Atlantic States Marine Fisheries Commission

Sustainably Managing Atlantic Coastal Fisheries

ANNUAL REPORT 2018

Annual Report 2018

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

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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
ACL	Annual catch limits
ARM	Adaptive Resource Management
AMG	Atlantic migratory group
APAIS	Access Point Angler Intercept Survey
ASMFC	Atlantic States Marine Fisheries Commission (also referred to as the Commission)
B_{MSY}	Biomass at maximum sustainable yield
CATI	Call Assisted Telephone Interview
CESS	Committee on Economics and Social Sciences
CMP FMP	Coastal Migratory Pelagics FMP
CPUE	Catch-per-unit-effort
DPS	Distinct population segments
DW	Dressed weight
eDr/mobile	Electronic data reporting/mobile
EESA	Episodic events set aside
ERPs	Ecological-based reference points
ESA	Endangered Species Act
eVTR	Electronic vessel trip reporting
F	Fishing mortality
FHTS	For-hire Telephone Survey
FMP	Fishery Management Plan
FY	Fiscal year
GARFO	Greater Atlantic Regional Fisheries Office
GBK	Georges Bank
GIS	Geographic information system
GOM	Gulf of Maine
GOM/GBK	Gulf of Maine/Georges Bank
HMS	Highly Migratory Species
ISFMP	Interstate Fisheries Management Program
IFA	Interjurisdictional Fisheries Act
ITC	Interstate Tagging Committee
IUCN	International Union for the Conservation of Nature
LCS	Large coastal shark
LPTS	Large Pelagic Telephone Survey
MAFMC	Mid-Atlantic Fishery Management Council
MRIP	Marine Recreational Information Program
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
NFHP	National Fish Habitat Partnership
NGO	Non-governmental organization
NMFS	National Marine Fisheries Service; also known as NOAA Fisheries
NOAA	National Oceanic and Atmospheric Administration
PDT	Plan Development Team
PID	Public Information Document
PRT	Plan Review Team
RHL	Recreational harvest limit
RSA	Research Set-Aside
SAFIS	Standard Atlantic Fisheries Information System
SAFMC	South Atlantic Fishery Management Council
SARP	Southeast Atlantic Aquatic Resources Partnership
SAS	Stock Assessment Subcommittee
SAV	Submerged aquatic vegetation
SCA	Statistical catch-at-age
SCS	Small coastal shark
SEAMAP	Southeast Area Monitoring and Assessment Program
SEDAR	SouthEast Data, Assessment, and Review Process
SFMP	Sustainable fishery management plan
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
TEWG	Technical Expert Working Group
TLA	Traffic Light Analysis
USFWS	U.S. Fish and Wildlife Service

Table of Contents

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

Sustainably Managing Atlantic Coastal Fisheries

GOALS

- Rebuild, maintain, fairly allocate, and promote Atlantic coastal fisheries
- Provide the scientific foundation for, and conduct stock assessments to support, informed management actions
- Promote compliance with fishery management plans to ensure sustainable use of Atlantic coast fisheries
- Protect and enhance fish habitat and ecosystem health through partnerships and education
- Strengthen stakeholder and public support for the Commission
- Advance Commission and member states' priorities through a proactive legislative policy agenda
- Ensure the fiscal stability and efficient administration of the Commission

COMMISSIONER VALUES

- Effective stewardship of marine resources through strong partnerships
- Decisions based on sound science
- Long-term ecological sustainability
- Transparency and accountability in all actions
- Timely response to new information through adaptive management
- Balancing resource conservation with the economic success of coastal communities
- Efficient use of time and fiscal resources
- Work cooperatively with honesty, integrity, and fairness

Commissioners

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Stephen R. Train

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Senator Ronnie W. Cromer
Dr. Malcolm Rhodes

GEORGIA
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Rep. Chad Nimmer
A.G. “Spud” Woodward

FLORIDA
Jessica McCawley
Senator Thad Altman
William R. Orndorf

Preface

The Atlantic States Marine Fisheries Commission (Commission) was formed 77 years ago by the 15 Atlantic coastal 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 cooperatively, in collaboration with the federal government. With this approach, the states uphold their collective fisheries management responsibilities in a cost-effective, timely, transparent, and responsive fashion.

For 2018, the Commission's current budget is $11.6 million. The base funding ($733,444) 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). The Commission also receives funds from NOAA Fisheries to carry out the provisions of the Interjurisdictional Fisheries Act (IFA) (P.L. 99-659). The accompanying graph illustrates the benefits states receive from ACFCMA and IFA.

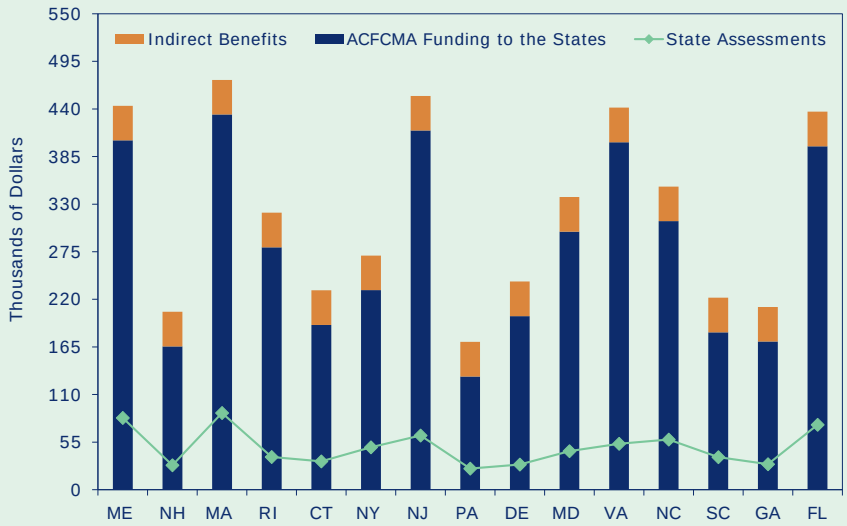
The U.S. Fish and Wildlife Service (USFWS) also provides grant funding to the Commission through its Federal Aid in Sport Fish Restoration Program (Wallop/Breaux).

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 and the Fisheries Information Network line in the NOAA Fisheries budget. In 2016, through ACCSP, the Commission was given responsibility for oversight and management for state conduct of the Access Point Angler Intercept Survey (APAIS). Funding for this program is provided by NOAA Fisheries.

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.

Return on State Assessments to the Commission

Sources: FY19 ASMFC Assessments and FY18 ACFCMA & 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

Robert E. Beal

On behalf of the Commission and the 15 Atlantic coastal states, I am pleased to present our 2018 Annual Report. The report fulfills our obligation to inform Congress on the Commission's use of public funds, provides our stakeholders with a summary of activities and progress in carrying out our cooperative stewardship responsibilities, and reflects our Commissioners' commitment to accountability and transparency in all they do to sustainably manage the fisheries under their care.

We remain grateful to Congress, the Administration, our Governors and state legislators for their continued support. Many of our accomplishments would not have been possible without their trust and confidence. In addition, the technical support provided by NOAA Fisheries and USFWS staff to the Commission and states is an invaluable component of our interstate fisheries management, science, and data collection activities.

2018 saw significant progress on plan amendments for summer flounder and Atlantic cobia, both slated for final action in 2019. The Summer Flounder Amendment considers modifying management of the commercial fishery, while the Cobia Amendment 1 would establish recommendations for measures in federal waters in response to the species being transferred to Commission-led management. The Commission also approved nine addenda modifying the management programs for American eel; American lobster; Jonah crab; black drum; coastal sharks; northern shrimp; and summer flounder, scup, and black sea bass.

On the science front, benchmark stock assessments were approved for Atlantic herring and northern shrimp, and significant progress was made on seven others: Atlantic menhaden, Atlantic striped bass, summer flounder, American shad, American lobster, Atlantic cobia, and horseshoe crab. The Commission's Ecological Reference Points Workgroup and Atlantic Menhaden Stock Assessment Subcommittee continued to explore modeling approaches to evaluate the health of the stock and inform the management of the species in an ecological context. Both benchmark assessments are currently scheduled for peer review in late 2019.

Throughout 2018, Commissioners addressed a number of challenging issues. In response to the continued depleted condition of the northern shrimp resource and sustained low levels of biomass and recruitment, the Northern Shrimp Section extended the moratorium on commercial fishing through 2021. Should biomass and recruitment improve, it would take several years for those shrimp to be commercially harvestable. With record low numbers of Atlantic right whales, the Commission and the states have been actively engaged in efforts to protect the large mammals through our American Lobster Board and the federal Atlantic Large Whale Take Reduction Team. There was a bit of good news in late-December as the first right whale calf was spotted in two years. Our partners at NOAA Fisheries also continued to increase emphasis on aquaculture in 2018. As such, the Commission established an Aquaculture Committee and populated it with members recommended by the states.

At our Annual Meeting in New York City, the Commission reviewed and approved the 2019 Action Plan and discussed next steps in the development of the 2019 – 2023 Strategic Plan. With 27 species currently managed by the Commission, finite staff time, Commissioner time and funding, as well as a myriad of other factors impacting marine resources, Commissioners recognize the absolute need to prioritize activities. With that in mind, the 2019 Action Plan prioritizes issues into high and medium importance, focusing Commission resources on high priority issues, with lower priority issues addressed as resources allow.

ACCSP continued to build upon its suite of electronic reporting tools for commercial and recreational fisheries. Although first authorized for federal recreational and for-hire trip reporting by the Greater Atlantic Region back in 2016, ACCSP's eTrips/Mobile application became the go-to for-hire trip reporting application this year after the Mid-Atlantic Fishery Management Council's for-hire electronic vessel trip report (eVTR) rule went into effect. The application was also modified to accommodate additional reporting requirements in preparation for a similar South Atlantic Fishery Management Council-issued for-hire reporting rule that will go into effect in 2019. Additional improvements to electronic trip reporting include the development of a tablet application, the Dockside Interceptor, to enable state APAIS interviewers to record and transmit angler intercept data electronically, rather than on paper forms. The new technology is intended for deployment in the 2019 fishing season. At the request of its stakeholders, ACCSP expanded its role in data dissemination for science and management purposes, participating in stock assessments and fulfilling more than 100 custom data requests.

The Commission met a number of obstacles, both internal and external, throughout 2018. Some were resolved and others will continue to challenge us in 2019 and beyond. However, the fabric of the Commission and our commitment to cooperatively managing Atlantic coast fisheries remains strong. At the end of the day, our goal remains the same – healthy, sustainable fisheries and thriving fishing communities. Working together, we can achieve extraordinary things; however, it takes the steadfast commitment of each state and our federal partners to achieve that potential.

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

Report from the Chair

James J. Gilmore

It was my pleasure and honor to present this, my Chair's Report, to my fellow Commissioners as both their Chair and host of the Commission's 77th Annual Meeting in New York City in October 2018. The meeting held special meaning for me. As a New Yorker, born and raised, and someone who has worked in the city (and in the South Tower of the Twin Towers), I am profoundly proud of this city and its people, who have had to come together to deal with one of the nation's worst tragedies. As horrible as 9/11 was, the ability of New Yorkers to set aside their differences and personal losses to come to each other's aid was inspiring and uplifting. It renewed my faith in the goodness of people and their ability to unite and accomplish great feats for a common cause.

My fellow New York Commissioners and I felt so strongly about this notion of strength through unity – the ability of people with diverse interests and backgrounds to unify for a greater good – that we chose to use the image of the One World Trade Center as our Annual Meeting logo.

New York also has immense historical significance to the Commission. It was one of a handful of states that came together through the Eastern States Conservation Conference in 1937 to discuss the concept of forming an interstate commission for the purpose of coordinating state marine fisheries activities along the Eastern Seaboard. Upon the Commission's establishment in 1940, New York served as its headquarters with Wayne Heydecker, New York State Regional Representative for the Council of State Governments, serving as the Commission's Secretary-Treasurer, a position he would hold for the next two decades. The Roosevelt Hotel itself played an important part in the Commission's history, serving as the meeting place for 11 out of the first 17 Annual Meetings. It's at the Roosevelt Hotel where Commissioners solidified their commitment to seek solutions that were in the best interests of their shared fishery resources.

So now we find ourselves back at the Roosevelt Hotel 60 years later, dealing with many of the same issues – declining fish stocks, changing environmental conditions, and growing stakeholder demands. And, I'm here to tell you, as it was so many years ago and throughout the evolution of the Commission, we are all in this together. We are all inextricably connected and it's reflected in our shared interests and the challenges we face. Just look at the resources we manage. They show no loyalty to one region or state. They move up and down the coast, inshore and offshore. Filling the roles of predators and prey, seeking optimal environmental conditions to maximize their survival, and striving to produce more offspring than are removed - all part of one big interconnected ecosystem. No one piece of it belongs to New York, or Maine, or North Carolina. And yet we divvy up the resources, each of us seeking the biggest piece of pie we can get. I don't blame us, I'm in there with the next guy trying to do what I think is right for our fishermen. But, in doing so, in our struggle to ensure that we get our fair piece, I think we can easily lose sight of the larger picture, of all the reasons why we all choose to be in fisheries management: our love of the ocean and its marine resources, and the deep desire to be effective stewards and ensure that these resources are available to those who want to use them now and over the long-run.

While the issues may seem daunting, they are not insurmountable. What is required is a renewed commitment by all of us to work through our challenges with respect for each other and the integrity of our process.

As your Chair, I see it as my responsibility to remind you why we are all here and why now, more than ever, we need to reenergize ourselves and recommit to our shared vision of sustainable Atlantic coastal fisheries. Our greatest strength is in our ability to work cooperatively for the benefit of the fishery resources under our care and those that depend on these resources – recreational anglers and the industries they support, commercial fishermen and processors, who enable consumers to purchase and eat fresh fish, as well as those who place value in the non-consumptive aspects of our coastal resources.

The issues before us are great. They include changing ocean conditions and their effect on species distribution and survival; reallocation of resources between recreational and commercial sectors, as well as between the states; increased fisheries/protected species interactions; responding to recent changes in recreational catch estimates; competing ocean uses; and the challenge of maintaining an engaged membership given the ebb and flow of veteran and new Commissioners, in addition to always present fiscal limitations. While the issues may seem daunting, they are not insurmountable. What is required is a renewed commitment by all of us to work through our challenges with respect for each other and the integrity of our process. When we stray from our intended goal, we need to remind ourselves to take a step back and refocus our energies for the common good. We also must remember to not get caught up in us versus them when we do not get what we want. Let's not lose sight of the fact that we are the Commission. What happens to one state ultimately impacts us all.

Fortunately, we have the continued support of Congress and our federal partners, and an outstanding staff to arm us with the needed resources and information to make informed, balanced decisions. And, we have each other – intelligent, dedicated, passionate, innovative stewards of our Atlantic coastal fisheries. Together, there is nothing we cannot accomplish.

It has been a great honor to serve as your Chair this past year. I am excited about the opportunities and challenges ahead and look forward to working with you all in the coming year.

Stock Status Overview

In 2018, the Commission maintained sustainable fisheries for a number of rebuilt species such as Gulf of Maine/ Georges Bank American lobster, Atlantic cobia, Atlantic menhaden, bluefish, and black sea bass. The Commission started a new amendment for Atlantic cobia, updated management programs for ten species (via addenda), and initiated three addenda to examine issues including spawning protections for Atlantic herring and resiliency in the Georges Bank American lobster fishery. The Commission and the Mid-Atlantic Fishery Management Council (MAFMC) continued work on the development of an amendment to the Summer Flounder Fishery Management Plan (FMP) and initiated an amendment for bluefish. While these are positive steps forward, there is still substantial work ahead to rebuild valuable Atlantic coastal fishery resources such as American shad, American eel, river herring, Southern New England American lobster and winter flounder.

The Commission maintains its role as the deliberative forum for the Atlantic coastal states to come together to 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 changing ocean conditions, competing ocean uses, predator/prey interactions and marine mammal interactions, in addition to the more traditional considerations of stock maintenance, rebuilding, and allocation of fisheries resources.

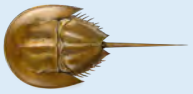
The following section provides a summary of the status of the species managed by the Commission and highlights management activities that occurred throughout 2018. For this summary, a stock that is experiencing overfishing has fish removed at a rate faster than the population can sustain in the long run. Over the long-term, this will lead to declines in the population. An overfished determination occurs when stock biomass falls below the biomass 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.

Recovering/rebuilding occurs when stocks exhibit stable or increasing trends and stock biomass is between the threshold and the target levels. A rebuilt/sustainable stock is one whose biomass is equal to or above the biomass level to ensure population sustainability. When between benchmark assessments, a stock can still be considered rebuilt/ sustainable if it drops below the target, but remains above the threshold. Concern is when a stock develops emerging issues, e.g., increased effort, declining landings, or impacts due to environmental conditions. Unknown stock status occurs when there is no accepted stock assessment to estimate the stock condition.

Quick Guide to Stock Status

STATUS/ TRENDS	SPECIES		OVERFISHED	OVERFISHING	REBUILDING STATUS & SCHEDULE
⬇		American Eel	Depleted	Unknown	2017 stock assessment update indicates resource remains depleted
✓		American Lobster – Gulf of Maine/ Georges Bank (GOM/GBK)	Not Depleted	N	GOM/GBK stock abundance has increased since the 1980s. SNE stock has collapsed and is experiencing recruitment failure.
⬇		Southern New England (SNE)	Depleted	N	
⬇		American Shad	Depleted	Unknown	Depleted on coastwide basis; Amendment 3 established 2013 moratorium unless river-specific sustainability can be documented; benchmark assessment scheduled for 2020
?		Atlantic Croaker	Unknown	Unknown	Status unknown; TLA indicates relatively low harvest in 2017; no management action was triggered
✸		Atlantic Herring	N	N	2018 stock assessment indicates declines in total biomass, SSB, and recruitment over the past 5 years
✓		Atlantic Menhaden	N	N	2018 and 2019 TACs set at 216,000 mt
⬆/⇔		Atlantic Striped Bass	N	N	Rebuilt; harvest reductions implemented in 2015; fishing mortality estimated below target level in 2015, but female SSB continues to decline towards the threshold; benchmark assessment scheduled for release in 2019
⬇		Atlantic Sturgeon	Depleted	N	40+ year moratorium implemented in 1998; listed in 2012 under the ESA; 2017 benchmark assessment indicates stock is depleted coastwide though slow recovery has been occurring since 1998 and total mortality is sustainable
✓		Black Drum	N	N	FMP approved in 2013; status based on 2015 benchmark assessment, which found 2012 median biomass well above median biomass that produces MSY
✓		Black Sea Bass	N	N	Improved recruitment and declining fishing mortality rates since 2007 have led to steady increases in SSB; operational assessment scheduled for 2019
✓		Bluefish	N	N	Biomass above threshold but below target; operational assessment scheduled for 2019
✸		Coastal Sharks	Varies by species & species complex		
✓		Cobia	N	N	FMP approved in 2017; SEDAR research track assessment scheduled for 2019 and SEDAR operational stock assessment scheduled for 2020

✓= Rebuilt /Sustainable ⇔ = Recovering/Rebuilding ⬇ = Depleted ? = Unknown ✸ = Concern

STATUS/ TRENDS	SPECIES		OVERFISHED	OVERFISHING	REBUILDING STATUS & SCHEDULE
✸		Horseshoe 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 has been used since 2013 to set harvest levels for horseshoe crabs of DE Bay origin; benchmark assessment scheduled for 2019
?		Jonah Crab	Unknown	Unknown	No range-wide assessment; Interstate FMP adopted in August 2015
🡻		Northern Shrimp	Depleted	N	2018 benchmark assessment indicates biomass has declined precipitously since 2010 and recruitment in recent years has been low; fishery moratorium in place since 2014 to protect remaining spawning population
⇔	Red Drum 	Northern Region	Unknown	N	sSPR above target and threshold SPRs
		Southern Region	Unknown	N	sSPR above target and threshold SPRs, though high uncertainty
🡻		River Herring	Depleted	Unknown	2017 assessment update indicates stock remains depleted on coastwide basis; Amendment 2 established 2012 moratorium unless river-specific sustainability can be documented
✓		Scup	N	N	Rebuilt
✓		Spanish Mackerel	N	N	Rebuilt
✓		Spiny Dogfish	N	N	Rebuilt since 2008
?		Spot	Unknown	Unknown	Status unknown; TLA indicates relatively low harvest in 2017; no management action was triggered
?		Spotted Seatrout	Unknown	Unknown	Omnibus Amendment includes measures to protect spawning stock & establishes 12" minimum size limit
✸		Summer Flounder	N	Y	2016 assessment update shows biomass trending downward since 2010; benchmark stock assessment scheduled for release in 2019
✸	Tautog 	MA-RI	N	N	Amendment 1 establishes regional stock units and reference points
		Long Island Sound	Y	Y	
		NJ-NY Bight	Y	Y	
		DE / MD / VA	Y	N	
🡻		Weakfish	Depleted	N	6-year rebuilding period if spawning stock biomass < threshold level; restricted harvest since 2009; stock assessment update scheduled for 2019
✸	Winter Flounder 	Gulf of Maine	Unknown	N	Stock biomass is unknown; unknown why stock is not responding to low catches and low exploitation rates
🡻		Southern New England/ Mid-Atlantic	Y	N	Current biomass at 18% of SSB target based on 2017 operational assessment

Species Highlights

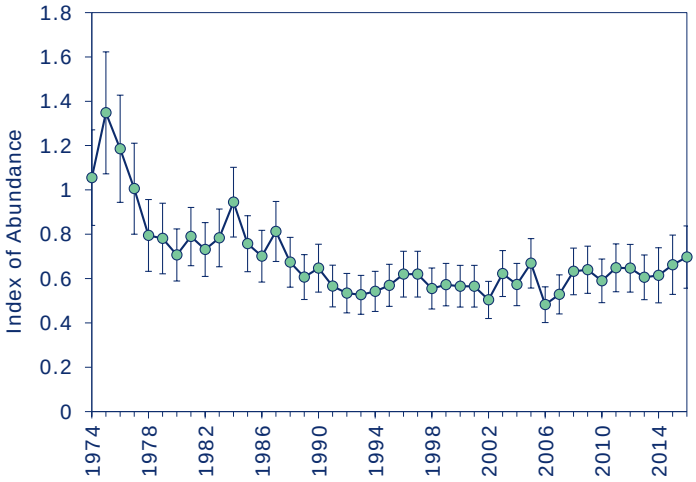
AMERICAN EEL

American eel are a challenging species to manage on a coastwide basis for a number of reasons. During their life-span, eel will navigate oceanic waters, coastal estuaries, and inland freshwater river systems, placing the species under a myriad of management authorities, from international to multiple federal, state and local governments. From a biological perspective, much is still unknown about the species. Information is limited about their abundance, status at all life stages, and habitat requirements. According to the 2017 stock assessment update, the American eel population remains depleted in U.S. waters. The stock is at or near historically low levels due to a combination of historical overfishing, habitat loss, food web alterations, predation, turbine mortality, environmental changes, toxins and contaminants, and disease. Trend analyses of abundance indices indicate large declines in abundance of yellow eels during the 1980s through the early 1990s, with primarily neutral or stable abundance from the mid-1990s through 2016.

In 2018, the American Eel Management Board approved Addendum V to the FMP, increasing the yellow eel coastwide cap starting in 2019 to 916,473 pounds; adjusting the method (management trigger) to reduce total landings to the coastwide cap when the cap has been exceeded; and removing the implementation of state-by-state allocations if the management trigger is met. Management action will be initiated if the yellow eel coastwide cap is exceeded by more than 10% in two consecutive years and only those states accounting for more than 1% of the total yellow eel landings will be responsible for adjusting their measures. A workgroup has been formed to define the process for equitably reducing landings among the affected states when the management trigger has been met. The Addendum also maintains Maine's glass eel quota of 9,688 pounds.

40+ Year Index of Abundance of Yellow American Eel along the Atlantic Coast, 1974-2016

Source: ASMFC American Eel Stock Assessment Update, 2017



The error bars represent the standard errors about the estimates.

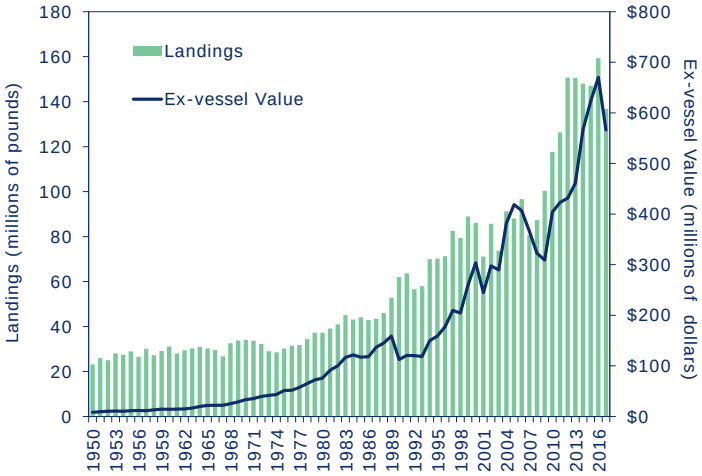
The commercial eel fishery primarily targets yellow eel. From the mid-1970s to the early 1980s, American eel supported significant fisheries, with landings ranging from 2.5 to 3.6 million pounds. Since 1987, coastwide landings have remained below 1.6 million pounds. State-reported landings of yellow eels in 2017 totaled approximately 851,637 pounds, a 10% decrease from 2016 and below the coastwide quota.

Since 2011, there has been a growing international demand for glass eels (an early life stage of American eel) for aquaculture purposes, which has increased landings and the price per pound of glass eels. In 2017, total glass eel harvest from Maine and South Carolina remained below Maine's quota. The Board also approved Maine's glass eel aquaculture proposal for the 2019 fishing season, allowing for an additional 200 pounds of glass eels to be harvested for development in domestic aquaculture facilities. This amount is in addition to Maine's 2019 glass eel quota of 9,688 pounds.

AMERICAN LOBSTER

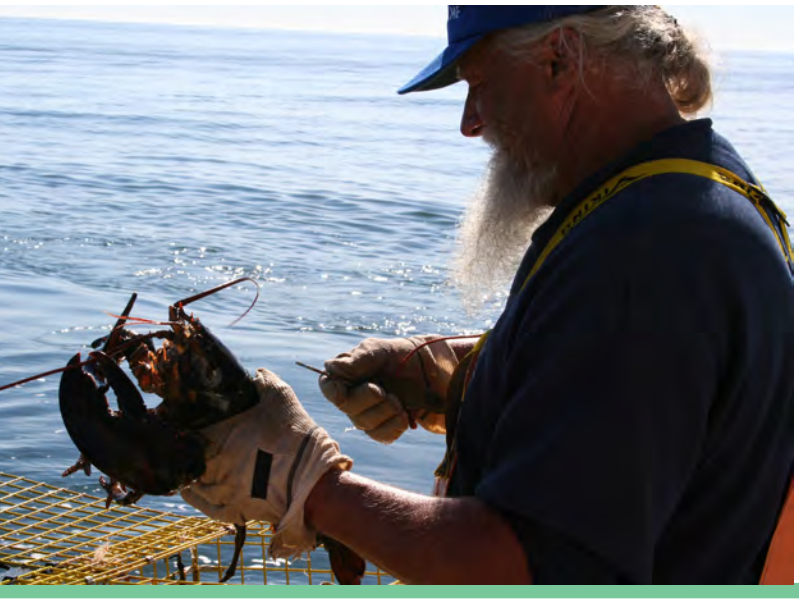
The American lobster fishery is one of the most valuable fisheries along the Atlantic coast. However, there are several important issues facing the industry including changes in ocean conditions, reductions in bait availability, and the decline of the Atlantic right whale population. In 2017, 136.7 million pounds of lobster were landed coastwide, representing a $566.4 million

American Lobster Landings and Ex-Vessel Value
Source: ACCSP Data Warehouse, 2018



ex-vessel value. The vast majority of these landings came from the Gulf of Maine/Georges Bank (GOM/GBK), where the stock is at record high abundance. In contrast, there has been an overall decrease in the percentage of landings from the Southern New England stock, which is depleted and experiencing recruitment failure.

In 2018, the American Lobster Management Board approved Addendum XXVI to Amendment 3 to the FMP. The Addendum addresses concerns regarding limitations in existing reporting requirements by expanding the mandatory harvester reporting data elements, improving the spatial resolution of harvester data, establishing a five-year timeline for implementation of 100% harvester reporting, and prioritizing the development of electronic harvester reporting. In addition, the Addendum improves biological sampling requirements and encourages states with more than 10% of coastwide landings in either the lobster or Jonah crab fisheries to conduct additional sampling trips.



Throughout 2018, the Board continued to develop Draft Addendum XXVII. The document was initiated to increase the resiliency of the GOM/GBK stock by considering the standardization of management measures across Lobster Conservation Management Areas. This is a proactive management action in response to signs of reduced lobster settlement in the GOM. While trawl surveys and ventless trap surveys continue to show high levels of lobster abundance, the young-of-year surveys show declines since 2013. This decrease could foreshadow a decline in recruitment and landings. Work on this addendum will continue in 2019.

A prominent issue facing the lobster fishery has been the decline of the endangered Atlantic right whale population. A recent stock assessment showed declines have been occurring since 2010. In addition, NOAA Fisheries declared an unusual mortality event in 2017 after there were 17 confirmed mortalities due to entanglement and vessel strikes. Given the potential entanglement risk posed by lobster gear, Commission staff and Board members have participated on the Atlantic Large Whale Take Reduction Team, which is charged with reducing the serious injury and mortality of right whales as the result of fishing gear. The Board is also considering what action, if any, should be taken to modify the FMP to reduce the threats to right whales.

Work on the next benchmark stock assessment for American lobster continued throughout 2018, the results of which will be presented to the Board in 2020.

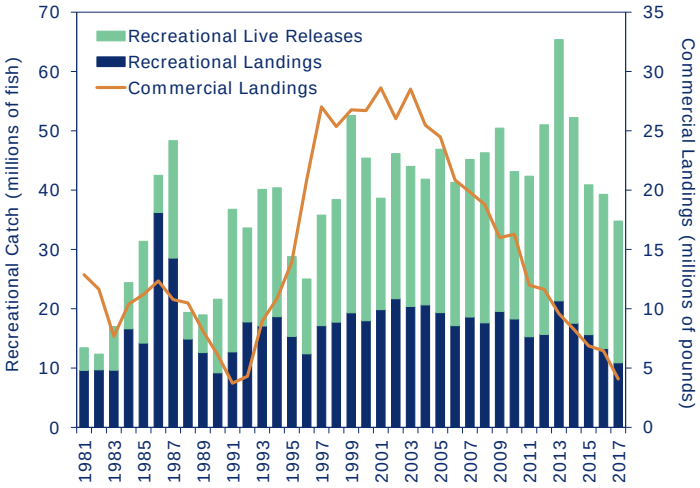
ATLANTIC CROAKER

Atlantic croaker is an inshore, bottom-dwelling fish found in coastal waters from the GOM to Argentina. Sought by recreational anglers and commercial fishermen alike, an estimated nine million pounds of croaker were landed in 2017, with approximately 46% landed by the commercial sector and 54% harvested by recreational anglers. This represents a 27% decline in total landings from 2016 and an 81% decline in total landings from the 1981-2017 time series peak in 2003. Virginia harvested the majority of croaker, with approximately 70% of the harvest from each sector.

In 2017, a benchmark stock assessment was completed. This assessment used a stock synthesis model to address a major source of uncertainty from previous assessments – the magnitude of croaker bycatch in South Atlantic shrimp trawls. However, due to conflicting trends in abundance and harvest, as well as other uncertainties, this assessment was not recommended for management use.

A traffic light analysis (TLA) is typically conducted each year to evaluate fishery trends and develop state-specific management actions (e.g. bag limits, size restrictions, time and area closures, and gear restrictions) when harvest and abundance thresholds are exceeded for three consecutive years. The name comes from assigning a color (red, yellow or green) to categorize relative levels of indicators that reflect the condition of the fish population (abundance metric) or fishery (harvest metric). For example, as harvest increases relative to the long-term mean, the proportion of green in a given year increases, and as harvest decreases, the amount of red in that year becomes more predominant. The TLA improves the management approach as it illustrates long-term trends in the stock and includes specific management recommendations in response to declines in the stock or fishery.

Atlantic Croaker Commercial Landings and Recreational Catch
Source: ACCSP Data Warehouse 2018



Similar to the benchmark assessment, recent TLA runs showed conflicting trends, with significant decreases in overall harvest but increases in adult abundance and some juvenile abundance. Based on these conflicting trends (theoretically, an increase in abundance should lead to an increase in harvest), the Technical Committee evaluated the TLA and recommended several adjustments, including incorporation of additional abundance surveys, application of age-length keys and length compositions to all abundance surveys to better estimate the number of adults, use of regional rather than coastwide metrics, a new reference time period, and a new triggering mechanism. In August 2018, the TLA was presented to the Board using both the current and Technical Committee-recommended methods. The current method showed similar results of increasing adult abundance with declining harvest but did not trigger management action. The results of the Technical Committee-recommended method, which included all proposed changes, triggered management action due to significant declines in harvest and adult abundance in the Mid-Atlantic (north of Virginia-North Carolina border) region. Rather than taking immediate management action in response to the Technical Committee-recommended TLA, the Board delayed action until the states had the opportunity to gather public input from their constituents on what potential actions could be helpful to the stock and fishery.

ATLANTIC HERRING

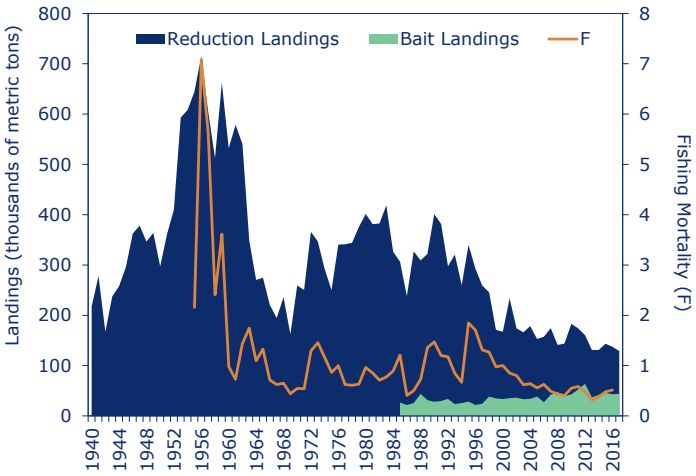
Atlantic herring are oceanic, plankton-feeding fish that occur in large schools and inhabit coastal and continental shelf waters from Labrador to Virginia. The commercial fishery supports bait and food fisheries, with a total domestic harvest of 108 million pounds valued at $27 million in 2017. As a baitfish, herring primarily support the American lobster fishery. The herring fishery is managed cooperatively by the Commission's Atlantic Herring Management Board and the New England Fishery Management Council (NEFMC). In 2018, the Atlantic Herring Section, which was composed of the states of Maine through New Jersey, became a Management Board to allow the addition of the NEFMC and NOAA Fisheries as voting members to the Board and further strengthen cooperative state/federal management of the resource.

The 2018 benchmark stock assessment, conducted by the Northeast Fisheries Science Center (NEFSC), provided an updated picture of stock health. While Atlantic herring are not overfished and not experiencing overfishing, the report highlighted concerns about trends in recruitment and spawning stock biomass (SSB). Specifically, recruitment has been below the time series average for the past five years, with 2016 recruitment being the lowest on record at 1.7 million fish. While recruitment has been variable throughout time, these recent and continuing low levels of recruitment indicate there will be fewer fish available to harvest in future years. SSB has also been lower in recent years, with 2017 SSB estimated at 311.9 million pounds. Fishing mortality has decreased in recent years, with a 2017 level of 0.45, below the fishing mortality threshold of 0.51.

In response to the results of the stock assessment, NOAA Fisheries reduced the 2018 sub-annual catch limits (ACLs) for the

Atlantic Menhaden Bait and Reduction Landings and Fishing Mortality (Ages 2-4)

Sources: NOAA Fisheries and State Compliance Reports, 2018



While the episodic events set aside (EESA) quota (1% of the TAC) has been relatively constant since its inception, annual landings under the EESA have increased rapidly and the quota was exceeded for the first time in 2017.

In 2018, the Commission continued to work on two Atlantic menhaden benchmark stock assessments: a single-species assessment and the highly anticipated ecosystem-based assessment, which aims to develop ecological reference points specific to menhaden. Both assessments will be used to evaluate the health of the stock and inform the management of the species in an ecological context. The Stock Assessment Subcommittee (leading the single-species assessment) also began exploring single-species modeling approaches while the Ecological Reference Point Workgroup, as the name implies, continued to explore modeling approaches that estimate the abundance of menhaden and account for the species' role as a forage fish. Both benchmark assessments will be peer-reviewed through the SouthEast Data Assessment Review (SEDAR) process at the end of 2019.

ATLANTIC STRIPED BASS

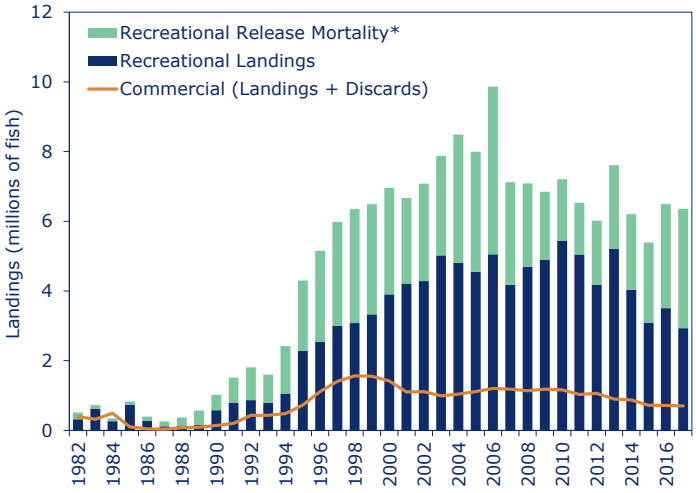
Known throughout New England and the Mid-Atlantic as striper, rockfish, linesider, rollers, squidhound, or simply as "bass," Atlantic striped bass is regularly referred to as America's greatest game fish on the U.S. Atlantic coast. High demand for this species among fishermen and consumers, coupled with the complexity of its seasonal distribution along the coast, make sustainable management of the Atlantic coast striped bass population complex and challenging.

A 2016 stock assessment update indicates that although the population is not overfished and overfishing is not occurring, female SSB has been declining since the mid-2000s. In 2015, female SSB was estimated at 130 million pounds, which is just above the SSB threshold of 127 million pounds. Fishing mortality in 2015 was estimated at 0.16, which is below both the fishing mortality threshold and target levels. In November 2018, the highly anticipated benchmark assessment and peer review was completed. The final assessment and peer review reports will be presented to the Atlantic Striped Bass Management Board in February 2019.

The Atlantic striped bass fishery is predominately recreational, with the anglers accounting for 83% of fish harvested annually since 2000 (89% by weight). In 2017, total removals (commercial and recreational harvest plus discard mortality from both sectors) are estimated at 7.06 million fish, which is a 2% decrease relative to 2016. The recreational fishery is managed via bag and size limits. From 2004 to 2014, recreational harvest averaged

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

Source: ASMFC Atlantic Striped Bass Technical Committee, 2018

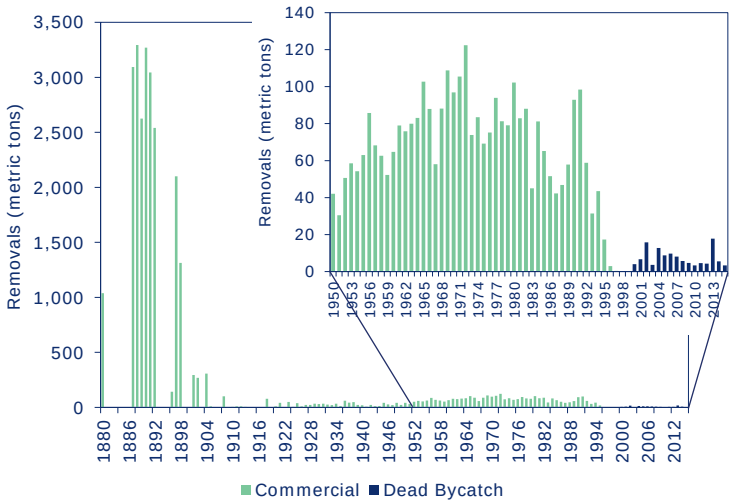


*Recreational release mortality assumes that 9% of fish released alive die.

4.74 million fish under Amendment 6 measures. Since the implementation of harvest reductions through Addendum IV, harvest has averaged 3.17 million fish, and was estimated at 2.93 million fish in 2017. Recreational release mortality peaked in 2006 at 4.81 million fish, declined to 1.48 million fish in 2011, and has been increasing steadily to 3.42 million fish in 2017.

Between 2004 and 2014, commercial landings were relatively stable due to the commercial quota system, with average landings of 943,000 fish per year. Since implementation of Addendum IV, which included reductions to the commercial quota beginning in 2015, coastwide commercial landings decreased to an average of 608,000 fish per year. In 2017, commercial harvest was estimated at 592,576 fish, with commercial discards estimated at 108,475 fish.

Coastwide Atlantic Sturgeon Commercial Landings and Dead Bycatch
Source: ASMFC Atlantic Sturgeon Benchmark Stock Assessment, 2017



ATLANTIC STURGEON

Reaching lengths of over 14 feet and living over 60 years, Atlantic sturgeon are one of the largest and longest-lived anadromous fish in North America and can be found along the entire Atlantic coast from Labrador, Canada to the St. Johns River in Florida. While these primitive fish have been taken for food by humans for thousands of years, large scale commercial fisheries for this species did not exist until the mid-1800s. At that time, Atlantic sturgeon were among the top three species by weight of fish harvested commercially along the Atlantic coast, and considered second in value only to lobster. Available data suggest coastwide landings peaked in the late 1800s and declined precipitously to low levels in the early 20th century. Based on concerns about the status of the stock, the Commission instituted a coastwide moratorium in 1998.

The 2017 Benchmark Stock Assessment and Peer Review Report indicate Atlantic sturgeon remain depleted coastwide and at the distinct population segment (DPS) level relative to historic abundance. However, on a coastwide basis, the population appears to be recovering slowly since implementation of the 1998 moratorium. Despite the fishing moratorium, the population still experiences mortality from several sources, but the assessment indicates that total mortality is sustainable. The "depleted" determination was used instead of "overfished" because of the many factors contributing to the low abundance of Atlantic sturgeon, including incidental fishing, habitat loss, ship strikes, and changing ocean conditions.

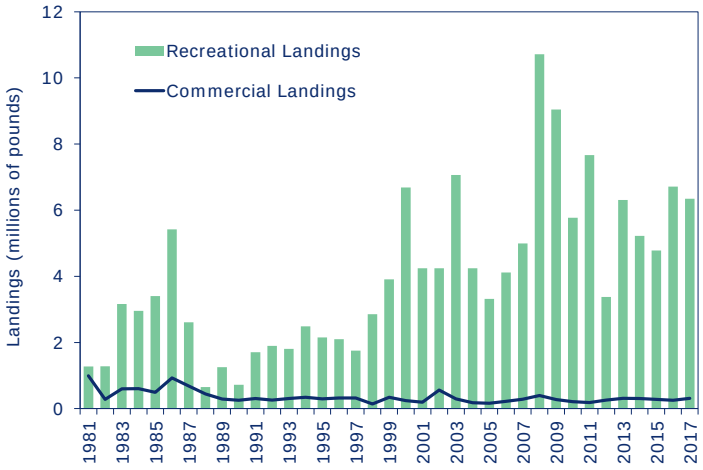
In 2018, the Board discussed the need to support management actions that have contributed to the recovery seen to date (e.g., the moratorium, habitat restoration/protection, better bycatch monitoring) and to continue to work on improving them (e.g., identifying bycatch and ship strike hotspots and ways to reduce those interactions).

Atlantic sturgeon have been listed as either endangered or threatened (based on the DPS) under the Endangered Species Act (ESA) since 2012. NOAA Fisheries is in the process of conducting a review of the 2012 ESA listing and developing recovery targets. NOAA Fisheries will work closely with the Commission and the Technical Committee throughout both processes.

BLACK DRUM

With sizes reaching over 46 inches in length and 120 pounds in weight, black drum are drawing increasing interest from recreational anglers, particularly as a catch and release fishery. Similar to the past four years, recreational landings in 2017 were 6.3 million pounds, with landed fish constituting only 22% of all black drum caught by the fishery. The other 78% of recreationally caught fish were released alive, making 2017 the fourth

Black Drum Commercial and Recreational Landings
Source: ACCSP Data Warehouse, 2018



consecutive year in which releases exceeded 70% of the recreational catch. Outside of a large peak in 2008, recreational and commercial landings have remained fairly stable since 2000, with recreational landings far exceeding (typically 20-30 times) those of commercial (by weight). The commercial fishery landed about 294,000 pounds in 2017. Florida and North Carolina fisheries comprised the majority of total (commercial and recreational) harvest and recreational live releases in 2017.

The Black Drum FMP requires all states set minimum size limits of 14" or greater by 2016, likely contributing to the recent high percentages of recreationally released fish. State-specific maximum possession limits are also in place as required by the FMP. The 2015 benchmark stock assessment determined black drum are not overfished and not experiencing overfishing. Despite a decline in estimated biomass since 1900, the stock remains above the biomass that produces maximum sustainable yield (B_{MSY} = 47.26 million pounds).

In 2018, the Board approved Addendum I to the Black Drum FMP, allowing Maryland to reopen its commercial fishery in the Chesapeake Bay. The commercial fishery was previously closed in Maryland's Bay waters due to a requirement of the FMP to maintain all measures in place at the time of the FMP's approval. During this time, a moratorium, initially intended to be a temporary measure for a 1990s tag and release study program, was still in place. Addendum I now allows Maryland to reopen this fishery under a 10 fish daily vessel limit and 28 inch total length minimum size limit, or more restrictive measures.

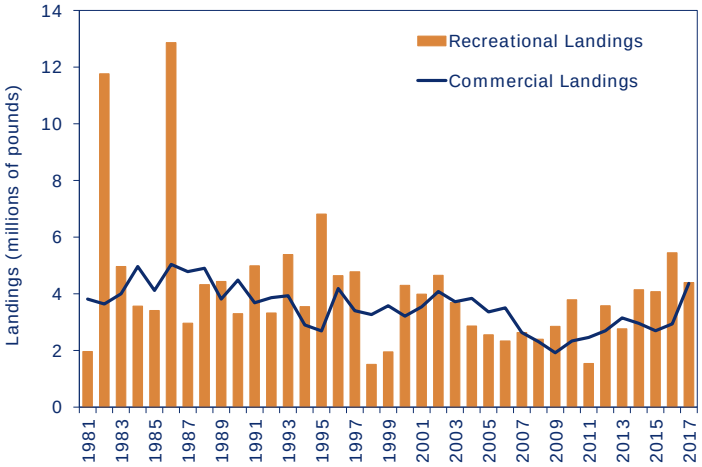
BLACK SEA BASS

Black sea bass are an abundant and popular commercial and recreational species throughout Southern New England and the Mid-Atlantic region. According to the latest stock assessment, which modeled fish north and south of Hudson Canyon separately, the majority of the stock occurred in the south prior to the mid-2000s. Since then, the biomass in the north has grown considerably and currently accounts for the majority of SSB. Additionally, catch by region has generally increased in the north while remaining stable in the south during the past decade. While quota restrictions have held regional proportions of total commercial landings relatively stable, recreational harvest in the northern states has increased over the past decade.

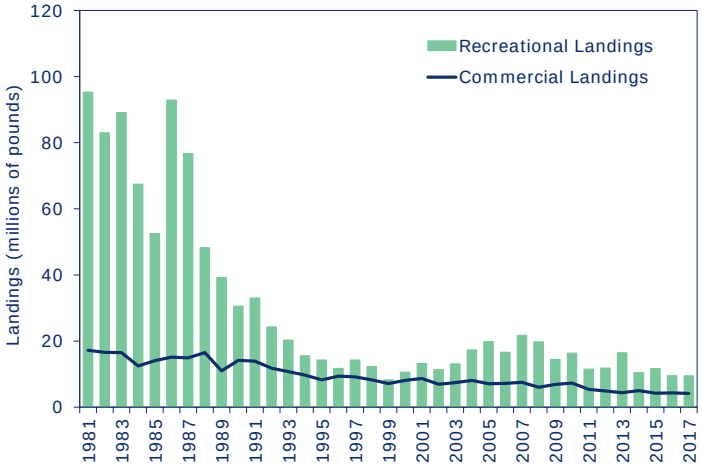
Shifting distributions of abundance and biomass spurred several management changes in 2018. In early 2018, the Commission approved Addendum XXX, which established regional management of the recreational fishery with allocations of the recreational harvest limit (RHL) based on a combination of historical landings data and exploitable biomass information from the 2016 stock assessment. Three management regions were defined as Massachusetts through New York, New Jersey, and Delaware through North Carolina. Following an appeal of the allocations specified in Addendum XXX by the northern states of Massachusetts, Rhode Island, Connecticut and New York, the Summer Flounder, Scup and Black Sea Bass Management Board approved revised 2018 recreational measures for the northern states to mitigate the impacts of the allocations specified in Addendum XXX.

In December, the Board approved Addendum XXXII, which allows the Board to set recreational measures in 2019 and future years through an annual specifications process.

Black Sea Bass Commercial and Recreational Landings
Source: ACCSP Data Warehouse, 2018



Bluefish Commercial and Recreational Landings
Source: ACCSP Data Warehouse, 2018



The specifications process will take into account changes in the distribution of biomass and abundance of black sea bass to provide equitable access to the resource.

Additionally in December, through joint action with the Mid-Atlantic Fishery Management Council (MAFMC), the Commission approved Addendum XXXI, which expands the suite of tools available for managing summer flounder, scup and black sea bass, and reduces inconsistencies between state and federal regulations. Addendum XXXI allows for conservation equivalency for the recreational fishery. Further, through the addendum, the Board has recommended NOAA Fisheries implement regulations to allow transit through federal waters in Block Island Sound for non-federally permitted vessels in possession of summer flounder, scup and black sea bass.

The Commission approved status quo specifications for the 2019 season. The 2018 black sea bass commercial fishery continued to use state-by-state quota management to mitigate potentially disproportionate impacts of coastwide measures on individual states. At 3.88 million pounds, 2017 commercial landings were 5% under the annual coastwide quota of 4.12 million pounds. In 2017, recreational harvest was estimated at 4.16 million pounds, 3% below the RHL of 4.29 million pounds. Similar to 2018, the Board and MAFMC agreed to open a recreational fishery in federal waters during February 2019.

BLUEFISH

After experiencing a significant decline in biomass between the 1980s and early 1990s, commercial quotas and recreational possession limits implemented via Amendment 1 (1998) brought bluefish back to a healthy stock status in 2009. The 2015 benchmark stock assessment indicated the resource remains in good condition – not overfished and not experiencing overfishing. However, the 2018 data update provided by the Northeast Fisheries Science Center (NEFSC), including catch, landings, and survey indices through 2017, indicates that all survey indices except one showed a decrease from 2016 values. An operational stock assessment will be completed in 2019 to incorporate recalibrated harvest estimated from the Marine Recreational Information Program (MRIP) and updated stock status information.

Predominantly a recreational fishery, recreational harvest accounts for approximately 80% of total removals in recent years. In 2017, anglers harvested 9.5 million pounds of bluefish, 23% below the annual average since 2009. Since a state-specific quota system was implemented in 2000, commercial landings have averaged around 6.3 million pounds annually. Commercial landings were 4.12 million pounds in 2017, with North Carolina, Rhode Island, and New York contributing the largest proportions of landings. For 2019, the Commission preliminarily approved a 7.71 million pound commercial quota and an 11.62 million pound RHL.

In recent years, there has been an increasing trend of state-to-state commercial quota transfers, with New York, Massachusetts, and Rhode Island requesting quota from other states. Additionally, recalibrated MRIP estimates indicate recreational harvest levels have been greater than previously believed. These factors are being considered in the development of a joint Commission/ MAFMC amendment to the Bluefish FMP to investigate sector-based and state-by-state commercial allocation issues. In 2018, MAFMC and the Commission conducted scoping hearings; development of the amendment will continue in 2019.

COASTAL SHARKS

Considered a keystone species because they generally reside at the top of the food chain, removing or reducing shark populations in an area can create imbalance in the food chain and have far reaching negative impacts. Relative to other marine fish, sharks have a very low reproductive potential which is due to sharks' slow growth, late sexual maturity, one to two-year reproductive cycles, small number of offspring, and specific requirements for nursery areas in highly productive coastal or estuarine waters. These biological factors leave many shark species vulnerable to overfishing.

Forty species of Atlantic coastal sharks are managed cooperatively throughout their range by the Commission's Interstate FMP and NOAA Fisheries' 2006 Consolidated Highly Migratory Species (HMS) FMP for Atlantic Sharks. The Interstate FMP was developed to complement federal shark management and ensure consistency between state and federal management measures.

In 2018, the Coastal Sharks Management Board approved Addendum V to the FMP. The Addendum allows the Board to respond to changes in the stock status of coastal shark populations and adjust regulations through Board action rather than an addendum, ensuring greater consistency between state and federal shark regulations. The Board also approved 2019 specifications, including a fishery opening date of January 1, 2019 and a variable possession limit, which will start at 25 fish per vessel per trip for those species within the aggregated large coastal sharks (LCS) species group (silky, tiger, blacktip, spinner, bull, lemon, nurse) and the hammerhead species group (scalloped hammerhead, great hammerhead, smooth hammerhead). Additionally, the retention limit for blacknose sharks for all permit holders in the Atlantic region south of 34°00′ N. lat. is eight fish per vessel trip. The Commission will follow NOAA Fisheries for in-season changes to the possession limit.

Stock status is assessed by species complex or by species group for species without enough data for an individual assessment. In summary, 14 species have been assessed domestically, three species have been assessed internationally and 28 species have not yet been assessed. Most of the species that have been assessed and all of those that have not been assessed require a benchmark stock assessment due to new data, changing information on stocks, and improved assessment methodologies. The accompanying table outlines the stock status of each species or species group. In 2017, a benchmark stock assessment for shortfin mako was completed; results indicate the stock is overfished and overfishing is occurring.

Commercial LCS landings in 2017 were approximately 381,067 pounds dressed weight (dw), an 18% decrease from 2016, while landings of SCS species in 2017 were approximately 294,841 pounds dw, a 40% increase from

Coastal Sharks Stock Status Information by Species and Species Groups

Species or Complex Name	Stock Status		References/Comments
	Overfished	Overfishing	
Pelagic			
Porbeagle	Yes	No	Porbeagle Stock Assessment, ICCAT Standing Committee on Research and Statistics Report ('09); Rebuilding ends in 2108 (HMS Am. 2)
Blue	No	No	ICCAT Standing Committee on Research and Statistics Report ('15)
Shortfin Mako	Yes	Yes	ICCAT Standing Committee on Research and Statistics Report ('17)
All other	Unknown	Unknown	
Aggregated Large Coastal Sharks (LCS)			
Atlantic Blacktip	Unknown	Unknown	SEDAR 11 ('06)
Aggregated Large Coastal Sharks Atlantic Region	Unknown	Unknown	SEDAR 11 ('06); difficult to assess as a species complex due to various life history characteristics/lack of available data
Non-Blacknose Small Coastal Sharks (SCS)			
Atlantic	No	No	SEDAR 34 ('13)
Bonnethead	Unknown	Unknown	SEDAR 34 ('13)
Finetooth	No	No	SEDAR 13 ('07)
Hammerhead			
Scalloped	Yes	Yes	SEFSC Scientific Review by Hayes et al. ('09); Rebuilding ends in 2023 (HMS Am. 5a)
Blacknose			
Blacknose	Yes	Yes	SEDAR 21 ('10); Rebuilding ends in 2043 (HMS Am. 5a)
Smoothhound			
Atlantic Smooth	No	No	SEDAR 39 ('15)
Research			
Sandbar	Yes	No	SEDAR 21 ('10)
Prohibited			
Dusky	Yes	Yes	SEDAR 21 ('16); Rebuilding ends in 2107 (HMS Am. 5b)
All other	Unknown	Unknown	

2016. Total U.S. landings of Atlantic pelagic shark species were 251,375 pounds dw in 2017, a slight increase from 2016, which is largely attributed to the increase in landings of shortfin mako and other pelagic sharks. Smoothhound commercial landings in 2017 were 831,761 pounds dw, a 19% increase in landings in the second year under management.

Across all species management groups, 184,865 sharks were harvested during the 2017 recreational fishing season in the Atlantic region, a 52% decrease compared to the 2016 season. The recreational shark fishery predominately targets sharks from the smoothhound, pelagic, and SCS complexes. In 2017, approximately 58,255 sharks from the SCS complex were recreationally harvested, a 69% decrease from 2016. Sharpnose sharks represented 67% of the 2017 SCS harvest. The LCS complex, including hammerheads, had 7,291 sharks harvested in 2017, while the pelagic shark complex had 58,259 sharks harvested in 2017, an increase of 57% from 2016. Approximately 58,446 smoothhound sharks were recreationally harvested in the Atlantic region, a decrease of 60% from 2016.

COBIA

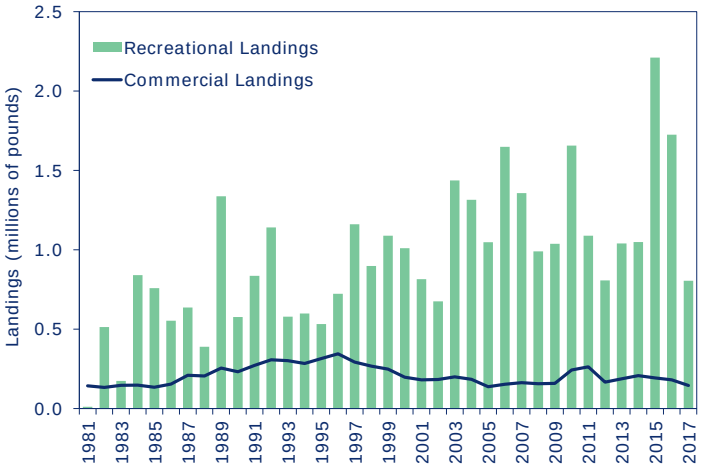
In 2017, the Commission approved the Interstate FMP for Atlantic Migratory Group (Atlantic) Cobia. Complementing many aspects of the South Atlantic Fishery Management Council's (SAFMC) cobia regulations for federal waters extending from New York through Georgia, the FMP was initiated in response to recent overages of the federal ACL for Atlantic cobia. Under the Interstate FMP, the recreational fishery is managed using coastwide bag, minimum size, vessel and season limits set by individual states. The vessel and season limits were approved by the South Atlantic State/Federal Fisheries Management Board, with the goal of achieving 2018 state harvest targets. State harvest targets were derived as allocations of the federal recreational ACL, but will be evaluated every three years. The commercial fishery is managed using coastwide size, possession, and vessel limits. The federal commercial ACL of 50,000 pounds is allocated to the entire commercial fishery from New York through Georgia. The commercial Atlantic cobia fishery closes if the ACL is projected to be reached.

In 2018, the SAFMC and Gulf of Mexico Fishery Management Council approved Amendment 31 to the FMP for Coastal Migratory Pelagic Resources in the Gulf of Mexico and Atlantic Region (CMP FMP), which would remove Atlantic cobia from the CMP FMP and make the Commission the sole management authority for this stock. Amendment 31 currently awaits final approval by the Secretary of Commerce.

In anticipation of approval of Amendment 31 to the CMP FMP, the Board initiated development of Amendment 1 to the Interstate FMP in 2018. This amendment would reflect the Commission's sole management authority by updating complementary portions of the Interstate FMP, which are dependent upon the CMP FMP, to be free-standing regulations. Additionally, Amendment 1 would establish the protocol for the Board to recommend federal waters management measures to be implemented by NOAA Fisheries. The Board will continue the development of the Amendment into 2019, with final action anticipated in late summer/early fall.

In 2018, a Stock Identification Workshop was held as a preliminary part of the SEDAR 58 stock assessment process for Atlantic cobia. The results of the Workshop recommended maintaining the current stock structure of separate Atlantic and Gulf stocks, existing north and

Atlantic Cobia Commercial and Recreational Landings
Source: ACCSP Data Warehouse, 2018



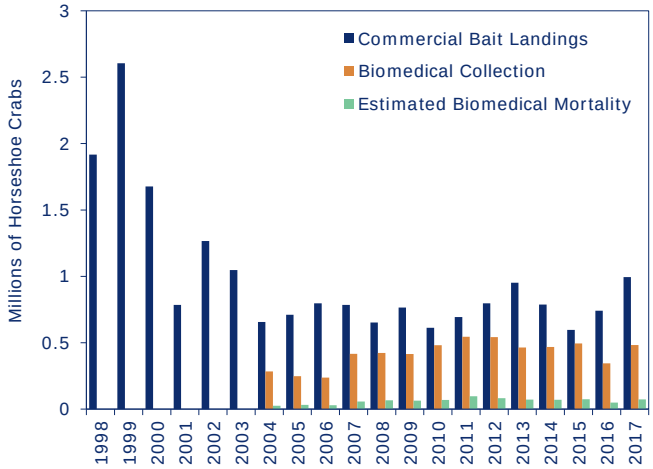
south, respectively, of the Georgia-Florida border. The Atlantic cobia stock will be assessed in 2019 through SEDAR.

HORSESHOE CRAB

Horseshoe crab are an ecologically important species that provide a variety of human and environmental services. 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. A chemical in the horseshoe crab tissue also makes it an ideal bait to catch conch and American eel. The Delaware Bay not only supports the largest spawning population of horseshoe crabs in the world, but is also the largest staging area for shorebirds in the Atlantic Flyway, with an estimated 425,000 to one million migratory shorebirds converging on the Delaware Bay each year to feed on horseshoe crab eggs and rebuild energy reserves prior to completing their northward migration.

With their eggs playing an important ecological role in the food web of migrating shorebirds, horseshoe crabs are the first Commission-managed species to incorporate ecosystem principles into its management program. To address this food web dynamic, the species is managed using an Adaptive Resource Management (ARM) Framework, which incorporates both shorebird and horseshoe crab abundance levels into the horseshoe crab specifications for the Delaware Bay states. Red knots, the shorebird that most relies on horseshoe crab eggs for food, were listed as threatened under the ESA in 2014. The ARM Framework was cited as one of the main reasons the species was not listed as endangered (due to adequate management in place). The ARM Framework's performance continues to be evaluated and improved by the Commission's ARM Subcommittee, with input from the Horseshoe Crab and Delaware Bay Ecosystem Technical Committees. The Mid-Atlantic Horseshoe Crab Benthic Trawl Survey has historically provided abundance data for use in the ARM Framework, although funding for this survey in recent years has been inconsistent. The 2017 survey showed increased numbers of adult female horseshoe crabs and decreased numbers of adult males and juveniles of both sexes from 2016. The survey was conducted in 2018 and has been funded for 2019 as well. The Commission will continue working with state and

Horseshoe Crab Bait Landings and Biomedical Collection
Source: State Compliance Reports, 2018



Please note the following details regarding biomedical collection numbers:

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

federal partners to secure long-term funding for this important survey.

For the 2016-2019 fishing seasons, harvest in the Delaware Bay area was set at 500,000 male horseshoe crabs. Reported coastwide bait landings in 2017 remained well below the coastwide quota (1.59 million crabs) at approximately one million crabs. Biomedical collections in 2017 were estimated at about 576,000 crabs, including bled crabs sold in the bait fishery. Mortality observed during the collection and bleeding process is reported annually. Additionally, 15% of crabs that are bled are assumed to die due to this process. As required by the FMP, crabs processed by the biomedical industry that are not sourced from the bait fishery are returned to the water from where they were harvested.

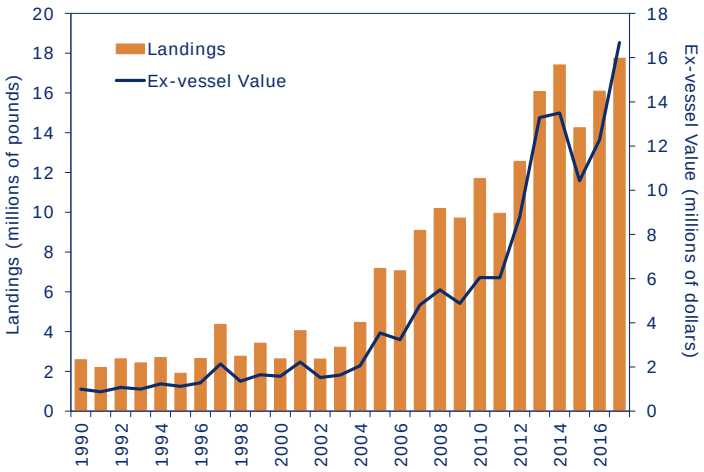
A benchmark stock assessment is scheduled for completion in the spring of 2019. This assessment will be the first to incorporate biomedical mortality data. It will also evaluate stock status or trends for each of the four regional horseshoe crab populations.

JONAH CRAB

The Jonah crab fishery continues to rapidly expand into a directed fishery, particularly in Massachusetts and Rhode Island. In 2017, 17.4 million pounds of Jonah crab were landed coastwide, representing $16.3 million in ex-vessel value. This represents the highest annual coastwide landings of Jonah crab to date and a 669% increase in landings from 2000 (2.6 million pounds), when the species was primary caught as bycatch in the lobster fishery.

In 2018, the American Lobster Management Board took final action on Addendum III, which improved the collection of harvester reporting and biological data in the fishery. In conjunction with the lobster fishery, this Addendum expands the required harvester reporting

Jonah Crab Commercial Landings and Ex-Vessel Value
Source: ACCSP Data Warehouse, 2018



data elements, improves the spatial resolution of harvester data, and establishes a five-year timeline for 100% harvester reporting in the fishery. To achieve this timeline, the Board signaled a clear intent to prioritize the development of electronic harvester reporting in the fishery. In addition, the Addendum improves the biological sampling requirements and encourages states with more than 10% of coastwide landings to conduct additional sampling trips.

NORTHERN SHRIMP

Northern shrimp are a crustacean found in the sub-Arctic waters of the Northern Hemisphere. In the U.S., the GOM marks the southernmost extent of the species range. Although northern shrimp have historically supported a small but valuable fishery to the New England states, high levels of natural mortality and low levels of recruitment have resulted in a stock collapse. As a result, there has been a moratorium in the commercial fishery since 2014.

A benchmark stock assessment and peer review for northern shrimp was approved for management in 2018. The assessment uses a statistical catch-at-length model developed in collaboration with the University of Maine. Data incorporated into the model includes commercial landings, port and sea samples, catch from the research set aside, and information from the Summer Shrimp Survey and the NEFSC Fall Trawl Survey. Results of the benchmark stock assessment conclude that the northern shrimp stock in the GOM remains depleted, with SSB at extremely low levels since 2013. SSB in 2017 was estimated at 1.7 million pounds, well below the time series average of 7.9 million pounds. In addition, recruitment continues to be low, with values in 2017 estimated at 1.13 billion shrimp, less than half of the time series median of 2.63 billion shrimp. Fishing mortality has been very low in recent years due to the moratorium.

An important conclusion of the assessment is that high levels of natural mortality and low levels of recruitment continue to hinder recovery of the stock. Predation contributes significantly to the natural mortality of northern shrimp and has been at high levels over the past decade. In addition, long-term trends in ocean conditions have not been favorable for the recruitment of northern shrimp. Ocean temperatures in the western GOM have increased over the past decade, with warmer water temperature generally associated with lower recruitment indices and poorer survival during the first year of life. Rising ocean temperatures are predicted for the GOM, suggesting an increasingly inhospitable environment for northern shrimp in the GOM.

In response to the continued depleted condition of the resource and poor recruitment, the Northern Shrimp Section extended the moratorium on commercial fishing through 2021. Should recruitment improve, it would take several years for those shrimp to be commercially harvestable. Given the impact ocean temperatures have had on the stock, and the lack of change in stock status despite the five year moratorium, the Section establish a working group to evaluate management strategies for northern shrimp. The group will consider if or what management changes should be made should the stock have limited ability to recover due to changes in ocean conditions.

Finally, in 2018, the Section approved Addendum I to the Interstate FMP. The Addendum provides states the authority to allocate their state-specific quota between gear types in the event the fishery reopens.

RED DRUM

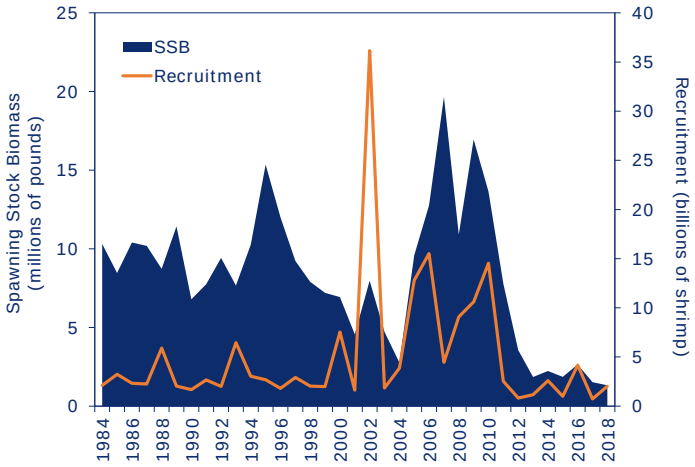
Red drum is one of the most recreationally sought-after fish throughout the South Atlantic. Juveniles are most abundant in estuarine waters and inlets, while fish older than age four inhabit deeper waters. As a result, the fishery is primarily nearshore with small red drum targeted in shallow waters and large trophy fish targeted along the Mid- and South Atlantic barrier islands. The 2017 recreational landings of two million pounds were above the ten-year average of 1.8 million pounds. Florida anglers landed the largest share of recreational harvest in numbers (40%).

The commercial fishery is largely dominated by North Carolina, which was responsible for 96% of the approximately 194,000 pounds harvested by the commercial fishery in 2017. Commercial landings in 2017 reversed the declining trend of the previous three years and were greater than the most recent 10-year average of about 171,000 pounds.

The 2017 Benchmark Stock Assessment indicates overfishing is not occurring for red drum for either the northern (New Jersey through North Carolina) or southern stocks (South Carolina through Florida). The assessment was unable to determine an overfished/not overfished status because population abundance could

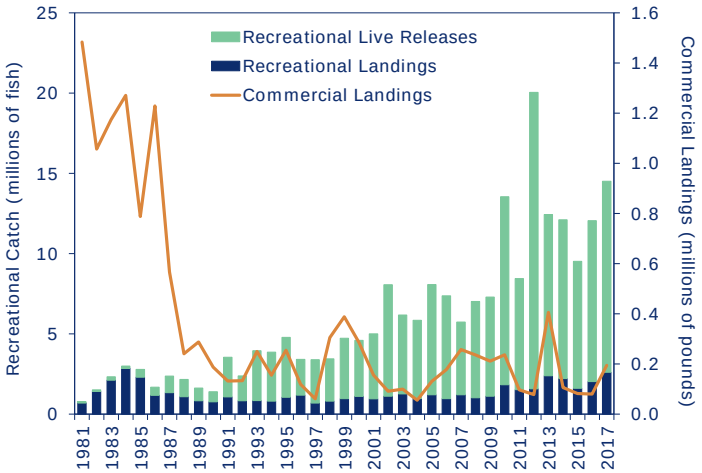
Northern Shrimp Spawning Stock Biomass and Recruitment

Source: ASMFC Northern Shrimp Assessment Update, 2018



Red Drum Commercial Landings and Recreational Catch

Source: ACCSP Data Warehouse, 2018

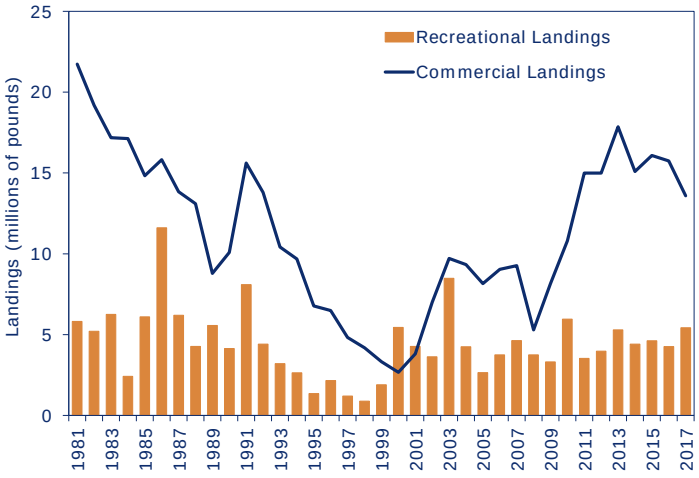


not be reliably estimated due to limited data for older fish (ages 4+) that are not typically harvested under the current fishery measures (slot-limits).

SCUP

Jointly managed by the Commission and MAFMC since 1997, scup are targeted by commercial and recreational fishermen across the Mid-Atlantic region in both state and federal waters. The 2017 stock assessment update indicated the stock is considered rebuilt and not experiencing overfishing, with SSB estimated at 396 million pounds, about two times the SSB target of 192 million pounds. In response to these findings, the Commission and MAFMC set the commercial quota at 23.98 million pounds and the RHL at 7.37 million pounds for the 2018 and 2019 fishing seasons.

Scup Commercial and Recreational Landings
Source: ACCSP Data Warehouse, 2018



In December, the Commission approved Addendum XXXI through a joint action with MAFMC. The Addendum expands the suite of tools available for managing summer flounder, scup and black sea bass, and reduces inconsistencies between state and federal regulations. Further, through the Addendum, the Board recommended NOAA Fisheries implement regulations to allow transit through federal waters in Block Island Sound for non-federally permitted vessels in possession of summer flounder, scup and black sea bass.

The Scup FMP currently allocates 78% of the annual acceptable biological catch (ABC) to the commercial sector and 22% to the recreational sector. The commercial quota is further divided into trimesters, with the summer period allocated by state-specific quotas, and the two winter periods operating on a coastwide quota. In 2018, the Board and MAFMC adjusted the incidental possession limit for the commercial fishery to 2,000 pounds during April 15 – June 15. The adjustment responds to a request made by Massachusetts and Rhode Island to address scup discards in the inshore spring longfin squid fishery.

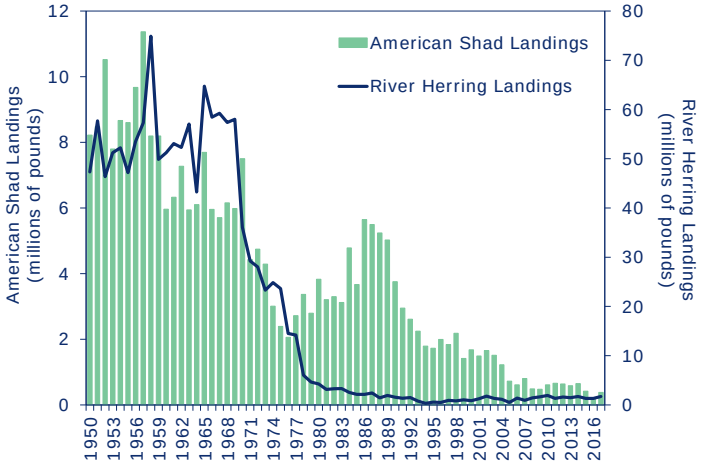
Over the past two decades, commercial landings have fluctuated from a high of 17.9 million pounds (2013) to a time series low of 2.7 million pounds (2000). In 2017, the commercial fishery landed approximately 13.59 million pounds, with the majority of landings occurring in Rhode Island, New York, and New Jersey. 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 2017, recreational anglers harvested approximately 5.43 million pounds, with the nearly all harvest occurring in Massachusetts, Rhode Island, Connecticut, New York, and New Jersey.

SHAD & RIVER HERRING

Shad and river herring used to comprise some of the most productive and significant ocean, coastal, and riverine fisheries on the Atlantic coast. Prior to the 1970s when both species began to experience drastic declines, commercial landings reached highs of 76 million pounds of river herring in 1958 and 12 million pounds of American shad in 1957. Today, these stocks are considered depleted as a result of various factors including passage barriers, habitat degradation, and overfishing.

The Commission continues to manage shad and river herring through 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). Plans must clearly demonstrate the fishery will not diminish potential future stock reproduction and recruitment through the development of sustainability targets which must be monitored, achieved, and maintained. As required by Amendments 2 and 3, SFMPs must be updated every

American Shad & River Herring Commercial Landings
Source: ACCSP Data Warehouse, 2018



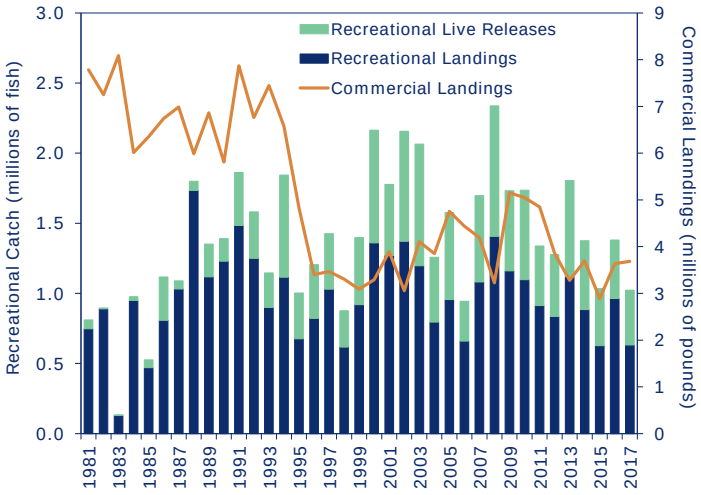
State	River	Trends (2006-2015)
NE U.S. Continental Shelf (NMFS Bottom Trawl)^		Increasing[A,B]
ME	Androscoggin	Increasing[A]
	Kennebeck	Increasing[RH]
	Sebasticook	Increasing[RH]
	Damariscotta	Increasing[A]
	Union	No Trend[A]
NH	Cocheco	Increasing[A,B]
	Exeter	Stable[RH]
	Lamprey	Increasing[RH]
	Oyster	Decreasing[RH]
	Taylor	No Returns[RH]
	Winnicut	Unknown[A,B]
MA	Mattapoisett	Increasing[A]
	Monument	Increasing[A,B]
	Nemasket	Increasing[A]
	Parker	Stable[A]
	Stony Brook	Unknown[A]
RI	Buckeye	Increasing[A]
	Gilbert	Stable[A]
	Nonquit	Decrease[A]
CT	Bride Brook	Increasing[A]
	Connecticut	Stable[B]
	Farmington	Unknown[A,B]
	Mianus	No Trend[A], Increasing[B]
	Mill Brook	No Trend[A]
	Naugatuck	Unknown[A,B]
	Shetucket	No Trend[A], Stable[B]
NY	Hudson	Increasing[RH]
NJ, DE,PA	Delaware	No Trend[A,B]
MD, DE	Nanticoke	Stable[A], No Trend[B]
VA, MD, DC	Potomac	Stable[A], Unknown[B]
VA	James	Unknown[A,B]
	Rappahannock	No Trend[A], Increasing[B]
	York	Unknown[A,B]
NC	Alligator	Unknown[A,B]
	Chowan	No Trend[A], Stable[B]
	Scuppernog	Unknown[A,B]
SC	Santee-Cooper	No Trend[B]
FL	St. Johns River	Unknown[B]

^NE shelf trends are from the spring, coastwide survey data which encounters river herring more frequently than the fall survey.
A = Alewife only; B= Blueback herring only; A,B = Alewife and blueback herring by species; RH = alewife and blueback herring combined.

five years. As of 2018, all active SFMPs were updated with the exception of the Merrimack River SFMP, which will be reviewed and updated in 2019. States without approved SFMPs maintained closures of their shad and river herring fisheries in 2018. In 2017, total commercial landings were approximately 398,278 pounds of American shad and 2.4 million pounds of river herring.

In 2017, a stock assessment update was completed for river herring, which found the stock remains depleted and near historic lows on a coastwide basis. Of the 54 river herring stocks for which data were available, 16 experienced increasing abundance trends, two experienced decreasing abundance trends, eight experienced stable abundance, 10 experienced no discernible trends in abundance, and 18 did not have enough data to assess recent abundance trends. In 2017, a benchmark stock assessment was initiated for American shad, with an expected completion date in 2020.

Spanish Mackerel Commercial Landings and Recreational Catch
Source: ACCSP Data Warehouse, 2018



SPANISH MACKEREL

Cooperative management by the Commission and SAFMC has successfully rebuilt Spanish mackerel stocks after years of overfishing. The last benchmark stock assessment, conducted in 2012, indicates Spanish mackerel are not overfished nor experiencing overfishing. The next assessment will be conducted through the SEDAR process in 2020.

Total 2017 landings were 4.2 million pounds, with commercial and recreational fisheries harvesting approximately 80% and 20%, respectively. Coastwide commercial landings have generally been below four million pounds since 1995. 2017 commercial landings are estimated at 3.5 million pounds. Over two-thirds of the landings occurred in Florida, with most of the remaining harvest occurring in North Carolina.

Recreational anglers harvested approximately 632,000 Spanish mackerel (751,000 million pounds) in 2017. Recreational harvest in 2017 declined from 2016 levels and was below the most recent 10-year average of 964,000 fish (1.3 million pounds). North Carolina (70% of fish) and Florida (22%) accounted for the majority of the recreational harvest. The number of recreational releases has generally declined since the time series high of 930,000

releases in 2008; approximately 391,000 fish (38% of recreationally caught fish) were released in 2017.

The provisions of Addendum I were maintained for the 2018 fishing season, allowing states to use a reduced minimum size of 11.5" in the commercial pound net fishery for the months of July through September. The measure is intended to reduce waste of shorter fish, which are discarded dead in the summer months, by converting them to landed fish that will be counted against the quota. North Carolina, the only state to implement the Addendum thus far, provides annual reports to the Board on Spanish mackerel catch in its pound net fishery.

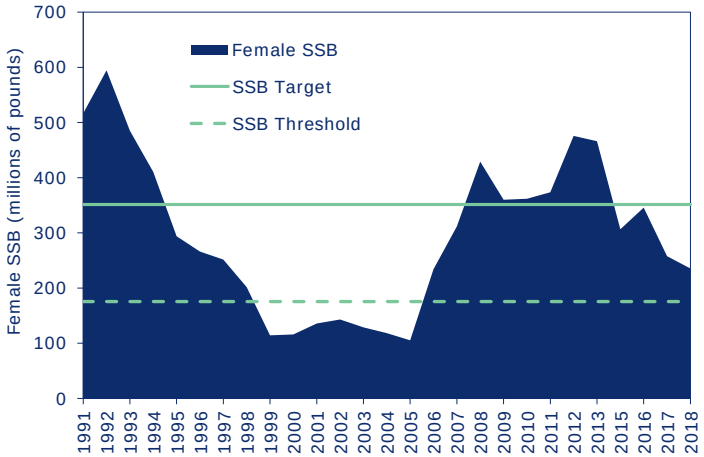
SPINY DOGFISH

A commonly found member of the shark family throughout the North and Mid-Atlantic region, spiny dogfish are slow growing and long-lived, with females living up to 40 years and males up to 35 years. Spiny dogfish gets its name from the sharp, venomous spines in front of each dorsal fin and from the species' habit of feeding in packs like dogs. Along the U.S. Atlantic coast, spiny dogfish migrate seasonally north and south, and inshore and offshore in response to changes in water temperature and salinity.

The current market for spiny dogfish is limited due largely to a downshift in demand by international markets, which have been the primary market for U.S.-caught spiny dogfish. In response to the declining international market in recent years, spiny dogfish fishermen and processors have been working to develop a domestic market by seeking and receiving Marine Stewardship Council certification for sustainability. Although a white and flakey product when cooked (similar to haddock or cod), marketing a shark species has been difficult, especially considering the global initiative to ban the trade of shark fins and keep sharks in the water.

Since 2000, the Commission has implemented complementary management measures to those established for federal waters. The commercial fishery has underutilized the commercial quota each year since 2012 due to limited demand, not abundance (landings have been less than half of the commercial quota for the past three seasons). While the stock is not overfished nor experiencing overfishing, biomass has declined in recent years. The commercial quota for the 2018 season (May 1, 2018 to April 30, 2019) is 38.2 million pounds. Based on preliminary landings data and projected landings trends, the fishery will likely underutilize the quota again as it has in recent years. The Spiny Dogfish Board approved a 20.5 million pound commercial quota for the 2019 fishing season, an approximate 46% reduction from the 2018 season in response to declining biomass. The next benchmark stock assessment is scheduled for 2022.

Spiny Dogfish Female Spawning Stock Biomass
Source: Northeast Fisheries Science Center, 2018

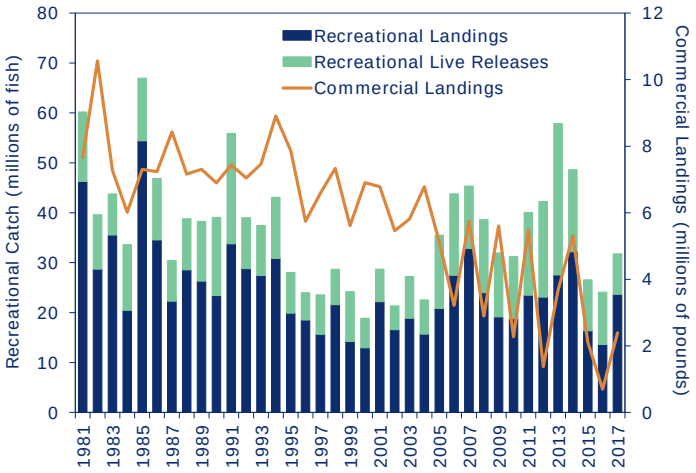


Note: There is no data point for 2014 due to the NEFSC survey not being conducted that year.

SPOT

Spot provide important recreational and commercial fisheries in the South Atlantic, although year-to-year fluctuations in landings are common. This is because spot are short-lived and the catch in most years consists

Spot Commercial Landings and Recreational Catch
Source: ACCSP Data Warehouse, 2018



of a single year-class, the strength of which is variable (partly due to environmental conditions prevalent in the spawning and nursery areas). Total 2017 landings were 10 million pounds, with 24% harvested by the commercial sector and 76% by the recreational fishery. Both commercial and recreational harvests significantly increased from 2016, which was the lowest year on record for both sectors. Commercial harvest in 2017 was estimated at 2.4 million pounds, a 279% increase from 2016. As in previous years, the majority of commercial harvest came from Virginia (73%) and North Carolina (17%). Recreational harvest in 2017 was 7.6 million pounds, a 111% increase, by pounds, from 2016. Virginia had the greatest share of the recreational harvest at 5 million pounds (66%).

In 2017, the first coastwide benchmark stock assessment was completed for spot. The assessment used a catch-survey model to estimate population parameters (e.g., stock status, natural mortality, discard rates, and mortality) and biological reference points. However, due to conflicting trends in abundance and harvest, as well as other uncertainties, this assessment was not recommended to be used for management advice.

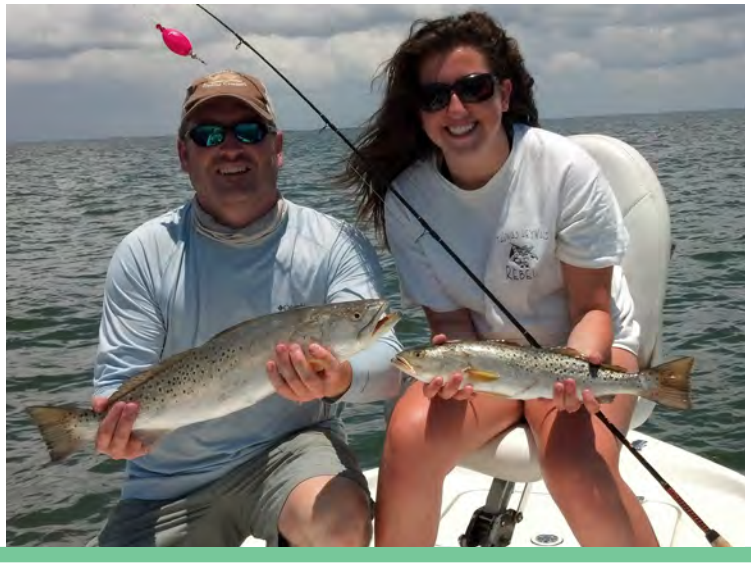
Established under Addendum I, a TLA is typically conducted each year to evaluate fishery trends and develop management actions, if necessary (see TLA description under Atlantic croaker). Recent TLA runs showed conflicting trends, with significant decreases in commercial harvest and juvenile abundance, slight decreases in harvest from the recreational sector, and slight increases in adult abundance. Based on these conflicting trends, the Technical Committee evaluated the TLA and recommended several adjustments, including incorporation of additional abundance surveys, application of age-length keys and length compositions to all abundance surveys to better estimate the number of adults, use of regional rather than coastwide metrics, a new reference time period, and a new triggering mechanism.

In August 2018, the TLA was presented to the Board using both the current and Technical Committee-recommended methods. The current method showed a slight decrease in adult abundance and a significant decrease in harvest, but did not trigger management action. The Technical Committee-recommended method, which included all proposed changes, resulted in a triggering of management action due to significant declines in harvest and adult abundance in the Mid-Atlantic (north of Virginia-North Carolina border) region over the past three years. Rather than taking immediate management action in response to the Technical Committee-recommended TLA, the Board delayed action until the states gathered public input from their constituents on what potential actions could be helpful to the stock and fishery.

SPOTTED SEATROUT

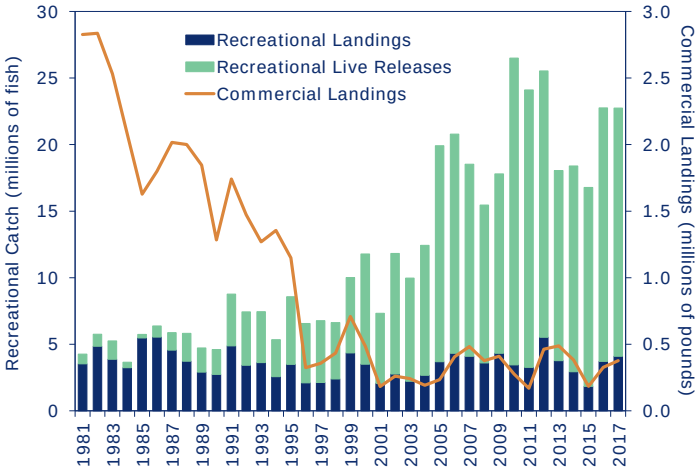
Spotted seatrout, a member of the drum family, is managed under the Commission's Omnibus Amendment for Spot, Spotted Seatrout and Spanish Mackerel, which includes recommended measures to protect the spawning stock, as well as a required coastwide minimum size of 12."

A coastwide stock assessment for spotted seatrout has not been conducted given the largely non-migratory nature of the species and the lack of data on migration where it does occur. Instead, states conduct their own age-structured analyses of local stocks. These regional assessments are important given that spotted seatrout are susceptible to inshore events such as winter freezes, excessive fresh water, hurricanes, and red tide conditions.

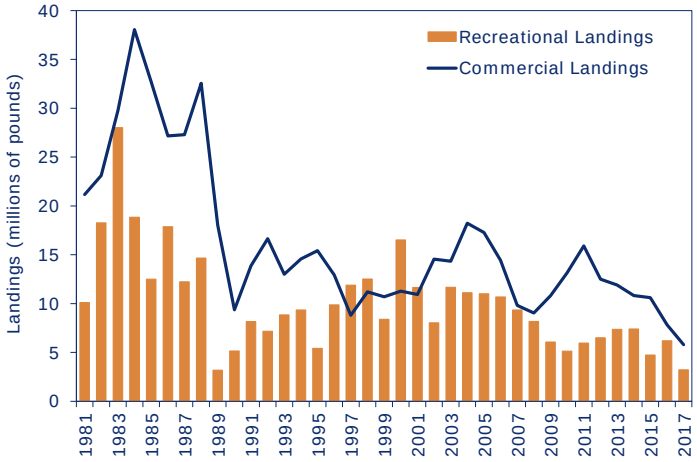


The spotted seatrout fishery is largely recreational, with declining commercial landings. Commercial landings have generally

Spotted Seatrout Commercial Landings and Recreational Catch
Source: ACCSP Data Warehouse, 2018



Summer Flounder Commercial and Recreational Landings
Source: ACCSP Data Warehouse, 2018



decreased since 1981, with 371,000 pounds of commercial harvest occurring in 2017. Recreational catch (harvest and releases) has markedly increased from 1981 (4.3 million fish) to 2017 (22.7 million fish). Recreational harvest has remained relatively stable throughout the time series, with 4.1 million fish (7 million pounds) harvested in 2017. Numbers and proportions of fish released alive have increased throughout the time series due to size and creel limits, as well as the encouragement of catch and release practices. In 2017, 82% of recreationally caught fish (18.6 million fish) were released.

SUMMER FLOUNDER

One of the most important commercially and recreationally targeted flatfish species along the U.S. Atlantic coast, summer flounder have been jointly managed by the Commission and MAFMC for more than three decades. Over the past five years, commercial landings have been on the decline, in part due to annual quota limits, dropping from 10.6 million pounds in 2015 to 5.8 million pounds in 2018. Recreational harvest from 2005 to present has also shown a steady decline, in part due to declines in the coastwide RHL. In 2017, recreational anglers harvested 3.2 million pounds of summer flounder.

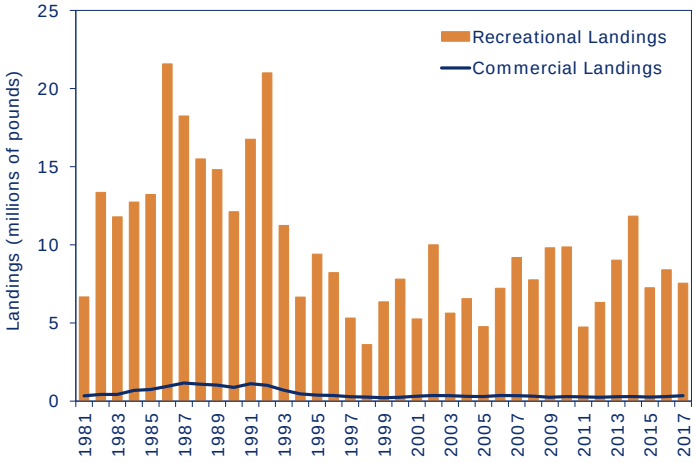
The 2016 stock assessment update indicates summer flounder are not overfished, but are experiencing overfishing. These results appear to be driven largely by below-average recruitment; the stock has experienced six years of below average year classes from 2010 to 2015. Additionally, indices of abundance from state and federal surveys have indicated declines in abundance ranging from nine to 97% from their most recent peaks (generally 2009 to 2012). The next benchmark stock assessment will be presented to the Summer Flounder, Scup, and Black Sea Bass Management Board and MAFMC in early 2019. In August 2018, the Board and MAMFC preliminarily approved for the 2019 fishing season a commercial quota of 7.72 million pounds and a RHL of 5.15 million pounds, a 16% increase from 2018 levels for both sectors. Both the commercial quota and RHL may be changed in early 2019 pending the results of the benchmark stock assessment.

In 2018, the Board and MAFMC gathered public comment on the Summer Flounder Commercial Issues Draft Amendment. The Amendment considers modifications to the current management program's goals, objectives, and commercial management strategies, including federal permit qualifying criteria, state allocations, and landings flexibility. In December, the Board and MAFMC considered final action on the Amendment but, after significant deliberations, delayed approval until both bodies have an opportunity to consider additional allocation options. Final action on the Amendment is anticipated for 2019.

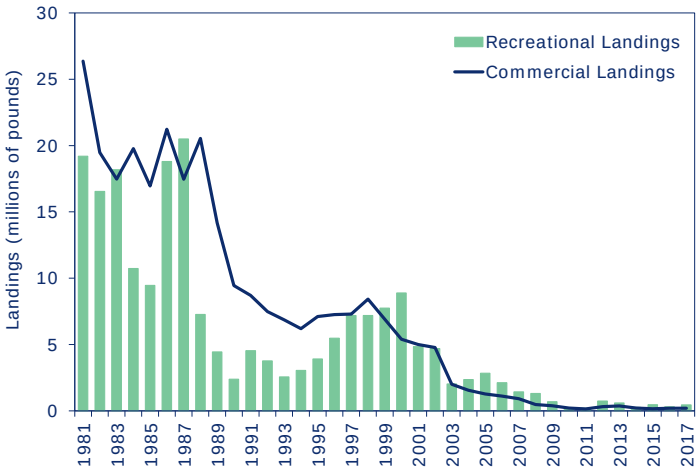
Additionally in December, the Board adopted Addenda XXXI and XXXII. Addendum XXXI, approved jointly with MAFMC, expands the suite of tools available for managing summer flounder, scup, and black sea bass, and reduces inconsistencies between state and federal regulations. Further, through the Addendum, the Board recommended NOAA Fisheries implement regulations to allow transit through federal waters in Block Island Sound for non-federally permitted vessels in possession of summer flounder, scup, and black sea bass.

Addendum XXXII, approved only by the Commission, allows the Board to set recreational measures starting in 2019 through an annual specifications process. The specifications process will allow the same regional alignment from recent years while providing guidelines on how measures can be developed and adjusted year-to-year moving forward.

Tautog Commercial and Recreational Landings
Source: ACCSP Data Warehouse, 2018



Weakfish Commercial and Recreational Landings
Source: ACCSP Data Warehouse, 2018



TAUTOG

2018 marked the first year of management under Amendment 1 to the Interstate FMP for Tautog. The Amendment instituted a fundamental change in tautog management by delineating the stock into four regions (Massachusetts-Rhode Island, Long Island Sound, New Jersey-New York Bight, and Delaware-Maryland-Virginia) due to differences in biology and fishery characteristics. Amendment 1 also seeks to mitigate the illegal harvest of tautog through a commercial harvest tagging program. Work continues on the development of the tagging program, with an implementation date of January 2020.

The 2016 stock assessment update indicated stocks in all regions, except Massachusetts-Rhode Island, were overfished, with overfishing occurring in Long Island Sound and the New Jersey-New York Bight. For the 2018 fishing year, new regional management measures were implemented to achieve fishing mortality targets based on the assessment results.

Approximately 90% of the total coastwide harvest is derived from the recreational fishery. Coastwide recreational harvest has generally declined since peaking at 16.9 million pounds in 1986. In 2017, recreational anglers harvested approximately 2.1 million pounds of tautog. Commercial harvest peaked in the late 1980s at 1.2 million pounds and declined to an average of 0.28 million pounds over the past five years. 2017 commercial harvest was 304,600 million pounds.

WEAKFISH

Weakfish have been one of the most important components of a mixed-stock fishery on the Atlantic coast since the 1800s. In the late 1990s, however, weakfish biomass began to decline, reaching an all-time low of 342,990 pounds in 2011 (compared to 45.6 million pounds in 1981). Total landings in the weakfish fishery have generally declined over the past two decades. Total landings for 2017 were 609,000 pounds, a 48% increase from 2016. At about 167,000 pounds, the commercial fishery accounted for 28% of the total 2017 landings, with North Carolina harvesting the largest share at 51%. Recreational landings in 2017 were 276,000 fish (436,000 pounds) and recreational releases were estimated at 1.5 million fish, a 65% increase in harvest (by numbers) and a 55% decrease in releases from 2016.

The 2016 benchmark stock assessment determined the stock is depleted and overfishing is not occurring. Similar to the 2009 assessment, this assessment found

an increase in natural mortality, rather than fishing mortality, was the source of the weakfish decline. Despite its continued depleted status, the stock showed an increase in biomass since 2009 (2014 biomass was 3.2 million pounds), following the implementation of a one fish recreational creel limit and a 100 pound commercial trip limit in 2010. An assessment update is scheduled to occur in 2019.

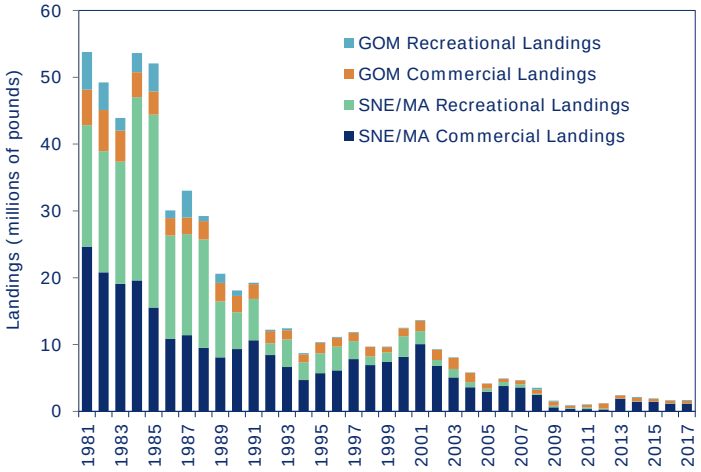
In 2018, in response to concern regarding potential increases in commercial discards (in Virginia and North Carolina) due to the 100 pound trip limit, the Technical Committee reviewed discard information to determine whether current management is resulting in significant loss to the fishery through increased dead discards. The Technical Committee found while notable increases in commercial discards were observed in Virginia and North Carolina in both 2016 and 2017, these singular points did not fit any long-term trend of increase and were not high enough to be a significant concern to the resource. The Technical Committee did not recommend any immediate action based on its analyses.

WINTER FLOUNDER

Winter flounder is an estuarine flatfish found in shoal water habitats along the northwest Atlantic coast. The commercial fishery for this species was once highly productive with landings in the early 1980s averaging 33.9 million pounds; however, since the late 1980s, landings have steadily declined. In 2017, 2.3 million pounds of winter flounder were commercially landed. The species is managed by the NEFMC as three separate stocks: GOM, Southern New England/Mid-Atlantic (SNE/MA), and GBK, with the Commission participating in the management of the GOM and SNE/MA stocks. Operational stock assessments completed for the winter flounder stocks in 2017 concluded the GOM stock biomass status is unknown and overfishing is not occurring. In SNE/MA, the stock is overfished but not experiencing overfishing.

In 2018, the Winter Flounder Management Board reviewed 2018 specifications. For the GOM stock, the 2018 ACL was set at 943,740 pounds, a decrease from the 2017 ACL of 1.7 million pounds. In addition, the state waters sub-component nearly halved from 269,010 pounds in 2017 to 147,735 pounds in 2018. For the SNE/MA stock, the 2018 ACL was set at 1.54 million pounds, a slight decrease from the 2017 ACL of 1.65 million pounds. The state waters sub-component increased from 154,350 pounds in 2017 to 160,965 pounds in 2018. The Board did not alter management measures for winter flounder in response to these specifications.

Winter Flounder Commercial and Recreational Landings by Stock Unit
Source: Northeast Fisheries Science Center, 2018



Fisheries Science to Support Management

Management of Sustainable Fisheries relies on accurate and timely scientific advice. The Commission strives to produce sound, actionable science through a technically rigorous, independently peer-reviewed stock assessment process. Assessments are developed using a broad suite of fishery-independent surveys and fishery-dependent monitoring, as well as research products developed by a network of fisheries scientists at state, federal and academic institutions along the coast. The Commission's scientific goals include the development of innovative scientific research and methodology, and enhancement of the states' stock assessment capabilities. Achieving the goals ensures sound science is available as the foundation for the Commission's evaluation of stock status and adaptive fisheries management actions.

New Commission science initiatives include development of long-term science strategies as part of the Commission's new 2019-2023 Strategic Plan, and collaborations with the U.S. Geological Survey to expand its support of diadromous and coastal fisheries research, stock assessments, and habitat restoration.

Fishery-Independent Data Collection

Fishery-independent surveys provide insight into the status of fish stocks without the biases inherent to commercial and recreational fisheries catch information. Data collection by numerous survey programs is a fundamental component of the Commission's stock assessment and fisheries management processes. The Commission coordinates two regional fishery-independent data collection programs on the Atlantic coast – 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 carry out the collection, management, and dissemination of fishery-independent data in the South Atlantic. Since 1982, SEAMAP has conducted long-term standardized surveys that provide the scientific basis for fisheries and habitat management in the region. SEAMAP conducts surveys and disseminates data in close collaboration with NOAA Fisheries' Southeast Science Center and Regional Office.

In 2018, SEAMAP-South Atlantic surveys (trawl, longline, and trap) continued to collect data on the distribution and abundance of a variety of important commercial and recreational species from North Carolina to Florida (e.g., red drum, Spanish mackerel, snapper, grouper, shrimp). More than 250 stations from Cape Hatteras to Cape Canaveral were sampled by the SEAMAP-South Atlantic Coastal Trawl Survey. The Pamlico Sound Trawl Survey completed over 100 stations to monitor estuarine finfish and shrimp populations, while the Coastal Longline Surveys completed 600 sets with more than 890 red drum and 860 sharks caught. Many drum were sampled for genetic analysis, then tagged and released to study migration and survival rates. Data collected from all SEAMAP-South Atlantic surveys provide long-term population metrics such as abundance trends, feeding habits, and population age structure for

use in state, interstate, and federal stock assessments of recreationally and commercially important fish and crustaceans.

The Program has a long track record of collecting data that are used to address real world questions in fisheries management. SEAMAP survey data are readily available online at *www.seamap.org*. Fisheries scientists, managers, and the public can search the SEAMAP database to examine population trends, set annual fishing regulations, and evaluate management strategies for numerous commercial and recreational species that migrate between the states' coastal waters and estuaries. Additionally, SEAMAP-South Atlantic continues to support ocean bottom mapping and fish habitat surveys, which gather seabed mapping data for managers to use when designating marine protected areas and other fish habitat conservation areas. Maps of SEAMAP and other South Atlantic fishery-independent data are available through an extensive geographic information system at *http://ocean.floridamarine.org/safmc_atlas/*.

NEAMAP

NEAMAP is a cooperative state/federal fishery-independent research and data collection program for coastal waters from Maine to North Carolina. Its mission is to carry out the collection and distribution of fishery-independent data obtained in the Northeast for use by state and federal fisheries management agencies, commercial and recreational fishermen, and researchers. Since 2007, the Mid-Atlantic Nearshore Trawl Survey has completed spring and fall surveys, sampling inshore waters from Cape Hatteras, North Carolina northward to Martha's Vineyard, Massachusetts. In addition, NEAMAP includes the Massachusetts Inshore Trawl Survey and the Maine-New Hampshire Inshore Trawl Survey. Survey data are used to complement data from NOAA Fisheries' NEFSC Trawl Survey, which samples in deeper, offshore waters of the Mid-Atlantic and New England.

In 2018, the Mid-Atlantic Nearshore Trawl Survey conducted tows at 150 locations in depths ranging from three to 25 fathoms. A portion of the spring survey stations was not sampled due to a vessel fire and associated delay in starting the survey. To date, over seven million individual fish and invertebrates, representing over 175 different species, have been collected by the survey. The Maine-New Hampshire Inshore Trawl Survey, which has been in operation since 2000, conducted spring and fall surveys with over 200 tows in five regions along the Maine and New Hampshire coasts in depths ranging from 30 to 330 feet. The Massachusetts Inshore Trawl Survey, which has conducted spring and fall surveys since 1978, surveyed 200 stations in 2018 in five geographic regions at depths up to 180 feet.

Data collected by both the Maine/New Hampshire and Massachusetts Surveys included information on length, sex and maturity, age and food habits of dozens of fish and crustacean species, as well as ocean bottom temperatures. Data from all three surveys – catch numbers, and individual fish and invertebrate lengths, weights, ages and diets – are used in stock assessments and are vital to improving our ability to track annual changes in population sizes and demographics. For further information about NEAMAP and its partner surveys, please visit *www.neamap.net*.

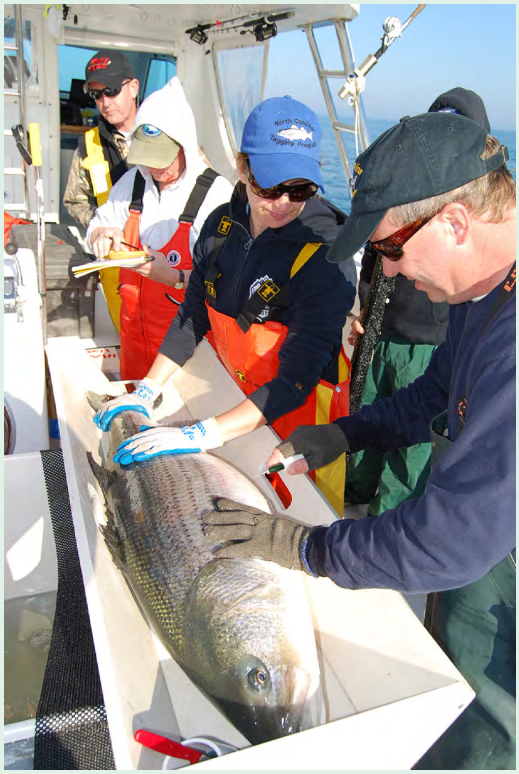
A NEAMAP Summit was held in 2018, bringing together chief scientists, gear experts, and data managers from state and regional fishery-independent surveys. In addition to the three surveys above, scientists participated from the NEFSC and trawl surveys in Rhode Island, New York, New Jersey, Maryland, and the SEAMAP South Atlantic region. The Program welcomed the addition of a new Nearshore Trawl Survey that the New York State Department of Environmental Conservation started conducting in 2018. After more than a decade of survey data collection and coordination, it is time for the Program to transition into a new phase. The Summit was designed to revisit and modify Program goals and objectives. NEAMAP is shifting gears from testing pilot surveys and developing standardized methods to identifying and designing new surveys to address fisheries data gaps, as well as heightening Program visibility. A renewed focus on outreach is underway to increase data use in stock assessments, ecosystem studies, and fisheries management. NEAMAP staff and survey scientists are also communicating data uses to the fishing industry and other stakeholders to promote buy-in of survey results for use in resource management decisions.

Research Initiatives

The Commission worked on several fisheries research initiatives in 2018 to address high priority issues for the Atlantic states and their fisheries stakeholders. Information gathered from the initiatives improved the scientific basis for Commission stock assessments and is fundamental to advising fisheries managers on the health of fish and crustacean populations.

ATLANTIC STRIPED BASS

A long-term research question in the assessment and management of coastal striped bass is how to determine the rates of migration and residency for striped bass originating from major nursery areas in Chesapeake Bay, Delaware Bay, and the Hudson River. Atlantic striped bass are currently managed as a single coastwide stock because of the lack of data on age- and sex-specific migration from these primary nursery areas. An assessment model that captures the stock-specific population dynamics of the coastal population would provide better management advice and reduce the risk of overexploiting each stock.



In 2018, the Commission gathered striped bass tagging data from state and university partners from North Carolina to Massachusetts. Tag and recapture results were input to a new multi-stock spatial assessment model to evaluate the migratory patterns and relative contributions of major coastal estuaries to the coastwide population. The Commission presented the new multi-stock model as part of the striped bass benchmark stock assessment that was completed in 2018.

BLACK SEA BASS

A black sea bass research fleet was recently established to sample fish off of the Southern New England coast. The new sampling program is led by the Rhode Island Division of Fish and Wildlife and the Commercial Fishermen's Research Foundation. Sampling is addressing major data gaps in biological information for the species that have hindered advances in black sea bass stock assessment. To date, nine fishing vessels comprising the research fleet have sampled more than 7,700 sea bass. Fish size, maturity, and age data are derived from samples and used to characterize the population in Southern New England. A subset of sea bass are also tagged and returned to the water in order to improve our understanding of stock structure and inshore-offshore migration patterns.

HORSESHOE CRAB

From 2002 to 2011, the Horseshoe Crab Trawl Survey, conducted by Virginia Tech University's Horseshoe Crab Research Center, was the only fishery-independent survey designed to sample horseshoe crab populations in Atlantic coastal waters. Survey data have been an important component of the Commission's coastwide stock assessment and ARM Framework, which incorporates both horseshoe crab and shorebird abundances to set optimized horseshoe crab harvest levels for the Delaware Bay area. The ARM Framework was used to set specifications for the 2013 to 2019 fishing seasons.

Due to funding shortfalls, the Horseshoe Crab Trawl Survey was not conducted between 2013 and 2015. The temporary break in 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. The Commission received short-term funding to conduct the Trawl Survey from 2016 to 2019. While the renewed funding is a positive development, the Commission will continue to seek long-term funding for the survey.

JONAH CRAB

The Jonah crab commercial fishery has undergone substantial growth in recent years. Historically, Jonah crab were considered bycatch in the New England lobster fishery. However, in the past 15 years, market demand has more than quadrupled, increasing targeted fishing pressure on Jonah crab. In areas where most of the U.S. Jonah crab fishery is conducted, no information exists on the movement patterns and size at maturity for male and female crab, key information for understanding crab population dynamics. The absence of maturity data prohibits estimation of the stock's spawning size and reproductive potential, limiting the Commission's ability to set biological reference points and conduct a stock assessment. A Jonah crab maturity study was initiated in 2015 and continued through 2018. Study results will improve our understanding of stock dynamics and more fully inform the newly established FMP.

RED DRUM

The Commission identified the lack of information on adult red drum as a data gap limiting the stock assessment to characterizing fish of ages one to six only, before older drum migrate offshore and reach a maximum age of up to 60 years. With federal 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, numbers of female and male drum, and the maturity and age structure of the population. All of the information is critical for evaluating the status of the red drum population in stock assessments, and for developing a successful red drum management program. Data on the distributions and abundances of several coastal shark species are also recorded in the long line surveys.

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 2018, the Commission facilitated fish ageing consistency and data sharing among various Atlantic coast laboratories through the development of standardized ageing protocols, the exchange of ageing samples, and a fish ageing workshop. An American eel age processing workshop occurred in 2018. The Commission also continued a black drum age sample collection program among the Mid-Atlantic states to obtain more age data on larger, older fish in order to develop an age-structured stock assessment model. Workshop results and ageing protocols can also be found on the Commission website at *www.asmfc.org/fisheries-science/research*.

CHANGING OCEAN CONDITIONS

Changing ocean conditions can have significant impacts on the behavior and geographic distribution of fishery resources. With warming waters, the availability of habitat for fish stocks may change and species may shift their range to seek out more suitable conditions. For stocks that are on the move, there is a need to reassess current management plans and fishery allocations. However, it is important to first fully evaluate the environmental and regulatory drivers that control stock distributions before revising management strategies.

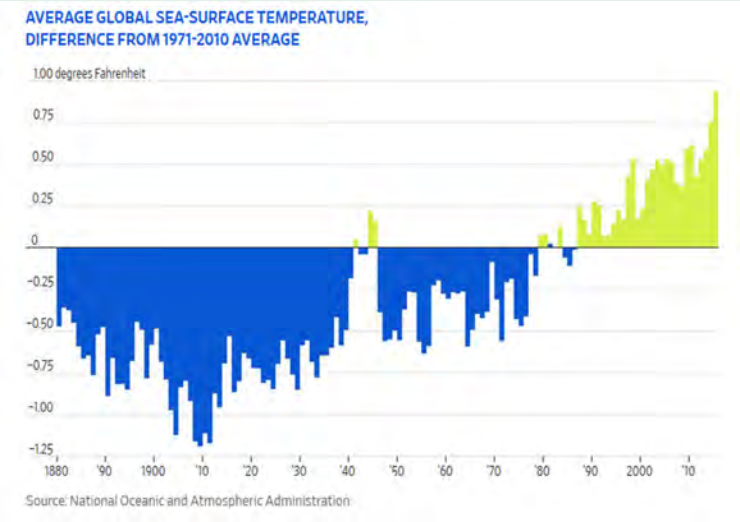
In anticipation of the impacts of changing ocean conditions on fish and crustacean stocks, a Commission Workgroup, comprised of fishery managers and scientists, prepared and adopted policies on how to adaptively manage stocks impacted by changing ocean conditions. Recommendations from the Workgroup included evaluations of shifts in distribution and productivity for new stock assessments, such as benchmark assessments for summer flounder and northern shrimp completed in 2018. The Commission is also incorporating the latest science and analytical tools to evaluate the impacts of changing ocean conditions on fish habitat through its Habitat Program and the Atlantic Coastal Fish Habitat Partnership. The Commission will continue to track new scientific tools and management issues related to changing ocean conditions and fisheries, including fish stock vulnerability tools developed by NOAA Fisheries *(www.st.nmfs.noaa.gov/ecosystems/climate/activities/assessing-vulnerability-of-fish-stocks).*

Ecosystem Models and Assessments

Ecosystem interactions, such as predator-prey relationships, are important for understanding the population dynamics of fishery resources managed by the Commission. The Ecological Reference Points (ERPs) Workgroup, comprised of state, federal, and university scientists, is responsible for evaluating relationships among species using multispecies predator-prey models. The Workgroup continues to develop multispecies models and ecosystem-based approaches that may be used to develop menhaden-specific ERPs. The ERPs will be based on the feeding needs of menhaden's primary predators (e.g., striped bass, weakfish, bluefish). In 2018, the Workgroup evaluated new multispecies models that will provide ecosystem reference points and complement the results of the Atlantic menhaden single-species stock assessment.

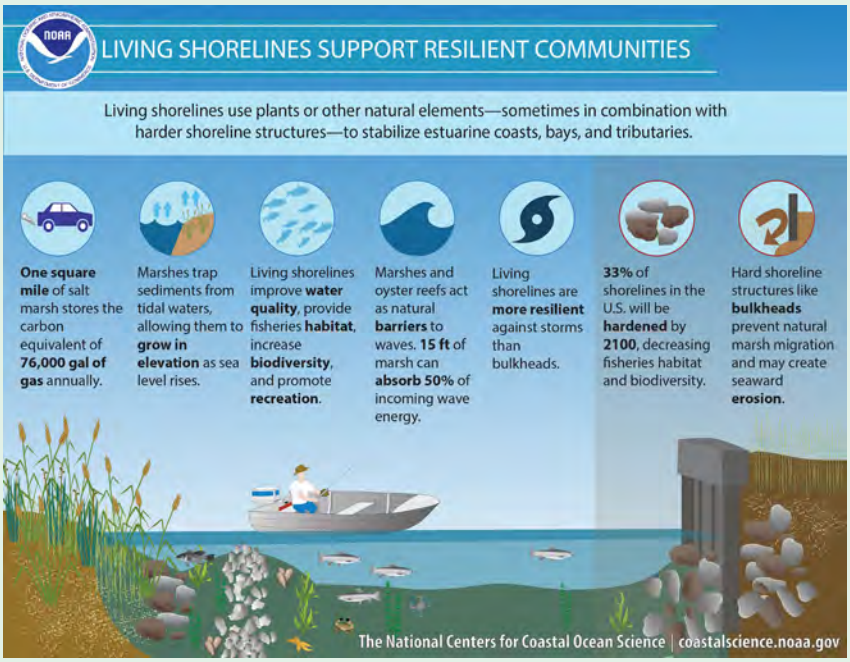
Stock Assessment Peer Review

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 2018, four stock assessments – Atlantic herring, northern shrimp, striped bass, and summer flounder – were evaluated through external peer reviews. The Commission and partners at the NEFSC advanced the assessment methods for these stocks, including development of a new statistical catch-at-length model for shrimp. Each assessment is presented to species management boards to inform management decisions for the newly assessed stocks.



STOCK ASSESSMENT TRAINING

The Commission organizes stock assessment training courses to provide instruction to fisheries professionals on the most progressive analytical methods available for use in stock assessments. Courses are conducted 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 results. 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. In 2018, the Commission held an introductory stock assessment training session on use of the statistical programming software, R. The software, which is widely used by stock assessment scientists around the globe, has also been used in several of the Commission's assessments. Training new state and federal scientists in the R software is designed to enhance their skills for future participation on stock assessment committees.



Socioeconomic Science

The Commission's Committee on Economics and Social Sciences (CESS) worked on data standards and basic information to include in FMPs (e.g., dockside prices, fishery permits, and participant demographics). CESS surveyed the Atlantic state marine fishery agencies to determine the types and extent of socioeconomic data they collect, to serve as the information source for FMP socioeconomic sections. CESS members also participated in deliberations among species technical committees and plan review teams during the development of FMP amendments and addenda that involved socioeconomic considerations.

Habitat Protection, Restoration, and Enhancement

The Commission recognizes protection, restoration, and enhancement of fish habitats are essential to promoting the sustainability of fisheries along the Atlantic coast. The Habitat Committee's charge is to identify, enhance, and cooperatively manage vital fish habitat for conservation, restoration, and protection, and to support cooperative management of fisheries activities. The Committee successfully performed this role through several activities in 2018.

The Habitat Committee released its annual issue of the *Habitat Hotline Atlantic.* The issue focused on monitoring our changing habitats along the East Coast. The Hotline featured articles about projecting shifts in thermal habitat for Atlantic species, sentinel monitoring for changing ocean conditions in Long Island Sound, the effects of road salt on anadromous fish, and a dynamic perspective of habitat management in the Northeastern United States. It also included an update on the Florida reef tract disease event, information on the Long Island volunteer river herring survey, and updates from the Atlantic Coastal Fish Habitat Partnership (ACFHP), the Gulf of Maine Research Institute, and state and federal marine fishery agencies.

In 2018, the Commission's Interstate Fisheries Management Program Policy Board approved the Habitat Committee's living shorelines factsheet to supplement the 2010 Habitat Management Series publication *Living Shorelines: Impacts of Erosion Control Strategies on Coastal Habitats.* This factsheet will be available on the ASMFC website in January 2019.

Throughout 2018, the Habitat Committee worked on two documents: a Habitat Management Series document focusing on aquaculture and one focusing on acoustic impacts to fish habitat. Both documents are expected to be finalized in 2019.

ATLANTIC COASTAL FISH HABITAT PARTNERSHIP

Beginning in 2006, the Commission contributed to the establishment and growth of 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. The Partnership 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).

The Partnership redesigned and modernized its website, *www.atlanticfishhabitat.org.* Bold and visually appealing, the new site seeks to be a resource to partners and those who are working on fish habitat conservation, or simply want to become more informed about habitat issues. An exciting feature of the new website is the Species-Habitat Matrix tool, which evaluates the relative importance of 26 coastal, estuarine, and freshwater habitats in terms of their value to 131 fish and invertebrate species. Specifically, the Matrix quantifies the importance of different habitats as shelter, nursery, feeding, or spawning areas for each species during the egg/larval, juvenile/young-of-the-year, adult, and spawning adult life stages. The new website tool is a database that allows users to search by species, region, habitat, and/or life stage and populates in real-time. You can download the results or the entire dataset for further analysis. Information in the Species-Habitat tool is intended for people and organizations to use in order to make better, quantifiable decisions about habitat conservation.

On the Ground Projects

ACFHP partnered with USFWS to fund three new on-the-ground restoration projects in 2018. The New York State Department of Environmental Conservation is leading a project to retrofit traditional boat moorings with conservation moorings in Coecles Harbor, New York. Coecles Harbor has the most substantial eelgrass bed remaining in any New York harbor. Conservation moorings, with their smaller footprint and bungee-like design, will reduce impacts to the eelgrass below and allow for recovery and increased resiliency. Protecting eelgrass will maintain habitat for species such as bay scallop, fluke, puffers, river herring, and striped bass.

The second project is led by The Nature Conservancy, who is working with partners to remove the Columbia Dam in Knowlton Township, New Jersey. The Columbia Dam is located less than 0.25 miles upstream of the confluence with the Delaware River, and is the first complete barrier to fish passage on the Paulins Kill. The removal will open 20 miles of streams and benefit species such as American shad, river herring, sea lamprey, and American eel.

Finally, East Carolina University is working with partners to restore 0.11 acres of intertidal oyster reefs in Back Sound, North Carolina. The reefs will protect over three acres of eroding and remnant salt marsh on Carrot Island, in the Rachel Carson Reserve. The project will benefit species such as red and black drum, flounder, Atlantic sharpnose and bonnet head sharks, black sea bass, and diamond back terrapins. For more information on all ACFHP-USFWS funded projects, please visit: *http://www.atlanticfishhabitat.org/on-the-ground-projects/.*

Habitat MAPPING Characterization

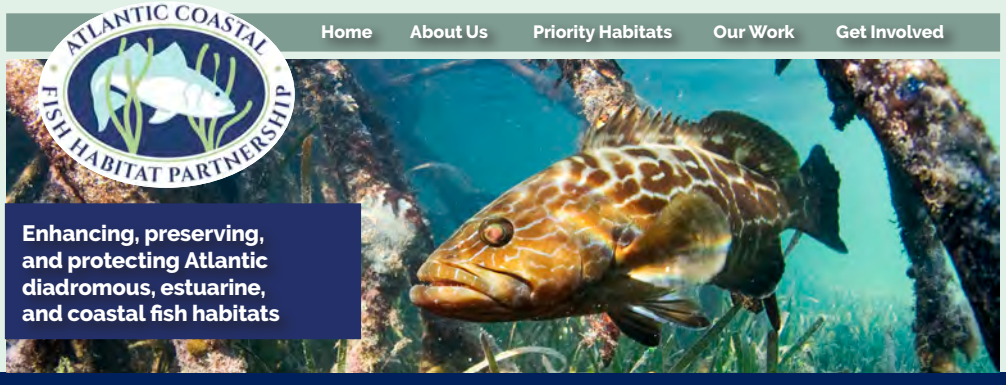
ACFHP has completed its NOAA-funded pilot project to characterize fish habitat conservation areas through Geographic Information System (GIS) mapping and analysis for the Southeast Region of the U.S. from North Carolina to Florida, and will be releasing the results in January 2019. Four separate maps were created, based on ACFHP's subregional priority habitats. Diadromous and estuarine maps were produced from North Carolina to northern Florida, and estuarine and coastal (coral reef) maps were produced for southern Florida. The maps will help ACFHP and partners identify where best to invest effort and future NFHP funds. Threats, such as impervious surface extent and barriers to fish passage, and well as habitat quantity and quality, were considered in the analysis. Funding from NOAA has been secured to begin mapping the northern portion (Virginia to Maine) of the ACFHP region in early 2019.

Black Sea Bass Habitat

ACFHP has continued to make progress promoting research on the relationship between black sea bass abundance and habitat characteristics in the Mid-Atlantic through a grant from the MAFMC. The project, led by Dr. Brad Stevens of the University of Maryland Eastern Shore, is titled *'Hab in the MAB: Characterizing black sea bass habitat in the Mid-Atlantic Bight.'* Dr. Stevens is comparing black sea bass abundance, stomach contents, and position in the food web with habitat characteristics black sea bass are associated with: bottom type, natural vs. artificial reefs, and the plants, animals, and algae attached to each habitat. The work will lead to a better understanding of the importance of habitat and prey community structure on black sea bass feeding ecology. Dr. Stevens and his team completed field samping in 2018, and will finish analyzing project data in 2019.

Support ACFHP

There are many ways you can support ACFHP, including donating directly to our cause, indirectly via AmazonSmile, and by purchasing RepYourWaters outdoor apparel. To learn more, visit *http://www.atlanticfishhabitat.org/donate/.*



Dependable and Timely Fisheries Statistics

Effective management depends on quality fishery-dependent data (e.g., information collected from recreational and commercial fisheries, such as landings, effort, or discards) and fishery-independent data (e.g., information collected through monitoring programs and research surveys) to inform stock assessments and fisheries management decisions. However, just as fisheries management responsibilities are divided among agencies, so too are fisheries data collection efforts. Developed by different agencies with different data needs, these fisheries data collection programs are heterogeneous in their temporal and spatial coverage, the data elements they collect, and in the codes used to enter and store the data.

Recognizing the need for consistency across Atlantic coast fishery-dependent data collection efforts, the 23 agencies responsible for fisheries management on the Atlantic coast established the Atlantic Coastal Cooperative Statistics Program (ACCSP). Using a committee-based approach, ACCSP works with its partners to increase data utility by:

- Developing and implementing coastwide data standards
- Providing electronic applications that improve partner data collection
- Integrating and sharing partner data via a coastwide repository
- Facilitating fisheries data access while protecting confidentiality
- Supporting further technological innovation

Improving Data Collection and Integration across Jurisdictions

COMMERCIAL FISHERIES

In 2003, using data standards developed through a committee process, ACCSP developed and deployed the Standard Atlantic Fisheries Information System (SAFIS) to enable online dealer reporting in Rhode Island. Over the past 15 years, SAFIS has evolved into a coastwide fishery-dependent data reporting system used by both dealers and harvesters. Today, the system houses live data collected via the three online and two mobile-based reporting applications, one of which is also used by the for-hire sector. Refreshed nightly, these live data can be accessed by the Program Partners for use in quota monitoring and in-season management.

MODERNIZING SAFIS

Now 15 years old, the SAFIS database requires modernization in order to keep pace with the needs of the Program Partners. Partners want better, more accurate data available in real-time, all while reducing the duplicative reporting burden on fishermen and dealers. Since 2016, ACCSP has been working on developing a blueprint for a redesigned database flexible enough to accommodate all partners' data requirements.

In 2018, ACCSP invited partner representatives to provide input to the design at two technical meetings. Staff used the input gathered from these workshops to develop a general systems specification document that outlines the proposed database design. ACCSP will use multi-level rules for all possible permit, gear, and species combinations to render the system flexible enough to accommodate all Partners' requirements. Software will be developed to build reporting forms on the fly based on the rules set by the agency to which the user is reporting. This will likely require the creation of an administrative console for the Partners to set up and manage their jurisdictions' rules. The redesigned SAFIS will also be capable of integrating with vessel monitoring and electronic monitoring systems, two areas of growing interest to fisheries managers. Per SAFIS user feedback, the new system will support smartphone-based reporting.

ADAPTING SOFTWARE TO PARTNER NEEDS

Concurrent with the redesign efforts, the ACCSP software team continues to make modifications to existing software in response to partners' evolving needs. In 2018, these modifications included:

- A new version of eTrips/Mobile with expanded gear attributes for use in the South Atlantic

- Modifications to eTrips/Online necessary for commercial trip reports to be accepted by the Greater Atlantic Regional Fisheries Office (GARFO)
- An eTrips/Mobile adaptation for Connecticut shellfish harvesters
- A version of eDR/mobile for testing in Georgia

RECREATIONAL FISHERIES

ACCSP is also continuing its work to improve recreational fisheries data collection. The cooperative approach among ACCSP, the Atlantic states, and NOAA Fisheries' MRIP is helping move the entire coast to a consistent recreational data collection design with unified catch and effort estimates across state and federal jurisdictions.

APAIS IMPROVEMENTS

Since 2016, ACCSP has coordinated state conduct of the Access Point Angler Intercept Survey (APAIS), the dockside intercept component of MRIP, from Maine to Georgia. It has helped foster collaborative efforts to identify and implement survey improvements to attain more angler intercepts, including better site selection/pressure estimation, building rapport with local fishermen, and modifications to the vessel directory.

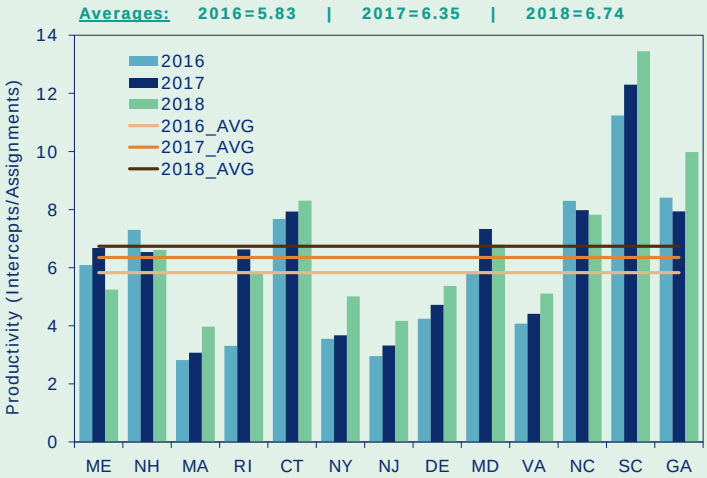
The collaborative efforts appear to be paying off, as intercept productivity (the number of intercepts per assignment) through Wave 5 was up by more than 6% in comparison to 2017, and up more than 15% over 2016. While the average number of site assignments conducted per state between Waves 1 and 5 has increased roughly 10% since 2016, site assignment intercepts have increased by more than 28%. Charter intercepts between Waves 1 and 5 have increased nearly 50% since 2016. These increases will help provide catch information that is more representative of recreational fishing trips on the Atlantic coast.

ACCSP will be introducing a tablet-based version of the APAIS in 2019 to move the survey from paper to electronic data collection. Identified as a priority item in the ACCSP Recreational Technical Committee's 2017 Atlantic Coast Recreational Implementation Plan, electronic data transmission will eliminate time spent on shipping and scanning paper forms, reducing ACCSP's processing time by two to three weeks. This will provide state partners with additional time to review edits and perform final data checks before the data are submitted to NOAA Fisheries at the end of each month. The tablet application also features built-in logic that hinders introduction of errors during data entry, meaning there should be fewer edits to be made. ACCSP staff spent 2018 preparing for the transition by further developing an electronic adaptation of the paper-based survey, which originated from a SAFMC pilot project and field testing it with state partners.

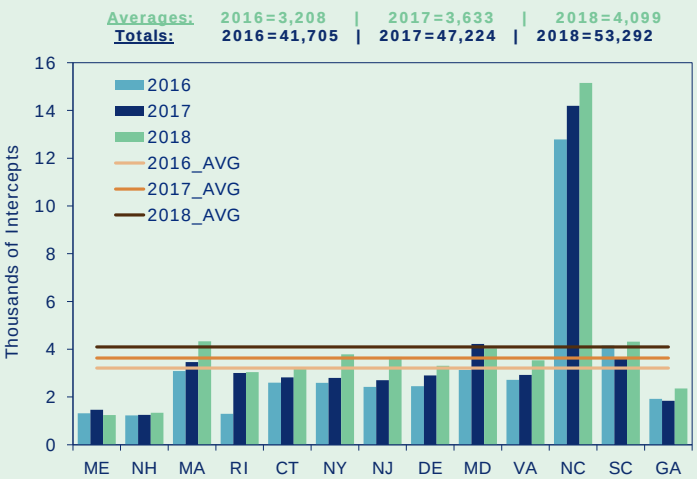
EFFORT ESTIMATION

In 2018, MRIP completed its three-year transition to a new effort survey for private anglers. Previously collected via the Coastal Household Telephone Survey, effort information for shore and private boat fishing trips is now gathered using the mail-based Fishing Effort

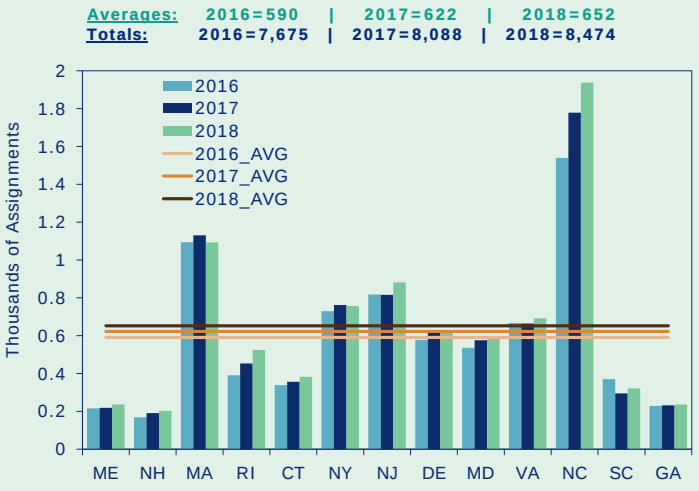
Comparison of Site Assignment Productivity in Waves 1-5 from 2016-2018



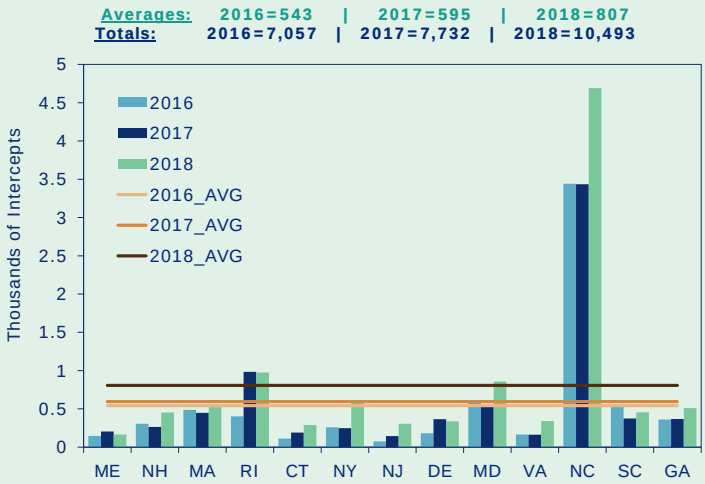
Comparison of APAIS Site Assignment Intercepts in Waves 1-5 from 2016-2018



Comparison of Site Assignments in Waves 1-5 from 2016-2018



Comparison of Charter Intercepts in Waves 1-5 from 2016-2018



Survey. Effort information from the for-hire sector will continue to be gathered via the For-Hire Telephone Survey (FHTS). In 2018, ACCSP's Recreational Technical Committee recommended moving to state conduct of the FHTS on the Atlantic coast by 2020. State conduct of FHTS would provide states with direct contact with captains, allowing state staff to learn captains' preferences and tailor approaches accordingly. It would also provide states with ownership of the Vessel Directory, making it easier for states to provide updates as needed.

To facilitate state conduct of the FHTS, ACCSP is developing a Call Assisted Telephone Interviewing system (CATI). This system will help state staff schedule and conduct FHTS interviews by scheduling call backs, automating mail merge for notification letters, and tracking calls completed each week. Responses from each call will be recorded directly into the ACCSP database. CATI will first be implemented by the three Atlantic states that already conduct the FHTS: Maine, North Carolina, and Georgia. A Large Pelagic Telephone Survey (LPTS) add-on will be incorporated within the CATI by April of 2019. The Committee aims for coastwide implementation by 2020, provided it receives support from NOAA Fisheries.

STREAMLINING FOR-HIRE DATA COLLECTION

Over the past few years, there has been growing interest in the use of electronic logbooks to collect trip data from the for-hire sector. In 2018, MAFMC mandated electronic trip reporting for for-hire vessels with MAFMC species permits. A similar rule for the South Atlantic and Gulf of Mexico Fishery Management Councils is expected to begin in 2019.

ACCSP was selected by GARFO and the Southeast For-Hire Integrated Electronic Reporting system as the repository for the for-hire reports. With GARFO's certification of the SAFIS eTrips/Mobile application for data submission, the majority of the 2018 federal for-hire reports were submitted via the application. ACCSP's eTrips/Mobile application is expected to be certified for use in the South Atlantic and Gulf for-hire fisheries in the first quarter of 2019.

Currently, for-hire logbook data are only incorporated into MRIP effort estimations along with data collected from the FHTS, although stakeholders have expressed interest in using the logbook data to generate MRIP catch estimates as well. Before this can occur, issues associated with accommodating concurrent for-hire reporting scenarios and validating self-reported data must be addressed.

The Recreational Technical Committee is working on a plan to integrate for-hire data collection from three sources - APAIS, FHTS, and logbooks - for both state and federal vessels on the Atlantic coast. The draft Comprehensive For-Hire Data Collection and Monitoring documents current methodologies and potential options for integrating for-hire data collections into one, comprehensive for-hire data collection program complete with validation. The Committee continues to refine the plan, aiming to submit a final version for peer review by 2020.

FACILITATING DATA ACCESS AND USE

ACCSP also works to increase the utility of partner data by integrating and sharing data via a coastwide repository that facilitates data access while also preserving confidentiality. ACCSP's Data Warehouse hosts the most complete set of fishery-dependent data for the entire Atlantic coast. In addition to data fed directly from SAFIS, the Warehouse dataset incorporates an additional 35 data streams supplied by the Program Partners. Using an automated access system, appropriate standardized data can be queried online and used by fishery managers, stock assessment scientists, fishermen, and the public. Recreational data supplied by MRIP can also be queried via the Warehouse.

Enhancing the Data Warehouse User Experience

ACCSP continues to make modifications to the Warehouse in order to enhance user experience. In 2018, staff worked with the Commercial Technical Committee to develop a new approach for displaying non-confidential data in the Warehouse's public reports. The new approach allows ACCSP to show more data while preserving confidentiality and clearly indicating where data have been redacted. Staff has also created an updated confidential access request form for users and a confidential access interface for Partner security contacts to better manage confidential data privileges.

CONTRIBUTION TO STOCK ASSESSMENTS AND PEER REVIEWS

ACCSP continues to compile Atlantic coast data for *Fisheries of the United States* and the online federal commercial data query system. The data are also used in many stock assessments and peer reviews. In 2018, ACCSP's data team participated in the following stock assessment, peer review, and data compilation processes:

- Weakfish (discard information for Board)
- Striped Bass (FMP review)
- Bluefish (stock assessment update)
- American Lobster (ASMFC stock assessment/FMP review)
- American Eel (ASMFC stock assessment)
- Atlantic Herring (quota monitoring)
- Horseshoe Crab (ASMFC stock assessment)
- Atlantic Menhaden (ASMFC stock assessment)
- Shad (ASMFC stock assessment)
- Red Drum (FMP review)
- Tautog (FMP review)
- Summer Flounder (amendment)

This year, the Data Team helped the State of New Jersey acquire information on fishing area activity in order to assess the impact of a plan for offshore windfarms in New York. The team also provided area fished data to the Natural Resource Defense Council to support outreach on the effects of seismic surveying.

CUSTOM DATA REQUESTS

ACCSP's data team also fulfills custom data requests from a variety of stakeholders including NGOs, students, and international bodies. The number of requests continues to grow: the team has completed 72 custom data requests in FY2018 to date.

ENCOURAGING FURTHER INNOVATION

In addition to improving fisheries data collection and facilitating data access/use, ACCSP encourages further innovation in fishery-dependent data collection and management through its annual project funding process. Funding is awarded to program partners for projects that support collaboratively derived priorities. Informed by the recommendations of the Operations and Advisory Committees, the Coordinating Council makes final funding decisions each fall. In FY 2018, roughly $1.2 million was distributed to a wide variety of Partner projects.

Awards

During 2018, the Commission had the privilege of presenting awards to several deserving individuals who have directly contributed to furthering the Commission's vision of Sustainably Managing Atlantic Coastal Fisheries.

CAPTAIN DAVID H. HART AWARD

The Commission presented **ROY W. MILLER**, Delaware's Governor Appointee to the ASMFC and former Director of Delaware's Division of Fish and Wildlife (DE DFW), the Captain David H. Hart Award, its highest annual award, at the Commission's 77th Annual Meeting in New York City. For the past 40 years, Mr. Miller has admirably served the State of Delaware and the Commission.

From the outset of his career in 1978 through passage of the Atlantic Striped Bass Conservation Act in 1984, Mr. Miller served on the Striped Bass Science and Statistical Committee (now known as the Striped Bass Technical Committee), working with the Committee to address the precipitous decline of the striped bass population. As part of those discussions, he was instrumental in getting Delaware to join Maryland in implementing a moratorium on the Delaware striped bass fishery. To this day, he considers the recovery of the striped bass population and the return of the Delaware Bay as a productive and important spawning area as two of his proudest Commission moments.

Beginning in 2003, as Section Administrator for DE DFW, Mr. Miller became the state's Administrative Commissioner Proxy. In that position, he served on and chaired numerous management boards, including Shad and River Herring, Weakfish, and the Horseshoe Crab Board. His chairmanship of the Horseshoe Crab Board was during the highly contentious development and implementation of the FMP, which sought to balance the needs of watermen, who wanted to continue to harvest crabs to use as bait, with the desires of environmentalists, who wanted to preserve the crabs so their eggs could feed migrating shorebirds. Mr. Miller skillfully guided the Board through some intense Board meetings, including significant public comment provided at the meetings. In addition to a management program that accommodated the needs of all the stakeholders and the resource, those meetings also resulted in revised comment protocols for public speaking at ASMFC meetings.

Immediately after his retirement in 2009, Mr. Miller was chosen by Governor Jack Markell (D-DE) to serve as his Appointee to the Commission. Notably, Mr. Miller didn't miss a meeting between his retirement and the Governor's appointment and continues to serve to this day without fail. As Governor Appointee, Mr. Miller continues to chair management boards and has been a regular visitor to Capitol Hill, keeping staffers apprised of important developments in Delaware and at the Commission. At one such meeting with former Congressman Carney's staff, Mr. Miller expressed his concern about funding shortfalls that resulted in the discontinuance of the Mid-Atlantic Horseshoe Crab Trawl Survey. That meeting and others that followed ultimately led to the restoration of the survey's funding in 2016. The survey is now supported by Senators and Representatives throughout the Mid-Atlantic; the survey's third consecutive year was completed this October.

Throughout his four decades of service, Mr. Miller has distinguished himself by his dedication to the Commission's management process. An insightful and respectful debater, and one of the most collegial Commissioners, Mr. Miller has consistently sought compromise instead of contention. These traits, combined with his long and meritorious record of accomplishments and dedication to sustainable fisheries management, make him a most worthy award recipient.

The Commission instituted the Hart Award in 1991 to recognize individuals who have made outstanding efforts to improve Atlantic coast marine fisheries. The Hart Award is named for one of the Commission's longest serving members, who dedicated himself to the advancement and protection of marine fishery resources, Captain David H. Hart, from the State of New Jersey.

Awards of Excellence

In 2018, the Commission presented Mr. Dan McKiernan, Dr. Larry Jacobson and Colonel Kyle Overturf with its Annual Awards of Excellence for their outstanding contributions to management and policy, science, and law enforcement activities along the Atlantic coast.

MANAGEMENT & POLICY CONTRIBUTIONS

MR. DAN MCKIERNAN
Massachusetts Division of Marine Fisheries

Dan McKiernan has been a vital contributor to the Commission's management and policy programs for over three decades. Throughout his career, he has worked tirelessly to meet the needs of Massachusetts' fishermen while ensuring the health of the fisheries resources on which they depend. At the management board level, Mr. McKiernan approaches problem solving in a pragmatic, collaborative way. His recipe for success has been one part engagement and one part persuasion, bringing his colleagues together during board meetings or over a friendly meal to make his case for Massachusetts' position while finding effective solutions to difficult interstate fisheries management problems.

His efforts on the development and adoption of Amendment 1 to the Tautog FMP illustrate his dedication to the collaborative process. Working closely with neighboring Rhode Island officials, he helped to develop uniform rules throughout the region. Mr. McKiernan has also been a staunch advocate of a harvester tagging program to improve tracking of the fish in commerce, thereby helping to address the longstanding problem of poaching in the fishery.

Having devoted a significant portion of his career working on American lobster science and management, there are few who are more passionate and dedicated to this species. As Chair of the American Lobster Management Board, Mr. McKiernan skillfully led the Board through difficult deliberations regarding the findings of the 2015 benchmark assessment and the future management of the species. In response to the decline of the SNE stock, Mr. McKiernan was integral to right-sizing the industry in Lobster Conservation

Left to right: James J. Gilmore, ASMFC Chair; AAE recipients Dan McKiernan and Col. Kyle Overturf; and Robert E. Beal, ASMFC Executive Director

Management Areas 2 (inshore Southern New England) and 3 (offshore waters) to the abundance of the resource. This was accomplished through trap reductions over a six-year period.

Mr. McKiernan understands that on-the-water experience and talking to fishermen is a critical component of any fisheries manager job. That is why he has spent considerable time on fishing vessels acquiring the hands-on knowledge and perspective necessary to understand and respect fishermen's views. Throughout his career, Mr. McKiernan has been a proponent of working with the fishing industry to understand their unique perspective, get advice about management issues, and engage them in cooperative fisheries research.

SCIENCE, TECHNICAL & ADVISORY CONTRIBUTIONS

DR. LARRY JACOBSON
NOAA Fisheries Northeast Fisheries Science Center (retired)

Dr. Larry Jacobson has greatly advanced the scientific understanding of American lobster biology through his contributions on the Commission's American Lobster Stock Assessment Subcommittee. In 2004, Dr. Jacobson was one of the lead model developers for the Lobster Model Technical Review. He played an important role in shifting away from the historical Delury stock assessment model to the current statistical length-based approach developed by Dr. Yong Chen. Dr. Jacobson's extensive knowledge in population dynamics and statistics, combined with his model programming skills, were invaluable during this transition and the continued development of Dr. Chen's assessment model.

During the 2015 lobster assessment, Dr. Jacobson took over the assessment responsibilities for the Gulf of Maine stock. Under his leadership, the assessment model was substantially improved to incorporate spatial dynamics within the stock and show changes in climate and stock productivity. These improvements allowed for accurate modeling of the SNE stock decline, as well as the rapid increase in the combined GOM/GBK stock. The 2015 lobster assessment's timely completion was in large part due to Dr. Jacobson's skill and commitment.

Dr. Jacobson's willingness to step into a leadership role when needed, his commitment to seeking out and using the best scientific methods available, and his dedication to sharing his knowledge of lobster biology and stock dynamics with his colleagues are several reasons why American lobster is one of our best understood marine species.

LAW ENFORCEMENT CONTRIBUTIONS

COLONEL KYLE OVERTURF
Connecticut Environmental Police (retired)

Colonel Kyle Overturf exemplifies the lifelong commitment and spirit of public service that is common among his natural resource enforcement peers. Growing up hunting and fishing, Colonel Overturf learned the "game warden" lifestyle firsthand from his father, who served 25 years with Connecticut's Environmental Police.

Colonel Overturf began his law enforcement career in 1986, serving as a Conservation Enforcement Officer in the Central Marine Sector for the State Environmental Police. Progressing through his career, Colonel Overturf was promoted to Sergeant, then to Eastern District Supervisor in Recreational Law Enforcement. He later went on to serve as Captain and Commander of the State's Western and Marine Districts. In recognition of his leadership and professionalism, Colonel Overturf was promoted to Colonel in 2010 to lead the Connecticut Environmental Conservation Police as Director.

That leadership and professionalism has been reflected in Colonel Overturf's work throughout his career, where he has focused on the mentoring, instruction, and professional development of fellow marine and conservation officers. Colonel Overturf has served as an instructor at the Connecticut Police Academy and currently serves as an Adjunct Instructor at the University of Connecticut, where he teaches Conservation Law Enforcement. He has been a leader in resource conservation at regional and national levels, serving in the National Association of Conservation Law Enforcement Chiefs, including as President of the Northeast Association of Chiefs. He supported the development of an enforcement group within the Association of Fish and Wildlife Agencies, and for many years has been a positive presence on the Commission's Law Enforcement Committee. Colonel Overturf served as Law Enforcement Committee Chair from 2011-2013.

Reflecting his concern for professional development and training in the field of marine and conservation enforcement, Colonel Overturf has been a staunch advocate and supporter of a nationwide Conservation Law Enforcement Leadership Academy, administered through the National Association of Conservation Law Enforcement Chiefs and with support from the United States Fish and Wildlife Service. He serves on the Academy Steering Team and was a member of the first graduating class in 2014. He actively encourages and supports future leaders through this program, carrying on a tradition of care and passion for protecting all our natural resources that was bestowed on him by his father.

ACFHP Melissa Laser Fish Habitat Conservation Award

ACFHP proudly presented Eric Anderson of Palm Beach County Department of Environmental Resources Management its 2018 Melissa Laser Habitat Conservation Award at the Commission's 77th Annual Meeting in New York, New York.

Mr. Anderson has led the design and management of at least 10 large scale restoration projects in the Lake Worth Lagoon, Palm Beach County, Florida. The lagoon is situated in a highly urban coastal environment, creating unique challenges that Mr. Anderson expertly addresses. Mr. Anderson's work has focused on restoration of ACFHP priority mangrove and seagrass habitats by creating in-water habitat islands.

The Grassy Flats project, endorsed by ACFHP in 2012, exemplifies Mr. Anderson's talents in managing all the challenges of a successful restoration project. Grassy Flats is a 12-acre, $3.7 million seagrass, mangrove, oyster, and tidal marsh restoration project that included multiple partners and grants. This project employed innovative construction methods, including a "sand-shooter" and beneficial re-use of sediments. Monitoring of fish, wildlife, and vegetation two years after the completion of the project show it is successfully providing habitat and being utilized by native wildlife. ACFHP endorsed this project based on its support of the Partnership's restoration objectives and lagoon-wide long-term water quality benefits. The project has proved to be resilient and withstood the impacts of Hurricane Irma in 2017. Eric is currently developing two large-scale projects that will create additional mangrove and seagrass habitats.

Eric is a valued restoration partner who targets and fulfills ACFHP conservation goals, and finds innovative means to gain support for, fund, and implement beneficial fish habitat projects. He also generously shares his skills and experiences with other practitioners. Palm Beach County Department of Environmental Resources Management has earned a reputation of excellence for estuarine restoration work, which is largely due to Eric's hard work and dedication.

The Melissa Laser Fish Habitat Conservation Award is bestowed upon individuals deemed to further the conservation, protection, restoration, and enhancement of habitat for native Atlantic coastal, estuarine-dependent, and diadromous fishes in a unique or extraordinary manner. The award was established in memory of Dr. Melissa Laser who passed away unexpectedly on April 27, 2010. Melissa was a biologist with the Maine Department of Marine Resources where she worked tirelessly to protect, improve, and restore aquatic ecosystems in Maine and along the entire Atlantic coast.

Financial Report

The Commission was once again fortunate to receive adequate funding to conduct all fundamental programmatic activities and maintain current staffing. Of note, the Commission's total assets were nearly constant (less than a 3% decrease) from FY 2017 to FY 2018. This maintenance of funding is necessary to support the core mission of the Commission. Following is a financial snapshot of the Commission for the years ended June 30, 2018 and 2017. Detailed financial statements audited by the firm Dixon Hughes Goodman LLP, are available from the Commission office.

Atlantic States Marine Fisheries Commission
Condensed Statement of Financial Position Information
For the Years Ended June 30, 2018 and 2017

ASSETS

	2018	2017
CURRENT ASSETS:		
Cash and cash equivalents	$ 512,317	$ 1,019,597
Grants and accounts receivable	2,639,344	2,260,197
Prepaid expenses	83,265	50,288
Total Current Assets	3,234,926	3,330,082
Investments	842,812	841,328
Property and Equipment, Net	3,424,638	3,558,567
TOTAL ASSETS	$ 7,502,376	$ 7,729,977

LIABILITIES AND NET ASSETS

CURRENT LIABILITIES:		
Accounts payable and accrued expenses	$ 1,483,956	$ 1,562,887
Deferred revenue and contract advances	302,626	819,821
Current maturities of long term debt	180,000	180,000
Total Current Liabilities	1,966,582	2,562,708
OTHER LIABILITIES:		
Long term debt	250,912	430,912
Obligation under interest rate swap	1,696	10,144
Total Other Liabilities	252,608	441,056
TOTAL LIABILITES	2,219,190	3,003,764
UNRESTRICTED NET ASSETS	5,283,186	4,726,213
TOTAL LIABILITIES AND NET ASSETS	$ 7,502,376	$ 7,729,977

Atlantic States Marine Fisheries Commission
Condensed Statement of Activities Information
For the Years Ended June 30, 2018 and 2017

	2018	2017
REVENUE:		
Contract reimbursements	$ 14,140,269	$ 14,071,392
Contributions from member states	698,519	665,257
Other	27,521	26,591
Total Revenue	14,866,309	14,763,240
EXPENSES:		
Salaries and fringe benefits	5,993,209	5,824,678
Subcontracts	5,502,547	6,171,518
Travel	1,368,771	1,323,386
Other	1,453,257	975,428
Total Expenses	14,317,784	14,295,010
OTHER INCOME (EXPENSES):		
Interest rate swap obligation adjustment	8,448	23,042
Gain (loss) on disposal of property	-	-
Total Other Income (Expenses)	8,448	23,042
CHANGE IN NET ASSETS	556,973	491,272
NET ASSETS, BEGINNING OF YEAR	4,726,213	4,234,941
NET ASSETS, END OF YEAR	$ 5,283,186	$ 4,726,213

Commission Staff

EXECUTIVE DIRECTORATE

Robert E. Beal	*Executive Director*
Deke Tompkins	*Legislative Executive Assistant*

ATLANTIC COASTAL COOPERATIVE STATISTICS PROGRAM

Mike Cahall	*Director*
Ed Martino, Ph.D.	*IT Manager and Programmer*
Alexandra Schwaab	*Program Manager*

DATA TEAM

Julie Defilippi Simpson	*Data Team Leader*
Heather Konell	*Senior Fisheries Data Coordinator*
Joe Myers	*Senior Data Coordinator*
Jennifer Ni	*Fisheries Data Analyst*
Mike Rinaldi	*Fisheries Data Coordinator*

SOFTWARE TEAM

Karen Holmes	*Software Team Leader*
Nico Mwai	*Senior Developer - Fisheries Systems*

RECREATIONAL DATA PROGRAM

Geoffrey White	*Recreational Program Manager*
Alex DiJohnson	*Recreational Data Coordinator*
Sarah Rains	*Recreational Data Analyst*
Coleby Wilt	*Recreational Data Coordinator*

COMMUNICATIONS

Tina L. Berger	*Director*
Jessica Kuesel	*Fisheries Administrative Assistant*

FINANCE AND ADMINISTRATION

Laura C. Leach	*Director*
Cecilia Butler	*Human Resources Administrator*
Jayran Farzanegan	*Accounting Manager*
Lisa Hartman	*Staff Assistant*
Chris Jacobs	*Facilities and Technology Administrator*
Cynthia Robertson	*Meetings Assistant*

FISHERIES SCIENCE PROGRAM

Pat Campfield	*Director*
Kristen Anstead, Ph.D.	*Stock Assessment Scientist*
Katie Drew, Ph.D.	*Stock Assessment Team Lead*
Lisa Havel, Ph.D.	*ACFHP Coordinator*
Jeff Kipp	*Senior Stock Assessment Scientist*
Sarah Murray	*Fisheries Science Coordinator*

INTERSTATE FISHERIES MANAGEMENT PROGRAM

Toni Kerns	*Director*
Max Appelman	*Fishery Management Plan Coordinator*
Kirby Rootes-Murdy	*Senior Fishery Management Plan Coordinator*
Mike Schmidtke, Ph.D.	*Fishery Management Plan Coordinator*
Caitlin Starks	*Fishery Management Plan Coordinator*
Megan Ware	*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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- Captain David H. Hart Award recipient Roy Miller with an Atlantic striped bass © Roy Miller

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- Nichola Meserve of the Massachusetts Division of Marine Fisheries (MA DMF) with a dominant, male black sea bass as evidenced by the nuchal hump at the top of its head before its dorsal fin © MA DMF

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- Angler with a bluefish © John McMurray, *www.nyflyfishng.com*

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- Tiger shark being measured on a federal research survey © Captain Jerry Adam
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- River herring sampled as part of the Maryland Gillnetting Survey © Caitlin Starks, ASMFC

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- Recreational anglers with spotted seatrout © Captain Walter Bateman, *www.carolinaguide.com*

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- Recreational anglers with tautog © Nick Denny
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- Winter flounder on seafloor © Jerry Prezioso, NOAA Fisheries

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- Shark sampled as part of South Carolina Department of Natural Resources (SC DNR) Coastal Sharks Longline Survey © SC DNR

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- Harvest fish sampled as part of the Massachusetts Inshore Trawl Survey © MA DMF

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- Atlantic striped bass sampled as part of the Striped Bass Hook and Line Tagging Survey © Tom Crews, USFWS

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