

Atlantic States Marine Fisheries Commission



2023
Annual Report

Commissioners

MAINE

Patrick C. Keliher
Rep. Allison Hepler
Stephen R. Train

NEW HAMPSHIRE

Cheri Patterson
Sen. David H. Watters
Douglas Grout

MASSACHUSETTS

Dan McKiernan
Rep. Sarah K. Peake
Raymond W. Kane

RHODE ISLAND

Jason McNamee, Ph.D.
Sen. Susan Sosnowski
David V.D. Borden

CONNECTICUT

Justin Davis, Ph.D.
Rep. Joseph Gresko
William Hyatt

NEW YORK

Marty Gary
Assy. Fred Thiele
Emerson C. Hasbrouck, Jr.

NEW JERSEY

Joseph Cimino, Vice-Chair
Sen. Vin Gopal
Jeff Kaelin

PENNSYLVANIA

Timothy D. Schaeffer, Ph.D.
Rep. Anita Kulik
Loren W. Lustig

DELAWARE

John Clark
Rep. William J. Carson
Roy W. Miller

MARYLAND

Lynn Waller Fegley
Del. Dana Stein
H. Russell Dize

VIRGINIA

Jamie Green
Sen. Monty Mason
J. Bryan Plumlee

NORTH CAROLINA

Kathy Rawls
Rep. Michael Wray
Jerry A. Mannen

SOUTH CAROLINA

Mel Bell
Sen. Ronnie W. Cromer
Dr. Malcolm Rhodes

GEORGIA

Doug Haymans
Rep. Trey Rhodes
A.G. "Spud" Woodward, Chair

FLORIDA

Jessica McCawley
Rep. Thad Altman
Gary Jennings



OUR 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.



Annual Report 2023

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

Atlantic States Marine Fisheries Commission

1050 North Highland Street

Suite 200 A-N

Arlington, Virginia 22201

703.842.0740

Robert E. Beal, Executive Director

Tina L. Berger, Editor

FEBRUARY 2024



Introduction

The Atlantic States Marine Fisheries Commission (Commission) is pleased to present our 2023 Annual Report. The report fulfills our obligation to inform Congress on the Commission's use of public funds, and provides stakeholders with an overview of activities and progress in carrying out our cooperative stewardship responsibilities for the marine, shell, and diadromous species under our care.

In the report, you will find a quick guide to stock status for the 27 species groups the Commission manages; a fisheries management section, focusing on species which had the most significant management or stock assessment activities in 2023; and sections highlighting major accomplishments in 2023 in the areas of fisheries science, habitat conservation, and fishery data collection and management. Please visit the Commission's website at www.asmfc.org for additional information on any of our programs or activities.

The Commission was formed 82 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 US Congress in 1942. The Commission's mission as stated in the Compact is to promote cooperative management of fisheries – marine, shell, and diadromous – of the Atlantic coast of the US by the protection and enhancement of such fisheries, and by the avoidance of physical waste of the fisheries from any cause. 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.

The Commission serves as a 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. 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.

The task of managing finite marine resources continues to grow more complex in light 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. To support these activities at both the Commission and state level, the Commission has a budget of \$53.6 million, which comes from a combination of state appropriations and federal grants, including the Atlantic Coastal Fisheries Cooperative Management Act.

We remain grateful to Congress, the Administration, our Governors, and state legislators for their continued support of the Commission and its vision of *Sustainable and Cooperative Management of Atlantic Coastal Fisheries*. Many of our accomplishments would not have been possible without their trust and confidence. In addition, the technical support provided by NOAA Fisheries, US Fish and Wildlife Service, and US Geological Survey staff to the Commission and states is an invaluable component of our interstate fisheries management, science, and data collection activities.

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.

Report from the Chair



SPUD WOODWARD

As my final report as Chair of the Commission, I want to thank my fellow Commissioners and proxies, members of Congress, federal partners, and stakeholders for the support you continue to provide us in our important work of sustainable and cooperative management of Atlantic coast species. Collectively, we have made significant strides in 2023 in the areas of fisheries management, fisheries science, and data collection and management.

Over my term as Chair, we have successfully revised three of the Commission’s foundational policies – our Appeals Process, *De Minimis* Policy, and Conservation Equivalency Guidelines. Each are fundamentally important to ensuring that we treat each other fairly, with clearly articulated guidelines and processes, and without undue burden in the management process.

There has been a lot of stock assessment activity in 2023, with benchmark stock assessments for American eel, black drum, Jonah crab, and winter flounder, all endorsed through a peer review process and accepted for management use by the relevant species management boards. Another five benchmark stock assessments are in preparation for completion in 2024 and 2025.

In response to the American eel benchmark stock assessment finding that eels continue to be depleted, the Board initiated an addendum to consider reductions to the coastwide yellow eel harvest cap. At the same time, the American Eel Board is working on an addendum to address Maine’s glass eel fishery quota, which sunsets in 2024.


















Commissioners also took important steps to increase spawning protection for the Gulf of Maine/Georges Bank stock of American lobster and rebuild Atlantic striped bass. Through the adoption on Addendum XXVII, the American Lobster Board established a trigger mechanism to implement management measures – specifically gauge and escape vent sizes – to provide additional protection of the spawning stock biomass.

In 2023, for the first time in 12 years, Commissioners used the emergency action provision of the Interstate Fisheries Management Program Charter to implement a 31” maximum size limit for striped bass recreational fisheries in order to control recreational harvest and protect a strong year class that could aid in stock rebuilding. The action responded to the near doubling of estimated recreational harvest from 2021 to 2022 and the strong likelihood that the 2029 rebuilding timeline would not be met unless fishing mortality was reduced. The emergency provision extends until October 28, 2024, while the Board considers management measures designed to reduce fishing mortality to the target and promote stock rebuilding under Draft Addendum II, which will be considered for approval in January 2024.











This was also a year of heightened stakeholder and media interest in the Commission’s management of Atlantic menhaden and Delaware Bay-origin horseshoe crab. The Commission has invested considerable resources to manage these species in an ecological context, recognizing their role in providing an important food source to other species. For Atlantic menhaden, the Commission uses ecological reference points to set coastwide harvest levels that account for the forage needs of key predatory fish, while the Adaptive Resource Management Framework uses abundance estimates of both horseshoe crabs and migratory shorebirds to set harvest limits for horseshoe crabs in the Delaware Bay region. The Commission stands behind the science that supports these management programs and is committed to further refining the models as the science and our understanding of these species continue to evolve.

In closing, I want to thank the staff for their support during my tenure as Commission Chair. I also want to thank my Vice-Chair, Joe Cimino, for his willingness to serve as a leader and for his valuable perspective. In the year ahead, I look forward to working with our new leadership and all of you as we strive to ensure we have healthy fisheries along the Atlantic coast.

Quick Guide to ASMFC Species Stock Status

SPECIES		OVERFISHED	OVERFISHING	ASSESSMENT & MANAGEMENT OVERVIEW
	American Eel	Depleted	Unknown	Stock status based on 2023 benchmark stock assessment. Measures implemented in 2013/2014 to reduce <i>F</i> and prevent expansion of the fishery. Addenda initiated to consider reducing yellow eel harvest and addressing Maine glass eel quota.
	Gulf of Maine/ Georges Bank (GOM/GBK)	N	N	Stock status based on 2020 benchmark assessment; abundance and recruitment near record highs. Addendum XXVII, approved in 2023, seeks to increase protection of spawning stock.
	Southern New England	Depleted	N	Stock status based on 2020 benchmark assessment; abundance and recruitment lowest on record.
	American Shad	Depleted	Unknown	Stock status based on 2020 benchmark assessment. Species depleted on coastwide basis, with recovery limited by restricted access to spawning habitat. Amendment 3 established 2013 moratorium unless river-specific sustainability can be documented.
	Atlantic Croaker	Unknown	Unknown	2020 TLA triggered management action for the Mid-Atlantic and South Atlantic regions; changes to recreational and commercial fishery regulations implemented. Benchmark assessment scheduled for 2024.
	Atlantic Herring	Y	N	Stock status based on 2022 assessment update; SSB at 21% SSB target.
	Atlantic Menhaden	N	N	Stock status based on 2022 assessment update; use of ERPs approved by Board in 2020. Single-species assessment update and ERP benchmark assessment and peer review scheduled for 2025.
	Atlantic Striped Bass	Y	N	Stock status based on 2022 assessment update. Measures implemented in 2020 to achieve 18% reduction in total removals and end overfishing. Emergency action, adopted in May 2023, changed recreational size limit, beginning May 2 extending to October 28, 2024 or until implementation of Addendum II, which is intended to reduce <i>F</i> to the target in 2024.
	Atlantic Sturgeon	Depleted	N	Stock status based on 2017 benchmark assessment; slow recovery occurring since 1998 and total mortality is sustainable. 40+ year moratorium implemented in 1998; listed in 2012 under the ESA. Assessment update scheduled for 2024.
	Black Drum	N	N	Stock status based on 2023 benchmark assessment; spawning biomass has been increasing; exploitation has remained at a higher, stable level since the early 2000s.
	Black Sea Bass	N	N	Stock status based on 2021 management track stock assessment; SSB estimated to be 2.2 times the biomass target. Research and management track assessments scheduled to be completed in 2024.
	Bluefish	N	N	Stock status based on 2023 management track stock assessment. Amendment 2 (2021) established a 7-year rebuilding program. Stock will remain under rebuilding program until biomass reaches target. Management track assessment to be completed in 2025.
	Coastal Sharks	Varies by species and species complex		
	Cobia	N	N	Stock status based on 2022 benchmark stock assessment; pattern of rapid biomass increases in strong recruitment years followed by years of decline.
	Horseshoe Crab	Unknown	Unknown	Stock status based on 2019 benchmark assessment; NE region and DE Bay stocks stable; NY region stock poor; and SE region stock good. Coastwide abundance has fluctuated, with many surveys decreasing after 1998 but increasing in recent years. ARM Framework used since 2013 to set harvest levels for DE Bay-origin horseshoe crabs. ARM Framework Revision adopted via Addendum VIII in 2022. Stock assessment update scheduled for 2024.
	Jonah Crab	Not Depleted Compared to Historic Lows	Unknown	Stock status based on 2023 benchmark assessment; coastwide population abundance remains above historic lows but with recent declines in landings and CPUE, stock should be closely monitored. Measures implemented to prevent harvest of immature crabs and cap fishery to limit expansion.
	Northern Shrimp	Depleted	N	Stock status based on 2021 stock assessment update; abundance, biomass, SSB, and recruitment are at near time-series lows. Environmental conditions continue to be unfavorable to rebuilding. Moratorium in place since 2014 to protect remaining spawning population.
	Northern Region	Unknown	No	Stock status based on 2018 benchmark assessment; sSPR above target and threshold SPRs. Benchmark assessment scheduled for 2024.
	Southern Region	Unknown	No	

Quick Guide to ASMFC Species Stock Status

SPECIES		OVERFISHED	OVERFISHING	ASSESSMENT & MANAGEMENT OVERVIEW
	River Herring	Depleted	Unknown	Stock status based on 2017 assessment update. Amendment 2 established 2012 moratorium unless river-specific sustainability can be documented. Benchmark assessment and peer review scheduled for 2024.
	Scup	N	N	Stock status based on 2023 management track stock assessment; SSB estimated to be over two times its target. Management track assessment scheduled for 2025.
	Spanish Mackerel	N	N	Stock status based on 2022 stock assessment update, which found stock status unchanged. However, if the high F seen in 2020 continues, the stock may fall into an overfishing status.
	Spiny Dogfish	N	N	Stock status based on 2023 management track assessment; despite a decline in stock productivity, SSB estimated to be 101% of the target and F estimated to be 89% of the threshold.
	Spot	Unknown	Unknown	2020 TLA triggered management action for Mid-Atlantic and South Atlantic regions; changes to recreational/commercial fishery regulations implemented. Benchmark assessment scheduled for 2025.
	Spotted Seatrout	Unknown	Unknown	No range-wide assessment. Omnibus Amendment included measures to protect spawning stock and established 12" minimum size limit.
	Summer Flounder	N	Y	Stock status based on 2023 assessment. Assessment detected patterns of declining maturity and mean length/weights at age. Management track assessment scheduled for 2025.
	Massachusetts-Rhode Island	N	N	Stock status based on 2021 assessment update, which found improvements in all regions. Assessment update scheduled for 2025.
	Long Island Sound	N	N	
	New Jersey-New York Bight	Y	N	
	Delaware/Maryland/Virginia	N	N	
	Weakfish	Depleted	No	Stock status based on 2019 assessment update. Species depleted since 2003; population experiencing high levels of natural mortality, preventing stock recovery. Harvest limited to 1 fish recreational bag limit and a 100 pound commercial bycatch limit.
	Gulf of Maine	Unknown	N	Stock status based on 2022 management track assessment; abundance indices relatively flat over time series with an increase in 2021/2022. Management track assessment scheduled for both stocks in 2025.
	Southern New England/Mid-Atlantic	N	N	Stock status based on 2022 management track assessment; SSB at record lows despite sustained low levels of F. Recruitment has declined sharply since 1980s and remains near time series low. Change in overfished status due to a change in the recruitment time series used to estimate BRPs, rather than an improvement in the stock.

For more information about the Commission's fisheries management program or any of the above species go to <http://www.asmfc.org/fisheries-management/program-overview>.

WHAT DOES A STATUS MEAN?

Unknown - There is no accepted stock assessment to estimate stock status.

Depleted - Reflects low levels of abundance though it is unclear whether fishing mortality is the primary cause for reduced stock size

Overfished - Occurs when stock biomass falls below the threshold established by the fishery management plan (FMP), impacting the stock's reproductive capacity to replace fish removed through harvest, and that decline is driven primarily by fishing mortality

Overfishing - Removing fish from a population at a rate that exceeds the threshold established in the FMP, impacting the stock's reproductive capacity to replace fish removed through harvest

Benchmark stock assessment - A full analysis and review of stock condition, focusing on the consideration of new data sources and newer or improved assessment models. This assessment is generally conducted every few years and undergoes a formal peer review by a panel of independent scientists who evaluate whether the data and the methods used to produce the assessment are scientifically sound and appropriate for management use.

Stock assessment update - Incorporates data from the most recent years into a peer-reviewed assessment model to determine current stock status (abundance and overfishing levels).

Management track or operational assessments - Part of the Northeast Fisheries Science Center (NEFSC) stock assessment process (management track) and the Southeast Data, Assessment, and Review (SEDAR) stock assessment process (operational). Provides routine, scheduled, and updated advice to directly inform management actions. Management track and operational assessments ensure that stock status is updated on a regular and predictable basis.

Research track assessments - Part of the NEFSC and SEDAR stock assessment processes and are complex scientific efforts that are designed to be carried out over several years. They can (1) focus on research topics for one or more individual stocks, (2) evaluate an issue or new model/tool that could apply to many stocks and/or (3) consider extensive changes in data, model, or stock structure. Research assessments can provide the basis for future management assessments.

TABLE ACRONYMS

ARM Adaptive Resource Management	MSY maximum sustainable yield
CPUE catch per unit effort	SPR spawning potential ratio
ERPs ecological reference points	sSPR static spawning potential ratio
ESA Endangered Species Act	SSB spawning stock biomass
F fishing mortality	TLA Traffic Light Analysis

Species Highlights

AMERICAN EEL

Along the East Coast, American eel are an important resource from both a biodiversity and human use perspective. They serve as an important prey species for many fish, aquatic mammals, and birds. Although fisheries are a fraction of what they were historically, they continue to support valuable commercial, recreational, and subsistence fisheries in some areas along the Atlantic coast.



From a biological perspective, much is still unknown about American eel.

This is largely due to their unique life cycle that begins in the Sargasso Sea, moves into coastal estuaries and rivers along the US Atlantic coast for the majority of their lives, and then returns to the Sargasso Sea to reproduce. Information is limited about their abundance, status at all life stages, and habitat requirements. The 2023 peer-reviewed benchmark stock assessment found the American eel population remains depleted in US 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. The stock assessment found the yellow eel population at lower levels than the 2017 assessment, and recommended yellow eel harvest be decreased. Trend analyses of abundance indices indicated 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 2010, followed

by further declines. Total landings remain low but stable. No overfishing determination could be made.

In response to the assessment findings, the American Eel Management Board initiated an addendum to consider reductions to the coastwide yellow eel harvest cap. In 2014, the yellow eel coastwide cap was set at 907,671 pounds and was raised to 916,473 pounds in 2019. The addendum will consider using a tool recommended in the assessment for setting the coastwide cap based

on abundance indices and catch. The draft addendum will include a range of potential coastwide caps and management options. In addition to this addendum, the Board initiated an addendum to address Maine's glass eel fishery quota, which has been 9,688 pounds since 2015 and is set to expire by the end of 2024. It is anticipated that the Board will take final action on both addenda in 2024.

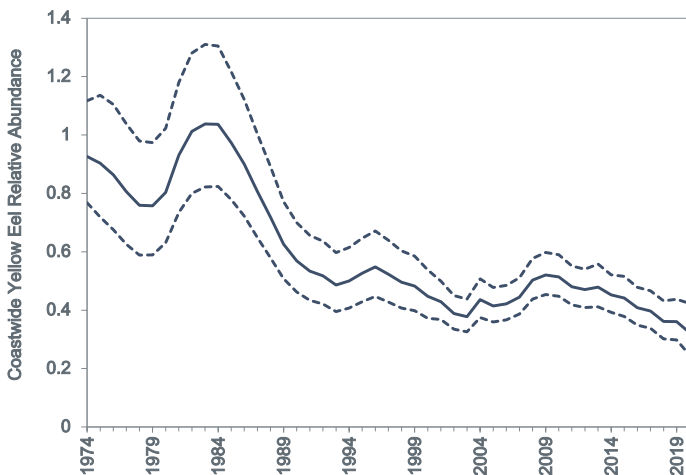
AMERICAN LOBSTER

With 120 million pounds landed in 2022 and ex-vessel value of \$519 million, American lobster continue to support one of the most valuable fisheries along the Atlantic coast. The 2020 peer-reviewed benchmark stock assessment found that the Gulf of Maine/Georges Bank (GOM/GBK) stock is not depleted and the Southern New England (SNE) stock is significantly depleted. Given rapidly changing environmental conditions, the Peer Review Panel recommended that changes to stock abundance and settlement indices be monitored through an annual data update process to allow for more timely reactions to any concerning trends in the interim before the next stock assessment.

In response to that recommendation, the American Lobster Management Board implemented annual data updates allowing the Board to more closely monitor changes in stock abundance and any potentially concerning trends that could support additional research or the consideration of possible management changes. The 2023 annual update used young-of-the-year settlement indicators, trawl survey indicators, including the abundance of lobsters entering the fishery, and sex-specific abundance indices from the ventless trawl survey to assess lobster abundance by area. Overall, GOM indicators showed declines from time series highs observed during the stock assessment, GBK indicators showed slight improvement, while SNE indicators showed continued unfavorable conditions with some further signs of decline.

Coastwide Yellow Eel Relative Abundance Index with 95% Confidence Interval

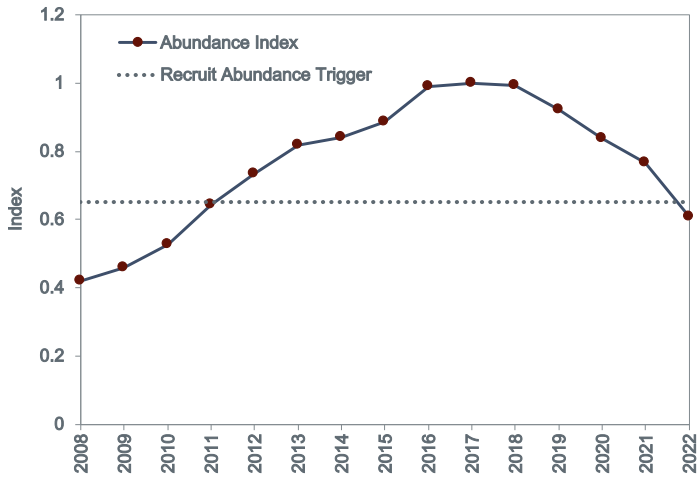
Source: ASMFC American Eel Benchmark Stock Assessment Report, 2023



Abundance Index of Recruit* American Lobster

Source: ASMFC American Lobster Data Update, 2023

*Recruit lobsters are those that have entered the fishery and are at a harvestable size (71-80mm carapace length). Management is triggered if the index declines 35% from 2017 levels (dashed line).



Additionally, the Board established a trigger mechanism as a proactive measure to improve the resiliency of the GOM/GBK stock, through the approval of Addendum XXVII. The Addendum responds to data which show lobster settlement throughout GOM has generally been below the time series average since 2012. Persistent low settlement could



foreshadow declines in recruitment and landings. Specifically, the Addendum requires changes to gauge and escape vent sizes in Lobster Conservation Management Areas (LCMAs) 1 (GOM), 3 (offshore federal waters) and Outer Cape Cod (OCC) to be initiated based on an observed decline in recruit abundance

indices of 35% from the reference level (equal to the three-year average from 2016-2018).

Under the 2023 annual update, the trigger index declined by 39%, surpassing the trigger level. The triggered measures include two increases to the minimum gauge size in LCMA 1, a corresponding change in the LCMA 1 escape vent size, and a single decrease to the maximum gauge size in LCMA 3 and OCC. The Board postponed implementation of these measures to January 1, 2025 to provide the Gulf of Maine states, which account for the majority of landings, the opportunity to coordinate with Canada regarding possible trade implications of differing size limits, and give the

industry and gauge makers additional time to prepare for these changes.

The next benchmark stock assessment is scheduled for 2025.

ATLANTIC STRIPED BASS

Atlantic striped bass are one of the most iconic fish along the US Atlantic coast. High demand for this species among fishermen and consumers, coupled with the complexity of its seasonal distribution along the coast, makes sustainable management of the Atlantic coast striped bass population complex and challenging.

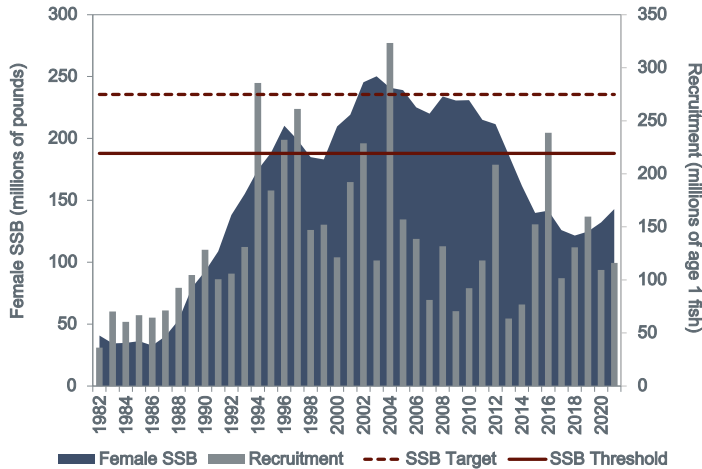
Since the release of the 2018 benchmark stock assessment, which indicated the striped bass stock was overfished and experiencing overfishing, the Atlantic Striped Bass Management Board has taken a number of management actions to end overfishing and rebuild the stock. Addendum VI to Amendment 6 (2020) was implemented quickly as the first action under the 10-year rebuilding program and required an 18% reduction in both recreational and commercial removals. It also implemented a circle hook requirement for the recreational fishery. In 2022, building upon Addendum VI's measures, the Board approved Amendment 7 to the Interstate Fishery Management Plan (FMP). The Amendment strengthens the Commission's ability to reach the rebuilding goal by implementing a more conservative recruitment trigger, providing more formal guidance for the conservation equivalency process, and implementing additional measures intended to increase the chance of survival after a striped bass is released alive in the recreational fishery.

In 2023, the Board took two actions to ensure continued stock rebuilding progress. The first action was the approval of an emergency action for the states to immediately implement a 31" maximum size limit for striped bass recreational fisheries to control recreational harvest and protect a strong year class that could aid in stock rebuilding. The Board's action responded to newly available data and analysis on the unanticipated magnitude of the 2022 recreational harvest and its implications for the 2029 rebuilding timeline.

Specifically, data showed a near doubling of recreational harvest from 2021 to 2022. Further, updated stock rebuilding projections estimated the probability of rebuilding the stock to its biomass target by 2029 dropped to less than 15% under the assumption that the higher 2022 fishing mortality rate continues each year. One of the primary drivers of the significant increase in harvest is the fact that the abundant 2015 year-class had begun to grow into the ocean slot limit (28" to <35"). In 2023, the 2015 year-class almost entirely recruited into this size range, meaning they would have all been available for harvest if the slot remained 28" to <35",

Atlantic Striped Bass Female Spawning Stock Biomass and Recruitment

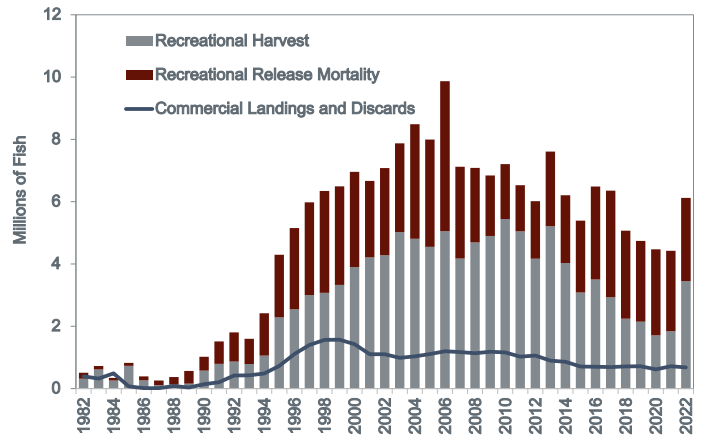
Source: ASMFC Atlantic Striped Bass Stock Assessment Update, 2022



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

Source: State Compliance Reports, 2023

* 9% of fish released alive are assumed to die because of being caught.



suggesting the potential for even greater recreational harvest in 2023 without swift action to amend the slot limit.

The 2015 year-class is important to the future of striped bass because it is one of the few large year-classes that has been produced in the past 20 years. Striped bass can survive more than 30 years and spawn more than 20 times. This capability evolved in striped bass (and many other fish) to compensate for years when environmental conditions or other factors would lead to poor survival of their young. Since 2005, the number of age-1 striped bass entering the population each year has been mostly below average, including five of the past six years. With fewer striped bass born in the years before and after 2015, it is important for as many striped bass from the 2015 year-class to grow to spawning size and have as many opportunities to reproduce as possible in an effort to yield additional strong year-classes and support stock rebuilding.

The second Board action was the initiation of Draft Addendum II to Amendment 7 to address the concerns about increased removals and stock rebuilding beyond 2023. The Draft Addendum considers 2024 management measures designed to reduce fishing mortality to the target. These include recreational bag and size limit options for the ocean and Chesapeake Bay regions, different limits for the for-hire modes, and minimum requirements for states that authorize at-sea/shore-side filleting of striped bass. For the commercial fishery, the Draft Addendum proposes an option



to reduce commercial quotas by up to 14.5%, with the final percent reduction to be determined by the Board.

The Board intends to consider the results of the upcoming 2024 stock assessment update to inform management action beyond 2024. To enable an expedited management response to the 2024 stock assessment update, the Draft Addendum proposes a provision that would enable the Board to respond to the results of the stock assessment updates via Board action if the stock is projected to not rebuild by 2029. The Draft Addendum was released for public comment in November, including the solicitation of comments via 15 public hearings from Maine through Virginia. The Board will consider approval of Addendum II in January 2024.

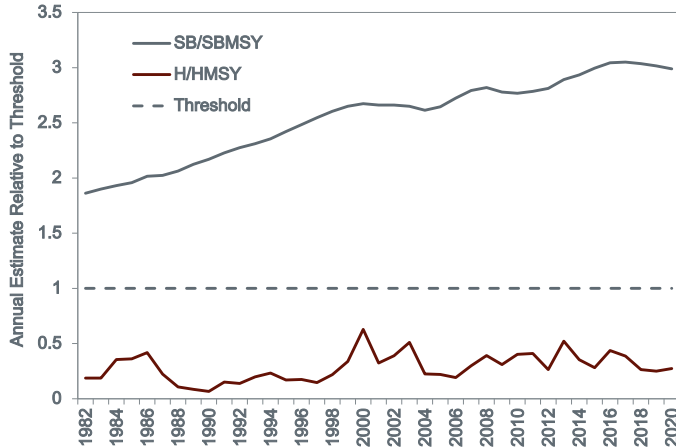
BLACK DRUM

As the largest member of the drum family and known to provide a tough fight, recreational anglers are increasingly interested in targeting black drum on the Atlantic coast. In the South Atlantic, recreational fisheries mainly keep small sub-adults and release larger, mature black drum. In contrast, the Mid-Atlantic recreational fisheries harvest mostly larger, mature fish. While recreational fisheries occur on a larger scale than commercial, black drum are harvested in both sectors along the coast. In 2022, recreational anglers harvested 850,000 black drum (4.9 million pounds) and released alive 1.9 million fish. Commercial landings were just under 245,000 pounds.



Black Drum Relative Spawning Biomass (SB) and Exploitation (H)

Source: ASMFC Black Drum Benchmark Stock Assessment, 2023



The 2023 Black Drum Stock Assessment and Peer Review Report indicates the Atlantic coastal stock of black drum are not overfished and not experiencing overfishing. The assessment estimates annual spawning biomass (SB) and exploitation (H; i.e., the proportion of stock biomass removed by fishing).

This assessment also developed indicators of stock abundance, and stock and fishery characteristics. The abundance indicators include several fishery-independent indices from the Mid-Atlantic and South Atlantic regions that track young-of-year and sub-adult fish. There is also one coastwide fishery-dependent index of catch per unit effort (CPUE) developed from recreational fishery data that tracks all exploitable sizes of black drum. A majority of the indices show no clear trend, although the recreational CPUE has been increasing throughout the time series (1982-2020). No management action was taken because there were no major concerns with the stock.

JONAH CRAB

Until recently, Jonah crab were predominantly a bycatch species in the American lobster fishery. Annual commercial Jonah crab landings were generally lower than 6 million pounds through 1996. Since then, as the lobster fishery has declined in SNE and the market for crab has expanded, harvesters have pivoted to target Jonah crab in addition to (or instead of) lobster. A mixed crustacean fishery now exists in which harvesters seasonally adjust their fishing strategies to target Jonah crab or lobster. Harvest pressure on Jonah crab has increased substantially over the past two decades, with landings increasing steadily since around 1996. Between 2010 and 2022, annual landings of Jonah crab averaged about 16 million pounds, ranging between 10 million (2011) and 22.8 million pounds (2018). Total Jonah crab commercial catch in 2022 was 14 million pounds, with an ex-vessel value of about \$22 million.

In 2023, the first Atlantic coast range-wide assessment of Jonah crab was conducted, representing a significant advancement in our understanding of the species, its life history characteristics, and distinct fisheries by stock unit. The Jonah Crab Benchmark Stock Assessment and Peer Review Report indicates Jonah crab abundance remains above historic lows of the 1980s and 1990s. However, there is evidence of declining CPUE in the fishery in recent years.

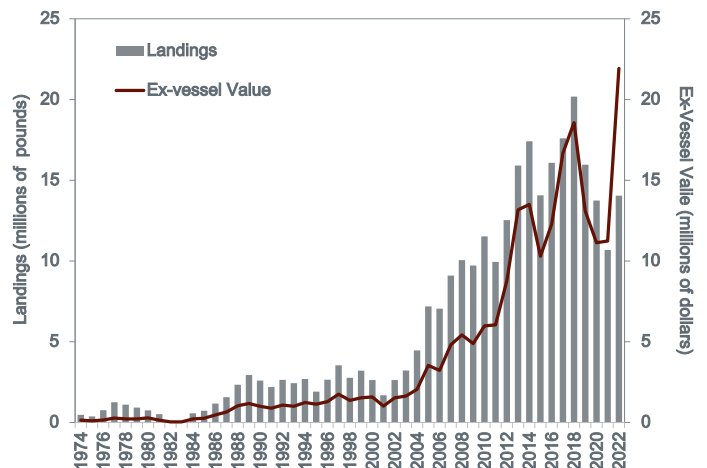
According to the Peer Review Panel, “Despite the limited availability of current data, there is considerable urgency for the assessment due to a very steep, three-year, decline in landings. Commercial landings have declined 51% in three years, after an unprecedented 30-fold rise in landings. Although the recent decline is not well-detected in fishery-independent stock indicators, there is some evidence of declining CPUE in the fishery, creating substantial concern and uncertainty for the status of the stock. Given the mixed signals, the status of the Jonah crab stock is highly uncertain.” Given the high level of uncertainty in the status of the Jonah crab stock, the Peer Review Panel strongly recommended close monitoring of annual stock indicators in the next few years to determine whether sharply declining recent landings are signaling the start of a ‘bust’ phase of a boom-and-bust arc, or are due to fishery and market-related factors uncoupled with Jonah crab abundance.



In response to the assessment findings and peer review panel recommendations, the American Lobster Management Board tasked the Technical Committee with recommending possible measures or actions to address concerns about stock status and recent fishery trends. The Technical Committee will report back to the Board in 2024.

Jonah Crab Commercial Landings and Ex-Vessel Value

Source: ACCSP Data Warehouse, 2022



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, 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. The Commission's scientific goals include the development of innovative scientific research and methodology, and enhancement of the states' stock assessment capabilities. Achieving these goals ensures robust science is available as the foundation for the Commission's evaluation of stock status and adaptive fisheries management actions.

STOCK ASSESSMENTS

Commission stock assessment teams completed multiple assessments in 2023 and continued work on several stock assessments scheduled for completion in 2024 to support significant management decisions and advance the state of Atlantic fisheries science. Notably, a first-time benchmark assessment for Jonah crab in New England waters was completed, as well as an assessment update for bluefish. State stock assessment scientists also contributed to the 2023 federal research track assessments for black sea bass, summer flounder, and scup.

Jonah Crab

The 2023 benchmark stock assessment is the first evaluation of US Jonah crab stocks. The assessment was initiated to address the increasing directed fishery effort over the past two decades and determine stock status. The US management unit for Jonah crab extends from Maine through Virginia. The population is divided into four stock areas: inshore Gulf of Maine, offshore Gulf of Maine, inshore Southern New England, and offshore Southern New England. Differences in size-at-maturity among areas were the primary basis for stock structure. In addition, tagging data revealed limited movement of crabs between areas.

Commercial at-sea and port sampling programs provide data to characterize the size composition of commercial catch and landings. Notably, the states and Commission partner with the Rhode Island-based Commercial Fishermen's Research Foundation to collect crab biological data. The time series of data collection is still too limited to provide a comprehensive picture of stockwide size compositions. However, spatial snapshots of data, including from areas accounting for the most landings, indicate stable size compositions. As the time series lengthens, the data will be evaluated in future stock

assessments to determine if they reliably track changing stock conditions and fishery exploitation levels.

Available data did not support the development of stock assessment models to estimate abundance, fishing mortality, and biological reference points to determine stock status and thus Jonah crab are considered to be data-poor. Therefore, simple stock indicators were developed from available data time series. These indicators provide a qualitative characterization of stock condition relative to historical levels. Indicators developed for Jonah crab included abundance indices from fishery-independent surveys, landings, and time series related to stock condition and fishery performance. If the indicator in any given year is below 25% of observed values during the time series, it is considered a negative condition. If it is above 25% of observed values, but below 75% of observed values, it is considered a neutral condition. If it is above 75% of observed values, it is considered a positive condition.

Abundance indicators were neutral and positive at the end of the time series indicating abundance remains above historical lows observed in the 1980s and 1990s. However, recent landings have steadily declined in offshore Southern New England, where the majority of coastwide landings occur. The trend is believed to be influenced by a combination of factors including market changes. Given the decline in landings and commercial catch rates, the assessment Peer Review Panel noted stock status remains highly uncertain and recommended close monitoring of the population in coming years.

CLIMATE AND FISHERIES

Since 2021, marine fishery management organizations along the US East Coast have been exploring governance and management issues related to climate change and fishery stock distributions. This effort recognizes the profound impact that climate change is having on our ocean ecosystems and coastlines and the need to plan for how fishery management organizations and coastal communities can best adapt to these changes in a thoughtful and deliberate way.

Throughout the multi-stage scenario planning process, hundreds of stakeholders helped generate four distinct "scenarios," each describing a possible future for East Coast fisheries, coastal communities, and fisheries management. The capstone to this initiative was a Scenario Planning Summit, held in 2023, which brought together representatives from the three East Coast Regional Fishery Management Councils, the Commission, and NOAA Fisheries. During

the Summit, participants used the scenarios as a platform from which to develop a set of potential governance and management actions that could help prepare fishery management organizations for future challenges related to climate change.

One of the products of this effort is a Potential Action Menu, which suggests possible next steps for management organizations to consider as they plan for the future. The Potential Action Menu is organized around three overarching themes: (1) cross-jurisdictional governance; (2) managing under increased uncertainty; and (3) data sources and partnerships. Each theme's potential actions are prioritized, with high priority given to those that could be quickly or easily implemented or that the fishery management organizations viewed as important issues to address in the near-term.

The Potential Action Menu is intended to be an evolving document, used as a planning tool to guide development of priorities and a place to capture future issues and ideas. Throughout 2023 and into 2024, East Coast fishery management organizations will meet individually and collectively to discuss how best to integrate the high priority items into actions.

A Scenario Planning Toolkit has been created to support ongoing conversations about how climate change is affecting fisheries. The toolkit consists of materials to provide guidance to other stakeholders who may wish to undertake their own scenario work, with resources including a set of overview slides, worksheet templates, draft agendas for various types of sessions, guidance on different scenario approaches, and guidelines for facilitators. For more information, please visit <https://www.mafmc.org/climate-change-scenario-planning>.

HABITAT PROTECTION, RESTORATION, AND ENHANCEMENT

Protection, restoration, and enhancement of fish habitats are essential to promoting the sustainability of fisheries along the Atlantic coast. Fish Habitats of Concern (FHOC) constitute a subset of fish habitat – like submerged aquatic vegetation, spawning grounds or types of nearshore estuarine habitat – that are of high ecological importance, rare, sensitive, or vulnerable to development threats. These areas are defined

based on the same criteria as federally-designated Habitat Areas of Particular Concern under the Magnuson-Stevens Act (MSA). However, as species solely managed by the Commission do not fall under MSA, their habitats lack federal legal protection, and consultation with the National Marine Fisheries Service is not required. Therefore, in 2023, the Commission approved a FHOC document for Commission-managed species in order to concentrate conservation efforts on specific habitats that are ecologically invaluable, vulnerable, and necessary to support each life stage of a species. FHOCs are to be included as part of each Commission fishery management plan, acknowledging the critical role habitats play in fisheries production and ecosystem function.

Atlantic Coastal Fish Habitat Partnership (ACFHP)

As an ACFHP partner, the Commission addresses habitat threats with a broad and coordinated approach, leveraging resources from many agencies, organizations, and corporations to make a difference for Atlantic fish habitat. ACFHP operates under the purview of the National Fish Habitat Partnership.



ON THE GROUND PROJECTS

ACFHP partnered with the US Fish and Wildlife Service to fund three new on the ground restoration projects in 2023. The North Carolina Coastal Federation Donor Marsh Restoration Project restored one acre of saltmarsh habitat within the North River Wetlands Preserve in North Carolina, serving as a marsh grass “donor” for other marsh restoration projects and preventing further degradation of natural

wetland processes in the region. The Paulina Dam Removal on the Paulins Kill in New Jersey will build upon the previous success of the Columbia and County Line dam removals, eliminating the third barrier to fish passage within the system. Removal of the Paulina Dam barrier will provide access to 45 river miles for migratory fish on this Delaware River tributary. Finally, the ER Collins Dam removal will open three miles on the Pequest River in New Jersey, providing benefits to fish, mussel, and macroinvertebrate populations, and improving fish passage, hydrological dynamics, and water quality. There are an additional two upstream dams that will likely be candidates for removal in the near future. Removal of those dams will open over 10 miles of mainstem riverine habitat and even more tributaries.

In 2023, ACFHP secured funding from the NOAA Office of Habitat Conservation and the NOAA Recreational Fisheries Engagement Initiative to support the Coastal Conservation Association Florida in the natural restoration of 5,000 square feet of seagrass habitat. This project deploys a unique approach by using nutrient-enriched sediment tubes to promote seagrass growth in Key Largo, Florida. These invaluable ecosystems have witnessed a notable surge in severe damage caused by recreational activities, particularly prop scarring from boats. For more information on all ACFHP-funded projects, please visit: <http://www.atlanticfishhabitat.org/on-the-ground-projects/>.

SCIENCE AND DATA PROJECTS

ACFHP completed its assessment of fish habitat through geographic information system mapping and analysis. With

funding from NOAA Fisheries Southeast Regional Office and Greater Atlantic Regional Fisheries Office, the entire Atlantic coast was analyzed for fish habitats best suited for restoration or protection. Resulting maps are supporting ACFHP and its partners in identifying where best to invest future habitat restoration efforts. These maps are implemented in the Partnership's annual request for proposals for habitat conservation project funding. To access the maps, final report, and user guides, visit: <https://www.atlanticfishhabitat.org/science-and-data-projects/>.

Support ACFHP

There are many ways you can support ACFHP, including donating directly or 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, for-hire, 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. Just as fisheries management responsibilities are divided among agencies, so too are fisheries data collection efforts across different agencies with varying data needs.

The Atlantic Coastal Cooperative Statistics Program (ACCSP) was established in 1995 as one of five regional Fisheries Information Networks (FINs) to address the issues of inconsistent temporal and spatial coverage and dataset compatibility by standardizing and centralizing fishery-dependent data collection and data management along the Atlantic coast. FINs are collaborative state-federal programs that supply dependable and timely marine fisheries data in their respective regions. ACCSP is composed of



representatives from marine fisheries management agencies coastwide, including the Commission, the three Atlantic coast regional fishery management councils, the 15 Atlantic states and the District of Columbia, Potomac River Fisheries Commission, NOAA Fisheries, and US Fish and Wildlife Service. ACCSP plays a critical role in supporting effective resource management through its efforts to standardize data collection and dissemination across jurisdictions and to efficiently provide Atlantic coast data to the state, regional, and national data systems.

In 2023, ACCSP and its partners further advanced the program's objectives through (1) providing funding at the state, regional, and federal levels to help partners complete projects that address the current goals and priorities of ACCSP; (2) building software that meets specific partner needs, reduces the burden on industry, and meets the reporting requirements of multiple jurisdictions in a single report; and (3) collecting, standardizing, and disseminating data in a timely fashion while maintaining the necessary levels of confidentiality.

FUNDED PROJECTS

Each year, ACCSP provides funding to its program partners to support improvements to data collection and management activities. This year, with the support of funding provided by Congress, ACCSP awarded almost \$1 million to several projects along the Atlantic coast, including electronic reporting, biological sampling, and citizen science. In 2023, ACCSP worked with the North Carolina Division of Marine Fisheries (NCDMF) to modernize its biological database to facilitate transmission of fishery-dependent data to the ACCSP Data Warehouse. NCDMF biological data are then available to NOAA Fisheries Southeast Fisheries Science Center's (SEFSC) Trip Information Program, including data from the snapper-grouper fishery, one of the largest managed fisheries in the South Atlantic. Availability of these fishery-dependent biological data in the ACCSP Data Warehouse centralizes access for SEFSC staff and other state and regional partners for use in stock assessments and fishery management plans. To find out more about the funded projects, visit <https://www.accsp.org/what-we-do/partner-project-funding/>.

SAFIS APPLICATIONS

ACCSP provides partner agencies with electronic commercial dealer reporting, and commercial, for-hire, and recreational harvester catch reporting through the Standard Atlantic Fisheries Information System (SAFIS) suite of applications. These electronic reporting systems have significantly improved the ease of data entry by the fishing industry and the speed of data submission to ACCSP and its partners. SAFIS applications are available to dealers and harvesters at no cost. In 2023, two major upgrades were made to the SAFIS system to enhance the level of customization and control by partner agencies and improve the user experience. First, each partner agency can now manage the list of available species, market, grade codes, and harvester trip type so that users are only presented with appropriate options. The user experience is improved by reducing potential submission errors while also increasing the quality of the data. Second, ACCSP expanded the module to manage individuals, corporations, and vessels so that the linkage between an individual and corporation or one corporation to another with respect to permit ownership is clearly defined. This enhancement provides partners with a comprehensive view of an individual's participation in the industry and streamlines the user experience by eliminating the need for multiple SAFIS login accounts.

Complementing the Commission's American Lobster Addendum XXIX, ACCSP developed a dedicated real-time vessel track viewer and the ability to analyze data after submission. This technology can help to significantly improve stock assessments for American lobster and Jonah crab, identify areas where lobster fishing effort may overlap with endangered North Atlantic right whales, and document

the footprint of the fishery to help reduce spatial conflicts with other ocean uses like wind energy development and aquaculture.

Partners with limited resources, such as state managers and law enforcement officers, are eager to explore new cellular-based vessel tracking technology to allow for more flexible management programs. Linking positional data generated from tracking devices with trip-level logbook data will bolster management efforts by supporting the identification of fishing patterns and non-fishing activity as well as provide the potential for future use by law enforcement. The storage and display of tracker data within SAFIS further advances ACCSP being the primary repository for fishery-dependent data collection, making multi-jurisdictional management more streamlined and data more easily available.

DATA COLLECTION AND DISSEMINATION

ACCSP compiles data from the Atlantic states and federally-permitted fisheries to support regional data needs for stock assessments and management along the Atlantic. In 2023, ACCSP continued its annual process of adding new data and incorporating changes to historical data as necessary to ensure consistency among datasets at the state, federal, and regional levels so that scientific and management analyses are based on the best available data. These data are provided to NOAA's annual publication, *Fisheries of the United States*. ACCSP data contributed to all 44 federal Atlantic species stock assessments completed in FY23.

ACCSP developed a new section in the ACCSP Data Warehouse to inventory state and federal biological sampling and bycatch programs on the Atlantic coast. The new online inventories provide a readily accessible, publicly available, and searchable resource to inform the ACCSP committee process with respect to funding priorities and are a resource for stock assessments and other science that forms the basis of fisheries management.

Annually, ACCSP administers state data collection for the Marine Recreational Information Program (MRIP) along the Atlantic coast and presents the MRIP catch and effort estimates in the ACCSP Data Warehouse. MRIP established the Recreational Fishing Survey and Data Standards in 2020. In 2023, as part of the phased implementation, the MRIP query tool was changed modifying the display of statistical elements such as cumulative estimates, key statistics, and measures of precision. As supportive and collaborative partners, ACCSP brought the presentation of recreational effort and catch estimates within the Data Warehouse in line with NOAA Fisheries' MRIP updated data standards.

Financial Report

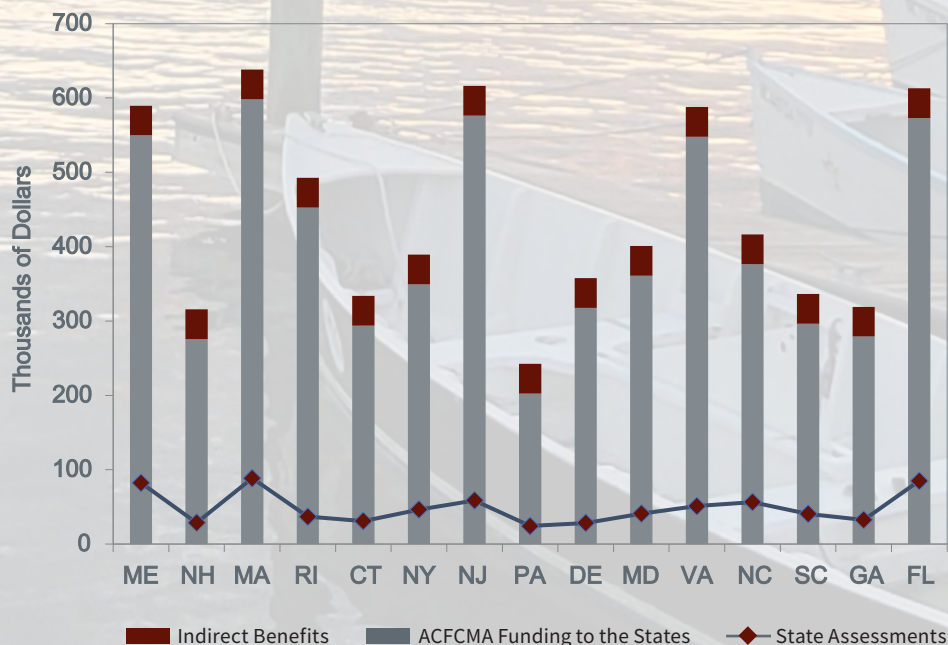
The Commission’s FY2024 budget is \$53.6 million. The base funding (\$733,444) is provided by the member states’ annual appropriations, which are determined by the value of commercial fishing landings and saltwater recreational trips within each state. The bulk of the Commission’s funding is received through federal cooperative agreements funded by line-item appropriations in the NOAA budget to implement the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA) and the Atlantic Coastal Cooperative Statistics Program, as well as provide oversight and management for state conduct of the Access Point Angler Intercept Survey, the survey component of the Marine Recreational Information Program. 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 majority of the Commission’s budget goes directly to support the fisheries management, monitoring and science activities of the states. The US Fish and Wildlife Service also provides funding to the Commission through its Federal Aid in Sport Fish Restoration Program (Wallop/Breaux). The Commission received \$14 million to facilitate gear modifications to mitigate interactions between the American lobster fishery and the North Atlantic right whale, as well as \$11 million to provide funds to help with the Atlantic herring fishery disaster relief.

The following two pages provide a condensed statement of financial position information for the years ended June 30, 2023 and 2022.

2024 Return on State Assessments to the Commission

Source: FY24ASMFC Assessments and FY23 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.



Atlantic States Marine Fisheries Commission
Condensed Statement of Financial Position Information
For the Years Ended June 30, 2023 and 2022

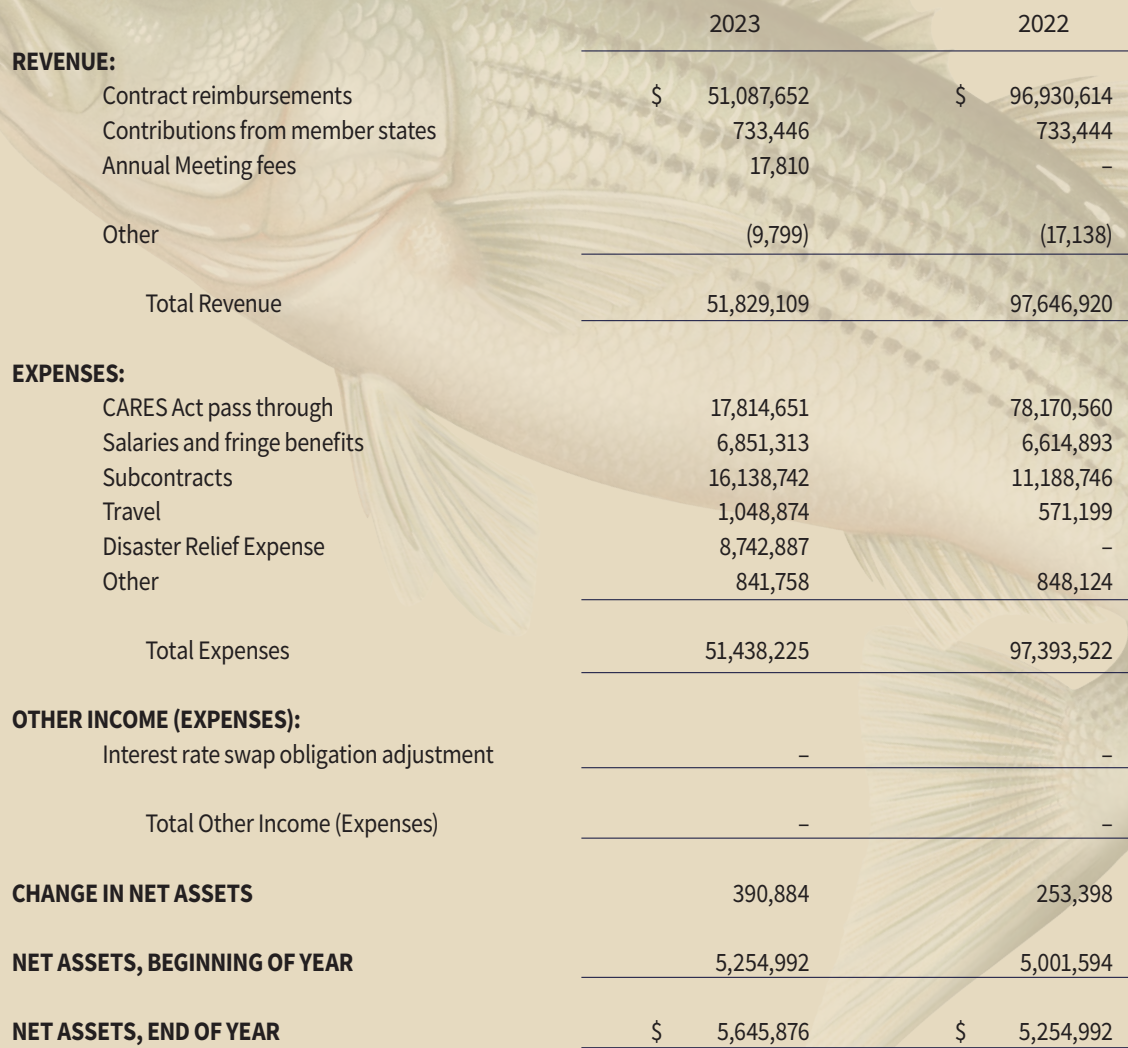
ASSETS

	2023	2022
CURRENT ASSETS:		
Cash and cash equivalents	\$ 110,870	\$ 285,669
Grants and accounts receivable	5,279,738	3,527,881
Other receivables	49	-
Prepaid expenses	-	30,299
Total Current Assets	5,390,657	3,843,849
Investments	1,084,781	845,310
Property and Equipment, Net	2,839,489	2,934,373
Operating lease right-of-use asset, Net	53,360	2,934,373
TOTAL ASSETS	\$ 9,368,287	\$ 7,623,532

LIABILITIES AND NET ASSETS

CURRENT LIABILITIES:		
Accounts payable and accrued expenses	\$ 3,460,623	\$ 2,148,640
Deferred revenue and contract advances	208,428	209,985
Due to CARES Act recipients	-	9,915
Operating lease liability, current portion	30,046	-
Total Current Liabilities	3,699,097	2,368,540
OTHER LIABILITIES:		
Operating lease liability, long-term portion	23,214	-
Total Other Liabilities	23,314	-
TOTAL LIABILITIES	3,722,411	2,368,540
NET ASSETS WITHOUT DONOR RESTRICTIONS	5,645,876	5,254,992
TOTAL LIABILITIES AND NET ASSETS	\$ 9,368,287	\$ 7,623,532

Atlantic States Marine Fisheries Commission
Condensed Statement of Activities Information
For the Years Ended June 30, 2023 and 2022



	2023	2022
REVENUE:		
Contract reimbursements	\$ 51,087,652	\$ 96,930,614
Contributions from member states	733,446	733,444
Annual Meeting fees	17,810	-
Other	(9,799)	(17,138)
Total Revenue	51,829,109	97,646,920
EXPENSES:		
CARES Act pass through	17,814,651	78,170,560
Salaries and fringe benefits	6,851,313	6,614,893
Subcontracts	16,138,742	11,188,746
Travel	1,048,874	571,199
Disaster Relief Expense	8,742,887	-
Other	841,758	848,124
Total Expenses	51,438,225	97,393,522
OTHER INCOME (EXPENSES):		
Interest rate swap obligation adjustment	-	-
Total Other Income (Expenses)	-	-
CHANGE IN NET ASSETS	390,884	253,398
NET ASSETS, BEGINNING OF YEAR	5,254,992	5,001,594
NET ASSETS, END OF YEAR	\$ 5,645,876	\$ 5,254,992

Staff and Acknowledgements

EXECUTIVE DIRECTORATE

Robert E. Beal, Executive Director
Alexander Law, Legislative Program Coordinator

ATLANTIC COASTAL COOPERATIVE STATISTICS PROGRAM

Geoffrey White, Director
Julie Defilippi Simpson, Deputy Director
Marisa Powell, Program Assistant

DATA TEAM

Mike Rinaldi, Data Team Lead
Anna-Mai Christmas-Svajdenka, Data Coordinator
Joe Myers, Senior Data Coordinator
Jennifer Ni, Data Analyst
Heather Power, Senior Data Coordinator
Skye Thomas, Data Coordinator

RECREATIONAL DATA TEAM

Alex DiJohnson, Recreational Data Team Lead
Trevor Scheffel, Data Coordinator
Gabe Thompson, Data Coordinator

SOFTWARE TEAM

Ed Martino, Ph.D., Software and IT Team Lead
Daniel Mestawat, Programmer
Jamal Ouididen, Programmer
Kranthi, Software Developer

COMMUNICATIONS

Tina L. Berger, Director
Madeline Musante, Fisheries Outreach Assistant

FINANCE AND ADMINISTRATION

Laura C. Leach, Director
Lisa B. Carty, Deputy Director of Administration
Lindsey Aubart, Cooperative Projects Coordinator
Cecilia Butler, Human Resources Administrator
Jayran Farzanegan, Accounting Manager
Lisa Hartman, Staff Assistant
Chris Jacobs, Facilities and Technology Administrator

FISHERIES SCIENCE PROGRAM

Pat Campfield, Director
Katie Drew, Ph.D., Stock Assessment Team Lead
Kristen Anstead, Ph.D., Stock Assessment Scientist
Simen Kaalstad, ACFHP Director and Habitat Coordinator
Jeff Kipp, Senior Stock Assessment Scientist
Jainita Patel, Fisheries Science Coordinator

INTERSTATE FISHERIES MANAGEMENT PROGRAM

Toni Kerns, Fisheries Policy Director
Caitlin Starks, Senior Fishery Management Coordinator
Tracey Bauer, Fishery Management Coordinator
James Boyle IV, Fishery Management Coordinator
Emilie Franke, Fishery Management Coordinator
Chelsea Tuohy, Fishery Management Coordinator

ACKNOWLEDGEMENTS

We would like to thank the following people and agencies for the use of their photographs and images:

OUTSIDE AND TITLE PAGE

Jonah Crab © Derek Perry,
Massachusetts Division of Marine Fisheries

PAGE 6

Center: American Eel © Jennifer Pyle,
New Jersey Department of Environmental Protection

PAGE 7

American Lobster © Massachusetts Lobstermen's Association

PAGE 8

Atlantic Striped Bass © Joel Helbeche,
Massachusetts Division of Marine Fisheries
Black Drum © Ken Neill

PAGE 9

Jonah Crab from Gulf of Maine Northern Shrimp
Trawl Survey

PAGE 10

Restored Donor Marsh, North River © North Carolina
Coastal Federation

PAGE 12

Paulina Dam from River Right © The Nature
Conservancy, New Jersey

PAGE 14

Beaufort, North Carolina © Laura Collins Leach, ASMFC



1050 North Highland Street
Suite 200 A-N
Arlington, Virginia 22201
www.asmfc.org

