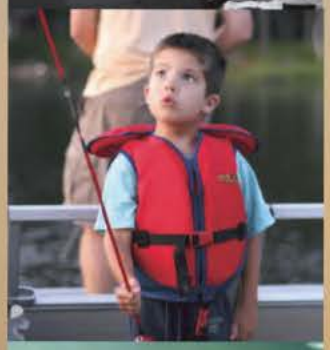
ANNUAL REPORT 2013

ATLANTIC STATES MARINE FISHERIES COMMISSION

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



2013 ANNUAL REPORT

OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

To the Congress of the United States
and to the Governors and Legislators
of the Fifteen Compacting States

Presented in compliance with the terms of the Compact and the state-enabling acts creating such Commission and Public Law 539-77th Congress assenting thereto (Chapter 283, Second Session, 77th Congress, 56 Stat. 267) approved May 4, 1942, as amended by Public Law 721, 81st Congress, approved August 19, 1950

Robert E. Beal, *Executive Director*

Atlantic States Marine Fisheries Commission
1050 N. Highland Street, Arlington, VA 22201

Tina L. Berger, *Editor*
February 2014

Commonly Used Acronyms

AAE	Annual Awards of Excellence
ACCSP	Atlantic Coastal Cooperative Statistics Program
ACFHP	Atlantic Coastal Fish Habitat Partnership
ACFCMA	Atlantic Coastal Fisheries Cooperative Management Act
ACLs	Annual catch limits
ARM	Adaptive Resource Management
ASMFC	Atlantic States Marine Fisheries Commission (also referred to as the Commission)
BRDs	Bycatch reduction devices
ChesMMAP	Chesapeake Bay Multispecies Monitoring and Assessment Program
CPUE	Catch-per-unit-effort
DPS	Distinct population segment
ESA	Endangered Species Act
F	Fishing mortality
FMP	Fishery Management Plan
GBK	Georges Bank
GOM	Gulf of Maine
ISFMP	Interstate Fisheries Management Program
IFA	Interjurisdictional Fisheries Act
ITC	Interstate Tagging Committee
LCMA	Lobster Conservation Management Area
LCS	Large Coastal Shark Complex
MAFMC	Mid-Atlantic Fishery Management Council
MSP	Maximum spawning potential
MSTC	Multispecies Technical Committee
MSVPA-X	Extended Multispecies Virtual Population Analysis
MSY	Maximum sustainable yield
MT	Metric tons
NEAMAP	Northeast Area Monitoring and Assessment Program
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center
NFHAP	National Fish Habitat Action Plan
NFWF	National Fish and Wildlife Foundation
NMFS	National Marine Fisheries Service; also known as NOAA Fisheries
NOAA	National Oceanic and Atmospheric Administration
PRT	Plan Review Team
RHL	Recreational harvest limit
SAFMC	South Atlantic Fishery Management Council
SAW/ SARC	Northeast Regional Stock Assessment Workshop and Stock Assessment Review Committee, respectively
SCS	Small Coastal Shark Complex
SEAMAP	Southeast Area Monitoring and Assessment Program
SEFSC	Southeast Fisheries Science Center
SFMPs	Sustainable Fishery Management Plans
SNE	Southern New England
SNE/MA	Southern New England/ Mid-Atlantic
SPR	Spawning potential ratio
SSB	Spawning stock biomass
SSC	Scientific and Statistical Committee
TAC	Total allowable catch
TAL	Total allowable landings
USFWS	U.S. Fish and Wildlife Service

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Guiding Principles

Mission

To promote cooperative management of fisheries – marine, shell, and diadromous – of the Atlantic coast of the United States by the protection and enhancement of such fisheries, and by the avoidance of physical waste of the fisheries from any cause

Vision

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

Goals

1. Rebuild and restore depleted Atlantic coastal fisheries, and maintain and fairly allocate recovered fisheries through cooperative regulatory planning
2. Strengthen cooperative research, data collection capabilities, and the scientific basis for stock assessments and fisheries management actions
3. Improve stakeholder compliance with Commission fishery management plans
4. Protect, restore, and enhance fish habitat and ecosystem health through partnerships, policy development, and education
5. Strengthen congressional, stakeholder, and public support for the Commission's Mission, Vision, and actions
6. Represent member states' collective interests at regional and national levels
7. Strengthen human resource management and enhance learning and growth within the Commission
8. Provide efficient administration of the Commission's business affairs and ensure the Commission's financial stability

Commissioner Values

- Effective stewardship of the Atlantic coast's marine resources
- Work cooperatively with honesty and integrity
- Transparency and accountability in all Commission actions
- Courage to make difficult decisions
- Forging a vision for the future
- Support decisions of the Commission
- Ensure the long-term financial stability of the Commission
- Respect for everyone involved in the Commission process
- Dedication to growth and learning
- Freedom and flexibility to solve problems creatively
- Commitment to preparation for and participation in meetings

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PREFACE

The Commission was formed 71 years ago by the 15 Atlantic coast states to assist in managing and conserving their shared coastal fishery resources. With the recognition that fish do not adhere to political boundaries, the states formed an Interstate Compact, which was approved by the U.S. Congress in 1942. The states have found that their mutual interest in sustaining healthy coastal fishery resources is best promoted by working together cooperatively, in collaboration with the federal government. With this approach, the states uphold their collective fisheries management responsibilities in a cost-effective, timely, and responsive fashion.

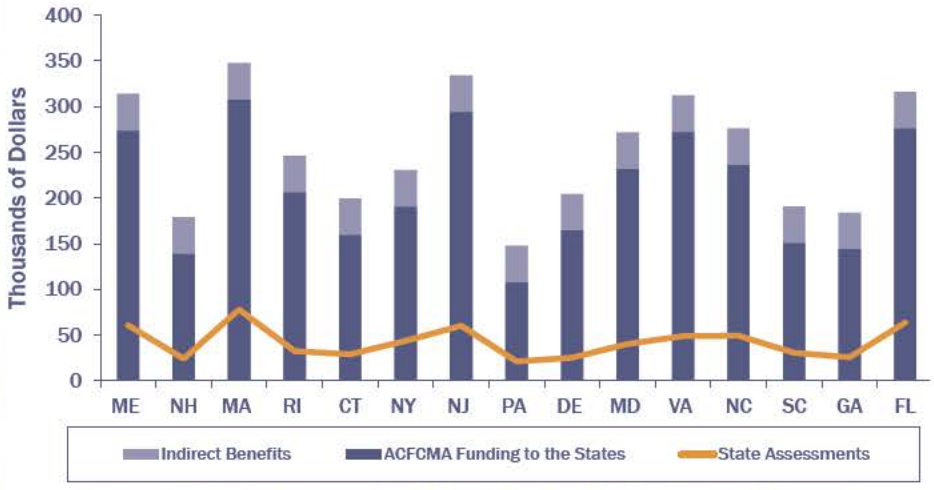
The Commission's current budget is $7.6 million. The base funding ($603,421) comes from the member states' appropriations, which are determined by the value of commercial fishing landings and saltwater recreational trips within each state. The bulk of the Commission's funding comes from a combination of state and federal grants, the largest being a line-item in the NOAA Fisheries budget appropriated to implement the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA) of 1993. The Commission also receives funds from NOAA Fisheries to carry out the mandates of the Interjurisdictional Fisheries Act (IFA) of 1986 (P.L. 99-659). The accompanying graph illustrates the benefits that states receive from ACFCMA and IFA.

The U.S. Fish and Wildlife Service (USFWS) also provides grant funding to the Commission through its Federal Aid in Sport Fish Restoration Program (Wallop/Breaux). Also, since 1999 the Commission has overseen the administration of the Atlantic Coastal Cooperative Statistics Program (ACCSP), a state and federal partnership for Atlantic coastal fisheries data collection and management. Funding for this program is provided by ACFCMA.

The Commission serves as a deliberative body of the Atlantic coastal states, coordinating the conservation and management of nearshore fishery resources, including marine, shell, and diadromous species. The 15 member states of the Commission are (from north to south): Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and Florida. Each state is represented on the Commission by three Commissioners: the director of the state's marine fisheries management agency, a state legislator, and an individual appointed by the state's governor to represent fishery interests. These Commissioners participate in deliberations in the Commission's main policy arenas: interstate fisheries management, fisheries science, habitat conservation, and law enforcement. Through these activities, the states collectively ensure the sound conservation and management of Atlantic coastal fishery resources and the resulting benefits that accrue to their fishing and non-fishing public.

2013 Return on State Assessments to the Commission

Source: FY14 ASMFC Assessments and FY13 ACFCMA and IFA Allocations



*Indirect Benefits include travel and per diem for 6 people from each state to participate in Commission meetings. Please note that this figure does not include the collective benefits derived from the work of the FMP Coordinators and Science Staff.

Report to our Stakeholders

On behalf of the Atlantic States Marine Fisheries Commission, I am pleased to present our 2013 Annual Report. The report fulfills our obligation to inform Congress on the use of public funds provided to the Commission and provides our stakeholders with a summary of activities and progress in carrying out our cooperative stewardship responsibilities. Commission-managed marine resources generate billions of dollars in economic activity annually and provide tens of thousands of jobs within our coastal communities.

In addition to detailing our 2013 activities, this report includes figures displaying the historical trends in stock status or catch for each managed species. These figures reflect our Commissioners' commitment to accountability and transparency in all they do to manage and rebuild fisheries under their care.

Our Commissioners sincerely appreciate the strong cooperation and support the Commission continues to receive from members of Congress as well as the governors and legislators of our member states. Our Commissioners recognize our history of accomplishments over these many years would not have been possible without their trust and confidence. In order to build on this success, the Commission continues to strengthen its partnerships with the Gulf and Pacific States Marine Fisheries Commissions to address issues of mutual interest. This three Commission alliance has shown to be an effective approach to unify the messages of 24 U.S. coastal states through one strong voice on national fisheries issues.

2013 marked the final year of the Commission's current Five-Year Strategic Plan (2009-2013). Over the course of the Plan, the Commission made significant progress toward restoring Atlantic coastal fisheries, with much of this progress a direct result of the Commission's increased investment in fisheries science. In 2009, the stock status was unknown for nine species managed by the Commission and by 2013 this number had been reduced to only two species. Benchmark stock assessments for the remaining two species of unknown status (Atlantic sturgeon and black drum) are scheduled to be completed by the end of 2015. At the same time, the Commission maintained robust populations for important species such as striped bass, Gulf of Maine and Georges Bank American lobster, summer flounder, scup, black sea bass, Atlantic herring, and spiny dogfish.

Over the past 12 months, Commissioners drafted a new Strategic Plan to guide their activities through 2018. This new Plan highlights the Commissioners' commitment to respond to our improved fisheries science and build on past successes to end overfishing and sustainably manage coastal species. The draft Strategic Plan reaffirms the Commissioners' dedication to finding long-term, durable solutions that are best for all, rather than best for a single state or region. This dedication will be needed as the Commission faces a number of significant obstacles and challenges ahead including: uncertain fiscal resources, competing ocean uses, ecosystem functions, climate change, and protected resource issues. The Plan also recognizes the challenges the Commission will face in addressing the politically and economically sensitive issue of resource allocation. For the next five years, this Plan will capitalize on the Commissioners' passion and dedication, the power of state cooperation, and our strong partnerships with federal colleagues to address these challenges.

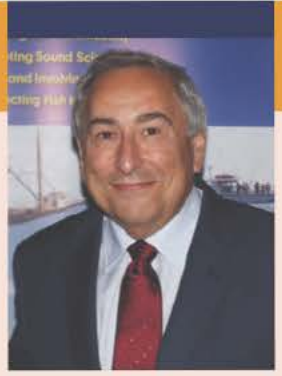
2013 was my first full year as the Commission's Executive Director and it has been a wonderful year of growth and learning for me. I am impressed daily by the dedication, enthusiasm, and professionalism of the staff that is committed to the success of the Commission. We have creative and inspired Commissioners that are devoted to leaving healthy and abundant marine fisheries for the next generation to enjoy. Also, the Commission is fortunate to have the strong support of our federal partners. The fiscal, staff, and technical support provided by NOAA Fisheries and USFWS to our Commission and states is an irreplaceable part of our interstate fisheries management program and science activities. As we all work to respond to the reduced fiscal resources, these partnerships will be more important than ever.

Over the next few years, the three Commission alliance will continue to work with our state and federal partners to reinforce the social and economic returns that come from investing in marine fisheries management and science. The overall investment is relatively modest; however, the returns are impressive. Our previous management successes have demonstrated the economic returns and jobs that can result from abundant and healthy coastal fisheries. This lesson reinforces the relevance and importance of the Commission's vision today and in the years to come. Readers can track our activities and progress by visiting our redesigned website at *www.asmfc.org* or following us on Facebook and Twitter.

Thank you all for your commitment to the Commission and the successful management of marine resources along the Atlantic coast.

Robert E. Beal
Executive Director

REPORT FROM THE CHAIR



Our strength is in our differences and in our ability to come together to develop creative, workable solutions. And, by strengthening our relationships, we strengthen the Commission as a whole and its ability to successfully respond to the challenges that lie ahead.

This will be my last report as Chair of the Atlantic States Marine Fisheries Commission as Dr. Louis B. Daniel, III assumes the role of chair for the next two years. It has been an honor to work with my fellow Commissioners during my chairmanship. The Commission is a constantly evolving organization, adapting to changes in membership, staff, emerging issues, and shifting priorities. The last two years have certainly been no exception with some significant changes having occurred. We selected a new Executive Director and Dr. Daniel, the Executive Committee, and I have been extremely pleased with the leadership Bob Beal has exhibited during both the time of transition and as he has come into his own as Executive Director. We feel confident in his ability, as well as that of his Senior Staff – Laura Leach, Pat Campfield, Toni Kerns, and Tina Berger – to keep the Commission running smoothly and provide the necessary information to support our important and difficult management decisions ahead.

We also embarked on the development of a new Strategic Plan to guide our actions over the next five years. Considerable thought and effort has been devoted to this new plan at both the Commissioner and staff level. The draft Strategic Plan reflects the Commissioners' commitment to end overfishing and rebuild overfished fishery resources, to seek outcomes that support the economic success of coastal communities, to work toward long-term ecological sustainability, and to be transparent and accountable in all their actions. This is set against the backdrop of a constantly changing marine environment with ever greater pressures being placed upon it, including increasing protected species issues, competing ocean uses, and the impacts of climate change on fisheries populations. Of all of these issues, the impacts of climate change will have the most profound effect on our fisheries management programs and will force us to rethink how we do business. We have begun to see its effects on species such as northern shrimp and Southern New England lobster. Fortunately, we will have a dynamic Strategic Plan that allows us to adaptively and creatively respond to emerging issues efficiently and in a well-thought out way.

Last year, I called upon my fellow Commissioners to reenergize their investment in and ownership of the Commission. I am grateful that they took this call to heart. I have seen a renewed commitment to work together for the greater good, to move beyond our parochial issues and seek solutions that will yield the best outcome for the resource and the stakeholders that depend on it. Our Executive Committee has never been stronger and has taken a hands-on approach to working with staff to effectively address financial, legislative, and management issues as they arise. Through this approach, the Executive Committee, which is comprised of members from each of the 15 states, ensures the full buy-in of our member states in all decisions and actions made by the Commission. I would encourage Commissioners to continue the hard but rewarding work of strengthening our relationships with one another – not just at Commission meetings but at all times. We all wrestle with the same issues of finite resources, growing workloads, and stakeholder concerns and yet we all address our challenges in different ways. Let's capitalize on our unique perspectives and learn from one another. Our strength is in our differences and in our ability to come together to develop creative, workable solutions. And, by strengthening our relationships, we strengthen the Commission as a whole and its ability to successfully respond to the challenges that lie ahead. I look forward to continuing to work with you and our new Chair and Vice-Chair, Dr. Daniel and Mr. Douglas Grout, to sustainably manage Atlantic coastal fisheries.

Paul Diodati

Stock Status Overview







The Atlantic States Marine Fisheries Commission continues to monitor and revise its interjurisdictional management programs for 25 species groups, making progress toward rebuilding and sustainably managing Atlantic coastal fisheries.

In 2013, the Commission strengthened rebuilding programs for several species, including Southern New England American lobster, Atlantic menhaden, northern shrimp, and American eel. The Commission approved a new Fishery Management Plan for Black Drum, and updated management programs for twelve of its species (via amendments or addenda) in response to stock assessment information and changes in the fisheries. However, there is still substantial work ahead to fully rebuild valuable Atlantic coastal fishery resources such as American eel, American shad, river herring, winter flounder, and weakfish.

The Commission maintains its role as an honest broker and forum for the Atlantic coastal states to come together and discuss the biological, socioeconomic, and environmental issues central to developing management programs for each species. The task of managing finite marine resources continues to grow more complex with the consideration of predator/prey interactions, habitat, and water quality, in addition to the more traditional considerations of stock maintenance, rebuilding, and the allocation of fisheries resources.

The following section provides a summary of the status of species managed by the Commission and highlights management activities that occurred throughout 2013. For this summary, **overfishing** is defined as removing fish from the population at a rate that exceeds the threshold established in the fishery management plan (FMP). Over the long-term, this will lead to declines in the population. An **overfished** determination occurs when stock biomass falls below the threshold established by the FMP, significantly reducing the stock's reproductive capacity to replace fish removed through harvest. The term **depleted** reflects low levels of abundance though it is unclear whether fishing mortality is the primary cause for reduced stock size. **Rebuilding** occurs when stock biomass is approaching the target level established by the FMP; the target level is established to ensure population sustainability. A **rebuilt** stock is one whose biomass is equal to or above the biomass level established by the FMP; the target level is established to ensure population sustainability. **Stable/unchanged** is when a stock's biomass has been consistent in recent years. **Unknown** stock status occurs when there is no accepted stock assessment to estimate the stock status.

Some other terms used throughout this report are benchmark stock assessment, peer-reviewed stock assessment, and stock assessment update. A **benchmark stock assessment** is a full analysis and review of the stock condition, focusing on the consideration of new data sources and newer or improved assessment models. This assessment is generally conducted every three to five years and undergoes a formal peer review by a panel of independent fisheries scientists who evaluate whether the data and methods used to produce the assessment are scientifically sound and appropriate for management use (**peer-reviewed stock assessment**). A **stock assessment update** incorporates data from the most recent years into the peer-reviewed assessment model to determine current stock status (abundance and overfishing level).

Quick Guide to ASMFC Stock Status

STATUS/ TRENDS	SPECIES		OVERFISHED	OVERFISHING	REBUILDING STATUS & SCHEDULE
?		American Eel	Depleted	Unknown	Board approved restrictions to yellow and silver eel fisheries in 2013 and considers limits to glass eel fisheries in 2014 in response to 2012 benchmark assessment
✓	American Lobster 	Gulf of Maine (GOM)	N	N	GOM and GBK stocks rebuilt Board approved 10% reduction in exploitation on SNE stock as 1st phase in rebuilding program Board approved trap reductions in Areas 2 & 3 pending NOAA Fisheries rulemaking
✓		Georges Bank (GBK)	N	N	
🡻		Southern New England (SNE)	Y	N	
🡻		American Shad	Depleted	Unknown	Amendment 3 establishes 2013 moratorium unless sustainability can be documented
✓		Atlantic Croaker	Unknown	N	Overfished status unknown; however, biomass has been increasing and age structure has been expanding since late 1980s
✓		Atlantic Herring	N	N	Rebuilt
?		Atlantic Menhaden	Unknown	Y	Amendment 2 implements ~25% reduction from 2011 levels, beginning in 2013; benchmark assessment scheduled for 2014
✓		Atlantic Striped Bass	N	N	Rebuilt since 1995 although female SSB has continued to decline since 2004; Board to consider management response for 2015 implementation
?		Atlantic Sturgeon	Y	N	40+ year moratorium; to be rebuilt by ~2038; listed in 2012 under the ESA; benchmark assessment scheduled for 2015
?		Black Drum	?	?	FMP approved in 2013; benchmark assessment scheduled for 2014
✓		Black Sea Bass	N	N	Rebuilt
✓		Bluefish	N	N	Biomass above threshold but below target
⇔		Coastal Sharks	Varies by species and species complex		

✓ = Rebuilt 🡹 = Rebuilding ⇔ = Stable/Unchanged 🡻 = Depleted ? = Unknown

STATUS/ TRENDS	SPECIES		OVERFISHED	OVERFISHING	REBUILDING STATUS & SCHEDULE
?		Horsehoe Crab	Unknown	Unknown	2013 assessment update found New England & NY stocks to have declined, while DE Bay & Southeast stocks have increased over time series; ARM Framework used to set harvest levels for horseshoe crabs of DE Bay origin for 2013 and 2014 fisheries
↓		Northern Shrimp	Y	Y	2013 assessment indicates recruitment failure and stock collapse; Board established moratorium for 2014 fishery to protect remaining spawning population; benchmark assessment scheduled for 2014
⇔	Red Drum 	Northern Region	Unknown	N	SPR above target and threshold SPRs
		Southern Region	Unknown	N	SPR above threshold SPR
↓		River Herring	Depleted	Unknown	Amendment 2 establishes 2012 moratorium unless sustainability can be documented
✓		Scup	N	N	Rebuilt
✓		Spanish Mackerel	N	N	Rebuilt
✓		Spiny Dogfish	N	N	Rebuilt
?		Spot	Unknown	Unknown	Omnibus Amendment establishes stock status triggers until coastwide assessment can be conducted
?		Spotted Seatrout	Unknown	Unknown	Omnibus Amendment includes measures to protect spawning stock and establishes 12" minimum size limit
✓		Summer Flounder	N	N	Rebuilt
↓		Tautog	Y	Y	Current biomass at 40% of SSB target; F target reduced to 0.15 to initiate stock rebuilding; benchmark assessment scheduled for 2014
↓		Weakfish	Depleted	N	6-year rebuilding period if SSB < threshold level; Board approved further harvest restrictions based on 2009 benchmark assessment
?	Winter Flounder 	GOM	Unknown	N	Overfished status unknown since assessment model was not accepted by peer review
↓		SNE/ Mid-Atlantic	Y	N	Current biomass at 16% of SSB target

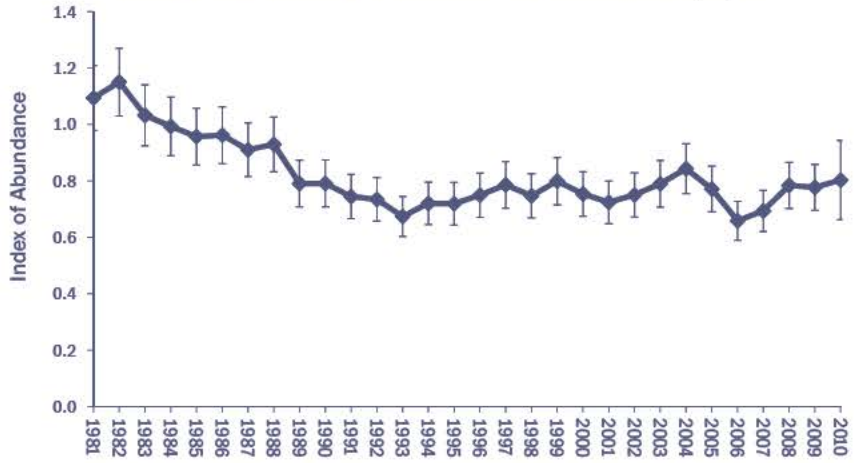
✓ = Rebuilt ↑ = Rebuilding ⇔ = Stable/Unchanged ↓ = Depleted ? = Unknown

AMERICAN EEL

In 2013, the Commission approved Addendum III to the American Eel Fishery Management Plan (FMP). The Addendum establishes a 9 inch minimum size limit for recreational and commercial yellow eel fisheries, trip-level reporting for the commercial yellow eel fishery, a seasonal closure for silver eel fisheries, a 25 recreational fish per day creel limit, and measures to restrict the development of fisheries on pigmented eels. It also calls for the implementation of state-specific monitoring programs and provides recommendations for habitat improvements. States will be required to implement the Addendum's measures by January 1, 2014, with the exception of dealer reporting requirements which are to be implemented by January 1, 2015.

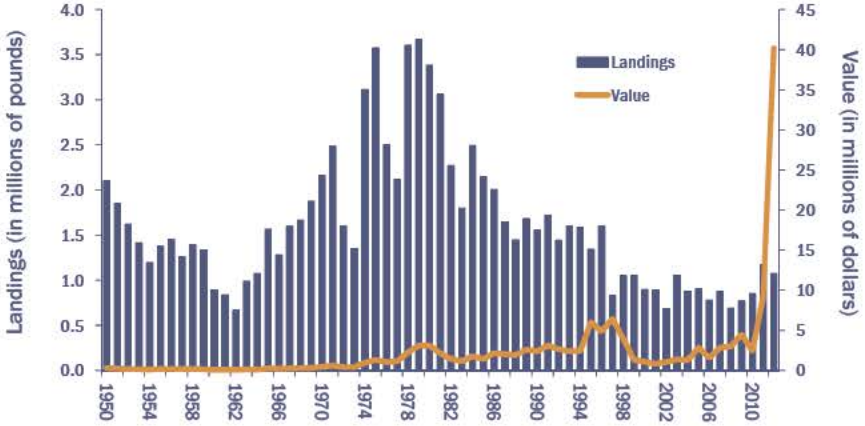
Index of Abundance for Yellow-phase American Eels along the Atlantic Coast

Source: ASMFC American Eel Benchmark Stock Assessment Report, 2012



American Eel Total Commercial Landings and Value

Source: ASMFC American Eel Benchmark Stock Assessment Report (2012), ASMFC State Compliance Reports, and personal communication NMFS Fisheries Statistics Division, 2013



Timeline of Management Actions: FMP (1999); Addendum I (2006); Addendum II (2008); Addendum III (2013)

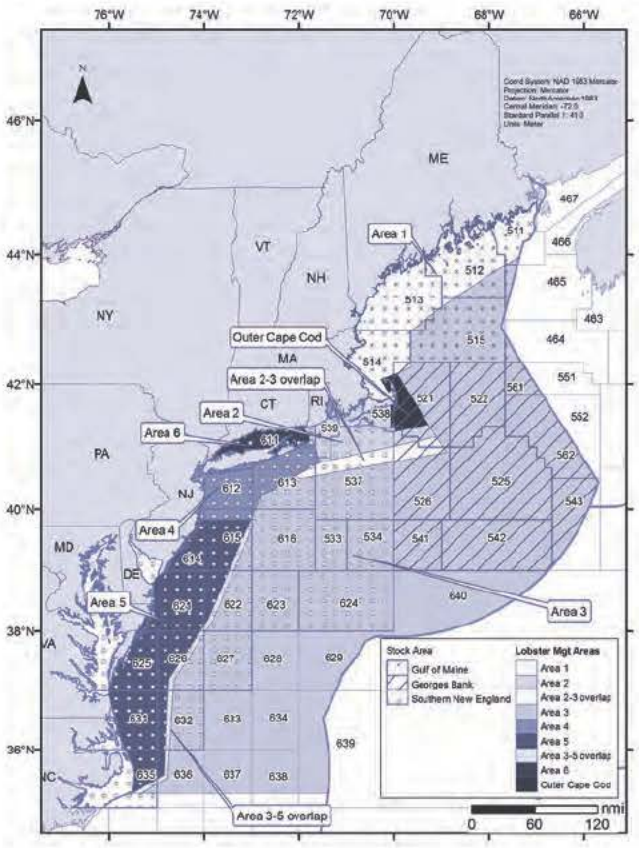
The Addendum was initiated in response to the 2012 American eel benchmark stock assessment. The assessment found the American eel population to be at or near historically low levels due to a combination of past fishing pressure, habitat loss, food web alterations, predation, turbine mortality, environmental changes, toxins, contaminants, and disease. The public comment draft of Addendum III proposed a multitude of management measures for glass, yellow, and silver eel fisheries. Given the scope of management options and the wide range of public input that was received during the Addendum's development, the American Eel Management Board chose to address the yellow and silver eel fisheries in Addendum III and initiated Addendum IV to address management measures for the glass eel fishery. The Board will consider action on Draft Addendum IV in 2014.

From the 1970s to the mid-1980s, American eel supported significant commercial fisheries, with landings ranging from 2.5 to 3.6 million pounds. Landings dropped to 1.6 million pounds in 1987 and have remained at low levels, ranging from 1.5 million to 700,000 pounds since then. State reported landings of yellow and silver eels in 2012 totaled over one million pounds and were valued at approximately $1.5 million. Yellow and silver eel landings in 2012 were the second highest in the past decade, decreasing by 8% from the decade high achieved in 2011. Since 2010, increased demand for glass eels by foreign markets has led to a dramatic increase in the value of glass eel, with record high prices for catch being recorded.

In 2012, glass eel harvest from Maine and South Carolina totaled 22,215 pounds and was valued at nearly $40 million, 20 times greater than the average value for the past 11 years. According to preliminary landings data, Maine and South Carolina harvested an estimated 20,320 pounds of glass eels in 2013.

In 2010, the Center for Environmental Science, Accuracy, and Reliability (CESAR) petitioned USFWS to list American eel under the Endangered Species Act (ESA). In September 2011, USFWS concluded the petition may be warranted and initiated a status review to assess the health of the population and the magnitude of threats facing the species. However, in August 2012, CESAR filed a lawsuit against USFWS for failure to publish a proposed rule within the timeframe specified by the ESA. A Settlement Agreement was approved in April 2013, which requires USFWS to publish its proposed rule by September 30, 2015.

Map of American Lobster Stock Assessment and Management Areas

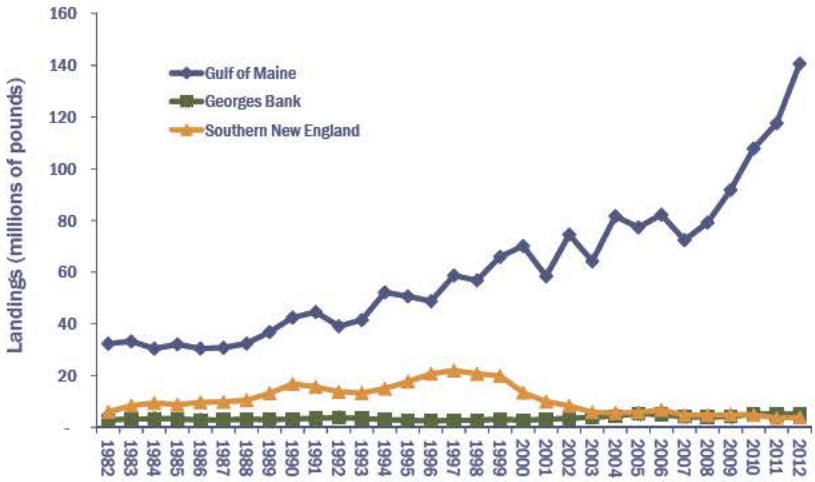


AMERICAN LOBSTER

With an ex-vessel value of nearly $430 million in 2012, American lobster continues to be one of the most valuable commercial fisheries along the Atlantic coast. The lobster fishery has undergone incredible expansion in effort and landings since the late 1940s and early 1950s, when landings varied around 25 million pounds. Over the past two decades, coastwide landings have increased substantially, rising from 57 million pounds in 1993 to a peak of 150 million pounds in 2012. Gulf of Maine (GOM) landings accounted for 94% of the 2012 landings, the majority of which were harvested by the Maine fishery (84%), followed by the Massachusetts fishery (10%).

Preliminary American Lobster Landings by Stock Assessment Area

Source: ACCSP Data Warehouse, 2013



Timeline of Management Actions: Amendment 3 (1997); Addendum I (1999); Addendum II (2001); Addendum III (2002); Addenda IV & V (2004); Addenda VI & VII (2005); Addenda VIII & IX (2006); Addenda X & XI (2007); Addendum XIII (2008); Addendum XII, XIV and XV (2009); Addendum XVI (2010); Addendum XVII (2011); Addendum XVIII (2012); Addenda XIX – XXII (2013)

Despite these overall increases, landings from Southern New England (SNE) have been declining over the past several years. The 2009 assessment and subsequent Technical Committee review of available science found the SNE stock to be in poor condition with continued low abundance and poor recruitment. Environmental changes in concert with fishing mortality have been identified as principal causes of lower recruitment levels and poor stock condition.

In response to the status of the SNE stock, the American Lobster Management Board adopted a consolidation program for lobster conservation management areas (LCMAs) 2 and 3 to address latent effort (unfished traps) by reducing the overall number of

traps allocated by 50% for LCMA 2 and 25% for LCMA 3 over a five year time period. Also, in response to the SNE stock condition, LCMAs 2, 4, and 5 have implemented mandatory v-notching programs as required under Addendum XVII to achieve a 10% reduction in exploitation.

In 2013, the Board approved Addenda XXI and XXII to Amendment 3 to the American Lobster FMP. The Addenda implement a 10% transfer tax for full or partial business sales, a closed season for Closed Area II of Georges Bank to protect egg-bearing females and reduce gear conflicts, and LCMAs 2 and 3 ownership caps for traps/permits. The Board also initiated Addendum XXIII to update the habitat information contained in Amendment 3.

The 2009 peer-reviewed benchmark stock assessment found record high stock abundance and recruitment (number of lobsters entering the fishery) throughout most of GOM and Georges Bank (GBK), and continued low abundance and persistently low recruitment in SNE. According to the American Lobster Technical Committee, it is this low recruitment, caused by a combination of environmental factors and continued fishing mortality, which is preventing the SNE stock from rebuilding. Additionally, the peer review panel cautioned that despite current high levels of abundance and recruitment in GOM and GBK, managers should remain vigilant of recruitment patterns in these stocks and stand ready to impose substantial restrictions should recruitment decline.

The management program's current biological reference points (exploitation and abundance targets and thresholds) for the three stock assessment areas (GOM, GBK, SNE) were established through Addendum XVI. Based on these reference points, GOM and GBK abundance is in favorable condition with abundance above the 75% percentile. Exploitation in the GOM is moderate and is at an acceptable level for GBK. The SNE abundance estimate is below the 25th percentile requiring Board action to rebuild the stock.

The next benchmark assessment is scheduled to be completed for Board consideration in 2014.

ATLANTIC CROAKER

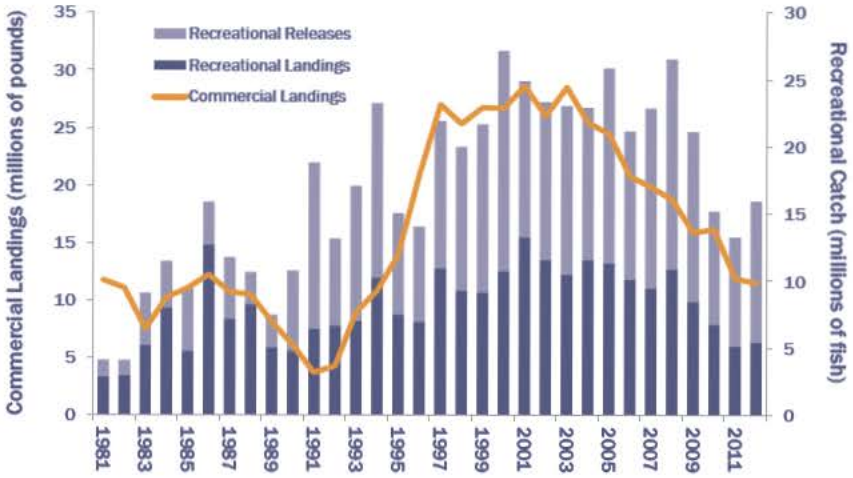
An abundant inshore bottom dwelling fish along the U.S. Atlantic coast, Atlantic croaker are sought by recreational anglers and commercial fishermen from New Jersey to North Carolina. An estimated 14.6 million pounds of croaker were landed in 2012, with approximately 80% landed by the commercial sector and 20% harvested by recreational anglers. The majority of these landings occurred in the Mid-Atlantic region.

Atlantic coast commercial landings have exhibited a cyclical pattern, with low landings in the 1960s to early 1970s and the 1980s to early 1990s, and high landings in the mid-to late 1970s and the mid-1990s to present. Commercial landings increased from a low of 3.7 million pounds in 1991 to 30.1 million pounds in 2001; however, landings have declined consistently since 2003 to 11.6 million pounds in 2012. Within the management unit, the majority of commercial landings come from Virginia (59%) and North Carolina (27%). Maryland had the next highest level with 8% of the coastwide landings.

From 1981-2012, recreational landings have varied between 1.3 and 11.1 million pounds. Landings generally increased until 2001 and held stable from 2001-2006 before exhibiting a declining trend from 2007 through 2012. In

Atlantic Croaker Commercial Landings and Recreational Catch

Source: Personal communication NMFS Fisheries Statistics Division, 2013



Timeline of Management Actions: FMP (1987); Amendment 1 (2005); Addendum I (2011)

2012, recreational anglers landed an estimated 2.9 million pounds and released 10.5 million fish, a slight decline from the 10 year average.

The latest benchmark assessment, conducted in 2010, determined the resource was not experiencing overfishing. Although model estimates of spawning stock biomass (SSB) were too uncertain to be used to precisely determine overfished stock status, biomass has been increasing and the age structure of the population has been expanding since the late 1980s. The assessment considered the population to be a single stock on the Atlantic coast. The previous stock assessment divided the stock into Mid-Atlantic and South Atlantic regions and assessed only the Mid-Atlantic region.

A major source of uncertainty identified by the assessment is the magnitude of Atlantic croaker bycatch in South Atlantic shrimp trawls. Most croaker caught in this fishery are less than one year old, too small to be marketed, and thus are discarded. Croaker is one of the largest components of the shrimp trawl catch; some studies found that shrimp trawls caught more croaker than shrimp. There are no continuous monitoring programs to account for these discards. In some years, the best available estimates of discards are as large as or larger than reported landings.

In 2013, the Atlantic Croaker Technical Committee completed the 2012 Assessment Trigger and an examination of the Atlantic croaker fishery using a traffic light approach. Based on the results of the trigger analysis, which found declines in commercial and recreational landings for the Atlantic croaker fisheries but did not trip the triggers, the South Atlantic State/Federal Fisheries Management Board tasked the Technical Committee with further developing traffic light approach with management options to consider under a variety of conditions. The analyses will be presented to the Board in early 2014.

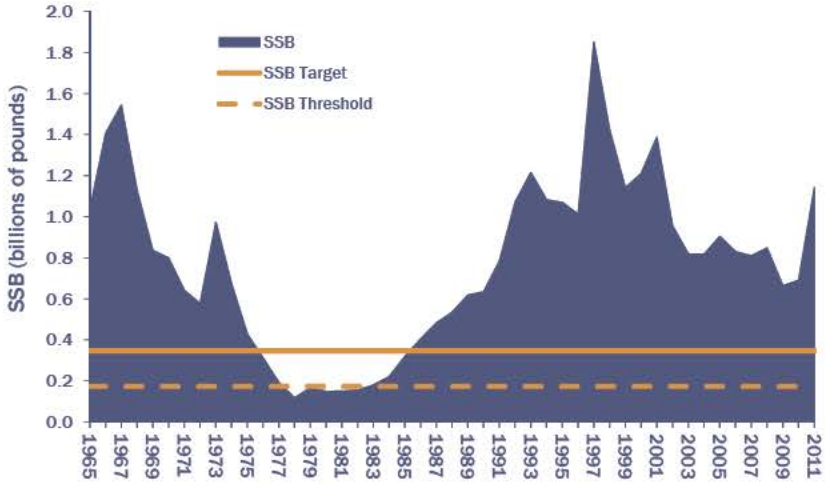
ATLANTIC HERRING

Atlantic herring are one of the most important species in the Northeast because of the essential role they play in the marine ecosystem and their importance to fishermen. Herring form the base of the food web as a forage fish for marine mammals, seabirds, and many fish throughout the Mid-Atlantic and Northeast. Many eco-tourism activities, such as whale watching, are dependent on a steady supply of herring because whales migrate inshore following schooling herring. Atlantic herring provide effective and affordable bait to lobster, blue crab and tuna fishermen and are sold as canned sardines, steaks, and kippers. They are also a valued commodity overseas where they are frozen and salted as a food fish. Total domestic

harvest (189 million pounds) was valued at $28.8 million in 2012, an increase of more than 16% from 2011.

While commercial fisheries have existed in the Northwest Atlantic since the 1500s, an aggressive foreign fishery developed on GBK in the early 1960s, with landings reaching one billion pounds in 1968. This excessive harvest, in addition to the stock's natural fluctuations, led to a collapse of the offshore sea herring stock. Stringent cooperative management throughout the 1990s by the Commission (in state waters, 0-3 miles from shore) and the New England Fishery Management Council (NEFMC) (in federal waters, 3-200 miles from shore) resulted in a fully rebuilt stock that has been stable for the past decade. U.S. landings averaged just below 190 million pounds from 2003-2012. The majority of landings are taken from GOM, but fisheries also occur in GBK and areas south and west of Cape Cod.

Atlantic Herring Spawning Stock Biomass (SSB)
Source: 54th Northeast Regional Stock Assessment Workshop, 2012



Timeline of Management Actions: FMP (1993); Amendment 1 (1999); Amendment 2 (2006); Addendum I (2009); Addendum II (2010); Addendum V (2010); Addendum VI (2013)

The 2012 benchmark stock assessment indicates Atlantic herring are not overfished and are not subject to overfishing, and have rebuilt relative to the target SSB. SSB was estimated to be over 1.14 billion pounds, more than three times greater than the target level of 346 million pounds. Although the stock complex is assessed as a whole, catch limits are allocated among four management areas based on estimates of stock composition and relative biomass.

In 2013, the Atlantic Herring Section approved Addendum VI to Amendment 2 to the Atlantic Herring FMP. The Addendum complements NEFMC's Framework Adjustment 2 to the Federal FMP by establishing seasonal splitting in the four management areas, a rollover of up to 10% unused quota to the year after final landings data are made available, harvest control measures in the form of triggers, and a specification process to set the triggers.

The Section also set the annual catch limit (ACL) for the 2013 –2015 fishing seasons at 237.7 million pounds, an 18% increase from 2010-2012 limits. For all three years, the ACL is further subdivided by Atlantic herring management areas as follows: Area 1A = 68.8 million pounds, Area 1B = 10.14 million pounds, Area 2 = 66.15 million pounds, and Area 3 = 92.6 million pounds. The Area 1A sub-ACL is distributed seasonally with 72.8% available from June 1-September 30 and 27.2 % available from October 1-December 31. Directed fisheries within a management area will close when 92% of that period's quota has been harvested, and the stock-wide fishery will close when 95% of the ACL is projected to be reached. Maine, New Hampshire, and Massachusetts continued to modify days-out of the fishery during the season to prolong the fishery in Area 1A (inshore GOM), making herring available during peak demand. In October 2013, the Area 1A fishery was closed having landed 92% of the management area's ACL.

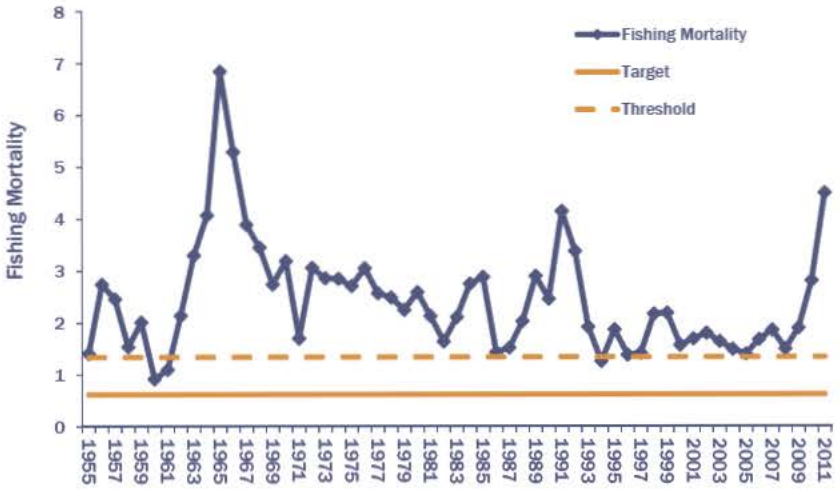
Concerns raised by the Commission and stakeholders regarding river herring (alewife and blueback herring) bycatch in the Atlantic herring fishery prompted the NEFMC to include catch/bycatch monitoring requirements and measures to reduce interactions with river herring stocks in Amendment 5 to the federal FMP. However, NOAA Fisheries only partially implemented Amendment 5 in 2013. To address the measures not approved in Amendment 5, NEFMC selected catch cap options for the Atlantic herring fishery (Draft Framework Adjustment 3) and will be initiating the development of Framework Adjustment 4 in 2014 to address measures such as slippage and dealer weighing provisions.

ATLANTIC MENHADEN

Atlantic coastal states and jurisdictions from Maine to Florida implemented Amendment 2 to the Atlantic Menhaden FMP in 2013. The Amendment establishes a 170,800 mt (376.6 million pound) total allowable catch (TAC) beginning in 2013 and continuing until completion of and Board action on the 2014 benchmark stock assessment. The TAC represents a 20% reduction from the average of landings from 2009-2011 and an approximately 24% reduction from 2012 levels. The Amendment also establishes a new biological reference point for biomass based on maximum spawning potential (MSP), with the goal of increasing abundance, SSB, and menhaden availability as a forage species. This new reference point uses the same metric (i.e., MSP) that is used to define overfishing. Currently, the Atlantic menhaden are experiencing overfishing, but it is unknown if the stock is overfished. The uncertainty in the overfished determination comes from conflicting results of sensitivity runs explored in the 2012 assessment update. The next benchmark stock assessment is scheduled for peer review in December 2014.

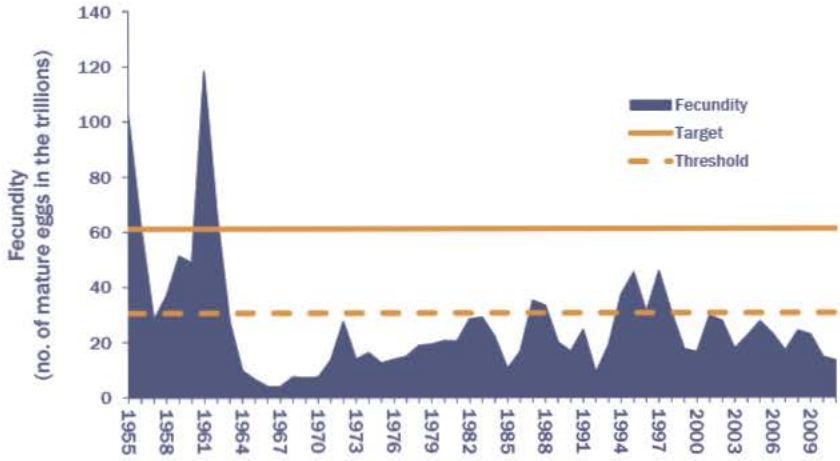
Atlantic Menhaden Fishing Mortality (Full F)

Source: ASMFC Atlantic Menhaden Stock Assessment Update, 2012



Atlantic Menhaden Fecundity

Source: ASMFC Atlantic Menhaden Stock Assessment Update, 2012



Timeline of Management Actions: FMP (1981); FMP Revision (1991); Amendment 1 (2001); Addendum I (2004); Addendum II (2005); Addendum III (2006); Addendum IV (2009); Addendum V (2011); Amendment 2 (2012)

In 2013, as part of Amendment 2, the Board implemented an Episodic Events Set Aside Pilot Program, providing flexibility to New England states to harvest from a set aside when they experience Atlantic menhaden in higher than normal abundance. To participate in the program, states must implement mandatory management elements such as daily trip level reporting and vessel trip limits. The pilot program was extended through 2015 with a modification that any unused set aside during an episodic year will be redistributed to other states and jurisdictions on November 1st based on the same allocation percentages used for the overall quota in Amendment 2.

The Atlantic menhaden commercial fishery has two major components, a reduction sector that harvests fish for animal feed and fish oil, and a bait sector that supplies bait to other commercial and recreational fisheries (e.g., American lobster, blue crab, king mackerel). Total commercial landings averaged 464 million pounds from 2008-2012 with approximately 77% harvested by the reduction fishery and 23% harvested for bait purposes. Recreational landings of Atlantic menhaden are poorly monitored,

with landings estimated to be less than 1% of the total landings of the species. During the past decade (2002-2012), recreational catch averaged an estimated 589,000 pounds per year.

The Board also continues to place a high priority on advancing the development of ecosystem reference points using a multispecies modeling approach. Ecosystem reference points are expected to address the forage needs of menhaden's predator species, including striped bass, weakfish, and bluefish. This work is anticipated to take a few years because of the time needed to develop comprehensive ecological modeling techniques. In 2013, the Biological Ecological Reference Point Working Group improved estimation procedures for the distribution and spatial overlap of both predator and prey biomass/abundance levels in the multispecies modeling framework.

ATLANTIC STRIPED BASS

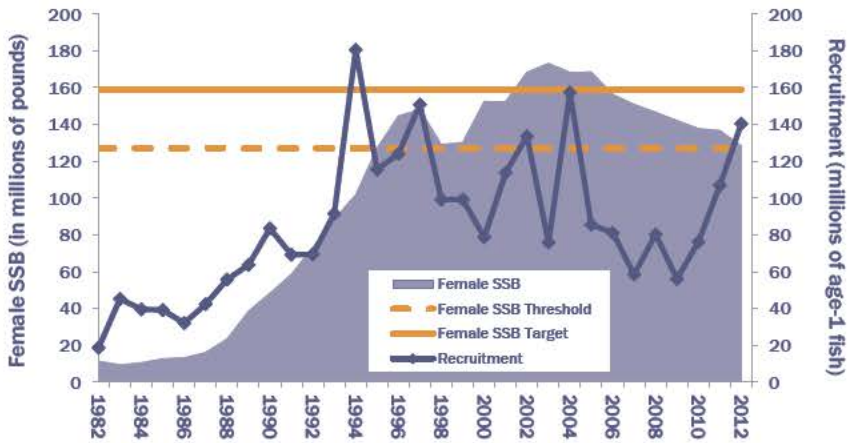
Atlantic striped bass continue to be one of the most valued fisheries along the Atlantic coast, with recreational anglers harvesting 1.5 million fish (19 million pounds) and releasing another 5.2 million fish in 2012. Since 2005, commercial landings have averaged 7 million pounds annually. The 2013 Atlantic striped bass benchmark assessment indicates the resource is not overfished nor experiencing overfishing relative to the proposed new reference points defined in the assessment. Although the stock is not overfished, female SSB has continued to decline since 2004 and is estimated at 128 million pounds just above the SSB threshold of 127 million pounds and below the SSB target of 159 million pounds. Additionally, total fishing mortality is estimated at 0.20, a value that is between the proposed new fishing mortality threshold (0.219) and fishing mortality target (0.18).

Recreational harvest increased from 2.2 million pounds (163,000 fish) in 1990 to 31 million pounds (2.8 million fish) in 2006. Following the peak in 2006, harvest declined through 2012 to 19 million pounds (1.5 million fish). The vast majority (85-90%) of the annual catch in most years is released alive, with 9% of the fish that are released alive assumed to die as a result of being caught. The number of released fish peaked in 2006 at 23.3 million fish, 2.1 million of which were assumed to have died. Total numbers of releases have declined since then, with 5.2 million fish released in 2012; 467,000 of which were assumed to have died. Commercial landings increased from 800,000 pounds in 1990 to 7.3 million pounds in 2004 following liberalization of fishery regulations. Since 2005, landings have fluctuated around an average of 6.97 million pounds.

Projections of female SSB and fishing mortality suggest if the current fishing mortality rate (0.20) is maintained during 2013-2017, the probability of the stock being overfished (SSB less than the SSB threshold) is high and increases until 2015-

Atlantic Striped Bass Female Spawning Stock Biomass (SSB) and Recruitment (Age-1)

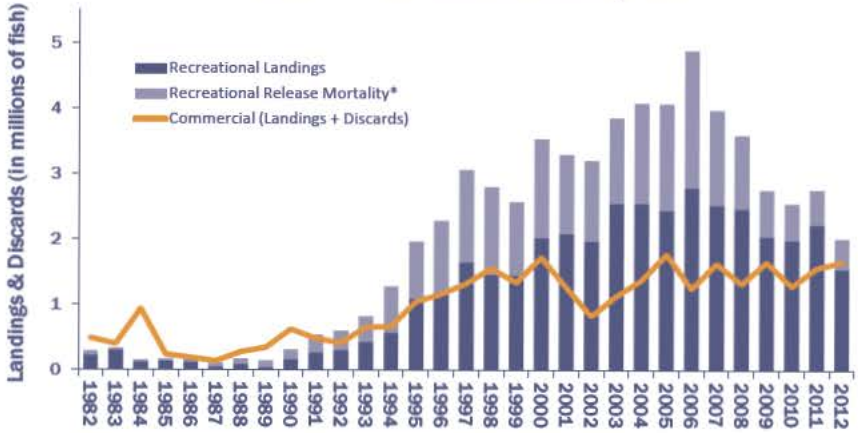
Source: 57th Northeast Regional Stock Assessment Workshop, 2013



Timeline of Management Actions: Amendments 1 & 2 (1984); Amendment 3 (1985); Amendment 4 (1990); Amendment 5 (1995); Amendment 6 (2003); Addendum I (2007); Addendum II (2010); Addendum III (2012)

Atlantic Striped Bass Commercial Landings & Discards and Recreational Landings & Release Mortality

Source: 57th Stock Assessment Workshop, 2013



*Recreational release mortality assumes that 9% offish released alive die.

2016, but declines thereafter. This trend is driven by the lack of strong year classes currently in the fishery, and the emergence of the strong 2011 year class that matures into the spawning stock in three to four years. Despite recent declines in SSB, the stock is still well above the SSB during the moratorium that was in place in the mid-1980s.

Given these findings and the management plan's triggers (e.g., both fishing mortality and SSB are between their respective target and threshold limits), the Atlantic Striped Bass Management Board initiated the development of two addenda. The first addendum will propose adoption of the new fishing mortality reference points recommended by the benchmark assessment. These include fishing mortality reference points for the coastal stock as described above, as well as stock-specific reference points for the Chesapeake Bay and Albemarle/Roanoke stocks that will be developed by the Technical Committee. The second addendum will propose a range of commercial and recreational management measures for the coastal, Chesapeake Bay, and Albemarle/Roanoke stocks to reduce fishing mortality to at least the target with a proposed implementation date of January 2015. It is anticipated that the Board will consider action on both addenda in 2014.

In 2013, the states and jurisdictions implemented Addendum III to Amendment 6 to the Atlantic Striped Bass FMP with the goal of preventing commercial quota overages and the illegal harvest of striped bass. Both activities undermine the sustainability of striped bass populations as well as reduce the economic opportunities of commercial and recreational fishermen who legally participate in the fishery. The Addendum establishes a mandatory commercial tagging program for all states and jurisdictions with commercial striped bass fisheries and recommends increasing penalties for illegally harvested fish. The tagging program includes requirements for timely catch reporting, increased accounting of unused tags, improved standardization of tag type, and the use of biological metrics for determining tag quantity for states and jurisdictions. North Carolina was granted an extension due to the timing of its season (its fishery opens December 1st), while Massachusetts lacks an established commercial tagging program and needs additional time to develop its program. Both states are required to implement their programs by January 1, 2014.

ATLANTIC STURGEON

For the past 25 years, the 15 Atlantic coast states, through the Commission, have sought to effectively manage Atlantic sturgeon throughout its range. With the approval of Amendment I to the Atlantic Sturgeon FMP in 1998, which implemented a 40-year coastwide moratorium on harvest, states committed to protecting this ancient species. Additionally, states have invested considerable resources to increase understanding of sturgeon biology and life history.

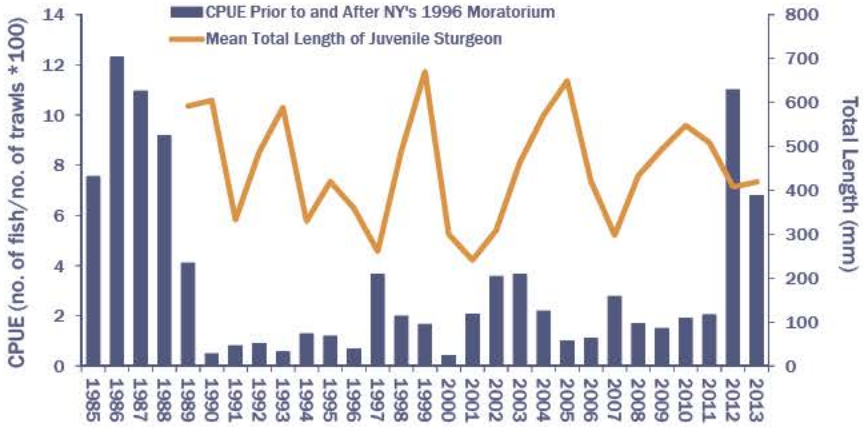
In 2013, the Commission initiated the development of a coastwide benchmark stock assessment for Atlantic sturgeon to evaluate stock status, stock delineation, and bycatch; the findings of which should be available in early 2015. The assessment

responds to the 2012 ESA listing of Atlantic sturgeon as threatened for the GOM distinct population segment (DPS) and endangered for the remaining DPSs (New York Bight, Chesapeake Bay, Carolina, and South Atlantic).

Very little is known about the Atlantic sturgeon's stock status. Reliable data are difficult to obtain because many river systems have few fish, and rivers with more fish are often not easily sampled. Several states have been conducting long-term monitoring of Atlantic sturgeon. Data from two of these efforts are provided in the accompanying graphs, which depict catch per unit effort (CPUE) for fishery-independent surveys conducted by North Carolina and New York. Both surveys have experienced significant fluctuations in recent years. However, in 2013, North Carolina's CPUE was the second highest value in the past twenty years. Further, the spike of juveniles seen in New York's survey are believed to be a direct result of the New York's moratorium in 1997 and the concomitant increase of spawning fish in the Hudson River.

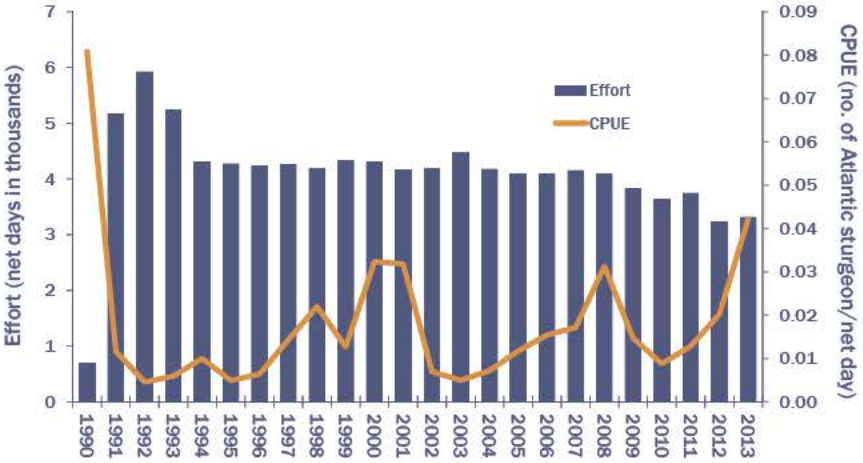
Catch Per Unit Effort (CPUE) of Hudson River Juvenile Atlantic Sturgeon

Source: NY State Dept. of Environmental Conservation with Survey Data from Hudson River Power Generating Companies, Hudson River Monitoring Program, 2013



Fishery-independent Catch Rates of Juvenile Atlantic Sturgeon in Albemarle Sound

Source: NC Division of Marine Fisheries, 2013



Timeline of Management Actions: FMP (1990); Amendment 1 (1998); Addendum I (2001); Addendum II (2005); Addendum III (2006)

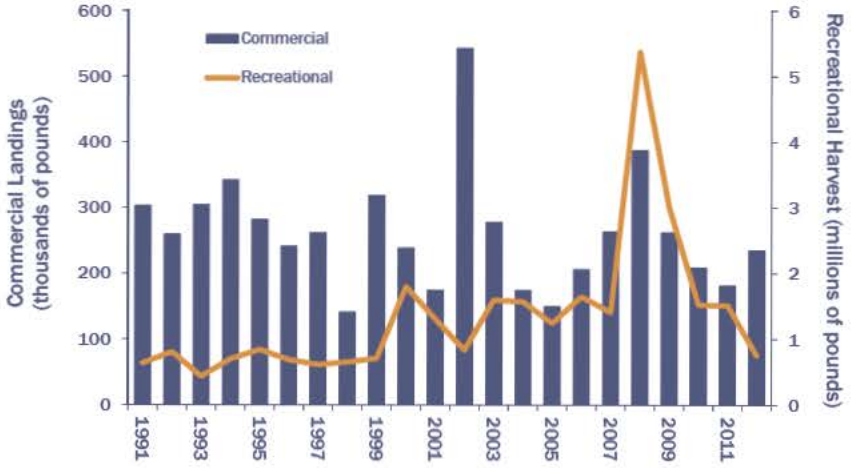
BLACK DRUM

In 2013, the Commission adopted the Interstate FMP for Black Drum. The FMP requires all states to maintain current regulations for black drum and implement a maximum possession limit and minimum size limit (of no less than 12 inches) by January 1, 2014. States will be required to further increase the minimum size limit (to no less than 14 inches) by January 1, 2016. Further, the FMP establishes a management framework to address future concerns or changes in the fishery or population. This will be particularly important as the Commission works towards the finalization of the first coastwide benchmark stock assessment for black drum in 2014.

The FMP was initiated to address a number of concerns. There has been a significant increase in harvest by both recreational and commercial fishermen in recent years, with the fishery targeting very young fish in some areas and more heavily targeting the established breeding stock in other areas; both of which could undermine the stock's ability to sustain itself. Further, the lack of consistent coastwide regulations or management goals may negatively impact the black drum population as fishing pressure shifts from other stocks.

The only available stock status information comes from two regional stock assessments. A 1995 Florida assessment suggested its black drum stocks could sustain the level of fishing

Black Drum Recreational Harvest and Commercial Landings
Sources: ACCSP Data Warehouse and personal communication NMFS Fisheries Statistics Division, 2013



that occurred in the early 1990s, while a 2001 regional Chesapeake Bay assessment suggested fishing mortality was below F_{MSY}, the fishing level that would sustain the stock at its maximum yield. There are no targeted surveys for black drum and current surveys do not sufficiently intersect with the vast ages and sizes of the population. Most landings are restricted to younger and smaller fish with some large adults. A few surveys do encounter and sample adult fish across the wide range of potential ages, but these surveys do not indicate any major trends in the status of the population, which may be due to low or inconsistent intercepts of black drum. Due to these data limitations, data poor assessment techniques will be considered for the benchmark stock assessment.

The black drum fishery is predominantly recreational, with anglers landing about three times the fish (by weight) than the commercial fishery. From 2000-2008, recreational harvest trended upward with harvest peaking at 5.4 million pounds in 2008. Harvest has been on the decline since then with an estimated 742,800 pounds harvested in 2012. Florida and North Carolina fisheries comprise the majority of recreational black drum harvest.

Historically, commercial landings averaged approximately 368,000 pounds in the 1950s and 1960s and then declined to an average of approximately 211,000 pounds in the 1970s and 1980s. The commercial fishery landed approximately 243,000 pounds in 2012. Since 2000, the majority of commercial landings occur in North Carolina and Virginia, while a smaller portion is landed in New Jersey, Maryland, Delaware, and Florida. In recent years, gillnets and pound nets have been the primary gear used.

BLACK SEA BASS

For nearly two decades, the Commission and the Mid-Atlantic Fishery Management Council (MAFMC) have jointly managed the black sea bass stock north of Cape Hatteras. Under this successful management program, which includes quotas to restrict the commercial fishery and possession limits, seasons, and minimum sizes to control recreational landings, black sea bass were declared rebuilt in 2009. The latest stock assessment update, completed in 2012, indicates that black sea bass are not overfished and are not subject to overfishing, with biomass estimated to be 102% of the biomass target. Based on these findings and preliminary 2013 landings, the Commission and MAFMC adopted a 2.17 million pound commercial quota and a 2.26 million pound recreational harvest limit (RHL) for the 2014 and 2015 fishing seasons.

In 2013, the Commission's Summer Flounder, Scup, and Black Sea Bass Board approved regional and state-by-state approaches for the 2013 black sea bass recreational season in order to mitigate potential disproportionate impacts to individual states that coastwide measures may cause. The 2012 regulations resulted in a harvest of 3.18 million pounds, approximately 1.86 million pounds over the 2012 target. 2013 regulations were modified to reduce harvest by 24% to achieve the 2013 RHL. The Board also approved for public comment Draft Addendum XXV, which proposes a similar management approach for the 2014 recreational fishery. Final Board action on Draft Addendum XXV is expected to occur in early 2014.

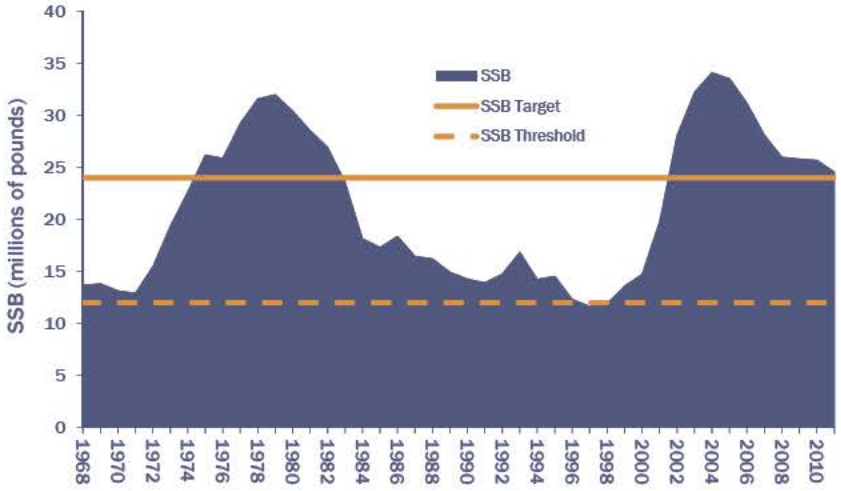
The commercial fishery is allocated 49% of the available quota. The principal gears used in the fishery are pots, otter trawl, and handline. After peaking at 22 million pounds in 1952, commercial landings markedly decreased in the 1960s and have since ranged from 1.3 to 4.4 million pounds. From 1988-1997, landings averaged 2.86 million pounds. In 1998, a quota system was incorporated into the management

program and state-by-state shares were introduced in 2003. Since 1998, landings have ranged from 2.86 to 3.53 million pounds, with 2012 landings estimated at 1.63 million pounds.

The recreational fishery is allocated 51% of the available quota. After peaking in 1985 at 12.35 million pounds, recreational harvest averaged 3.75 million pounds annually from 1988-1997. Recreational harvest limits were put in place in 1998 and harvest has ranged from 1.1 to 4.4 million pounds from 1998-2012. Recreational harvest in 2012 was estimated at 3.18 million pounds.

Black Sea Bass Spawning Stock Biomass (SSB)

Source: Northeast Fisheries Science Center Black Sea Bass Projections, 2012



Timeline of Management Actions: FMP (1996); Amendment 10 (1997); Amendment 11 (1998); Amendment 12 (1999); Amendment 13 (2003); Addenda II & III (2004); Addendum XVI (2005); Addendum XIX (2007); Addendum XX (2009); Addendum XXI (2011); Addendum XXIII (2013)

BLUEFISH

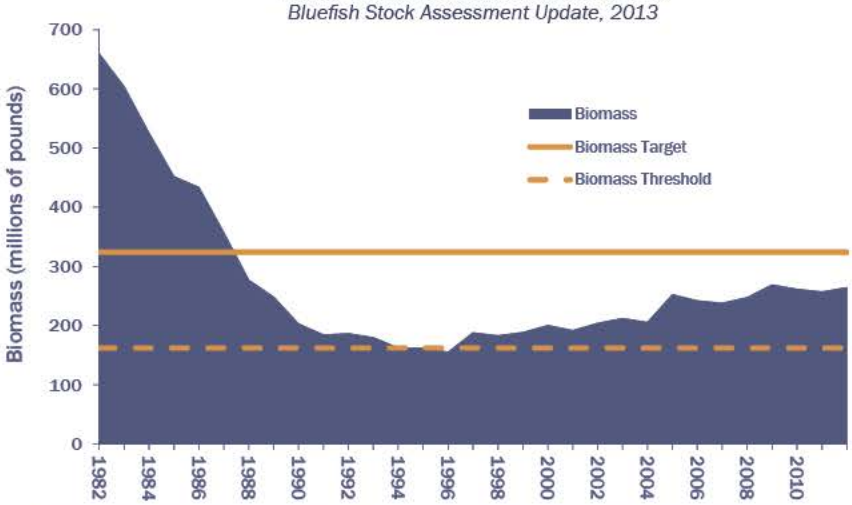
Jointly managed by the Commission and MAFMC since 1998 through state-specific quotas for the commercial fishery and a maximum possession limit to constrain the recreational fishery, bluefish were declared rebuilt in 2009. The 2013 stock assessment update finds the resource to be in good condition; it is neither overfished nor experiencing overfishing. Total biomass is estimated at 277 million pounds, approximately 85% of its target and about a 3% decline from 2010. Fishing mortality is estimated to be 0.097, below the fishing mortality threshold (0.19). Based on these findings and preliminary 2013 landings, the Commission and MAFMC adopted a 7.49 million pound commercial quota and a 13.59 million pound RHL for the 2014 fishery.

A coastwide biological sampling program to improve the quantity and quality of information used in future bluefish stock assessments was approved and implemented in 2012. A 2013 review the inaugural biological sampling program found the geographic range, distribution of sampling times, and program design are effectively capturing age data and it can be used in the next benchmark assessment, currently scheduled for 2015.

Recreational harvest has been increasing since a low of 3.6 million pounds in 1999. From 2001-2011, recreational harvest averaged 17.9 million pounds annually. In 2012, anglers harvested a total of 5.5 million pounds of bluefish, a 9% increase from 2011. Landings from the commercial bluefish fishery have been consistently lower than the recreational catch. Commercial landings decreased from 16.5 million pounds in 1981 to 7.3 million pounds in 1999. The commercial fishery has been regulated by a quota since implementation of Amendment 1 in 2000, and has since averaged around 6.5 million pounds annually. In 2012, landings were 4.5 million pounds, three-quarters of which were harvested in New York, New Jersey, and North Carolina.

Bluefish Biomass

Source: Northeast Fisheries Science Center Bluefish Stock Assessment Update, 2013



Timeline of Management Actions: FMP (1989); Amendment 1 (1998); Addendum I (2012)

COASTAL SHARKS

Forty species of Atlantic coastal sharks are managed throughout their range by NOAA Fisheries' 2006 Consolidated Highly Migratory Species (HMS) FMP for Coastal Sharks and the Commission's Interstate Atlantic Coastal Sharks FMP. The Interstate FMP establishes a suite of management measures for recreational and commercial shark fisheries in state waters. The FMP, approved in 2008 and fully implemented by the states in 2010, was developed to complement federal shark management and ensure consistency between state and federal management measures. In 2013, the Spiny Dogfish and Coastal Sharks Management Board increased the large coastal shark (LCS) commercial possession limit to 36 fish for the 2014 fishery based on the successful distribution of the quota in 2013. This quota is consistent with the federal specifications.

In 2013, the Board approved two addenda to the Interstate FMP. Addendum II establishes state shares for the smooth dogfish fishery and was initiated in response to a proposed federal smooth dogfish commercial quota, which has since been postponed. The smooth dogfish state shares do not apply until NOAA Fisheries implements a smooth dogfish quota, anticipated for approval in 2014. Addendum III changes the species groupings and increases the size limit for hammerhead sharks to 78 inches. The Addendum responds to changes in the federal plan and will be implemented in March 2014 to ensure consistency between state and federal regulations.

The Shark Conservation Act of 2010 instituted additional measures to protect shark species from illegal, unreported, and unregulated fishing activities while protecting the sustainable fishing practices of domestic shark fishermen. During 2013, several states initiated or passed shark fin bans, which prohibited the possession of unattached shark fins. NOAA Fisheries released a proposed rule to preempt these state shark fin bans, as they interfere with the agency's ability to sustainably manage shark fishing in domestic waters. Currently, NOAA Fisheries is working with each state to ensure adequate protection of sharks and optimum sustainable yield from shark fisheries.

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. The accompanying table outlines the stock status of each species or species group. There is no assessment for smooth dogfish on the Atlantic coast. The first coastwide assessment and peer review is scheduled for completion in 2014.

Commercial landings of Atlantic LCS species in 2012 were approximately 441,000 pounds (dressed weight), a slight decrease from 2011. Commercial landings of small coastal shark species in 2012 were approximately 419,990 pounds (dressed weight), a decrease of approximately 164,000 pounds from 2011. Total U.S. landings of Atlantic pelagic species of sharks were 314,000 pounds (dressed weight) in 2012.

Recreational landings of shark species in 2012 were similar to other years. Approximately 44,000 fish were harvested during the 2012 fishing season, compared to 182,900 fish in the 2011 season, and 178,200 fish in the 2010 fishing season. The small coastal shark group had the most landings, comprising approximately 75% of the harvest in 2012. LCS complex came next with approximately 23% of the harvest, and pelagic species comprised 2% of the total harvest.

Stock Status of Atlantic Coastal Shark Species and Species Groups

Species or Complex Name	Stock Status		References/Comments
	Overfished	Overfishing is Occurring	
Porbeagle	Y	N	Porbeagle Stock Assessment, ICCAT Standing Committee on Research and Statistics Report (2009)
Dusky	Y	Y	SEDAR 21 (2011); designated a prohibited species
Large Coastal Sharks	Unknown	Unknown	SEDAR 11 (2006); difficult to assess as a species complex due to various life history characteristics and lack of available data
Blacktip	Unknown	Unknown	SEDAR 11 (2006)
Sandbar	Y	N	SEDAR 21 (2011)
Atlantic Sharpnose	N	N	SEDAR 34 (2013)
Blacknose	Y	Y	SEDAR 21 (2011)
Bonnethead	N	N	SEDAR 34 (2013)
Finetooth	N	N	SEDAR 13 (2007)
Smooth Dogfish	Unknown	Unknown	No assessment; benchmark assessment scheduled for 2014

HORSESHOE CRAB

Horseshoe crab is the first Commission-managed species to incorporate ecosystem principles in its management program. The species is valued by various interests including conch and eel fisheries, the pharmaceutical industry, and shorebird enthusiasts. A chemical in the horseshoe crab tissue makes it an ideal bait to catch conch and eel. Horseshoe crab blood is used by the biomedical industry to produce Limulus Amoebocyte Lysate, an important tool in the detection of contaminants in patients, drugs, and medical supplies. Finally, horseshoe crab eggs serve as the primary food source for migrating shorebirds including the red knot, which USFWS is currently proposing to list as threatened under the ESA.

2013 marked the first year the Horseshoe Crab Management Board used the Adaptive Resource Management (ARM) Framework to set horseshoe crab harvest levels for the Delaware Bay area. The ARM Framework, established through Addendum VII, incorporates both shorebird and horseshoe crab abundance levels to set optimized harvest levels for horseshoe crabs of Delaware Bay origin. For both the 2013 and 2014 fishing seasons, the Board approved a 500,000 male-only crab harvest. This total harvest is allocated among the four states that harvest horseshoe crabs from the Delaware Bay crab population (New Jersey, Delaware, Maryland, and Virginia). The allocation is based upon multiple decision options, including the proportion of horseshoe crabs harvested that originate from Delaware Bay and allowance for additional male harvest by Virginia and Maryland to compensate for protecting female horseshoe crabs when the ARM harvest output includes a moratorium on female crabs. Since 2008, New Jersey has had a moratorium on horseshoe crab harvest.

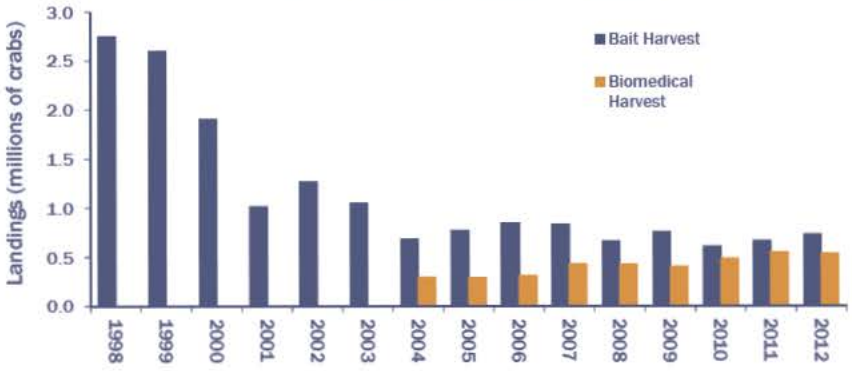
A stock assessment update for horseshoe crabs was completed in 2013. The update indicates horseshoe crab abundance has increased in the Southeast (North Carolina through Florida) and remains stable in the Delaware Bay region (New Jersey through coastal Virginia). The New York and New England regions continue to see a decrease in abundance. These continued declines will be investigated by the Stock Assessment Subcommittee and addressed in the future.

Reported coastwide bait landings in 2012 remained well below the coastwide quota at 729,100 crabs. Since 2004 when reporting began, biomedical use has increased with an estimated 611,800 crabs captured in 2012. As required by the FMP, bled crabs are returned to the water from where they were harvested except in some states where bled crabs are sold to the bait industry to minimize the impact on the population. The Board is working with the biomedical industry to find ways to incorporate biomedical data into a regional stock assessment.

Another concern related to horseshoe crabs are reports that Asian horseshoe crabs *(Tachypleus gigas, Carcinoscorpius rotundicauda,* and *Tachypleus tridentatus)* were imported for use as bait in the conch and eel fisheries in 2011 and 2012. It is unknown how introducing these non-native organisms into state waters could impact the American horseshoe crab populations or the ecosystem. As a result, the Board has urged states to ban the importation or possession of Asian horseshoe crabs.

Coastwide Horsehoe Crab Bait Landings & Biomedical Harvest

Source: ASMFC State Compliance Reports



Please note the following details regarding biomedical harvest numbers:

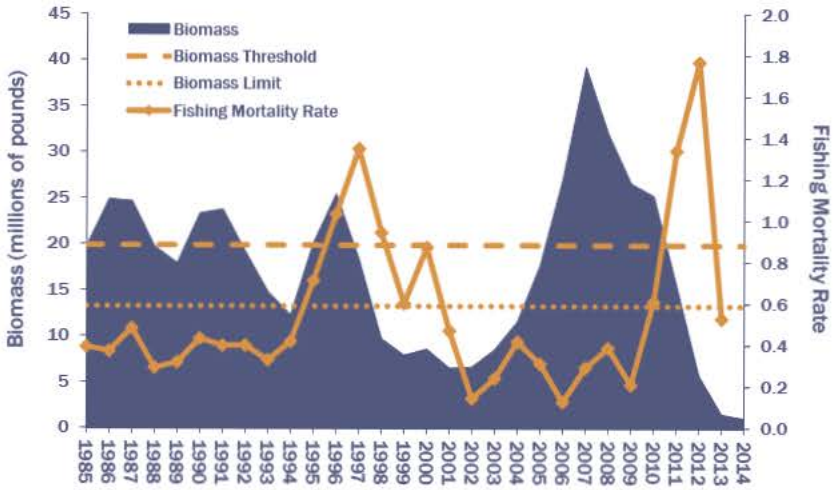
- Harvest numbers include all horseshoe crabs brought to bleeding facilities, including those that were harvested as bait and counted against state quotas.
- Most of the biomedical crabs harvested are returned to the water after bleeding; a 15% mortality rate is estimated for all bled crabs.

Timeline of Management Actions: FMP (1999); Addendum I (2000); Addendum II (2001); Addendum III (2004); Addendum IV (2006); Addendum V (2008); Addendum VI (2010); Addendum VII (2012)

NORTHERN SHRIMP

Gulf of Maine Northern Shrimp Total Biomass & Fishing Mortality Rate

Source: ASMFC Assessment Report for the Gulf of Maine Northern Shrimp, 2013



Timeline of Management Actions: FMP (1986); Amendment 1 (2004); Amendment 2 (2011); Addendum I (2012)

The northern shrimp management program is unique among Commission-managed species in that it is regulated by only three states (Maine, New Hampshire, and Massachusetts) through the Northern Shrimp Section. The resource has historically provided a small but valuable fishery to GOM fishermen. In recent years, however, record low abundance of northern shrimp has resulted in a diminished fishery. Poor stock condition led the Northern Shrimp Section to establish a moratorium for the 2014 fishery, the first time in over 30 years that the fishery was closed. The 2013 season, which was classified as a "do no harm" fishery with a total allowable catch (TAC) of 1.378 million pounds (divided between the trap and trawl fishery, 17% and 83%, respectively), resulted in a fishing mortality rate (0.53) above the target (0.38). This was despite the fact that only 49% of the TAC was harvested.

The 2013 stock assessment update indicates the northern shrimp stock is overfished and experiencing overfishing. Northern shrimp abundance in the western GOM has declined steadily since 2006. Current biomass (1.1 million pounds) is the lowest value in recent history, estimated at 5.2% for the biomass reference period (1985-1994), and well below the biomass threshold of 19.85 million pounds and the biomass limit of 13.23 million pounds. Additionally, there has been recruitment failure for the past three years. The Northern Shrimp Technical Committee considers the stock to have collapsed with little prospect of recovery in the near future.

In GOM, increasing water temperatures and a decline in phytoplankton abundance (a food source for shrimp) are factors which likely have contributed, and will continue to contribute, to the poor recruitment in the stock. The increased abundance of northern shrimp predators (e.g., spiny dogfish, redfish, and silver hake) may play a role in declining biomass. Northern shrimp stocks in other areas of the world (e.g., Greenland, Flemish Cap, Grand Banks) have also seen decreasing trends in abundance and recruitment, providing additional evidence that environmental conditions are impacting northern shrimp across their range.

The benchmark stock assessment is scheduled to be peer-reviewed in January 2014. This assessment uses a new model which incorporates additional data sets that are not included in the stock assessment update. Once the benchmark assessment has been reviewed by a panel of independent experts through the Northeast Regional Stock Assessment Review Committee, the Section will consider the report for management use.

The Section plans to continue development of a limited entry program in 2014 to match the size of the fishery to the size of the northern shrimp resource.

RED DRUM

Red drum are managed solely by the Commission through Amendment 2 to the Interstate FMP. The Amendment requires states to implement recreational creel and size limits to achieve the fishing mortality target, including a maximum size limit of 27 inches, and maintain existing commercial regulations. A harvest moratorium and Presidential Executive Order, enacted in 2007, prevents any harvest or sale of red drum from federal waters.

Red Drum Recreational Catch and Commercial Landings
Source: Personal communication NMFS Fisheries Statistics Division, 2013

Timeline of Management Actions: FMP (1984); Amendment 1 (1991); Amendment 2 (2002); Addendum I (2013)

In 2013, the South Atlantic State/ Federal Fisheries Management Board approved Addendum I to Amendment 2. The Addendum seeks to increase our knowledge base and aid in the protection of important red drum habitat. It updates Amendment 2's habitat section to include current information on red drum spawning habitat and habitat by life stage (egg, larval, juvenile, sub-adult, and adult). It also identifies and describes the distribution of key habitats and habitats of concern, including threats, habitat bottlenecks (habitat or habitat characteristics that limit the sustainability or recovery of red drum), and ecosystem considerations.

The latest benchmark stock assessment, conducted in 2009, indicates the stock is not subject to overfishing and sufficient numbers of young fish are surviving to become breeding adults. Data limitations resulting from species' life history characteristics and management program present unique challenges to scientists as they try to assess the status of the stock. Relatively little is known about the adult (spawning) population (ages four and older), as these fish are primarily found in offshore waters where fishing for red drum is prohibited under federal law. The impact of these limitations is a stock assessment that adequately describes abundance and exploitation rates for the pre-adult component of the population (ages one to three), particularly for the northern region, but provides no reliable information on the adult component. The stock assessment model was considered to be informative only about the relative, not absolute, trends in age one to three abundance and exploitation for the southern region. Therefore, only general conclusions about trends in stock status could be provided for the southern region. The next benchmark stock assessment is scheduled for 2015.

Recreational harvest peaked in 1984 at 2.6 million pounds. Since 1988, the number has fluctuated without trend between 800,000 and 2.1 million pounds. The 2012 recreational landings of 1.7 million pounds represent a 22% increase from the previous ten year average (2002-2011). Since 1990, recreational landings have averaged approximately 88% of total landings of red drum. In 2012, this number spiked up to 96%.

The commercial fishery for red drum was more prevalent in the 1980s, but has declined since then. Landings have averaged approximately 180,000 pounds per year since 1990. North Carolina was responsible for landing 86% of the commercial harvest in 2012. Outside the creation of two regional management zones in Florida, state management measures remained unchanged with the exception of an increased bag limit in the northern region from one to two fish per day. No management action or other changes to state regulations occurred in 2013.

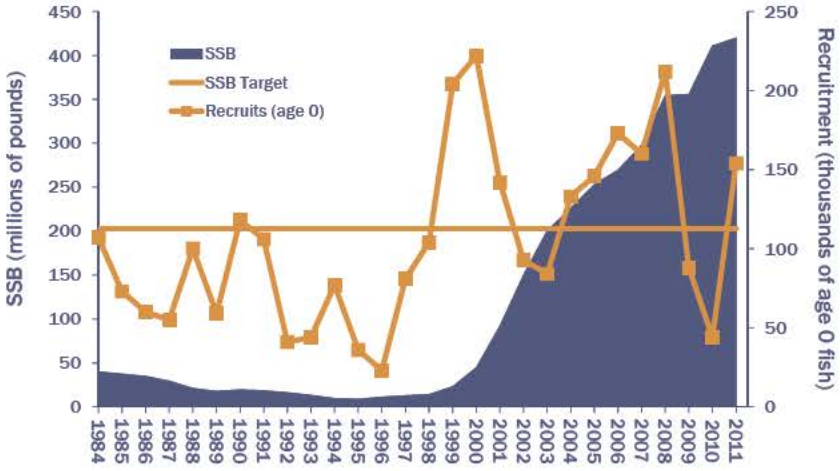
SCUP

For decades, scup have been eagerly pursued by commercial, recreational, and subsistence fishermen throughout SNE and the Mid-Atlantic, largely due to its fine flavor and avid pursuit of baited hooks. One of four species jointly managed by the Commission and MAFMC, scup are considered rebuilt and not experiencing overfishing. The 2012 scup stock assessment update estimates SSB at 420 million pounds, 207% of its target. As a result, both the Commission and MAFMC set the commercial quota at 21.95 million pounds and the recreational harvest limit at 7.03 million pounds for the 2014 fishery. In addition, the Board increased the commercial possession limit for the Winter II commercial season (November 1-December 31) season from 2,000 to 12,000 pounds for the 2014 fishery.

The scup resource is currently allocated 78% to the commercial sector and 22% to the recreational fishery. Commercial landings peaked in 1960 at 48.5 million pounds. In recent years, landings have fluctuated from 15.6 million pounds in 1991 to a time series low of 2.7 million pounds in 2000. The commercial fishery landed 14.8 million pounds in 2012. For the past several years, Rhode Island and New Jersey have harvested the largest share of the commercial landings. Recreational landings declined steadily from 11.6 million pounds in 1986 to 0.9 million pounds in 1998, the lowest value in the time series. In 2012, recreational anglers harvested 4.1 million pounds, with the majority of harvest coming from Massachusetts, New York, Rhode Island, and Connecticut.

Scup Spawning Stock Biomass (SSB) and Recruitment

Source: Northeast Fisheries Science Center Stock Assessment Update, 2012



Timeline of Management Actions: FMP (1996); Amendment 13 (2002); Addendum IX (2003); Addenda XI & XIII (2004); Addendum XVI (2005); Amendment 14 (2007); Addendum XX (2009)

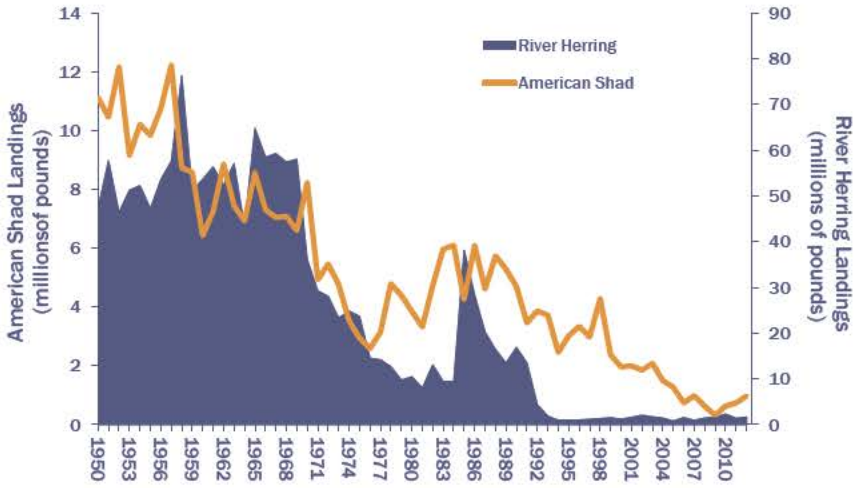
SHAD & RIVER HERRING

The Commission has made significant progress in improving the conservation and management of shad and river herring stocks coastwide over the past few years due to its adoption and implementation of Amendments 2 and 3 to the Shad and River Herring FMP. Both Amendments require states and jurisdictions to close their shad and river herring fisheries unless they develop and implement sustainable fishery management plans (SFMPs). The Amendments define a sustainable fishery as "a commercial and/or recreational fishery that will not diminish the potential future stock reproduction and recruitment." Plans must clearly demonstrate that the state's or jurisdiction's shad and river herring fisheries meet this new definition of sustainability through the development of sustainability targets which must be monitored, achieved, and maintained.

The Commission also continues to collaborate with NEFMC and MAFMC to address the bycatch of these species in federal fisheries.

NEFMC recently approved catch caps for shad and river herring in the Atlantic herring fishery. MAFMC approved a bycatch cap in the Atlantic mackerel fishery and established a working group to address issues related to river herring conservation and management.

American Shad & River Herring Commercial Landings
Source: Personal communication NMFS Fisheries Statistics Division, 2013



Timeline of Management Actions: FMP (1985); Amendment 1 (1999); Amendment 2 – River Herring (2009); Amendment 3 – American Shad (2010)

American Shad

2013 was the first year states and jurisdictions without an approved SFMP were required to close their commercial and recreational American shad fisheries, with the exception of catch and release fisheries. The Board approved SFMPs for Connecticut, the Delaware River Basin Fish and Wildlife Management Cooperative (representing New York, New Jersey, Delaware, and Pennsylvania), Potomac River Fisheries Commission, North Carolina, Georgia, South Carolina, and Florida.

States were also required to submit a habitat plan under Amendment 3. These plans are currently being reviewed by the Shad and River Herring Technical Committee and will be considered by the Management Board in early 2014. The purpose of the habitat plans are to compile available data on threats to habitat to understand data gaps and future research needs.

The most recent benchmark stock assessment, conducted in 2007, indicates American shad stocks are currently at all-time lows and do not appear to be recovering. It identified the primary causes for the continued stock declines as a combination of excessive total mortality; habitat loss and degradation; and migration and habitat access impediments. Although improvement has been seen in a few stocks, many remain severely depressed compared to historic levels. Coastwide landings for American shad were 635,960 pounds in 2012.

To improve data collection, Amendment 3 implements additional required fishery-independent and -dependent monitoring for some states or jurisdictions. This includes monitoring of juvenile and adult American shad stocks; hatchery production; and commercial, recreational, and bycatch fisheries. Additionally, the Amendment increases coordination of monitoring activities for river systems under shared jurisdictions, as well as between freshwater and marine agencies.

River Herring

Amendment 2, adopted in 2009, prohibited commercial and recreational river herring fisheries in state waters as of January 1, 2012, unless a state or jurisdiction develops and receives approval for a SFMP. The Board has approved SFMPs for Maine, New Hampshire, New York, North Carolina, and South Carolina. The remaining states and jurisdictions closed their commercial and recreational fisheries in 2012.

The 2012 benchmark stock assessment found of the 52 stocks of alewife and blueback herring for which data were available for use in the assessment, 23 were depleted relative to historic levels, one stock was increasing, and the status of 28 stocks could not be determined because the time-series of available data was too short. Estimates of abundance and fishing mortality

could not be developed because of the lack of adequate data. The depleted determination was used instead of overfished because of the many factors that have contributed to the declining abundance of river herring, which include not just directed and incidental fishing, but also habitat loss, predation, and climate change.

In 2011, the National Resources Defense Council petitioned NOAA Fisheries to list river herring on the endangered species list throughout all or part of the species range. NOAA Fisheries conducted a status review and found that the listing was not warranted in 2013. NOAA Fisheries is partnering with the Commission to develop a comprehensive conservation plan for river herring throughout its entire range. This working group will be comprised of individuals possessing expert knowledge or experience with river herring.

State	River	Status Relative to Historic Levels/Recent Trends
ME	Damariscotta	Depleted[A], Stable[A]
	Union	Increasing[A], Stable[A]
NH	Cocheco	Unknown[A,B], Stable[A,B]
	Exeter	Depleted[A], Increasing[A]
	Lamprey	Depleted[A], Unknown[A]
	Oyster	Depleted[B], Stable[B]
	Taylor	Depleted[B], Decreasing[B]
	Winnicut	Depleted[A,B], Unkown[A,B]
MA	Mattapoisett	Depleted[A], Unknown[A]
	Monument	Depleted[A], Unknown[A]
	Parker	Depleted[A], Unknown[A]
	Stony Brook	Depleted[A], Unknown[A]
RI	Buckeye	Depleted[A], Unknown[A]
	Gilbert	Depleted[A], Decreasing[A]
	Nonquit	Depleted[A], Decreasing[A]
CT	Connecticut	Depleted[B], Decreasing[B]
NY	Hudson	Depleted[A,B], Stable[A,B]
MD, DE	Nanticoke	Depleted[A,B], Decreasing[A,B]
VA, MD, DC	Potomac	Depleted[A,B], Unknown[A,B]
NC	Chowan	Depleted[A,B], Stable[A,B]
SC	Santee-Cooper	Depleted[B], Increasing[B]

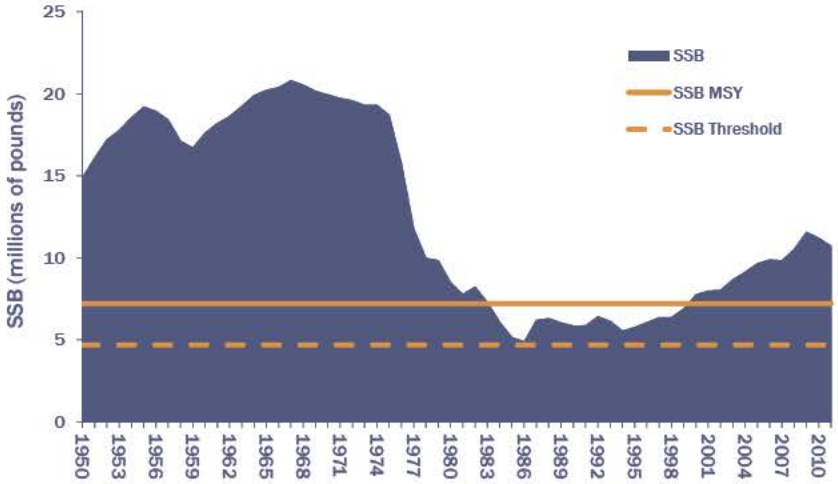
Status relative to historic levels is pre-1970. Recent trends reflect the last ten years of data.
A= alewife only;
B = blueback herring only;
A,B = alewife and blueback herring by species

SPANISH MACKEREL

Cooperatively managed by the Commission and the South Atlantic Fishery Management Council (SAFMC), Spanish mackerel support thriving recreational and commercial fisheries in the South Atlantic and are gaining importance in the Mid-Atlantic. In 2013, the Commission's South Atlantic State/Federal Fisheries Management Board approved Addendum I to the Omnibus Amendment. The Addendum establishes a pilot program to allow states to reduce the Spanish mackerel minimum size limit for the commercial pound net fishery to 11½ inches during the months of July through September for the 2013 and 2014 fishing years only. The measure is intended to reduce waste of these shorter fish, which are discarded dead in the summer months, by converting them to landed fish that will be counted against the quota. After the 2014 fishing year, the Board will evaluate the success of the program for consideration in years beyond 2014.

The Addendum responds to reports about the increased incidence of Spanish mackerel ¼ to ½ inch short of the 12 inch fork length minimum size limit in pound nets during the summer months. While the fish are alive in the pound net, once the net is bunted and bailing commences, they die before being released. This may be due to a combination of temperature, stress, and crowding. While individual fishermen have experimented with different wall or panel mesh sizes depending on the target species, there is no consistent use of cull panels. Those who have used cull panels have noted the difficulty and lack of success in being able to release the undersized fish quickly enough to prevent dead discards during this time of year.

Spanish Mackerel Spawning Stock Biomass (SSB)
Source: SouthEast Data, Assessment and Review, 2012



Timeline of Management Actions: FMP (1990); Omnibus Amendment (2011); Addendum I (2013)

The latest benchmark stock assessment, conducted in 2012, indicates Spanish mackerel are not overfished and is not subject to overfishing. Total 2012 landings were 4.7 million pounds, with commercial and recreational fisheries harvesting approximately 70% and 30% of the resource, respectively. From 1981-2011, the commercial sector accounted for approximately 70% of the total landings. Coastwide commercial landings have been consistently below four million pounds since 1995, with the exception of 2010 when commercial landings increased to 4.5 million pounds. 2012 landings are estimated at 3.5 million pounds. Almost 63% of the landings occur in Florida, with the remaining amount harvested in North Carolina. The primary commercial gear are gillnets (40%), cast nets (27%), and hook and line (30%).

Recreational anglers harvested 1.2 million pounds of Spanish mackerel in 2012. The number of recreationally-harvested fish appears to show a cyclical trend, with low harvests in the early to mid-1980s and mid- to late 1990s, interspersed with higher harvests. Florida and North Carolina continue to account for the majority of recreational landings in both number and weight (on average, 86% by number since 1981).

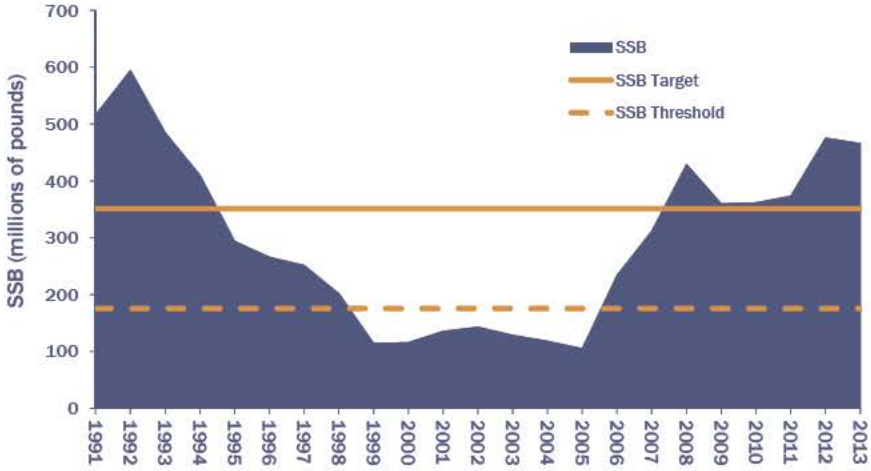
SPINY DOGFISH

In 2013, spiny dogfish garnered media attention as fishermen and processors worked to create a domestic market for the species. A majority of U.S. caught spiny dogfish are exported to Europe. Recent changes in the European market have impacted the domestic demand for the product. Given that spiny dogfish has been rebuilt since 2008, and other New England stocks are overfished or experiencing overfishing, spiny dogfish provides a sustainable alternative for fishermen, processors, and seafood consumers.

The Commission and MAFMC have jointly managed spiny dogfish since 2000. After eight years of stringent state and federal quotas, spiny dogfish was declared rebuilt. The 2013 stock assessment update indicates the resource continues to be in good condition, with spiny dogfish not overfished and not subject to overfishing. Female SSB was estimated at 466 million pounds in 2013, and has exceeded the target (351.23 million pounds) for the past six years. Fishing mortality is estimated to be 0.154 in 2012, well below the plan's threshold (0.2439).

Commercial landings remained below the 2012/2013 quota of 30 million pounds (~26 million pounds for the 2012 fishing season). Discards have remained relatively stable, around 11 million pounds over the past decade, and are expected to remain near that level in the

Spiny Dogfish Spawning Stock Biomass (SSB) (>=80 cm)
Source: Northeast Fisheries Science Center Update on the Status of Spiny Dogfish in 2013 and Projected Harvests at the F_{MSY} Proxy and P_{STAR} of 40%, 2013



Timeline of Management Actions: Emergency Action (2000); FMP (2003); Addendum I (2005); Addendum II (2008); Addendum III (2011); Addendum IV (2012)

future. Canadian landings have also decreased significantly in recent years (13,230 pounds in 2010; 273,000 pounds in 2011; 143,299 pounds in 2012). It is anticipated the Canadian dogfish harvest will not increase in the near future given the current lack of demand and the subsequent closure of Canadian spiny dogfish processors.

With a healthy stock status, the Spiny Dogfish and Coastal Sharks Management Board approved a 40.8 million pound quota for the 2013/2014 fishing season (May 1-April 30), with a maximum possession limit of 4,000 pounds per day for the northern region states (Maine through Connecticut) and state-specific trip limits for the southern region states (New York to North Carolina). The 2013/2014 quota represents a 17% increase from the 2012/2013 quota of 35.6 million pounds. The Board also reconsidered quotas for the 2014/2015 and 2015/2016 fishing seasons, setting the quotas at 49.37 million pounds and 50.61 million pounds, respectively. These measures are consistent with those recommended for federal waters.

SPOT

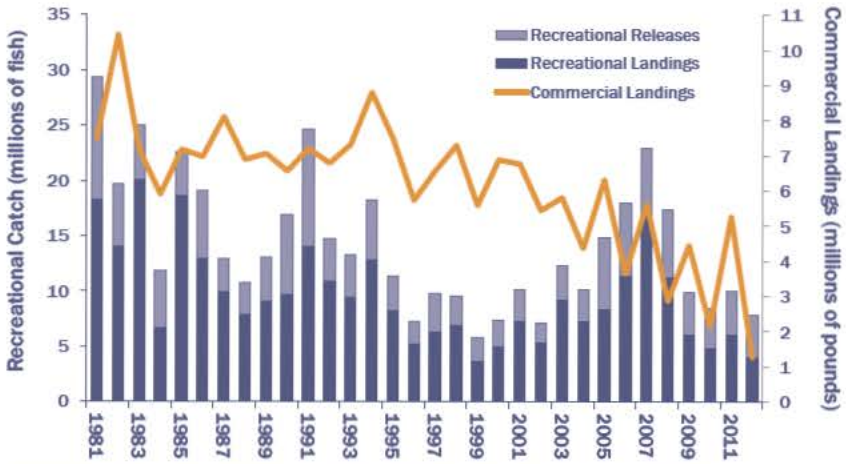
Spot directly support recreational and commercial fisheries in the South and Mid-Atlantic and function as an important forage species throughout these regions. The range of this short-lived species includes brackish and saltwater habitats predominately between Chesapeake Bay and South Carolina. Annual variation in landings, typically composed of fish belonging to a single year class, is due in part to the prevailing environmental conditions at spawning and nursery sites. No coastwide assessment has been performed for spot; however, spot are a target or component of several state surveys using trawls, gillnets, or seine nets. Abundance indices have been highly variable throughout the survey time series, with decreases observed in two of the three trigger indices in 2012.

In 2013, the Spot Plan Review Team conducted a review of spot fishery data and found the triggers, which provide a benchmark for initiating management action, did not trip but the overall trends in indices and landings were concerning. Based on the results of the trigger assessment, the South Atlantic State/Federal Fisheries Management Board tasked its Plan Review Team with developing a traffic light approach with management options to consider under a variety of conditions. The analyses will be presented to the Board in 2014.

Total landings in 2012 were 3.2 million pounds, with 39% harvested by the commercial sector and 61% by the recreational fishery. Commercial

Spot Recreational Catch and Commercial Landings

Source: Personal communication NMFS Fisheries Statistics Division, 2013



Timeline of Management Actions: FMP (1987); Omnibus Amendment (2011)

harvest in 2012 was estimated at 1.2 million pounds, with the majority taken in gillnets. This is a 75% decrease from landings in 2011, although the reason for this decrease is unknown. Small spot are also a major component of the bycatch in haul seine and pound net fisheries in Chesapeake Bay and North Carolina, as well as a significant part of the bycatch of the South Atlantic shrimp trawl fishery. However, substantial reductions in the magnitude of bycatch have occurred in the latter fishery.

Spotted Seatrout Recreational Catch and Commercial Landings
Source: Personal communication NMFS Fisheries Statistics Division, 2013

Timeline of Management Actions: FMP (1987); Omnibus Amendment (2011)

For the past three decades, recreational harvest along the Atlantic coast has varied between 1.7 and 6.9 million pounds. There was an increasing trend in the recreational harvest from the low of 3.6 million pounds in 1999 to a high of 5.5 million pounds in 2007; however, harvest declined in 2012 to 1.9 million pounds.

SPOTTED SEATROUT

Spotted seatrout are managed under the Omnibus Amendment for Spot, Spotted Seatrout, and Spanish Mackerel, which includes recommended measures to protect the spawning stock, as well as a required coastwide minimum size of 12 inches. Increased coastal development and the resulting loss of estuarine habitat, coupled with heavy fishing pressure, have effected spotted seatrout populations. The extent of the anthropogenic effect is unclear as there is no coastwide stock assessment for the species and local assessments vary by state. Spotted seatrout are also susceptible to inshore events such as winter freezes, excessive fresh water, hurricanes, and red tide conditions. Fortunately, seatrout have a life history trait that helps maintain population size – the ability to reproduce prolifically. Compared to other marine gamefish, spotted seatrout enjoy one of the longest spawning seasons.

Over the past three decades, the recreational catch of spotted seatrout has shown a strong upward trend, increasing from 1.8 million fish in 1982 to a record high of 8.8 million fish in 2012. The majority of this increase, particularly in recent years, is due to expansion of the recreational releases, which now constitutes 79% of the total recreational catch. While commercial landings have been highly variable over the same time period (ranging between 915,000 and 165,000 pounds), they show an overall downward trend. This may be due to increased regulation and possible declines in abundance. Significant changes to regulations include the 1987 designation of spotted seatrout as a gamefish in South Carolina, and the 1995 prohibition on the use of gillnets in Florida's coastal waters. Commercial landings in 2012 were approximately 408,500 pounds, with about 65% coming from North Carolina.

SUMMER FLOUNDER

Highly valued by both recreational and commercial fishermen, summer flounder have been jointly managed by the Commission and MAFMC for more than two decades. The population is now rebuilt in response to the joint management program, with current SSB

estimated at 125.97 million pounds, slightly below the target of 137.55 million pounds. Summer flounder are not overfished and overfishing is not occurring. The Commission and MAFMC established a 21.94 million pound TAL for the 2014 fishing season, with an RHL of 7.01 million pounds and a commercial quota of 10.51 million pounds. Up to three percent of the TAL was been allocated to the research set aside program in 2014.

There has been a growing concern that current summer flounder management measures (as established under the FMP) are not providing recreational fishermen along the coast with equitable harvest opportunities. Those measures, involving state-specific recreational management measures under conservation equivalency are increasingly being viewed as problematic due to reliance upon recreational harvest estimates for a single year (1998) as the basis for individual state targets, and changes in both resource abundance and the socio-economic characteristics of the fishery. To address these issues, the Summer Flounder, Scup and Black Sea Bass Board released Draft Addendum XXV for public comment in late 2013. The Draft Addendum includes options that allow for management measures by region and the sharing of unused RHL – both with the intent of providing more equity in recreational harvest opportunities along the coast. The Board will consider approval of the Addendum in early 2014.

During the late 1980s, commercial landings declined dramatically, reaching a low of 9.3 million pounds in 1990. Landings showed an increasing trend through 1995, but have varied without trend through 2010. For the past three years, commercial landings have been above 10 million pounds, with 2012 landings at 13.3 million pounds. Otter trawl is the principal commercial gear. After reaching a low of 3.2 million pounds in 1989, recreational landings increased to 11.9 million pounds in 1997 and 16.5 million pounds in 2000. Since 2009, landings have been approximately 5 million pounds with 6.3 million pounds landed in 2012.

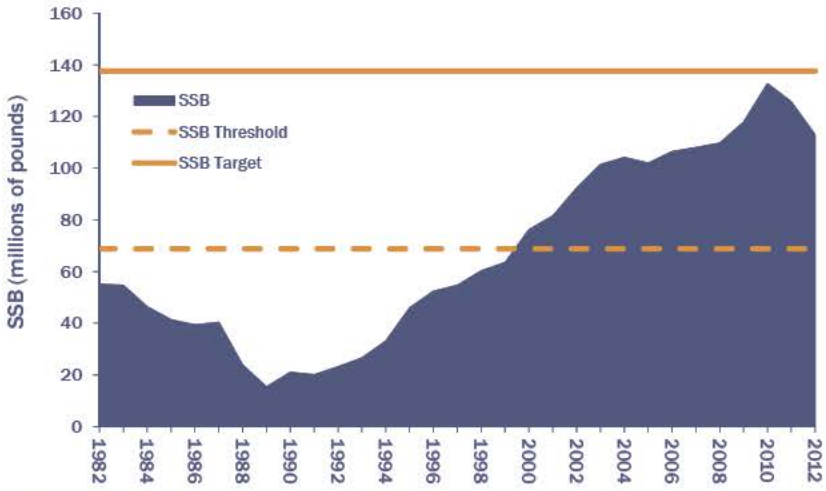
TAUTOG

Tautog is a large species of wrasse that typically inhabits hard-substrate habitats along the coast of Nova Scotia through North Carolina. Traditionally, it is a popular recreational species, with 90% of the coastwide harvest taken by anglers. In recent years, commercial landings in some states comprised up to 40% of their total landings due to a demand for the live fish market. Most landings occur within state waters between Cape Cod and Chesapeake Bay in the spring and fall months. Some Mid-Atlantic fishermen pursue tautog year-round and there is an active fishery off the coast of Virginia in winter.

A revised stock assessment update in 2012 indicates that tautog continues to be overfished and subject to overfishing. SSB remained at low levels for the last decade, with SSB estimated at 23.5 million pounds, 39% of the target SSB (59 million pounds). The three-year average fishing mortality (2007-2009) was estimated at 0.31, well above the FMP's fishing mortality target of 0.15. This led the Commission to implement Addendum VI to the Tautog FMP in 2012, which requires a 39% coastwide reduction in exploitation from the 2008-2009 average in order to achieve the fishing mortality target of 0.15.

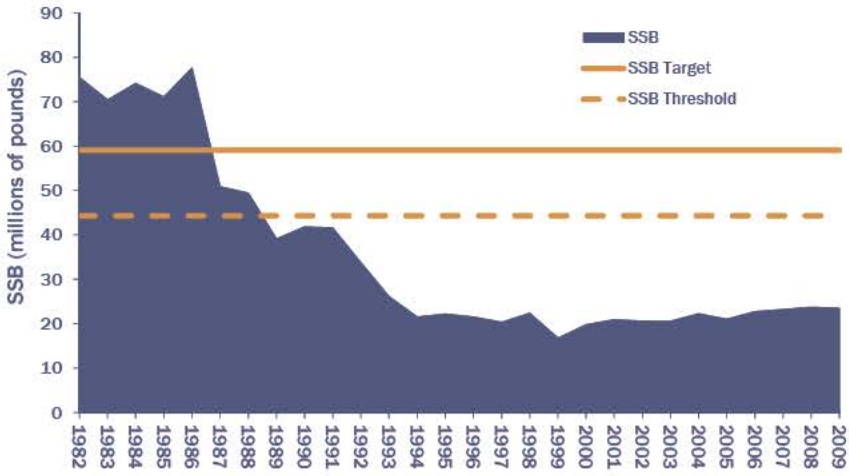
Summer Flounder Spawning Stock Biomass (SSB)

Source: 57th Northeast Regional Stock Assessment Workshop, 2013



Timeline of Management Actions: FMP (1988); Amendment 1 (1991); Amendments 2-5 (1993); Amendment 6 (1994); Amendment 7 (1995); Amendment 8 & 9 (1996); Amendment 10 (1997); Amendment 11 (1998); Amendment 12 (1999); Amendment 13 (2003); Addenda VIII & XV (2004); Addenda XVI & XVII (2005); Addendum XVIII (2006); Addendum XIX (2007)

Tautog Spawning Stock Biomass (SSB)
Source: ASMFC Tautog Stock Assessment Update, 2012



Timeline of Management Actions: FMP (1996); Addendum I (1997); Addendum II (1999); Addendum III (2002); Addenda IV & V (2007); Addendum VI (2011)

WEAKFISH

Weakfish have been one of the most important components of a mixed-stock fishery on the Atlantic coast since the 1800s. Beginning in 2000, however, weakfish biomass began to decline, reaching an all time low of 2.9 million pounds in 2008 (compared to 30.8 million pounds in 1996). The 2009 benchmark stock assessment found that fishing mortality is not the cause of this decline, but that natural mortality has increased substantially since the late 1990s from such possible factors as predation, competition, and environmental stressors. As a consequence of current stock size, the assessment indicated that total fishery removals (at the time of the assessment) represented a significant proportion of the remaining biomass, and were unsustainable. In 2009, in response to the depleted state of the weakfish stock, the Weakfish Management Board approved Addendum IV to Amendment 4, significantly reducing the commercial and recreational harvest of weakfish. Recent total fishery landings are estimated at 160,540 pounds in 2011 and 539,320 pounds in 2012.

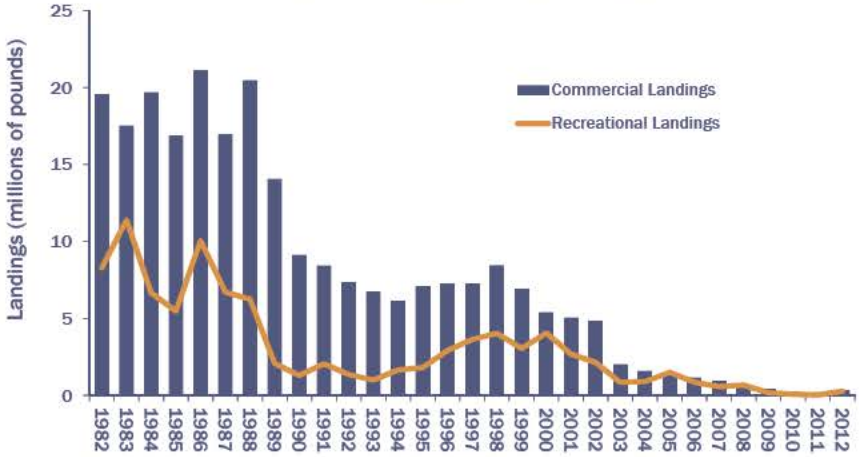
In 2012, total tautog harvest was 2.4 million pounds, an increase from 1.8 million pounds in 2011. Recreational harvest ranged from a time series high of 16.9 million pounds in 1986 to a low of 1.5 million pounds in 1998. From 2000-2012, recreational harvest averaged 3.3 million pounds, but declined to 1.5 million pounds in 2011. Connecticut anglers accounted for 45% of the 2012 recreational harvest, followed by Rhode Island (24%), and New York (11%).

Commercial landings ranged from a high of 1.2 million pounds in 1987 to a low of approximately 208,800 pounds in 1999. Landings have averaged 289,000 pounds since 2000, with 2012 landings estimated at 214,000 pounds. More than 50% of the 2012 commercial harvest was landed in Massachusetts and New York. Rod and reel are the predominant commercial gear, although floating fish traps, fish pots, and otter trawl harvest are also used.

As part of the 2014 benchmark stock assessment process, the Commission held data and stock assessment workshops in 2013, with the peer review scheduled for 2014. The Tautog Management Board also found that state ageing methods continue to be consistent following the 2012 ageing workshop, which concluded that operculum (gill plates) should serve as the standard biological sample for ageing tautog.

Given current high natural mortality levels, stock projections indicate that the stock is unlikely to recover rapidly. The spawning potential is estimated to be at 3% of unfished levels, well below the target level of 30% established in Addendum IV. In order to rebuild the stock, total mortality will need to be reduced, although this is unlikely

Weakfish Commercial and Recreational Landings
Source: ASMFC State Compliance Reports



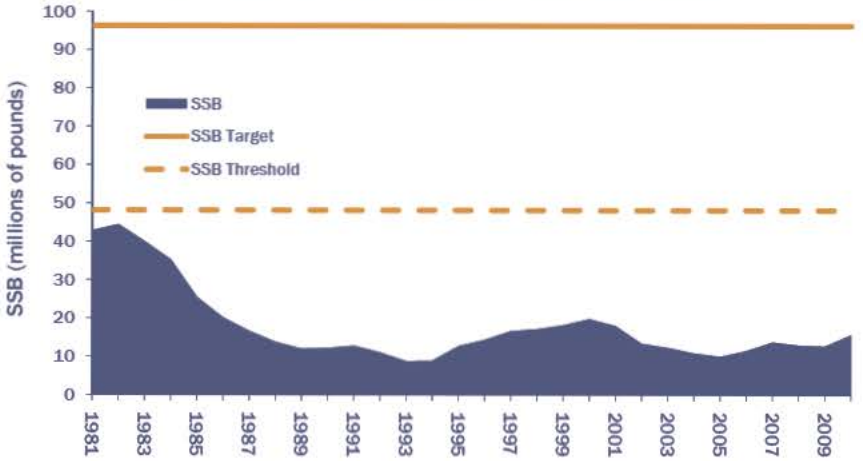
Timeline of Management Actions: FMP (1985); Amendment 1 (1991); Amendment 2 (1995); Amendment 3 (1996); Amendment 4 (2002); Addendum I (2005); Addenda II & III (2007); Addendum IV (2009)

to occur until natural mortality decreases to previous levels.

Juvenile abundance surveys suggest that young-of-the-year weakfish continues to be in a productive pattern, although there is concern because these strong young-of-the-year indices do not translate into high adult biomass.

Southern New England/Mid-Atlantic Winter Flounder Spawning Stock Biomass (SSB)

Source: 52nd Northeast Regional Stock Assessment Workshop, 2011

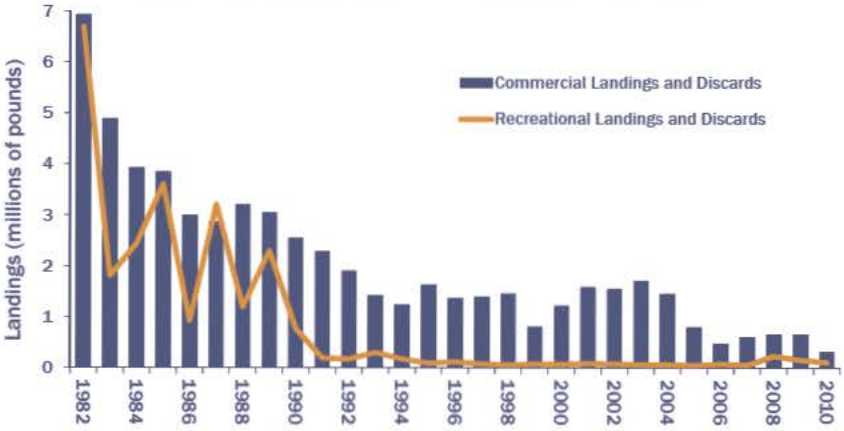


WINTER FLOUNDER

The winter flounder commercial fishery was once highly productive, with coastwide landings peaking at 40.3 million pounds in 1981. Since then, landings have steadily declined. Total commercial landings for all stocks (e.g., GBK, GOM, and SNE/MA combined) dipped to 3.5 million pounds in 2010, but have increased to 5.3 million pounds in 2012. Winter flounder is also sought-after by anglers, and the recreational fishery followed similar trends to the commercial fishery; landings peaked in 1982 at 16.4 million pounds, and declined to just under 108,000 pounds in 2012.

Gulf of Maine Winter Flounder Landings and Discards

Source: 52nd Northeast Regional Stock Assessment Workshop, 2011



Timeline of Management Actions: FMP & Addendum I (1992); Addendum II (1998); Amendment 1 (2005); Addendum I (2009); Addendum II (2012); Addendum III (2013)

Winter flounder are managed by the Commission in state waters and NEFMC in federal waters. A benchmark assessment, completed in 2011, found overfishing was not occurring on the GOM winter flounder stock, while its overfished status could not be determined. The SNE/MA stock is overfished but not subject to overfishing. The 2010 SSB estimate of 15.6 million pounds was below both the target (96 million pounds) and threshold (48 million pounds). Fishing mortality on the SNE/MA stock was estimated to be 0.051, well below the fishing mortality threshold of 0.29. The stock has not rebuilt, in part due to low recruitment.

The Winter Flounder Management Board approved Addendum III to Amendment 1 in 2013, which established the use of an annual specifications process to set commercial trip limits and recreational measures. It also established triggers to reduce trip limits when a percentage of the state water harvest, to be determined by NOAA Fisheries, has been reached. As an emergency action to alleviate ACL reductions for other New England groundfish species, NOAA Fisheries extended the rebuilding plan and lifted the fishing moratorium on the SNE/MA winter flounder stock, which had been in place since 2009. The provisions included an ACL of 3.6 million pounds. The GOM stock's ACL was maintained at 2.3 million pounds. The Board set the 2013 specifications for commercial state water fisheries at status quo, keeping the 50 pound/38 fish bag limit for the SNE/MA fishery and 500 pounds for the GOM fishery.

FISHERIES SCIENCE
TO SUPPORT MANAGEMENT

FISHERY-INDEPENDENT DATA COLLECTION

Fishery-independent monitoring provides insight into the status of fish stocks without the biases inherent to commercial and recreational fisheries catch information. The data collected through monitoring programs are a critical component to the Commission's stock assessment and fisheries management processes. The Fisheries Science Program coordinates two primary Atlantic coast fishery-independent data collection programs – the South Atlantic component of the Southeast Area Monitoring and Assessment Program (SEAMAP) and the Northeast Area Monitoring and Assessment Program (NEAMAP).

SEAMAP

SEAMAP is a cooperative program among state and federal agencies and universities to facilitate the collection, management, and dissemination of fishery-independent data in the Southeastern U.S. and Caribbean. Since 1982, SEAMAP has sponsored long-term standardized surveys that have become the backbone of fisheries and habitat management for its three regions – the South Atlantic, Gulf of Mexico, and Caribbean. In 2012, SEAMAP-South Atlantic surveys continued to collect data on the distribution and abundance of a variety of important commercial and recreational species (e.g., red drum, Atlantic croaker, striped bass) from North Carolina to Florida.

In 2013, SEAMAP-South Atlantic continued development of a web-based application to integrate and share information among the several fishery-independent surveys under the SEAMAP umbrella and the fishery managers that use SEAMAP data. The compilation of datasets will be useful in the management of several commercially and recreationally important fish species that migrate between the states' coastal waters and estuaries. From these data, fisheries scientists and managers can determine year-to-year abundance trends, set fishing regulations, and evaluate management strategies.

Additionally, SEAMAP-South Atlantic continued to support the Bottom Mapping and Fish Habitat Characterization activities, which gathers seabed mapping data to advise managers when considering establishment of Marine Protected Areas and other fish habitat conservation areas.

NEAMAP

NEAMAP is a cooperative state/federal fishery-independent research and data collection program established in 1998 for the coastal waters from Maine to North Carolina. The program was developed to respond to the lack of adequate survey coverage and coordination in the coastal waters of the Mid-Atlantic Bight. Its primary tool to fill the gap in coverage has been the NEAMAP Nearshore Trawl Survey. The Nearshore Survey is conducted in the Mid-Atlantic and Southern New England regions and has completed spring and fall surveys from 2007 to present. The survey samples inshore waters from Cape Hatteras, North Carolina, northward to Martha's Vineyard, Massachusetts. NEAMAP also includes the Maine-New Hampshire Inshore Trawl Survey, as well as the Massachusetts Inshore Trawl Survey. Survey data are used to complement data from the NOAA Fisheries Northeast Fisheries Science Center (NEFSC) Trawl Survey, which samples in deeper, offshore waters of the Mid-Atlantic and New England.

In 2013, research scientists from the Virginia Institute of Marine Science completed spring and fall trawl surveys, working aboard the *F/V Darana R*, a commercial fishing vessel owned and operated by Captain James Ruhle. Each survey in 2013 conducted tows at 150 locations in depths ranging from three to 25 fathoms. Over seven million individual fish and invertebrates, representing over 175 different species, were collected during the eleven full-scale surveys conducted through the fall of 2013. Individual length measurements were recorded for more than 620,000 animals and laboratory processing is proceeding on

the 36,000 stomach samples and 49,000 ageing structures (e.g., ear bones, vertebrae, spines) collected in the field. The catch and sample data are used by scientists and managers to describe trends in fish stock abundance and health.

The 2013 NEAMAP Nearshore Trawl Survey not only extends the time series of fish and invertebrate abundance estimates, but also provides important fish age data for Atlantic striped bass, summer flounder, black sea bass, and other Commission-managed species. These data are vital to improving our ability to track year classes and understand changes in population age structure. With additional years of sampling, the Nearshore Trawl Survey will become an increasingly valuable source of fishery-independent data, alongside the Maine-New Hampshire and Massachusetts Surveys, to support and improve stock assessments. The majority of funds needed to conduct NEAMAP surveys in the spring and fall of 2014 have been obtained; however, there is no long-term funding source for the surveys.

RESEARCH INITIATIVES

The Commission continued several fisheries research initiatives in 2013 that were supported and funded by Congress to address high priority issues for the Atlantic states and their stakeholders. Information gathered from research initiatives provides the scientific basis for Commission stock assessments and is fundamental to advising fisheries managers on the health of fish and shellfish populations.

Northern Shrimp

The 30th Gulf of Maine Northern Shrimp Trawl Survey was conducted in 2013 by NEFSC in cooperation with the Commission's Northern Shrimp Technical Committee. A total of 84 stations were sampled, with information on shrimp numbers, sizes, gender, and maturity collected to provide data for annual stock assessments and related analyses. The survey is a valuable tool for consistently evaluating the shrimp stock's condition. Results show shrimp abundance and biomass have declined over the past several years, with 2013 catches at the lowest level ever recorded in the survey's history. A notable decline in shrimp sizes across life stages and genders was also detected in the 2013 survey.

Red Drum

The Commission identified red drum as a priority species in need of research because the status of the adult portion of the population is not well known. With federally dedicated research funds, state scientists from North Carolina, South Carolina, and Georgia conduct bottom longline surveys to provide a fishery-independent index of adult red drum abundance. Many red drum encountered in the survey are tagged to provide information on survival rates, migratory behavior, and stock identification. Information is also collected on the presence of hatchery-origin fish in the offshore adult population, as well as sex ratios, maturity, and age structure of the population. All of the information is critical for evaluating the status of the red drum population, especially the adult portion, and developing a successful red drum management program.

Fish Ageing

Fish age and growth information are key components of stock assessments that improve our understanding of species' population dynamics. With age samples being collected, processed, and read by scientists at several institutions every year, it is important to ensure all ageing labs follow consistent protocols. In 2013, the Commission facilitated fish ageing consistency and data sharing among different Atlantic coast laboratories through the development of standardized ageing protocols, the exchange of ageing samples, and two fish ageing workshops for black sea bass and river herring. Results from the ageing

workshops will be included in the next coastwide stock assessments of each species. The proceedings of these ageing workshops and others can be found on the Commission website at *www.asmfc.org/fisheries-science/research*. Summer flounder and scup ageing exchanges and workshops are planned for 2014.

Horseshoe Crab Trawl Survey

Since 2002, the Horseshoe Crab Trawl Survey, conducted by Virginia Tech University's Horseshoe Crab Research Center, has been the only fishery-independent survey designed to sample horseshoe crab populations in Atlantic coastal waters. The survey's data have been a critical component of the Commission's coastwide stock assessment and the Adaptive Resource Management (ARM) Framework, which incorporates both shorebird and horseshoe crab abundance levels to set optimized horseshoe crab harvest levels for the Delaware Bay area. Adopted for management use by the Horseshoe Crab Management Board in 2012, the ARM Framework is the mechanism used to set harvest specifications for horseshoe crabs of Delaware Bay origin; both the 2013 and 2014 fishing year specifications were determined using the ARM Framework.

Due to funding shortfalls, the Horseshoe Crab Trawl Survey was not conducted in 2013 for the first time in its ten year history. The loss of the survey and its data present challenges for use of the ARM Framework, which depends on the adult abundance indices derived from the Horseshoe Crab Trawl Survey data. In the meantime, while the Commission pursues new long-term funding sources to resume this important survey, the ARM Working Group will explore ways to adapt the ARM Framework and specification setting by using data provided by the NEAMAP Nearshore Trawl Survey. It is unclear how switching from the Horseshoe Crab Trawl Survey data to the NEAMAP Nearshore Trawl Survey data will impact horseshoe crab management.

Recreational Fishing Release Mortality

Populations of several fish species managed by the Commission are subject to high levels of recreational fishing catch and release. The release mortality rates, or degree to which fish survive following release, is an important factor included in stock assessments to determine how many fish are lost to release mortality every year. In 2013, the Commission, in collaboration with NOAA Fisheries, hosted a Mid-Atlantic/New England regional workshop on release mortality to gather the latest scientific study results on release mortality and identify best fish handling practices to minimize mortality from catch and release fish. Regional workshop participants included scientists, managers, and fishermen. Workshop reports, presentations, and additional results can be found at *www.fishsmart.org*.

COOPERATIVE TAGGING

Tag and recapture data are valuable inputs to the stock assessments of several species managed by the Commission, including Atlantic striped bass, red drum, Atlantic sturgeon, weakfish, spiny dogfish, and coastal sharks. The Interstate Tagging Committee (ITC) was created in 1999 to improve the quality and utility of fish tagging data through the development and promotion of protocols for effective tagging programs. ITC maintains a Cooperative Tagging Website and Registry providing information on coastwide tagging programs. Anglers can search a database by fish species, tag type, and tag color in order to identify recovered tags. Recent ITC activities include certification of state tagging programs in Massachusetts, Virginia, and South Carolina, and development of online tagging videos to guide anglers on proper tagging techniques. The Cooperative Tagging Website can be found at *www.fishtag.info*.

Since the early 1980s, the Commission has been a partner to the Cooperative Winter Tagging Program led by USFWS. The Program organizes annual field tagging of Atlantic striped bass, Atlantic sturgeon, spiny dogfish, and other species that aggregate each winter in the coastal waters off Virginia and North Carolina. In 2013, state funds were made available

for a trawling vessel to catch, tag, and release striped bass as part of the Winter Tagging Program. Another year of successful trawl sampling was completed, with 921 striped bass tagged. In a complementary effort, more than 1,100 striped bass were caught, tagged, and released by scientists and captains aboard recreational charter vessels. Information from recaptured fish with tags provides scientists with data to better understand fish survival and growth, habitat preferences, seasonal movements and migrations, and stock boundaries.

MULTISPECIES MODELS AND ASSESSMENTS

The Commission recognizes the importance of ecological interactions, such as predator-prey relationships, in understanding the population dynamics of fishery resources. The Fisheries Science Program coordinates the Multispecies Technical Committee (MSTC), a group of state, federal, and university scientists tasked with evaluating relationships among species via a multispecies modeling framework known as the extended Multispecies Virtual Population Analysis (MSVPA).

The MSTC periodically performs updates to the model, evaluates the status of research recommendations from the 2005 model peer review, and works with the Commission's Assessment Science Committee to consider and evaluate alternative stock assessment models that incorporate ecosystem factors. In addition, a subcommittee of the MSTC continues to work on several alternative multispecies models and ecosystem-based approaches that may be used to develop ecological reference points for Atlantic menhaden. These reference points would be based on the forage needs of menhaden's primary predators (e.g., striped bass, weakfish, bluefish). This subcommittee updated the MSVPA model in 2013 with the most recent years of data in order to include its results in the 2014 Atlantic menhaden benchmark stock assessment.

STOCK ASSESSMENT PEER REVIEW

The Commission's species management boards rely on the scientific and technical information provided by independent peer reviews of stock assessments to evaluate stock status and develop fisheries regulations using the best available science. In 2013, four benchmark stock assessments were evaluated through peer review processes. The Atlantic striped bass and summer flounder assessment reviews were conducted through the Northeast Regional Stock Assessment Review Committee. The small coastal shark stock assessments (Atlantic sharpnose, bonnethead) were evaluated through the Southeast Data and Assessment Review process. Information on the outcome of 2013 stock assessment peer reviews can be found in the species highlights section of this report.

STOCK ASSESSMENT TRAINING

The Commission organizes stock assessment training courses to provide instruction to fisheries professionals on the most progressive fisheries analysis methods available for use in stock assessments. Courses are provided each year to meet the specific training needs identified as critical to supporting coastwide assessments, and to provide managers with a better understanding of assessment outcomes. In 2013, an Introduction to Stock Assessment Methods training course was held to enhance state scientists' knowledge of approaches to modeling fish populations. Intermediate and advanced level stock assessment courses are planned for 2014. The courses are designed to provide state scientists with hands-on experience in developing stock assessments, using fishery-independent and -dependent data in a variety of analytical methods and models. Additionally, Commission staff participated in the July 2013 World Conference on Stock Assessment Methods.

With the launch of the revised Commission website and new social media platforms, the Commission has created a dedicated page on Fisheries Science 101 at *www.asmfc.org/fisheries-science/fisheries-science-101*. The webpage explains the basic concepts of fisheries science to give stakeholders a better understanding of the types of information scientists provide to fisheries managers. It also includes links to stock assessment seminars, such as "Understanding the Science Behind Northern Shrimp Management." Additional seminars will be posted as they become available.

HABITAT PROTECTION, RESTORATION, AND ENHANCEMENT

The Commission recognizes that protection, restoration, and enhancement of fish habitats are essential to promoting the sustainability of fisheries along the Atlantic coast. The Habitat Program's goal is to identify, enhance, and cooperatively manage vital fish habitat for conservation, restoration, and protection, and supporting the cooperative management of Commission and jointly-managed species. The Program successfully performed this role through several activities in 2013.

The Habitat Program completed its Guidance Document in 2013. It replaces the previous Operational Procedures Manual by updating and clarifying the Program's mission, membership responsibilities, and guidance for FMP habitat sections. Furthermore, the Artificial Reef Committee has shifted to reporting directly to the ISFMP Policy Board, and will continue to work closely with the Habitat Committee.

The Habitat Program produced the *2013 Annual Issue of Habitat Hotline Atlantic*, which will be released in early 2014 as a two-volume set. The first volume focuses on fish habitat policy and regulation along the Atlantic coast. It includes articles on regional approaches to shellfish and fisheries management plans, oyster reef restoration projects, an overview on ocean data portals, and the Southeast Connectivity Project, to name a few topics. The second volume highlights state habitat-related initiatives and provides an update from the Atlantic Coastal Fish Habitat Partnership.

The Habitat Program began working on the next installment of the Habitat Management Series, which will present an objective view of the diverse nearshore and estuarine aquaculture practices and their effects on coastal fish habitats. The installment, to be published in 2014, will take a coastwide exploration of the growing nearshore aquaculture industry's positive and negative impacts as the need for fish habitat restoration and spatial planning becomes critical.

As part of its responsibility to provide the most up-to-date information on the habitat needs and ecosystem functions of Commission-managed species, the Habitat Program continues to update the habitat sections of the Commission FMPs. The Habitat Committee developed a whitepaper on habitat bottlenecks, which will serve as a guide for habitat management recommendations to help the recovery of depleted species when fisheries management has limited impact on a species' ability to rebuild. In 2013, the Commission adopted new habitat sections to the American Lobster and Red Drum FMPs. The Habitat Committee initiated the development of a sciaenid habitat source document, similar to the Atlantic Coast Diadromous Fish Habitat published in 2009. Information from the source document will be used to develop new habitat sections for the Commission-managed sciaenid species, such as Atlantic croaker, black drum and weakfish. In addition, the Habitat Program continues to collaborate with federal partners to increase consistency in fish habitat conservation. For example, as an ongoing effort, the Habitat Program is working with NOAA Fisheries and USFWS to review and update the Habitat Areas of Particular Concern designations for species managed by the Commission and/or regional fishery management councils.

Atlantic Coastal Fish Habitat Partnership

Beginning in 2006, the Commission contributed to the establishment and growth of the Atlantic Coastal Fish Habitat Partnership (ACFHP), an assembly of state, federal, tribal, and non-governmental groups whose mission is to conserve habitat for Atlantic coast diadromous, estuarine-dependent, and coastal fish species. ACFHP addresses habitat threats with a broad and coordinated approach, leveraging resources from many agencies, organizations, and corporations to make a difference for fish habitat. ACFHP operates under the purview of the National Fish Habitat Partnership (NFHP).

2013 was the fourth year of ACFHP's successful partnership with USFWS in funding on-the-ground fish habitat conservation projects. Two new projects were funded this year. The first, led by Cornell Cooperative Extension of Suffolk County, will focus on restoring eelgrass habitat in the Peconic Estuary, New York. The second, led by the University of North Florida, will focus on preventing shoreline erosion and promoting shoreline accretion using a combination

of mussel and oyster-based living shorelines, and Spartina alterniflora planting, in the Guana Tolomato Matanzas National Estuarine Research Reserve, Florida. For more information on these and other ACFHP-USFWS funded projects, please visit *www.atlanticfishhabitat.org/projects/fundedprojects/.*

In cooperation with its state partners, and with funding from NOAA Fisheries, ACFHP moved towards implementing an on-the-ground project to expand conservation mooring technology currently in place in coastal Massachusetts, to new locations along the Atlantic coast. Conservation mooring is a system designed to avoid contact with the seafloor and reduce physical damage to the submerged aquatic vegetation that provides valuable habitat for young fish. The system uses an elastic connection, akin to a bungee cord, to connect the surface buoy with the anchoring device. This eliminates any chain sweep that physically damages or eliminates vegetation growing on the seafloor.

ACFHP also officially endorsed several project proposals in 2013: a dam removal and riverine habitat restoration project in New Hampshire, a dam removal project in Connecticut, a salt marsh and tidal creek restoration project in North Carolina, and a culvert replacement and shoreline restoration project in South Carolina. In the absence of funding or other resources, endorsement is an opportunity to gain support from ACFHP for completed, current, or proposed projects. To learn more about ACFHP endorsed projects and proposals please visit *www.atlanticfishhabitat.org/projects/endorsedprojects/.*

In collaboration with its neighboring Fish Habitat Partnerships (FHPs), the Eastern Brook Trout Joint Venture (EBTJV) and the Southeast Aquatic Resources Partnership (SARP), ACFHP took steps to promote a more cohesive implementation of the National Fish Habitat Action Plan, which helps direct the work of protecting, restoring, and enhancing fish habitats across their collective 26 partner states. Through this "Whitewater to Bluewater" alliance among ACFHP, EBTJV, and SARP, the three FHPs are taking a more coordinated approach towards implementing their strategic plans, habitat assessments, and outreach activities. The three partnerships developed a Whitewater to Bluewater website for accessing information and products pertaining to the Fish Habitat Partnerships' collaborative efforts.

In addition to collaborating with its neighboring FHPs, ACFHP has embarked on a national cooperative initiative with nine other FHPs that are helping to protect, restore, and enhance fish habitats in coastal marine environments – the Pacific Marine and Estuarine FHP, the California Fish Passage Forum, the Hawaii FHP, the Kenai Peninsula FHP, the Mat-Su Basin Salmon Habitat Partnership, the Southeast Alaska FHP (candidate FHP), the Southwest Alaska Salmon Habitat Partnership, the Western Native Trout Initiative, and SARP. Initial products include quarterly newsletters and a poster highlighting the activities all of the FHPs are undertaking.

With the funding support of the North Atlantic Landscape Cooperative, ACFHP and its partners have begun work with Downstream Strategies, LLC to complete fish habitat assessments: Development of a Decision Support Tool to Assess Aquatic Habitats & Threats in North Atlantic Watersheds & Estuaries. Through the project, data will be assembled and conditions analyzed to understand distribution, habitat, and threats to inland, estuarine, and coastal aquatic species across the North Atlantic region. Stakeholders will be engaged during all stages of the project to ensure results are useful to managers of aquatic resources and habitats. The focus of the project is a flexible modeling process that has been widely adopted by aquatic and fisheries experts across the country. Based on multiple models of individual species or species groups, we can create species distribution maps, and identify and quantify threats and stressors to each species. We can then create a multi-criteria decision support tool that integrates the components of each model to provide an interactive and user-friendly mapping program for resource managers to visualize, rank, and manipulate inputs in order to prioritize areas for conservation action. More information on the project and the North Atlantic Landscape Conservation Cooperative can be found at *www.northatlanticlcc.org/.*

AWARDS

During 2013, the Commission had the privilege of presenting awards to several deserving individuals who have directly contributed to furthering the Commission's vision of healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015.

CAPTAIN DAVID H. HART AWARD

The Commission presented G. Ricthie White, long-time ASMFC Commissioner from New Hampshire and fisheries advocate, the Captain David H. Hart Award, its highest annual award, at the Commission's 72st Annual Meeting in St. Simons Island, Georgia.

Mr. White contributed first-hand to the recovery of striped bass and the steady increase of recreational and commercial fishing opportunities as a member of the ASMFC Striped Bass Advisory Panel in the 1990s. In 2000, Mr. White was selected by Governor Jeanne Shaheen to officially join the Commission as his state's Governor Appointee. During his fourteen years as an ASMFC Commissioner, he has actively participated in the Commission's fisheries management process, serving on a number of species management boards, sections and committees, and took on his first leadership role as Chair of the Northern Shrimp Section in 2006 and as past chair of the Governors Appointees. Mr. White now serves as the Chair of the Winter Flounder Board, and remains an influential member in numerous other areas of the Commission.

Mr. White is a dedicated and staunch advocate for science-based management. He consistently strives to put the resource first while balancing the needs of commercial and recreational anglers and coastal communities. His steadfast commitment can further be illustrated by his many contributions to fisheries and wildlife management that extend far beyond his work with the Commission. Mr. White serves on the Board of Directors of Ducks Unlimited and the American Bluefin Tuna Association, and was a founding member of the Coastal Conservation Association of New Hampshire, where he has been an active member of the Board of Directors since its inception. Recently, Mr. White has taken on the role of Coordinator for New Hampshire's Revolving Loan Fund, providing low interest loans for the New Hampshire fishing industry. He was also a founding member of Rescue Great Bay, where he promoted the importance of clean water for estuarine habitats and its value to coastal communities that rely on healthy marine resources for economic success.

As Commissioner, Mr. White has fostered an open approach to fisheries management and ownership of the Commission actions, holding the Commission to the highest standards of transparency and accountability in all that it does. His actions and demeanor truly embody the spirit and character of the Captain David H. Hart Award. Instituted in 1991, the award is named for one of the Commission's longest serving members, who dedicated himself to the advancement and protection of marine fishery resources.

ANNUAL AWARD OF EXCELLENCE

MANAGEMENT AND POLICY CONTRIBUTIONS

Mr. William J. Goldsborough
Chesapeake Bay Foundation

For 30 years, Mr. William J. Goldsborough has been on the front lines of fisheries management, advocating for science-based decision-making and the integration of ecological services into the Commission's species management programs. As senior scientist with the Chesapeake Bay Foundation, Mr. Goldsborough has been a steadfast voice supporting the conservation of Chesapeake Bay fisheries, effectively opposing legislation and other actions that might harm the Bay's resources. He played a central role in striped bass recovery beginning with the implementation of Maryland's moratorium in 1985 and through to the development of a conservation-based approach to reopening the fishery in 1990.

Passionate about the significance of healthy habitat on healthy fisheries, he advanced the importance of habitat as a critical common concern among fishermen. At the regional level, he brought together a diverse group of commercial and recreational fishermen, representing 16 fishing organizations, to adopt codes for protecting the Chesapeake Bay. Coastwide, he has left an indelible mark on the Commission's Habitat Program as one of the earliest members of the Habitat Committee and its longest serving chair, having served in that position for 10 years. Under his leadership and participation, the Committee has developed habitat sections for many Interstate FMPs and released numerous publications, all of which have helped to elevate understanding of habitat and its critical link to supporting abundant fisheries.

Mr. Goldsborough has been a tireless and articulate advocate for the need to address Atlantic menhaden's ecological role in the Commission's management process. He was instrumental in the development and adoption of Amendment 1 in 2001, which formally recognized menhaden as an important forage species. He helped plan and conduct a 2004 menhaden workshop, which highlighted the various ecological services menhaden provide and the need for ecological reference points in managing the resource. He was instrumental in developing the Chesapeake Bay reduction cap, beginning in 2006, and prompting a five-year Chesapeake Bay population research program. Over the past few years, Mr. Goldsborough vigorously campaigned for the development of ecological reference points. The recent adoption of interim reference points and a new management program for Atlantic menhaden are, in part, due to his efforts.

Mr. Thomas W. McCloy (retired)
New Jersey Marine Fisheries Administration
Mr. Thomas W. McCloy devoted his entire career, now extending into its 40th year, working for the betterment of New Jersey's marine resources and the fisheries they support. He began his career in the early 1970s as a biologist, conducting some of the first comprehensive population and habitat assessments of New Jersey's various shellfish resources. He was promoted to Bureau Chief for Marine Fisheries in 1990 and Administrator for Marine Fisheries Administration in 2001.

In the 1990s, Mr. McCloy became engaged in broader coastal resources issues, serving as New Jersey's administrative proxy to both the Commission and MAFMC. At the Commission, he played a key role in developing many of the initial FMPs in response to the requirements of the newly enacted Atlantic Coastal Fisheries Cooperative Management Act. These documents serve as the foundation for much of the Commission's management policies today.

For the past 12 years, as Marine Fisheries Administrator, Mr. McCloy has been a key link between upper management within the state's resource agency and its diverse fisheries constituency. His expertise and experience has guided these groups in ensuring that the appropriate and prudent actions are taken to the benefit of the resource first and the fisheries that rely on them second.

However, Mr. McCloy's greatest and most enduring success has been the mentorship of his staff. He demanded the best of them, expecting excellence, professionalism, and a commitment to safeguard fisheries resources for their sustainable use. In turn, he invested significant time in training staff on how to fairly evaluate the issues before them, listen carefully to all affected parties, understand the full scope of the problem, and use the best scientific information to make an informed decision. Due to this mentorship, a good number of his staff has served in important leadership roles, from chairing the majority of the Commission management boards to serving as vital contributors on species technical and stock assessment committees as well as the Management and Science Committee.

Dr. Malcolm Rhodes
South Carolina Governor Appointee to the Commission
A passionate steward of Atlantic coast fisheries and their habitats, Dr. Malcolm Rhodes has served as South Carolina's Governor Appointee to the Commission for eight years. From the outset, he has brought his leadership and expertise to bear, chairing both the Shad and River Herring Management Board and the Governors Appointees. He has also been a longstanding and active participant on the Administrative Oversight Committee and Executive Committee – two primary committees which set Commission administrative policies and provide guidance to the Executive Director on personnel, fiscal, and organizational matters.

As Chair of the Shad and River Herring Management Board, Dr. Rhodes led the states through the complex process of developing American shad sustainable fisheries plans for specific river systems. In doing so, he ushered in a new model and standard of fisheries conservation by turning the traditional, "Fish until you see there is a problem," management approach to a more precautionary and enlightened "Don't fish unless you can prove there won't be a problem" mindset.

A true gentleman conservationist, Dr. Rhodes' calm and kind demeanor have enabled him to provide sound leadership to the Commission as it works to sustain and rebuild Atlantic coast fish stocks.

Robert J. Ross, Jr. (retired)
NOAA Fisheries Northeast Region
Mr. Robert J. Ross, Jr., began his career in fisheries management 40 years ago as a student working in a NOAA Fisheries lab testing fish samples for heavy metals and contaminants. From there, he became a well-known port agent collecting important fisheries landings and biological data throughout New England. His outstanding work ethic and affable manner led to steady promotions within NOAA Fisheries from including a stint with the State/Federal and Constituent Office and later working in the Northeast Regional Office.

Mr. Ross has been an active and engaged participant in the Commission's fisheries management process for the past 15 years. His leadership and collaborative efforts have been critical to the continued success of several cooperatively managed species, including spiny dogfish, summer flounder, scup, black sea bass, and winter flounder. But, by far, his greatest contributions have been in the management of American lobster. As a member of the American Lobster Plan Development Team and Management Board, Mr. Ross played a vital role in ensuring the sustainable management of this valuable species coastwide. He worked closely with the lobster industry, scientists, and state partners to craft a unique and cutting-edge approach to sustainable lobster management which involves the implementation of area-based eligibility and trap transferability. His analytical abilities yielded important analyses of federal actions in support of Commission management goals and he drafted and published countless federal actions to complement state management measures for the American lobster fishery. Despite this program's increasing complexity, he remained committed to its success and health and vibrancy of the resource and industry it supports.

SCIENTIFIC, TECHNICAL AND ADVISORY CONTRIBUTIONS

Ms. Margaret Hunter
Maine Department of Marine Resources
Ms. Maggie Hunter has served on the Commission's Northern Shrimp Technical Committee for well over a decade and for the majority of those years, she provided critical leadership as its Chair. Over the course of her chairmanship, she directed the Technical

Committee's work through two peer-reviewed benchmark stock assessments, several annual stock assessment updates, two major plan amendments, and several addenda. Further, she has provided valuable scientific advice to the Northern Shrimp Section on quota setting, monitoring, reference points, and effort controls. She is one of those truly gifted scientists who is not only able to conduct sound scientific analysis, but is also able to effectively communicate the analysis and findings in a relatable and understandable way to both fishery managers and fishermen.

Ms. Hunter has been a dedicated scientist with the Maine Department of Marine Resources (DMR) for over 30 years, conducting field research on northern shrimp, Atlantic herring, sea urchins, groundfish, and other species, as well as providing valuable computer and analytical support for numerous fisheries projects. Since 2000, she has been responsible for the monitoring and assessment of Maine's sea urchin and northern shrimp fisheries. Both programs are critically important in that they provide the scientific foundation for management of these valuable fisheries.

Ms. Hunter's outstanding work ethic and commitment to detailed but understandable scientific advice has set an example for other scientists at the Maine DMR as well as those working on the Commission's technical and stock assessment committees.

Dr. Alexei Sharov
Maryland Department of Natural Resources
For over 15 years, Dr. Alexei Sharov has helped to advance the field of fisheries science through his work on state, regional, and coastwide fisheries stock assessments and research survey designs. As lead investigator, Dr. Sharov worked vigorously to further the body of scientific knowledge on Atlantic menhaden on the 2006-2009 project to examine the utility of LIDAR (Light Detection and Ranging) to estimate menhaden abundance in the Chesapeake Bay. He also made significant contributions to coastwide benchmark stock assessments for Atlantic striped bass and Atlantic menhaden. Regionally, Dr. Sharov has been an active participant on the NEFMC's Scientific and Statistical Committee for over five years. He has also played an important role in blue crab management since 1990, lending his expertise on blue crab stock assessments and leading in the design of the bay-wide winter dredge survey which is now the principal tool for blue crab management throughout the Chesapeake.

Mr. James Gartland
Virginia Institute of Marine Science
Mr. James Gartland has devoted his career to improving the quality and quantity of data that forms the basis of fisheries management decisions. Since 2001, he has served as Program Manager for the Virginia Institute of Marine Science's Multispecies Fisheries Research Program. The core of that Program includes two large-scale fisheries-independent trawl surveys, ChesMMAP and NEAMAP, and an accompanying laboratory program, with Mr. Gartland overseeing all aspects of both surveys and the post-cruise laboratory processing of samples. To illustrate the scope of work that Mr. Gartland oversees, in 2009, approximately 700 trawl tows were conducted in Chesapeake Bay and along the Atlantic coast, approximately 10,000 pairs of otoliths were collected (the majority of which have been processed), and the contents of roughly 9,500 fish stomachs were analyzed. Further, his oversight of ChesMMAP's collection of tissue samples from Atlantic striped bass has helped to monitor the prevalence of mycobacteriosis. This effort resulted in a published manuscript documenting mycobacteriosis-associated mortality in striped bass – the first documented case of mortality caused by a chronic disease in a wild finfish population.

LAW ENFORCEMENT CONTRIBUTIONS

Captain Dorothy Thumm (retired)
New York State Department of Environmental Conservation
Captain Dorothy Thumm dedicated her 40-year career to the protection and sustainable management of Atlantic coast fishery resources. A trailblazer in her field, she was the fourth woman to be hired as an environmental conservation officer by New York in 1980 and the first woman to be promoted to Lieutenant and then later Captain after completing her FBI Academy training. She served as Commanding Officer of New York's Marine Enforcement Unit from 2005 to 2013. An outstanding officer with an impeccable record, she worked collaboratively with the Bureau Marine Resources to target priority fishery enforcement needs, networking with a myriad of local, state, and federal agencies to ensure that fishery laws and regulations were properly enforced.

For the past seven years, Captain Thumm served as an active member of the Commission's Law Enforcement Committee (LEC), providing valuable input at both the state and regional level on issues affecting high visibility species such as American lobster, Atlantic sturgeon, striped bass, and tautog. Her strong leadership skills combined with her knowledge and understanding of fisheries and habitat issues were valuable assets to the Committee. A true team player, Captain Thumm represented the LEC on the Atlantic Sturgeon Board where she provided input, comments, and feedback on law enforcement issues. She also assisted in producing the Law Enforcement Committee's document *"Guidelines for Resource Managers on the Enforceability of Fishery Management Measures."*

New Jersey/NOAA Fisheries/Department of Justice Law Enforcement Team
Mr. Wayne Hettenbach, Mr. Patrick Duggan, Captain Mark Canale, Lieutenant Karl Yunghans and Special Agents Jeffrey Ray and James Cassin are six members of a joint New Jersey/NOAA Fisheries/Dept. of Justice Law Enforcement Team, who recently capped off a five-year investigation, ending with the conviction of seven defendants on 37 individual counts for trafficking in illegal oysters. The defendants, all from New Jersey, were overharvesting oysters from the Delaware Bay and then falsely recording their harvest on state and federal records. Further, the Delaware dealer who sold the illegal oysters helped cover up the overharvest by filing false state and federal health documentation. It is estimated that in some years the overharvest exceeded the fishermen's quota by more than 60%. All told, the defendants illegally obtained nearly 15,000 bushels of oysters from the Delaware Bay at a fair market value in excess of $1.2 million.

New Jersey officers initiated the investigation, with NOAA Fisheries joining soon after. The agencies worked hand-in-hand to covertly record the offloading and transfer of illegal oysters over state lines to Delaware. This surveillance, combined with information gained from coordinated surprise inspections and simultaneous search warrants, yielded tens of thousands of documents. For well over a year, state and federal agents and prosecutors worked to assemble the necessary evidence, prepare their case, and conduct hearings and testimony.

Ultimately, their tireless work, exemplary interagency coordination, and dedication to preserving our natural resources, led to the successful conviction of an extensive criminal ring that had been depleting a vital, keystone species in the Delaware Bay.

The Commission established the Annual Awards of Excellence in 1998 to recognize the important contributions of individuals to the success of the organization. The awards are given in the areas of law enforcement, legislation, management and policy, and scientific, technical & advisory contributions. Each year, the Commission honors the very best contributions in those areas.

FINANCIAL REPORT

This past year was financially challenging for non-profits and related organizations, especially those who depend on the federal budget for funding. Sequestration made accurate budgeting very difficult, and yet the Commission is pleased to note that it was able to conduct all programmatic activities as planned and keep its staff intact. Following is a financial snapshot of the Commission for the years ended June 30, 2013 and 2012. Detailed financial statements audited by the firm Jones and McIntyre, PLLC, are available from the Commission office.

ATLANTIC STATES MARINE FISHERIES COMMISSION
CONDENSED STATEMENT OF FINANCIAL POSITION INFORMATION
FOR THE YEARS ENDED JUNE 30, 2013 AND 2012

ASSETS

	2013	2012
CURRENT ASSETS:		
Cash and Investments	$ 1,213,474	$ 1,038,040
Grants and accounts receivable	621,273	237,103
Prepaid expenses	28,071	40,360
Total Current Assets	$ 1,862,818	$ 1,315,503
Property and Equipment, Net	$ 4,071,488	$ 4,219,725
TOTAL ASSETS	$ 5,934,306	$ 5,535,228

LIABILITIES AND NET ASSETS

CURRENT LIABILITIES:		
Accounts payable and accrued expenses	$ 1,228,062	$ 524,334
Deferred revenue and contract advances	172,043	110,739
Current maturities of long term debt	208,841	212,053
Total Current Liabilities	$ 1,608,946	$ 847,126
OTHER LIABILITIES:		
Long term debt	$ 1,385,694	$ 1,891,672
Obligation under interest rate swap	94,089	116,390
Total Other Liabilities	$ 1,479,783	$ 2,008,062
TOTAL LIABILITES	$ 3,088,729	$ 2,855,188
UNRESTRICTED NET ASSETS	2,845,577	2,680,040
TOTAL LIABILITIES AND NET ASSETS	$ 5,934,306	$ 5,535,228

ATLANTIC STATES MARINE FISHERIES COMMISSION
CONDENSED STATEMENT OF ACTIVITIES INFORMATION
FOR THE YEARS ENDED JUNE 30, 2013 AND 2012

	2013	2012
REVENUE:		
Contract reimbursements	$ 6,266,019	$ 5,331,008
Contributions from member states	603,421	574,682
Other	40,543	51,485
Total Revenue	$ 6,909,983	$ 5,957,175
EXPENSES:		
Salaries and fringe benefits	$ 3,248,704	$ 3,344,423
Subcontracts	1,880,834	684,791
Travel	880,017	917,429
Other	734,891	798,973
Total Expenses	$ 6,744,446	$ 5,745,616
CHANGE IN NET ASSETS	$ 165,537	$ 211,559
NET ASSETS, BEGINNING OF YEAR	2,680,040	2,468,481
NET ASSETS, END OF YEAR	$ 2,845,577	$ 2,680,040

Staff

Robert E. Beal
Executive Director

Deke Tompkins
Legislative Executive Assistant

Laura C. Leach
Director of Finance and Administration

Cecilia Butler
Human Resources Administrator

Lisa Hartman
Staff Assistant

Stefanie Miles
Membership Assistant

Cynthia Robertson
Meetings Assistant

Tina L. Berger
Director of Communications

Patrick Campfield
Fisheries Science Director

Katie Drew, Ph.D.
Senior Stock Assessment Scientist

Emily Greene
Atlantic Coastal Fish Habitat Partnership Coordinator

Jeff J. Kipp
Stock Assessment Scientist

Shanna L. Madsen
Fisheries Science Coordinator

Genevieve M. Nesslage, Ph.D.
Senior Stock Assessment Scientist

Toni Kerns
Director, Interstate Fisheries Management Program

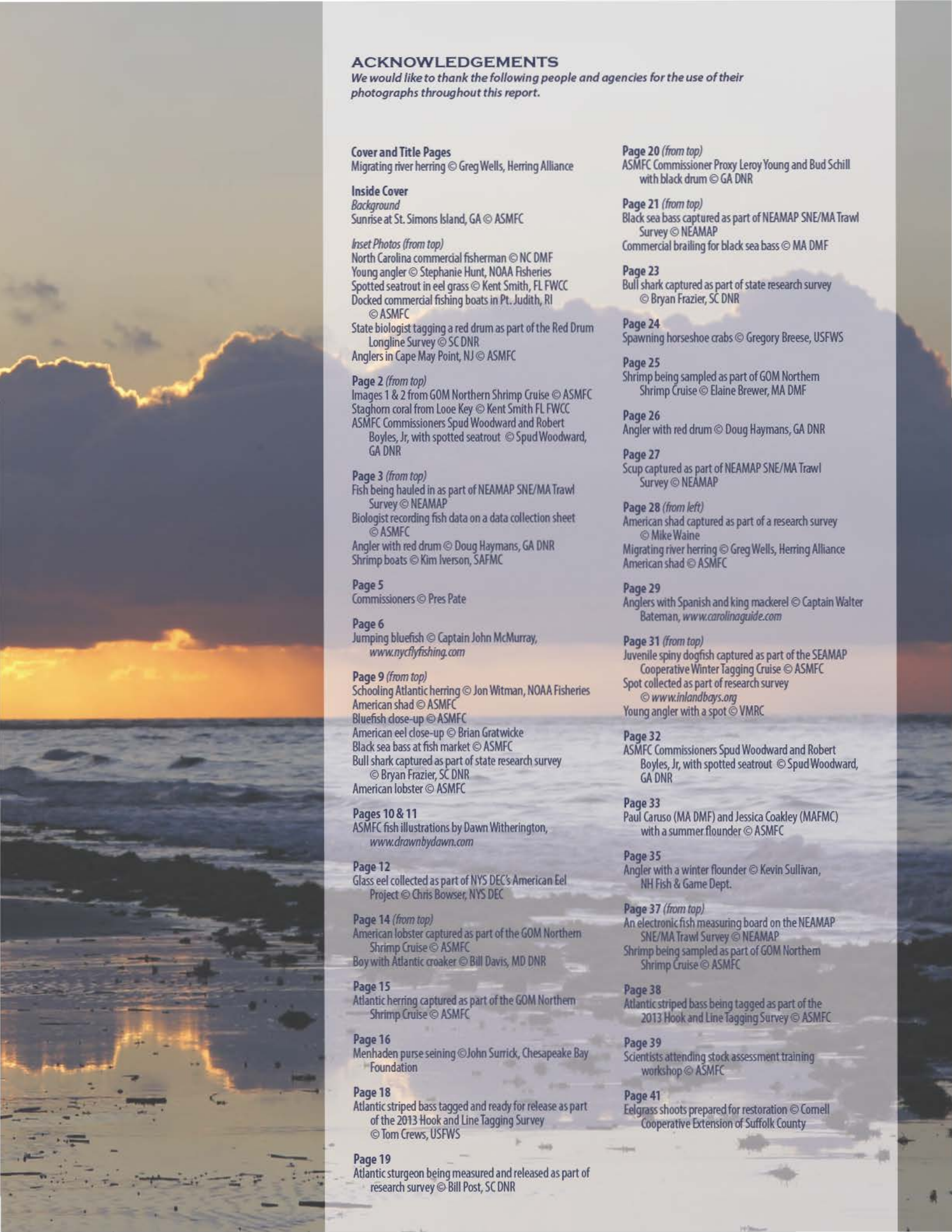
Marin Hawk
Fishery Management Plan Coordinator

Kirby Rootes-Murdy
Fishery Management Plan Coordinator

Kate Taylor
Senior Fishery Management Plan Coordinator

Michael Waine
Fishery Management Plan Coordinator

Melissa Yuen
Fishery Management Plan Coordinator



ACKNOWLEDGEMENTS

We would like to thank the following people and agencies for the use of their photographs throughout this report.

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Atlantic herring captured as part of the GOM Northern Shrimp Cruise © ASMFC

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Menhaden purse seining © John Surrick, Chesapeake Bay Foundation

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Atlantic striped bass tagged and ready for release as part of the 2013 Hook and Line Tagging Survey © Tom Crews, USFWS

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Atlantic sturgeon being measured and released as part of research survey © Bill Post, SC DNR

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ASMFC Commissioner Proxy Leroy Young and Bud Schill with black drum © GA DNR

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Black sea bass captured as part of NEAMAP SNE/MA Trawl Survey © NEAMAP
Commercial brailing for black sea bass © MA DMF

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Bull shark captured as part of state research survey © Bryan Frazier, SC DNR

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Spawning horseshoe crabs © Gregory Breese, USFWS

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Shrimp being sampled as part of GOM Northern Shrimp Cruise © Elaine Brewer, MA DMF

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Angler with red drum © Doug Haymans, GA DNR

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Scup captured as part of NEAMAP SNE/MA Trawl Survey © NEAMAP

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American shad captured as part of a research survey © Mike Waine
Migrating river herring © Greg Wells, Herring Alliance
American shad © ASMFC

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Anglers with Spanish and king mackerel © Captain Walter Bateman, *www.carolinaguide.com*

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Juvenile spiny dogfish captured as part of the SEAMAP Cooperative Winter Tagging Cruise © ASMFC
Spot collected as part of research survey © *www.inlandbays.org*
Young angler with a spot © VMRC

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ASMFC Commissioners Spud Woodward and Robert Boyles, Jr, with spotted seatrout © Spud Woodward, GA DNR

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Paul Caruso (MA DMF) and Jessica Coakley (MAFMC) with a summer flounder © ASMFC

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Angler with a winter flounder © Kevin Sullivan, NH Fish & Game Dept.

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An electronic fish measuring board on the NEAMAP SNE/MA Trawl Survey © NEAMAP
Shrimp being sampled as part of GOM Northern Shrimp Cruise © ASMFC

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Atlantic striped bass being tagged as part of the 2013 Hook and Line Tagging Survey © ASMFC

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Atlantic States Marine Fisheries Commission
1050 North Highland Street, Suite 200 A-N
Arlington, Virginia 22201
703.842.0740 www.asmfc.org