

Atlantic States Marine Fisheries Commission

Sturgeon Management Board

May 23, 2013
8:45 – 9:45 a.m.
Alexandria, Virginia

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change;
other items may be added as necessary.

1. Welcome/Call to Order (*R. Allen*) 8:45 a.m.
2. Board Consent 8:45 a.m.
 - Approval of Agenda
 - Approval of Proceedings from February 9, 2013
3. Public Comment 8:45 a.m.
4. NOAA Fisheries Atlantic Sturgeon Draft Biological Opinion and Population Estimation Analysis Update 8:50 a.m.
 - Population Estimation Analysis (*J. Bullard*)
 - Draft Biological Opinion Overview (*K. Damon-Randall*)
5. Consider FMP Review and State Compliance (*K. Taylor*) **Action** 9:35 a.m.
6. Other Business/Adjourn 9:45 a.m.

The meeting will be held at: the Crowne Plaza Hotel, 901 North Fairfax Street, Alexandria, Virginia • 703-683-6000

Healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015.

REVIEW OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
FISHERY MANAGEMENT PLAN FOR
ATLANTIC STURGEON (*Acipenser oxyrhincus*)
FOR FISHING YEAR 2011

Prepared by:

The Atlantic Sturgeon Plan Review Team

May 2013

**REVIEW OF THE ASMFC FISHERY MANAGEMENT PLAN FOR
ATLANTIC STURGEON (*Acipenser oxyrhincus*) FOR 2008**

I. Status of the Fishery Management Plan

<u>Year of plan's adoption:</u>	1990
<u>Amendments:</u>	Amendment 1 (June 1998)
<u>Addenda:</u>	Technical Addendum #1 (October 16, 2000) Addendum I (January 31, 2001) Addendum II (May 2005) Addendum III (November 2006)
<u>Management unit:</u>	Migratory stocks of Atlantic sturgeon from Maine through Florida
<u>Jurisdictions with a declared interest:</u>	Maine through Florida, including District of Columbia and the Potomac River Fisheries Commission
<u>Committees:</u>	Sturgeon Management Board, Plan Review Team, Technical Committee, Stock Assessment Subcommittee, Advisory Panel, Culture and Stocking Committee

The Atlantic Sturgeon Fishery Management Plan (FMP) was approved by the Atlantic Sturgeon Management Board in 1990. By 1995, the member states and jurisdictions determined that the FMP was insufficient for conservation and restoration of Atlantic sturgeon stocks, and initiated development of Amendment 1. The amendment was approved in June 1998 by ASMFC. Its goal is to restore Atlantic sturgeon spawning stocks to population levels that will provide for sustainable fisheries and ensure viable spawning populations. Based on recommendations of the 1998 ASMFC Atlantic sturgeon stock assessment, the specific objectives to achieve this goal include:

- Establish 20 protected yearclasses of females in each spawning stock;
- Close the fishery for a sufficient time period to reestablish spawning stocks and increase numbers in current spawning stocks;
- Reduce or eliminate bycatch mortality of Atlantic sturgeon;
- Determine the spawning sites and provide protection of spawning habitats for each spawning stock;
- Where feasible, reestablish access to historical spawning habitats for Atlantic sturgeon; and
- Conduct appropriate research as needed, especially to define unit stocks of Atlantic sturgeon.

Under Amendment 1, states must maintain complete closure of any directed fishery for Atlantic sturgeon and prohibit landings from any fishery. Additionally, possession of Atlantic sturgeon or any parts (including eggs) is prohibited. Exceptions to the moratorium on possession were approved via Technical Addendum # 1 for the purposes of scientific research and educational display.

Formal exemptions to the harvest and possession moratorium may be permitted to states that intend to import non-indigenous Atlantic sturgeon for the purposes of private aquaculture development.

Amendment 1 requires that, beginning in 1999, states report annually on the following topics to ASMFC:

- Results of bycatch monitoring for Atlantic sturgeon in other fisheries;
- Monitoring results (tagging, juvenile abundance indices, etc.);
- Habitat status (restoration efforts, FERC relicensing studies, etc.), in accordance with the recommendations in the FMP; and
- Aquaculture operations authorized, status of regulations, disease-free certification status, etc. Additional reporting requirements for aquaculture are outlined in the ASMFC Terms, Limitations, and Enforcement Document. These requirements are specific to states exempted from the harvest and possession moratorium by the Sturgeon Management Board for the purposes of importation and development of private aquaculture facilities.

Annual reports must cover the previous calendar year at a minimum and should include significant findings of the current year.

II. Status of the Stock

Current Atlantic sturgeon populations throughout the species' range are either extirpated or at historically low abundance. Recruitment is variable at low levels in most regions. Survival of Atlantic sturgeon during the 20th Century implies that enough spawning and nursery habitats exist to perpetuate the species. In the absence of major threats to existing habitat, reduced fishing mortality is of greater importance to stock restoration efforts than habitat limitations. Adult population abundance in some systems may be so low as to significantly impede reproduction success and timely recovery.

The 1998 Atlantic Sturgeon Stock Assessment report defined the target fishing rate as that level of F that generated an eggs-per-recruit (EPR) equal to 50% of the EPR at $F = 0.0$ (i.e., virgin stock). This rate (F_{50}) equals 0.03 (annual harvest rate of 3%) for a restored population. This target is far below recent estimates of F prior to enactment of fishing moratoria, which ranged from 0.01 - 0.12 for females and 0.15 - 0.24 for males in the Hudson River. These numbers may not apply to southern stocks, where more signs toward recovery are being seen.

Undertaken concurrently with the Commission stock assessment in 1998, the National Marine Fisheries Service (NMFS) investigated the status of the species with regard to listing under the Endangered Species Act (ESA). That status review concluded that listing was not warranted at the time.

In February 2007 a status review team, convened by the National Marine Fisheries Service (NMFS), finalized its report on the status of Atlantic sturgeon in the U.S. (NOAA 2007). The status review identified five distinct population segments – discrete population units with distinct physical, genetic, and physiological characteristics – along the east coast. The review

team concluded that there was greater than a 50% chance that the Chesapeake Bay, New York Bight and Carolina subpopulations would become endangered within the next twenty years. The biggest threats to the recovery of the subpopulations included bycatch mortality, water quality, lack of adequate state and/or federal regulatory mechanisms, and dredging activities. The review did not have enough information to make a determination on the Gulf of Maine and South Atlantic subpopulations.

In 2009, the National Resources Defense Council petitioned NMFS to list Atlantic sturgeon on the ESA based on the recommendations from the 2007 Status Review. In January 2010, NMFS reported that the petition may be warranted. After further review NMFS published a proposed rule in October 2010 to list the Gulf of Maine Distinct Population Segment (DPS) as threatened and the remaining DPSs as endangered. Over 400 public comments were submitted to NMFS on the proposed rule.

NMFS published the final rule in February 2012, declaring the Gulf of Maine DPS as threatened and the remaining four DPSs as endangered (effective April 2012). NMFS is currently considering protective regulations (referred to as a 4(d) rule) for the threatened Gulf of Maine DPS which would essentially provide the same protection as an endangered listing.

In 2013 the ASMFC initiated a new benchmark stock assessment for Atlantic sturgeon. The assessment is expected to be peer reviewed in early 2015.

III. Status of the Fishery

Reported landings of Atlantic sturgeon peaked in 1890 at 3.4 million kilograms and declined precipitously thereafter. Since 1997, all states have enacted bans on harvest and possession of Atlantic sturgeon and sturgeon parts. The National Marine Fisheries Service enacted a ban on harvest and possession of Atlantic sturgeon in federal waters in 1998. As per Amendment 1, these moratoria will remain in effect until stocks exhibit a minimum of 20 protected yearclasses of spawning females and the FMP is modified to permit harvest and possession.

Addendum I to the Interstate Fishery Management Plan for Atlantic sturgeon exempts the State of Florida from the possession moratorium for the purposes of developing private aquaculture facilities for cultivation and propagation of the species. Addendum II exempts a private company in North Carolina from the moratorium on possession, propagation, and sale of Atlantic sturgeon meat and eggs. Addendum III was approved on November 17, 2006, exempting a private company in North Carolina from a moratorium on possession, propagation, and sale of Atlantic sturgeon meat and eggs and exempting a Canadian exporter from exporting Atlantic sturgeon fry and fingerlings into North Carolina.

In 2003 an Atlantic Sturgeon Technical Committee workshop on the status of Atlantic sturgeon identified several new issues regarding bycatch of Atlantic sturgeon. Another workshop focused on recovery techniques, held in 2004, and provided more recommendations for dealing with bycatch. ASMFC hosted an Atlantic sturgeon bycatch workshop in 2006 and 2007 that: (1) evaluated genetic and mark-recapture data and approaches to identifying stock composition of

bycatch; (2) reviewed and summarized jurisdictional reports on bycatch; and (3) estimated fishery-specific bycatch and bycatch mortality of Atlantic sturgeon during the past ten years in New England and Mid-Atlantic waters.

Tables 1 provides a summary of commercial bycatch of Atlantic sturgeon data reported by the states in the most recent compliance reports. Note that sources of data across states are not consistent. Not all fisheries or water bodies are monitored.

IV. Research Needs

Assessments of population status

- Determine levels of by-catch and compare to F_{50} target levels for individual populations. By-catch, particularly in coastal waters may represent largest threat to Atlantic sturgeon rebuilding. Characterize Atlantic sturgeon bycatch in various fisheries by gear and season. Include data on fish size, health condition at capture, and number of fish captured. Develop markers that permit identification of bycatch by population origin.
- Conduct assessments of population abundance and age structure in various river systems. Particular emphasis should be placed in documenting occurrence of age 0-1 juveniles and spawning adults as indicators of natural reproduction.
- Continue to determine the extent to which Atlantic sturgeon are genetically differentiable among rivers. Interpret biological significance of findings.
- Conduct further analyses to assess the sensitivity of F_{50} to model inputs for northern and southern stocks.

Assess current habitat suitability

- Quantify the amount and quality of sturgeon habitat in important sturgeon estuaries and rivers, including spawning and nursery habitats. Define and map bottom water quality, velocity, and substrate types for suitable sturgeon spawning habitat. Define and map bottom water quality and substrate types suitable for sturgeon nursery habitat.

Identify mortality factors

- Assess loss to ship/boat strikes.

Develop culture and stock enhancement information

- Further develop techniques for capture, transport, and long-term holding of wild brood stock.
- Refine maturation-induced spawning procedures. Refine sperm cryo-preservation techniques to assure availability of male gametes.
- Continue basic cultural experiments at all life stages to provide information on: a) efficacy of alternative spawning techniques; b) egg incubation and fry production techniques; c) holding and rearing densities; d) prophylactic treatments; e) nutritional requirements and feeding techniques; and f) optimal environmental rearing conditions and systems.
- Conduct research study to identify suitable stocking protocols for hatchery fish (e.g., fish size, time of year, site, marking technique).

- Conduct and monitor pilot-scale-stocking programs before conducting large-scale efforts that encompass broad geographic area.
- Establish stocking goals and success criteria prior to development of large-scale stock enhancement or recovery programs.

Elucidate life history and ecological characteristics

- Develop methods to determine sex and maturity of captured sturgeon.
- Identify rates of tag loss and tag reporting.
- Establish coordinated tagging programs to delineate migratory patterns and stock composition. Priority should be to mark juveniles in important sturgeon rivers before they begin ocean life phase.
- Standardize PIT tagging and ultrasonic telemetry equipment and procedures.
- Analyze existing sea sampling data to characterize at-sea migratory behavior. Use electronic tagging to model coastal migrations of juvenile and adult Atlantic sturgeon.
- Evaluate aging techniques for Atlantic sturgeon with known age fish. Emphasis should be placed on verifying current methodology based on fin rays.
- Determine length, fecundity, and maturity at age for North, Mid, and South Atlantic stocks.
- Establish tolerance of different life stages to important contaminants.
- Establish tolerance and preference of different life stages to important environmental factors (e.g., DO, pH, temperature, salinity).

Other

- Encourage shortnose sturgeon researchers to include data collection for incidentally captured Atlantic sturgeon.

V. Ongoing & Completed Research Highlighted in Compliance Reports

Amendment 1 does not require any research in participating jurisdictions/states. Nonetheless, several state and federal agencies are conducting or have completed research projects on Atlantic sturgeon to further understand the species' life history, genetics, behavior, and aquaculture. Some of these include:

- Connectivity and demographic correspondence among sturgeon stocks in Maine (and Beyond) – Maine DMR, University of Maine, and University of New England
- Distribution, abundance, movement, and genetic composition of Atlantic sturgeon in the Kennebec complex – Maine DMR
- Abundance and distribution of Atlantic sturgeon in Connecticut waters (2006 through 2010) - Connecticut DEP
- Sturgeons in the mid-Atlantic region: a multi-state collaboration on research and conservation (2010 through 2013) – Connecticut DEP, New York DEC, Delaware DFW, and New Jersey DEP
- Coastwide Cooperative Tagging Program –US Fish and Wildlife Service
- Sonic tagging and sampling of Atlantic sturgeon, south of Long Island Sound – SUNY Stonybrook

- Juvenile emigration from the Hudson River Estuary – New York DEC and USFWS
- Understanding adult sturgeon ocean migration movements – New York DEC
- Determining the connectivity among and fine-scale habitat use within Atlantic sturgeon aggregation areas in the Mid-Atlantic Bight: Implications for gear restricted management areas to reduce bycatch – New York DEC
- Cryo-preservation and viability of fresh milt of wild vs. hatchery-reared sturgeon - The University of Maryland and USFWS
- Atlantic sturgeon ship strike mortalities – DE DFW and Delaware State University
- Identification of Atlantic sturgeon critical habitat and interbasin exchange – Delaware State University
- Seasonal movement and behavior patterns of juvenile sturgeons – Delaware DFW, Delaware State University and Environmental Research Consultants, Inc
- Captive Atlantic sturgeon spawning and experimental streamside stocking – Maryland DNR, US Fish and Wildlife Service, University of Maryland and GenOn Potomac River Generating Station.
- Analysis of the effects of various prepared diets on gonadal development and sex steroid levels of Atlantic sturgeon - University of Maryland's Center for Environmental Science Aquatic and Restoration Ecology Laboratory
- Reducing sturgeon interactions in striped bass anchored gill nets – Virginia Institute of Marine Science
- Installation of Atlantic sturgeon spawning reefs in the James River - Virginia Commonwealth University, James River Association, Luck Stone, Vulcan Materials, and the Fish America Foundation
- Availability of Atlantic sturgeon spawning habitat in the James and Appomattox Rivers - Virginia Institute of Marine Science
- Research and Management of Endangered and Threatened Species in the Southeast: Riverine Movements of Shortnose and Atlantic Sturgeon – North Carolina DMF, South Carolina DNR, University of Georgia, and North Carolina State University
- Movements of Atlantic and shortnose sturgeon in the Altamaha, Ocmulgee, Oconee, Ogeechee, Satilla and St Marys Rivers – University of Georgia

VI. Status of Management Measures and Issues

Mandatory management measures include:

1. Complete closure, through prohibiting possession of Atlantic sturgeon, and any and all parts thereof including eggs, and of any directed fishery for and landings of Atlantic sturgeon until the fishery management plan is modified to reopen fishing in that jurisdiction. In February of 1999, the National Marine Fisheries Service imposed a harvest and possession moratorium on Atlantic sturgeon in the EEZ.
2. In addition, states shall implement any restrictions in other fisheries as outlined in bycatch reduction sections of the FMP.
3. States may grant limited specific exceptions to prohibitions on possession for imports of non-U.S. Atlantic sturgeon and/or cultured Atlantic sturgeon upon adoption of FMP

addenda that specify the terms, limitations, and enforcement requirements for each such exception. It is intended that each such addendum shall be developed by a PRT, in consultation with representatives of the ASMFC federal partners, applicable state aquaculture authorities, the ASMFC Law Enforcement Committee, the state(s) for which shipments are intended, and the party(ies) requesting the exception.

In addition to these mandatory regulations, states are implementing several recommendations in the FMP including development of a coast-wide tagging database and culture techniques, incorporation of shortnose sturgeon issues in Atlantic sturgeon research (and vice versa), stock identification, and habitat restoration.

VII. Current State-by-State Implementation of FMP Compliance Requirements

Compliance requirement: Complete closure, through prohibiting possession of Atlantic sturgeon, and any and all parts thereof including eggs, and of any directed fishery for and landings of Atlantic sturgeon until the fishery management plan is modified to reopen fishing in that jurisdiction. As described in Sections 3.4 and 5.1.2 of Amendment 1, states/jurisdictions must report on monitoring programs and provide estimates of bycatch of Atlantic sturgeon in other fisheries under their jurisdiction. All states and jurisdictions maintain compliance with Amendment 1 at this time. See Table 2 for a state-by-state summary of compliance.

VIII. Recommendations of Plan Review Team

The PRT recommends that states:

1. Further improve understanding of critical Atlantic sturgeon habitat utilization and population estimation.
2. Specify when no Atlantic sturgeon are encountered in gear that typically encounters sturgeon.
3. Continue to educate fishing communities on identification techniques to distinguish shortnose and Atlantic sturgeon.
4. Expand upon state-initiated programs to estimate sturgeon bycatch in their fisheries. The PRT stresses the importance of mandatory reporting requirements to effectively monitor sturgeon bycatch in their fisheries. The PRT notes that bycatch estimates using self-reported data are likely largely underestimated.

Table 1. Bycatch of Atlantic sturgeon in 2011

State	Location	Fisheries	Target Species	Data Source	Type of Program	Number	Dead
ME	ocean	trawl, purse seine, gillnet	multiple	mandatory logbook	bycatch	0	0
NH	ocean	unspecified	unspecified	observers	bycatch	0	0
MA	ocean	sink gillnet	cod	MA observer	bycatch	1	0
RI	ocean	trawl	summer flounder	NMFS observer	bycatch	8	0
	ocean	anchored gillnet	monkfish and wintr skate	NMFS observer	bycatch	9	8
CT	Connecticut River	drift gillnet	American shad	logbook	bycatch	16	0
NY	ocean*	unspecified	unspecified	mandatory reports	bycatch	-	-
NJ	Delaware Bay	unspecified	unspecified	voluntary logbook	bycatch	1	0
DE	Delaware River	gillnet	striped bass, Am. Shad & weakfish	voluntary logbook	bycatch	153^	0
	Delaware River	ship strike	unspecified	reporting	ship strike	21	21
MD	unspecified	gill net	unspecified	reward program	bycatch	28	0
	unspecified	pound net	unspecified	reward program	bycatch	7	0
NC	Pamlico Sound	unspecified	flounder	observers	bycatch	3	0
	Cape Fear River	drift gillnet	American shad	observers	bycatch	0	0
SC	Winyah River	gillnet	shad	reporting	bycatch	181	0
GA	ocean	gillnet	shrimp and whelk	GA CRD	bycatch	0	0
FL	St Johns River	hook and line	unspecified	unspecified	bycatch	1	0
TOTAL						276	29

* information not provided in 2011

^ number extrapolated from logbook data and effort

Table 2. State-by-state summary of compliance for 2011

	Bycatch Monitoring ¹	Monitoring Results ²	Habitat Status ³	Aquaculture Operations ⁴	Moratorium on Harvest and Possession ⁵
ME	C	C	C	C	C
NH	C	C	C	C	C
MA	C	C	C	C	C
RI	C	C	C	C	C
CT	C	C	C	C	C
NY	C	C	C	C	C
NJ	C	C	C	C	C
PA	C	C	C	C	C
DE	C	C	C	C	C
MD	C	C	C	C	C
PRFC	C	C	C	C	C
DC	C	C	C	C	C
VA	C	C	C	C	C
NC	C	C	C	C	C
SC	C	C	C	C	C
GA	C	C	C	C	C
FL	C	C	C	C	C

NOTE ** C = IN COMPLIANCE, P = PARTIAL, N = NOT IN COMPLIANCE/NO REPORT SUBMITTED, NA = NOT APPLICABLE

¹** **REQUIRED** Bycatch Monitoring may be implemented via law enforcement observations, FI surveys, ACCSP and/or at-sea observer programs.

²** **RECOMMENDED** Monitoring Results should include:

- a). Programmatic details of how juvenile abundance survey will be performed (recommended every 5 years)
- b). Calculated CPUE estimates of juveniles (when survey is completed)
- c). Report on juvenile tag and release programs
- d). Assessment of spawning stock status including examination of sex ratio, size, and age structure by sex of the larger sub-adults and adults.

³** **RECOMMENDED** Habitat Monitoring reports should include:

- a). Assessment of sturgeon habitats of particular concern
- b). Restoration programs
- c). FERC relicensing evaluations

⁴** **RECOMMENDED** Aquaculture monitoring reports should include:

- a). Aquaculture research and development
- b). Collection of brood stock and release of cultured progeny
- c). Translocation of sturgeons and inadvertent spread of diseases
- d). Introduction of non-native sturgeons for commercial aquaculture
- e). Collection and archiving tissue samples for genetic analysis
- f). Monitoring effectiveness of restoration programs

REQUIRED for states with private aquaculture exemptions to the harvest and possession moratorium ⁵** **REQUIRED** State moratorium on the harvest and possession of Atlantic Sturgeon currently applies throughout ASMFC jurisdiction

DRAFT

Atlantic Sturgeon
Plan Review Team Report
2012 Review of State Compliance for 2011

May 2013

Prepared for the Atlantic Sturgeon Management Board
by the ASMFC Atlantic Sturgeon Plan Review Team

Introduction

The Interstate Fishery Management Plan for Atlantic Sturgeon requires that states submit annual reports detailing each state's fishery-dependent and independent bycatch monitoring results, habitat status, and aquaculture operations for Atlantic Sturgeon. These reports are reviewed by the Atlantic Sturgeon Plan Review Team to determine compliance for the previous calendar year and must be submitted to the ASMFC by October 1 of each year. For example, this year's reports should have been submitted by October 1, 2012, and should have reported on the 2011 season.

The status of Atlantic Sturgeon is not well understood. When preparing annual compliance reports, states are encouraged to consider opportunities to increase the amount of information gathered for sturgeon. For example, the PRT requests that states expand sturgeon bycatch monitoring to a previously unmonitored commercial fishery, if not all commercial fisheries, in an effort to gain a more comprehensive understanding of the species.

2012 Compliance Review

The Plan Review Team (PRT) reviewed state annual compliance reports of the 2011 fishery in order to determine compliance status. As described in Section 5 of Amendment 1 to the Fishery Management Plan, under Compliance, the PRT has summarized the compliance on a state-by-state basis below.

MAINE

Comments or trends highlighted in state report:

- In 2011, a total of 148 Atlantic sturgeon were caught of which 116 were PIT tagged and 19 acoustically tagged as part of research into the movement of Atlantic sturgeon conducted by MDMR, UMaine, and University of New England (UNE) through a Section 6 grant.
- Maine and New Hampshire conduct an inshore fisheries independent groundfish trawl survey in the spring and fall, in five areas. Although fishing effort has been similar in each of the regions, 43 of 49 sub-adult Atlantic sturgeon have been captured in Region 2 near the mouth of the Kennebec River. In the fall of 2011, an Atlantic sturgeon was captured in Region 4 for the first time.
- There are three barriers located in the Penobscot River. The Bangor Water Works Dam (rkm 42, constructed in 1874) was removed in 1995. The Great Works Dam (rkm 59, constructed in 1830) was removed in 2012 and the Veazie Dam (rkm 47, constructed in 1833) is expected to be removed beginning in 2013.
- No Atlantic sturgeon were reported as bycatch in 2011, for the third year in a row.

Areas of concern:

- None

PRT requests/recommendations:

- None

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

NEW HAMPSHIRE

Comments or trends highlighted in state report:

- No Atlantic sturgeon were reported as bycatch in 2011
- In 2011, one tagged Atlantic sturgeon was recorded in Great Bay Estuary by a University of New Hampshire receiver, and one at the Isles of Shoals by a NMFS receiver. One tagged shortnose sturgeon was recorded in Great Bay by a US Geological Survey in 2011.

Areas of concern:

- None

PRT requests/recommendations:

- None

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

MASSACHUSETTS

Comments or trends highlighted in state report:

- On June 8, 2012, a sturgeon was captured and released alive near Gloucester, Massachusetts. The fish weighed 34 lbs and was captured in a sink gill net by a commercial vessel targeting Atlantic cod.
- There were no reports of Atlantic sturgeon bycatch in any recreational fishery in 2011.
- No Atlantic sturgeon have been captured in the fisheries independent trawl survey since 1986.
- DMF has received anecdotal information that multiple sturgeon were seen to breach the water in the Merrimack River in 2011. The report indicated that dozens of individual breaches were observed and that most fish were between 3 and 4 feet long and were most likely Atlantic sturgeon.
- One Atlantic sturgeon was recovered dead in Hanover. This Atlantic sturgeon was approximately 6 feet long with a weight of about 75 lbs. A necropsy conducted by the New England Aquarium found that the fish was a non ripe female.

Areas of concern:

None

PRT requests/recommendations:

- How does MA interact with ME in the Gulf of Maine IBS survey

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

RHODE ISLAND

Comments or trends highlighted in state report:

- NEFOP records record 17 Atlantic sturgeon caught in anchored gillnets (9) and bottom otter single and twin trawls (8). While this was the highest value observed since 1994, it was only ranked 12th overall due to the increase in observed hauls in 2011.
- Of the sturgeon reported by NEFOP, 9 were released alive (8 from trawl fisheries and one from the monkfish gillnet fishery) and 8 were reported dead (7 from the monkfish gillnet fishery and 1 from the winter skate gillnet fishery).

Areas of concern:

- None

PRT requests/recommendations:

- None

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

CONNECTICUT

Comments or trends highlighted in state report:

- With the listing of Atlantic sturgeon from the New York Bight DPS as Federally Endangered, State listing of Atlantic sturgeon in Connecticut was changed from State Threatened in freshwaters to state Endangered.
- A total of 16 sturgeon were reported captured and released as bycatch in the Connecticut River shad gillnet fishery for April, May and June of 2011. This was the lowest value since 2005.
- Connecticut partnered with several other agencies and organizations for a NMFS funded Section 6 study on 'Sturgeons in the mid-Atlantic region: a multi-state collaboration or research and conservation.' from 2010 through 2013.

Areas of concern:

- None

PRT requests/recommendations:

- The PRT also requests more information be included on the “directed collections”.

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

NEW YORK

Comments or trends highlighted in state report:

- The American shad fishery in the Hudson River was closed in 2010. Bycatch of juvenile Atlantic sturgeon no longer occurs.
- Fishery independent data on relative abundance of juvenile Atlantic sturgeon prior to emigration from the Hudson River Estuary have been collected annually by contractors to Hudson River power generators since 1974. This program suffered a major loss of data in 2012 as the HRG did not possess a NMFS endangered species permit when the Atlantic

sturgeon were listed. However, data indicates that an increase in abundance is occurring in the Hudson stock since the fishery closure in 1996. After four years of below average years, once the 2012 survey began it resulted in the second highest value in the time series.

- The first experimental hatchery release for the Hudson occurred in 1994 when approximately 4,925 age-zero fish were released. In 2009 and 2010, two fish returned as mature adults to the Hudson spawning areas near Hyde Park NY. The six fish recaptured in 2011 were caught off Bethany Beach, DE.
- In 2010, a transmission cable company proposed to lay a high voltage (1000MW) power transmission line down 133 km of the length of the Hudson River from just above Saugerties (km 165) to the Harlem River (km 22) to Astoria, Queens, NY. Only Haverstraw Bay, a known over-wintering area for juvenile sturgeon will be bypassed. Negotiations are ongoing with the company to conduct habitat studies to examine possible effects of the cable and its magnetic field throughout the major spawning area.

Areas of concern:

- Data on ocean bycatch were not obtained for 2011-12.

PRT requests/recommendations:

- None

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

NEW JERSEY

Comments or trends highlighted in state report:

- According to logbooks collected from New Jersey commercial shad fishers there was one Atlantic sturgeon caught as bycatch during 2011 in Delaware Bay. This sturgeon was released alive at the time of tending the net. Permit holders are not required to report Atlantic sturgeon interactions however, so this number may be an underestimate of the total interactions with commercial shad gill netters throughout the state.
- Staff encountered one sturgeon during Division's Delaware Bay American Shad and Striped Bass Tagging Program in 2011 and none during 2012 sampling. Not all fish are brought aboard the sampling vessel, so a size range is not available for most years.
- Three sturgeon were caught during the Division's ocean trawl survey, which was the lowest number since 2002.

Areas of concern:

- None

PRT requests/recommendations:

- None

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

PENNSYLVANIA

Comments or trends highlighted in state report:

- The U.S. Fish and Wildlife Service (USFWS) Northeast Fishery Center at Lamar continues to hold a small number of wild Atlantic sturgeon (N = 4) as well as five year classes of hatchery-reared fish (N = 50) for use in research on domestic breeding. Laparoscopic examinations were performed on three of the largest female sturgeon in the spring of 2010 and 2011, and the ovaries were found to be reproductively immature. The oldest female examined was age-19. It will likely be several years before any female sturgeon at Lamar will come into spawning condition.

Areas of concern:

- None

PRT requests/recommendations:

None

Compliance issues:

None

Recommendations for action by the Sturgeon Management Board:

None

DELAWARE

Comments or trends highlighted in state report:

- The Division uses a voluntary logbook program to monitor the by-catch of Atlantic sturgeon in the spring gill net fishery in the Delaware River, Delaware Bay, and near-shore Atlantic Ocean. In 2011 a total of 5 Atlantic sturgeon were encountered during the spring gill net fishery, all in the Delaware River, with no mortalities reported. However, only 7% (4 of 59) of fishermen responded to the survey. Expanding the estimate to the entire spring gill net fishery results in a total of 153 Atlantic sturgeon bycaught in the spring gill net fishery in the Delaware River, which is slightly below average from previous years despite the fact that effort was nearly 50% below average.
- In 2011, 21 Atlantic sturgeon carcasses were reported from the Delaware Estuary of which 17 had external injuries that were most likely the result of being struck by a ship propeller. An additional adult sized male Atlantic sturgeon carcass with signs of vessel strike was reported in the Nanticoke. Three shortnose sturgeon carcasses were also reported, two of which had signs of vessel strike.
- Results of the 2011 juvenile abundance survey in the lower Delaware River indicate a successful 2011 year class. One individual captured was possibly from the 2010 year class. This was the first potential 2010 year class candidate caught in 2 seasons of effort, which indicates poor year class strength. Salinity may be a factor in producing successful year classes.
- In 2011, 8 Atlantic sturgeon were collected in the lower Delaware River and Bay trawl. The 2011 catch is a record threefold greater than the previous high in 1996 and is likely due to the extremely wet year pushing the freshwater zone downstream and temporarily pushing sturgeon distribution into a much greater portion of the trawling stations in the Estuary.
- In an attempt to understand the impact of gillnet configuration on Atlantic sturgeon

landings, gillnets with alternating panels were deployed which were either tied-down to mimic the monkfish fishery or standup (no tie downs). A total of 115 Atlantic sturgeon were captured in the tie-down nets with 94 landed in the standup gear. All of these fish were first time captures.

Areas of concern:

- None

PRT requests/recommendations:

- None

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

MARYLAND

Comments or trends highlighted in state report:

- The Maryland Sturgeon Reward Program pays commercial fishermen for each live sturgeon reported to the program. Reward program reports for calendar year 2011 totaled 28 gill net captures, and seven pound net captures.
- The Fish Passage Workgroup of the Chesapeake Bay Program's Living Resources Subcommittee was charged with reopening blocked tributaries in Chesapeake Bay. Their ten-year goal was to reopen 1,357 miles of streams. That goal has since been increased to 2,807 miles for the Chesapeake Bay watershed. As of September 2011, 471 miles of Maryland streams have been reopened since 1988. This was accomplished through the construction of fish passage facilities, dam removals and altering blockages with breeches or notches. The workgroup recently developed a new mapping tool to prioritize fish passage projects. The tool uses more than one dozen habitat and biological metrics to rank blockages across the entire Chesapeake Bay watershed.
- Surplus Canadian-origin hatchery fish are provided to any suitable facility for research, outreach or education purposes. There are currently 8 institutions participating in the program and they care for 405 animals as of December 2011 (2005-11 year classes). A "sturgeon in schools" classroom program was terminated in 2011, resulting in a drop from 37 participating institutions.
- In 2011, the University of Maryland's Center for Environmental Science Aquatic and Restoration Ecology Laboratory at Horn Point (AREL) received thirty-eight Atlantic sturgeon through the Maryland Sturgeon Reward Program. Eleven fish were successfully trained onto commercial pellets. Three fish were received in poor condition and died shortly after arrival. It is unusual to observe fish from the reward program in poor condition so it is likely that these fish were in poor health prior to capture. Two sturgeon could not be trained to feed and were released in good condition.

Areas of concern:

- None

PRT requests/recommendations:

- None

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

POTOMAC RIVER FISHERIES COMMISSION

Comments or trends highlighted in state report:

- No sturgeon were reported as bycaught in any gear.
- In 2011, there were nine Atlantic sturgeon recorded as captured live in the Potomac River by the Maryland DNR reward program. All fish were kept by MD DNR.

Areas of concern:

- None

PRT requests/recommendations:

- None

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

WASHINGTON, DC

Comments or trends highlighted in state report:

- There is no monitoring program specifically directed at the capture of sturgeon in the District, and none have been collected during any routine fishery sampling.

Areas of concern:

- None

PRT requests/recommendations:

- None

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

VIRGINIA

Comments or trends highlighted in state report:

- The Virginia Institute of Marine Science (VIMS) Juvenile Fish and Blue Crab Survey monitors the distribution and abundance of important finfish and invertebrate species occurring in the Chesapeake Bay. On December 1, 2011, one young-of-the-year Atlantic sturgeon was captured in the Pamunkey River, indicating that successful spawning occurred in the York River System. Three additional young-of-the-year Atlantic sturgeon were captured at the same sampling location in January 2012.
- In 2011 a final project report was published which was funded by the Virginia Fishery Resource Grant Program that tested raised footlines in Virginia's striped bass fishery as a gear based method of reducing sturgeon interactions in anchored gill nets. Upon completion of this project it was concluded that use of floating nets can aid in lowering

the Atlantic sturgeon bycatch, often while not greatly affecting the striped bass fishery. Some mesh sizes in float nets only resulted in a reduction of striped bass catch of approximately 10%.

- In 2011
- Virginia Commonwealth University and its partners, constructed two Atlantic sturgeon spawning reefs in the tidal James River in 2010 and 2011. Although no sturgeon eggs have been collected on the two reefs, VCU has collected a significant number of reproductively-active, adult sturgeon in the vicinity of the lower reef.
- 11 Atlantic sturgeon were caught in the James Rivers during the VIMS American shad monitoring program. One additional sturgeon was captures in either the York or Rappahannock Rivers.

Areas of concern:

- None

PRT requests/recommendations:

- Currently the report only specifies the number of Atlantic sturgeon captured in the James River during the VIMS American shad monitoring program, although it is mentioned that Atlantic sturgeon are also captured in the York and Rappahannock Rivers. The PRT requests that the number of sturgeon caught in each of the rivers is provided.

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

NORTH CAROLINA

Comments or trends highlighted in state report:

- The Albemarle Sound Independent Gill Net Survey caught 47 Atlantic sturgeon in 2011. There were two Atlantic sturgeon mortalities and 45 fish were tagged and released.
- The Pamlico Sound Independent Gill Net Survey caught 4 Atlantic sturgeon during 2011. All were released alive.
- The North Carolina Wildlife Resources Commission (NCWRC) continued a trial sampling survey to capture and tag Atlantic sturgeon in the Roanoke River near Weldon. Two male Atlantic sturgeon were collected, tagged and released.
- During 2010, The North Carolina Division of Marine Fisheries joined a multi-state grant entitled “Research and Management of Endangered and Threatened Species in the Southeast: Riverine Movements of Shortnose and Atlantic Sturgeon”. During 2011, 56 Atlantic sturgeon were collected in the Cape Fear River. Thirty-five of the sturgeon were implanted with Vemco telemetry tags. The remaining 21 fish were either too small or the condition of the fish was not appropriate for tagging. An additional 9 Atlantic sturgeon were collected and telemetry tagged in the Albemarle Sound during 2011.
- Three Atlantic sturgeon were observed during fall flounder large mesh trips and one Atlantic sturgeon was observed during small mesh trips. No shortnose sturgeon were observed during these trips in 2011.
- Fisherman participating in the American shad fishery conducted in the Cape Fear (drift nets) and Brunswick rivers (anchored gill nets) were interviewed for interactions with

Atlantic sturgeon during 9 fishing trips. No Atlantic or shortnose sturgeon were reported during 2011.

- In 2005 LaPaz LLC. received approval from the ASMFC and NCDMF to operate an Atlantic sturgeon aquaculture operation in North Carolina. LaPaz imported 2,022 fertilized Atlantic sturgeon eggs from Supreme Sturgeon and Caviar during 2006. An additional 3,861 fertilized Atlantic sturgeon eggs were imported in July 2008. Recently, LaPaz has shifted their focus away from Atlantic sturgeon and plans to concentrate on production of other species. The LaPaz facility reduced the number of Atlantic sturgeon being held, nearly all of the 2006 fish have been culled and 435 fish from 2010 were transported to the University of West Virginia. During this transition, LaPaz anticipates marketing some meat and potentially some caviar from the remaining Atlantic sturgeon that are on-site, and are of suitable size and quality. Fish that are not mature or large enough for efficient processing will likely be removed from the systems and disposed (composted, buried, or rendered). Much of this transition is planned to be accomplished in 2013.

Areas of concern:

- None

PRT requests/recommendations:

- None

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

SOUTH CAROLINA

Comments or trends highlighted in state report:

- In 2011, 81 Atlantic sturgeon were tagged in the Edisto River. There were 13 recaptures.
- The statewide reported by-catch of Atlantic sturgeon from the shad gill-net fishery in 2011 was 181 (none were reported from herring fisheries), all but two were from the Winyah Bay System. Twenty-one shortnose sturgeon were reported as incidental catches in 2011. The actual, overall level of by-catch in the shad gillnet fishery is most likely under-reported.

Areas of concern:

- None

PRT requests/recommendations:

- None

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

GEORGIA

Comments or trends highlighted in state report:

- Due to the passage of ASMFC Shad and River Herring Amendment 3 and to reduce incidental bycatch of shortnose sturgeon, new commercial shad fishing regulations took effect January 1, 2011. Changes in the commercial regulations closed the upper portions of Altamaha, Ogeechee, and Savannah rivers to commercial shad fishing gear. These changes reduced areas open to commercial shad fishing by 65%, 66%, and 35% respectively for the Altamaha, Ogeechee, and Savannah rivers. In addition, the Satilla and St. Marys rivers were entirely closed to commercial shad fishing
- During fishery-independent monitoring of the adult shad populations in the Altamaha River, thirteen Atlantic and four shortnose sturgeon were encountered over 16 days. All sturgeon were measured and released alive.
- During fisheries-independent bottom trawling along Georgia's beaches, estuaries, rivers and creeks resulted in encounters with one Atlantic sturgeon. All captured sturgeon were promptly returned to the water alive.
- The University of Georgia is currently working on the 10th year of an ongoing study focusing on the Atlantic sturgeon population of the Altamaha River. In 2011 855 juvenile Atlantic sturgeon were captured and 51 fish were re-captured. All captured Atlantic sturgeon were measured, weighed, and pit-tagged prior to release. Although age-1 abundance declined in 2011, total juvenile biomass (for age-1 and age-2 cohorts combined) reached the highest point on record in 2011. Subsequent analysis of juvenile growth rates showed that annual growth declined significantly as total juvenile biomass has increased. Although the juvenile carrying capacity of the Altamaha Estuary is uncertain, the density dependent changes in juvenile growth documented in 2010 and 2011, suggest the Altamaha River Atlantic sturgeon population is recovering and annual recruitment may be approaching pre-fishery levels. This project was discontinued in 2012, but will resume in 2013 if funding is available.
- For several years, the Georgia Port Authority (GPA) has sought to deepen the harbor from 42 to 47 feet. The Final Environmental Impact Statement has been reviewed and GPA has obtained all environmental clearances to go forward with the project. The final Record of Decision is expected this fall with construction beginning as soon as summer 2013.

Areas of concern:

- None

PRT requests/recommendations:

- The report details new regulations that affect the potential for bycatch of Atlantic sturgeon, but does not provide information on if Atlantic sturgeon were encountered in 2011.

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

FLORIDA

Comments or trends highlighted in state report:

- One juvenile Atlantic sturgeon was caught on hook-and-line in the St. Johns River in January of 2012.

- In 2011, Florida proposed listing the Atlantic sturgeon as threatened in the St. Marys and St. Johns Rivers; prior to FWC Commission approval this state-listing, in April 2012, NMFS designated the species federally endangered, making Florida's listing moot.

Areas of concern/praise:

- None

PRT requests/recommendations:

- None

Compliance issues:

- None

Recommendations for action by the Sturgeon Management Board:

- None

DRAFT