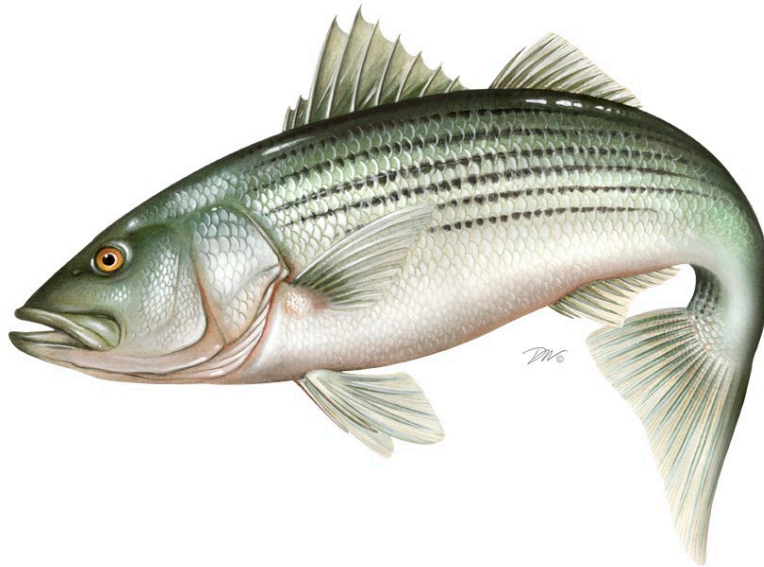


Atlantic States Marine Fisheries Commission

**ADDENDUM I TO AMENDMENT 7
TO THE ATLANTIC STRIPED BASS
INTERSTATE FISHERY MANAGEMENT PLAN**

Commercial Quota Transfers in the Ocean Region



May 2023



Sustainable and Cooperative Management of Atlantic Coastal Fisheries

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1.0 INTRODUCTION

Atlantic striped bass (*Morone saxatilis*) are managed through the Atlantic States Marine Fisheries Commission (Commission) in state waters (0-3 miles) and through the National Marine Fisheries Service (NMFS) in federal waters (3-200 miles). The management unit includes the coastal migratory stock from Maine through North Carolina. Atlantic striped bass are currently managed in state waters under Amendment 7 (2022) to the Interstate Fishery Management Plan (FMP).

In August 2021, the Atlantic Striped Bass Management Board (Board) initiated Draft Addendum VII to Amendment 6 to consider allowing for the voluntary transfer of commercial striped bass quota in the ocean region, after deciding that changes to the commercial quota system would not be considered in the then ongoing development of Draft Amendment 7. Subsequently, the draft addendum was postponed to enable the Plan Development Team (PDT) and Board to focus on the development and completion of Amendment 7, which was approved in May 2022. In August 2022, the Board considered next steps for the draft addendum and provided additional guidance to the PDT on management options to be added. Due to Amendment 7's approval during its development, this addendum is now Addendum I to Amendment 7.

Addendum I allows for voluntary transfers of ocean commercial quota contingent on stock status. When the stock is not overfished, the Board will decide if voluntary transfers of ocean commercial quota between states that have ocean quota is allowed, and can set criteria for those transfers. When the stock is overfished, no quota transfers are allowed.

2.0 OVERVIEW

2.1 Statement of the Problem

Members of the Board and public have raised questions about the striped bass commercial quota system, with particular concern regarding the 1972-1979 reference period and basis for state commercial quotas. Those concerns include, but are not limited to: changes in fishing effort and resource distribution since the 1972-1979 reference period; likely inaccuracies in the commercial landings data for the 1970s reference period due to the lack of mandatory reporting across all states and/or evidence of harvesters selling fish in states other than where it was landed; and inconsistent application of the reference period landings in one management action which increased all but one of the states' quotas (i.e., Delaware in Amendment 6). These concerns, along with other questions about the quota system (e.g., fixed quotas vs. setting quotas annually), were included in the scoping document for Draft Amendment 7 in 2021, but the issue of addressing commercial quotas was not selected for further development in Draft Amendment 7. Some Board members expressed support for addressing the commercial quota issue at a different time separate from Amendment 7, noting a desire to not slow Amendment 7's progress and focus on stock rebuilding.

In order to consider a management option that could provide some, more immediate relief to states seeking a change to their commercial quota, the Board initiated this addendum to consider allowing for the voluntary transfer of striped bass commercial quota in the ocean region. Many quota-managed fisheries allow for the voluntary transfer of commercial quota

between states (e.g., black sea bass, bluefish, horseshoe crab). This is a useful technique that can be utilized to address a variety of problems in the management of a commercial fishery (e.g., quota overages, safe harbor landings, shifting stock distributions). Prior to this addendum, the Atlantic Striped Bass FMP was the only Commission FMP with state-by-state commercial quotas that does not allow for the voluntary transfer of commercial quota or quota reconciliation (using end-of-year quota underages to address any overages).

2.2 Background

2.2.1 Commercial Quota Management for Atlantic Striped Bass

The Atlantic Striped Bass FMP uses a quota system to manage the commercial fishery in the Chesapeake Bay and the ocean region. The FMP establishes a separate Chesapeake Bay-wide quota, which is then allocated to Bay jurisdictions per the mutual agreement of Maryland, the Potomac River Fisheries Commission (PRFC), and Virginia; there is no striped bass commercial fishery in the District of Columbia. The FMP establishes state-by-state quotas for the ocean region, which includes all coastal bay, inland rivers, and estuaries outside the Chesapeake Bay system. The ocean region commercial quotas are based on a proportion of the states' average landings during 1972–1979, with one exception for Delaware, and as modified by approved conservation equivalency (CE) proposals, as described in the following section.

Quota overages are paid back the following year on a pound-for-pound basis, and rollover of unused quota from one year to the next is not permitted.

In addition to commercial quotas, the FMP specifies commercial size limits, and requires states to implement a commercial tagging program whereby all commercially-harvested striped bass must be tagged at the point of harvest and/or the point of sale.

2.2.1.1 History of Commercial Quota Management

In general, the ocean commercial quotas are based on average landings during 1972-1979 and assuming a 28" minimum size limit. This historical base period was first used for management in 1989 under Amendment 4, which allowed for a modest relaxation of the stringent Amendment 3 requirements that had led to harvest moratoria in many states in the mid-to-late 1980s. Amendment 4 required closed seasons in order to restrict commercial harvest to 20% of the 1972–1979 base period, or an equivalent commercial quota as was elected by many of the states. The amendment allowed for separate "producer area" management (including a smaller size limit) for the Hudson River estuary, Chesapeake Bay, and inshore North Carolina. Due to New York's ban on commercial striped bass harvest in the Hudson River since 1976, this resulted in only an ocean quota for New York. In Maryland, separate Chesapeake Bay and ocean quotas were established, whereas Virginia was approved to adopt one state-wide quota for ease of management. Maryland was also authorized to employ a harvest control model to establish a flexible Chesapeake Bay quota based on projected exploitable biomass. The commercial fisheries never reopened in Maine, New Hampshire, Connecticut, and New Jersey following their voluntary moratoria. In 1991, New Jersey started a Striped Bass Bonus Program (i.e., permit program), which reallocates their commercial quota to the recreational fishery,

allowing participating recreational anglers to take a “bonus fish”; the New Jersey bonus program is still in place and currently operates through an approved CE program. Connecticut implemented a similar bonus program from 2011-2019.

State-specific quotas were first implemented under Amendment 5 (1995) when the Commission declared the stock fully rebuilt; states were allocated 70% of their average landings during the 1972–1979 base period. Amendment 5 specified separate quotas for producer areas and the ocean, and extended producer-area status to the Delaware River and Bay, which allowed its producer-area commercial quota to be managed under a harvest control model (i.e., maintain a target *F* rate) similar to that used in the Chesapeake Bay. Like Virginia, Delaware was approved to combine its producer area and ocean quotas into one overall state quota beginning in 1996. The three Chesapeake Bay jurisdictions with commercial fisheries (Maryland, PRFC, and Virginia) adopted a Bay-wide commercial quota in 1997 (allocated per their own agreement) that was set using the harvest control model. Maryland maintained a separate ocean quota, while Virginia continued with a combined state-wide quota until 2002, when Virginia switched to managing the ocean and Bay quotas separately due to shifting effort into the coastal area.

Under Amendment 6 (2003), the state-by-state ocean commercial quotas were increased to 100% of the base period, except for Delaware’s commercial quota which remained at the level allocated in 2002 for its statewide quota (Table 1). The decision to hold Delaware’s commercial quota at the 2002 level was based on tagging information that indicated fishing mortality on the Delaware River/Bay stock was too high, and uncertainty regarding the status of the spawning stock for the Delaware River/Bay.

Producer areas were also no longer used as a management tool under Amendment 6, but the Chesapeake Bay and the Albemarle Sound/Roanoke River in North Carolina were defined as their own management areas, for different reasons. The Albemarle/Roanoke stock contributes minimally to the coastal migratory stock, and is therefore managed separately by the state of North Carolina under the auspices of ASMFC. On the other hand, the Chesapeake Bay stock, which is unquestionably part of the coastal migratory stock, was established as a management area in Amendment 6 in order to have a separate management program due to the size availability of striped bass in the area. This resulted in the ongoing use of a Chesapeake Bay-wide commercial quota distinct from the ocean commercial quotas.

Amendment 6 required all states to maintain a 28-inch minimum size limit for the commercial fishery, with three exceptions. The Delaware Bay shad gillnet fishery and the Albemarle Sound commercial fishery were subject to a 20-inch minimum size limit, and the Chesapeake Bay commercial fishery was subject to an 18-inch minimum size limit.

The ocean quotas were subsequently reduced by 25% in 2015 (Addendum IV) and by an additional 18% in 2020 (Addendum VI) in response to declining stock status (Table 1). Addendum IV required all states to maintain their 2013 commercial size limits and Addendum VI required all states to maintain their 2017 commercial size limits. Throughout quota

management, states have used conservation equivalency (CE) to implement different commercial size limits resulting in changes to their quota amounts. Approved CE programs have used yield-per-recruit (YPR) and spawning stock biomass-per-recruit (SPR) analyses to determine how to adjust the quota to maintain the same spawning potential under a new commercial size limit. The Addendum IV quota reductions were applied to the Amendment 6 base quotas, whereas the Addendum VI reductions were applied to the Addendum IV quotas as modified by CE. The Addendum VI quotas were further modified by some states through approved CE plans (Table 1). Massachusetts increased its Addendum VI base quota to account for increasing its commercial minimum size limit, and New York reduced its base quota to account for lowering the minimum size of its commercial slot limit. Additionally, New Jersey, Delaware, Maryland, PRFC, and Virginia increased their Addendum VI base quotas by taking a greater than 18% reduction in the recreational sector to offset the commercial sector taking a smaller reduction. Amendment 7 (2022) maintains the same commercial measures specified in Addendum VI to Amendment 6; all approved Addendum VI CE programs and state implementation plans are maintained until commercial measures are changed in the future.

Table 1. Commercial striped bass quotas for the ocean region from 2003-2022.

Year	2003-2014	2015-2019	2020-2022	
State	Am6 Quota (lbs)	Add IV Base Quotas: 25% reduction from Am6 Quota (lbs)	Add VI Base Quotas: 18% Reduction from Add IV Quotas (lbs) [accounting for Add IV CE adjustments]	Add VI CE-Adjusted Quotas
Maine*	250	188	154	154
New Hampshire*	5,750	4,313	3,537	3,537
Massachusetts	1,159,750	869,813	713,247	735,240
Rhode Island	243,625 ^a	182,719 ^b	148,889	148,889
Connecticut**	23,750	17,813	14,607	14,607
New York	1,061,060 ^a	795,795	652,552	640,718
New Jersey**	321,750	241,313 ^b	197,877	215,912
Delaware	193,447	145,085	118,970	142,474
Maryland Ocean	131,560 ^a	98,670 ^b	74,396	89,094
Virginia Ocean	184,853	138,640	113,685	125,034
North Carolina	480,480	360,360	295,495	295,495
Ocean Total	3,806,275	2,854,709	2,333,409	2,411,154

* Commercial harvest/sale prohibited, with no re-allocation of quota.

** Commercial harvest/sale prohibited, with re-allocation of quota to the recreational fishery.

a. Amendment 6 quota reduced through conservation equivalency; NY (828,293 pounds) and MD (126,396 pounds) beginning in 2004, RI (239,963 pounds) beginning in 2007.

b. Addendum IV quota reduced through conservation equivalency for RI (181,572 lbs), NJ (215,912), and MD (90,727 lbs).

2.2.1.2. Past Consideration of Quota Transfers

Until this addendum in May 2023, the Striped Bass FMP did not permit the transfer of commercial quota between jurisdictions. The Board previously considered commercial quota transfers in the FMP through Draft Amendment 5 and Draft Addendum IV to Amendment 6. The Board did not approve the use of transfers in Amendment 5 (1995) in order to focus efforts on rebuilding the stock. During consideration of Draft Addendum IV to Amendment 6, the Technical Committee raised concerns that transfers had the potential to increase harvest at a time when harvest reductions were needed, which contributed to the Board not approving transfers under Addendum IV (2014).

2.2.2 Status of the Stock

Female spawning stock biomass (SSB) and fishing mortality rate (F) are estimated on a regular basis, and compared to target and threshold levels (i.e., biological reference points) in order to assess the status of the striped bass stock. The 1995 estimate of female SSB is currently used as the SSB threshold because many stock characteristics, such as an expanded age structure, were reached by this year, and this is also the year the stock was declared recovered. The female SSB target is equal to 125% of the female SSB threshold. The associated F threshold and F target are calculated to achieve the respective SSB reference points in the long term.

In November 2022, the Board reviewed the results of the 2022 Stock Assessment Update, which uses the same forward projecting statistical catch-at-age model from the peer-reviewed 2018 Benchmark Stock Assessment. The model uses fishery-dependent data and fishery-independent survey indices to develop catch-at-age matrices and estimate annual population size, fishing mortality, and recruitment. Data through 2021 were added to the model, and the model structure was adjusted for 2020-2021 to account for the regulation changes implemented through Addendum VI to Amendment 6.

The 2022 Stock Assessment Update found that the stock remains overfished but is no longer experiencing overfishing in the terminal year (2021). Female SSB in 2021 was estimated at 143 million pounds, which is below the SSB threshold of 188 million pounds and below the SSB target of 235 million pounds. F in 2021 was estimated at 0.14, which is below the F threshold of 0.20 and below the F target of 0.17. The reference points were updated using the low recruitment assumption, which resulted in a lower F target and F threshold compared to the 2018 Benchmark Assessment.

The 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 early 1980s, when the stock was considered collapsed). 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), but 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, below the time series average of 135.7 million fish.

The 2022 Assessment Update also included short-term projections (using the low recruitment assumption) to determine the probability of SSB being at or above the SSB target by 2029, which is the stock rebuilding deadline following the initial overfished determination in the 2018 Benchmark Assessment. The 2022 Stock Assessment Update indicated that under the 2021 fishing mortality rate, there was a 97% chance the stock will be rebuilt by 2029. In May 2023, the Board received new stock rebuilding projections incorporating 2022 data, which estimate the probability of SSB rebuilding to its target by 2029 drops from 97% under the 2021 fishing mortality rate to less than 15% if the higher 2022 fishing mortality rate continues each year.

2.2.3 Status of the Fishery

Note: Since this addendum applies only to commercial quota in the ocean region, this section focuses primarily on the ocean commercial fishery. For information on the Chesapeake Bay commercial fishery or striped bass recreational fisheries, see the Review of the FMP for Atlantic Striped Bass: 2021 Fishing Year (August 2022).

In 2021, total Atlantic striped bass removals (commercial and recreational, including harvest, commercial dead discards and recreational release mortality) were estimated at 5.1 million fish, which is about the same as removals in 2020. In 2021, the commercial sector accounted for 14% of total removals in numbers of fish (12% harvest and 2% dead discards), and the recreational sector accounted for 86% of removals in numbers of fish (36% harvest and 50% release mortality) (Figure 1). Removals for each sector by year are listed in the Appendix.

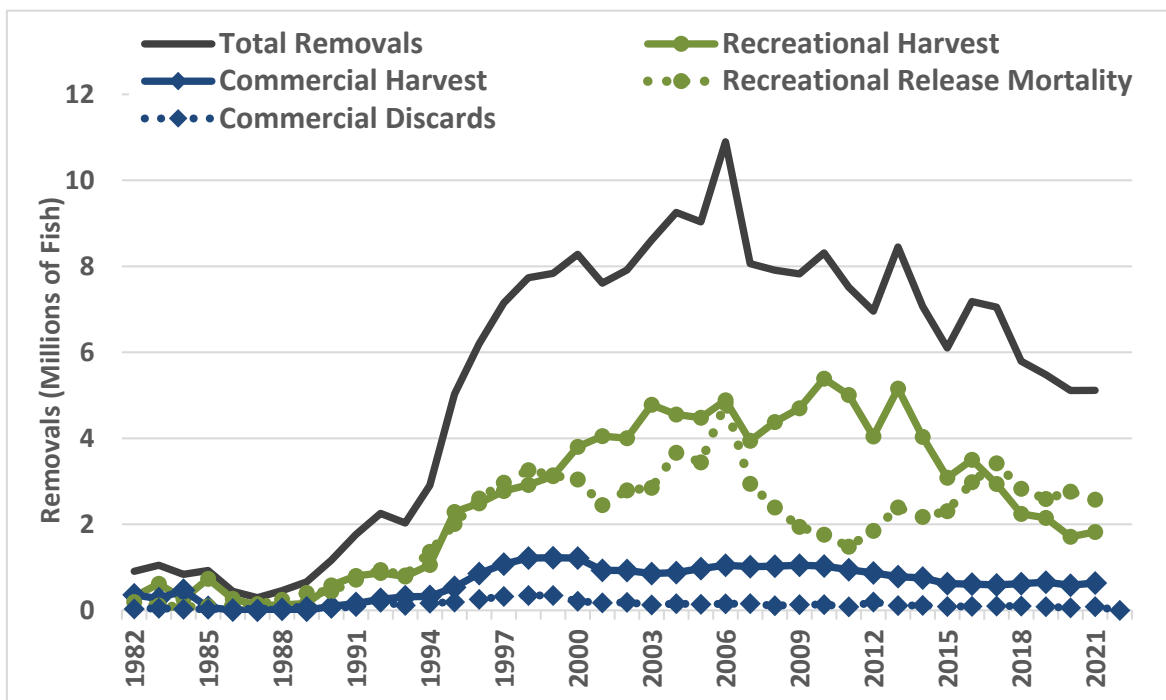


Figure 1. Total Atlantic striped bass removals by sector in numbers of fish, 1982-2021. Source: State compliance reports, MRIP, ASMFC.

Commercial Fishery Landings

In 2021, the ocean commercial striped bass quota was 2,411,154 pounds, and 1,840,693 pounds were harvested in the ocean region. In the Chesapeake Bay region, the 2021 commercial striped bass quota was 3,001,648 pounds, and 2,492,531 pounds were harvested. Neither quota was exceeded in 2021. Refer to the Appendix for 2021 quotas and landings by state, as well as 2021 commercial fishery regulations by state, including size limits, trip limits, and seasons, where applicable.

Since 1990, commercial landings from the ocean fishery have accounted for approximately 40% of total coastwide commercial landings by weight, with the other 60% coming from the Chesapeake Bay (Figure 2). The proportion of commercial harvest coming from Chesapeake Bay is much higher in numbers of fish (roughly 80%) because fish harvested in Chesapeake Bay have a lower average weight than fish harvested in ocean fisheries.

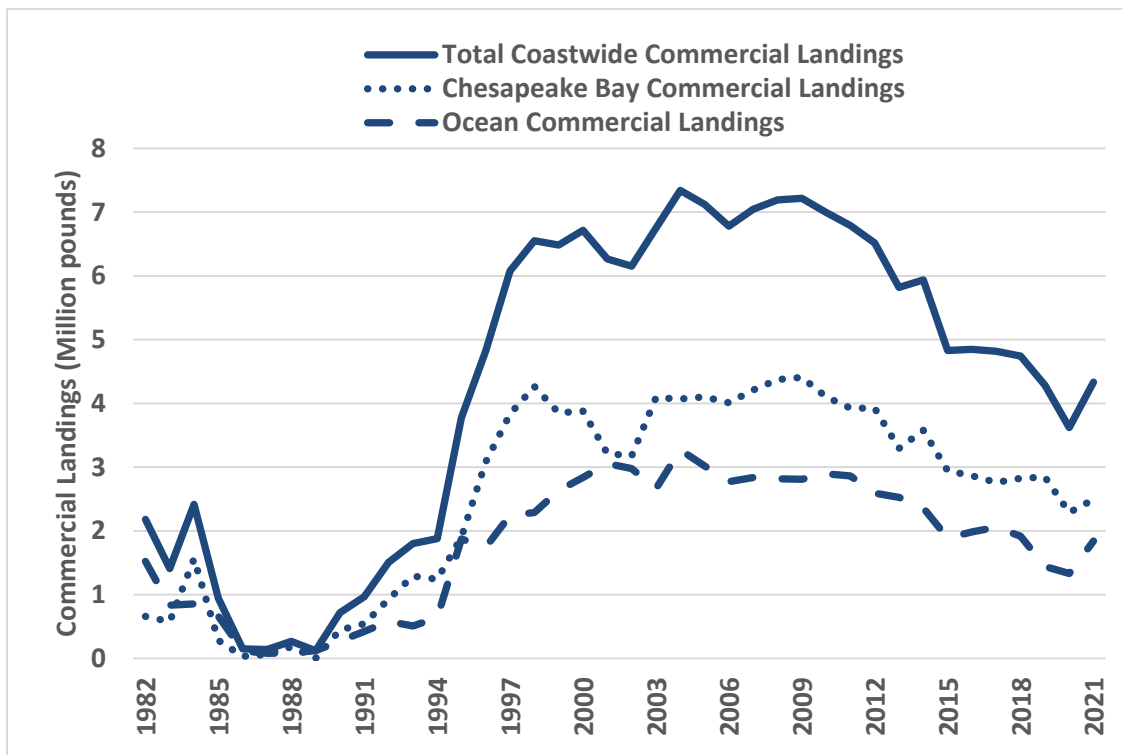


Figure 2. Commercial landings coastwide total, and by region, in pounds, 1982-2021. Source: State compliance reports.

From 2004 to 2014, ocean commercial landings averaged 2.8 million pounds annually. From 2015-2019, ocean commercial landings decreased to an average of 1.9 million pounds annually due to implementation of Addendum IV and a reduction in the commercial quota. In the last two years under Addendum VI, ocean commercial landings were 1.3 million pounds in 2020, and 1.8 million pounds in 2021.

In 2021, Massachusetts landed 40% of the ocean commercial harvest by weight, New York landed 34%, Delaware landed 8%, Rhode Island landed 7%, Virginia landed 7%, and Maryland landed 5% (Figure 3). North Carolina has had zero commercial harvest in their ocean waters since 2012.

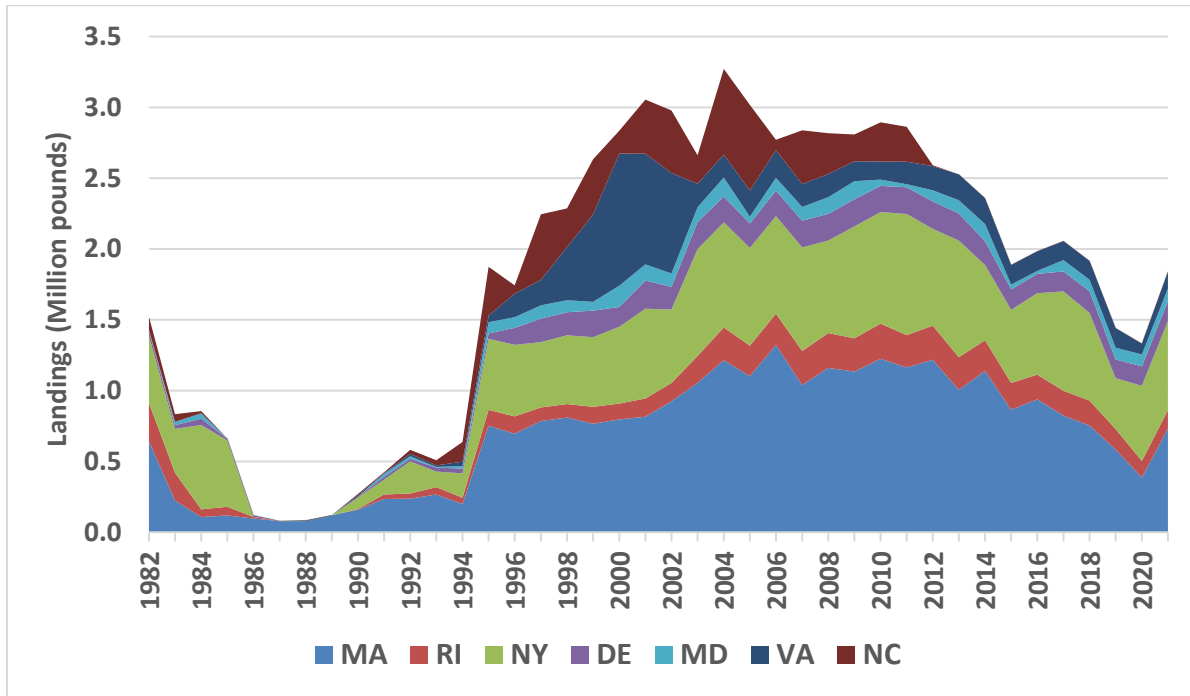


Figure 3. Commercial Atlantic striped bass landings from the ocean region by state in pounds, 1982-2021. Source: State compliance reports. Commercial harvest and sale prohibited in ME, NH, CT, and NJ. NC is ocean only.

Commercial Quota Utilization in the Ocean Region

The ocean region regularly underutilizes its cumulative quota due to lack of striped bass availability in some state waters (particularly North Carolina, which holds 13% of the ocean quota, yet has had zero ocean harvest since 2012) coupled with prohibitions on commercial striped bass fishing in Maine, New Hampshire, Connecticut, and New Jersey (which collectively share about 10% of the ocean commercial quota).

In 2021, the commercial quota utilization in the ocean region increased from 55% in 2020 to 76% in 2021 (Figure 4). This is the highest ocean quota utilization in the past five years and is similar to the ocean quota utilization in 2017 (75%). Each state that allows commercial harvest utilized 87-99% of their ocean quota in 2021, with the exception of North Carolina which had zero ocean harvest (Table 2).

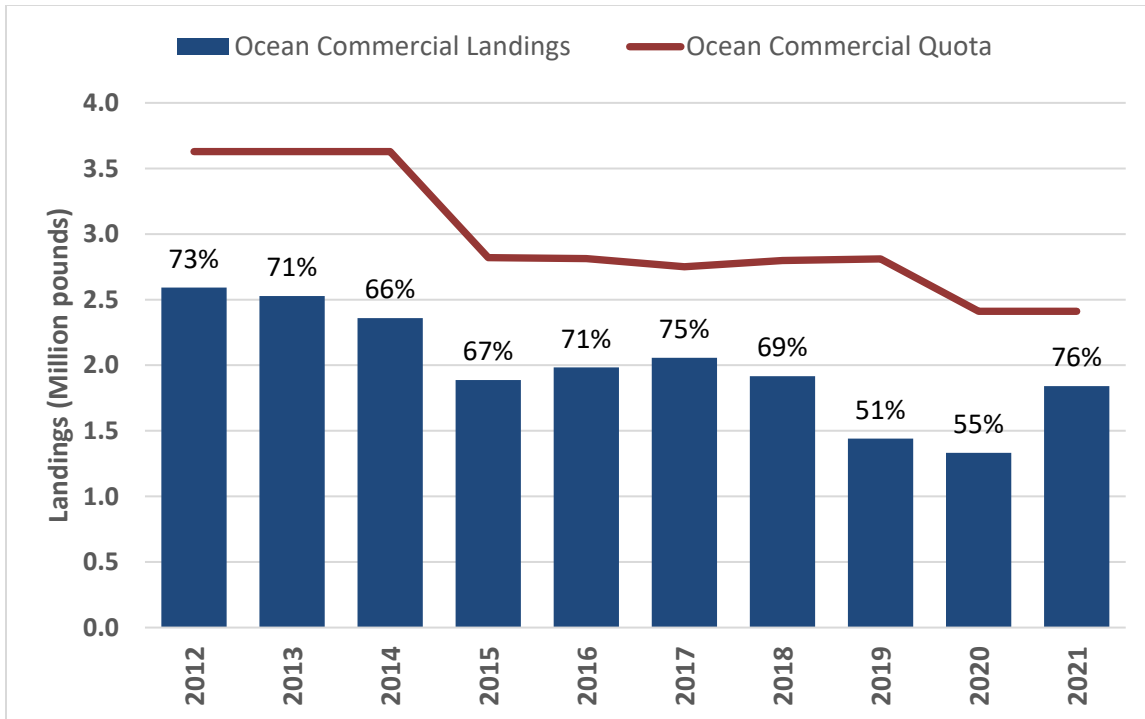


Figure 4. Ocean commercial landings and ocean commercial quota, and percent utilization, 2012-2021.

Table 2. Percent of ocean commercial quota utilized by state, 2017-2021.

State	2017	2018	2019	2020	2021
Maine*	0%	0%	0%	0%	0%
New Hampshire*	0%	0%	0%	0%	0%
Massachusetts	103%	89%	67%	53%	100%
Rhode Island	97%	97%	79%	78%	88%
Connecticut**	0%	0%	0%	0%	0%
New York	88%	78%	45%	83%	98%
New Jersey**	0%	0%	0%	0%	0%
Delaware	98%	107%	98%	97%	98%
Maryland (ocean only)	89%	88%	91%	94%	100%
Virginia (ocean only)	97%	97%	100%	62%	96%
North Carolina (ocean only)	0%	0%	0%	0%	0%
Ocean Total	75%	69%	51%	55%	76%

* Commercial harvest/sale prohibited.

** Commercial harvest/sale prohibited, with re-allocation of quota to the recreational fishery. Connecticut re-allocated its quota to the recreational fishery from 2011-2019; New Jersey has re-allocated its quota to the recreational fishery from 1991-present.

There are several factors that could contribute to how much quota is landed each year, including year class availability, overall stock abundance, nearshore availability, fishing effort, and state management programs. These factors and their impact on striped bass commercial fisheries likely vary among states and within the seasons.

Allowing quota transfers could increase utilization of the total ocean quota, which could undermine the goals and objectives of the reductions taken under Addendum VI in 2020. The commercial ocean fishery has consistently underutilized its total quota, due to a combination of fish availability and state-specific regulations (e.g., commercial fishing prohibitions). Addendum VI was designed to achieve a specific reduction in total removals through more restrictive recreational measures and reduced commercial quotas in order to achieve the fishing mortality target. During the Addendum VI process, the Technical Committee noted the reduction in commercial quota would achieve the necessary reduction in commercial removals only if the commercial fishery performs as it has in the past (i.e., if the total quota continues to be underutilized to the same degree). This assumption may be violated if the transfer of commercial quota in the ocean region is permitted. If Addendum VI commercial quotas were fully utilized through the transfer of latent quota, commercial harvest would be higher than estimated in the Addendum VI projections and states may not maintain the desired commercial reduction.

There is some inherent uncertainty associated with transfers occurring between states that harvest different size striped bass. State commercial fisheries catch different size fish due to multiple factors, including variability in striped bass size distribution along the coast and state management programs (different size limits, gears, seasons). Further, through CE, states have been able to adjust their commercial size limits from the historical standard, which results in changes to their respective commercial quotas. Several adjustments have been made to commercial size limits over time resulting in changes commercial quotas. Stated more simply, a pound of striped bass commercial quota is not equal across all states.

3.0 MANAGEMENT PROGRAM

3.1 Commercial Quota Transfers for the Ocean Quota

The stock must not be overfished (i.e., female spawning stock biomass falls below the female spawning stock biomass threshold) in order to transfer quota. When the stock is overfished, no quota transfers are allowed. Overfished status is determined by the results of the most recent stock assessment update or benchmark stock assessment approved for management use.

Every one to two years, based on stock status, the Board will decide if voluntary transfers of ocean commercial quota between states that have ocean quota is allowed. Transfers can be allowed for one year or two consecutive years. The decision will be made by the final Board meeting of the year based on information on the status of the striped bass stock and performance of the fisheries. Quota transfers are not permitted unless approved by the Board. Transfer of Chesapeake Bay quota to an ocean fishery or vice versa is not allowed.

Commercial quota that has been reallocated to a state's recreational fishery (i.e., for a recreational bonus program) is not eligible to be used for commercial quota transfers. When developing CE proposals to reallocate commercial quota to a recreational fishery, states can specify reallocation of all or part of their commercial quota; any portion of the state's commercial quota that is not reallocated to the recreational fishery may be used for commercial quota transfers.

3.2 Board Criteria and Process for Quota Transfers

Transfer Criteria

If the Board allows the voluntary transfer of commercial quota, the Board may annually choose to specify one or more of the following criteria:

- A limit on the transferable amount of quota (e.g., a set poundage or a set percentage of the total commercial quota) and, further, a seasonal limitation on its transferability (e.g., no more than 50% of the transferable quota amount may be transferred before July 1).
- The eligibility of a state to receive a transfer based on percentage of that state's quota landed (e.g., state may not request quota until it has landed 90% of its annual quota).

If the Board chooses to specify the above criteria, it will be as specific as possible (e.g., specify whether eligibility is based on total statewide quota utilization, or gear- or season-specific quota utilization within a state).

Transfer Process

Quota is transferred pound-for-pound from the donor state to the receiving state.

If allowing transfers, the Board will also set the timing in which transfers between states may occur during the fishing year and up to 45 days after the last day of the calendar year. If the Board does not specify the transfer period, the default will be until 45 days after the last day of the calendar year. All transfers require a donor state (state giving quota) and a receiving state (state accepting additional quota). All transfers must adhere to the quota transfer limitations/criteria established by the Board for that year. All other terms and conditions of the transfer are to be identified solely by the parties involved in the transfer.

The Administrative Commissioner of the agencies involved (donor and receiving state) must submit a signed letter to the Commission identifying the involved states, species, and pounds of quota to be transferred between the parties. A transfer becomes effective upon receipt of a letter from Commission staff to the donor and receiving states, and does not require approval by the Board. All transfers are final upon receipt of the signed letters by the Commission. In the event that the donor or receiving state of a transaction subsequently wishes to change the amount or details of the transaction, both parties have to agree to the change, and submit to the Commission signed letters from the Administrative Commissioner of the agencies involved.

These transfers do not permanently affect the state-specific shares of the quota (i.e., the state-specific quotas remain fixed).

Once quota has been transferred to a state, the state receiving quota becomes responsible for any overages of transferred quota. That is, the amount over the final quota (that state's quota plus any quota transferred to that state) for a state will be deducted from the corresponding state's quota the following fishing season.

4.0 COMPLIANCE SCHEDULE

This Addendum is effective as of May 2, 2023.

If the Board allows commercial quota transfers for a given year, states must account for any additional quota potentially received via transfers when determining the number of commercial tags required for that fishing season.

Appendix. State-by-State Commercial Fishery Regulations, Commercial Landings, 2021 Quota Accounting, and Coastwide Removals by Sector

Table A1. 2021 Striped Bass commercial regulations.

Source: 2022 State Compliance Reports. Minimum sizes and slot size limits are in total length (TL).

STATE	SIZE LIMITS (TL) and TRIP LIMITS	SEASONAL QUOTA	OPEN SEASON
ME	Commercial fishing prohibited		
NH	Commercial fishing prohibited		
MA	≥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 throughout.
CT	Commercial fishing prohibited; bonus program in CT suspended indefinitely in 2020.		
NY	26"-38" size; (Hudson River closed to commercial harvest)	640,718 lbs. 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; *quota reallocated to recreational bonus program: 1 fish/permit at 24" to <28"	215,912 lbs.	5.15 – 12.31 (permit required)
PA	Commercial fishing prohibited		

Table A1, continued

STATE	SIZE LIMITS (TL) and TRIP LIMITS	SEASONAL QUOTA	OPEN SEASON
DE	Gill Net: 20" min in DE Bay/River during spring season. 28" in all other waters/seasons.	Gillnet: 135,350 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 lbs./day trip limit
MD	Chesapeake Bay and Rivers: 18-36" Common pool trip limits: Hook and Line - 250 lbs./license/week Gill Net - 300 lbs./license/week	1,445,394 lbs. (part of Bay-wide quota)	Bay Pound Net: 6.1-12.31 Bay Haul Seine: 1.1-2.28; 6.1-12.31 Bay Hook & Line: 6.1-12.31 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" 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 Pound Net & Other: 2.15-3.25, 6.1-12.15 <u>Gill Net</u> : 11.9.2020-3.25.2021 Misc. Gear: 2.15-3.25, 6.1-12.15
VA	Chesapeake Bay and Rivers: 18" min; 28" 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" 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 A2. 2021 Commercial quota accounting in pounds.

Source: 2022 state compliance reports. 2021 quota was based on Addendum VI and approved conservation equivalency programs.

State	Add VI (base)	2021 Quota [^]	2021 Harvest	Overage
Ocean				
Maine*	154	154	-	-
New Hampshire*	3,537	3,537	-	-
Massachusetts	713,247	735,240	732,071	0
Rhode Island	148,889	148,889	130,308	0
Connecticut*	14,607	14,607	-	-
New York	652,552	640,718	629,491	0
New Jersey**	197,877	215,912	-	-
Delaware	118,970	142,474	140,250	0
Maryland	74,396	89,094	88,652 ⁺	0
Virginia	113,685	125,034	119,921	0
North Carolina	295,495	295,495	0	0
Ocean Total	2,333,409	2,411,154	1,840,693	0
Chesapeake Bay				
Maryland	2,588,603	1,445,394	1,305,276 ⁺	0
Virginia		983,393	729,736	0
PRFC		572,861	400,414	0
Bay Total		3,001,648	2,435,126	0

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

* Commercial harvest/sale prohibited, with no re-allocation of quota.

** Commercial harvest/sale prohibited, with re-allocation of quota to the recreational fishery.

[^] 2020 quota changed through conservation equivalency for MA (735,240 lbs), NY (640,718 lbs), NJ (215,912 lbs), DE (142,474 lbs), MD (ocean: 89,094 lbs; bay: 1,445,394 lbs), PRFC (572,861 lbs), VA (ocean: 125,034 lbs; bay: 983,393 lbs).

⁺ Maryland commercial landings for 2021 are considered preliminary.

Table A3. Commercial harvest by state and region in pounds (x1000), 1997-2021 calendar years.

Source: State compliance reports. ^Estimates exclude inshore harvest.

Year	Ocean								Chesapeake Bay				Grand Total
	MA	RI	NY	DE	MD	VA	NC^	Total	MD	PRFC	VA	Total	
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	1,305.3	411.3	729.7	2,446.4	4,287.0

+ Maryland commercial landings for 2021 are considered preliminary.

Table A4. Total removals (harvest plus discards/release mortality) of Atlantic striped bass by sector in numbers of fish, 1992-2021 calendar years. Note: Harvest is from state compliance reports/MRIP (June 2022), discards/release mortality is from ASMFC. Estimates exclude inshore harvest from NC.

Year	Commercial		Recreational		Total Removals
	Harvest	Dead Discards*	Harvest	Release Mortality	
1992	256,476	189,814	869,779	937,611	2,253,681
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	634,552	85,676	1,824,484	2,572,931	5,117,643

* Commercial dead discard estimates are derived via a generalized additive model (GAM), and are therefore re-estimated for the entire time series when a new year of data is added.

Table A5. Proportion of total removals (harvest plus discards/release mortality) of Atlantic striped bass by sector in numbers of fish, 1992-2021. Note: Harvest is from state compliance reports/MRIP (June 2022), discards/release mortality is from ASMFC. Estimates exclude inshore harvest from NC.

Year	Commercial		Recreational	
	Harvest	Dead Discards*	Harvest	Release Mortality
1992	11%	8%	39%	42%
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%

* Commercial dead discard estimates are re-estimated for the entire time series when a new year of data is added. Note: Percent may not sum to 100 due to rounding.