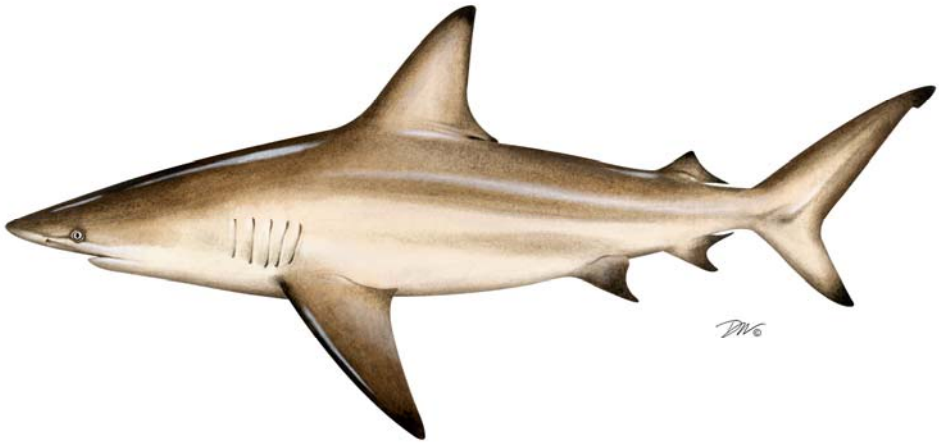
2012 REVIEW OF THE ATLANTIC STATES MARINE FISHERIES COMMISSION FISHERY MANAGEMENT PLAN FOR

COASTAL SHARKS

2011 FISHING YEAR



Coastal Sharks Plan Review Team

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I. Status of the Fishery Management Plan

Date of FMP Approval:	August 2008
Amendments	None
Addenda	Addendum I (September 2009)
Management Unit:	Entire coastwide distribution of the resource from the estuaries eastward to the inshore boundary of the EEZ
States With Declared Interest:	Maine - Florida
Active Boards/Committees:	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.

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, blacknose, and bonnethead sharks
Non-sandbar large coastal	Silky, tiger, blacktip, spinner, bull, lemon, nurse, scalloped hammerhead, great hammerhead and smooth hammerhead
Pelagic	Shortfin mako, porbeagle, common thresher, oceanic whitetip and blue sharks
Smooth dogfish	Smooth dogfish

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 obscures*), sandbar (*Carcharhinus plumbeus*), and blacknose (*Carcharhinus acrontus*) 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 incorporating the results of the assessment as part of Amendment 5 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.

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
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)
Smooth dogfish	Unknown	Unknown	No assessment

Atlantic sharpnose and bonnethead sharks will be assessed in 2013 by SEDAR. 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 sharks complexes opened on January 1, 2011, with the exception of the non-sandbar large coastal 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 2011 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	351.9	July 15, 2011	November 15, 2011
Non-sandbar LCS Research Quota	37.5	January 1, 2011	July 26, 2011
Sandbar Research Quota	87.9	January 1, 2011	
Non-blacknose Small Coastal Sharks	314.4	January 1, 2011	December 31, 2011
Blacknose Sharks	19.9	January 1, 2011	December 31, 2011
Blue Sharks	273	January 1, 2011	December 31, 2011
Porbeagle Sharks	1.6	January 1, 2011	August 29, 2011
Pelagic Sharks other than Porbeagle or Blue	488	January 1, 2011	December 31, 2011

Landings

Commercial landings of Atlantic large coastal sharks species in 2011 were 1,485,239 lbs dw, a slight decrease from the 2010 total (Table 4). Commercial landings of small coastal shark species in 2011 were 583,684 lbs dw. This is an increase of approximately 225,000 lbs dw from 2010 (Table 5). Total US landings of Atlantic pelagic species of sharks were 1,603 mt ww in 2011. This is approximately a threefold increase in landings from 2010, when landings totaled 565 mt ww Table 6. The 2011 landings of pelagic species comprise 5.1% of total international landings of pelagic species.

Table 4: Commercial landings of authorized Atlantic large coastal sharks by species (thousands of pounds dw), 2003-2011. Source: HMS SAFE Report, 2012.

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Blacktip	1474.4	1092.6	894.8	1255.3	1091.5	573.7	601.1	858.3	572.2
Bull	93.8	49.6	118.4	173.4	154.9	186.9	207.5	222.8	228.5
Dusky	23.3	1.0	0.9	4.2	2.1	0.0	0.5	0.0	0.0
Great hammerhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scalloped hammerhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Smooth hammerhead	0.0	0.1	0.1	0.2	0.0	0.4	4.0	7.8	0.1
Unclassified hammerhead	150.4	116.5	182.4	141.1	65.2	55.9	159.9	95.7	104.3
LCS	51.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

unclassified									
Lemon	80.7	67.8	74.4	65.1	72.6	53.4	82.3	46.4	82.3
Nurse	0.1	0.3	0.2	2.3	0.0	0.1	0.1	0.1	0.0
Sandbar	1425.6	1223.2	1247.0	1501.3	691.9	86.6	168.0	129.3	140.3
Silky	51.6	11.8	18.2	16.2	16.5	4.8	5.5	1.2	1.6
Spinner	12.1	14.8	47.7	96.3	17.9	123.7	37.0	91.1	71.2
Tiger	18.5	31.0	39.4	50.7	34.2	29.7	23.0	49.0	58.8
Unclassified assigned to LCS	908.1	603.2	519.7	499.1	182.2	247.6	224.1	18.0	225.8
Total	4290.0	3212.0	3142.9	3804.9	2329.1	1362.8	1513.2	1519.6	1485.2

Table 5: Commercial landings of authorized Atlantic small coastal sharks by species (thousands of lbs dw), 2003-2011. Source: HMS SAFE Report, 2012.

	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Blacknose	131.5	68.1	124.0	187.9	91.4	134.3	149.9	220.3	32.3
Bonnethead	38.6	29.4	33.3	33.4	53.6	61.0	55.3	11.7	41.3
Finetooth	163.4	121.0	109.8	80.5	138.5	80.8	150.9	92.7	211.9
Sharpnose Atlantic	191.0	230.9	354.3	459.2	332.2	324.6	277.3	220.3	261.3
Unclassified assigned to SCS	8.6	1.4	9.8	1.3	2.4	23.1	34.4	0.9	36.6
Total	131.5	68.1	124.0	187.9	91.4	134.3	149.9	220.3	583.4

Table 6: Commercial landings of authorized pelagic sharks by species off the Atlantic coast of the United States (mt dw), 2003-2011. Source: HMS SAFE Report, 2012.

	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Blue shark	0	72	72	68	55	138	107	176	1,183
Shortfin mako	142	411	469	469	382	188	354	385	408
Porbeagle	0	1	0	1	0	1	1	4	12
Total	**142**	**484**	**541**	**538**	**437**	**327**	**462**	**565**	**1,603**

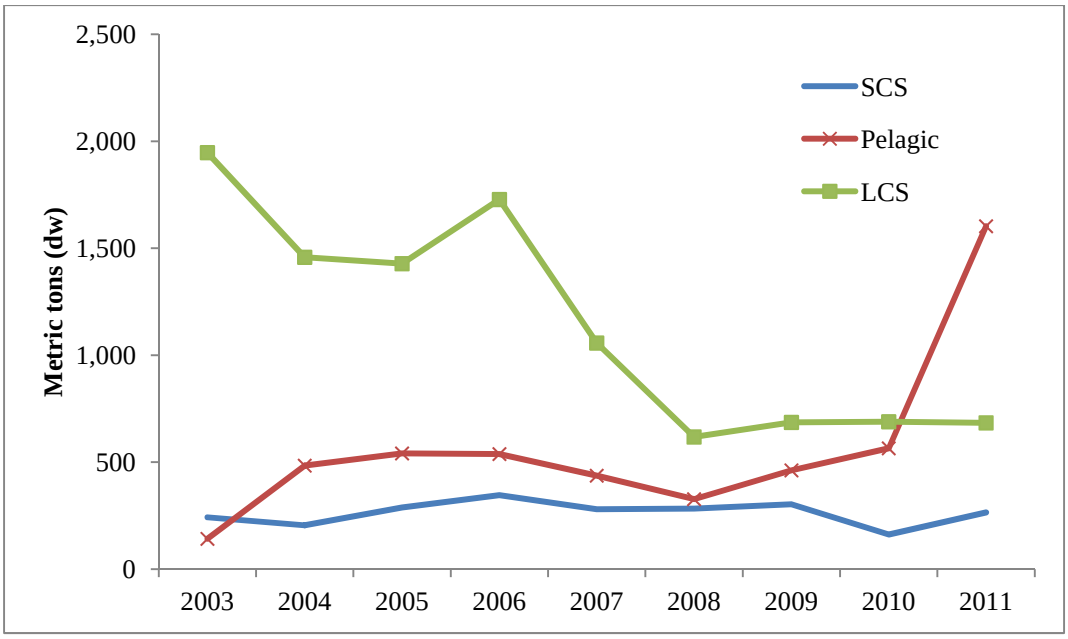

Figure 1: Commercial landings of coastal sharks off the east coast of the United States by species complex, 2003-2011. Source: HMS SAFE Report, 2012.

Recreational landings of shark species in 2011 were similar to other years. Approximately 182,900 fish were harvested during the 2011 fishing season, compared to 178,200 fish in the 2010 season, and 188,500 fish in the 2009 fishing season. The small coastal shark group had the most landings, comprising approximately 60% of the harvest in 2011. Large coastals came next with approximately 33% of the harvest, and pelagic species comprised 3% of the total harvest. Approximately 4% of the total recreational harvest was unclassified and not attributed to any species group.

Table 7: Recreational harvest of all Atlantic shark species by species group in thousands of fish, 2002-2011. Source: HMS SAFE Report, 2012.

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
LCS	80.6	89	67.4	85	59.1	68.8	45	64.5	89.5	60.9
Pelagic	4.7	4.3	5	5.4	16.5	9	2.8	7.8	6.8	5.2
SCS	152.5	134.3	127	118.9	117.2	167.6	107.9	101.1	81.3	109.3
Unclassified	5.4	18.4	28.5	47.6	7.5	23.9	6.1	15.1	0.6	7.5
Total	243.2	246	227.9	256.9	200.3	269.3	161.8	188.5	178.2	182.9

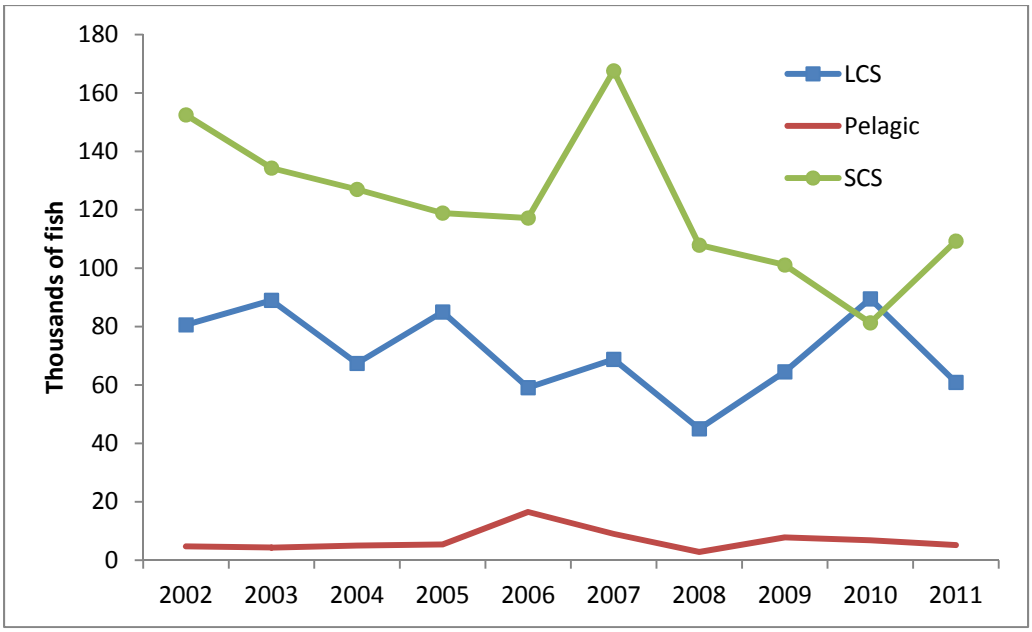

Figure 2: Recreational harvest of all Atlantic coast species by species group, in thousands of fish, 2002-2011. Source: HMS SAFE Report, 2012.

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 Rhode Island Division of Fish & Wildlife, Marine Fisheries Section monthly and seasonal trawl survey. During the 2011 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 **Error! Reference source not found.** below.

Table 8: Summary of fishery independent monitoring for coastal sharks captured in the RI Division of Fish & Wildlife, Marine Fisheries Section monthly and season trawl survey during 2011. 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						
2011	Jan	13	0	0	0	0
	Feb	13	0	0	0	0
	Mar	13	0	0	0	0
	Apr	13	0	0	0	0
	May	13	3.39	1	0.08	0.26
	Jun	12	13.73	5	0.42	1.14

Jul	13	1.50	8	0.62	0.12
Aug	13	3.36	5	0.38	0.26
Sep	13	1.39	2	0.15	0.11
Oct	13	14.98	16	1.23	1.15
Nov	13	0.63	1	0.08	0.05
Dec	13	0	0	0	0
Seasonal coastal trawl survey					
Spring	43	0	0	0	0
Fall	43	33.15	12	0.77	0.28

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 2011 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. Delaware also conducts a 16' juvenile trawl survey in the Inland bays. The only species caught in this survey was smooth dogfish.

Maryland

There are no specific at sea sampling programs for Atlantic coastal sharks in Maryland. Limited biological sampling of commercial catch onboard commercial offshore trawlers does occur. On August 17, 2011, September 27, 2011, and October 11, 2011, 12 Smooth Dogfish (*Mustelus canis*) were encountered in four bottom trawls offshore of Ocean City, MD that were targeting horseshoe crabs. The vessel was rigged with a 27.4 m (90 foot) bottom trawl with a 15.24 cm (6 inch) mesh body, with a 15.24 cm (6 inches) cod end. Twelve smooth dogfish were measured and sexed. The minimum size was 398 mm and the maximum size was 730 mm. Average length was 522 mm (± 22). There were seven males, four females, and one unknown. It is unknown if these fish were kept or released.

Two Atlantic Angel Sharks (*Squatina dumeril*) were measured and released on July 7, 2011 and August 17, 2011. The vessel was rigged with a 27.4 m (90 foot) bottom trawl with a 15.24 cm (6 inch) mesh body, with a 15.24 cm (6 inches) cod end. The minimum size was 1200 mm and the maximum size was 1300 mm.

North Carolina

The NCDMF does not have an independent program to tag Atlantic Coastal sharks. The NCDMF does have an independent red drum longline project (began 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 12 coastal sharks in 2011. Of the 12 sharks caught, five were sandbar sharks (*Carcharhinus plumbeus*) ranging in size from 622-1038 mm TL (mean=915 mm TL), one bull shark (*Carcharhinus leucas*) 1829 mm TL, four blacktip sharks (Carcharhinus limbatus) ranging in size from 1188-1335 mm TL (mean=1257) and two spinner sharks (Carcharhinus brevipinna) ranging in size from 489-501 mm TL (mean=739 mm TL). Of the five sandbar sharks caught four were released with steel dart tags.

In 2011, the Pamlico Sound independent gill net survey catch included a total of one blacktip (*Carcharhinus limbatus*) with a total length of 663 mm, five bull sharks (*Carcharhinus leucas*) with total lengths ranging from 835-929 mm (mean=894 mm TL), four bonnethead (*Sphyrna tiburo*) with total lengths ranging from 856 -1104 mm (mean=949 mm TL), four sandbar sharks (*Carcharhinus plumbeus*) with total lengths ranging from 686-821 mm (mean = 757 mm TL), four Atlantic sharpnose (*Rizoprionodon terraenovae*) with total lengths ranging from 338-982 mm (mean = 761 mm TL) and 398 smooth hound (*Mustelus canis*) with total lengths ranging from 332-1040 mm (mean = 662 mm TL).

In 2011, 1142 sharks were caught in the near shore ocean and 123 were caught in the Cape Fear and New rivers through the Fisheries Independent Assessment Program Ocean Gillnet (FIAPOG). Of the 1142 sharks caught in the nearshore ocean, there were seven blacktip with total lengths ranging in size from 760 – 1270 mm (mean = 1000 mm TL), 33 bonnethead with total lengths ranging in size from 575 – 990 mm (mean = 778 mm TL), eight scalloped hammerhead (*Sphyrna lewini*) with total lengths ranging in size from 449-980 (mean = 704 mm TL), 346 sharpnose with total lengths ranging in size from 257 – 850 mm (mean = 626 mm TL), 38 smooth dogfish with total lengths ranging in size from 452-1070 mm (mean = 788 mm TL), 11 spinner (*Carcharhinus brevipinna*) with total lengths ranging in size from 572-1425 mm (mean = 931 mm TL), six sand tiger (*Carcharias taurus*) with total lengths ranging in size from 940-2743 mm (mean=1972) and one sandbar (*Carcharhinus plumbeus*) with a total length of 1829.

Of the 123 sharks that were caught in the Cape Fear and New rivers, there were four blacktip with total lengths ranging in size from 953 – 1015 mm (mean = 980 mm TL), 24 bonnethead with total lengths ranging in size from 663 – 955 mm (mean = 820 mm TL), four sandbar with total lengths ranging in size from 700 – 800 mm (mean = 761 mm TL), 78 sharpnose with total lengths ranging in size from 246 – 644 mm (mean = 336 mm TL), two smooth dogfish with total lengths ranging in size from 510 – 620 mm TL (Mean = 565 mm TL), one bull shark (*Carcharhinus leucas*) with a total length of 594 mm, one dusky shark (*Carcharhinus obscures*) with a total length of 561 mm and seven finetooth sharks (*Carcharhinus isodon*) with total lengths ranging in size from 961-1122 mm (mean=1017 mm TL).

South Carolina
The marine game fish tagging program encourages anglers to participate in the catch and release of fish, while helping scientists collect valuable information on movement and migration. Reductions in funding have reduced the amount of participating anglers as well as tagging effort. A total of 17 sharks were tagged by recreational anglers in 2011, with five Atlantic sharpnose, two blacktips, six bonnetheads, one finetooth and two lemon sharks tagged.

Catches of LCS on the hand deployed longline, which is a part of the COASTSPAN survey, 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 2011 remained above the long term average, although they were slightly lower than 2010. Catches of SCS were also lower in 2011.

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 lower than their mean CPUE in 2011 with SCS having the lowest CPUE on record since the survey began (Figure 9). Large coastal sharks are caught infrequently in gill nets, averaging less than one LCS per net set.

Georgia
SEAMAP samples Georgia's adult red drum population. Sampling 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 2011, CRD staff deployed 284 sets consisting of 17,028 total hooks and 142 hours of total soak time. A total of 770 sharks, representing 12 species were captured during the 2011 season.

COASTSPAN samples areas where sharks are known to nurse. Sampling 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 2011, CRD staff fished 120 longline stations consisting of 6,000 hooks and a total of 60 hours of soak time. No spiny dogfish were captured. A total of 407 sharks, representing 7 species were captured during 2011.

The Ecological Monitoring Survey (EMS) uses a 40-foot flat otter trawl with neither a turtle excluder device nor bycatch reduction device to sample 42 stations across six estuaries. At each station, a standard 15 minute tow is made. During this report period, 504 tows/observations were conducted, totaling 127.00 hours of tow time. A total of 288 sharks, representing 5 species were captured during 2011.

The Marine Sportfish Population Health Survey (MSPHS) is a multi-faceted ongoing survey used to collect information on the biology and population dynamics of recreationally important finfish. 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 2011, a total of 216 gillnet and 150 trammel net sets were made, resulting in the capture of 217 individuals representing four 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, and Addendum I, which was implemented in September 2009.

The FMP addresses the management of 40 species, including smooth hound sharks, 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.

VI. Implementation of FMP Compliance Requirements for 2011

Mandatory compliance elements for 2011 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.
- 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.
- 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 in Table 3..
- 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.
- All sharks caught by commercial fishermen must have tails and fins attached naturally to the carcass through landing.

Table 9: Possession limits for shark species in state waters for 2011 fishing season.

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

VII. PRT Recommendations

State Compliance
Connecticut, New York and New Jersey have not submitted reports. All other 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 plans goals and objectives.

States that have been granted *de minimis* status are Maine, New Hampshire and Massachussetts. 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

Massachussetts, also a state that does not land large quantities of sharks and does not have many of the sharks 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]

[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.

- 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
- 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. 2012. NOAA Fisheries, December 21, 2012.
< http://www.nmfs.noaa.gov/sfa/hms/hmsdocument_files/SAFEreports.htm>