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DMF News

Published by the Massachusetts Division of Marine Fisheries (DMF) to inform and educate its constituents on matters relating to the conservation and sustainable use of the Commonwealth's marine resources.

Inside

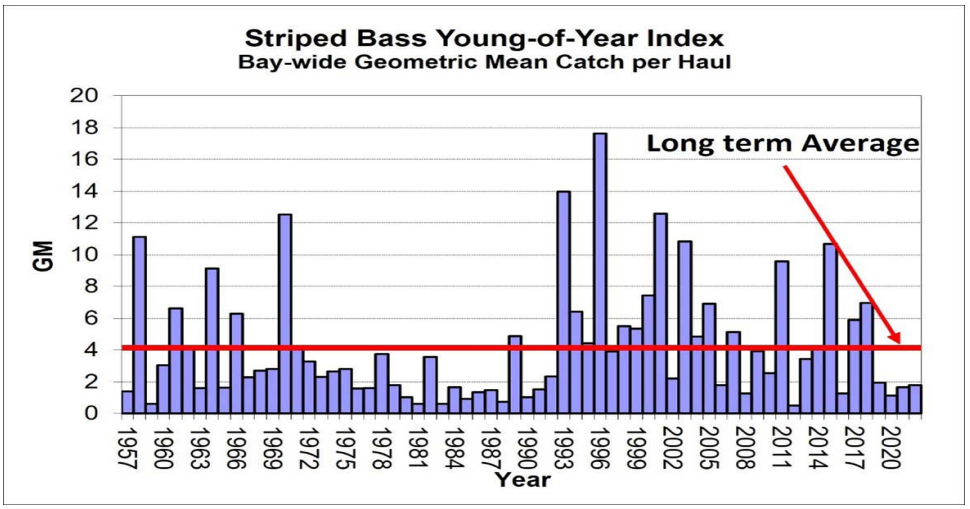


Figure 1. Long term striped bass young-of-the year index from Maryland

Emergency Action Taken to Reduce the Recreational Harvest of Striped Bass in 2023

On May 2, 2023, the Atlantic States Marine Fisheries Commission (ASMFC) Striped Bass Management Board (Board) voted to take emergency action to implement a 31" maximum size limit for all striped bass recreational fisheries. This results in a 1 fish at 28" to less than 31" size slot limit for all ocean recreational fisheries coastwide, including Massachusetts. To be in compliance with the Emergency Action, the Massachusetts Division of Marine Fisheries enacted emergency recreational regulations to change the maximum length limit for keeping striped bass in Massachusetts on May 26, 2023. The Board also voted to initiate an Addendum to examine additional measures for 2024 if needed to meet the 2029 deadline to rebuild striped bass. This Addendum will be a fully public process and will consider changes to both the recreational and commercial regulations.

This action responds to the unprecedented magnitude of the 2022 recreational harvest, which was nearly double that of 2021, and new stock rebuilding projections, which estimate the probability of the spawning stock rebuilding to its biomass target by 2029 dropped from

DMF's Boston Office is Now Closed

As of April 28, 2023, DMF's Boston office officially closed. Recreational and commercial permits for saltwater fishing will no longer be sold at the office located at 251 Causeway Street in Boston. To purchase permits, customers can visit DMF's Gloucester or New Bedford locations. More information on office locations can be found on DMF's website.

97% under the lower 2021 fishing mortality rate to less than 15% if the higher 2022 fishing mortality rate continues each year. Put another way, so many more striped bass were caught in 2022 than were expected that the current plan to ensure striped bass will remain plentiful for years to come no longer appeared effective. The main reason for the increase in harvest was that some striped bass from the abundant 2015 year-class, those fish born in 2015, had grown enough to be harvested under the 2022 slot limit (28" to <35"). With an additional year of growth from 2022 to 2023, the entire 2015 became available for harvest in the 28" to <35" slot. This suggested the potential for even greater recreational harvest in 2023 without swift action to amend the slot limit. The bottom line is that if measures weren't taken to slow down the 2023 harvest (by reducing the slot size), the stock rebuilding would have come completely off the rails.

The Board labored over the decision to take an Emergency Action, which is rarely done because it, by necessity, excludes public comment. After weighing the possibility of an even greater harvest, particularly of the 2015 year class in 2023, the Board made the difficult decision to slow the harvest by reducing the slot size, thereby reducing the harvest of the 2015 year class.

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, and this capability evolved in stripers (and many other fish) to compensate for years when the weather or other factors would lead to bad survival of their young. Since 2005, survival of newborn striped bass has been mostly below average, including the past 4 years which are among the lowest recorded (see Figure 1). With fewer surviving striped bass born in the years before and after 2015, it is important for as many bass from the 2015 year-class to grow to spawning size and have as many opportunities to reproduce (and hopefully create additional strong year-classes) as possible if we hope to recover striped bass stocks and maintain strong striped bass fisheries in our coastal waters.

The question has arisen as to why was 31" selected as the maximum size. The 2015 year-class is 8 years old in 2023, with an average size of about 31 ½" in length. DMF age data from recreational samples suggest that the new 28" to less than 31" slot along the coast will protect more than half of the 2015 year-class from recreational harvest in 2023 (compared to zero protection with the 28" to <35" slot) (see Figure 2). This level of protection will increase in future years as these striped bass continue to grow.

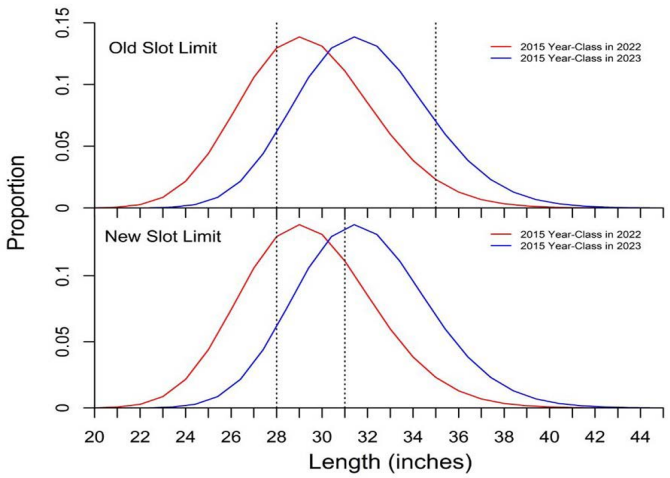


Figure 2. Comparison of the length of the 2015 year class in 2022 and 2023 relative to the old (28"-<35) and new (28"<35") slot size.

The Board maintained a slot limit approach for several reasons, as opposed to transitioning to a higher minimum size (35" for example). When the Board originally went to a slot limit, the 28" minimum was maintained to make sure that shore-based anglers had opportunities to harvest striped bass, and this remains important. The application of a maximum size has had a lot of support among anglers as a way to protect the largest and most fecund female fish. Finally, beginning next year the 2015 year-class will begin to shift into the greater than 34" grouping, meaning a higher minimum size alone would not be a good way to protect the 2015 year-class moving forward.

Many anglers in Massachusetts enjoyed great success catching fish in the 28" to less than 35" slot last year, especially as compared to the first years it was in effect. This was directly tied to the highly abundant 2015 year-class, compared to the prior 3 years' poor year classes. Last year, a little more than half of the 2015 year-class had grown large enough to be harvested in the slot. DMF recreational sampling data from last year indicate that the 2015-year class made up 55% of harvested fish. Fishing can also be very dependent on how much and how consistently bait is in state waters. The extended presence of very large and predictable schools of menhaden in Massachusetts Bay last year led to great fishing, but high harvests and catches. With the coastal resurgence of menhaden, anglers in many other states enjoyed similar great fishing, contributing to the surge in coastwide recreational harvest.

Some people have questioned why this needed to be done as an emergency action with no public input. The information regarding the great increase in 2022 harvest only became available in March of this year. The only way for the Striped Bass Board to react quickly to decrease the harvest for 2023 was to implement an Emergency Action. All other avenues of rulemaking would have taken many more months and the opportunity to protect the 2015 year-class at its peak vulnerability would have been lost. Prior to the May 2 meeting, the Striped Bass Board received thousands of public comments urging the Board to take swift and significant action to put the stock back on track to rebuild. There will be several opportunities over the coming months to provide public input as the new Addendum advances.

A common question is "why doesn't the commercial fishery need to take a reduction?". In 2022, the commercial fishery, which is managed under a hard quota (as it is every year), had no increase in harvest while the recreational fishery harvest almost doubled. Therefore, the Emergency Action was directed at the sector that was responsible for the great increase from 2021 to 2022. The Board also initiated a new Addendum to the Striped Bass Management Plan to be implemented in 2024. Changes to the commercial length limits and other conservation measures will be considered as part of this Addendum.

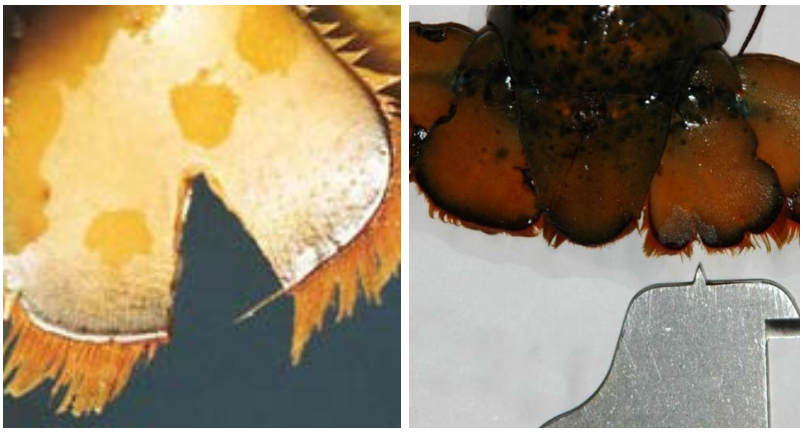
There's a lot of parts in motion right now. We have the emergency action in place to the end of this year; a new addendum has been started to address overfishing in 2024; and a new stock assessment will be released in late summer next year and this may result in further changes to regulations to continue to restore the striped bass stocks. We will keep you updated as changes in regulations occur and we greatly appreciate the patience and cooperation of recreational anglers as we confront the current stock problems.

For more information refer to the FAQ: https://www.mass.gov/info-details/striped-bass-emergency-action-frequently-asked-questions-faq

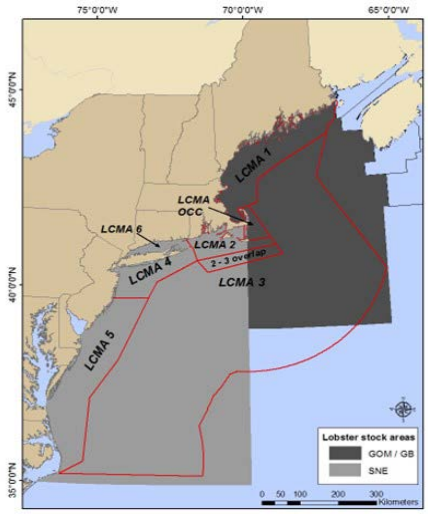
By Dr. Michael P. Armstrong, Ben Gahagan, and Nichola Meserve

ASMFC Approves Gulf of Maine Lobster Conservation Plan

Some aspects will be triggered only if the stock shows further decline



Left: A recently cut v-notch in the tail of a female (this lobster has not molted since the notch was cut). Right: A female that has molted at least once since the v-notch was cut. This lobster is not harvestable under the 1/8" v-notch possession definition. The metal gauge with a point at the end is used to assess whether the notch is 1/8" deep.



Current US lobster stocks and LMAs.

The abundance of American lobster off Massachusetts, New Hampshire and Maine is still very high and the industry's annual catches are twice what they were two decades ago, but there are signs that declines from the record highs are inevitable. The landings from this Gulf of Maine & Georges Bank stock have seen slight declines from historic highs around 2016 when landings reached about 160 million lbs. Catches in the past 6 years since the historic high have declined slowly to approximately 132 million lbs. in 2021.

State and federal scientists are confident that the decline in catches is tied to fewer young lobsters surviving in recent years. Surveys conducted by the states' lobster scientists using SCUBA to count young-of-the-year lobsters settling in the nearshore areas have seen some decline over the past decade. And as expected, after a 4-5 year lag we have detected declines in the larger (but still undersized) lobsters collected in the "ventless trap" surveys. DMF and other states conduct these surveys cooperatively with contracted commercial lobster vessels working with biologists aboard to set and haul standardized baited survey traps - without the usual escape vents - to track the abundance of lobsters as they age into catchable size.

The cause of the decline in annual production of young lobster appears to be related to ocean warming and shifts in ocean currents that might be affecting food for larval lobsters, not overfishing. Oceanographers have detected alterations in the flows of cold water currents from the north resulting in overall warming water temperatures in the Gulf of Maine. Along with this warming, abundance of some copepod species that larval lobsters eat have declined. These changes appear to be closely related to the declines in young lobsters settling to the bottom. The stocks are not expected to experience the dramatic steep decline seen in southern New England waters because the Gulf of Maine has sufficient deeper water habitats to accommodate the temperature needs of the lobster. However, the changing environmental conditions make it harder to predict how the lobster population will respond.

The Atlantic States Marine Fisheries Commission has been closely monitoring the recent decline and took the extraordinary measure this year to enact a management plan that will trigger rule changes in the near future if the stock continues to decline. The Technical Committee devised an index of abundance by blending data from two fishery independent sources: state trawl surveys and the ventless trap surveys. To date, the index appears to have declined by about 28%. If and when the decline reaches 35%, rules will be automatically enacted by states to bolster the amount of spawning lobsters by raising the minimum legal carapace size in two steps over a 3-year period from 3 ¼" to 3 3/8". The hope is that increased egg production will compensate for the reduced survival of larval lobsters.

This will be the first increase in minimum legal size for lobsters in the Gulf of Maine in over 30 years. While the increase seems minor, it may increase the total egg production of this stock by up to 40%! In addition there will be a modest decrease in the maximum size allowed for lobsters harvested from offshore waters from 6 ¾" to 6 ½" on a separate schedule.

A second significant action taken by the Commission was a set of rule changes that will go into effect next year designed to provide a more consistent and enforceable conservation strategy across and within management areas.

The number of trap tags issued annually for vessels in Area 3 and Area 1 will be limited to the actual trap limit, and the extra 10% currently allowed will be eliminated. The state of Maine was already limiting trap tag issuance to the trap limit for Maine-based vessels. A standard "v-notch" possession definition for female lobsters in Area 3 and Outer Cape Cod was enacted: 1/8" indentation with or without setal hairs in the designated tail flipper . Most lobstermen in the Gulf of Maine are required to carve a v-shaped notch into a specific tail flipper of egg-bearing female lobsters, to mark her as a "breeder." This mark protects the female from future harvest. This 1/8" v-notch definition will protect reproductive females (that were notched and released by another fisher) through two molts (in most cases), and will further contribute to the egg production of the stock.

All lobster fishers in the Outer Cape Cod region will now be required to abide by the 6 ¾" maximum size that other fishers in the federal waters off Outer Cape Cod, as well as those vessels fishing far offshore (Area 3), have been required to abide by for the past decade. These simplified and more consistent rules will enhance conservation by increasing compliance and making enforcement easier – all contributing to improvements in the long-term health of the stock.

The Commission's approach to establish "triggers" for prescribed conservation was both creative and proactive because it will prevent further delays in the rulemaking process. Addendums can take up to 2 years to develop and enact but under this approach the changes will be enacted in a matter of months in response to changes in the stock. DMF will undergo rulemaking this fall to implement some of these rule changes in time for the 2024 fishing year, and will be ready to enact the most substantial changes, specifically the gauge size changes, if the fishery-independent surveys detect further declines and the trigger is reached.

By Dan McKiernan, Director

DMF Expands Winter Flounder Research Plan

Since 2019, DMF has been devoting available resources to reexamine life history characteristics and habitat use of winter flounder in state coastal waters. Winter flounder are a fairly ubiquitous species in Massachusetts coastal waters, but detailed information on juvenile and adult distribution, spawning behavior, and habitat use is lacking. The potential value of this information, such as for evaluating existing time-of-year restrictions on activities ranging from fishing to harbor dredging, continues to be recognized. DMF has benefitted from partnering with external organizations to expand our research capability, and most recently, state lawmakers directed funding to this cause.

As reported in a 2021 DMF News article (https://www.mass.gov/news/winter-flounder-spawning-habitat-study), this winter flounder research initiative began in 2019 as a "proof of concept" study into the effectiveness of using eDNA to reliably determine presence or absence of winter flounder in coastal waters. (eDNA, or environmental DNA is genetic material from an organism that enters the aquatic environment—such as metabolic waste, shed cells, and mucus—and can be used to identify a species of interest without physically sampling it.) DMF first collaborated with Rhode Island Division of Marine Fisheries to collect water samples during their winter flounder fyke net survey, in addition to during our state winter flounder seine survey, and partnered with the Gloucester Marine Genomics Institute (GMGI) to develop primers for detecting winter flounder eDNA in the samples, and validate these against the survey collections. With promising results in hand, DMF expanded its water sample collection in 2021–2022 with monthly sampling in six Cape Cod embayments: Sesuit Harbor, Wellfleet Harbor, and Pamet Harbor on the north side and Green Pond, Waquoit Bay, and the Bass River on the south side.

With the dedicated funding in the FY23 budget, DMF selected one of these embayments, Waquoit Bay, to conduct a fyke net survey paired with continued water sampling to further validate the eDNA approach (with GMGI genetic analysis support) to assess winter flounder presence and directly observe the temporal and spatial distribution of adults, and their sex, maturity, and spawning condition. Four fyke nets were sampled 1-2 times weekly from mid-January (which corresponds to the start of the time-of-year restriction period for dredging work in this region of the state) through the end of April. Temperature, salinity, dissolved oxygen, pH, and turbidity were also monitored. With the remaining FY23 budget funds, DMF partnered with the Cape Cod Commercial Fishermen's Alliance to contract four commercial fishing vessels for dedicated sampling trips to collect winter flounder sex and maturity information from Massachusetts state waters. These trips began in April 2023 with a study area ranging from Ipswich Bay south to Cape Cod Bay and across a variety of depths. DMF is also conducting port sampling of commercial landings to collect additional sex, maturity, and biological information. This is a cost-effective way to collect data to supplement the fishery-independent sampling above, but such opportunistic, fishery dependent data comes with less spatial data.

Other winter flounder work specific to Boston Harbor was also initiated in 2021 when DMF and UMass-Amherst began a multi-year study of juvenile and adult winter flounder habitat use, distribution, and residency in the harbor. The study includes multiple approaches. To investigate the time and locations of spawning activity, acoustic tagging and telemetry are being used to track adult winter flounder in the harbor. During 2021–2022, a total of 151 adult winter flounder were caught in Boston Harbor and tagged with acoustic transmitters that will continue to be detected for up to three years within DMF's extensive acoustic receiver array (both within and beyond Boston Harbor). A small-mesh beam trawl survey is being used to quantify the relative abundance of juvenile and young-of-the-year winter flounder and track their usage over various habitats within the harbor. Across the two years of summer-time survey activity, over 800 tows were completed and more than 7,000 winter flounder collected, with additional survey work planned for 2023. Lastly, otoliths (ear bones) from young-of-the-year winter flounder collected during the beam trawl survey were processed for daily age analysis to calculate their hatch date and gain more information about the spawning season of adults. DMF plans to expand this hatch date analysis to young-of-the-year collected from other embayments in the Gulf of Maine in 2023.

These studies collectively are expected to shed new light on winter flounder biology and ecology. While DMF conducted comprehensive habitat studies on winter flounder during the 1960s–1970s, vast habitat changes, urbanization, climate change, and a decrease in flounder populations have created a need for updated science. In particular, incomplete data on Gulf of Maine winter flounder within coastal embayments is likely impacting the efficacy and efficiency of current broad-scale time-of-year restrictions on coastal projects (i.e., January 15–May 31 across southern Massachusetts, February 1–June 30 for Cape Cod Bay, and February 15–June 30 for the north coast of Massachusetts). This broad TOY period combined with user conflicts during summer months generally restricts the dredging window to the fall and early winter. In addition, the state has a prohibition on the use of all mobile gear from February 1 through May 31 in the inshore areas of Cape Cod Bay north to the New Hampshire border that was implemented in the name of winter flounder spawning protection in 1985 as part of a set of regulations to limit effort of vessels in response to a recognized need to address resource declines. Such broad measures ought to be re-evaluated from time to time and with regards to current resource, fishery, and management characteristics.

Data are still being collected and/or analyzed for all of these initiatives. DMF expects to add to the scientific literature with peer-reviewed methods and results in the future, with possible implications for various time-of-year restrictions.

By Nichola Meserve, Fisheries Policy Analyst

Protected Species Update

The 2023 right whale season saw plenty of whale activity, plus successful collaboration between DMF, researchers, fishermen and environmental law enforcement. Right whale abundance was once again high in the Massachusetts Restricted Area from late winter to spring 2023, with the observation of approximately 58% of the known population (n=197 individuals) over the course of the season. DMF has partnered with the Center for Coastal Studies (CCS) to conduct aerial surveillance of Cape Cod Bay (CCB) and adjacent water since 1998. Those surveys were expanded to include Massachusetts Bay and the North Shore in response to shifting right whale distribution patterns. In 2023, a season high of 88 individual right whales was documented in CCB on April 9th and whale abundance slowly declined after that until the seasonal trap closure was lifted on May 8th when whales had fully departed the area. In addition, 10 of the 11 mother/calf pairs seen in the Southeast US were also observed in CCB, highlighting the importance of the area as a nursery habitat for that vulnerable life stage. The CCS aerial team is continuing to analyze photos from the season and the number of whales observed could increase.

In 2023, DMF again implemented the Massachusetts Restricted Area (MRA), a seasonal trap gear closure from February 1 through May 15 in Cape Cod Bay, the Outer Cape, Massachusetts Bay and the North Shore, which protects right whales from entanglement risk posed by trap gear. To ensure the conservation benefit of the closure, DMF conducts a derelict gear removal program to remove lost, abandoned or illegal gear from the MRA. This season DMF again partnered with the Massachusetts Environmental Police, commercial fishermen and the Center for Coastal Studies aerial team to identify and remove any gear left in the closure. Compliance was improved over levels seen the previous year, with 368 traps and 208 buoy lines removed from the water in 2023. This is a third of the gear removed in 2022 when compliance with the closure was poor in Mass Bay and the North Shore.

Right whales still face significant threats across their range however and the population has continued its downward trend. Although that decline has slowed in recent years due to a reduction in observed mortalities which peaked in 2017 and 2019. The latest population estimate from 2021 numbers around 340 individuals, with serious entanglements and ship strike remaining significant issues for the species. In the majority of recent cases, the known origin of entanglements has been Canadian snow crab and Canadian lobster gear.

In 2023, DMF continued to support the testing of ropeless or on-demand fishing gear by collaborating with the Northeast Fisheries Science Center (NEFSC) on expanded trials of ropeless systems under their Exempted Fishing Permit. The permit allows the testing of alternatives to traditional buoy lines in the Massachusetts Restricted Area (MRA), however authorization from DMF is required to test ropeless gear in state waters. Between Feb 1 and April 30, NEFSC worked with six commercial fishermen in state and federal waters portions of the MRA to test fully ropeless systems, resulting in 257 ropeless gear hauls. The goal was to test ropeless deployments that minimize the potential for gear conflict. The relatively shallow and sheltered MA state waters provide an ideal testing lab for alternative gear technologies that could be used in a variety of fishing habitats.

By Erin Burke, Protected Species Specialist

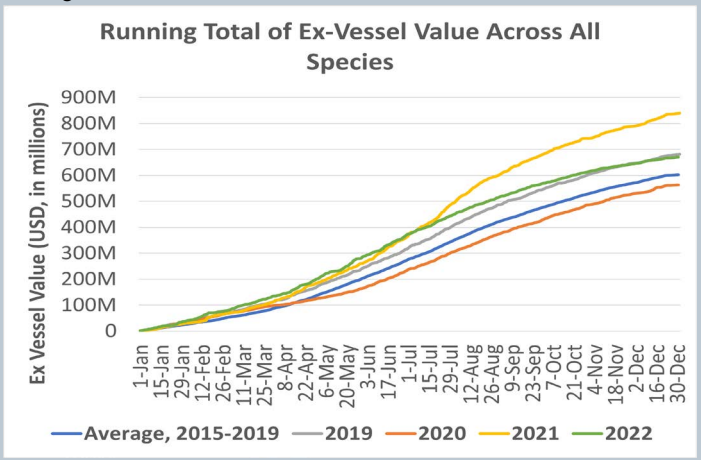
Massachusetts Seafood Value Returns to More Normal Levels in 2022

After reaching an all-time high of over $800 million in 2021, the ex-vessel value of seafood landed in Massachusetts returned closer to pre-pandemic norms with a total value of approximately $670 million. This value is similar to 2019 and still well above the previous 5-year average (see Figure 1). The previous two years were preceded by a very difficult year for the seafood industry in 2020 when the ex-vessel value of seafood was down significantly due to pandemic-related impacts.

The biggest drivers to the reduction in value for 2022 as compared to 2021 can be traced to two major factors. First, sea scallop landings were down 23% in 2022, resulting in a reduction of $125 million in ex-vessel value. Second the ex-vessel price/lb paid for lobster was down nearly 25% from 2021, resulting in a reduction of $44 million in ex-vessel value. In recent years, sea scallops and lobsters have accounted for approximately 70% of the ex-vessel value of seafood landed in Massachusetts, so it is no surprise that large fluctuations in the value of these species impact the overall value.

The reduction in value in the sea scallop and lobster fisheries was offset, somewhat, by gains in other fisheries. For example, the ex-vessel value of oysters was up $2 million dollars (~6 %) from 2021. The oyster industry was particularly hard hit during the pandemic, but the value has now recovered to pre-pandemic levels.

Commercial fishers reported increased expenses in 2022 for fuel, bait, dockage, and ice shrinking their profit margins. Trucking capacity was also an issue for the seafood industry as it was for many other sectors. DMF will be monitoring seafood landings and value, as well as other challenges that arise for the industry throughout 2023.



Data Source: SAFIS eDR as of 4/21/23.
***Historic values are not adjusted for inflation.**

By Story Reed, Assistant Director

Massachusetts' 2023 Lobster Gear Relief Program for Dual Permit Holders

The Massachusetts Lobster Gear Relief Program for Dual Permit Holders was created to help defray the cost of requiring two sets of fishing gear to protect endangered North Atlantic right whales. The Massachusetts Legislature allocated $500,000 for eligible Massachusetts commercial lobster permit holders pursuant to c. 126 of the Acts of 2022. Due to fisheries management requirements, commercial trap fishers are subject to different buoy line marking requirements based on the jurisdiction where the gear is being fished. This creates a unique problem for trap fishers who have a single fishing business authorized to fish trap gear in both state and federal waters (dual permit holders). Effectively, these permit holders are now required to alter their buoy lines when moving trap gear from state to federal waters or vice versa. This may be accommodated by either adding or removing marks and weak points from the buoy line when moving the gear from one jurisdiction to another, or more likely, carrying separate buoy lines marked and configured for each jurisdiction and then removing and replacing buoy lines when gear is moved across jurisdictional boundaries.

The Massachusetts Division of Marine Fisheries worked with the Lobster Foundation of Massachusetts in cooperation with the Massachusetts Lobstermen's Association to efficiently distribute these funds to eligible fishers. To be eligible for this program lobster fishers must have had both state and federal lobster trap permits in 2022 and renewed or intended to renew both state and federal lobster trap permits for 2023, in addition to a history of ordering MA/EEZ tags. Catch report data from 2021 was used to show proof of dual fishing and the number of traps fished. There were 162 eligible lobster fishers in this program, 155 qualified for the maximum tier ($3,025) of funding and seven qualified for the minimum tier ($1000) of funding. Maximum and minimum tiers were based on the number of traps historically dual fished, and the amounts per tier were determined by the available funds dispersed across the eligible applicants. Checks were mailed out by the Lobster Foundation of Massachusetts on the week of June 5, 2023.

By Amanda Meli, Grants Coordinator

Assistance for Electronic Tracking Devices - Federal Lobster Vessels

In Massachusetts, electronic tracking devices were required by May 1, 2023, for vessels federally permitted to land trap-caught American lobster and/or Jonah crab. The Federal Fiscal Year 2022 budget provided funds for this assistance program which is being distributed for the purchase and installation of an electronic tracking device and a subsequent subscription service to all eligible Massachusetts persons or entities whose vessel is required to deploy an approved electronic tracker per Addendum XXIX to Amendment 3 to the American Lobster Fishery Management Plan and Addendum IV to the Jonah Crab Fishery Management Plan.

The Massachusetts Division of Marine Fisheries (MA DMF) identified eligible permit holders and contacted them via US mail to give them the electronic tracking device options to install on their commercial vessel and provide a subsidy application to help cover the cost of the device, subscription service, and defray the cost of installation. MA DMF requires a completed application to accept this financial assistance and an affidavit from the permit holder that the device is installed on their identified vessel. Each permit holder who returns these forms in 2023 will receive a one-time payment of $1,500 as a subsidy for the installation of an electronic tracking device on their federally permitted vessel. As of June 6, 2023, 240 reimbursement checks of $1,500 have been issued through the program.

By Amanda Meli, Grants Coordinator

DMF Continues to Host the Annual Saltwater Derby

2022 Saltwater Derby winner John Clark with DMF staff.

The Massachusetts Division of Marine Fisheries has held its Saltwater Fishing Derby for the last thirty years. The derby, also known as the Governor's Cup, was previously hosted by the Division of Tourism until 1983. In 2017, the Division of Marine Fisheries made a few changes to the longstanding and popular Saltwater Fishing Derby. The minimum Junior qualifying weights for the weigh-in portion of the derby have been lowered for many species. This gives our Junior anglers a better chance at catching a Derby winning fish. We also expanded the Catch and Release part of the Derby for anglers who don't desire to harvest a fish. This will allow these fishers a chance to showcase their angling skills while keeping with the wide spreading angling trend of catch and release fishing. Thirty-two species are now eligible for weigh in and catch and release awards. Anglers must catch a fish that meets or exceeds the minimum qualifying length or weight in order to be considered for a Derby pin.

DMF has also added an Angler of The Year Award. Special annual awards will now be given out to the two anglers (Adult and Junior) who have the most Derby winning fish: weigh in, catch and release or combined. Since its' inception in 2017, the Adult Angler of The Year award has been won by 6 different anglers including three women. The Junior Angler of The Year has been dominated by one individual, John Clark. John has won the award five years in a row, with a combined eighteen winning fish. John has been an avid fisherman since he was two years old, and received his first derby pin when he was ten years old.

Further details and entry forms can be found at most bait and tackle shops, on our web page www.mass.gov/dfwele/dmf, or at one of our field offices. Both parts of the derby run from January 1st to November 30th annually.

Creature Feature: White Shark, *Carcharodon carcharias*

Great white shark, photo courtesy of Atlantic White Shark Conservancy.

Description: The white shark (or great white shark) is a member of the family Lamnidae, which also includes the popular shortfin mako (Isurus oxyrinchus) and cold-water porbeagle (Lamna nasus) sharks. Like these closely related species, the white shark is built for speed with a streamline, torpedo-shaped body, relatively short pectoral and pelvic fins, a flattened caudal keel, and a lunate tail (lower lobe is almost the same size as the upper lobe). The white shark is differentiated from its local cousins by its coloration (gray back sharply meeting a bright white underside), relatively shorter snout and deeper body, broad triangular teeth, and overall larger size. Like the tunas, all lamnid sharks have the very unique ability to raise their body temperature above the surrounding seawater, which is rare in the fish world.

Distribution and Habitat: The white shark is found in tropical and temperate waters throughout the western North Atlantic including the Caribbean Sea, The Bahamas, the Gulf of Mexico, and along the eastern seaboard from Florida to as far north as Newfoundland, Canada. Like many fish species, the white shark migrates seasonally north and south along the eastern seaboard of the US, but also moves offshore into the oceanic waters of the Atlantic. This species arrives in Massachusetts waters as early as late April and can stay as late as mid-December, but is most common August through October.

The white shark inhabits the entire water column along the continental shelf, but is also known to approach very close to the shoreline when feeding on seals in our coastal waters. When the species moves off the shelf into oceanic waters, it dives as deep as 3700 feet through a very broad temperature range of 35-87°F. The white shark is not a schooling fish and is most often observed as solitary individuals.

Life History: The white shark is considered a generalist that feeds a variety of species. Small white sharks from the size at birth to about nine feet in length are built for speed and agility. They are relatively slim, like mako sharks, and well-adapted for feeding on schooling fish, squid, and other sharks. The teeth of small white sharks are relatively long and narrow and perfect for grasping prey like small fishes. As white sharks get larger than eight feet, their body shape gets bulkier as their muscle mass increases and their tooth shape become broader and more triangular, which is ideal for cutting and gouging pieces from prey too large to swallow whole. Using speed and powerful jaws, these larger white sharks are now capable of attacking and killing animals including seals, dolphins, and porpoises. They are also capable of tearing large chunks of blubber and muscle from dead whale carcasses, which they opportunistically scavenge.

When in Massachusetts waters, small white sharks are known to feed on striped bass, while larger sharks are observed targeting seals off the Outer Cape or scavenging humpback, minke, and right whales.

In the North Atlantic, the white shark grows very slowly and is thought to live in excess of 70 years. Males and females do not mature until they are in the late twenties and reach lengths of 12 and 15 feet, respectively. When it comes to white sharks, maximum size tends to be exaggerated with reports greater than at 25 or 30 feet. In reality, the largest reliably measured white shark was 19 feet, 9 inches and over 5,000 lbs. Off the coast of Massachusetts, white sharks as large as 18 feet have been observed by DMF biologists.

The reproductive biology of the white shark is poorly understood. In the western North Atlantic, it is not known when or where males mate with females. Gestation in this species is thought to be more than a year and females give birth to between five and ten pups, but as many as 17 have been found in pregnant females. Newborn white sharks are about 4 to 5 feet in length and fully capable of surviving without parental care. Although it is not known where or when females give birth to their young, the smallest white sharks appear on the continental shelf between New Jersey and Massachusetts in the summer months. This region is considered a white shark nursery.

Management: There is no stock assessment for white sharks in the western North Atlantic, but working with MarineFisheries, the Atlantic White Shark Conservancy has cataloged more than 600 individuals off the coast of Cape Cod over the last decade (White Shark Logbook (atlanticwhiteshark.org)). The best available data indicate that the white shark population is rebounding after being overexploited during the 1980's and 1990's. In 1997, the National Marine Fisheries Service designated the white shark a prohibited shark species, which means that it cannot be harvested and retained. In 2005, MarineFisheries followed suit and designated the white shark a prohibited species. With the increase in white shark abundance in our coastal waters over the last decade, MarineFisheries adopted additional regulations in 2015 to prohibit the attraction, capture, and tagging of white sharks in state waters without a special white shark permit.

On an international scale, the white shark is listed on Appendix II by the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES), which regulates the trade of this species - to export white sharks or white shark parts, a CITES permit is required. In addition, the white shark is listed on both Appendix I and II of the Convention on Migratory Species (CMS), an environmental treaty of the United Nations specializing in the conservation of migratory species. The Appendix I listing means that the white shark is threatened with extinction and CMS countries must work to protect this species, its habitat, migration pathways, and any other factors that might endanger them. The CMS Appendix II listing means that white sharks would significantly benefit from international agreements for their conservation and management.

By Dr. Greg Skomal, Recreational Fisheries Program Manager

Diadromous Fisheries Updates

The DMF Diadromous Fisheries Project works to sustain and improve sea-run fish passage, habitat, and populations. Efforts cover 10 species, with a focus on river herring, American shad, American eel, and rainbow smelt. Read on for some important project updates!

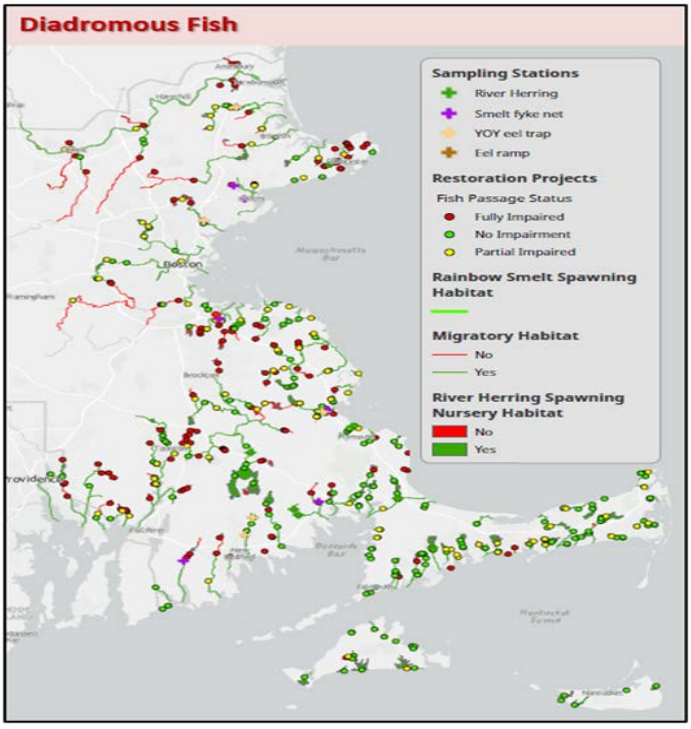
River Herring Runs Rebound in 2023. There was widespread concern for river herring populations in Massachusetts in 2022 after three straight years of declining runs counts. This followed the promising 2019 runs that were among the highest seen in 15 years in some regions. Thankfully, the spawning runs in 2023 rebounded in most locations. DMF staff manages eight river herring spawning run counting stations with local partners and provides technical assistance to approximately 30 more counting stations that are mostly volunteer-based visual counts. Most regions rebounded in 2023 with the exception of Narragansett Bay and Buzzards Bay where concerns continue over the extended trend of low counts. Cape Cod, the South Shore, Boston Harbor, and the North Shore all had runs that increased significantly. Final counts are still coming in. To date, two locations—Herring Brook in Pembroke and Herring River in Harwich—have exceeded a half million fish. Last year, none of the over 40 stations recorded a half million fish. The turnaround in Pembroke is remarkable. After multiple fishway improvements, Herring Brook posted increasing counts to reach over 400,000 in 2019, after which the number of fish plummeted to about 40,000 in both 2021 and 2022. This year in Pembroke, the herring just kept coming, week after week. With over 570,000 herring counted there were a lot of smiles around Herring Brook this spring.

American Eel Recruitment Sets Record. American eel is the one catadromous fish in North America, meaning they are born at sea and undergo a spring migration to freshwater habitats (the opposite strategy to the more common anadromous fish). DMF has installed 12 eel ramps in coastal Massachusetts since 2007. Most of these include counting tanks maintained with local partners. In addition, DMF maintains two glass eel monitoring stations to contribute to coast-wide eel monitoring and management. Catches were high at most stations in 2022 relative to time-series averages, with one station posting the first recorded catch over 100,000 glass eels. The catches in 2023 were also high, with two stations exceeding 100,000 eels: a two-year spike that has not been seen before by DMF monitoring. As is often the case, for reasons we can only speculate over, the higher recruitment of glass eels from the ocean to coastal rivers in MA during 2023 was also seen at other New England states.

Young-of-year and age-1+ eels caught at one of the state's eel ramp monitoring stations. Photo credit: Judy Scanlon.

American Shad Stocking in the Taunton River. DMF monitors American shad with electrofishing surveys at two small coastal rivers and cooperatively at fish lifts in the Merrimack River. A new collaboration began in 2022, led by the U.S. Fish & Wildlife Service's Attleboro Hatchery with assistance from DMF and DFW, to stock shad in the Taunton River. Over 5 million shad were stocked in 2022 and stocking has started again this spring. Pre-stocking monitoring caught only a handful of juvenile and adult shad in the Taunton River by electrofishing and none with five-years of beach seining, whereas the first post-stocking beach seine monitoring in 2022 caught juvenile shad in July and October—very likely survivors from the May and June stocking of larvae. Monitoring will continue in 2023 to document post-stocking responses, and hopefully, in 2025 anglers will confirm stocking success with catches of the first returning adults as harbingers of a new shad sportfishery in the Taunton River.

New Tools to Assist in Management Released. During this past year, two long-term efforts by DMF to assist the management of diadromous fish came to fruition. DMF and MassDEP have developed a new policy to set guidelines for stream maintenance to improve diadromous fish migrations. In April 2022, MassDEP released a new Wetlands Program Policy titled, Diadromous Fisheries Stream Management (BWR/WP 22-1). This policy will streamline local review and expedite execution of proposed stream maintenance projects under the Wetlands Protection Act, while setting responsible guidelines for this essential and time-honored practice. Secondly, MassGIS published a new Diadromous Fish GIS Data Layer in January 2023 that integrates DMF survey data on diadromous fish passageways with the DMF Diadromous Fish Restoration Priority List in a GIS format. The Data Layer includes information on 490 structures that can influence diadromous fish migrations in coastal Massachusetts, species presence and time-of-year recommendations at watershed locations, and specific information on river herring and rainbow smelt spawning habitat. The development of these two management tools were years in the making. Both should contribute to improved planning and coordination for diadromous management and restoration in Massachusetts.



GIS Map depicting diadromous fish sampling stations, restoration projects, and migratory habitat.

By Brad Chase, Diadromous Fisheries Project Leader

Massachusetts Anglers Continue to Enjoy Excellent Recreational Fishing

The Commonwealth of Massachusetts offers some of the finest recreational fishing on the east coast and a wide diversity of species for anglers to pursue. This is, in part, because the coast straddles two ecological regions divided by Cape Cod. Cold water species like cod, haddock, pollock and winter flounder to the north, warm water species such as scup, black sea bass and summer flounder to the south. This means that a party boat angler could jump on a trip out of Gloucester for haddock, pollock, or even halibut on one day and then leave from the South Coast and spend the day fishing for scup, black sea bass, and fluke. However, global climate change is changing our coastal waters quickly and fishing opportunities are changing with them. This includes the reduction of many cold-water fisheries like winter flounder and cod and the emergence of warmer water species like black sea bass that are increasing in abundance throughout Massachusetts waters. In this article, we will review the recent trends for some of the most popular and pursued recreational fish and discuss some of the most notable fisheries of 2022 with an eye towards the 2023 fishing season.

The most popular and pursued species in Massachusetts are striped bass, summer flounder (fluke), scup, black sea bass, and haddock. All these species have accessibility in common; they are mostly fish that are present in waters close to shore throughout all or great parts of the coastline. Haddock almost always require a boat trip, but they have been very abundant throughout Massachusetts and most find them a meal well worth a day on the water. Excellent eating is another common theme for these fish and catching, cooking, and sharing them with family and friends can be a much more rewarding experience than paying at the fish market for some filets (although this is a great option in a time crunch too). Black sea bass, fluke, and haddock are all sweet and light fleshed fish that can be prepared in many delightful ways. Many of these fish are also a great deal of fun to fish for. Black sea bass, scup, and haddock can all make for an action-packed outing while fluke can inspire intense devotion to fishing and fighting technique. Striped bass offer the complete package with opportunities for non-stop action to finely honed techniques to catch an elusive fish in the 40 to 60 lb. range.

The striped bass fishing during 2022 was very good to excellent throughout Massachusetts, and this resulted in the highest amounts of harvested and released striped bass in recent history (Figure 1). Beginning in early March, smaller holdover bass were available in several areas and smaller migrating bass began arriving on the South Coast by mid-April. By mid-May, larger bass were in Massachusetts waters, feeding on squid, menhaden, seaworms, and silversides. Over the course of the season, two areas were exceptional: Cape Cod Bay and the rips off Monomoy. There were large schools of menhaden from Plymouth to Boston Harbor and big striped bass were feeding on them all summer long. Anglers live-lining menhaden landed and released many bass above 40 inches. The striped bass fishing off Monomoy was almost as good. These fish were smaller in size compared to those in Cape Cod Bay but were just as abundant. Anglers had plenty of action using a variety of lures ranging from top water plugs to flies. Part of this exceptional fishing was driven by abundant 2015 year-class of Chesapeake Bay spawned striped bass and this ideal fishing led to a coastwide doubling of harvest (see article on Page 1).

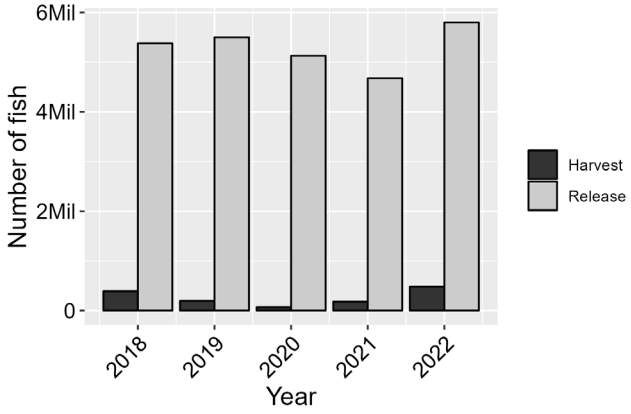


Figure 1. Harvest and release of striped bass in Massachusetts, 2018-2022.

In the waters of southern Massachusetts, the inshore trio of fluke, scup, and black sea bass provide consistent opportunities for boat and shore anglers. The black sea bass fishing over the past several years has been consistent. Many anglers remember 2021 for fantastic catches of black sea bass, especially in Buzzards Bay, but there has been some decline in the abundance of larger fish and the overall number of sea bass caught since then (Figure 2). Anglers fishing in Nantucket Sound and Buzzards Bay during May and June usually returned home with respectable bags. As the seasons progressed and the fish dispersed after spawning, anglers had to target deeper wrecks or rock piles to find legal sized black sea bass.

Scup fishing in Massachusetts over the past five years has been exceptional with Massachusetts anglers typically catching between 4 and 6 million scup every year (Figure 2). During the spring and early summer, anglers found large concentrations of scup covering almost every rocky bottom. Several two-pound scup were weighed in the state derby each of the past few years, with winning fish close to three pounds. During this time of year, shore fishermen were also getting in on the action, as keeper sized scup were found in-shore in relatively shallow areas. As our coastal waters warmed, larger fish moved to deeper cooler waters, but lots of smaller fish were still found in suitable shallow water habitats. Scup is considered great table fare, especially among immigrant communities of Massachusetts. For many anglers, harvesting abundant scup, often readily available from boat or shore, is an important source of "locally caught" protein. Not to mention they are fun to catch, while spending time outdoors!

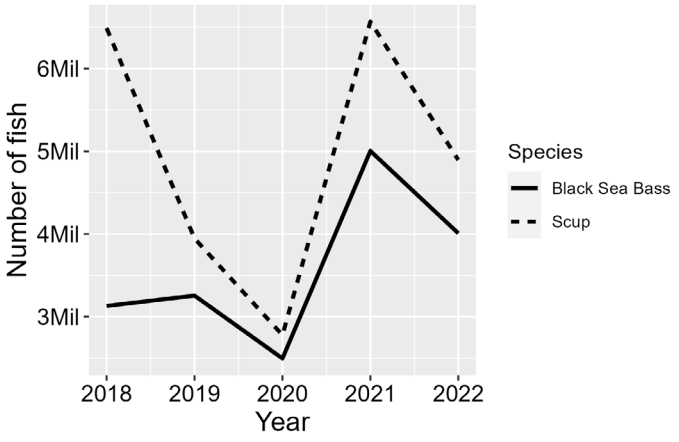


Figure 2. Total catch (harvest and release) of scup and black sea bass in Massachusetts, 2018-2022.

The fluke fishing in recent years has been more difficult than sea bass or scup (Figure 3). There have been good numbers of sub-legal fish around, but finding keeper sized fish can be tricky. This is not uncommon for fluke fishermen and persistence was key to successfully landing a keeper sized fluke when fishing inshore. Anglers fishing the deeper areas around the Elizabeth Islands were rewarded with some decent sized fluke. The fishing further offshore around Nantucket continues to be reliable, with many fish weighing in the double digits being boated each year.

Over the past 5 years, anglers have enjoyed above average fishing for haddock in waters off Massachusetts. Haddock can be found in many different areas in the Gulf of Maine from inshore spots in Cape Cod Bay to as far as Jeffries Ledge and Tillies Bank. Be sure to check out the DMF haddock guide and use the monthly maps when targeting haddock to maximize haddock catch and avoid cod. If you find yourself catching more cod than haddock in a particular spot, make a quick move to keep cod catches low. While haddock were in very high abundance and available in areas of around 100 feet of water for several seasons, the catch has not been as high in the last two years (Figure 3) and fish are now often found in water over 200 feet. It takes a little more work to reel fish up from these depths, and many anglers make use of setups using braid to reduce drag and improve fishing. Another good tip is to use baited hooks instead of jigs when targeting haddock as they increase haddock catch while reducing the catch and wounding of cod.

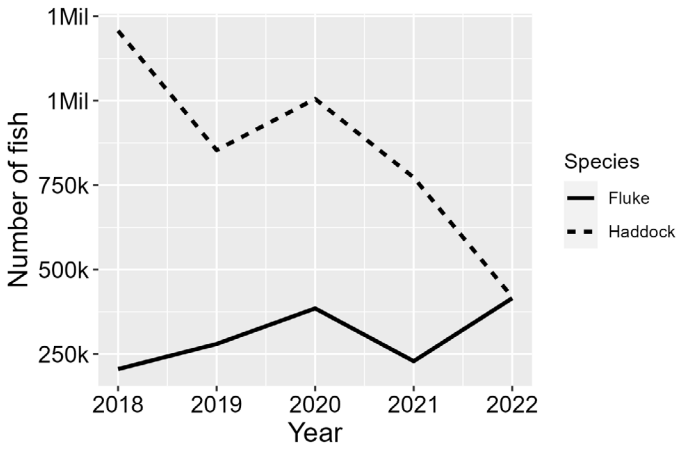


Figure 3. Total catch (harvest and release) of fluke and haddock in Massachusetts, 2018-2022.

As the 2023 fishing year gets under way, many anglers in Massachusetts are already enjoying what appears to be another great year. Striped bass, haddock, scup, and black sea bass fishing have been exceptional to solid and fluke fishing is picking up. DMF encourages anglers to get out on the water and enjoy the great recreational fishing opportunities available while also making sure to be aware of the new regulations on size and bag limits that can be found in our Guide and on the DMF website. Catching your own dinner is incredibly fulfilling and a great source of healthy food, but when you aren't planning to keep a fish make sure to handle the fish with care and keep them in the water as much as possible so they can be caught and enjoyed another day.

By Recreational Fisheries Program staff

Striped Bass Citizen Science Project

Due to regulations and conservation-minded anglers, most striped bass are released back to the water after being caught. Even though most of these fish survive, post-release mortality from recreational anglers causes more striped bass deaths than any other source. We at MADMF conduct research to understand what affects the survival of recreationally-caught striped bass. Between 2020 and 2021, DMF biologists tagged 349 striped bass with accelerometer transmitters, caught with live and dead bait using both circle and J-hooks. These specialized tags sense 'tail beats' from the fish within an array of receivers, informing researchers whether the fish dies or not. Preliminary analyses suggest that survival is related to hook location, water temperature, and handling time.

As a follow-up, we are expanding our investigation of release mortality to include striped bass caught via artificial lures and flies. During the summers of 2023 and 2024, we are partnering with volunteer anglers to collect information when they go striped bass fishing. These citizen scientists are asked to record data on the fish they catch (length, fight time, handling time, hook location, and injury), their tackle choices (lure type and size, number and type of hooks), as well as the air and water temperature. Although the program has only been running for a couple months, over 500 anglers have signed up to date and over 1000 striped bass have already been reported!

Each angler who submits at least one report will receive a complimentary pair of fishing pliers as a thank you. Continued participation will keep anglers entered into weekly raffle drawings for Shimano spinning rod/reel combos and Costa sunglasses. Anyone interested in helping us conserve striped bass can sign up by filling out a brief application at mass.gov/striper.

The ultimate goals of this project are to identify the causes of release mortality, and to provide an updated mortality rate estimate that is representative of the entire recreational fishery.

Week one raffle winner, Brad Cozier.

By Micah Dean, Senior Marine Fisheries Biologist

Seafood Marketing Update

Mass. Ave. at the Seafood Expo North America
For the fourth year, DMF coordinated a Mass. Ave. at the Seafood Expo North America. This is a cluster of businesses from the Commonwealth received 50% cost-share for the show via Massachusetts Department of Agricultural Resources and the USDA, and is promoted by the Seafood Marketing Program. DMF led a tour of the seven businesses of Mass. Ave. for new Secretary Tepper, Undersecretary Cooper, Representative Paul Schmid, and Commissioners Amidon and Randal. See our advertisement in Expo Today!

Massachusetts Seafood Pavilion returns to the New England Food Show
The Seafood Marketing Program spearheaded the Massachusetts Seafood Pavilion for the second year at the New England Food Show at the BCEC, April 2-4. A call went out to all permitted wholesale seafood businesses to table at the region's largest restaurant, retail, and foodservice event.

Thirteen businesses made up our Massachusetts Seafood Pavilion and sampled their products to show-goers. DMF had a booth that successfully directed people to the businesses and answered general questions about Massachusetts seafood. In addition, we provided educational material for the adjacent lounge area, trivia cards, and a survey on flatfish.

Wendy Mainardi and Julia Kaplan of DMF attending the New England Food Show.

Teaching the Teachers 2023
The Seafood Marketing Program partnered with Massachusetts Farm to School for a webinar for teachers in advance of May Seafood Harvest of the Month. The webinar consisted of a Seafood 101 presentation by Wendy Mainardi and two fishermen (Denice Lapierre and Eric Lorentzen) interviews.

Along these lines, the Program is partnering with another organization for an in-person workshop in Boston. The Mass. Ag. In the Classroom Workshop will take place on July 18th at Red's Best at the Fish Pier. There will be presentations, a tour, lunch and hands-on lesson plans.

By Wendy Mainardi, Seafood Marketing Coordinator

Dish on Fish: Monkfish Ravioli

This recipe comes to DMF via our Seafood Marketing Grant Program. The New Bedford Fishing Heritage Center put together this School of Fish Recipe Book to Infuse Sustainable Seafood into Culinary Arts Programs. The recipe is courtesy of Chef Robert Wilkinson.

Filling Ingredients:
1 lb. monkfish meat
1/2 small onion, finely diced
3 cloves of garlic, minced
1 oz butter
juice and zest from 1/2 lemon
1/2 cup white wine
2 tbsp fresh parsley, chopped fine

Pasta Ingredients:
2 cups all purpose flour
½ tsp. salt
3 large eggs
1 tsp. olive oil
Pasta rolling machine

To make the filling:
1. Sauté the onions, and garlic in the butter slowly until tender. Then, add the white wine, and let introduce until it is almost gone.
2. Add the lemon juice and zest along with the monkfish and sauté slowly until it is cooked all the way through (145 degrees Fahrenheit).
3. Add in the parsley and season with salt and pepper until you achieve the taste you desire.

To make the pasta:
1. Combine the flour and salt in a large bowl and whisk to blend.
2. Make a well in the center. Place the eggs, olive oil, in the well. Mix together with a fork until a shaggy mass forms.
3. Turn the ingredients out onto the table and start to knead until a dough forms. Keep kneading for10-12 minutes to form smooth dough. The dough will be dry but you can add 1⁄4teaspoon at a time if needed.
4. Let the dough rest for 1 hour then start to roll out. Keeping the pasta roller at its highest setting, fold the dough into thirds and run through. Repeat this process two more times then adjust the setting one number smaller after each pass.
5. After the last pass place the dough onto a table and then cut the dough into two equal halves. Brush a small amount of water on one dough and then fill with a tablespoon of filling from the recipe above.
6. Place the second dough on top and seal the edges being careful to get all of the air out. Cut into a circle and place on a sheet pan dusted with flour.
7. When all of the dough and filling have been used, start to boil water with salt in a large pot. Slowly place the raviolis into the boiling water and boil for approximately 3-5 minutes.
8. When they are done they can be served right away or reheated for later use. These are nicely served with a garlic, lemon butter that has been heated slowly and whisked together just before service.

Division Comings and Goings

Dr. Justin Bopp joined the Division of Marine Fisheries as the agency's Offshore Wind Renewable Energy and Fishery Specialist, a position previously held by Simi Harrison. In the role, Dr. Bopp will provide technical review of offshore wind projects, consult on best management practices and overarching policies, and assist with fisheries mitigation. Previously, Dr. Bopp was a marine fisheries ecologist at Michigan State University. His graduate and post-doc work involved numerous studies to help understand fish habitat selection, movement patterns and behaviors. Justin's applied ecological expertise, strong GIS skills and collaborative approach will help drive solutions to promote the long-term coexistence of the offshore wind and fishing industries.

Jacob Dorothy was hired this past January as a lobster field biologist working in the invertebrate program within DMF. He is responsible for the upkeep of the ventless lobster survey traps and groundlines, as well as delivering them to the captains from the north shore to Buzzards Bay. He helps with data entry, temperature monitor launching and retrieval. Prior to becoming a field biologist, he worked for DMF as a seasonal contract technician for Invertebrate Fisheries and the MRIP sampling program. He is excited to be a part of such a great team.

Kiera Lawlor joined DMF in May as a VMS Tracking Coordinator for the Fisheries Statistic Program. Kiera will be working out of the New Bedford office, where she will be implementing and maintaining all programmatic elements that support the vessel tracking program. Prior to coming to DMF, Kiera worked at NOAA Fisheries as a contractor for the Analysis and Program Support Division. Kiera holds a Bachelor's degree in environmental science from Endicott College, where she spent her undergrad working in food safety and quality assurance at a seafood processing plant.

Maggie Leary joined DMF in December as a Shellfish Classification Biologist. She will plan and conduct field investigations leading to the classification of shellfish growing areas, including collection and interpretation of water quality data, shoreline surveys to identify contamination sources, and sanitary surveys in support of classification decisions. Maggie graduated from the University of New England in 2019 with a B.S in Animal Behavior and is currently receiving her Masters of Fisheries and Wildlife Resources with Clemson University. She spent two seasons working with DMFs Sportfish program as a Fisheries Technician before to moving over to the Shellfish program. Prior to working with DMF, she worked as a Zookeeper with primates and carnivores.

Neil McCoy joined DMF in February as the Information & Education Coordinator for the Recreational Fisheries Program. Neil graduated from North Carolina State University with a M.S. in Zoology and from Oregon State University with a B.A. in Graphic Design. Before joining DMF he worked as a communications specialist for the NOAA Marine Debris Program and as a science communicator and visual designer for the North Carolina State University Department of Applied Ecology. Neil is based in Gloucester, where he leads social media and digital outreach efforts for recreational fisheries.

Vicki Oliveira joined the New Bedford permit staff as a receiving teller this past December. She comes with a great deal of experience in customer service after working for over twelve years as an Assistant to the Town Administrator in the Town of Fairhaven. Vicki came on just as DMF rolled out a new permitting application, and she has been a tremendous help to our constituents as they learn to navigate the system. Welcome to the New Bedford Permitting Office.

Iris Seto joined DMF in April as a Fisheries Habitat Specialist based in the Gloucester office. She will be responsible for tracking coastal alteration projects, and assisting in a suite of habitat mapping and monitoring efforts. Iris initially worked with DMF as an intern assessing mooring impacts to eelgrass and more recently has been working for DMF under contract as an eelgrass restoration scientist. She holds a BA in Environmental Biology from Washington University in St. Louis, and an MS in Marine Biology from Northeastern University. Prior to joining DMF, she spent a year with the Charles River Watershed Association overseeing their volunteer water quality monitoring program.

After many years with DMF, **Sandra Downing** left DMF to work for the Massachusetts Environmental Police in their Boston Boat Registration office. We wish her all the best.

Staff Transitions: In January, **Dr. Christian Petitpas** was promoted to the New Bedford Region Shellfish Supervisor/ EAIV position at the Divisions SMAST West office. In April, **Ben Gahagan** was promoted to Manager of DMF's new standalone Recreational Fisheries Program. In April, **Dr. Tracy Pugh** was promoted to the Invertebrate Fisheries Program Manager position at the DMF's New Bedford SMAST office.

On July 1, **Diane Regan** retired from DMF after 40 years' service. Diane began her association with the Division as a lobster tech working at the Lobster Hatchery in Oak Bluffs in 1981 for 2 summers. She was then hired into a Lab Tech position at the Shellfish Purification Plant in March 1983. Little did she know that the Shellfish Plant would be her home for the next 40 years. Diane advanced from a lab tech position to the supervising Bacteriologist soon thereafter leading the laboratory through countless FDA and DPH evaluations, budget struggles, personnel changes, and other crises. Diane has been the foremost advocate and a tireless crusader for the depuration plant, over the years giving plant tours to school groups, visiting officials and the general public. As well she has always been welcoming of visiting scientists, collaborating on all aspects of depuration and marine and shellfish microbial studies. Diane will be sorely missed at the plant, in the shellfish program and at DMF. With retirement we hope she can spend more time at her cottage on Martha's Vineyard along with her husband Mike and wish her the best always.

Recent Publications

The following publications are recent articles written or co-written by DMF staff and published in scholarly journals or the DMF technical series. A full list of publications can be found at https://www.mass.gov/marine-fisheries-publications.

Contributions

Dr. Christian Petitpas was a co-author on an article titled: Cross-shelf exchange associated with a shelf-water streamer at the Mid-Atlantic Bight shelf edge which was published in Progress in Oceanography, Volume 210, p. 102931.

Thomas O'Shea Announced as the new DFG Commissioner, DMF bids Farewell to Former Commissioner Ron Amidon

Tom O'Shea comes to DFG from The Trustees, where he most recently served as Vice President of Conservation and Resilience, leading the conservation and climate agenda. Prior to his role at The Trustees overseeing land conservation, advocacy and policy, agriculture, coastal resilience and ecology, he served as an Assistant Director for DFG's Division of Fisheries and Wildlife. Tom earned a Master of Public Administration from Harvard University's Kennedy School of Government, a Master of Forestry from Yale University's School of Environment, and an undergraduate degree from the University of Maine. He is an outdoorsman and triathlete who resides in Holden with his wife and son.

DMF would like to thank Ron Amidon for his work as Commissioner prior to Tom O'Shea. Ron was a strong supporter of DMF and its nine-member Marine Fisheries Advisory Commission. He was instrumental in assisting the agency in improving its organizational structure and securing personnel to advance the agency's programmatic capabilities. We wish him the best in his future endeavors.

Changes to the New England Fishery Management Council

NOAA Fisheries has announced the 2023 appointees to the eight regional fishery management councils, including a new Massachusetts appointee to the New England Fishery Management Council. Ms. Jacqueline (Jackie) Odell will begin her three year term in August. She will fill a seat previously held by Ms. Elizabeth (Libby) Etrie who is terming out after 9 years of dedicated service to New England's marine fishing communities. Ms. Etrie's robust understanding, strong relationships and rational approaches to highly complex issues will be missed.

Mr. John Pappalardo has also been re-appointed to his seat, joining three other Massachusetts Council members: Mr. Eric Hansen, Mr. Michael Pierdinock and Ms. Melanie Griffin (permanent proxy for DMF Director Daniel McKiernan). Along with their regional colleagues, Council members help conserve and manage fishery resources by relying on sound science, promoting public participation, and balancing competing interests.

Although the Council process may appear formal and complicated, there are many ways to become familiar with it and engage on issues that are important to you. If you have never been to one, attending a Council meeting has never been easier with many meetings allowing for virtual public attendance. Other information and suggestions for how to get involved can be found on the Council's website at https://www.nefmc.org/get-involved. Additionally you can subscribe to receive email updates, including meeting notices, news releases, and other fisheries-related information at https://www.nefmc.org/subscribe. The next New England Fishery Management Council meeting will be held September 26-28, 2023 in Plymouth, MA.

DMF Accolades

During the annual Masschusetts Lobstermen Association (MLA) weekend in Hyannis, DMF's **Story Reed** and **Tracy Pugh** were presented with Appreciation Awards from MLA's Executive Director, Beth Casoni.

From L to R: MLA Executive Director, Beth Casoni; DMF's Tracy Pugh and Story Reed; and MLA's President Sooky Sawyer

DMF's Deputy Director **Bob Glenn** and Environmental Analyst **Julia Kaplan** were awarded with a Director's Commendation from the Massachusetts Environmental Police (MEP) for their work of coordinating and assisting with the removal of abandoned fishing gear during fixed gear closures to protect the Northern Atlantic right whale.

Julia Kaplan and Bob Glenn with their MEP Director's Commendation awards.

Finally, DMF's Deputy Director **Dr. Michael Armstrong** was awarded a Lifetime Achievement Award from the Massachusetts Sportsmen's Council.

In Memorium: Mike Hickey

It is with profound sadness that we must announce the passing of John Michael Hickey on May 24, 2023. "Mike" was the long time Shellfish Program Manager for the Division retiring in 2020 after a nearly 52-year career.

Mike began his career with DMF in June 1968 as an Assistant Marine Fisheries Biologist, promoted to Marine Fisheries Biologist in 1972 as the new Shellfish Technical Assistance Project Leader. Mike's directive was to provide science-based shellfish management and shellfish propagation assistance to coastal municipalities. It was at this time he was first tasked with promoting private shellfish aquaculture under newly passed state legislation, and by 1980 was promoted to Senior Marine Fisheries Biologist. Then in 1988, Mike assumed leadership of newly acquired shellfish growing area classification responsibilities from the Massachusetts DEQE, now the Department of Environmental Protection. At that time, he was promoted to Chief Biologist and led the combined projects known as the Shellfish Sanitation and Management Program until retirement.

He is considered a founder of the Interstate Shellfish Sanitation Conference (ISSC), attending the ISSC conference on twenty-six (26) occasions, his last in 2019. Mike was first elected and served as the Region 1 regulatory representative to the ISSC Executive Board in 1983, serving uninterrupted until 2020 making him the longest serving board member. During his tenure on the Executive Board, he was elected Chair twice, from 1997 to 2001 and then again from 2008 to 2013, also making him the longest serving Board Chair. Always active in ISSC he was a member and participated on countless workgroups, committees, sub-committees, and the various Task Forces often as the chair, his advice and counsel was always in demand. At ISSC and in state, he worked on shellfish issues concerning marine biotoxins, Harmful Algal Bloom's, depuration, aquaculture, water quality, harvest techniques, shellfish disease, seafood safety, and local and state management policy.

Mike authored and co-authored numerous papers and reports on Massachusetts shellfish and was regarded by many as the foremost shellfish expert in the Commonwealth during his career. He was an active member of the Northeast Shellfish Sanitation Association (NESSA) for 40 years, elected President twice, and was an advisor to the Massachusetts Shellfish Officers Association (MSOA) for over 40 years.

Mike was known to his colleagues, co-workers, and throughout the industry for his straight talk, incisive mind, and ready laugh being always willing to work hard and lend a hand. He will be dearly missed.

Adjudicatory Proceedings

Under state law, DMF may sanction commercial and recreational fishing permits for violations of the state's marine fishery laws and regulations subject to a due process adjudicatory proceeding. These adjudicatory proceedings are held before a magistrate. They may be initiated by the agency, the Environmental Police, or municipal officials (constables) authorized to enforce the marine fishery laws of the Commonwealth.

During the period of January 1, 2023 to present, DMF initiated one new adjudicatory proceeding. This matter involves numerous menhaden overages during the 2022 fishing year and intentional misreporting. This matter remains ongoing. DMF also resolved two matters that were previously initiated. The first matter dealt with violations of the state's seasonal lobster trap closure, protected species regulations affecting buoy lines, surface marking requirements for lobster trap gear, and lobster conservation rules. DMF reached a settlement agreement with the party resulting in a three-year suspension of their commercial lobster permit. The second matter dealt with violations of the state's seasonal lobster trap closure. DMF reached a settlement agreement with the party that requires they haul-out their lobster trap gear by no later than November 30 from 2023 – 2027.

Regulatory Updates

Area 1A Mobile Gear Fishing Season (322 CMR 4.06). DMF authorizes the seasonal use of mobile gear within the inshore waters of so-called Area 1A off Gloucester and Rockport. During the late winter and early spring, this area has been open to mobile gear fishing from February 1 – March 31. Beginning in 2023, this seasonal allowance has been extended through May 15. However, the seasonal allowance may be rescinded between May 1 and May 15 should fixed gear closures open early in response to right whales migrating out of state waters.

Commercial Period II Summer Flounder Trip Limit Increase (322 CMR 6.22). Through an in-season adjustment, DMF increased the commercial summer flounder trip limit for January 1 – April 22 from 3,000 pounds to 10,000 pounds. This action was taken to enhance access to and increase the utilization of the available 2023 commercial summer flounder quota.

Commercial Menhaden (322 CMR 6.43). For the 2023 season, DMF implemented new rules affecting the commercial menhaden fishery. These rules were adopted by permit condition to ensure they went into effect at the start of the season, as final regulations are not expected to be promulgated until July 2023. From January 1 – June 14, the directed fishery is closed and only small-scale directed and non-directed gears may be used to take up to 6,000 pounds of menhaden; purse seining is prohibited. The directed fishery opens on June 15. Limited entry permit holders will start the directed fishery with a 120,000 pound trip limit, this trip limit is reduced to 25,000 pounds once 50% of the quota is taken, and 6,000 pound once 90% of the quota is taken; if the 90% quota use threshold is reached on or after September 1, the trip limit remains at 25,000 pounds. Throughout the directed fishery, open access fishers may retain up to 6,000 pounds of menhaden daily. Once 100% of the quota is taken, the directed fishery is closed and only small-scale directed and non-directed gears may be used to take up to 6,000 pounds of menhaden; purse seining is prohibited. DMF also codified long-standing conditions regarding the use of purse seines and carrier vessels as regulations; this included time-area closures, purse seine net size requirements, and carrying and landing restrictions. For 2024, all purse seiners will need to have their nets annually certified by DMF and limited entry permit holders will need to get their fish holds marked by a certified marine surveyor to demonstrate volumetric capacity at the 120,000 pound trip limit and 25,000 pound trip limit.

Commercial Whelk Minimum Size (322 CMR 6.21). DMF revised the schedule to increase the whelk gauge width. The prior schedule increased the whelk gauge width by 1 /8" biennially until a terminal gauge width of 3 5 /8" is reached in 2029. The revised schedule will delay the pending 1 /8" increase in 2023 until 2024 and then have future increases occur every third year, rather than every other year. The terminal gauge width remains 3 5 /8" and this target will now be reached in 2033. This terminal gauge size corresponds to the shell width where 50% of female whelks reach sexual maturity in the primary harvest area of Nantucket Sound. This action was taken in response to an industry petition expressing concerns about diminished fishery performance and its potential impact on shoreside infrastructure.

Electronic Monitoring Devices in Commercial Lobster Trap Fishery (322 CMR 7.11). Effective May 1, 2023, Massachusetts commercial lobster permit holders who also hold a federal lobster trap permit are required to install and have operational electronic monitoring devices on their vessels. This was required by the Atlantic States Marine Fisheries Commission through Addendum XXIX to Interstate Fishery Management Plan for American Lobster and Addendum IV to the Interstate Fishery Management pLan for Jonah Crabs. The purpose of the requirement is to enhance the collection of high resolution spatio-temporal data to address a variety of ongoing and emerging issues relevant to marine spatial planning (e.g., wind energy, aquaculture, marine protected areas) and fisheries management (e.g., protected species risk assessment and stock assessments).

Mackerel Limits and Permitting (322 CMR 6.44 and 7.01). For 2023, DMF adopted a new commercial mackerel endorsement. This endorsement is required if any commercial fishery intends to retain, possess, or land mackerel for sale or to catch, possess, or land more than 20 mackerel per calendar day, including the possession of mackerel to use as bait in another commercial fishery. Additionally, DMF established a new recreational mackerel limit of 20-fish per day. This limit applies both as a harvest limit and as a per person possession limit. The limit does not apply to mackerel aggregate shoreside (e.g., coolers, holding cars) for future use. As mixing commercial and recreational trips is prohibited, anglers cannot obtain a commercial mackerel endorsement to exceed the recreational mackerel limit when fishing recreationally for other target species (e.g., striped bass, bluefish, bluefin tuna).

Protected Species (322 CMR 12.00). Several actions were taken regarding protected species management. Annually, DMF establishes a small vessel speed limit of 10 knots within Cape Cod Bay during March and April to reduce the risk of strip strikes on right whales. This year, the speed limit was extend through May 7 given the continued presence of right whales in the area. The seasonal fixed gear closures for gillnets and trap gear were lifted on May 8, as a result of aerial surveys demonstrating right whales had migrated out of state waters. Lastly, DMF rescinded the requirement that recreational and commercial trap gear be rigged with a weak link at the buoy that is capable of breaking at 600 pounds pressure. Weak

links were designed to allow for a buoy line to part should it entangle a right whale. However, the entanglement record shows little evidence the gear modification works as intended and ultimately does not lead to risk reduction.

Recreational Black Sea Bass (322 CMR 6.28). For 2023, the Atlantic coastal states were required to reduce their recreational harvest of black sea bass by 10% compared to 2022. Based on public input, DMF achieved this reduction through increasing the minimum size by ½" from 16" to 16.5". The fishery opened on May 20 and closes after September 7 and the bag limit remained at 4-fish per angler.

Recreational Scup (322 CMR 6.27). For 2023, the Atlantic coastal states were required to reduce their recreational harvest of scup by 10% compared to 2022. The Northern Region (NY – MA) achieved this through implementing uniform measures. This included closing the January 1 – April 30 period; reducing the for-hire bonus season bag limit from 50-fish to 40-fish; and increasing the minimum size from 10" to 10.5" for vessel-based anglers (both for-hire and private). Out of environmental justice concerns, the minimum size for shore-based anglers was reduced from 10" to 9.5", as larger fish tend to be less available to this mode. Accordingly, for 2023 recreational fishery for scup is open from May 1 – December 31 with a 30-fish bag limit and 10.5" minimum size for vessel-based anglers and 9.5" minimum size for shore-based anglers. During the period of May 1 – June 30, for-hire anglers have a bonus season that accommodates a 40-fish bag limit. If five or more anglers are on-board a private vessel, then the aggregate limit is 150 fish.

Recreational Striped Bass (322 CMR 6.07). Effective May 26, 2023, DMF changed the maximum length for keeping striped bass from less than 35" to less than 31". As a result, the new recreational slot limit is 28" to less than 31". This responded to an emergency action take by the Atlantic States Marine Fisheries Commission on May 2. The basis for taking emergency action was that striped bass recreational harvest coastwide nearly doubled in 2022. This unexpectedly high harvest greatly reduced the probability of rebuilding the currently overfished striped bass stock by 2029, which is the goal of the interstate management plan. The main reason for the increase in harvest was that some striped bass from the abundant 2015 year-class, those fish born in 2015, had grown enough to be harvested under the 2022 slot limit (28" to <35"). This year, the 2015 year-class will be entirely recruited into this size range, meaning this entire robust year class would be available for harvest if the slot remained 28" to <35", whereas the new slot limit is expected to protect more than 50% of the year class. 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. Since 2005, survival of newborn striped bass has been mostly below average, including the past 4 years which are among the lowest recorded. With fewer surviving striped bass born in the years before and after 2015, it is important for as many bass from the 2015 year-class to grow to spawning size and have as many opportunities to reproduce (and hopefully create additional strong year-classes) as possible if we hope to recover striped bass stocks and maintain strong striped bass fisheries in our coastal waters.

Recreational Tautog (322 CMR 6.40). DMF adopted a 21" maximum size for the recreational tautog fishery, resulting in a slot limit of 16" to 21". Under this slot limit, there is an allowance for an angler to retain one trophy fish measuring greater than 21" per calendar day. This aligns Massachusetts recreational fishing regulations with Rhode Island's, as we comprise a single management region under the Atlantic States Marine Fisheries Commission's Interstate Fishery Management Plan. Having consistent rules across jurisdictions enhances enforcement and compliance and should address impacts of the potential eastward movement of fishing effort into Massachusetts and Rhode Island to target the relatively healthy stock of tautog shared by the two states.

Short Fin Mako (322 CMR 6.37). DMF prohibited the retention, possession, and landing of shortfin makos from Massachusetts' state waters. This action complies with the Atlantic States Marine Fisheries Commission's Interstate Fishery Management Plan for Coastal Sharks and is consistent with recent actions taken by the International Commission on the Conservation of Tunas, NOAA Fisheries Highly Migratory Species program.

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