# ATLANTIC STATES MARINE FISHERIES COMMISSION 

## REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN

FOR ATLANTIC STRIPED BASS
(Morone saxatilis)

2022 FISHING YEAR


Approved
August 2023

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## I. Status of the Fishery Management Plan

| Date of FMP Approval: | Original FMP - 1981 |
| :---: | :---: |
| Amendments: | Amendment 1-1984 <br> Amendment 2-1984 <br> Amendment 3-1985 <br> Amendment 4 - 1989; Addendum I - 1991, Addendum II - 1992, <br> Addendum III - 1993, Addendum IV - 1994 <br> Amendment 5 - 1995; Addendum I - 1997, Addendum II - 1997, <br> Addendum III - 1998, Addendum IV - 1999, Addendum V - 2000 <br> Amendment 6 - 2003; Addendum I - 2007, Addendum II - 2010, <br> Addendum III - 2012, Addendum IV - 2014, Addendum VI -2019 <br> Amendment 7-2022; Addendum I-2023 |
| Management Unit: | Migratory stocks of Atlantic striped bass from Maine through North Carolina |
| States With Declared Interest: | Maine - North Carolina, including Pennsylvania |
| Additional Jurisdictions: | District of Columbia, Potomac River Fisheries Commission, National Marine Fisheries Service, United States Fish and Wildlife Service |
| Active Boards/Committees: | Atlantic Striped Bass Management Board, Advisory Panel, Technical Committee, Stock Assessment Subcommittee, Tagging Subcommittee, Plan Review Team, and Plan Development Team |

## Original FMP and Amendments 1-5

The Atlantic States Marine Fisheries Commission (Commission) developed a Fisheries Management Plan (FMP) for Atlantic Striped Bass in 1981 in response to poor juvenile recruitment and declining landings. The FMP recommended increased restrictions on commercial and recreational fisheries, such as minimum size limits and harvest closures on spawning grounds. Two amendments were passed in 1984 recommending additional management measures to reduce fishing mortality. To strengthen the management response and improve compliance and enforcement, the Atlantic Striped Bass Conservation Act (P.L. 98-613) was passed in late 1984. The Striped Bass Act ${ }^{1}$ mandated the implementation of striped bass regulations passed by the Commission and gave the Commission authority to recommend to the Secretaries of Commerce and Interior that states be found out of compliance when they failed to implement management measures consistent with the FMP.

The first enforceable plan under the Striped Bass Act, Amendment 3, was approved in 1985, and required size regulations to protect the 1982 year class - the first modest size cohort since the

[^0]previous decade. The objective was to increase size limits to allow at least $95 \%$ of the females in the 1982 year class to spawn at least once. Smaller size limits were permitted in producer areas than along the coast. Several states, beginning with Maryland in 1985, opted for a more conservative approach and imposed a total moratorium on striped bass landings for several years. The amendment contained a trigger mechanism to relax regulations when the 3 -year moving average of the Maryland juvenile abundance index (JAI) exceeded an arithmetic mean of 8.0 - which was attained with the recruitment of the 1989 year class. Also, in 1985, the Commission determined the Albemarle Sound-Roanoke River (A-R) stock in North Carolina contributed minimally to the coastal migratory population, and was therefore allowed to operate under an alternative management program.

Amendment 4, implemented in 1989, aimed to rebuild the resource rather than maximize yield. The amendment allowed state fisheries to reopen under a target fishing morality ( $F$ ) of 0.25 , which was half the estimated F needed to achieve maximum sustainable yield (MSY). The amendment allowed an increase in the target F once spawning stock biomass (SSB) was restored to levels estimated during the late 1960s and early 1970s. The dual size limit concept was maintained (coastal versus producer areas), and a recreational trip limit and commercial season was implemented to reduce the harvest to $20 \%$ of that in the historic period of 1972-1979. A series of four addenda were implemented from 1990-1994 to maintain protection of the 1982 year class.

In 1990, to provide additional protection to striped bass and ensure the effectiveness of state regulations, NOAA Fisheries passed a final rule (55 Federal Register 40181-02) prohibiting possession, fishing (catch and release fishing), harvest, and retention of Atlantic striped bass in the Exclusive Economic Zone (EEZ), with the exception of a defined transit zone within Block Island Sound. Atlantic striped bass may be transported through this defined area provided that the vessel is not used to fish while in the EEZ and the vessel remains in continuous transit, and that the fish were legally caught in adjoining state waters.

In 1995, the Atlantic striped bass migratory stock was declared recovered by the Commission (the A-R stock was declared recovered in 1997) and Amendment 5 was adopted to increase the target $F$ to 0.33 , midway between the existing F target ( 0.25 ) and $\mathrm{F}_{\text {msy. Target }} \mathrm{F}$ was allowed to increase again to 0.40 after two years of implementation. Regulations were developed to achieve the $\operatorname{target} F$ (which included measures to restore commercial harvest to 70\% of the average landings during the 1972-1979 historical period) and states were allowed to submit proposals to implement alternative regulations that were deemed conservationally equivalent to the Amendment 5 measures. From 1997-2000, a series of five addenda were implemented to respond to the latest stock status information and adjust the regulatory program to achieve each change in target $F$.

## Amendment 6

In 2003, Amendment 6 was adopted to address five limitations within the existing management program: 1) potential inability to prevent the Amendment 5 exploitation target from being exceeded; 2) perceived decrease in availability or abundance of large striped bass in the coastal migratory population; 3) a lack of management direction with respect to target and threshold biomass levels; 4) inequitable effects of regulations on the recreational and commercial fisheries, and coastal and
producer area sectors; and 5) excessively frequent changes to the management program. Accordingly, Amendment 6 completely replaced the existing FMP for Atlantic striped bass. ${ }^{2}$

The goal of Amendment 6 is "to perpetuate, through cooperative interstate management, migratory stocks of striped bass; to allow commercial and recreational fisheries consistent with the long-term maintenance of a broad age structure, a self-sustaining spawning stock; and also to provide for the restoration and maintenance of their essential habitat." In support of this goal, the following objectives are included:

1. Manage striped bass fisheries under a control rule designed to maintain stock size at or above the target female spawning stock biomass level and a level of fishing mortality at or below the target exploitation rate.
2. Manage fishing mortality to maintain an age structure that provides adequate spawning potential to sustain long-term abundance of striped bass populations.
3. Provide a management plan that strives, to the extent practical, to maintain coastwide consistency of implemented measures, while allowing the States defined flexibility to implement alternative strategies that accomplish the objectives of the FMP.
4. Foster quality and economically viable recreational, for-hire, and commercial fisheries.
5. Maximize cost effectiveness of current information gathering and prioritize state obligations in order to minimize costs of monitoring and management.
6. Adopt a long-term management regime that minimizes or eliminates the need to make annual changes or modifications to management measures.
7. Establish a fishing mortality target that will result in a net increase in the abundance (pounds) of age 15 and older striped bass in the population, relative to the 2000 estimate.

Amendment 6 modified the F target and threshold, and introduced a new set of biological reference points (BRPs) based on female SSB, as well as a list of management triggers based on the BRPs. The coastal commercial quotas were restored to $100 \%$ of the states' average landings during the 19721979 historical period, except for Delaware's coastal commercial quota which remained at the level allocated in $2002^{3}$. In the recreational fisheries, all states were required to implement a two-fish bag limit with a minimum size limit of 28 inches, except for the Chesapeake Bay fisheries, North Carolina fisheries that operate in the A-R, and states with approved alternative regulations. The Chesapeake Bay and A-R regulatory programs were predicated on a more conservative $F$ target than the coastal migratory stock, which allowed these states/jurisdictions (hereafter states) to implement separate seasons, harvest caps, and size and bag limits as long as they remain under that $F$ target. No minimum

[^1]size limit can be less than 18 inches under Amendment 6. The same minimum size standards regulate the commercial fisheries as the recreational fisheries, except for a minimum 20 inch size limit in the Delaware Bay spring American shad gillnet fishery.

States are permitted the flexibility to deviate from these regulations by submitting conservation equivalency proposals to the Plan Review Team (PRT). All proposals are subject to technical review and approval by the Atlantic Striped Bass Management (Board). It is the responsibility of the state to demonstrate through quantitative analysis that the proposed management program is equivalent to the standards in the FMP, or will not contribute to the overfishing of the resource.

Five addenda to Amendment 6 have been implemented. Addendum I, approved in 2007, established a bycatch monitoring and research program to increase the accuracy of data on striped bass discards and recommended development of a web-based angler education program. Also in 2007, President George W. Bush issued an Executive Order (E.O. 13449) prohibiting the sale of striped bass (and red drum) caught within the EEZ. Addendum II was approved in 2010 and established a new definition of recruitment failure such that each index would have a fixed threshold rather than a threshold that changes annually with the addition of each year's data. Addendum III was approved in 2012 and requires all states with a commercial fishery for striped bass to implement a uniform commercial harvest tagging program. The Addendum was initiated in response to significant poaching events in the Chesapeake Bay and aims to limit illegal harvest of striped bass.

Addendum IV was triggered in response to the 2013 benchmark assessment, which indicated a steady decline in SSB since the mid-2000s. The Addendum established new F reference points, and changed commercial and recreational measures to reduce $F$ to a level at or below the new target. Chesapeake Bay fisheries were required to implement lower reductions than coastal states ( $20.5 \%$ compared to $25 \%$ ) since their fisheries were reduced by $14 \%$ in 2013 based on their management program. The addendum maintained the flexibility to implement alternative regulations through the conservation equivalency process. This practice has resulted in a variety of regulations among states. All states promulgated regulations prior to the start of their 2015 seasons.

Addendum VI was initiated in response to the 2018 benchmark assessment which indicated the stock is overfished and experiencing overfishing ${ }^{4}$. Approved in October 2019, the Addendum aimed to reduce total removals by $18 \%$ relative to 2017 levels in order to achieve F target in 2020. Specifically, the Addendum reduced all state commercial quotas by $18 \%$, and implemented a 1 fish bag limit and a $28^{\prime \prime}$ to less than $35^{\prime \prime}$ slot limit for ocean fisheries and a 1 fish bag limit and an $18^{\prime \prime}$ minimum size limit in Chesapeake Bay to reduce total recreational removals by $18 \%$ in both regions. The Addendum's

[^2]measures were designed to apply the needed reductions proportionally to both the commercial and recreational sectors, although states were permitted to submit alternative regulations through conservation equivalency that achieve an $18 \%$ reduction in total removals statewide. The Board reviewed and approved management options for 2020 on a state-by-state basis in February, and all states promulgated regulations by April 1.

Addendum VI also required the mandatory use of circle hooks when fishing with bait to reduce release mortality in recreational striped bass fisheries. States are encouraged to promote the use of circle hooks through various public outreach and education platforms to garner support and compliance with this important conservation measure. In October 2020, the Board approved state implementation plans for circle hook requirements, with the caveat that no exemptions to Addendum VI mandatory circle hook requirements will be permitted. Circle hook regulations were required to be implemented no later than January 1, 2021. In March 2021, the Board approved a clarification on the definition of bait and methods of fishing ${ }^{5}$ that require circle hooks, which must be implemented by states as part of Addendum VI compliance. Per Commission standards, states could implement more restrictive measures. The Board also approved guidance on how to address incidental catch of striped bass when targeting other species with non-circle hooks with bait attached. This guidance was not a compliance criterion since incidental catch was not originally part of Addendum VI.

## Amendment 7

Amendment 7 was approved in May 2022, and consolidates Amendment 6 and its associated addenda into a single document. The purpose of Amendment 7 is to update the management program to align with current fishery needs and priorities given the status and understanding of the resource and fishery has changed considerably since implementation of Amendment 6 in 2003. Amendment 7 builds upon the Addendum VI to Amendment 6 action to address overfishing and initiate rebuilding in response to the overfished finding from the 2018 stock assessment, requiring the Board to rebuild the stock by 2029. Amendment 7 established new requirements for the following components of the FMP: management triggers, conservation equivalency, additional measures to address recreational release mortality, and the stock rebuilding plan.

For management triggers, Amendment 7 established an updated recruitment management trigger that is more sensitive to low recruitment than the previous trigger, and it required a specific management response to low year class strength. The response requires re-evaluation of the fishing mortality management triggers to account for low recruitment. If one of those triggers trips after reevaluation, the Board is required to take action to reduce fishing mortality. Amendment 7 also updated the spawning stock biomass triggers by establishing a deadline for implementing a rebuilding plan. The Board must implement a rebuilding plan within two years of when a spawning stock biomass trigger is tripped.

[^3]For conservation equivalency (CE), Amendment 7 does not allow CE to be used for most recreational striped bass fisheries when the stock is overfished. Amendment 7 also provided constraints around the use of Marine Recreational Information Program data for CE proposals and defines the overall percent reduction/liberalization a proposal must achieve, including required uncertainty buffers. These restrictions are intended to minimize the risks due to uncertainty when CE is used for non-quota managed striped bass fisheries.

For recreational release mortality, Amendment 7 established a new gear restriction which prohibits gaffing striped bass when fishing recreationally. This is in addition to the existing circle hook requirement when fishing recreationally with bait. Additionally, Amendment 7 required striped bass caught on any unapproved method of take (e.g., caught on a J-hook with bait) must be returned to the water immediately without unnecessary injury. This provision, which is related to incidental catch, was previously a recommendation in Addendum VI to Amendment 6.

For stock rebuilding, Amendment 7 addressed the 2022 stock assessment and how it would inform efforts to meet the 2029 stock rebuilding deadline. Given concerns about recent low recruitment and the possibility of continued low recruitment, Amendment 7 required the 2022 stock assessment's rebuilding projections to use a low recruitment assumption to conservatively account for that future possibility. Amendment 7 also established a mechanism for the Board to respond more quickly to the 2022 assessment results if action was needed to achieve stock rebuilding by 2029.

All provisions of Amendment 7 were effective May 5, 2022 except for gear restrictions. States had to implement new gear restrictions by January 1, 2023. Amendment 7 also maintained the same recreational and commercial measures specified in Addendum VI to Amendment 6, which were implemented in 2020. As such, all approved Addendum VI conservation equivalency programs and state implementation plans are maintained until such measures are changed in the future.

## Addendum I to Amendment 7

Addendum I to Amendment 7 was approved in May 2023 to allow for voluntary ocean commercial quota transfers contingent on stock status. The addendum was developed to provide some, more immediate relief to states seeking a change to their commercial quota after the Board decided that changes to the commercial quota system would not be considered in the then ongoing development of Draft Amendment 7. When the stock is overfished, no quota transfers will be allowed. When the stock is not overfished, the Board can decide every one to two years whether it will allow voluntary transfers of ocean commercial quota. The Board can also set criteria for allowable transfers, including a limit on how much and when quota can be transferred in a given year, and the eligibility of a state to request a transfer based on its landings.

## 2023 Emergency Action

The Board approved an emergency action in May 2023 to change the recreational size limit to $28-31^{\prime \prime}$, effective for 180 days from May 2, 2023 through October 28, 2023. This action responded to the unanticipated magnitude of 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 drops from $97 \%$ under the lower 2021 fishing mortality rate to less than 15\% if the higher 2022 fishing mortality rate continues each year.

The Board implemented the emergency 31-inch maximum size limit for 2023 to reduce harvest of the strong 2015-year class. The 31-inch maximum size limit applies to all existing recreational fishery regulations where a higher (or no) maximum size applies, excluding the May Chesapeake Bay trophy fisheries which already prohibit harvest of fish less than 35 inches. All bag limits, seasons, and gear restrictions will remain the same. Jurisdictions were required to implement the required measure as soon as possible but no later than July 2,2023 . If it deems necessary, the Board may extend the emergency action for two additional periods of up to one year each at a future Board meeting.

## Pending Action

The Board initiated Addendum II to Amendment 7 in May 2023 to address the concerns about increased removals and stock rebuilding beyond 2023. The Draft Addendum is intended to follow the 2023 emergency action, and will consider 2024 management measures designed to reduce fishing mortality to the target. Specifically, the Draft Addendum will propose options for the ocean recreational fishery, including modifications to the slot limit with harvest season closures as a secondary non-preferred option. It will also propose options for the Chesapeake Bay recreational fisheries, as well as all commercial fisheries, including maximum size limits.

For measures beyond 2024, the Board intends to consider the results of the upcoming 2024 stock assessment update to inform subsequent management action. To enable an expedited management response to the 2024 stock assessment update, the Draft Addendum will propose 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 Board will consider Draft Addendum II at the Summer 2023 Meeting, when it will consider approving the document for public comment.

## II. Status of the Stocks

The biological reference points (BRPs) currently used for management are based on the 1995 estimate of female spawning stock biomass (SSB). The 1995 estimate of female SSB is used as the SSB threshold because many stock characteristics (such as an expanded age structure) were reached by this year and the stock was declared recovered. The SSB target is equal to $125 \%$ of SSB threshold.

The accepted model is a forward projecting statistical catch-at-age (SCA) model which uses catch-atage data and fishery-dependent and -independent survey indices to estimate annual population size and fishing mortality (NEFSC 2019). Indices of abundance track relative changes in the population over time while catch data provide information on the scale of the population size. Age structure data (numbers of fish by age) provide additional information on recruitment (number of age-1 fish entering the population) and trends in mortality.

The most recent assessment for striped bass was an update completed in 2022 with data through 2021 (ASMFC 2022a). Prior to this, the 2018 Benchmark Stock Assessment had determined that striped bass were overfished and experiencing overfishing in the terminal year (2017) (NEFSC 2019). Following the implementation of new management measures in 2020, the 2022 Stock Assessment Update found that the stock was no longer experiencing overfishing in 2021 ( $F=0.14$, below the threshold of 0.20 and the target of 0.17) but remained overfished (Female SSB $=143$ million pounds, below both the target of 235 million pounds and the threshold of 188 million pounds) (Figures 1 and 2). These reference points were calculated using the "low recruitment assumption" (per Amendment 7's requirement under a tripped recruitment trigger), which resulted in a lower, more conservative F target and threshold compared to the 2018 benchmark assessment. Although below the threshold and considered overfished, female SSB in 2021 was still estimated to be more than three-times of that during the early 1980s, when the stock was considered collapsed (Figure 1).

The 2022 assessment also indicated a period of strong recruitment (numbers of age- 1 fish entering the population) from 1994-2004, followed by a period of low recruitment from 2005-2011 (although not as low as the period of stock collapse in the early 1980s) (Figure 1). This period of low recruitment contributed to the decline in SSB that the stock has experienced since 2010. Recruitment of age-1 fish was high in 2012, 2015, 2016, and 2019 (corresponding to strong 2011, 2014, 2015, and 2018 year classes, respectively); however, estimates of age-1 striped bass were below the long-term average in 2018, 2020, and 2021. Recruitment in 2021 was estimated at 116 million age-1 fish, which is below the time series average of 136 million fish.

The 2022 assessment also included short-term projections to determine the probability of SSB being at or above the SSB target by 2029. These projections used the "low recruitment assumption", which restricts the estimates of age-1 recruitment to those occurring during 2008-2021, rather than the longer time series of 1993-2021. These projections indicated that under the 2021 fishing mortality rate, there was a 97\% probability the stock will be rebuilt by 2029.

However, concerns over high recreational removals in 2022 compared to 2021, the terminal year of the most recent assessment update, prompted the Board to request updated stock projections using 2022 preliminary removals. These estimates of preliminary 2022 removals and updated stock projections were presented to the Board in May 2023. These 2022 removals were used to estimate $F$ in 2022. Since striped bass catch and F rates vary from year-to-year (even under the same regulations), the average $F$ from 2019-2022 (excluding 2020 due to uncertainty associated with COVID-19 impacts) was applied to 2023-2029 in the new projections. Under this F rate, the new projections estimate the probability of rebuilding SSB to its target by 2029 drops from $97 \%$ to $15 \%$.

It should be noted that these projections are not the same as a full stock assessment update where the model would be re-run to include the 2022 catch-at-age and index data. Accordingly, the status of the stock remains overfished but no longer experiencing overfishing as per the 2022 stock assessment update. The next stock assessment for striped bass is currently scheduled for 2024 (an update with data through 2023).

## III. Status of the Fishery in the Ocean and Chesapeake Bay

## Total Removals

In 2022, total Atlantic striped bass removals (commercial and recreational, including harvest, commercial dead discards and recreational release mortality) were estimated at 6.8 million fish, which is a $32 \%$ increase from 2021 total removals (Table 3; Figure 5). This 2022 increase was driven by an increase in recreational removals, as commercial removals slightly decreased. In 2022, the commercial sector accounted for about $10 \%$ of total removals in numbers of fish ( $9 \%$ harvest and $1 \%$ dead discards), and the recreational sector accounted for $90 \%$ of removals in numbers of fish ( $51 \%$ harvest and $39 \%$ release mortality) (Table 4).

## Commercial Fishery

The commercial fishery (ocean and Chesapeake Bay) harvested 4.28 million pounds ( 599,615 fish) in 2022, which is a $7 \%$ decrease by weight relative to 2021 ( $1 \%$ decrease by number; Tables $5-6$ ).

The ocean commercial quota utilization slightly increased from $76 \%$ in 2021 to $79 \%$ in 2022, with two New England states (Massachusetts and Rhode Island) reporting quota overages. This is the highest ocean quota utilization in the past five years; ocean quota utilization in 2020-2021 was particularly low at $51 \%$ and $55 \%$, respectively. In the ocean, each state that allows commercial harvest utilized 97-109\% of their ocean quota in 2022, with the exception of North Carolina which had zero ocean harvest.

In the Chesapeake Bay, quota utilization slightly decreased from $83 \%$ in 2021 to $80 \%$ in 2022. In the past five years, 2018-2019 were the highest quota utilization years at about 91-92\% utilized, while 2020 was the lowest recent quota utilization at $76 \%$.

Quota utilization is important to consider when calculating reductions in commercial removals. The projections for Addendum VI assumed the same quota utilization rate as 2017. As quota utilization changes from year to year, the realized reduction in commercial removals will change.

The PRT notes there are several factors that contribute to changes in commercial harvest levels under the same quota level from 2020-2022. Year class availability could be a factor, particularly in the ocean, with the relatively strong 2015-year class becoming more available to ocean fisheries. If stock abundance is increasing overall, that could also contribute to more fish being available. Availability also depends on when and how long striped bass stay within state waters (vs. offshore in the EEZ) during the season. Another factor is the impacts of COVID-19 during 2020-2021, but those impacts likely varied among states, varied between 2020 and 2021, and varied depending on timing within the season.

Commercial harvest from Chesapeake Bay accounted for $55 \%$ of the 2022 total commercial harvest by weight. Of total commercial harvest (combined ocean and Chesapeake Bay) by weight, Maryland landed $31 \%$, Virginia landed 20\%, and Massachusetts landed 18\% (Table 6; Figure 6). Additional harvest came from New York (15\%), the Potomac River (10\%), Rhode Island (4\%), and Delaware (3\%). The proportion of commercial harvest coming from Chesapeake Bay is much higher in numbers of fish; roughly 81\% in 2022 (Table 7). This is because fish harvested in Chesapeake Bay have a lower average
weight than fish harvested in ocean fisheries. In 2022, coastwide commercial dead discards were estimated at $81,200^{6}$ fish, which accounts for about $1 \%$ of total removals in 2022 (Table 3).

From 2004-2014, coastwide commercial landings averaged 6.8 million pounds per year. From 20152019, commercial landings decreased to an average of 4.7 million pounds due to implementation of reduced quotas through Addendum IV. From 2020-2022, coastwide commercial landings decreased again to an average 4.1 million pounds due to further reduced quotas through Addendum VI.

## Recreational Fishery

Total recreational catch (harvest and live releases) coastwide was estimated at 33.1 million fish in 2022 , which is a $38 \%$ increase from 2021 (Table 8). This overall coastwide increase was a combination of a large increase in harvest and a marginal increase in live releases.

Under the same management measures as 2020-2021, total recreational harvest in 2022 increased to 3.4 million fish ( 35.8 million pounds), which is an $88 \%$ increase by number relative to 2021 ( $127 \%$ increase by weight) (Tables 9-10). This increase was likely due to the increased availability of the strong 2015-year class in the ocean slot in 2022. New Jersey landed the largest proportion of recreational harvest in number of fish ${ }^{7}$ (33\%), followed by New York (26\%), Maryland (19\%), and Massachusetts (14\%) (Table 10). The proportion of coastwide recreational harvest in numbers from Chesapeake Bay was estimated at $20 \%$ in 2022, compared to $35 \%$ in 2021. By weight, the proportion of recreational harvest from the Chesapeake Bay was estimated at $9 \%$ in 2022, compared to $20 \%$ in 2021. This decrease in the proportion of recreational harvest from the Chesapeake Bay, and therefore increased proportion of ocean recreational harvest, aligns with the availability of the strong 2015-year class in the ocean fishery.

The vast majority of recreational striped bass catch (over 90\%) is released alive either due to angler preference or regulation (i.e., closed season, undersized, or already caught the bag limit) (Figure 7). The stock assessment assumes, based on previous studies, that $9 \%$ of fish that are released alive die as a result of being caught. In 2022, recreational anglers caught and released an estimated 29.6 million fish, of which 2.7 million are assumed to have died (Table 8). This represents a $3 \%$ increase in live releases coastwide from 2021.

In 2022, combined private vessel/shore modes of the recreational striped bass fishery accounted for $95 \%$ of recreational removals, and the for-hire components (charter and head boats) accounted for $5 \%$. Coastwide in 2022, private vessel/shore mode recreational removals increased by $42 \%$ relative to 2021, while for-hire recreational removals decreased by $7 \%$. However, this trend differs by region and by mode. In the ocean, private vessel/shore mode removals increased by $52 \%$ and for-hire removals

[^4]increased by 22\% in 2022. In the Chesapeake Bay, private vessel/shore mode removals increased by only $3 \%$, and for-hire removals decreased by $27 \%$.

The ocean and Chesapeake Bay regions experienced different changes in recreational catch in 2022 relative to 2021. The ocean region saw an increase in both recreational harvest ( $132 \%$ increase in numbers of fish) and live releases ( $7 \%$ increase) relative to 2021. On the other hand, the Chesapeake Bay saw a much smaller increase in recreational harvest ( $7 \%$ increase) and a decrease in live releases ( $18 \%$ decrease) relative to 2021 . Again, the large increase in ocean recreational harvest is likely due to the availability of the strong 2015 year class in the ocean slot in 2022, when many of those age-7 fish reached a length above the legal minimum size of 28 inches.

The number of trips directed at striped bass (primary and secondary target) also shows a differing trend between the ocean and the Chesapeake Bay. In 2022, the number of ocean directed trips increased by $31 \%$ relative to 2021, while the number of Chesapeake Bay directed trips decreased slightly by about 2\% (Table 12).

The PRT notes there are several factors that contribute to trends in recreational catch and effort, including year class availability, overall stock abundance, nearshore availability of bait and striped bass, and angler behavior. The relatively strong 2015-year class moving into the ocean and becoming available to the ocean slot (i.e., those 2015-year class fish surpassing 28 -inches), is likely the primary driver of increased recreational catch in the ocean in 2022. Angler effort and behavior is also important to consider; when more fish are available in the fishery, effort can often increase in response.

## IV. Albemarle Sound and Roanoke River Management Area

## Fishery Management Plan

While striped bass in North Carolina's ocean waters are managed under the Interstate FMP, Addendum IV to Amendment 6 formally defers management of the A-R stock to the state of North Carolina using A-R stock-specific BRPs approved by the Board (NCDMF 2013, 2014).

Estuarine striped bass in North Carolina are currently managed under Amendment 1 to the North Carolina Estuarine Striped Bass Fishery Management Plan (FMP) and its subsequent revision and recent supplement (NCDMF 2013, 2014, 2019). It is a joint plan between the North Carolina Marine Fisheries Commission (NCMFC) and the North Carolina Wildlife Resources Commission (NCWRC). Amendment 1, adopted in 2013, lays out separate management strategies for the Albemarle Sound-Roanoke River (AR) stock and the estuarine (non-migratory) Central and Southern striped bass stocks in the Tar-Pamlico, Neuse, and Cape Fear rivers. Management programs in Amendment 1 for the A-R stock utilize annual total allowable landings (TAL), daily possession limits, open and closed harvest seasons, gill net mesh size and yardage restrictions, seasonal small mesh gill net attendance requirements, single barbless hook requirements in some areas, minimum size limits, and a no-harvest slot limit in the Roanoke River to maintain a sustainable harvest and reduce regulatory discard mortality in all sectors.

Amendment 2 to the North Carolina Estuarine Striped Bass FMP was adopted in November 2022. Amendment 2 maintains for the A-R stock the use of a TAL to manage harvest as informed by stock
assessments, and requires pound for pound payback for any overages. The Roanoke River Management Area continues to have a 18-22" harvest slot limit, and the Albemarle Sound Management Area has a new 18-25" harvest slot limit to protect larger striped bass. Single barbless hooks are still required in the Roanoke River from April-June, and a new requirement to use non-offset barbless circle hooks when fishing with bait in the inland Roanoke River waters is in place from May-June. Adaptive management continues to allow for adjustments to the TAL, bag limits, seasons, and gear.

As of May 2022, striped bass fisheries in the Atlantic Ocean of North Carolina are now managed under ASMFC's Amendment 7 to the Interstate FMP. North Carolina is required to inform the Commission of changes to striped bass management in the A-R System.

## Status of the Albemarle Sound-Roanoke River Striped Bass Stock

The most recent A-R stock assessment, the 2022 Stock Assessment Update, uses a forward-projecting fully-integrated, age-structured statistical model estimating population parameters and reference points for the A-R striped bass stock for 1991-2021 (Lee et al. 2022). The 2022 stock assessment is an update of the 2020 Benchmark Stock Assessment (Lee et al. 2020). The 2020 benchmark stock assessment model was peer reviewed by an outside panel of experts and approved for management use by the Board in May 2021. The 2022 assessment update was also peer reviewed in January 2023.

The A-R stock is managed using reference points for female spawning stock biomass (SSB) and fishing mortality ( $F$ ) with threshold values based on $35 \%$ spawning potential ratio and target values based on $45 \%$ spawning potential ratio. The 2022 assessment estimated female SSB in 2021 (terminal year) was 16.1 metric tons, which is below the SSB threshold of 125 metric tons. The assessment estimated $F$ in 2021 was 0.77 , which is above the $F$ threshold of 0.22 . These results indicate the stock is overfished and overfishing is occurring (Figures).

|  | Target | Threshold | Terminal Year (2021) <br> Estimate |
| :--- | :---: | :---: | :---: |
| Female SSB | 164 metric tons | 125 metric tons | 16 metric tons |
| Fishing Mortality (F) | 0.14 | 0.20 | 0.77 |

Due to the depressed condition of the stock, the population will be monitored through an annual review of data and the stock assessment will be updated if warranted.

In response to similar findings from the previous 2020 stock assessment, North Carolina implemented a 2020 Revision to Amendment 1 that lowered the annual TAL for Albemarle Sound and Roanoke River management areas in order to reduce $F$ to the target level. The current TAL is 51,216 pounds, which is a $57 \%$ reduction from 2017 landings (NCDMF 2020). The TAL remains in place until a new TAL is determined.

## Albemarle Sound and Roanoke River Atlantic Striped Bass Fisheries

In 2022, commercial harvest in the ASMA was 24,026 pounds ( 4,824 fish). There is no commercial harvest in the RRMA. Recreational harvest in the ASMA was 8,417 pounds ( 2,789 fish), and recreational harvest in the RRMA was 6,069 pounds (1,949 fish).

## V. Status of Research and Monitoring

Amendment 6, its Addenda I-VI, and Amendment 7 (approved May 2022) set the regulatory and monitoring measures for the coastwide striped bass fishery for 2022. Amendments 6 and 7 require certain states to implement fishery-dependent monitoring programs for striped bass. All states with commercial fisheries or substantial recreational fisheries are required to define the catch and effort composition of these fisheries. Additionally, all states with a commercial fishery must implement a commercial harvest tagging program.

Amendments 6 and 7 also require certain states to monitor the striped bass population independent of the fisheries. Juvenile abundance surveys are required from Maine (Kennebec River), New York (Hudson River), New Jersey (Delaware River), Maryland (Chesapeake Bay tributaries), Virginia (Chesapeake Bay tributaries), and North Carolina (Albemarle Sound). Spawning stock sampling is mandatory for New York (Hudson River), Pennsylvania (Delaware River), Delaware (Delaware River), Maryland (Upper Chesapeake Bay and Potomac River), Virginia (Rappahannock River and James River), and North Carolina (Albemarle Sound-Roanoke River). NOAA Fisheries, USFWS, Massachusetts, New York, New Jersey, Maryland, Virginia, and North Carolina are also required to continue their tagging programs, which provide data used to determine survivorship and migration patterns.

## VI. Status of Management Measures and Issues

## Ocean Commercial Quota

In 2022, the ocean commercial quota was $2,411,154$ pounds and was not exceeded. While two states (Massachusetts and Rhode Island) reported overages, the total ocean quota was not exceeded. Table 11 contains final 2022 quotas per Addendum VI and approved conservation equivalency programs and harvest that occurred in 2022.

## Chesapeake Bay Commercial Quota

In 2022, the Chesapeake Bay-wide quota was $3,001,648$ pounds and was allocated to Maryland, the PRFC, and Virginia based on historical harvest. In 2022, the Bay-wide quota was not exceeded. Table 11 contains jurisdiction-specific quotas and harvest that occurred in 2022 for Chesapeake Bay ${ }^{8}$.

## Chesapeake Bay Spring Harvest of Migrant Striped Bass

Historically, recreational fishermen in Chesapeake Bay are permitted to take adult migrant fish during a limited seasonal fishery, commonly referred to as the Spring Trophy Fishery. From 1993 to 2007 the fishery operated under a quota. Beginning in 2008, the Board approved non-quota management until stock assessment indicates that corrective action is necessary to reduce $F$ on the coastal stock. The

[^5]Spring Trophy Fishery is currently managed via bag limits and minimum sizes and Maryland and the Potomac River. The Commonwealth of Virginia closed the spring trophy season beginning in 2019.

The 2022 estimate of migrant fish harvested during the Maryland trophy season from May 1-May 15 was 1,365 fish ( 486 by charter vessels; 879 fish by private vessels).

For the entire time period of May 1 through June 15 when migrant fish are available to the Chesapeake Bay fisheries, a total of 2,814 migrant fish were harvested in Maryland ( 937 fish by charter vessels; 1,877 fish by private vessels), which is a $53 \%$ decrease compared to 2021 and below the 2006-2022 average of 33,075 fish.

## Wave-1 Recreational Harvest Estimates

Evidence suggests that North Carolina, Virginia, and possibly other states have had sizeable wave-1 (January/February) recreational striped bass fisheries beginning in 1996 (NEFSC 2018b). MRIP, formerly the Marine Recreational Fisheries Statistics Survey (MRFSS), has sampled for striped bass in North Carolina during wave-1 since 2004 (other states are not currently covered during wave-1). Virginia harvest in wave-1 is estimated for stock assessment via the ratio of landings and tag returns in wave-6 and regression analysis (refer to the methods described in NEFSC 2018a for more detail).

However, based on fishery-independent data collected by NCDMF, ASMFC and USFWS, striped bass distributions on their overwintering grounds during December through February has changed significantly since the mid-2000s. The migratory portion of the stocks has been well offshore in the EEZ ( $>3$ miles) affecting both Virginia's and North Carolina's striped bass winter ocean fisheries in recent years. Furthermore, North Carolina has reported zero recreational striped bass harvest during wave-1 and wave-6 in the ocean for 2012-2022, and Virginia has reported zero recreational ocean harvest for seven of the last nine years. Similarly, North Carolina's commercial fishery has reported zero striped bass landings from the ocean since 2013.

## Addendum III to Amendment 6/Amendment 7 Section 3.1.1: Commercial Fish Tagging Program

Addendum III to Amendment 6 and Section 3.1.1 of Amendment 7 include compliance requirements for monitoring commercial fishery harvest tagging programs. In 2022, all states implemented commercial tagging programs consistent with the tagging program requirements. Table 16 describes commercial tagging programs by state.

The PRT emphasizes the importance of tag accounting to account for unused tags at the end of each fishing year in all states. Due to the early deadlines for commercial tagging reports ( 60 days before the commercial fishery opens), tag accounting for the previous year is often preliminary or not yet available at that time. To address this, the PRT reiterates the importance of states reporting all tag accounting results in their annual state compliance reports (i.e., tags issues, tags used, tags returned, tags missing/broken/not accounted for). The PRT recommends that Commission staff work with the Law Enforcement Committee and the PRT to regularly follow-up with all states on tag accounting and other questions about state commercial tagging programs as needed. Additionally, the PRT recommends the Board task the PRT with a specific review of the commercial tagging program in the
near-term to review the program components, such as the biological metrics used to allocate tags, since it has been ten years since the tagging program was implemented.

## Addendum VI to Amendment 6: 18\% Reduction in Removals

2022 was the third implementation year of Addendum VI, which implemented measures to reduce total striped bass removals by $18 \%$ relative to 2017 levels in order to achieve the fishing mortality target in 2020. Tables 13a-13c list total removals (harvest plus discards/release mortality for commercial and recreational) in numbers of fish for 2017 and 2020-2022. In 2022, only a 3.5\% reduction in total removals coastwide (numbers of fish) was realized relative to total removals coastwide in 2017. Again, this is due to the increase in ocean recreational harvest in 2022 with the availability of the strong 2015 year-class. For the ocean region in 2022, total ocean removals were $15 \%$ above total ocean removals in 2017. On the other hand, for the Chesapeake Bay in 2022, total Bay removals were 37\% below 2017 Bay removals in 2017.

Tables 14 and 15 list the realized change for recreational removals (in numbers of fish) and commercial harvest (in pounds) by state for 2017, 2021, and 2022. Table 14 also includes the predicted reduction in recreational removals from state conservation equivalency plans, where applicable. The PRT notes that differences in performance are influenced by many factors, including changes in effort, fish availability/year classes, and environmental factors, even under the same management measures. The TC has discussed the challenge of trying to evaluate performance since the effects of different management measures cannot be isolated from the effects of effort changes and fish availability. There is a lot of year-to-year variability even under consistent regulations due to different year classes moving through the stock and variability in effort and angler behavior. During the TC's review of Addendum VI conservation equivalency proposals in 2019, the TC noted there is a high level of uncertainty in the percent reductions calculated due to the effect of changes in angler behavior (effort) and the size structure and distribution of the population (availability of legal and sub-legal fish), and these changes are difficult to account for and cannot be accurately quantified.

## Amendment 7 Recreational Gear Requirements

All states have implemented the required circle hook regulations. The PRT notes differences among the definitions of bait implemented by the states (see FMP Review for 2021 Fishing Year) with some definitions being more restrictive than the Board-approved definition. A few states have not defined bait, which could be considered more restrictive (per Commission standards, states can implement more restrictive measures). Additionally, some state regulations are more restrictive by not specifying any exemptions, as compared to the Board-approved exemption for bait on artificial lures.

Amendment 7 includes two additional recreational gear requirements required to be implemented by January 1, 2023 regarding gaffing and incidental catch:

- It shall be unlawful for any person to gaff or attempt to gaff any striped bass at any time when fishing recreationally.
- Striped bass caught on any unapproved method of take must be returned to the water immediately without unnecessary injury.

The PRT notes that all states have prohibited gaffing, except for the District of Columbia (DC) which does not specifically prohibit gaffing, but notes that gaffing is not listed as a legal gear in DC. For the incidental catch requirement, many states have implemented the provision as written (or nearly as written) in Amendment 7, but some states have referred to alternative regulatory language to meet the requirement (Table 18). Most alternative language notes that anglers can only take or catch striped bass via methods/gear that are legally allowed in that state's regulations.

## Juvenile Abundance Index Analysis

The following states are required to conduct striped bass young-of-year juvenile abundance index (JAI) surveys on an annual basis: Maine for the Kennebec River; New York for the Hudson River; New Jersey for the Delaware River; Maryland for the Maryland Chesapeake Bay tributaries; Virginia for the Virginia Chesapeake Bay tributaries; and North Carolina for the A-R stock.

The PRT and the Striped Bass Technical Committee (TC) annually review the JAls per the recruitment trigger specified in the FMP. As of May 2022, the new Amendment 7 recruitment trigger is effective and reads as follows:

If any of the four JAls used in the stock assessment model to estimate recruitment (NY, NJ, MD, VA) shows an index value that is below $75 \%$ of all values (i.e., below the 25 th percentile) in the respective JAI from 1992-2006* (which represents a period of high recruitment) for three consecutive years, then an interim F target and interim F threshold calculated using the low recruitment assumption will be implemented, and the F-based management triggers will be reevaluated using those interim reference points. If an F-based trigger is tripped upon reevaluation, the striped bass management program must be adjusted to reduce $F$ to the interim F target within one year.

For the 2023 review of JAls, the analysis evaluates the 2020, 2021, and 2022 JAI values per the Amendment 7 recruitment trigger. One state (Maryland) met the criteria of the Amendment 7 recruitment trigger (Figure 8). Maryland's JAI values for 2020 (1.12), 2021 (1.65), and 2022 (1.78) were below the Maryland JAI trigger level of 4.16. This trips the recruitment trigger in 2023, requiring $F$ reference points using the low recruitment assumption to be calculated, which already occurred during the 2022 stock assessment update. The current reference points from the 2022 stock assessment update already use the low recruitment assumption.

New York's JAI (Hudson River) was above its trigger level (11.70) from 2020-2022 with values ranging from 15.89 to 35.39 . New Jersey's JAI (Delaware River) was below its trigger level (1.07) in 2021 and 2022 with values of 0.67 and 0,77 , respectively. A 2020 JAI value for New Jersey is not available due to COVID-19 restrictions. Virginia's JAI was above its trigger level (8.22) in 2020 with a value of 13.89 , but fell below the trigger level in 2021 and 2022 with values of 6.3 and 7.95 , respectively.

Maine's JAI (Kennebec River) and North Carolina's JAI (Albemarle-Roanoke) are not part of the recruitment trigger, but are still required monitoring for those states (Figure 9). Maine’s JAI was below the level of recruitment failure in both 2020 and 2021 with values of 0.02 and 0.0 , respectively. North Carolina's JAI value in 2022 was 0.5 , the fifth consecutive year below the level of recruitment failure.

## Law Enforcement Reporting

States are asked to report any law enforcement issues that occurred the previous season in annual compliance reports. The most common violations noted coastwide were recreationally harvested fish under or over the legal size limit.

## VII. Plan Review Team Comments and Recommendations

A summary of 2022 fishery regulations by state is provided in Table 1 and Table 2. Each state's commercial tag monitoring program is described in Table 16 and state compliance with fisheryindependent and -dependent monitoring requirements are summarized in Table 17.

Based on annual state compliance reports (ASMFC 2023), the PRT determined that all states in 2022 implemented a management and monitoring program consistent with the provisions of Addendum VI to Amendment 6 and Amendment 7 (effective May 2022).

The PRT had previously noted inconsistencies with Addendum VI implementation, including New York's inclusive slot limit and Maryland's summer closure dates, which are described in the FMP Reviews for the 2021 and 2020 Fishing Years (ASMFC 2022b, ASMFC 2021). The Board did not express any concern with these inconsistencies during prior compliance reviews.

The PRT developed the following recommendations:

- The PRT reiterates the importance of states reporting all tag accounting results in their annual state compliance reports (i.e., tags issues, tags used, tags returned, tags missing/broken/not accounted for). The PRT recommends that Commission staff work with the Law Enforcement Committee and the PRT to regularly follow-up with all states on tag accounting and other questions about state commercial tagging programs as needed.
- The PRT recommends the Board task the PRT with a specific review of the commercial tagging program in the near-term to review the program components, such as the biological metrics used to allocate tags, since it has been ten years since the tagging program was implemented.

The PRT notes the following additional comments:

- All states have prohibited gaffing, except for the District of Columbia (DC) which does not specifically prohibit gaffing, but notes that gaffing is not listed as a legal gear in DC. For the incidental catch requirement, many states have implemented the provision as written (or nearly as written) in Amendment 7, but some states have referred to alternative regulatory language to meet the requirement (Table 18). Most alternative language notes that anglers can only take or catch striped bass via methods/gear that are legally allowed in that state's regulations. If the Board has any concerns with the proposed alternative language, the Board should discuss those concerns as soon as possible.
- While the New York spawning stock monitoring program in the Hudson River does meet the FMP's fishery-independent monitoring requirements, it does not provide an index of relative
abundance to characterize the Hudson River stock which was identified as a high priority research recommendation at SAW 66.


## VIII. Research Recommendations

Research recommendations were developed by the 2018 Benchmark Stock Assessment Subcommittee and the $66^{\text {th }}$ SARC and are listed in the final stock assessment report starting on report page 569 (NEFSC 2019).

## IX. References

ASMFC. 2021. Review of the Interstate Fishery Management Plan for Atlantic Striped Bass (Morone saxatilis): 2020 Fishing Year.

ASMFC. 2022a. Atlantic Striped Bass Stock Assessment Update, Atlantic States Marine Fisheries Commission, Arlington, VA. 191p.

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Lee, L.M., T.D. Teears, Y. Li, S. Darsee, and C. Godwin (editors). 2020. Assessment of the Albemarle Sound-Roanoke River striped bass (Morone saxatilis) in North Carolina, 1991-2017. North Carolina Division of Marine Fisheries, NCDMF SAP-SAR-2020-01, Morehead City, North Carolina. 171 p.

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North Carolina Department of Marine Fisheries (NCDMF). 2013. Amendment 1 to the North Carolina Estuarine Striped Bass Fishery Management Plan. North Carolina Department of Environment and Natural Resources. North Carolina Division of Marine Fisheries. Morehead City, NC. 826 pp.

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Northeast Fisheries Science Center (NEFSC). 2019a. 66 ${ }^{\text {th }}$ Northeast Regional Stock Assessment Workshop ( $66^{\text {th }}$ SAW) Assessment Report. US Dept Commer. Northeast Fish Sci Cent Ref Doc. 1908; 719 p.

Northeast Fisheries Science Center (NEFSC). 2019b. $66^{\text {th }}$ Northeast Regional Stock Assessment Workshop ( $66^{\text {th }}$ SAW) Assessment Summary Report. US Dept Commer. Northeast Fish Sci Cent Ref Doc. 19-01; 45 p.

Shepherd, G.R., R.W. Laney, M. Appelman, D. Honabarger and C.L. Wright. 2017. Biennial Report to Congress on the Progress and Findings of Studies of Striped Bass Populations --2017. National Marine Fisheries Service, Silver Spring, MD. 11 p.

## X. Tables

Table 1. Summary of Atlantic striped bass commercial regulations in 2022. Source: 2023 State Compliance Reports. Minimum sizes and slot size limits are in total length (TL). *Commercial quota reallocated to recreational bonus fish program.

| STATE | SIZE LIMITS (TL) and TRIP LIMITS | SEASONAL QUOTA | OPEN SEASON |
| :---: | :---: | :---: | :---: |
| ME | Commercial fishing prohibited |  |  |
| NH | Commercial fishing prohibited |  |  |
| MA | $\geq 35$ " minimum size; no gaffing undersized fish. 15 fish/day with commercial boat permit; 2 fish/day with rod and reel permit. | 735,240 lbs. Hook \& Line only. | 6.16-11.15 (or when quota reached); open fishing days of Monday, Tuesday and Wednesday, with Thursday and Friday added on October 1 (if quota remains). Cape Cod Canal closed to commercial striped bass fishing. |
| RI | Floating fish trap: 26" minimum size unlimited possession limit until $70 \%$ of quota reached, then 500 lbs . per licensee per day | Total: 148,889 lbs., split 39:61 between the trap and general category. Gill netting prohibited. | $4.1-12.31$ |
|  | General category (mostly rod \& reel): 34 " min. 5 fish/vessel/day limit. |  | 5.20-6.30; 7.1-12.31, or until quota reached. Closed Fridays, Saturdays, and Sundays during Jul-Dec. |
| CT | Commercial fishing prohibited; bonus program in CT suspended indefinitely in 2020. |  |  |
| NY | 26"-38" size; (Hudson River closed to commercial harvest) | 640,718 Ibs. Pound Nets, Gill Nets (6-8"stretched mesh), Hook \& Line. | $5.15-12.15$, or until quota reached. Limited entry permit only. |
| NJ* | Commercial fishing prohibited; bonus program: 1 fish/permit at $24^{\prime \prime}$ to $<28^{\prime \prime}$ | 215,912 lbs. | $5.15-12.31$ (permit required) |
| PA | Commercial fishing prohibited |  |  |
| DE | Gill Net: $20^{\prime \prime}$ min in DE Bay/River during spring season. $28^{\prime \prime}$ in all other waters/seasons. | Gillnet: $135,350 \mathrm{lbs}$. No fixed nets in DE River. | Gillnet: 2.15-5.31 (2.15-3.30 for Nanticoke River) \& 11.15-12.31; drift nets only 2.15-28 \& 5.1-31; no trip limit. |
|  | Hook and Line: 28 " min | Hook and line: 7,124 lbs. | Hook and Line: 4.1-12.31, $200 \mathrm{lbs} . /$ day trip limit |

(Table 1 continued - Summary of commercial regulations in 2022).

| STATE | SIZE LIMITS (TL) and TRIP LIMITS | SEASONAL QUOTA | OPEN SEASON |
| :---: | :---: | :---: | :---: |
| MD | Chesapeake Bay and Rivers: 18-36" Common pool trip limits: <br> Hook and Line - 250 lbs ./license/week <br> Gill Net - 300 lbs./license/week | 1,445,394 lbs. (part of Bay-wide quota) | Bay Pound Net: 6.1-12.31 <br> Bay Haul Seine: 1.1-2.28; 6.1-12.31 <br> Bay Hook \& Line: 6.1-12.31 <br> Bay Drift Gill Net: 1.1-2.28, 12.1-12.31 |
|  | Ocean: 24" minimum | Ocean: 89,094 lbs. | 1.1-5.31, 10.1-12.31 |
| PRFC | $18^{\prime \prime}$ min all year; 36" max 2.15-3.25 | 572,861 lbs. (split between gear types; part of Bay-wide quota) | Hook \& Line: 1.1-3.25, 6.1-12.31 <br> Pound Net \& Other: 2.15-3.25, 6.1-12.15 <br> Gill Net: 11.9.2021-3.25.2022 <br> Misc. Gear: 2.15-3.25, 6.1-12.15 |
| VA | Chesapeake Bay and Rivers: $18^{\prime \prime} \mathrm{min}$; $28^{\prime \prime}$ max size limit 3.15-6.15 | 983,393 lbs. (part of Bay-wide quota) | 1.16-12.31 |
|  | Ocean: 28" min | 125,034 lbs. |  |
| NC | Ocean: $28{ }^{\prime \prime}$ min | 295,495 lbs. (split between gear types) | Seine fishery was not opened Gill net fishery was not opened Trawl fishery was not opened |

Table 2. Summary of Atlantic striped bass recreational regulations in 2022. Source: 2023 State Compliance Reports. Minimum sizes and slot size

|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| STATE | SIZE LIMITS <br> (TL)/REGION | $\begin{aligned} & \text { BAG } \\ & \text { LIMIT } \end{aligned}$ | GEAR/FISHING RESTRICTIONS | OPEN SEASON |
| ME | $\geq 28^{\prime \prime}$ and $<35^{\prime \prime}$ | 1 fish/day | Hook and line only and no gaffing of striped bass. Regulations define bait as it pertains to the required use of circle hooks; immediate release w/o unnecessary injury if incidentally caught on unapproved hook type; maintains the circle hook exemption for rubber and latex tube rigs. | All year, except spawning areas are closed 12.1-4.30 and C\&R only 5.1-6.30 |
| NH | $\geq 28^{\prime \prime}$ and $<35^{\prime \prime}$ | 1 fish/day | Gaffing and culling prohibited; Use of corrodible non-offset circle hooks required if angling with bait. If taken contrary to restrictions, return fish to water immediately w/o unnecessary injury. | All year |
| MA | $\geq 28^{\prime \prime}$ and $<35^{\prime \prime}$ | 1 fish/day | Hook \& line only; no high-grading; gaffs and other injurious removal devices prohibited. Inline circle hook requirement when fishing with bait, except with artificial lures; mandatory release of catch on any unapproved method of take. No filleting at-sea except aboard for-hire vessels provided skin remains and ratio of 2 filets/fish. | All year |
| RI | $\geq 28^{\prime \prime}$ and $<35^{\prime \prime}$ | 1 fish/day | Circle required while fishing recreationally with bait for striped bass (except for artificial lures with bait attached); must release if caught on unapproved method of take | All year |
| CT | $\geq 28^{\prime \prime}$ and $<35^{\prime \prime}$ | 1 fish/day | Inline circle hooks only when using whole, cut or live natural bait. Exemption of artificial lures/release of incidental noncircle hook provision. Spearing and gaffing prohibited. If taken contrary to the provisions, shall, without avoidable injury, be returned immediately to the waters. | All year |
| NY | Ocean and DE River: 28-35" | 1 fish/day | Angling only. Spearing permitted in ocean waters. C\&R only during closed season, except no targeting in Hudson River during closed season. Circle hook requirements. No gaffing. Mandatory release of catch on any unapproved method of take. | Ocean: 4.15-12.15 <br> Delaware River: All year |
|  | HR: $18-28^{\prime \prime}$ | 1 fish/day |  | Hudson River: 4.1-11.30 |

(Table 2 continued - Summary of recreational regulations in 2022).

| STATE | SIZE LIMITS/REGION | BAG LIMIT | GEAR/FISHING RESTRICTIONS | OPEN SEASON |
| :---: | :---: | :---: | :---: | :---: |
| NJ | $\geq 28$ to < $38^{\prime \prime}$ | 1 fish/day | Circle hooks required when fishing with bait; must release if caught on unapproved method of take | Closed 1.1 - Feb 28 in all waters except in the Atlantic Ocean, and closed 4.1-5.31 in the lower DE River and tribs |
| PA | Upstream from Calhoun St Bridge: <br> 1 fish/day at $\geq 28$ " to $<35^{\prime \prime}$ |  | Unlawful to take or attempt to take fish unless the method is specifically authorized. Circle hooks required when fishing with bait downstream from Calhoun St. Bridge. | All year |
|  | Downstream from Calhoun St Bridge: 1 fish/day at $\geq 28 \prime$ to $<35$ (except 4.15.31) |  |  | All year. 2 fish/day at <br> 21"-<24"slot from 4.1-5.31 |
| DE | $\geq 28{ }^{\prime \prime}$ and $<35^{\prime \prime}$ | 1 fish/day | Hook \& line, spear (for divers) only. Inline circle hooks required when fishing for striped bass using cut or whole natural baits | All year. C\&R only 4.1-5.31 in spawning grounds. 20"-25"slot from 7.1-8.31 in DE River, Bay \& tributaries |
| MD | Ocean: $\geq 28{ }^{\prime \prime}$ and $<35{ }^{\prime \prime}$ | 1 fish/day | Circle hooks if chumming, live-lining, or bait fishing and targeting striped bass; no gaffing | All year |
|  | Chesapeake Bay and tribs^ | C\&R only | Circle hook requirement with bait; no eels; no stinger hooks; barbless hooks when trolling; max 6 lines when trolling; no gaffing | 1.1-2.28, 3.1-3.31, 12.11-12.31 |
|  | Chesapeake Bay: 35" min | 1 fish/day | Geographic restrictions apply; Circle hook requirement with bait; no eels bait; no gaffs | 5.1-5.15 |
|  | Chesapeake Bay: 1 fish/day, 19" minimum size; 2/fish/day for charter with only 1 fish >28" |  | Geographic restrictions apply; circle hooks if chumming, livelining, or bait fishing and targeting striped bass; no gaffing | 5.16-5.31 |
|  | Chesapeake Bay and tribs: 1 fish/day, 19" minimum size; 2/fish/day for charter with only 1 fish $>28$ " |  | All Bay and tribs open; circle hooks if chumming, livelining, or bait fishing and targeting striped bass; no gaffing | 6.1-7.15, 8.1-12.10 |

${ }^{\wedge}$ Susquehanna Flats: C\&R only Jan 1 - March 31 (circle hooks when bait fishing); 1 fish at 19"-26" slot May 16 - May 31 (circle hooks if chumming, livelining, or bait fishing and targeting striped bass).
(Table 2 continued - Summary of recreational regulations in 2022).

| STATE | SIZE LIMITS/REGION | BAG LIMIT | GEAR/FISHING RESTRICTIONS | OPEN SEASON |
| :---: | :---: | :---: | :---: | :---: |
| PRFC | Spring Trophy: 35 " minimum size | 1 fish/day | No more than two hooks or sets of hooks for each rod or line; no live eel; no high-grading; non-offset Circle Hooks are required when fishing for striped bass using cut or whole natural bait; no spearing or gaffing | 5.1-5.15 |
|  | Summer and Fall: $20^{\prime \prime}$ min | 2 fish/day | No more than two hooks or sets of hooks for each rod or line; non-offset Circle Hooks are required when fishing for striped bass using cut or whole natural bait; no spearing or gaffing; any fish caught other than lawful fishing activities immediately released | 5.16-7.6 and 8.21-12.31; closed 7.7-8.20 (No Direct Targeting) |
| DC | $18^{\prime \prime}$ minimum size | 1 fish/day | Hook and line only; unlawful to take fish except as specified | 5.16-12.31 |
| VA | Ocean: $28{ }^{\prime \prime}-36^{\prime \prime}$ slot limit | 1 fish/day | Hook \& line, rod \& reel, hand line, spearing only. No gaffing. Circle hooks required if/when using live bait. Unlawful to take/attempt take by any other gear/method | 1.1-3.31, 5.16-12.31 |
|  | Ocean Spring Trophy: NO SPRING TROPHY SEASON |  |  |  |
|  | Chesapeake Bay Spring Trophy: NO SPRING TROPHY SEASON |  |  |  |
|  | Bay Spring/Summer: 20"-28" slot limit | 1 fish/day | Hook \& line, rod \& reel, hand line, spearing only. No gaffing. Circle hooks required if/when using live bait. Unlawful to take/attempt take by any other gear/method | 5.16-6.15 |
|  | Bay Fall: 20-36" slot limit | 1 fish/day |  | 10.4-12.31 |
| NC | $\geq 28{ }^{\prime \prime}$ and <35" | 1 fish/day | No gaffing allowed. Circle hooks required when fishing with natural bait | All year |

Table 3. Total removals (harvest plus discards/release mortality) of Atlantic striped bass by sector in numbers of fish, 1993-2022 calendar years. Note: Harvest is from state compliance reports/MRIP (June 2023), discards/release mortality is from ASMFC. Estimates exclude inshore harvest from NC.

| Year | Commercial |  | Recreational |  | Total <br> Removals |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Harvest | Dead <br> Discards* | Harvest | Release <br> Mortality |  |
| 1993 | 314,526 | 114,317 | 789,037 | 812,404 | $2,030,284$ |
| 1994 | 325,401 | 165,700 | $1,055,523$ | $1,360,872$ | $2,907,496$ |
| 1995 | 537,412 | 192,368 | $2,287,578$ | $2,010,689$ | $5,028,047$ |
| 1996 | 854,102 | 257,506 | $2,487,422$ | $2,600,526$ | $6,199,556$ |
| 1997 | $1,076,561$ | 324,445 | $2,774,981$ | $2,969,781$ | $7,145,769$ |
| 1998 | $1,215,219$ | 346,537 | $2,915,390$ | $3,259,133$ | $7,736,278$ |
| 1999 | $1,223,572$ | 347,186 | $3,123,496$ | $3,140,905$ | $7,835,158$ |
| 2000 | $1,216,812$ | 213,863 | $3,802,477$ | $3,044,203$ | $8,277,354$ |
| 2001 | 931,412 | 175,815 | $4,052,474$ | $2,449,599$ | $7,609,300$ |
| 2002 | 928,085 | 187,084 | $4,005,084$ | $2,792,200$ | $7,912,453$ |
| 2003 | 854,326 | 126,274 | $4,781,402$ | $2,848,445$ | $8,610,447$ |
| 2004 | 879,768 | 156,026 | $4,553,027$ | $3,665,234$ | $9,254,055$ |
| 2005 | 970,403 | 142,385 | $4,480,802$ | $3,441,928$ | $9,035,518$ |
| 2006 | $1,047,648$ | 152,308 | $4,883,961$ | $4,812,332$ | $10,896,250$ |
| 2007 | $1,015,114$ | 158,078 | $3,944,679$ | $2,944,253$ | $8,062,124$ |
| 2008 | $1,027,824$ | 108,830 | $4,381,186$ | $2,391,200$ | $7,909,039$ |
| 2009 | $1,050,055$ | 133,317 | $4,700,222$ | $1,942,061$ | $7,825,654$ |
| 2010 | $1,031,448$ | 132,373 | $5,388,440$ | $1,760,759$ | $8,313,020$ |
| 2011 | 944,777 | 82,015 | $5,006,358$ | $1,482,029$ | $7,515,180$ |
| 2012 | 870,684 | 192,190 | $4,046,299$ | $1,847,880$ | $6,957,053$ |
| 2013 | 784,379 | 112,620 | $5,157,760$ | $2,393,425$ | $8,448,184$ |
| 2014 | 750,263 | 114,065 | $4,033,746$ | $2,172,342$ | $7,070,415$ |
| 2015 | 621,952 | 88,614 | $3,085,725$ | $2,307,133$ | $6,103,425$ |
| 2016 | 609,028 | 91,186 | $3,500,434$ | $2,981,430$ | $7,182,077$ |
| 2017 | 592,670 | 98,801 | $2,937,911$ | $3,421,110$ | $7,050,492$ |
| 2018 | 621,123 | 101,264 | $2,244,765$ | $2,826,667$ | $5,793,819$ |
| 2019 | 653,807 | 85,262 | $2,150,936$ | $2,589,045$ | $5,479,050$ |
| 2020 | 583,070 | 58,641 | $1,709,973$ | $2,760,231$ | $5,111,915$ |
| 2021 | 644,207 | 85,676 | $1,841,902$ | $2,583,788$ | $5,155,573$ |
| 2022 | 599,615 | 81,200 | $3,454,021$ | $2,667,846$ | $6,802,681$ |

* Commercial dead discard estimate for 2022 was estimated using the harvest-to-discard ratio from 2021. The entire time series for commercial dead discards will be re-estimated during the 2024 stock assessment using a generalized additive model (GAM).

Table 4. Proportion of total removals (harvest plus discards/release mortality) of Atlantic striped bass by sector in numbers of fish, 1993-2022. Note: Harvest is from state compliance reports/MRIP (June 2023), discards/release mortality is from ASMFC. Estimates exclude inshore harvest from NC.

| Year | Commercial |  | Recreational |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Harvest | Dead Discards* | Harvest | Release Mortality |
| 1993 | 15\% | 6\% | 39\% | 40\% |
| 1994 | 11\% | 6\% | 36\% | 47\% |
| 1995 | 11\% | 4\% | 45\% | 40\% |
| 1996 | 14\% | 4\% | 40\% | 42\% |
| 1997 | 15\% | 5\% | 39\% | 42\% |
| 1998 | 16\% | 4\% | 38\% | 42\% |
| 1999 | 16\% | 4\% | 40\% | 40\% |
| 2000 | 15\% | 3\% | 46\% | 37\% |
| 2001 | 12\% | 2\% | 53\% | 32\% |
| 2002 | 12\% | 2\% | 51\% | 35\% |
| 2003 | 10\% | 1\% | 56\% | 33\% |
| 2004 | 10\% | 2\% | 49\% | 40\% |
| 2005 | 11\% | 2\% | 50\% | 38\% |
| 2006 | 10\% | 1\% | 45\% | 44\% |
| 2007 | 13\% | 2\% | 49\% | 37\% |
| 2008 | 13\% | 1\% | 55\% | 30\% |
| 2009 | 13\% | 2\% | 60\% | 25\% |
| 2010 | 12\% | 2\% | 65\% | 21\% |
| 2011 | 13\% | 1\% | 67\% | 20\% |
| 2012 | 13\% | 3\% | 58\% | 27\% |
| 2013 | 9\% | 1\% | 61\% | 28\% |
| 2014 | 11\% | 2\% | 57\% | 31\% |
| 2015 | 10\% | 1\% | 51\% | 38\% |
| 2016 | 8\% | 1\% | 49\% | 42\% |
| 2017 | 8\% | 1\% | 42\% | 49\% |
| 2018 | 11\% | 2\% | 39\% | 49\% |
| 2019 | 12\% | 2\% | 39\% | 47\% |
| 2020 | 11\% | 1\% | 33\% | 54\% |
| 2021 | 12\% | 2\% | 36\% | 50\% |
| 2022 | 9\% | 1\% | 51\% | 39\% |

[^6]Table 5. Total harvest of Atlantic striped bass by sector, 1993-2022 calendar years. Note: Harvest is from state compliance reports/MRIP (Query June 2023). Estimates exclude inshore harvest from North Carolina.

| Year | Numbers of Fish |  |  | Pounds |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Commercial | Recreational | Total | Commercial | Recreational | Total |
| 1993 | 314,526 | 789,037 | $1,103,563$ | $1,800,176$ | $10,163,767$ | $11,963,943$ |
| 1994 | 325,401 | $1,055,523$ | $1,380,924$ | $1,877,197$ | $14,737,911$ | $16,615,108$ |
| 1995 | 537,412 | $2,287,578$ | $2,824,990$ | $3,775,278$ | $27,072,321$ | $30,847,599$ |
| 1996 | 854,102 | $2,487,422$ | $3,341,524$ | $4,822,864$ | $28,625,685$ | $33,448,549$ |
| 1997 | $1,076,561$ | $2,774,981$ | $3,851,542$ | $6,078,566$ | $30,616,093$ | $36,694,659$ |
| 1998 | $1,215,219$ | $2,915,390$ | $4,130,609$ | $6,551,623$ | $29,603,199$ | $36,154,822$ |
| 1999 | $1,223,572$ | $3,123,496$ | $4,347,068$ | $6,485,079$ | $33,564,988$ | $40,050,067$ |
| 2000 | $1,216,812$ | $3,802,477$ | $5,019,289$ | $6,715,044$ | $34,050,817$ | $40,765,861$ |
| 2001 | 931,412 | $4,052,474$ | $4,983,886$ | $6,266,953$ | $39,263,154$ | $45,530,107$ |
| 2002 | 928,085 | $4,005,084$ | $4,933,169$ | $6,152,583$ | $41,840,025$ | $47,992,608$ |
| 2003 | 854,326 | $4,781,402$ | $5,635,728$ | $6,750,799$ | $54,091,836$ | $60,842,635$ |
| 2004 | 879,768 | $4,553,027$ | $5,432,795$ | $7,340,822$ | $53,031,074$ | $60,371,896$ |
| 2005 | 970,403 | $4,480,802$ | $5,451,205$ | $7,120,647$ | $57,421,174$ | $64,541,821$ |
| 2006 | $1,047,648$ | $4,883,961$ | $5,931,609$ | $6,780,541$ | $50,674,431$ | $57,454,972$ |
| 2007 | $1,015,114$ | $3,944,679$ | $4,959,793$ | $7,047,179$ | $42,823,614$ | $49,870,793$ |
| 2008 | $1,027,824$ | $4,381,186$ | $5,409,010$ | $7,190,800$ | $56,665,318$ | $63,856,118$ |
| 2009 | $1,050,055$ | $4,700,222$ | $5,750,277$ | $7,217,484$ | $54,411,389$ | $61,628,873$ |
| 2010 | $1,031,448$ | $5,388,440$ | $6,419,888$ | $6,996,713$ | $61,431,360$ | $68,428,073$ |
| 2011 | 944,777 | $5,006,358$ | $5,951,135$ | $6,789,792$ | $59,592,092$ | $66,381,884$ |
| 2012 | 870,684 | $4,046,299$ | $4,916,983$ | $6,516,761$ | $53,256,619$ | $59,773,380$ |
| 2013 | 784,379 | $5,157,760$ | $5,942,139$ | $5,819,678$ | $65,057,289$ | $70,876,967$ |
| 2014 | 750,263 | $4,033,746$ | $4,784,009$ | $5,937,949$ | $47,948,610$ | $53,886,559$ |
| 2015 | 621,952 | $3,085,725$ | $3,707,677$ | $4,829,997$ | $39,898,799$ | $44,728,796$ |
| 2016 | 609,028 | $3,500,434$ | $4,109,462$ | $4,848,772$ | $43,671,532$ | $48,520,304$ |
| 2017 | 592,670 | $2,937,911$ | $3,530,581$ | $4,816,395$ | $37,952,581$ | $42,768,976$ |
| 2018 | 621,123 | $2,244,765$ | $2,865,888$ | $4,741,342$ | $23,069,028$ | $27,810,370$ |
| 2019 | 653,807 | $2,150,936$ | $2,804,743$ | $4,284,831$ | $23,556,287$ | $27,841,118$ |
| 2020 | 583,070 | $1,709,973$ | $2,293,043$ | $3,620,031$ | $14,858,984$ | $18,479,015$ |
| 2021 | 644,207 | $1,841,902$ | $2,486,109$ | $4,335,360$ | $15,781,510$ | $20,116,870$ |
| 2022 | 599,615 | $3,454,021$ | $4,053,636$ | $4,279,840$ | $35,805,246$ | $40,085,086$ |

Table 6. Commercial harvest by region in pounds (x1000), 1996-2022 calendar years. Source: State compliance reports.
$\wedge$ Estimates exclude inshore harvest.

| Year | Ocean |  |  |  |  |  |  |  | Chesapeake Bay |  |  |  | Grand Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MA | RI | NY | DE | MD | VA | NC^ | Total | MD | PRFC | VA | Total |  |
| 1996 | 695.9 | 122.6 | 504.4 | 120.5 | 75.7 | 165.9 | 58.2 | 1,743.2 | 1,487.7 | 346.8 | 1,245.2 | 3,079.7 | 4,822.9 |
| 1997 | 784.9 | 96.5 | 460.8 | 166.0 | 94.0 | 179.1 | 463.1 | 2,244.4 | 2,119.2 | 731.9 | 983.0 | 3,834.2 | 6,078.6 |
| 1998 | 810.1 | 94.7 | 485.9 | 163.2 | 84.6 | 375.0 | 273.0 | 2,286.6 | 2,426.7 | 726.2 | 1,112.2 | 4,265.1 | 6,551.6 |
| 1999 | 766.2 | 119.7 | 491.8 | 187.1 | 62.6 | 614.8 | 391.5 | 2,633.7 | 2,274.8 | 653.3 | 923.4 | 3,851.4 | 6,485.1 |
| 2000 | 796.2 | 111.8 | 542.7 | 140.6 | 149.7 | 932.7 | 162.4 | 2,836.0 | 2,261.8 | 666.0 | 951.2 | 3,879.0 | 6,715.0 |
| 2001 | 815.4 | 129.7 | 633.1 | 198.8 | 113.9 | 782.4 | 381.1 | 3,054.3 | 1,660.9 | 658.7 | 893.1 | 3,212.6 | 6,267.0 |
| 2002 | 924.9 | 129.2 | 518.6 | 160.6 | 93.2 | 710.2 | 441.0 | 2,977.6 | 1,759.4 | 521.0 | 894.4 | 3,174.9 | 6,152.6 |
| 2003 | 1,055.5 | 190.2 | 753.3 | 191.5 | 103.9 | 166.4 | 201.2 | 2,662.1 | 1,721.8 | 676.6 | 1,690.4 | 4,088.7 | 6,750.8 |
| 2004 | 1,214.2 | 232.3 | 741.7 | 182.2 | 134.2 | 161.3 | 605.4 | 3,271.2 | 1,790.3 | 772.3 | 1,507.0 | 4,069.6 | 7,340.8 |
| 2005 | 1,102.2 | 215.6 | 689.8 | 173.1 | 46.9 | 185.2 | 604.5 | 3,017.4 | 2,008.7 | 533.6 | 1,561.0 | 4,103.3 | 7,120.6 |
| 2006 | 1,322.3 | 221.4 | 688.4 | 179.5 | 91.1 | 195.0 | 74.2 | 2,771.8 | 2,116.3 | 673.5 | 1,219.0 | 4,008.7 | 6,780.5 |
| 2007 | 1,039.3 | 240.6 | 731.5 | 188.7 | 96.3 | 162.3 | 379.5 | 2,838.1 | 2,240.6 | 599.3 | 1,369.2 | 4,209.1 | 7,047.2 |
| 2008 | 1,160.3 | 245.9 | 653.1 | 188.8 | 118.0 | 163.1 | 288.4 | 2,817.7 | 2,208.0 | 613.8 | 1,551.3 | 4,373.1 | 7,190.8 |
| 2009 | 1,134.3 | 234.8 | 789.9 | 192.4 | 127.3 | 140.4 | 190.0 | 2,809.1 | 2,267.3 | 727.8 | 1,413.3 | 4,408.4 | 7,217.5 |
| 2010 | 1,224.5 | 248.9 | 786.8 | 185.4 | 44.8 | 127.8 | 276.4 | 2,894.7 | 2,105.8 | 683.2 | 1,313.0 | 4,102.0 | 6,996.7 |
| 2011 | 1,163.9 | 228.2 | 855.3 | 188.6 | 21.4 | 158.8 | 246.4 | 2,862.5 | 1,955.1 | 694.2 | 1,278.1 | 3,927.3 | 6,789.8 |
| 2012 | 1,218.5 | 239.9 | 683.8 | 194.3 | 77.6 | 170.8 | 7.3 | 2,592.0 | 1,851.4 | 733.7 | 1,339.6 | 3,924.7 | 6,516.8 |
| 2013 | 1,004.5 | 231.3 | 823.8 | 191.4 | 93.5 | 182.4 | 0.0 | 2,526.9 | 1,662.2 | 623.8 | 1,006.8 | 3,292.8 | 5,819.7 |
| 2014 | 1,138.5 | 216.9 | 531.5 | 167.9 | 120.9 | 183.7 | 0.0 | 2,359.4 | 1,805.7 | 603.4 | 1,169.4 | 3,578.5 | 5,937.9 |
| 2015 | 866.0 | 188.3 | 516.3 | 144.1 | 34.6 | 138.1 | 0.0 | 1,887.5 | 1,436.9 | 538.0 | 967.6 | 2,942.5 | 4,830.0 |
| 2016 | 938.7 | 174.7 | 575.0 | 136.5 | 19.7 | 139.2 | 0.0 | 1,983.9 | 1,425.5 | 537.1 | 902.3 | 2,864.9 | 4,848.8 |
| 2017 | 823.4 | 175.3 | 701.2 | 141.8 | 80.5 | 133.9 | 0.0 | 2,056.1 | 1,439.8 | 492.7 | 827.8 | 2,760.3 | 4,816.4 |
| 2018 | 753.7 | 176.6 | 617.2 | 155.0 | 79.8 | 134.2 | 0.0 | 1,916.6 | 1,424.3 | 449.4 | 951.0 | 2,824.7 | 4,741.3 |
| 2019 | 584.7 | 144.2 | 358.9 | 132.6 | 82.8 | 138.0 | 0.0 | 1,441.2 | 1,475.2 | 417.3 | 951.1 | 2,843.6 | 4,284.8 |
| 2020 | 386.9 | 115.9 | 530.5 | 138.0 | 83.6 | 77.2 | 0.0 | 1,332.2 | 1,273.8 | 400.3 | 613.8 | 2,287.9 | 3,620.0 |
| 2021 | 732.1 | 130.3 | 629.5 | 140.3 | 88.7 | 119.9 | 0.0 | 1,840.7 | 1,351.5 | 411.3 | 731.9 | 2,494.7 | 4,335.4 |
| 2022+ | 770.1 | 162.4 | 623.3 | 139.2 | 88.1 | 121.7 | 0.0 | 1,904.9 | 1,223.6 | 428.5 | 722.9 | 2,375.0 | 4,279.8 |

+ Maryland commercial landings for 2022 are considered preliminary.

Table 7. Commercial harvest and discards by region in numbers of fish (x1000), 1996-2022 calendar years. Source: harvest is from state
compliance reports, discards is from ASMFC. ^Estimates exclude inshore harvest.

| Year | Ocean |  |  |  |  |  |  |  | Chesapeake Bay |  |  |  | Discards* |  |  | Grand Total Removals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MA | RI | NY | DE | MD | VA | NC^ | Total | MD | PRFC | VA | Total | Ocean | Bay | Total |  |
| 1996 | 37.3 | 18.6 | 40.5 | 20.7 | 9.0 | 14.1 | 3.3 | 143.5 | 486.2 | 46.2 | 178.2 | 710.6 | 165.3 | 92.2 | 257.5 | 1,111.6 |
| 1997 | 44.0 | 7.1 | 37.6 | 33.2 | 8.4 | 17.3 | 25.8 | 173.4 | 620.3 | 87.7 | 195.2 | 903.2 | 237.9 | 86.5 | 324.4 | 1,401.0 |
| 1998 | 44.3 | 8.8 | 45.1 | 31.4 | 10.3 | 41.1 | 14.2 | 195.2 | 729.6 | 93.3 | 197.1 | 1,020.1 | 308.3 | 38.2 | 346.5 | 1,561.8 |
| 1999 | 40.9 | 11.6 | 49.9 | 34.8 | 10.2 | 48.7 | 21.1 | 217.2 | 776.0 | 90.6 | 139.8 | 1,006.3 | 312.5 | 34.7 | 347.2 | 1,570.8 |
| 2000 | 42.1 | 9.4 | 54.9 | 25.2 | 13.3 | 54.5 | 6.5 | 205.8 | 787.6 | 91.5 | 132.0 | 1,011.0 | 183.0 | 30.9 | 213.9 | 1,430.7 |
| 2001 | 45.8 | 10.9 | 58.3 | 34.4 | 11.1 | 42.3 | 25.0 | 227.7 | 538.8 | 87.8 | 77.1 | 703.7 | 140.0 | 35.8 | 175.8 | 1,107.2 |
| 2002 | 49.8 | 11.7 | 47.1 | 30.4 | 10.2 | 38.8 | 23.2 | 211.3 | 571.7 | 80.3 | 64.7 | 716.8 | 142.7 | 44.4 | 187.1 | 1,115.2 |
| 2003 | 56.4 | 15.5 | 68.4 | 31.5 | 11.6 | 10.5 | 5.8 | 199.6 | 427.9 | 83.1 | 143.7 | 654.7 | 91.9 | 34.3 | 126.3 | 980.6 |
| 2004 | 63.6 | 16.0 | 70.4 | 28.4 | 14.1 | 10.4 | 31.0 | 233.9 | 447.0 | 92.6 | 106.3 | 645.9 | 106.5 | 49.5 | 156.0 | 1,035.8 |
| 2005 | 60.5 | 14.9 | 70.6 | 26.3 | 6.1 | 11.3 | 27.3 | 217.1 | 563.9 | 80.6 | 108.9 | 753.3 | 85.3 | 57.1 | 142.4 | 1,112.8 |
| 2006 | 70.5 | 15.4 | 73.6 | 30.2 | 10.9 | 11.5 | 2.7 | 214.9 | 645.1 | 92.3 | 95.4 | 832.7 | 97.1 | 55.2 | 152.3 | 1,200.0 |
| 2007 | 54.2 | 13.9 | 78.5 | 31.1 | 11.6 | 10.6 | 16.8 | 216.7 | 587.6 | 86.5 | 124.3 | 798.4 | 93.4 | 64.6 | 158.1 | 1,173.2 |
| 2008 | 61.1 | 16.6 | 73.3 | 31.9 | 14.0 | 10.8 | 13.4 | 221.0 | 580.7 | 82.0 | 144.1 | 806.8 | 63.1 | 45.7 | 108.8 | 1,136.7 |
| 2009 | 59.4 | 16.8 | 82.6 | 21.8 | 12.5 | 8.9 | 9.0 | 211.1 | 605.6 | 89.6 | 143.8 | 839.0 | 59.2 | 74.1 | 133.3 | 1,183.4 |
| 2010 | 60.4 | 15.7 | 82.4 | 19.8 | 5.4 | 9.4 | 13.7 | 206.8 | 579.2 | 90.6 | 154.9 | 824.7 | 39.2 | 93.2 | 132.4 | 1,163.8 |
| 2011 | 58.7 | 14.3 | 87.4 | 20.5 | 2.1 | 12.2 | 10.9 | 206.0 | 488.9 | 96.1 | 153.7 | 738.7 | 34.1 | 47.9 | 82.0 | 1,026.8 |
| 2012 | 61.5 | 15.0 | 67.1 | 15.7 | 6.9 | 10.8 | 0.3 | 177.3 | 465.6 | 90.7 | 137.0 | 693.4 | 25.1 | 167.1 | 192.2 | 1,062.9 |
| 2013 | 58.6 | 13.8 | 76.2 | 17.7 | 7.6 | 10.0 | 0.0 | 183.8 | 391.5 | 78.0 | 131.0 | 600.5 | 37.3 | 75.3 | 112.6 | 897.0 |
| 2014 | 58.0 | 10.5 | 52.9 | 14.9 | 8.5 | 10.0 | 0.0 | 154.8 | 362.2 | 81.5 | 151.8 | 595.5 | 49.1 | 65.0 | 114.1 | 864.3 |
| 2015 | 42.3 | 11.3 | 45.6 | 11.0 | 2.6 | 7.7 | 0.0 | 120.4 | 298.3 | 71.0 | 132.2 | 501.5 | 37.1 | 51.5 | 88.6 | 710.6 |
| 2016 | 48.0 | 11.7 | 51.0 | 8.8 | 1.2 | 7.6 | 0.0 | 128.3 | 284.9 | 73.7 | 122.2 | 480.8 | 45.1 | 46.1 | 91.2 | 700.2 |
| 2017 | 41.2 | 10.1 | 61.6 | 9.5 | 3.5 | 7.6 | 0.0 | 133.5 | 263.6 | 67.5 | 128.0 | 459.2 | 78.4 | 20.4 | 98.8 | 691.5 |
| 2018 | 37.8 | 10.1 | 52.2 | 11.4 | 3.5 | 6.9 | 0.0 | 121.9 | 286.4 | 64.4 | 148.4 | 499.3 | 56.8 | 44.5 | 101.3 | 722.4 |
| 2019 | 29.6 | 7.3 | 29.6 | 8.2 | 3.3 | 6.9 | 0.0 | 84.9 | 356.7 | 62.6 | 149.6 | 568.9 | 18.2 | 67.1 | 85.3 | 739.1 |
| 2020 | 19.6 | 5.037 | 49.3 | 8.4 | 3.4 | 4.42 | 0.0 | 90.2 | 299.9 | 66.6 | 126.4 | 492.9 | 24.8 | 33.8 | 58.6 | 641.7 |
| 2021 | 36.9 | 4.6 | 58.8 | 9.2 | 3.6 | 6.6 | 0.0 | 119.6 | 310.4 | 68.0 | 146.2 | 524.6 | 14.0 | 71.7 | 85.7 | 729.9 |
| 2022+ | 33.0 | 11.5 | 53.8 | 8.2 | 3.4 | 6.3 | 0.0 | 116.1 | 265.2 | 71.7 | 146.7 | 483.6 | 13.2 | 68.0 | 81.2 | 680.8 |

[^7]Table 8. Total recreational catch, releases, and release mortality in numbers of fish by region (x1000), 1996-2022. Source: MRIP (Query June 2023).
Estimates exclude inshore harvest from North Carolina.

| Year | Harvest (A+B1) |  |  | Releases (B2) |  |  | Total Catch (A+B1+B2) |  |  | Release Mortality (9\% of B2) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Ocean | Bay | Total | Ocean | Bay | Total | Ocean | Bay | Total | Ocean | Bay | Total |
| 1996 | 1,362 | 1,125 | 2,487 | 22,384 | 6,511 | 28,895 | 23,746 | 7,636 | 31,382 | 2,015 | 586 | 2,601 |
| 1997 | 1,514 | 1,261 | 2,775 | 22,819 | 10,178 | 32,998 | 24,333 | 11,439 | 35,773 | 2,054 | 916 | 2,970 |
| 1998 | 1,647 | 1,268 | 2,915 | 29,294 | 6,918 | 36,213 | 30,941 | 8,187 | 39,128 | 2,637 | 623 | 3,259 |
| 1999 | 1,758 | 1,366 | 3,123 | 26,139 | 8,760 | 34,899 | 27,897 | 10,125 | 38,022 | 2,353 | 788 | 3,141 |
| 2000 | 2,198 | 1,604 | 3,802 | 25,090 | 8,734 | 33,824 | 27,289 | 10,338 | 37,627 | 2,258 | 786 | 3,044 |
| 2001 | 2,758 | 1,294 | 4,052 | 21,073 | 6,145 | 27,218 | 23,831 | 7,440 | 31,270 | 1,897 | 553 | 2,450 |
| 2002 | 2,756 | 1,249 | 4,005 | 23,653 | 7,371 | 31,024 | 26,409 | 8,620 | 35,030 | 2,129 | 663 | 2,792 |
| 2003 | 3,124 | 1,658 | 4,781 | 20,678 | 10,971 | 31,649 | 23,802 | 12,628 | 36,431 | 1,861 | 987 | 2,848 |
| 2004 | 3,078 | 1,475 | 4,553 | 27,868 | 12,857 | 40,725 | 30,946 | 14,332 | 45,278 | 2,508 | 1,157 | 3,665 |
| 2005 | 3,182 | 1,299 | 4,481 | 28,663 | 9,580 | 38,244 | 31,845 | 10,879 | 42,724 | 2,580 | 862 | 3,442 |
| 2006 | 2,789 | 2,095 | 4,884 | 41,239 | 12,232 | 53,470 | 44,028 | 14,327 | 58,354 | 3,711 | 1,101 | 4,812 |
| 2007 | 2,327 | 1,618 | 3,945 | 25,135 | 7,579 | 32,714 | 27,462 | 9,196 | 36,659 | 2,262 | 682 | 2,944 |
| 2008 | 3,025 | 1,356 | 4,381 | 21,878 | 4,691 | 26,569 | 24,904 | 6,046 | 30,950 | 1,969 | 422 | 2,391 |
| 2009 | 2,898 | 1,803 | 4,700 | 16,740 | 4,838 | 21,578 | 19,638 | 6,641 | 26,279 | 1,507 | 435 | 1,942 |
| 2010 | 3,906 | 1,483 | 5,388 | 13,606 | 5,957 | 19,564 | 17,512 | 7,440 | 24,952 | 1,225 | 536 | 1,761 |
| 2011 | 3,617 | 1,389 | 5,006 | 12,644 | 3,823 | 16,467 | 16,261 | 5,212 | 21,473 | 1,138 | 344 | 1,482 |
| 2012 | 3,071 | 975 | 4,046 | 11,242 | 9,290 | 20,532 | 14,314 | 10,265 | 24,578 | 1,012 | 836 | 1,848 |
| 2013 | 3,723 | 1,435 | 5,158 | 19,463 | 7,131 | 26,594 | 23,186 | 8,565 | 31,751 | 1,752 | 642 | 2,393 |
| 2014 | 2,276 | 1,758 | 4,034 | 15,107 | 9,031 | 24,137 | 17,382 | 10,789 | 28,171 | 1,360 | 813 | 2,172 |
| 2015 | 1,770 | 1,316 | 3,086 | 15,419 | 10,216 | 25,635 | 17,189 | 11,532 | 28,721 | 1,388 | 919 | 2,307 |
| 2016 | 1,817 | 1,683 | 3,500 | 17,794 | 15,333 | 33,127 | 19,611 | 17,016 | 36,627 | 1,601 | 1,380 | 2,981 |
| 2017 | 1,738 | 1,200 | 2,938 | 28,963 | 9,050 | 38,012 | 30,701 | 10,249 | 40,950 | 2,607 | 814 | 3,421 |
| 2018 | 1,195 | 1,050 | 2,245 | 22,739 | 8,669 | 31,407 | 23,933 | 9,719 | 33,652 | 2,046 | 780 | 2,827 |
| 2019 | 1,342 | 809 | 2,151 | 21,131 | 7,636 | 28,767 | 22,473 | 8,445 | 30,918 | 1,902 | 687 | 2,589 |
| 2020 | 923 | 787 | 1,710 | 22,710 | 7,959 | 30,669 | 23,633 | 8,746 | 32,379 | 2,044 | 716 | 2,760 |
| 2021 | 1,189 | 653 | 1,842 | 24,281 | 4,427 | 28,709 | 25,470 | 5,081 | 30,551 | 2,185 | 398 | 2,584 |
| 2022 | 2,756 | 697 | 3,454 | 26,031 | 3,611 | 29,643 | 28,788 | 4,309 | 33,097 | 2,343 | 325 | 2,668 |

Table 9. Recreational harvest by region in pounds (x1000), 1996-2022. Source: MRIP (Query June 2023). ^Estimates exclude NC inshore harvest.

| Year | Ocean |  |  |  |  |  |  |  |  |  |  |  | Chesapeake Bay |  |  | Grand Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ME | NH | MA | RI | CT | NY | NJ | DE | MD | VA | NC^ | Total | MD | VA | Total |  |
| 1996 | 95 | 183 | 2,983 | 1,626 | 1,405 | 10,739 | 3,959 | 795 | 0.0 | 812 | 392 | 22,990 | 2,789 | 2,847 | 5,636 | 28,626 |
| 1997 | 223 | 538 | 5,133 | 1,997 | 2,263 | 8,543 | 2,179 | 374 | 0.0 | 1,096 | 865 | 23,211 | 3,203 | 4,203 | 7,405 | 30,616 |
| 1998 | 305 | 262 | 7,359 | 1,544 | 1,807 | 4,889 | 4,182 | 645 | 579 | 545 | 636 | 22,754 | 3,023 | 3,826 | 6,849 | 29,603 |
| 1999 | 196 | 181 | 4,995 | 1,904 | 1,327 | 7,414 | 9,473 | 312 | 3.8 | 110 | 339 | 26,256 | 2,323 | 4,986 | 7,309 | 33,565 |
| 2000 | 347 | 109 | 4,863 | 2,008 | 890 | 7,053 | 9,768 | 925 | 0.0 | 416 | 277 | 26,656 | 3,503 | 3,892 | 7,395 | 34,051 |
| 2001 | 446 | 334 | 7,188 | 2,044 | 1,101 | 5,058 | 12,314 | 695 | 314 | 382 | 1,082 | 30,959 | 2,928 | 5,376 | 8,304 | 39,263 |
| 2002 | 775 | 322 | 10,261 | 2,708 | 1,251 | 5,975 | 9,621 | 589 | 0.0 | 1,135 | 998 | 33,634 | 2,643 | 5,563 | 8,206 | 41,840 |
| 2003 | 458 | 466 | 10,252 | 4,052 | 2,666 | 10,788 | 12,066 | 763 | 14 | 392 | 966 | 42,882 | 5,246 | 5,964 | 11,210 | 54,092 |
| 2004 | 554 | 268 | 9,329 | 2,460 | 2,229 | 6,437 | 13,303 | 870 | 57 | 1,067 | 6,656 | 43,230 | 4,860 | 4,941 | 9,801 | 53,031 |
| 2005 | 546 | 384 | 7,541 | 3,155 | 3,133 | 11,637 | 14,289 | 680 | 7.7 | 487 | 3,947 | 45,808 | 7,753 | 3,860 | 11,614 | 57,421 |
| 2006 | 610 | 244 | 6,787 | 1,569 | 2,854 | 9,845 | 12,716 | 586 | 2.8 | 921 | 2,975 | 39,109 | 6,494 | 5,071 | 11,565 | 50,674 |
| 2007 | 422 | 93 | 7,010 | 2,077 | 2,786 | 10,081 | 8,390 | 207 | 0.0 | 516 | 1,965 | 33,547 | 5,249 | 4,027 | 9,277 | 42,824 |
| 2008 | 607 | 182 | 8,424 | 970 | 2,273 | 18,000 | 12,407 | 847 | 0.0 | 1,690 | 750 | 46,150 | 5,639 | 4,877 | 10,515 | 56,665 |
| 2009 | 781 | 222 | 9,410 | 2,185 | 1,458 | 7,991 | 17,040 | 940 | 138 | 48 | 187 | 40,399 | 8,672 | 5,340 | 14,012 | 54,411 |
| 2010 | 218 | 238 | 9,959 | 2,102 | 2,323 | 18,190 | 17,454 | 895 | 107 | 206 | 1,198 | 52,891 | 6,482 | 2,059 | 8,541 | 61,431 |
| 2011 | 245 | 659 | 11,953 | 3,066 | 981 | 13,151 | 15,715 | 605 | 8.6 | 308 | 4,467 | 51,157 | 6,220 | 2,214 | 8,435 | 59,592 |
| 2012 | 152 | 432 | 14,941 | 2,096 | 1,835 | 13,096 | 11,551 | 644 | 21 | 1.7 | 0.0 | 44,768 | 3,819 | 4,670 | 8,488 | 53,257 |
| 2013 | 331 | 831 | 9,025 | 4,428 | 4,236 | 16,819 | 19,451 | 1,073 | 1,051 | 67 | 0.0 | 57,313 | 5,137 | 2,607 | 7,744 | 65,057 |
| 2014 | 423 | 203 | 7,965 | 3,402 | 2,665 | 13,998 | 8,886 | 381 | 159 | 0.0 | 0.0 | 38,083 | 8,877 | 989 | 9,866 | 47,949 |
| 2015 | 132 | 202 | 7,799 | 1,394 | 2,585 | 8,695 | 9,982 | 340 | 28 | 0.0 | 0.0 | 31,156 | 7,786 | 957 | 8,743 | 39,899 |
| 2016 | 189 | 191 | 3,731 | 1,776 | 912 | 12,053 | 12,790 | 86 | 7.2 | 0.0 | 0.0 | 31,735 | 10,912 | 1,024 | 11,936 | 43,672 |
| 2017 | 318 | 394 | 5,664 | 1,655 | 1,560 | 8,885 | 10,886 | 666 | 0.0 | 1.8 | 0.0 | 30,030 | 7,309 | 613 | 7,922 | 37,953 |
| 2018 | 142 | 130 | 4,925 | 1,121 | 1,165 | 3,453 | 7,012 | 33 | 0.0 | 0.0 | 0.0 | 17,982 | 4,683 | 404 | 5,087 | 23,069 |
| 2019 | 415 | 291 | 2,698 | 2,300 | 685 | 7,072 | 6,674 | 44 | 7.3 | 0.0 | 0.0 | 20,187 | 3,145 | 224 | 3,370 | 23,556 |
| 2020 | 180 | 29 | 776 | 483 | 830 | 2,202 | 6,584 | 16 | 0.0 | 0.0 | 0.0 | 11,100 | 3,480 | 280 | 3,759 | 14,859 |
| 2021 | 89 | 36 | 1,826 | 597 | 201 | 1,492 | 8,313 | 132 | 0 | 0 | 0 | 12,686 | 2,682 | 414 | 3,095 | 15,782 |
| 2022 | 590 | 240 | 5,288 | 779 | 1,294 | 10,695 | 13,508 | 39 | 0 | 0 | 0 | 32,434 | 3,083 | 288 | 3,371 | 35,805 |

Table 10. Recreational harvest by region in numbers of fish (x1000), 1996-2022. Source: MRIP (Query June 2023). ^Estimates exclude NC inshore harvest.

| Year | Ocean |  |  |  |  |  |  |  |  |  |  |  | Chesapeake Bay |  |  | Grand Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ME | NH | MA | RI | CT | NY | NJ | DE | MD | VA | NC^ | Total | MD | VA | Total |  |
| 1996 | 4.1 | 11.0 | 156.6 | 100.6 | 95.9 | 511.6 | 301.2 | 59.7 | 0.0 | 89.6 | 31.7 | 1,362.0 | 564.2 | 561.3 | 1,125.5 | 2,487.4 |
| 1997 | 43.0 | 29.9 | 365.6 | 124.7 | 149.0 | 450.5 | 171.2 | 29.1 | 0.0 | 91.1 | 60.1 | 1,514.1 | 552.4 | 708.4 | 1,260.8 | 2,775.0 |
| 1998 | 65.3 | 14.8 | 500.9 | 91.1 | 114.1 | 383.8 | 289.2 | 51.0 | 24.3 | 71.3 | 41.2 | 1,647.0 | 596.2 | 672.2 | 1,268.4 | 2,915.4 |
| 1999 | 37.5 | 9.9 | 327.1 | 116.6 | 88.2 | 450.9 | 657.1 | 28.3 | 1.6 | 14.1 | 26.4 | 1,757.8 | 530.9 | 834.8 | 1,365.7 | 3,123.5 |
| 2000 | 77.3 | 6.0 | 306.2 | 156.8 | 84.0 | 494.6 | 939.8 | 88.3 | 0.0 | 27.2 | 18.1 | 2,198.3 | 810.9 | 793.3 | 1,604.2 | 3,802.5 |
| 2001 | 91.9 | 23.5 | 551.0 | 149.8 | 78.2 | 364.2 | 1,267.5 | 70.6 | 64.1 | 36.7 | 60.7 | 2,758.1 | 513.3 | 781.1 | 1,294.4 | 4,052.5 |
| 2002 | 135.2 | 28.1 | 723.5 | 181.5 | 92.5 | 439.3 | 957.6 | 65.7 | 0.0 | 76.4 | 56.3 | 2,756.1 | 464.4 | 784.6 | 1,249.0 | 4,005.1 |
| 2003 | 99.7 | 41.3 | 797.2 | 226.4 | 181.7 | 678.4 | 942.8 | 75.7 | 0.9 | 29.3 | 50.4 | 3,123.8 | 816.0 | 841.6 | 1,657.6 | 4,781.4 |
| 2004 | 118.3 | 22.1 | 666.7 | 159.6 | 134.5 | 458.1 | 1,042.1 | 66.6 | 11.0 | 75.9 | 323.2 | 3,078.1 | 657.5 | 817.4 | 1,474.9 | 4,553.0 |
| 2005 | 118.3 | 35.5 | 536.1 | 195.6 | 202.6 | 854.6 | 958.1 | 48.8 | 3.6 | 34.2 | 194.9 | 3,182.2 | 815.5 | 483.1 | 1,298.6 | 4,480.8 |
| 2006 | 140.9 | 20.9 | 483.2 | 129.3 | 168.3 | 614.8 | 972.2 | 44.5 | 0.4 | 80.6 | 134.2 | 2,789.0 | 1,342.0 | 753.0 | 2,094.9 | 4,884.0 |
| 2007 | 95.5 | 8.1 | 471.9 | 135.8 | 163.9 | 602.8 | 722.2 | 17.2 | 0.0 | 28.0 | 81.8 | 2,327.1 | 1,127.3 | 490.3 | 1,617.6 | 3,944.7 |
| 2008 | 133.4 | 11.9 | 514.1 | 73.4 | 132.8 | 1,169.9 | 791.0 | 67.7 | 0.0 | 94.4 | 36.9 | 3,025.4 | 779.7 | 576.1 | 1,355.8 | 4,381.2 |
| 2009 | 146.5 | 17.3 | 695.0 | 138.4 | 100.3 | 574.2 | 1,141.5 | 64.8 | 10.2 | 3.0 | 6.5 | 2,897.7 | 1,094.4 | 708.1 | 1,802.5 | 4,700.2 |
| 2010 | 37.3 | 21.4 | 808.2 | 162.0 | 170.2 | 1,449.0 | 1,091.4 | 61.4 | 12.5 | 25.3 | 67.1 | 3,905.9 | 1,139.3 | 343.2 | 1,482.6 | 5,388.4 |
| 2011 | 48.5 | 54.2 | 873.5 | 202.2 | 91.1 | 1,005.3 | 1,038.9 | 43.7 | 0.8 | 51.2 | 207.6 | 3,617.1 | 1,112.1 | 277.2 | 1,389.3 | 5,006.4 |
| 2012 | 31.4 | 37.3 | 1,010.6 | 130.7 | 137.1 | 927.5 | 742.4 | 51.3 | 2.9 | 0.3 | 0.0 | 3,071.5 | 716.7 | 258.1 | 974.8 | 4,046.3 |
| 2013 | 73.3 | 63.2 | 658.7 | 308.3 | 269.6 | 902.5 | 1,324.2 | 70.6 | 48.4 | 4.4 | 0.0 | 3,723.2 | 1,136.7 | 297.9 | 1,434.5 | 5,157.8 |
| 2014 | 86.4 | 16.5 | 523.5 | 172.0 | 131.8 | 804.5 | 501.9 | 26.2 | 12.6 | 0.0 | 0.0 | 2,275.5 | 1,627.0 | 131.2 | 1,758.2 | 4,033.7 |
| 2015 | 14.4 | 10.0 | 485.3 | 67.0 | 140.8 | 406.8 | 600.3 | 41.9 | 3.5 | 0.0 | 0.0 | 1,770.1 | 1,108.0 | 207.7 | 1,315.7 | 3,085.7 |
| 2016 | 14.2 | 17.6 | 230.1 | 128.4 | 63.3 | 697.7 | 659.6 | 5.9 | 0.5 | 0.0 | 0.0 | 1,817.2 | 1,545.1 | 138.1 | 1,683.2 | 3,500.4 |
| 2017 | 22.0 | 37.7 | 392.3 | 59.8 | 94.9 | 477.3 | 626.4 | 27.8 | 0.0 | 0.1 | 0.0 | 1,738.3 | 1,091.6 | 108.0 | 1,199.6 | 2,937.9 |
| 2018 | 16.0 | 13.4 | 389.5 | 39.2 | 85.5 | 181.7 | 465.3 | 4.2 | 0.0 | 0.0 | 0.0 | 1,194.6 | 993.3 | 56.8 | 1,050.1 | 2,244.8 |
| 2019 | 38.0 | 14.7 | 195.6 | 104.1 | 67.1 | 498.0 | 412.9 | 10.9 | 1.0 | 0.0 | 0.0 | 1,342.2 | 764.1 | 44.6 | 808.7 | 2,150.9 |
| 2020 | 19.0 | 3.2 | 67.2 | 36.9 | 71.2 | 203.7 | 520.1 | 1.6 | 0.0 | 0.0 | 0.0 | 922.9 | 734.8 | 52.2 | 787.0 | 1,710.0 |
| 2021 | 12.7 | 4.4 | 179.1 | 57.7 | 21.2 | 137.8 | 766.2 | 9.496 | 0.0 | 0.0 | 0.0 | 1,189 | 583.7 | 69.6 | 653.3 | 1,842.9 |
| 2022 | 57.6 | 23.4 | 479.9 | 66.4 | 116.2 | 882.9 | 1,126.5 | 4.0 | 0.0 | 0.0 | 0.0 | 2,757 | 642.2 | 55.0 | 697.2 | 3,454.0 |

Table 11. Results of 2022 commercial quota accounting in pounds. Source: 2023 state compliance reports. 2022 quota was based on Addendum VI and approved conservation equivalency programs.

| State | 2020-22 Quota^ | 2022 Harvest | 2022 Overage |
| :---: | :---: | :---: | :---: |
| Ocean |  |  |  |
| Maine* | 154 | - | - |
| New Hampshire* | 3,537 | - | - |
| Massachusetts | 735,240 | 770,101 | 34,861 |
| Rhode Island | 148,889 | 162,434 | 13,545 |
| Connecticut* | 14,607 | - | - |
| New York | 640,718 | 623,304 | 0 |
| New Jersey** | 215,912 | - | - |
| Delaware | 142,474 | 139,221 | 0 |
| Maryland | 89,094 | 88,069 ${ }^{+}$ | 0 |
| Virginia | 125,034 | 121,723 | 0 |
| North Carolina | 295,495 | 0 | 0 |
| Ocean Total | 2,411,154 | 1,904,852 | 0 |
| Chesapeake Bay |  |  |  |
| Maryland | 1,445,394 | 1,223,606 ${ }^{+}$ | 0 |
| Virginia | 983,393 | 722,866 | 0 |
| PRFC | 572,861 | 440,087 | 0 |
| Bay Total | 3,001,648 | 2,483,438 | 0 |

Note: North Carolina's fishing year is December-November; PRFC's fishing year for gill nets is November-March.

* Commercial harvest/sale prohibited, with no re-allocation of quota.
** Commercial harvest/sale prohibited, with re-allocation of quota to the recreational fishery.
$\wedge$ Quota changed through conservation equivalency for MA ( $735,240 \mathrm{lbs}$ ), NY ( $640,718 \mathrm{lbs}$ ), NJ ( $215,912 \mathrm{lbs}$ ), DE ( $142,474 \mathrm{lbs}$ ), MD (ocean: 89,094 lbs; bay: 1,445,394 lbs), PRFC ( $572,861 \mathrm{lbs}$ ), VA (ocean: $125,034 \mathrm{lbs}$; bay: $983,393 \mathrm{lbs}$ ).
+ Maryland commercial landings for 2022 are considered preliminary.

Table 12. Number of directed trips for Atlantic striped bass (primary and secondary target) from Maine through North Carolina (excluding inshore NC) for 2018-2022. Source: MRIP (Query June 2023).

| Year | Ocean | Chesapeake Bay | Coastwide Total |
| :---: | :---: | :---: | :---: |
| 2018 | $15,686,903$ | $2,650,311$ | $\mathbf{1 8 , 3 3 7}, \mathbf{2 1 4}$ |
| 2019 | $16,189,653$ | $1,967,387$ | $\mathbf{1 8 , 1 5 7 , 0 4 0}$ |
| 2020 | $15,859,277$ | $2,678,922$ | $\mathbf{1 8 , 5 3 8}, \mathbf{1 9 9}$ |
| 2021 | $16,017,420$ | $2,183,568$ | $\mathbf{1 8 , 2 0 0}, 988$ |
| 2022 | $21,046,502$ | $2,132,346$ | $\mathbf{2 3 , 1 7 8}, 848$ |

Tables 13a-13c. Total removals in numbers of fish (harvest plus discards/release mortality) of Atlantic striped bass by sector in numbers of fish for 2017, 2020, 2021, and 2022. Harvest is from state compliance reports/MRIP (Query June 2023), discards/release mortality is from ASMFC. Estimates exclude inshore harvest from North Carolina.

Table 13a. Coastwide removals in numbers of fish for 2017 and 2020-2022.

|  | Commercial |  | Recreational |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Commercial <br> Removals | \% Change <br> from 2017 | Recreational <br> Removals | \% Change <br> from 2017 | Total <br> Removals | \% Change <br> from 2017 |
| 2017 | 691,471 | - | $6,359,021$ | - | $7,050,492$ | - |
| 2020 | 641,711 | $-7 \%$ | $4,470,204$ | $-30 \%$ | $5,111,915$ | $\mathbf{- 2 7 . 5 \%}$ |
| 2021 | 729,883 | $+6 \%$ | $4,425,690$ | $-30 \%$ | $5,155,573$ | $\mathbf{- 2 7 \%}$ |
| 2022 | 680,615 | $-2 \%$ | $6,121,867$ | $-4 \%$ | $6,802,681$ | $\mathbf{- 3 . 5 \%}$ |

Table 13b. Ocean removals in numbers of fish for 2017 and 2020-2022.

|  | Commercial |  | Recreational |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Commercial <br> Removals | \% Change <br> from 2017 | Recreational <br> Removals | \% Change <br> from 2017 | Total <br> Removals | \% Change <br> from 2017 |
| 2017 | 211,924 | - | $4,344,953$ | - | $4,556,877$ | - |
| 2020 | 115,044 | $-46 \%$ | $2,966,848$ | $-32 \%$ | $3,081,891$ | $\mathbf{- 3 2 \%}$ |
| 2021 | 133,569 | $-37 \%$ | $3,373,924$ | $-22 \%$ | $3,507,493$ | $\mathbf{- 2 3 \%}$ |
| 2022 | 129,295 | $-39 \%$ | $5,099,654$ | $+17 \%$ | $5,228,950$ | $\mathbf{+ 1 5 \%}$ |

Table 13c. Chesapeake Bay removals in numbers of fish for 2017 and 2020-2022.

|  | Commercial |  | Recreational |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Commercial <br> Removals | \% Change <br> from 2017 | Recreational <br> Removals | \% Change <br> from 2017 | Total <br> Removals | \% Change <br> from 2017 |
| 2017 | 479,547 | - | $2,014,068$ | - | $2,493,615$ | - |
| 2020 | 526,667 | $+10 \%$ | $1,503,357$ | $-25 \%$ | $2,030,024$ | $\mathbf{- 1 9 \%}$ |
| 2021 | 596,314 | $+24 \%$ | $1,051,766$ | $-48 \%$ | $1,648,080$ | $\mathbf{- 3 4 \%}$ |
| 2022 | 551,520 | $+15 \%$ | $1,022,212$ | $-49 \%$ | $1,573,732$ | $\mathbf{- 3 7 \%}$ |

Note: Some states chose a less than $18 \%$ commercial quota reduction in exchange for a greater than $18 \%$ reduction in recreational removals in their CE plans.

Table 14. Realized percent change in recreational removals in numbers of fish (harvest plus release mortality) of Atlantic striped bass by state relative to 2017 and predicted percent change in recreational removals from approved conservation equivalency plans (where applicable). Harvest is from MRIP (Query June 2023), release mortality is from ASMFC. Estimates exclude inshore harvest from North Carolina. NA = Percent reduction not calculated if implementing Addendum VI measure.

| State | $\begin{array}{c}\text { Realized \% } \\ \text { Change } \\ \text { Recreational } \\ \text { Harvest from } \\ \mathbf{2 0 1 7}\end{array}$ |  | $\begin{array}{c}\text { Realized \% } \\ \text { Change } \\ \text { Recreational } \\ \text { Release } \\ \text { Mortality from } \\ \text { 2017 }\end{array}$ | $\begin{array}{c}\text { Realized \% Change } \\ \text { Rec. Removals } \\ \text { (Harvest + Release } \\ \text { Mortality) from } \\ \mathbf{2 0 1 7}\end{array}$ | $\begin{array}{c}\text { Predicted \% } \\ \text { Change in } \\ \text { Rec. }\end{array}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\mathbf{2 0 2 1}$ | $\mathbf{2 0 2 2}$ | $\mathbf{2 0 2 1}$ | $\mathbf{2 0 2 2}$ | $\mathbf{2 0 2 1}$ | $\mathbf{2 0 2 2}$ |  |
| Removals CE Plan |  |  |  |  |  |  |  |$]$

^Offshore recreational harvest for North Carolina was 0 fish in 2017 and 2020-2022. Offshore estimated release mortality for North Carolina was 463 fish in 2017, 0 fish in 2020, 1,875 fish in 2021, and 3,107 fish in 2022.

Note: Increased harvest in 2022 and increased recreational releases in NY, NJ, and DE contributed to realized reductions in total recreational removals being less than predicted for those states.

Table 15. Percent change in commercial harvest by weight of Atlantic striped bass by state relative to 2017 and percent change in commercial quota from 2017. Note: Harvest is from state compliance reports. Estimates exclude inshore harvest from North Carolina.

| State | \% Change in Commercial Harvest by weight from 2017 |  | \% Change in Commercial Quota ${ }^{+}$ |
| :---: | :---: | :---: | :---: |
|  | 2021 | 2022 | Add VI |
| Ocean |  |  |  |
| Maine |  |  |  |
| New Hampshire |  |  |  |
| Massachusetts | -11\% | -6\% | -18\%* |
| Rhode Island | -26\% | -7\% | -18\% |
| Connecticut |  |  |  |
| New York | -10\% | -11\% | -18\%* |
| New Jersey |  |  |  |
| Delaware | -1\% | -2\% | -1.8\% |
| Maryland (ocean) | +10\% | 9\% | -1.8\% |
| Virginia (ocean) | -10\% | -9\% | -9.8\% |
| North Carolina^ | - | - | -18\% |
| Ocean Total | -10\% | -7\% |  |
| Chesapeake Bay |  |  |  |
| Maryland (Ches. Bay) | -9\% | -15\% | -1.8\% |
| PRFC (Ches. Bay) | -17\% | -13\% | -1.8\% |
| Virginia (Ches. Bay) | -12\% | -13\% | -7.7\% |
| Chesapeake Bay Total | -12\% | -14\% |  |
| Coastwide Total | -11\% | -11\% |  |

+ 2020-2022 quota changed through conservation equivalency for MA, NY, NJ, DE, MD, PRFC, VA.
*MA and NY quotas were based on an $18 \%$ reduction from 2017 quota and spawner-per-recruit (SPR) analysis that accounted for changing the commercial size limits.
${ }^{\wedge}$ North Carolina reported no ocean commercial harvest in 2017, 2020-2022.
Note: Some states chose a less than $18 \%$ commercial quota reduction in exchange for a greater than $18 \%$ reduction in recreational removals in their CE plans.

Table 16. Status of Commercial Tagging Programs by state for 2022.

| State | Total Participants | Tags Issued | Tags Used | Tags Returned /Broken | Tags Not Accounted For ${ }^{1}$ | Point of Tag (sale) harvest) | Biological Metric ${ }^{2}$ (Y/N) | Year, State and Unique ID on Tag ( $\mathrm{Y} / \mathrm{N}$ ) | Size Limit on Tag $(Y / N)$ | Tag Colors | Annual Tag Color Change (Y/N) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MA | 124 | 58,560 | 32,989 | 24,931 | 640 | Sale | Y | Y | Y | one tag color | Y |
| RI | 20 | 16,210 | 12,051 | 3,643 | 516 | Sale | Y | Y | N | two tag colors by gear | Y |
| NY | 377 | 61,000 | 53,750 | 5,970 | 1,288 | Harvest | Y | Y | N | one tag color | Y |
| DE* | 243 | 17,310 | 8,197 | 9,113 | 0 | Both | Y | Y | N | Harvest: two tag colors by gear <br> Sale: one color | Y |
| MD ${ }^{ \pm}$ | 612 | 442,850 | 286,426 | tbd | tbd | Harvest | Y | Y | N | three tag colors by fishery and area | Y |
| PRFC | 323 | 83,329 | 73,608 | 9,409 | 524 | Harvest | $Y$ | Y | N | five tag colors by gear | N |
| VA | 364 | 198,400 | 152,940 | 39,061 | 6,399 | Harvest | Y | Y | Y | two tag colors by area | Y |
| NC^ | 16 | 6,650 | 4,824 | 1,820 | 6 | Sale | Y | Y | Y | three tag colors by area | N |

${ }^{1}$ Tags not accounted for refers to unused tags that are not returned/not reported as lost or missing.
${ }^{2}$ States are required to allocate commercial tags to permit holders based on a biological metric. Most states use the average weight per fish from the previous year, or some variation thereof. Actual biological metric used is reported in Annual Commercial Tag Monitoring Reports.
*The number of tags noted in the table for Delaware are the tags issued to and used by harvesters. Tags are also issued to weigh stations where a second tag is attached to each striped bass, such that each fish has two tags. In 2022, 14,000 weigh station tags were issued, 8,197 were used, 5,803 were returned, and 0 not accounted for.
$\pm$ Maryland's audit of unused tags has been delayed by staffing issues.
$\wedge$ All commercial tags noted in the table for North Carolina were used in the Albemarle Sound management area.
Note: North Carolina's fishing year is December-November; PRFC's fishing year for gill nets is November-March.

Table 17. Status of compliance with monitoring and reporting requirements in 2022. JAI = juvenile abundance index survey, $\mathrm{SSB}=$ spawning stock biomass survey, TAG = participation in coastwide tagging program, $\mathrm{Y}=$ compliance standards met, $\mathrm{N}=$ compliance standards not met, NA = not applicable, $\mathrm{R}=$ recreational, $\mathrm{C}=$ commercial.

| Jurisdiction | Fishery-independent Monitoring |  | Fishery-dependent Monitoring |  | Annual reporting Status |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Requirement(s) | Status | Requirement(s) | Status |  |
| ME | JAI | Y | - | NA | Y |
| NH | - | NA | - | NA | Y |
| MA | TAG | Y | composition, catch \& effort (C\&R), tag program | Y | Y |
| RI | - | NA | composition (C\&R), catch \& effort (R), tag program | Y | Y |
| CT | - | NA | composition, catch \& effort (R) | Y | Y |
| NY | JAI, SSB, TAG | Y | composition, catch \& effort (C\&R), tag program | Y | Y |
| NJ | JAI, TAG | Y | composition, catch \& effort (R) | Y | Y |
| PA | SSB | Y | - | NA | Y |
| DE | SSB, TAG | Y | composition, catch \& effort (C), tag program | Y | Y |
| MD | JAI, SSB, TAG | Y | composition, catch \& effort (C\&R), tag program | Y | Y |
| PRFC | - | NA | composition, catch \& effort (C\&R), tag program | Y | $Y$ |
| DC | - | NA | - | NA | Y |
| VA | JAI, SSB, TAG | Y | composition, catch \& effort (C\&R), tag program | Y | Y |
| NC | JAI, SSB, TAG | Y | composition, catch \& effort (C\&R), tag program | Y | Y |

Table 18. State implementation of new Amendment 7 recreational gear provisions required to be implemented by January 1, 2023:

- It shall be unlawful for any person to gaff or attempt to gaff any striped bass at any time when fishing recreationally.
- Striped bass caught on any unapproved method of take must be returned to the water immediately without unnecessary injury.

| State | Gaffing <br> Prohibition | Referred Language for Incidental Catch Provision |
| :--- | :--- | :--- |
| Maine | Yes | Striped bass incidentally caught on any unapproved hook type must be returned to <br> the water immediately without unnecessary injury. |
| New Hampshire | Yes | Fish shall be taken only by angling unless otherwise specifically permitted. If a fish is unintentionally <br> taken contrary to the prohibitions or restrictions contained in a provision of this title, such fish shall <br> be immediately liberated and returned to the water without unnecessary injury. |
| Massachusetts | Yes | Striped bass caught on any unapproved method of take must be returned to the water immediately <br> without unnecessary injury. |
| Rhode Island | Yes | Striped bass caught on any unapproved method of take must be returned to the water immediately <br> without unnecessary injury. |
| New York | Yes | Striped bass shall not be taken except by angling and the use of a gaff in the taking of striped bass is <br> prohibited. Any striped bass taken contrary to the provisions of this section shall, without avoidable <br> injury, be returned immediately to the waters from which taken. |
| New Jersey | Yes | Striped bass caught on any unapproved method of take must be returned to the water immediately <br> without unnecessary injury. |
| Pennsylvania | Yes | Striped bass caught on any unapproved method of take must be returned to the water immediately <br> without unnecessary injury. |
| Any fish caught that is not to be counted in the creel limit shall be immediately released unharmed <br> into the water from which taken. Except as otherwise provided in $\S 53.24$ or $\S 63.40$ (relating to <br> tournament and fishing derby permits; and fishing tournaments and fishing derbies), a fish placed on <br> a stringer, or confined by any type of container, structure or device, or not returned immediately to <br> the water, will be considered as part of the daily creel or possession limits. Fish returned to the water <br> shall be handled carefully and be returned unharmed to the water from which take. |  |  |
| It is unlawful to use a method for taking fish or attempting to take fish from the waters of this |  |  |
| Commonwealth, including boundary lakes and rivers, unless the use of the method is specifically |  |  |
| authorized by law or this part. |  |  |


| State | Gaffing <br> Prohibition | Referred Language for Incidental Catch Provision <br> It is unlawful for any recreational fisherman to take or attempt to take any striped bass from the tidal <br> waters of this State with any fishing equipment other than a hook and line or a spear while said <br> recreational fisherman using the spear is underwater... <br> _.. Any striped bass taken from the tidal waters of this State that is not immediately returned, without <br> unnecessary injury, to the same waters from which it was taken, is deemed taken and reduced to <br> possession for purposes of this subsection. |  |
| :--- | :--- | :--- | :--- |
| Delaware | Yes | Yes | An individual may only use the gear specified in this regulation to catch fish for recreational purposes <br> from tidal waters. An individual using gear in accordance with this chapter shall comply with all <br> seasons, creel limits, size limits, and other species-specific rules as specified under this subtitle... |
| Maryland | No, but <br> does not <br> specify <br> gaffs as <br> legal gear | Except as otherwise permitted by these rules, a person shall fish only with rod, hook, and line, not to <br> exceed three (3) lines in number and not having more than two (2) hooks to each line. Artificial lures <br> or plugs with multiple or gang hooks are considered one unit. |  |
| Columbia | It is unlawful to: Take fish except as specified in this chapter |  |  |
| YRFC | Any fish, whose size is prohibited or whose season is closed by these regulations, which may be <br> caught or entrapped as an incident to other lawful fishing activities, shall be immediately released <br> and returned to the waters where found... <br> It shall be unlawful for any person fishing recreationally to take, catch, or attempt to take or catch <br> any striped bass by any gear or method other than hook-and-line, rod and reel, hand line, or <br> spearing. |  |  |
| Virginia | Yes | Striped bass taken on any unapproved method must be returned to the water immediately without <br> unnecessary injury. |  |
| North Carolina | Yes |  |  |

## XI. Figures

Figure 1. Atlantic striped bass female spawning stock biomass and recruitment, 1982-2021. Source: 2022 Stock Assessment Update.


Figure 2. Atlantic striped bass fishing mortality, 1982-2021. Source: 2022 Stock Assessment Update.


Figure 3. Albemarle Sound-Roanoke River striped bass female spawning stock biomass and recruitment (abundance of age-1), and biological reference points, 1991-2017. Source: 2020 A-R Stock Assessment (Lee et al. 2020).


Figure 4. Albemarle Sounds-Roanoke River striped bass fishing mortality (F) estimates, and biological reference points, 1991-2017. Source: 2020 A-R Stock Assessment (Lee et al. 2020).


Figure 5. Total Atlantic striped bass removals by sector in numbers of fish, 1982-2022. Note: Harvest is from state compliance reports/MRIP, discards/release mortality is from ASMFC. Estimates exclude inshore harvest from A-R.


Figure 6. Commercial Atlantic striped bass landings by state in pounds, 1982-2022. Source: State compliance reports. Commercial harvest and sale prohibited in ME, NH, CT, and NJ. NC is ocean only.


Figure 7. Total recreational catch and the proportion of fish released alive, 1982-2022. Source: MRIP/ASMFC. Estimates exclude inshore harvest from A-R.


Figure 8. Juvenile abundance indices for New York, New Jersey, Maryland, and Virginia for 1982-2022 with recruitment trigger analysis for recent years. An open circle in the last three years indicates a value below the recruitment trigger level. The recruitment trigger is tripped if a JAI is below the trigger level for three consecutive years. Source: 2023 State Compliance Reports.


Figure 9. Juvenile abundance indices for Maine and North Carolina from 1982-2022 noting the level of recruitment failure. Source: 2023 State Compliance Reports.



[^0]:    ${ }^{1}$ The 1997 reauthorization of the Striped Bass Act also required the Secretaries of Commerce and Interior provide a biennial report to Congress highlighting the progress and findings of studies of migratory and estuarine Striped Bass. The ninth such report was recently provided to Congress (Shepherd et al. 2017).

[^1]:    ${ }^{2}$ While NOAA Fisheries continues to implement a complete ban on the fishing and harvest of striped bass in the EEZ, Amendment 6 includes a recommendation to consider reopening the EEZ to striped bass fisheries. In September 2006, NOAA Fisheries concluded that it would be imprudent to open the EEZ to striped bass fishing because it could not be certain that opening the EEZ would not lead to increased effort and an overfishing scenario.
    ${ }^{3}$ The decision to hold Delaware's commercial quota at the 2002 level is based on tagging information that indicated F on the Delaware River/Bay stock is too high, and uncertainty regarding the status of the spawning stock for the Delaware River/Bay.

[^2]:    ${ }^{4}$ In February 2017, the Board initiated development of Draft Addendum V to consider liberalizing coastwide commercial and recreational regulations. The Board's action responded to concerns raised by Chesapeake Bay jurisdictions regarding continued economic hardship endured by its stakeholders since the implementation of Addendum IV and information from the 2016 stock assessment update indicating that F was below target in 2015, and that total removals could increase by $10 \%$ to achieve the target F. However, the Board chose to not advance the draft addendum for public comment largely due to harvest estimates having increased in 2016 without changing regulations. Instead, the Board decided to wait until it reviews the results of the 2018 benchmark stock assessment before considering making changes to the management program.

[^3]:    ${ }^{5}$ Definition of Bait and Methods of Fishing: Circle hooks are required when fishing for striped bass with bait, which is defined as any marine or aquatic organism live or dead, whole or parts thereof. This shall not apply to any artificial lure with bait attached.

[^4]:    ${ }^{6}$ Commercial dead discard estimate for 2022 was estimated using the harvest-to-discard ratio from 2021. The entire time series for commercial dead discards will be re-estimated during the 2024 stock assessment using a generalized additive model (GAM).
    ${ }^{7}$ By weight, New Jersey had the largest proportion of recreational harvest (38\%), followed by New York (30\%), Massachusetts (15\%), and Maryland (9\%).

[^5]:    ${ }^{8}$ Maryland commercial landings for 2022 are considered preliminary.

[^6]:    * Commercial dead discard estimate for 2022 was estimated using the harvest-to-discard ratio from 2021. The entire time series for commercial dead discards will be re-estimated during the 2024 stock assessment using a generalized additive model (GAM). Note: Percent may not sum to 100 due to rounding.

[^7]:    * Commercial dead discard estimate for 2022 was estimated using the harvest-to-discard ratio from 2021. The entire time series for commercial dead discards will be re-estimated during the 2024 stock assessment using a generalized additive model. + Maryland commercial landings for 2022 are considered preliminary.

