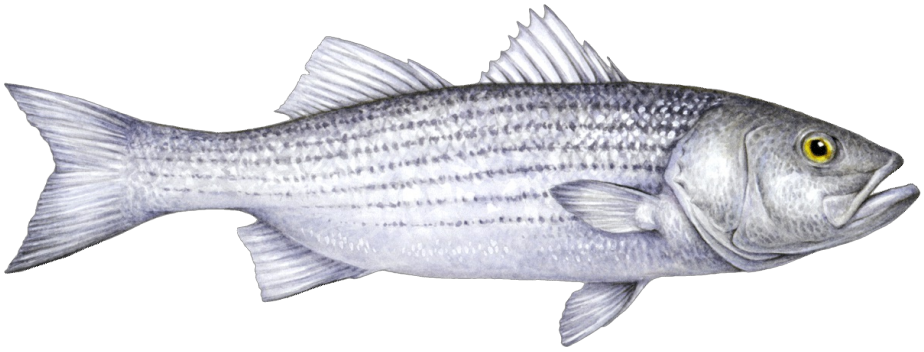
Monterey Bay Aquarium Seafood Watch

Environmental sustainability assessment of wild-caught Atlantic striped bass (Morone saxatilis) from the United States caught using set gillnets, stationary uncovered pound nets, handlines, and hand-operated pole-and-lines.



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Species:	Atlantic striped bass *(Morone saxatilis)*
Location:	United States of America: Northwest Atlantic
Gear:	Set gillnets, Stationary uncovered pound nets, Handlines and hand-operated pole-and-lines
Type:	Wild Caught
Author:	Seafood Watch
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Assessed using Seafood Watch Fisheries Standard v3

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About Monterey Bay Aquarium Seafood Watch

The mission of the Monterey Bay Aquarium is to inspire conservation of the ocean and enable a future where the ocean flourishes and people thrive in a just and equitable world. To do this, the Aquarium is focused on creating extraordinary experiences that inspire awe and wonder, championing science-based solutions, and connecting people across the planet to protect and restore the ocean. We know that healthy ocean ecosystems are critical to enabling life on Earth to exist, and that our very survival depends on them. As such, our conservation objectives are to mobilize climate action, improve the sustainability of global fisheries and aquaculture, reduce sources of plastic pollution, and restore and protect ocean wildlife and ecosystems.

The aquarium is focused on improving the sustainability of fisheries and aquaculture given the role seafood plays in providing essential nutrition for 3 billion people globally, and in supporting hundreds of millions of livelihoods. Approximately 180 million metric tons of wild and farmed seafood is harvested each year (excluding seaweeds). Unfortunately, not all current harvest practices are sustainable and poorly managed fisheries and aquaculture pose the greatest immediate threat to the health of the ocean and the economic survival and food security of billions of people.

The Seafood Watch program was started 25 years ago as a small exhibit in the Monterey Bay Aquarium highlighting better fishing practices and grew into one of the leading sources of information on seafood sustainability, harnessing the power of consumer choice to mobilize change. The program's comprehensive open-source information and public outreach raises awareness about global sustainability issues, identifies areas for improvement, recognizes and rewards best practices and empowers individuals and businesses to make informed decisions when purchasing seafood.

We define sustainable seafood as seafood from sources, whether fished or farmed, that can maintain or increase production without jeopardizing the structure and function of affected ecosystems, minimize harmful environmental impacts, assure good and fair working conditions, and support livelihoods and economic benefits throughout the entire supply chain. As one aspect of this vision, Seafood Watch has developed trusted, rigorous standards for assessing the environmental impacts of fishing and aquaculture practices worldwide. Built on a solid foundation of science and collaboration, our standards reflect our guiding principles for defining environmental sustainability in seafood.

Seafood Watch Ratings

The Seafood Watch Standard for Fisheries is used to produce assessments for wild-capture fisheries resulting in a Seafood Watch rating of green, yellow, or red. Seafood Watch uses the assessment criteria to determine a final numerical score as well as numerical subscores and colors for each criterion. These scores are translated to a final Seafood Watch color rating according to the methodology described in the table below. The table also describes how Seafood Watch defines each of these categories. The narrative descriptions of each Seafood Watch rating, and the guiding principles listed below, compose the framework on which the criteria are based.

Green	Final Score >3.2, and either criterion 1 or criterion 3 (or both) is green, and no red criteria, and no critical scores	Wild-caught and farm-raised seafood rated green are environmentally sustainable, well managed and caught or farmed in ways that cause little or no harm to habitats or other wildlife. These operations align with all of our guiding principles.
Yellow	Final score >2.2, and no more than one red criterion, and no critical scores, and does not meet the criteria for green (above)	Wild-caught and farm-raised seafood rated yellow cannot be considered fully environmentally sustainable at this time. They align with most of our guiding principles, but there is either one conservation concern needing substantial improvement, or there is significant uncertainty associated with the impacts of the fishery or aquaculture operations.
Red	Final Score ≤2.2, or two or more Red Criteria, or one or more Critical scores.	Wild-caught and farm-raised seafood rated Red are caught or farmed in ways that have a high risk of causing significant harm to the environment. They do not align with our guiding principles and are considered environmentally unsustainable due to either a critical conservation concern, or multiple areas where improvement is needed.

Disclaimer: All Seafood Watch fishery assessments are reviewed for accuracy by external experts in ecology, fisheries science, and aquaculture. Scientific review does not constitute an endorsement of the Seafood Watch program or its ratings on the part of the reviewing scientists. Seafood Watch is solely responsible for the conclusions reached in this assessment.

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Guiding Principles

Monterey Bay Aquarium defines sustainable seafood as seafood from sources, whether fished or farmed, that can maintain or increase production without jeopardizing the structure and function of affected ecosystems, minimize harmful environmental impacts, assure good and fair working conditions, and support livelihoods and economic benefits throughout the entire supply chain.

As one aspect of this vision, Seafood Watch has developed trusted, rigorous standards for assessing the environmental impacts of fishing and aquaculture practices worldwide. Environmentally sustainable wild capture fisheries:

1. **Follow the principles of ecosystem-based fisheries management**

   The fishery is managed to ensure the integrity of the entire ecosystem, rather than solely focusing on maintenance of single species stock productivity. To the extent allowed by the current state of the science, ecological interactions affected by the fishery are understood and protected, and the structure and function of the ecosystem is maintained.

2. **Ensure all affected stocks[1] are healthy and abundant**

   Abundance, size, sex, age and genetic structure of the main species affected by the fishery (not limited to target species) is maintained at levels that do not impair recruitment or long-term productivity of the stocks or fulfillment of their role in the ecosystem and food web.

   Abundance of the main species affected by the fishery should be at, above, or fluctuating around levels that allow for the long-term production of maximum sustainable yield. Higher abundances are necessary in the case of forage species, in order to allow the species to fulfill its ecological role.

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[1]"Affected" stocks include all stocks affected by the fishery, no matter whether target or bycatch, or whether they are ultimately retained or discarded.

3. **Fish all affected stocks at sustainable levels**

   Fishing mortality for the main species affected by the fishery should be appropriate given current abundance and inherent resilience to fishing while accounting for scientific uncertainty, management uncertainty, and non-fishery impacts such as habitat degradation.

   The cumulative fishing mortality experienced by affected species must be at or below the level that produces maximum sustainable yield for single-species fisheries on typical species that are at target levels.

   Fishing mortality may need to be lower than the level that produces maximum sustainable yield in certain cases such as forage species, multispecies fisheries, highly vulnerable species, or fisheries with high uncertainty.

   For species that are depleted below target levels, fishing mortality must be at or below a level that allows the species to recover to its target abundance.

4. **Minimize bycatch**

   Seafood Watch defines bycatch as all fisheries-related mortality or injury other than the retained catch. Examples include discards, endangered or threatened species catch, pre-catch mortality and ghost fishing. All discards, including those released alive, are considered bycatch unless there is valid scientific evidence of high post-release survival and there is no documented evidence of negative impacts at the population level.

   The fishery optimizes the utilization of marine and freshwater resources by minimizing post-harvest loss and by efficiently using marine and freshwater resources as bait.

5. **Have no more than a negligible impact on any threatened, endangered or protected species**

   The fishery avoids catch of any threatened, endangered or protected (ETP) species. If any ETP species are inadvertently caught, the fishery ensures and can demonstrate that it has no more than a negligible impact on these populations.

6. **Are managed to sustain the long-term productivity of all affected species**

   Management should be appropriate for the inherent resilience of affected marine

and freshwater life and should incorporate data sufficient to assess the affected species and manage fishing mortality to ensure little risk of depletion. Measures should be implemented and enforced to ensure that fishery mortality does not threaten the long term productivity or ecological role of any species in the future.

The management strategy has a high chance of preventing declines in stock productivity by taking into account the level of uncertainty, other impacts on the stock, and the potential for increased pressure in the future.

The management strategy effectively prevents negative population impacts on bycatch species, particularly species of concern.

7. **Avoid negative impacts on the structure, function or associated biota of aquatic habitats where fishing occurs**

   The fishery does not adversely affect the physical structure of the seafloor or associated biological communities.

   If high-impact gears (e.g. trawls, dredges) are used, vulnerable seafloor habitats (e.g. corals, seamounts) are not fished, and potential damage to the seafloor is mitigated through substantial spatial protection, gear modifications and/or other highly effective methods.

8. **Maintain the trophic role of all aquatic life**

   All stocks are maintained at levels that allow them to fulfill their ecological role and to maintain a functioning ecosystem and food web, as informed by the best available science.

9. **Do not result in harmful ecological changes such as reduction of dependent predator populations, trophic cascades, or phase shifts**

   Fishing activities must not result in harmful changes such as depletion of dependent predators, trophic cascades, or phase shifts.

   This may require fishing certain species (e.g., forage species) well below maximum sustainable yield and maintaining populations of these species well above the biomass that produces maximum sustainable yield.

10. **Ensure that any enhancement activities and fishing activities on enhanced stocks do not negatively affect the diversity, abundance, productivity, or genetic integrity of wild stocks**

Any enhancement activities are conducted at levels that do not negatively affect wild stocks by reducing diversity, abundance or genetic integrity.

Management of fisheries targeting enhanced stocks ensures that there are no negative impacts on the wild stocks, in line with the guiding principles described above, as a result of the fisheries.

Enhancement activities do not negatively affect the ecosystem through density dependent competition or any other means, as informed by the best available science.

Summary

Atlantic striped bass is an anadromous game and commercial fish species found in coastal systems and estuaries from the Gulf of St. Lawrence to Florida. This report covers the U.S. Atlantic striped bass fishery on the coastal migratory stock found on the U.S. East Coast that is harvested primarily with hook and line, gillnet, and pound net gears.

Criterion 1
Atlantic striped bass is managed by the Atlantic States Marine Fisheries Commission (ASMFC). The last benchmark stock assessment was peer-reviewed and approved for management use in 2018, and the last stock assessment update was completed in 2024. Based on the results of the 2024 update, the Atlantic coastal stock is overfished, but it is not experiencing overfishing. The stock was estimated below the threshold spawning stock biomass (SSB) and target levels. Fishing mortality was estimated to be between its target and threshold levels.

Criterion 2
Three gear types are typically used to target striped bass: hook and line, gillnet, and pound net. These gear types are used in two primary areas: in the Chesapeake Bay and in the Northwest Atlantic Ocean, which receive separate quotas. Hook and line gear has minimal bycatch except for sub-legal striped bass (i.e., undersized, or outside the slot size limit), which experiences low mortality as a result, and some bluefish. Gillnet fisheries catching Atlantic striped bass in the Bay also have known interactions with Atlantic menhaden, gizzard shad, and, seasonally, blue catfish. Of these, gizzard shad limits the C2 score due to its unassessed status. Ocean gillnets also encounter bluefish. Pound net gear in the Bay also encounters Atlantic menhaden, blue catfish, bluefish, common carp, gizzard shad, and white perch. Gizzard shad and common carp have unassessed stock statuses, limiting the C2 score. Pound nets in ocean fisheries also encounter Atlantic menhaden, bluefish, and scup. Bluefish limits the score for these fisheries because its abundance is between management reference points.

Criterion 3
ASMFC manages the coastwide migratory stock in state waters from Maine to North Carolina. This body produces regular stock assessment reports (benchmarks performed every 5 years) complete with reference points, projections, and measures of

uncertainty. These assessments are regularly updated and peer-reviewed. The Management Board follows scientific advice, and member states must monitor and enforce commercial quotas, recreational bag limits and size limits, closed seasons, and other measures. Enforcement of and compliance by harvesters is moderate due to some illegal poaching issues. The ASMFC fishery management and conservation process includes ample opportunity for stakeholder input.

Criterion 4

The estuarine and coastal areas where the fishery takes place mostly comprise sand, silt, and clay, with little long-term damage occurring as a result of the gear used in this fishery. But gillnet and pound net gear types do disturb the bottom to some extent, so they have moderate habitat impact. Striped bass is an important predatory fish in these ecosystems. Ecosystem-based management approaches have been discussed as a need for the fishery but are not currently implemented. Striped bass' role as a top-down predator on species of concern has not been examined on a population level.

Introduction

Scope of the analysis and ensuing rating

The Atlantic striped bass (*Morone saxatilis*) is an anadromous predatory fish that ranges from Florida to the Gulf of St. Lawrence. This report covers the U.S. commercial fishery on the Atlantic coastal migratory stock from Maine to North Carolina harvested with hook and line, pound net, and gillnet. Haul seines and trawl gear were not included because, combined, they make up less than 5% of the stock's commercial landings. Fisheries in this report were separated into Chesapeake Bay and ocean fisheries, because catch composition and catch quota differ between these two fishing areas.

Species Overview

Atlantic striped bass is a large-bodied, moderately long-lived predatory fish that ranges from the Gulf of St. Lawrence to Florida along the North American Atlantic coast. It is an anadromous species, spending most of its life in estuaries or coastal ocean waters, but moving into freshwater systems in the spring for spawning.

Atlantic striped bass is an important game and commercial fish (ASMFC 2015a) (ASMFC 2016e). Within the U.S., three large systems produce the bulk of the striped bass caught in the fishery: the Chesapeake Bay, Delaware Bay, and the Hudson River. Although other river systems contribute to a lesser extent, these areas are the principle production areas. Stocks from the Chesapeake Bay, Delaware Bay, and the Hudson River, along with the resident and migratory fish from smaller systems between Maine and North Carolina, are assessed and managed as one stock, which is termed the coastal migratory stock. The Albemarle Sound and Roanoke River stock of Atlantic striped bass is managed separately.

Atlantic striped bass does occur south of North Carolina, but fish south of the Albemarle Sound are not considered part of the coastal migratory stock. Total coastwide harvest is predominantly from the recreational sector. Most commercial landings come from the Chesapeake Bay and tributaries.

Striped bass is managed through the Atlantic States Marine Fisheries Commission (ASMFC), a collaborative effort by the states along the U.S. Atlantic Coast. The Commission has representation from all states, the Potomac River Fisheries Commission, and Washington D.C., and it makes decisions on fishery-related issues affecting all member jurisdictions (ASMFC 2016a). In 1981, the ASMFC implemented

the first Fishery Management Plan (FMP) for striped bass. Initially, this FMP only made recommendations, because the decisions made by the ASMFC were not binding. Congress passed the Atlantic Striped Bass Conservation Act (PL 98-613) in 1984, which required states to follow the ASMFC management plan, thereby making the ASMFC decision process binding across all member states.

Production Statistics

The Atlantic striped bass fishery is principally a recreational fishery, with only a small commercial component. In 2021, 5.1 million striped bass were removed by the recreational and commercial fisheries, including discards (ASMFC 2022e). Recreational removals account for 86% of total removals, stemming from both harvest and release mortality (ASMFC 2022a). In 2022, the recreational sector accounted for 90% of total removals (ASMFC 2023g). From 2018 to 2021, commercial harvest made up only 11% of the total striped bass removals, and Chesapeake Bay commercial landings made up 57% of the overall commercial harvest (ASMFC 2022a)(ASMFC 2022e). Commercial landings and price by year and state are given in Figure 1. Overall landings decreased from 2018-2021 compared to 2017 levels, as deemed necessary by management.

Year	Landings (MT)					Value (USD)				
State	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Connecticut	1	1	2	1	4	4,331	8,192	16,258	5,724	42,285
Delaware			60	63				470,237	477,684	
Maryland	858	798	793	721	731	7,263,752	6,021,992	6,014,913	5,306,331	5,741,551
Massachusetts	373	342	266	176	332	3,929,651	3,849,610	3,116,166	1,699,686	3,423,153
New York	313	108	70	88	85	2,475,408	717,511	527,430	648,481	720,928
North Carolina	45	62	62	56	13	289,043	439,367	372,949	337,493	72,567
Rhode Island	80	80	65	53	59	759,653	782,131	653,225	355,029	539,824
Virginia	491	579	630	419	510	5,911,680	5,993,973	4,850,941	3,132,284	3,791,481
Total	**2,161**	**1,970**	**1,948**	**1,577**	**1,734**	**$20,633,518**	**$17,812,776**	**$16,022,119**	**$11,962,712**	**$14,331,789**

Figure 1: Commercial landings of striped bass from 2017 to 2021. Landings are in metric tons (mt), while value is in U.S. dollars (USD). Data from NMFS Commercial Landings Database.

Importance to the US/North American market.

Striped bass, a popular game and commercial fish, is native to North America. The U.S. does not export striped bass, and there is uncertainty around imports because of the broad-level names used for import data, which categorize bass as either “sea bass” or “bass, fresh,” All landings are used in the U.S. market. There is an aquaculture industry for striped bass that typically produces hybrid bass. Hybrid striped bass was the fourth-largest U.S. aquaculture industry in the late 2010s—producing an average of

3,000 to 4,000 mt annually—but has not experienced growth in recent years (NMFS 2015)(Seafood Watch 2020)(NMFS 2022).

Common and market names.

The species is most commonly referred to as striped bass, but also can be sold as bass, greenhead, linesides, rockfish, rock, and striper. When used for sushi, it is referred to as suzuki.

Primary product forms

Fresh or frozen, either whole or fillets.

Final Ratings

Ratings Details	C 1 Target Species	C 2 Other Species	C 3 Management	C 4 Habitat	Rating
Striped bass United States | Virginia | Chesapeake Bay | Gillnets and entangling nets	1.732	2.644	3.000	3.000	Yellow (2.534)
Striped bass United States | Maryland | Chesapeake Bay | Gillnets and entangling nets	1.732	2.644	3.000	3.000	Yellow (2.534)
Striped bass United States | Northwest Atlantic Ocean | Gillnets and entangling nets | Flag Country: United States | FAO Major Area: Atlantic, Northwest | Permit/License:	1.732	3.413	3.000	3.000	Yellow (2.701)
Striped bass United States | Chesapeake Bay | Handlines and hand-operated pole-and-lines | Flag Country: United States | FAO Major Area: America, North - Inland Waters | Permit/License:	1.732	3.413	3.000	3.873	Yellow (2.879)
Striped bass United States | Northwest Atlantic Ocean | Handlines and hand-operated pole-and-lines | Flag Country: United States | FAO Major Area: Atlantic, Northwest | Permit/License:	1.732	3.413	3.000	3.873	Yellow (2.879)
Striped bass United States | Chesapeake Bay | Stationary uncovered pound nets	1.732	2.644	3.000	3.000	Yellow (2.534)
Striped bass United States | Northwest Atlantic Ocean | Stationary uncovered pound nets | Fyke nets	1.732	3.413	3.000	3.000	Yellow (2.701)

In 2021, 634,552 fish (1,734 metric tonnes) were landed, alongside 85,676 fish

discarded dead, in commercial Atlantic striped bass fisheries from Maine to North Carolina, though not all east coast states have commercial fisheries.

Summary

The Atlantic striped bass (*Morone saxatilis*) is an anadromous game and commercial fish species found in coastal systems and estuaries from the Gulf of St. Lawrence to Florida. This report covers the Atlantic striped bass fisheries on the U.S. East Coast from Maine to North Carolina using hook and line, gillnet, and pound net gears. Gears are separated regionally into Chesapeake Bay and Northwest Atlantic Ocean fisheries.

The hook and line fisheries receive a Yellow rating because of recent improvements in the striped bass stock's fishing mortality estimate, the overfished status of the stock, minimal interactions with other species, adequate management, and low habitat impact. The gillnet and pound net fisheries also receive Yellow ratings based on the latest striped bass stock status update, bycatch of several species (none of which are overfished or threatened), adequate management with some room for improvement in bycatch data, and potential habitat impacts.

Assessments

This section assesses the sustainability of the fishery(s) relative to the Seafood Watch Standard for Fisheries, available at www.seafoodwatch.org. The specific standard used is referenced on the title page of all Seafood Watch assessments.

Criterion 1: Impacts on the Species Under Assessment

This criterion evaluates the impact of fishing mortality on the species, given its current abundance. When abundance is unknown, abundance is scored based on the species' inherent vulnerability, which is calculated using a Productivity-Susceptibility Analysis. The final Criterion 1 score is determined by taking the geometric mean of the abundance and fishing mortality scores. The Criterion 1 rating is determined as follows:

- Score >3.2 = **Green** or Low Concern
- Score >2.2 and ≤3.2 = **Yellow** or Moderate Concern
- Score ≤2.2 = **Red** or High Concern

Rating is Critical if Factor 1.3 (Fishing Mortality) is Critical.

Guiding principles

- *Ensure all affected stocks are healthy and abundant.*
- *Fish all affected stocks at sustainable level*

Criterion 1 Summary

Striped bass			
Region / Method	**Abundance**	**Fishing Mortality**	**Score**
United States | Virginia | Chesapeake Bay | Gillnets and entangling nets	1.000 High Concern	3.000 Moderate Concern	**Red (1.732)**
United States | Maryland | Chesapeake Bay | Gillnets and entangling nets	1.000 High Concern	3.000 Moderate Concern	**Red (1.732)**
United States | Northwest Atlantic Ocean | Gillnets and entangling nets | Flag Country: United States | FAO Major Area: Atlantic, Northwest | Permit/License:	1.000 High Concern	3.000 Moderate Concern	**Red (1.732)**
United States | Chesapeake Bay | Handlines and hand-operated pole-and-lines | Flag Country: United States | FAO Major Area: America, North - Inland Waters | Permit/License:	1.000 High Concern	3.000 Moderate Concern	**Red (1.732)**
United States | Northwest Atlantic Ocean | Handlines and hand-operated pole-and-lines | Flag Country: United States | FAO Major Area: Atlantic, Northwest | Permit/License:	1.000 High Concern	3.000 Moderate Concern	**Red (1.732)**
United States | Chesapeake Bay | Stationary uncovered pound nets	1.000 High Concern	3.000 Moderate Concern	**Red (1.732)**
United States | Northwest Atlantic Ocean | Stationary uncovered pound nets | Fyke nets	1.000 High Concern	3.000 Moderate Concern	**Red (1.732)**

Criterion 1 Assessment

Scoring Guidelines

Factor 1.1 - Abundance

Goal: Stock abundance and size structure of native species is maintained at a level that does not impair recruitment or productivity.

- *5 (Very Low Concern) — Strong evidence exists that the population is above an appropriate target abundance level (given the species' ecological role), or near virgin biomass.*
- *3.67 (Low Concern) — Population may be below target abundance level, but*

is at least 75% of the target level, OR data-limited assessments suggest population is healthy and species is not highly vulnerable.

- *2.33 (Moderate Concern) — Population is not overfished but may be below 75% of the target abundance level, OR abundance is unknown and the species is not highly vulnerable.*
- *1 (High Concern) — Population is considered overfished/depleted, a species of concern, threatened or endangered, OR abundance is unknown and species is highly vulnerable.*

Factor 1.2 - Fishing Mortality

Goal: Fishing mortality is appropriate for current state of the stock.

- *5 (Low Concern) — Probable (>50%) that fishing mortality from all sources is at or below a sustainable level, given the species ecological role, OR fishery does not target species and fishing mortality is low enough to not adversely affect its population.*
- *3 (Moderate Concern) — Fishing mortality is fluctuating around sustainable levels, OR fishing mortality relative to a sustainable level is uncertain.*
- *1 (High Concern) — Probable that fishing mortality from all source is above a sustainable level.*

Striped bass *(Morone saxatilis)*

1.1 Abundance

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets

Northwest Atlantic | United States | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Handlines and hand-operated pole-and-lines

Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

High Concern

As estimated in the most recent (2024) stock assessment update, striped bass female spawning stock biomass (SSB) was approximately 191 million pounds (86,636mt) in 2023, which is below the updated SSB threshold of 197 million pounds and the target of 247 million pounds, indicating that the stock remains in an overfished state (ASMFC 2024b). As a result of the overfished stock status, this factor is rated a high concern.

Supplementary Information

The striped bass stock was first declared overfished in the 2018 stock assessment, with managers noting that the stock had been overfished since 2013 (ASMFC 2022a). Reference points are based on the 1995 estimate of female SSB when the stock was declared recovered. The single-stock statistical catch-at-age model from the 2018 stock assessment was updated in 2022 to include data from 2018 to 2021 and to account for recent regulatory changes to the FMP (ASMFC 2022a). This was further updated in 2024 (ASMFC 2024b).

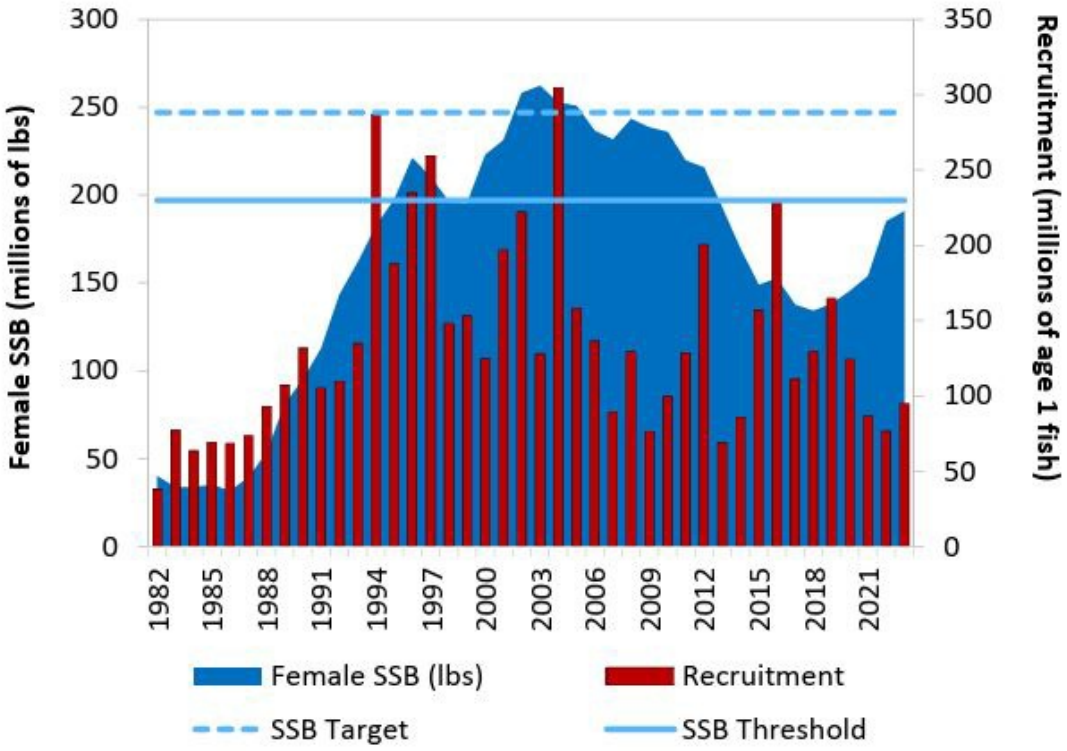

Figure 2: Atlantic striped bass SSB and recruitment, based on the 2024 stock assessment update {ASMFC 202b}. In 2023 (terminal year), SSB remained below both the threshold and target reference levels.

1.2 Fishing Mortality

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets

Northwest Atlantic | United States | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Handlines and hand-operated pole-and-lines

Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Moderate Concern

Preliminary data from the 2022 fishing season previously suggested that total

fishing removals increased by 33% from 2021 to 2022, albeit mostly due to an increase in recreational harvest (Atlantic Striped Bass Technical Committee and Stock Assessment Subcommittee 2023). Using this preliminary data, F may have been between target and threshold levels in 2022. The 2024 stock assessment update then confirmed this, with a finding that fishing mortality in 2023, at 0.18, was below the threshold level of 0.21 but above the target of 0.17 (ASMFC 2024b). Because F is between fishing mortality reference points, this factor is scored a moderate concern.

Supplementary Information

Addendum VI to Amendment 6 of the striped bass FMP implemented a goal of an 18% reduction in removals from 2017 levels. In 2021, coastwide removals were reduced from 2017 by 27%, exceeding the goal (ASMFC 2022e). In the Chesapeake Bay, where most striped bass fishing occurs, this reduction was 35% (ASMFC 2022e). But 2022 data show that a 88% increase in recreational harvest from 2021 to 2022 has significantly increased total removals of striped bass (up by 32% from 2021 to 2022) (Atlantic Striped Bass Technical Committee and Stock Assessment Subcommittee 2023). The FMP also has a stock rebuilding deadline of 2029, implemented after the status of the stock was determined to be overfished. Management defines the stock as rebuilt once SSB has surpassed both target and threshold levels. If fishing mortality were maintained at the 2021 level of 0.14, there would be a 97.5% chance that this rebuilding deadline would be met (ASMFC 2022a). However, preliminary 2022 data suggested that F in 2022, projected forward for SSB estimates, decreases this rebuilding probability to 11% or 15%, depending on which projection scenario is used (ASMFC 2023h). Most recently, the 2024 stock assessment update found a 50% probability that SSB would be at or above the target level by 2029, accounting for preliminary recreational catch levels in the first half of 2024 (ASMFC 2024b). However, this probability is reduced to <50% if fishing mortality increases in 2025, which it is expected to do, thus catch decreases may be needed in the future (ibid).

Criterion 2: Impacts on Other Species

All main retained and bycatch species in the fishery are evaluated under Criterion 2. Seafood Watch defines bycatch as all fisheries-related mortality or injury to species other than the retained catch. Examples include discards, endangered or threatened species catch, and ghost fishing. Species are evaluated using the same guidelines as in Criterion 1. When information on other species caught in the fishery is unavailable, the fishery's potential impacts on other species is scored according to the Unknown Bycatch Matrices, which are based on a synthesis of peer-reviewed literature and expert opinion on the bycatch impacts of each gear type. The fishery is also scored for the amount of non-retained catch (discards) and bait use relative to the retained catch. To determine the final Criterion 2 score, the score for the lowest scoring retained/bycatch species is multiplied by the discard/bait score. The Criterion 2 rating is determined as follows:

- Score >3.2 = **Green** or Low Concern
- Score >2.2 and ≤3.2 = **Yellow** or Moderate Concern
- Score ≤2.2 = **Red** or High Concern

Rating is Critical if Factor 2.3 (Fishing Mortality) is Crtitical

Guiding principles

- *Ensure all affected stocks are healthy and abundant.*
- *Fish all affected stocks at sustainable level.*
- *Minimize bycatch.*

Criterion 2 Summary

Criterion 2 score(s) overview

This table(s) provides an overview of the Criterion 2 subscore, discards+bait modifier, and final Criterion 2 score for each fishery. A separate table is provided for each species/stock that we want an overall rating for.

Striped bass			
Region / Method	**Sub Score**	**Discard Rate/Landings**	**Score**
United States | Virginia | Chesapeake Bay | Gillnets and entangling nets	2.644	1.000: < 100%	Yellow (2.644)
United States | Maryland | Chesapeake Bay | Gillnets and entangling nets	2.644	1.000: < 100%	Yellow (2.644)
United States | Northwest Atlantic Ocean | Gillnets and entangling nets | Flag Country: United States | FAO Major Area: Atlantic, Northwest | Permit/License:	3.413	1.000: < 100%	Green (3.413)
United States | Chesapeake Bay | Handlines and hand-operated pole-and-lines | Flag Country: United States | FAO Major Area: America, North - Inland Waters | Permit/License:	3.413	1.000: < 100%	Green (3.413)
United States | Northwest Atlantic Ocean | Handlines and hand-operated pole-and-lines | Flag Country: United States | FAO Major Area: Atlantic, Northwest | Permit/License:	3.413	1.000: < 100%	Green (3.413)
United States | Chesapeake Bay | Stationary uncovered pound nets	2.644	1.000: < 100%	Yellow (2.644)
United States | Northwest Atlantic Ocean | Stationary uncovered pound nets | Fyke nets	3.413	1.000: < 100%	Green (3.413)

Criterion 2 main assessed species/stocks table(s)

This table(s) provides a list of all species/stocks included in this assessment for each ‘fishery’ (as defined by a region/method combination). The text following this table(s) provides an explanation of the reasons the listed species were selected for inclusion in the assessment.

Chesapeake Bay | America, North - Inland Waters | United States | Handlines and hand-operated pole-and-lines			
Sub Score: 3.413	**Discard Rate: 1.000**		**Score: 3.413**
Species	**Abundance**	**Fishing Mortality**	**Score**
Striped bass	1.000: High Concern	3.000: Moderate Concern	Red (1.732)
Bluefish	2.330: Moderate Concern	5.000: Low Concern	Green (3.413)

Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets			
Sub Score: 2.644	**Discard Rate: 1.000**		**Score: 2.644**
Species	**Abundance**	**Fishing Mortality**	**Score**
Striped bass	1.000: High Concern	3.000: Moderate Concern	Red (1.732)
Gizzard shad	2.330: Moderate Concern	3.000: Moderate Concern	Yellow (2.644)
Atlantic menhaden	5.000: Very Low Concern	5.000: Low Concern	Green (5.000)

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets			
Sub Score: 2.644	**Discard Rate: 1.000**		**Score: 2.644**
Species	**Abundance**	**Fishing Mortality**	**Score**
Striped bass	1.000: High Concern	3.000: Moderate Concern	Red (1.732)
Common carp	2.330: Moderate Concern	3.000: Moderate Concern	Yellow (2.644)
Gizzard shad	2.330: Moderate Concern	3.000: Moderate Concern	Yellow (2.644)
Bluefish	2.330: Moderate Concern	5.000: Low Concern	Green (3.413)
White perch	3.670: Low Concern	5.000: Low Concern	Green (4.284)
Atlantic menhaden	5.000: Very Low Concern	5.000: Low Concern	Green (5.000)
Blue catfish	5.000: Very Low Concern	5.000: Low Concern	Green (5.000)

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets			
Sub Score: 2.644	**Discard Rate: 1.000**		**Score: 2.644**
Species	**Abundance**	**Fishing Mortality**	**Score**
Striped bass	1.000: High Concern	3.000: Moderate Concern	Red (1.732)
Gizzard shad	2.330: Moderate Concern	3.000: Moderate Concern	Yellow (2.644)
Atlantic menhaden	5.000: Very Low Concern	5.000: Low Concern	Green (5.000)
Blue catfish	5.000: Very Low Concern	5.000: Low Concern	Green (5.000)

Northwest Atlantic | United States | Gillnets and entangling nets			
Sub Score: 3.413	**Discard Rate: 1.000**		**Score: 3.413**
Species	**Abundance**	**Fishing Mortality**	**Score**
Striped bass	1.000: High Concern	3.000: Moderate Concern	Red (1.732)
Bluefish	2.330: Moderate Concern	5.000: Low Concern	Green (3.413)

Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines			
Sub Score: 3.413	**Discard Rate: 1.000**		**Score: 3.413**
Species	**Abundance**	**Fishing Mortality**	**Score**
Striped bass	1.000: High Concern	3.000: Moderate Concern	Red (1.732)
Bluefish	2.330: Moderate Concern	5.000: Low Concern	Green (3.413)

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets			
Sub Score: 3.413	**Discard Rate: 1.000**		**Score: 3.413**
Species	**Abundance**	**Fishing Mortality**	**Score**
Striped bass	1.000: High Concern	3.000: Moderate Concern	Red (1.732)
Bluefish	2.330: Moderate Concern	5.000: Low Concern	Green (3.413)
Atlantic menhaden	5.000: Very Low Concern	5.000: Low Concern	Green (5.000)
Scup	5.000: Very Low Concern	5.000: Low Concern	Green (5.000)

For Criterion 2, each gear type that targets striped bass was assessed separately, and gears were separated regionally (Chesapeake Bay and Northwest Atlantic Ocean). For presentation purposes, each species or stock is presented with the associated gear types explained in the “Key Information” section for that species or stock. Seven species or stocks were evaluated alongside striped bass: bluefish, common carp, gizzard shad, Atlantic menhaden, scup, blue catfish, and white perch.

Common carp, gizzard shad, bluefish, and blue catfish were included based on data and statements from managers in Chesapeake Bay fisheries in Virginia and Maryland that indicated these species likely made up at least 5% of the catch in certain gear types. Blue catfish, an invasive species in striped bass harvest areas, is often caught alongside striped bass in gillnets and pound nets. White perch, an anadromous species outside of ASMFC management, was included because it overlaps in time and space with both the gillnet and pound net fisheries for striped bass. Gillnet fisheries in the Chesapeake Bay were separated between states because seasonality affects their landings composition. The Maryland gillnet fishery only operates in the winter, limiting which species it captures, whereas the Virginia gillnet fishery (which uses both drift and fixed gillnets) operates more throughout the seasons, allowing it to encounter many species that are only in the Bay seasonally.

Northwest Atlantic Ocean fisheries bycatch was determined based on vessel landings report data from New York fisheries. These data showed that bluefish made up over 18% of handline/hook and line catch and over 10% of gillnet catch. Both fixed and drift gillnets are used in the Northwest Atlantic for striped bass, so these two gear types were combined under a single “gillnets and entangling nets” category. Finally, the New York data showed that scup, menhaden, and bluefish made up more than 5% of the catch in fixed net (pound net) striped bass ocean fisheries.

Two other species groups, dolphins and sea turtles, were considered but ultimately excluded from consideration. The directed striped bass fishery mostly operates in the upper, more freshwater regions of estuaries in the late winter to early spring timeframe. Dolphins and sea turtles are generally absent from those regions, especially during the late winter to spring ((NMFS 2013); Figure 7).

Hook and line/handline gear had few interactions with species other than striped bass because it is quite selective for the species, with minimal bycatch of other species, though occasionally bluefish is encountered. Thus, bluefish was included as the only bycatch species for this gear type. The score for winter gillnets in the Chesapeake Bay is limited by gizzard shad, an unmanaged species with unknown abundance and fishing mortality. Gillnets operating in other seasons in the Chesapeake Bay are also limited by gizzard shad. Finally, pound nets in the

Chesapeake Bay are also limited by gizzard shad, as well as common carp, another unmanaged species. Gillnets in the ocean fishery are not limited by C2 species scores because, similar to handlines, bluefish is the only bycatch species. Pound nets in the Northwest Atlantic have bycatch species with C2 scores that are also better than the C1 score for striped bass.

Criterion 2 Assessment

Scoring Guidelines

Factor 2.1 - Abundance

(same as Factor 1.1 above)

Factor 2.2 - Fishing Mortality

(same as Factor 1.2 above)

Factor 2.3 - Modifying Factor: Discards and Bait Use

Goal: Fishery optimizes the utilization of marine and freshwater resources by minimizing post-harvest loss. For fisheries that use bait, bait is used efficiently.

Scoring Guidelines: The discard rate is the sum of all dead discards (i.e. non-retained catch) plus bait use divided by the total retained catch.

Ratio of bait + discards/landings	Factor 2.3 score
<100%	1
>=100	0.75

Atlantic menhaden *(Brevoortia tyrannus)*

2.1 Abundance

Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Very Low Concern

A stock assessment update was last performed for Atlantic menhaden in 2022. Because menhaden is an important prey for species such as striped bass, it is managed using ecological reference points (ERPs). This includes ERP fecundity target and threshold levels, which are determined by striped bass population and fishing levels (ASMFC 2022f). Fecundity in 2021 was above both the ERP target and threshold. This factor is rated a very low concern, because a stock assessment update <5 years old finds the population to be above both reference points.

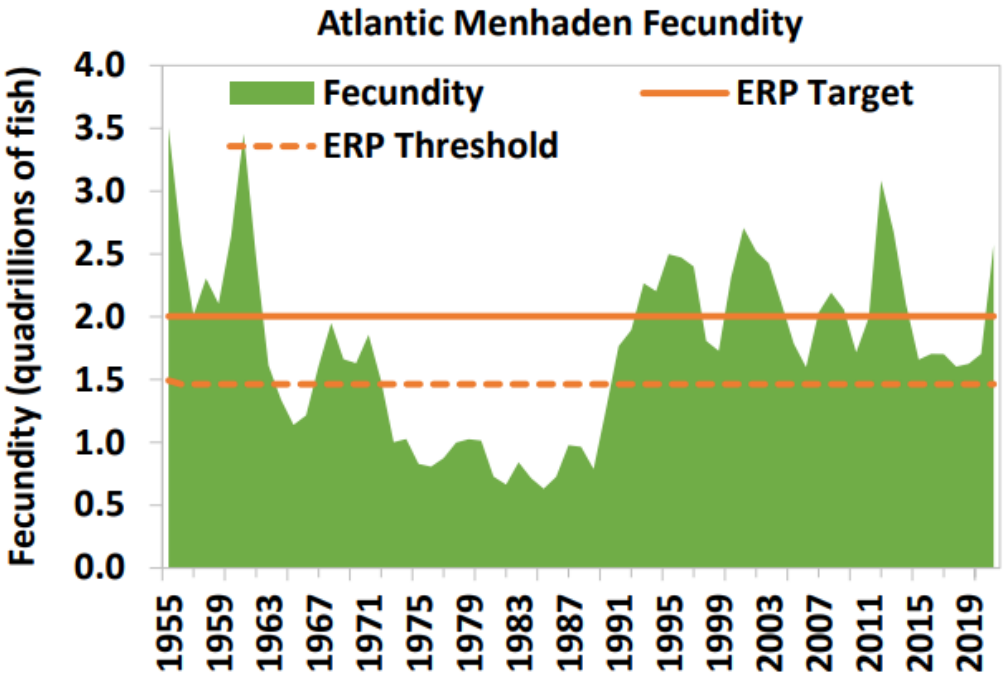

Figure 3: Fecundity of Atlantic menhaden, 1955–2021, versus ERP fecundity target and threshold levels. Source: (ASMFC 2022f).

2.2 Fishing Mortality

Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Low Concern

Atlantic menhaden is managed using ERPs, including fishing mortality target and threshold ERPs that are based on sustaining striped bass populations that prey on menhaden. The 2022 stock assessment update found that 2021 fishing mortality levels were below both the ERP threshold and target levels, and no overfishing was occurring (ASMFC 2022f). This factor is rated a low concern, because a stock assessment update <10 years old found that fishing mortality was below both reference points.

Supplementary Information

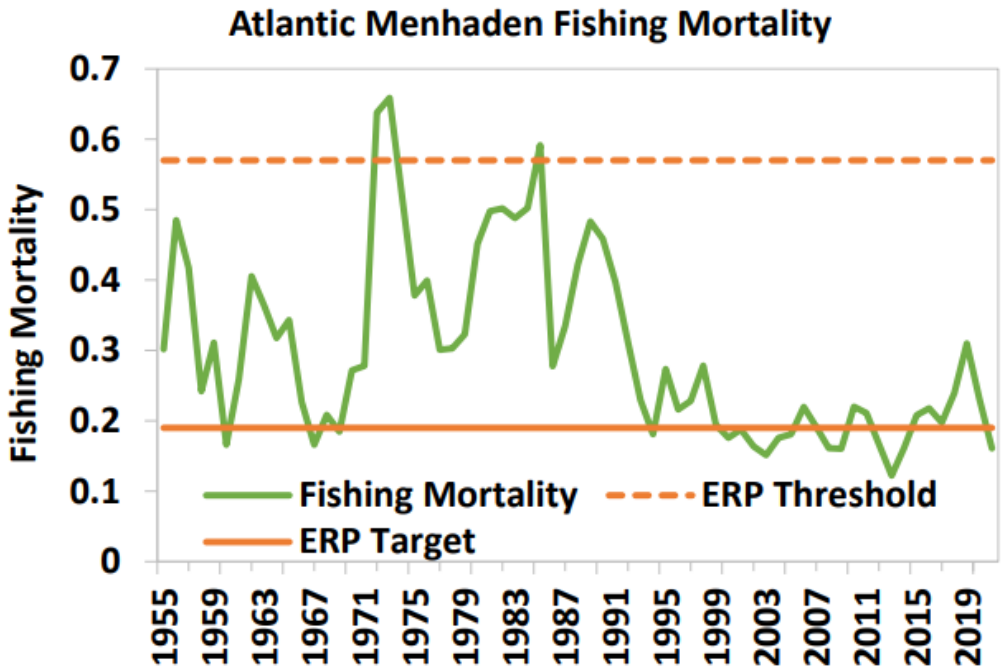

Figure 4: Atlantic menhaden fishing mortality versus ERP fishing mortality target and threshold levels, 1955–2021. Source: (ASMFC 2022f).

Blue catfish *(Ictalurus furcatus)*

2.1 Abundance

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Very Low Concern

Blue catfish is a species native to the Ohio, Mississippi, and Missouri River basins (MDNR 2022). In the 1970s and 1980s, the species was introduced into Virginia and Maryland rivers for recreational and sport fishing (Schloesser et al. 2011). The population has since expanded in the Chesapeake Bay and other nearby areas. Because blue catfish is an invasive species, this factor is rated a very low concern, regardless of stock size or status.

2.2 Fishing Mortality

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Low Concern

Blue catfish is often caught alongside striped bass in gillnets and pound nets in the Chesapeake Bay. Recent commercial landings of blue catfish in Maryland and Virginia have increased as the commercial fishery has been promoted by managers and conservationists, but total fishing mortality is unknown. Regardless, because blue catfish is a nonnative species in the Chesapeake Bay, this factor is rated a low concern.

Bluefish *(Pomatomus saltatrix)*

2.1 Abundance

Northwest Atlantic | United States | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Handlines and hand-operated pole-and-lines

Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Moderate Concern

In 2023, a management track stock assessment was performed for bluefish by NOAA's Northeast Fisheries Science Center. This assessment found that the stock was not overfished—an improvement from the 2019 operational stock assessment. Biomass was found to be above the threshold reference point but below the target reference point (SSB_{2022}/SSB_{target} = 0.60) (NEFSC 2023). The stock therefore remains in a rebuilding plan, with the goal of reaching its target reference point. This factor is rated a moderate concern, because the stock is classified as not overfished and is above its limit/threshold reference point but less than 75% of its target reference point.

Supplementary Information

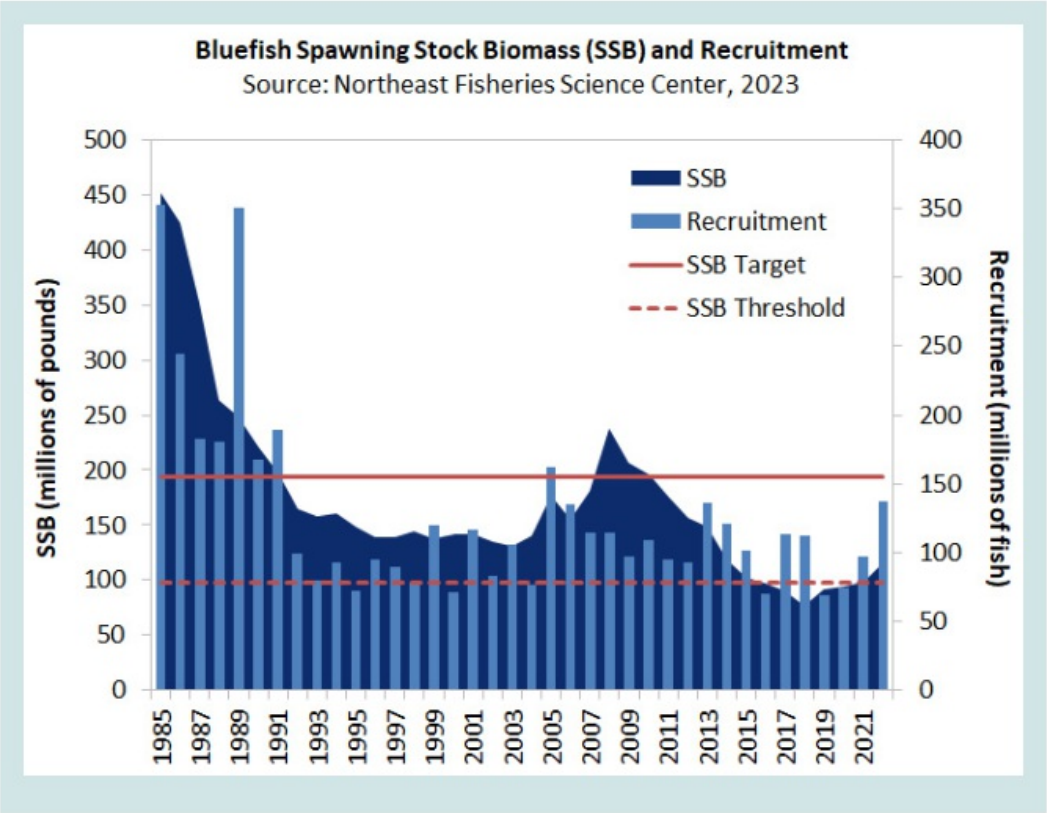

Figure 5: Bluefish SSB versus target and threshold levels, 1985–2022. Source: (NEFSC 2023).

2.2 Fishing Mortality

Northwest Atlantic | United States | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Handlines and hand-operated pole-and-lines

Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Low Concern

The 2023 bluefish assessment utilized a proxy F_{MSY} as an overfishing threshold reference point. The assessment found that 2023 fishing mortality was 64% of this

threshold point ($F_{2023}/F_{MSY\ proxy}$ = 0.64) (NEFSC 2023). Therefore, managers concluded that overfishing is not occurring. This factor is scored a low concern, because an assessment <10 years old points to fishing levels being below a sustainable level.

Common carp *(Cyprinus carpio)*

2.1 Abundance

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Moderate Concern

Common carp is a nonnative species in the U.S. but has been in the Chesapeake Bay area since the late 19th century (Chesapeake Bay Program 2023). There are no stock assessments for common carp in the Chesapeake Bay, so a productivity-susceptibility analysis (PSA) was performed. The PSA resulted in a score of 3.10, which translates to a medium vulnerability. Based on the PSA numerical score, this factor receives a score of moderate concern.

Supplementary Information

Table 1

Productivity Attribute	Relevant Information	Score (1 = low, 2 = medium, 3 = high)
Average age at maturity	1–3 (Froese and Pauly 2023b)	1
Von Bertalanffy Growth Coefficient (K)	0.1–0.3 (Froese and Pauly 2023b)	2
Fecundity	36,000–2,000,000 (Froese and Pauly 2023b)	1
Average maximum size	120 cm (Froese and Pauly 2023b)	2
Average size at maturity	34.8 cm (Froese and Pauly 2023b)	1
Reproductive strategy	Broadcast spawner (Froese and Pauly 2023b)	1
Total Productivity Score		**1.33**

Table 2

Susceptibility Attribute	Relevant Information	Score (1 = low, 2 = medium, 3 = high)
Areal overlap	Unknown; default score	3
Vertical overlap	Unknown; default score	3
Seasonal availability	Carp are present year-round in the Bay, and together, fisheries operate nearly year-round	3
Selectivity of fishery	Species is not targeted, but adults are larger than regulatory mesh sizes	2
Post-capture mortality	Unknown; default score	3
Total Susceptibility Score		**2.8**
Total PSA Score		**3.10**

2.2 Fishing Mortality

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Moderate Concern

Fishing mortality of common carp is unknown, so this factor is scored a moderate concern.

Gizzard shad *(Dorosoma cepedianum)*

2.1 Abundance

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Moderate Concern

The gizzard shad population in the Chesapeake Bay has been increasing since the 1980s, but the total stock size is unknown and has not been assessed. Therefore, a productivity-susceptibility analysis (PSA) was used to determine a vulnerability score for this species. Gizzard shad received a score of 1 for productivity and a score of 2.8 for susceptibility, resulting in a total vulnerability score of 2.97, or medium vulnerability. Because of this PSA score, gizzard shad receives a score of moderate concern for abundance.

Supplementary Information

Table 3

Productivity Attribute	Relevant Information	Score (1 = low, 2 = medium, 3 = high)
Average age at maturity	Maturity reached at age 2–3 (USGS 2021)	1
Von Bertalanffy Growth Coefficient (K)	Gizzard shad exhibits a “rapid growth rate” (USGS 2021)	1
Fecundity	>300,000 eggs per year, on average (USGS 2021)	1
Average maximum size	57 cm (Froese and Pauly 2023)	1
Average size at maturity	36.1 cm (Froese and Pauly 2023)	1
Reproductive strategy	Broadcast spawner (Williamson and Nelson 1985)	1
Total Productivity Score		**1**

Table 4

Susceptibility Attribute	Relevant Information	Score (1 = low, 2 = medium, 3 = high)
Areal overlap	Unknown; default score	3
Vertical overlap	Unknown; default score	3
Seasonal availability	MD gillnet fishery only operates in the winter (≈3 months), but other fisheries affecting gizzard shad occur throughout the year	3

Selectivity of fishery	Gizzard shad is not targeted, but adults are larger than regulatory mesh sizes	2
Post-capture mortality	Unknown; default score	3
Total Susceptibility Score		2.8

2.2 Fishing Mortality

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Moderate Concern

Gizzard shad catch is not monitored as thoroughly as the catch of target species in Chesapeake Bay fisheries, so it is largely unknown. This factor is scored a moderate concern because fishing mortality is unknown.

Scup *(Stenotomus chrysops)*

2.1 Abundance

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Very Low Concern

A management track assessment report for scup was completed by NEFSC in 2023. This assessment found that scup was not overfished, with adjusted SSB in 2022 being well over the target reference point [$SSB_{2022}/SSB_{MSY\ proxy}$ = 2.46 (CI = 1.70–3.50)] (NEFSC 2023b). Based on a stock assessment <5 years old indicating that the stock is above sustainable reference points, abundance is scored a very low concern.

Supplementary Information

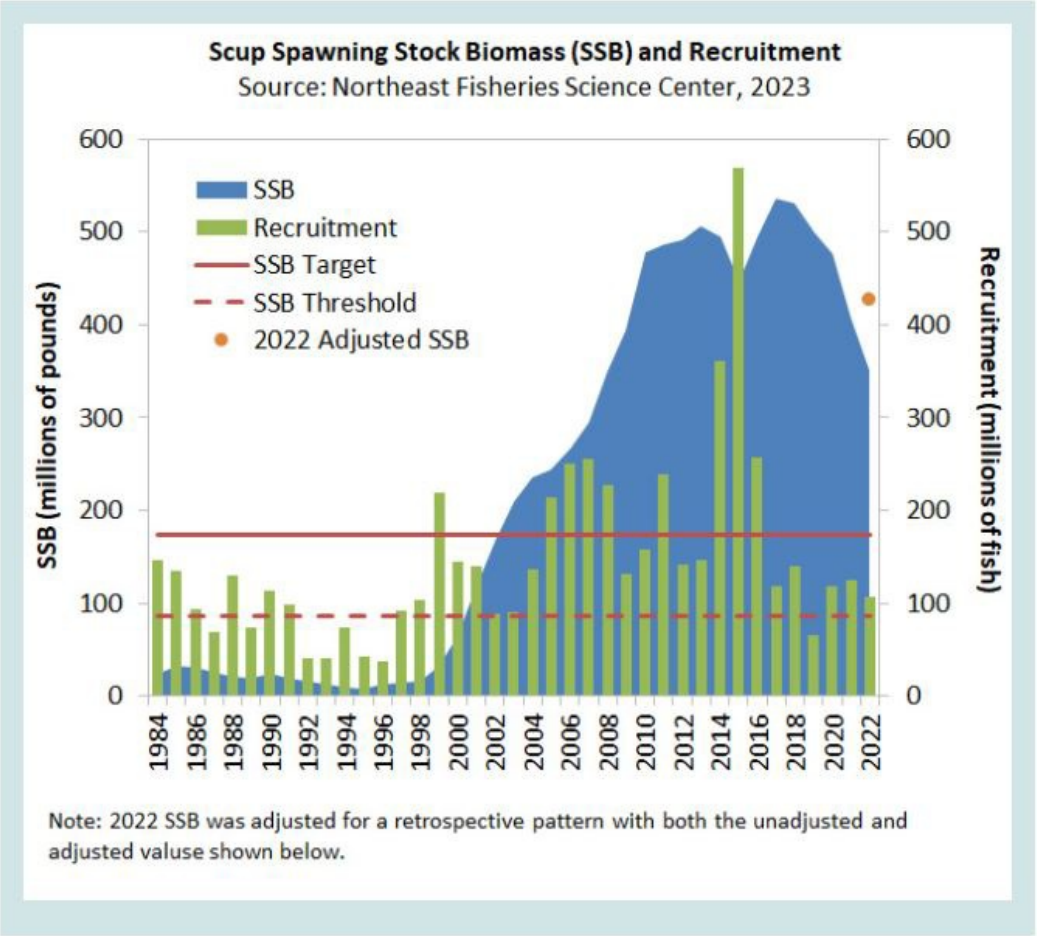

Figure 6: Scup spawning stock biomass and recruitment, 1984–2022. Source: (NEFSC 2023b).

2.2 Fishing Mortality

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Low Concern

The 2023 management track assessment found that fishing mortality was below the overfishing threshold reference point ($F_{2022}/F_{MSY\ proxy}$ = 0.52) (NEFSC 2023b). Managers concluded that the stock is not experiencing overfishing. Based on a stock assessment that is <10 years old indicating that fishing mortality is below a sustainable reference point, this factor is scored a low concern.

White perch *(Morone americana)*

2.1 Abundance

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Low Concern

Although assessment information across the range of the stock is not available, most landings of white perch occur in Maryland (NOAA Fisheries 2021a). An analysis conducted by the Maryland Department of Natural Resources for some Chesapeake Bay regions found the population in the Upper Bay to not be overfished and to have a high population level compared to the previous two decades (Piavis & Webb 2021). Recent abundance indices from surveys in the Chesapeake Bay also show that white perch populations continue to be healthy (Bonzek et al. 2019). Because there is no formal stock assessment but recent analyses indicate stock size and abundance indices are higher than recent averages, and there is no concern that the population is overfished, this factor is rated a low concern.

2.2 Fishing Mortality

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Low Concern

The Maryland assessment used spawning potential reference points established in 2006 to determine the impact of fishing mortality on the stock. It was found that fishing mortality in the Upper Bay was below the limit (1.12) but slightly above the target (0.6) in 2019 (Piavis & Webb 2021). Further modeling showed that there was a 74% chance that fishing mortality was above the target in 2019, with only a 2% chance that overfishing was occurring. Although fishing mortality is likely between reference points, pound nets have a lower mortality rate than other gear types such as gillnets (ASMFC 2020). Based on the lower mortality rate in this gear and white perch being a nontarget species, this fishery is likely not a substantial contributor to white perch fishing mortality, allowing for a low concern score.

2.3 Discard Rate/Landings

Chesapeake Bay | America, North - Inland Waters | United States |Handlines and hand-operated pole-and-lines
Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines

< 100%

For all three gear types, dead discards are less than the total poundage landed. Handlines and hook and line gear are highly selective and have minimal bycatch, mostly encountering occasional bluefish and undersized striped bass. In the recreational striped bass fishery, which mostly comprises handline and hook and line gear, 9% of released striped bass are assumed to die after their release (ASMFC 2022a). This finding suggests that discards of undersized striped bass in the commercial fishery do not exceed 100% of striped bass landings. Bluefish are only occasionally encountered, and commercial dead discards of bluefish across the coast are believed to be minimal (ASMFC 2022d). Across striped bass commercial fisheries, dead discards of striped bass made up 1% and 2% of total removals in 2020 and 2021, respectively (ASMFC 2023a). Because discards are minimal for this gear type, a score of 1 is awarded.

Chesapeake Bay | America, North - Inland Waters | United States |Virginia | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States |Maryland | Gillnets and entangling nets

Northwest Atlantic | United States | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States |Stationary uncovered pound nets

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

< 100%

For all three gear types, dead discards are less than the total poundage landed. According to the latest NOAA national bycatch report (2019, with data through 2015), fisheries with striped bass as a target species had bycatch ratios ranging from 0.075 to 0.3 from 2014 to 2015 (Benaka et al. 2019). These fisheries include Mid-Atlantic large and extra large gillnets and Southeast Atlantic coastal large and extra large gillnets. Across striped bass commercial fisheries, dead discards of striped bass made up 1% and 2% of total removals (commercial and recreational combined, including discards) in 2020 and 2021, respectively (ASMFC 2023a). These ratios suggest that the discards/bait ratios for gillnet fisheries are also small, leading to a score of 1 for this gear type. Pound nets, like gillnets, encounter nontarget species, though to a lesser extent. Because bycatch in pound nets is less of an issue than in gillnets, and because gillnets are believed to have a low discard rate, pound nets also score a 1.

Criterion 3: Management Effectiveness

Five factors are evaluated in Criterion 3: Management Strategy and Implementation, Bycatch Strategy, Scientific Research/Monitoring, Enforcement of Regulations, and Inclusion of Stakeholders. Each is scored as either 'highly effective', 'moderately effective', 'ineffective,' or 'critical'. The final Criterion 3 score is determined as follows:

- *5 (Very Low Concern) — Meets the standards of 'highly effective' for all five factors considered.*
- *4 (Low Concern) — Meets the standards of 'highly effective' for 'management strategy and implementation' and at least 'moderately effective' for all other factors.*
- *3 (Moderate Concern) — Meets the standards for at least 'moderately effective' for all five factors.*
- *2 (High Concern) — At a minimum, meets standards for 'moderately effective' for Management Strategy and Implementation and Bycatch Strategy, but at least one other factor is rated 'ineffective.'*
- *1 (Very High Concern) — Management Strategy and Implementation and/or Bycatch Management are 'ineffective.'*
- *0 (Critical) — Management Strategy and Implementation is 'critical'.*

The Criterion 3 rating is determined as follows:

- Score >3.2 = **Green** or Low Concern
- Score >2.2 and ≤3.2 = **Yellow** or Moderate Concern
- Score ≤2.2 = **Red** or High Concern

Rating is Critical if Management Strategy and Implementation is Critical.

Guiding principle

- The fishery is managed to sustain the long-term productivity of all impacted species.

Five factors are evaluated in Criterion 3: Management Strategy and Implementation, Bycatch Strategy, Scientific Research/Monitoring, Enforcement of Regulations, and Inclusion of Stakeholders. Each is scored as either 'highly effective', 'moderately effective', 'ineffective,' or 'critical'. The final Criterion 3 score is determined as follows:

Criterion 3 Summary

Fishery	Management Strategy And Implementation	Bycatch Strategy	Scientific Research And Monitoring	Enforcement Of Management Regulations	Stakeholder Inclusion	Score
Chesapeake Bay | America, North - Inland Waters | United States | Handlines and hand-operated pole-and-lines	Moderately Effective	Highly effective	Highly effective	Highly effective	Highly effective	Yellow (3.000)
Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets	Moderately Effective	Moderately Effective	Moderately Effective	Highly effective	Highly effective	Yellow (3.000)
Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets	Moderately Effective	Moderately Effective	Moderately Effective	Highly effective	Highly effective	Yellow (3.000)
Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets	Moderately Effective	Moderately Effective	Highly effective	Highly effective	Highly effective	Yellow (3.000)
Northwest Atlantic | United States | Gillnets and entangling nets	Moderately Effective	Moderately Effective	Moderately Effective	Highly effective	Highly effective	Yellow (3.000)
Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines	Moderately Effective	Highly effective	Highly effective	Highly effective	Highly effective	Yellow (3.000)
Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets	Moderately Effective	Highly effective	Moderately Effective	Highly effective	Highly effective	Yellow (3.000)

Criterion 3 Assessment

Scoring Guidelines

Factor 3.1 - Management Strategy and Implementation

Considerations: What type of management measures are in place? Are there appropriate management goals, and is there evidence that management goals are being met? Do manages follow scientific advice? To achieve a highly effective

rating, there must be appropriately defined management goals, precautionary policies that are based on scientific advice, and evidence that the measures in place have been successful at maintaining/rebuilding species.

Factor 3.2 - Bycatch Strategy

Considerations: What type of management strategy/measures are in place to reduce the impacts of the fishery on bycatch species and when applicable, to minimize ghost fishing? How successful are these management measures? To achieve a Highly Effective rating, the fishery must have no or low bycatch, or if there are bycatch or ghost fishing concerns, there must be effective measures in place to minimize impacts.

Factor 3.3 - Scientific Research and Monitoring

Considerations: How much and what types of data are collected to evaluate the fishery's impact on the species? Is there adequate monitoring of bycatch? To achieve a Highly Effective rating, regular, robust population assessments must be conducted for target or retained species, and an adequate bycatch data collection program must be in place to ensure bycatch management goals are met.

Factor 3.4 - Enforcement of Management Regulations

Considerations: Do fishermen comply with regulations, and how is this monitored? To achieve a Highly Effective rating, there must be regular enforcement of regulations and verification of compliance.

Factor 3.5 - Stakeholder Inclusion

Considerations: Are stakeholders involved/included in the decision-making process? Stakeholders are individuals/groups/organizations that have an interest in the fishery or that may be affected by the management of the fishery (e.g., fishermen, conservation groups, etc.). A Highly Effective rating is given if the management process is transparent, if high participation by all stakeholders is encouraged, and if there a mechanism to effectively address user conflicts.

3.1 Management Strategy And Implementation

Chesapeake Bay | America, North - Inland Waters | United States | Handlines and hand-operated pole-and-lines

Moderately Effective

Atlantic Striped Bass

Atlantic striped bass is managed under an FMP implemented by ASMFC and by individual states that implement their own regulations and restrictions for both commercial and recreational fisheries. Commercial fishing occurs in Massachusetts, Rhode Island, Delaware, Maryland, Virginia, North Carolina, New York, and the Potomac River (ASMFC 2022b). A quota system is in place through the FMP that provides a quota for the Chesapeake Bay (split between Maryland, Virginia, and the Potomac River Fisheries Commission) and the ocean region. These quotas and other management measures can be adjusted via amendments or addenda when management triggers are tripped, based on the results of stock assessment updates and benchmark stock assessments.

The 2018 benchmark stock assessment found that the striped bass stock had been overfished since 2013 and that overfishing was occurring (ASMFC 2019b). Based on these results, Addendum VI was added to Amendment 6 of the FMP. This addendum put in place measures to reduce removals by 18% relative to 2017 removals, introduced a size limit into the Chesapeake Bay, and put in place circle hook requirements in recreational fisheries to reduce recreational release mortality (ASMFC 2019f). In 2020, the development of Amendment 7 began, which combined the addenda under Amendment 6 and established new requirements around management triggers, established new measures for reducing recreational mortality, and established new requirements for ASMFC's stock rebuilding plan (ASMFC 2022b).

The 2022 stock assessment update reflected 2 years of management under Addendum VI and shows that management measures to rebuild the stock and reduce fishing mortality are working. While SSB in 2021 was still below both reference points (i.e., the stock remains overfished), 2021 F was below both reference points, and maintaining the 2021 F value had a 70.2% chance of allowing the stock to reach the SSB threshold in 2023 and a 78.6% chance of allowing the stock to reach the SSB target by 2029, the stock rebuilding deadline (ASMFC 2022a). SSB and F reference points in this assessment were adjusted to reflect data through 2021 and to reflect the use of low recruitment assumptions, based on

the Maryland juvenile survey exhibiting low indices (ASMFC 2022a), making reference points more conservative. But preliminary data from the 2022 season, which management does not expect to significantly differ from the final 2022 data, showed an increase in F, bringing total fishing mortality to between the target and reference points, rather than below both points (Atlantic Striped Bass Technical Committee and Stock Assessment Subcommittee 2023). These preliminary data also significantly reduced the probability of stock rebuilding by 2029. While the probability that SSB exceeds the SSB threshold (is no longer overfished) in 2029 (using F in 2022) may be as high as 94%, the probability that SSB also exceeds the SSB target (is rebuilt) in 2029, as required for stock recovery, may be as low as 11%.

Based on the 2022 data, management took emergency action steps in 2023 to address the 2022 high fishing mortality rates. These actions include changing recreational size limits (now 31" maximum for ocean fisheries) and consideration of i) reducing bag limits in the recreational sector, and ii) reducing the quota in the commercial sector (ASMFC 2023d). Management is also aiming to bring fishing mortality to the target level in 2024 and projected that the new emergency measures could reduce F by 30% from 2022 to 2023. In early 2024, Addendum II to Amendment 7 was passed, which focuses on how to achieve this F target level. This addendum i) updates recreational fisheries' bag and size limits, ii) mirrors these limits in the Chesapeake Bay trophy fishery, iii) requires some states to introduce additional measures to reduce recreational removals in high fishing pressure areas, iv) sets commercial size limits at 2022 limit levels, and v) reduces commercial state quotas from 2022 levels (ASMFC 2024). Managers also noted that the new stock assessment in 2024 may further be used to shift management via additional addenda or amendments, if the assessment finds that the probability that the rebuilding deadline is met needs to increase.

The 2024 stock assessment aligned with preliminary 2022 data results, indicating that the stock remains overfished without overfishing occurring, but that fishing mortality is between reference points (ASMFC 2024b). While the stock assessment indicated that 2023 and preliminary 2024 F levels would achieve the SSB target reference point by 2029 with a 50% probability, it also noted that increasing F in 2025 would reduce this probability (ibid). Based on stock results from 2022 to 2024, the management board met in December 2024 to discuss further rebuilding management measures for 2026.

Because handlines also encounter and land bluefish, its management is considered here.

Bluefish

Bluefish, like striped bass, is managed on the East Coast by ASMFC, which regularly performs stock assessments for the species. SSB reference points are in place, though there is only one fishing mortality reference point used in bluefish management. After a previous stock assessment determined bluefish to be in an overfished state, a rebuilding plan was developed by ASMFC. Though the 2022 stock assessment for bluefish found that the stock is no longer overfished, managers are maintaining the 7-year rebuilding plan (initiated in 2021) until the stock reaches its target SSB reference point. Virginia fisheries land many more bluefish than Maryland fisheries do in the Chesapeake Bay area, and Virginia has its own recreational quota and penalties in place to help support ASMFC's rebuilding efforts (VMRC 2022).

Though bluefish management is making strong rebuilding progress and the emergency actions taken for striped bass in 2023 may improve the stock's chance of rebuilding, the score for management effectiveness is limited by the lack of rebuilding progress in 2022 and the unknown effectiveness of the newest management actions for striped bass. Therefore, this factor is scored moderately effective.

Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets

Moderately Effective

Atlantic Striped Bass

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The 2018 benchmark stock assessment found that the striped bass stock had been overfished since 2013 and that overfishing was occurring (ASMFC 2019b). Based

on these results, Addendum VI was added to Amendment 6 of the FMP. This addendum put in place measures to reduce removals by 18% relative to 2017 removals, introduced a size limit into the Chesapeake Bay, and put in place circle hook requirements in recreational fisheries to reduce recreational release mortality (ASMFC 2019f). In 2020, the development of Amendment 7 began, which combined the addenda under Amendment 6 and established new requirements around management triggers, established new measures for reducing recreational mortality, and established new requirements for ASMFC's stock rebuilding plan (ASMFC 2022b).

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limits in the Chesapeake Bay trophy fishery, iii) requires some states to introduce additional measures to reduce recreational removals in high fishing pressure areas, iv) sets commercial size limits at 2022 limit levels, and v) reduces commercial state quotas from 2022 levels (ASMFC 2024). Managers also noted that the new stock assessment in 2024 may further be used to shift management via additional addenda or amendments, if the assessment finds that the probability that the rebuilding deadline is met needs to increase.

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Because the Maryland winter gillnet fishery may also land Atlantic menhaden and gizzard shad, management of these species is considered here.

Atlantic Menhaden

Atlantic menhaden, like striped bass, is managed at the federal level by ASMFC, under an Interstate FMP. The stock is managed using ecological reference points that are based on its importance as a striped bass prey species, allowing managers to manage the stock so that it can sufficiently feed striped bass (ASMFC 2023e). Regular stock assessments are performed, with the 2021 stock assessment indicating that the stock is not overfished and no overfishing is occurring. TACs in the FMP are adjusted based on updated stock status and ensuring “conservative risk” of exceeding the target ecological reference point.

Gizzard Shad

Gizzard shad is largely used as bait and is discarded >50% of the time when captured, because it is not fit for human consumption. Therefore, gizzard shad is retained to a much smaller extent than target species in gillnets. Gizzard shad does not fall under any management plan because it is not a target species for any fishery, and there are no concerns about its population or conservation status. But, because it is not formally managed, not much is known about its status relative to other, economically important species, and no reference points or precautionary policies are in place.

Though menhaden is effectively managed with precautionary policies in place, gizzard shad limits the management effectiveness of Maryland's winter gillnet fishery for striped bass. Further, though striped bass management made rebuilding progress in past years, rebuilding was hindered in 2022. Therefore, this factor is scored moderately effective.

Supplementary Information

The table presents a summary of the 2022 striped bass commercial regulations across states (ASMFC 2023g). Minimum sizes and slot size limits are in total length (TL). *Commercial quota reallocated to recreational bonus fish program.

Table 5

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.	June 16–November 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. General category (mostly rod & reel): 34" min. five fish/vessel/day limit.	Total: 148,889 lbs., split 39:61 between the trap and general category. Gill netting prohibited.	Traps: April 1–December 31 General: May 20–June 30, July 1–December 31, or until quota reached. Closed Fridays, Saturdays, and Sundays during July–December.
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, gillnets (6–8" stretched mesh), hook & line.	May 15–December 15, or until quota reached. Limited entry permit only.
NJ*	Commercial fishing prohibited; bonus program: one fish/permit at 24" to <28"	215,912 lbs.	May 15–December 31 (permit required)
PA	Commercial fishing prohibited		
DE	Gillnet: 20" min. in Delaware Bay/River during spring season. 28" in all other waters/seasons. Hook and line: 28" min.	Gillnet: 135,350 lbs. No fixed nets in Delaware River. Hook and line: 7,124 lbs.	Gillnet: February 15–May 31 (February 15–March 30 for Nanticoke River) and November 15–December 31; drift nets only February 15–28 and May 1–31; no trip limit. Hook and line: April 1–December 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. Ocean: 24" minimum	Chesapeake Bay and Rivers: 1,445,394 lbs. (part of Bay-wide quota) Ocean: 89,094 lbs.	Bay pound net: June 1–December 31 Bay haul seine: January 1–February 28; June 1–December 31 Bay hook and line: June 1–December 31 Bay drift gillnet: January 1–February 28, December 1–31 Ocean: January 1–May 31, October 1–December 31
PRFC	18" min all year; 36" max February 15–March 25	572,861 lbs. (split between gear types; part of Bay-wide quota)	Hook and line: January 1–March 25, June 1–December 31 Pound net & other: February 15–March 25, June 1–December 15 Gillnet: November 9, 2021 to March 25, 2022 Misc. gear: March 15–25, June 1–December 15

VA	Chesapeake Bay and Rivers: 18" min; 28" max size limit March 15–June 15 Ocean: 28" min	Chesapeake Bay and Rivers: 983,393 lbs. (part of Bay-wide quota) Ocean: 125,034 lbs.	January 16–December 31 (both)
NC	Ocean: 28" min	295,495 lbs. (split between gear types)	Seine fishery was not opened. Gillnet fishery was not opened. Trawl fishery was not opened.

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Moderately Effective

Atlantic Striped Bass

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(ASMFC 2019f). In 2020, the development of Amendment 7 began, which combined the addenda under Amendment 6 and established new requirements around management triggers, established new measures for reducing recreational mortality, and established new requirements for ASMFC's stock rebuilding plan (ASMFC 2022b).

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assessment in 2024 may further be used to shift management via additional addenda or amendments, if the assessment finds that the probability that the rebuilding deadline is met needs to increase.

The 2024 stock assessment aligned with preliminary 2022 data results, indicating that the stock remains overfished without overfishing occurring, but that fishing mortality is between reference points (ASMFC 2024b). While the stock assessment indicated that 2023 and preliminary 2024 F levels would achieve the SSB target reference point by 2029 with a 50% probability, it also noted that increasing F in 2025 would reduce this probability (ibid). Based on stock results from 2022 to 2024, the management board met in December 2024 to discuss further rebuilding management measures for 2026.

Because pound net fisheries in the Chesapeake Bay may also land weakfish, blue catfish, menhaden, carp, and gizzard shad, management of these species is considered here.

Blue Catfish

Although there is no FMP for blue catfish, the nonnative species is managed under a 2020 management strategy developed by the Invasive Catfish Workgroup. The Maryland Department of Natural Resources and Virginia Marine Resources Commission also implement state-specific management measures. The management strategy has goals and measures to reduce blue catfish abundance in the Chesapeake Bay while reducing the species' impact on native species and preventing its further expansion in the Bay.

Atlantic Menhaden

Atlantic menhaden, like striped bass, is managed at the federal level by ASMFC, under an Interstate FMP. The stock is managed using ecological reference points that are based on its importance as a striped bass prey species, allowing managers to manage the stock so it can sufficiently feed striped bass (ASMFC 2023e). Regular stock assessments are performed, with the 2021 stock assessment indicating that the stock is not overfished and no overfishing is occurring. Total allowable catches (TACs) in the FMP are adjusted based on updated stock status, and they ensure a "conservative risk" of exceeding the target ecological reference point.

Common Carp

There are no FMPs in place for the common carp in Chesapeake Bay waters. Other

carp species are managed under invasive/nuisance species management plans in Virginia and Maryland, but common carp is not included with these carps. Therefore, there are also no reference points in place, and no regular stock assessments are performed.

Gizzard Shad

Gizzard shad is largely used as bait and is discarded >50% of the time when captured because it is not fit for human consumption. Therefore, gizzard shad is retained to a much smaller extent than the target species in gillnets. Gizzard shad does not fall under any management plan because it is not a target species for any fishery, and there are no concerns about its population or conservation status. But, because it is not formally managed, not much is known about its status relative to other, economically important species, and no reference points or precautionary policies are in place.

White Perch

White perch in Maryland, where the majority of landings occur, is managed under an FMP that was drafted in 1990 but has not been formally adopted (MDNR 2016). This drafted framework still guides management through goals and objectives, strategies, and identification of problem areas. Management strategies are also developed in coordination with strategies for the striped bass fisheries because of habitat overlap (MDNR 2016). Gear, area, and size restrictions are also in place in Maryland, though there are not restrictions in place in Virginia. Stock assessments are performed every 2 to 4 years, with the most recent assessment completed in 2020. Proposed biological reference points that have been deemed appropriate are used during the stock assessment process, allowing for abundance and mortality comparisons to historic abundance levels and F target and limit levels. Abundance was considered healthy and not overfished in the Upper Bay, Choptank River, and Lower Bay in 2019 (Piavis & Webb 2021). Average F was below target and limit levels in the Upper Bay from 2015 to 2019 but rose slightly above the target level in 2019. Similarly, average F has stayed below the F target and limit levels over the past 31 years in the Choptank River, but slightly exceeded the target level in 2019. Overfishing is not occurring in the Upper Bay, Choptank River, or Lower Bay. Current management allows for some precautionary strategies and the use of proposed reference points, but a formal white perch FMP for the Chesapeake Bay is still in process and has not been officially adopted Bay-wide or for Maryland. Further, although management is fairly effective, strategies could be more precautionary in nature to avoid F exceeding target levels.

Management measures for striped bass have resulted in significant improvements in the 2020s, but rebuilding progress slowed in 2022, and management measures for other retained species limit the overall management effectiveness score, resulting in a moderately effective rating for this factor.

Supplementary Information

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Table 6

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NY	26"–38" size (Hudson River closed to commercial harvest)	640,718 lbs. Pound nets, gillnets (6–8" stretched mesh), hook and line.	May 15–December 15, or until quota reached. Limited entry permit only.
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Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Moderately Effective

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Atlantic menhaden, like striped bass, is managed at the federal level by ASMFC, under an Interstate FMP. The stock is managed using ecological reference points that are based on its importance as a striped bass prey species, allowing managers to manage the stock so that it can sufficiently feed striped bass (ASMFC 2023e). Regular stock assessments are performed, with the 2021 stock assessment indicating that the stock is not overfished and no overfishing is occurring. TACs in the FMP are adjusted based on updated stock status and ensuring “conservative risk” of exceeding the target ecological reference point.

Gizzard Shad

Gizzard shad is largely used as bait and is discarded >50% of the time when captured, because it is not fit for human consumption. Therefore, gizzard shad is retained to a much smaller extent than target species in gillnets. Gizzard shad does not fall under any management plan because it is not a target species for any fishery, and there are no concerns about its population or conservation status. But, because it is not formally managed, not much is known about its status relative to other, economically important species, and no reference points or precautionary policies are in place.

Blue Catfish

Although there is no FMP for blue catfish, the nonnative species is managed under a 2020 management strategy developed by the Invasive Catfish Workgroup. The

Maryland Department of Natural Resources and Virginia Marine Resources Commission also implement state-specific management measures. The management strategy has goals and measures to reduce blue catfish abundance in the Chesapeake Bay while reducing the species' impact on native species and preventing its further expansion in the Bay.

Though menhaden and blue catfish are effectively managed with precautionary policies in place, gizzard shad limits the management effectiveness of Virginia's gillnet fishery for striped bass. Further, though striped bass management made rebuilding progress in past years, rebuilding was hindered in 2022. Therefore, this factor is scored moderately effective.

Supplementary Information

The table presents a summary of the 2022 striped bass commercial regulations across states (ASMFC 2023g). Minimum sizes and slot size limits are in total length (TL). *Commercial quota reallocated to recreational bonus fish program.

Table 7

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 and line only.	June 16–November 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. General category (mostly rod & reel): 34" min. five fish/vessel/day limit.	Total: 148,889 lbs., split 39:61 between the trap and general category. Gill netting prohibited.	Traps: April 1–December 31 General: May 20–June 30, July 1–December 31, or until quota reached. Closed Fridays, Saturdays, and Sundays during July–December.
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, gillnets (6–8" stretched mesh), hook and line.	May 15–December 15, or until quota reached. Limited entry permit only.
NJ*	Commercial fishing prohibited; bonus program: one fish/permit at 24" to <28"	215,912 lbs.	May 15–December 31 (permit required)
PA	Commercial fishing prohibited		
DE	Gill net: 20" min. in Delaware Bay/River during spring season. 28" in all other waters/seasons. Hook and line: 28" min.	Gillnet: 135,350 lbs. No fixed nets in Delaware River. Hook and line: 7,124 lbs.	Gillnet: February 15–May 31 (February 15–March 30 for Nanticoke River) and November 15–December 31; drift nets only February 15–28 and May 1–31; no trip limit. Hook and line: April 1–December 31, 200 lbs./day trip limit

MD	Chesapeake Bay and Rivers: 18–36". Common pool trip limits—hook and line: 250 lbs./license/week; gillnet: 300 lbs./license/week. Ocean: 24" minimum	Chesapeake Bay and Rivers: 1,445,394 lbs. (part of Bay-wide quota) Ocean: 89,094 lbs.	Bay pound net: June 1–December 31 Bay haul seine: January 1–February 28; June 1–December 31 Bay hook and line: June 1–December 31 Bay drift gillnet: January 1–February 28, December 1–31 Ocean: January 1–May 31, October 1–December 31
PRFC	18" min. all year; 36" max February 15–March 25	572,861 lbs. (split between gear types; part of Bay-wide quota)	Hook and line: January 1–March 25, June 1–December 31 Pound net and other: February 15–March 25, June 1–December 15 Gillnet: November 9, 2021–March 25, 2022 Misc. gear: February 15–March 25, June 1–December 15
VA	Chesapeake Bay and Rivers: 18" min; 28" max size limit March 15–June 15 Ocean: 28" min	Chesapeake Bay and Rivers: 983,393 lbs. (part of Bay-wide quota) Ocean: 125,034 lbs.	January 16–December 31 (both)

NC	Ocean: 28" min	295,495 lbs. (split between gear types)	Seine fishery was not opened. Gillnet fishery was not opened. Trawl fishery was not opened.

Northwest Atlantic | United States | Gillnets and entangling nets

Moderately Effective

Atlantic Striped Bass

Atlantic striped bass is managed under an FMP implemented by ASMFC and by individual states that implement their own regulations and restrictions for both commercial and recreational fisheries. Commercial fishing occurs in Massachusetts, Rhode Island, Delaware, Maryland, Virginia, North Carolina, New York, and the Potomac River (ASMFC 2022b). A quota system is in place through the FMP that provides a quota for the Chesapeake Bay (split between Maryland, Virginia, and the Potomac River Fisheries Commission) and the ocean region. These quotas and other management measures can be adjusted via amendments or addenda when management triggers are tripped, based on the results of stock assessment updates and benchmark stock assessments.

The 2018 benchmark stock assessment found that the striped bass stock had been overfished since 2013 and that overfishing was occurring (ASMFC 2019b). Based on these results, Addendum VI was added to Amendment 6 of the FMP. This addendum put in place measures to reduce removals by 18% relative to 2017 removals, introduced a size limit into the Chesapeake Bay, and put in place circle hook requirements in recreational fisheries to reduce recreational release mortality (ASMFC 2019f). In 2020, the development of Amendment 7 began, which combined the addenda under Amendment 6 and established new requirements around management triggers, established new measures for reducing recreational mortality, and established new requirements for ASMFC’s stock rebuilding plan (ASMFC 2022b).

The 2022 stock assessment update reflected 2 years of management under Addendum VI and shows that management measures to rebuild the stock and

reduce fishing mortality are working. While SSB in 2021 was still below both reference points (i.e., the stock remains overfished), 2021 F was below both reference points, and maintaining the 2021 F value had a 70.2% chance of allowing the stock to reach the SSB threshold in 2023 and a 78.6% chance of allowing the stock to reach the SSB target by 2029, the stock rebuilding deadline (ASMFC 2022a). SSB and F reference points in this assessment were adjusted to reflect data through 2021 and to reflect the use of low recruitment assumptions, based on the Maryland juvenile survey exhibiting low indices (ASMFC 2022a), making reference points more conservative. But preliminary data from the 2022 season, which management does not expect to significantly differ from the final 2022 data, showed an increase in F, bringing total fishing mortality to between the target and reference points, rather than below both points (Atlantic Striped Bass Technical Committee and Stock Assessment Subcommittee 2023). These preliminary data also significantly reduced the probability of stock rebuilding by 2029. While the probability that SSB exceeds the SSB threshold (is no longer overfished) in 2029 (using F in 2022) may be as high as 94%, the probability that SSB also exceeds the SSB target (is rebuilt) in 2029, as required for stock recovery, may be as low as 11%.

Based on the 2022 data, management took emergency action steps in 2023 to address the 2022 high fishing mortality rates. These actions include changing recreational size limits (now 31" maximum for ocean fisheries) and consideration of i) reducing bag limits in the recreational sector, and ii) reducing the quota in the commercial sector (ASMFC 2023d). Management is also aiming to bring fishing mortality to the target level in 2024 and projected that the new emergency measures could reduce F by 30% from 2022 to 2023. In early 2024, Addendum II to Amendment 7 was passed, which focuses on how to achieve this F target level. This addendum i) updates recreational fisheries' bag and size limits, ii) mirrors these limits in the Chesapeake Bay trophy fishery, iii) requires some states to introduce additional measures to reduce recreational removals in high fishing pressure areas, iv) sets commercial size limits at 2022 limit levels, and v) reduces commercial state quotas from 2022 levels (ASMFC 2024). Managers also noted that the new stock assessment in 2024 may further be used to shift management via additional addenda or amendments, if the assessment finds that the probability that the rebuilding deadline is met needs to increase.

The 2024 stock assessment aligned with preliminary 2022 data results, indicating that the stock remains overfished without overfishing occurring, but that fishing mortality is between reference points (ASMFC 2024b). While the stock assessment indicated that 2023 and preliminary 2024 F levels would achieve the SSB target

reference point by 2029 with a 50% probability, it also noted that increasing F in 2025 would reduce this probability (ibid). Based on stock results from 2022 to 2024, the management board met in December 2024 to discuss further rebuilding management measures for 2026.

Because gillnets in the Northwest Atlantic also capture bluefish, management of this species is considered here.

Bluefish

Bluefish, like striped bass, is managed on the East Coast by ASMFC, which regularly performs stock assessments for the species. SSB reference points are in place, though there is only one fishing mortality reference point used in bluefish management. After a previous stock assessment determined bluefish to be in an overfished state, a rebuilding plan was developed by ASMFC. Though the 2022 stock assessment for bluefish found that the stock is no longer overfished, managers are maintaining the seven-year rebuilding plan (initiated in 2021) until the stock reaches its target SSB reference point. Northeast states follow the commercial restrictions (e.g., trip limits) set out by ASMFC, though minimum landing size restrictions differ between states. Currently, Rhode Island's minimum size restriction for bluefish is the largest at 18 inches (DEM 2023).

Though bluefish management is making strong rebuilding progress and the emergency actions taken for striped bass in 2023 may improve the stock's chance of rebuilding, the score for management effectiveness is limited by the lack of striped bass rebuilding progress in 2022 and the unknown effectiveness of the newest management actions for striped bass. Therefore, this factor is scored moderately effective.

Supplementary Information

The table presents a summary of the 2022 striped bass commercial regulations across states (ASMFC 2023g). Minimum sizes and slot size limits are in total length (TL). *Commercial quota reallocated to recreational bonus fish program.

Table 8

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.	June 16–November 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. General category (mostly rod & reel): 34" min. five fish/vessel/day limit.	Total: 148,889 lbs., split 39:61 between the trap and general category. Gill netting prohibited.	Traps: April 1–December 31 General: May 20–June 30, July 1–December 31, or until quota reached. Closed Fridays, Saturdays, and Sundays during July–December.
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, gillnets (6–8" stretched mesh), hook and line.	May 15–December 15, or until quota reached. Limited entry permit only.
NJ*	Commercial fishing prohibited; bonus program: one fish/permit at 24" to <28"	215,912 lbs.	May 15–December 31 (permit required)
PA	Commercial fishing prohibited		

DE	Gillnet: 20" min in Delaware Bay/River during spring season. 28" in all other waters/seasons. Hook and line: 28" min	Gillnet: 135,350 lbs. No fixed nets in Delaware River. Hook and line: 7,124 lbs.	Gillnet: February 15–May 31 (February 15–March 30 for Nanticoke River) and November 15–December 31; drift nets only February 15–28 and May 1–31; no trip limit. Hook and line: April 1–December 31, 200 lbs./day trip limit
MD	Chesapeake Bay and Rivers: 18–36". Common pool trip limits—hook and line: 250 lbs./license/week; gillnet: 300 lbs./license/week. Ocean: 24" minimum	Chesapeake Bay and Rivers: 1,445,394 lbs. (part of Bay-wide quota) Ocean: 89,094 lbs.	Bay pound net: June 1–December 31 Bay haul seine: January 1–February 28; June 1–December 31 Bay hook and line: June 1–December 31 Bay drift gillnet: January 1–February 28, December 1–31 Ocean: January 1–May 31, October 1–December 31

PRFC	18" min all year; 36" max February 15–March 25	572,861 lbs. (split between gear types; part of Bay-wide quota)	Hook and line: January 1–March 25, June 1–December 31 Pound net and other: February 15–March 25, June 1–December 15 Gillnet: November 9, 2021–March 25, 2022 Misc. gear: February 15–March 25, June 1–December 15
VA	Chesapeake Bay and Rivers: 18" min; 28" max size limit March 15-June 15 Ocean: 28" min	Chesapeake Bay and Rivers: 983,393 lbs. (part of Bay-wide quota) Ocean: 125,034 lbs.	January 16–December 31 (both)
NC	Ocean: 28" min	295,495 lbs. (split between gear types)	Seine fishery was not opened. Gillnet fishery was not opened. Trawl fishery was not opened.

Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines

Moderately Effective

Atlantic Striped Bass

Atlantic striped bass is managed under an FMP implemented by ASMFC and by individual states that implement their own regulations and restrictions for both

commercial and recreational fisheries. Commercial fishing occurs in Massachusetts, Rhode Island, Delaware, Maryland, Virginia, North Carolina, New York, and the Potomac River (ASMFC 2022b). A quota system is in place through the FMP that provides a quota for the Chesapeake Bay (split between Maryland, Virginia, and the Potomac River Fisheries Commission) and the ocean region. These quotas and other management measures can be adjusted via amendments or addenda when management triggers are tripped, based on the results of stock assessment updates and benchmark stock assessments.

The 2018 benchmark stock assessment found that the striped bass stock had been overfished since 2013 and that overfishing was occurring (ASMFC 2019b). Based on these results, Addendum VI was added to Amendment 6 of the FMP. This addendum put in place measures to reduce removals by 18% relative to 2017 removals, introduced a size limit into the Chesapeake Bay, and put in place circle hook requirements in recreational fisheries to reduce recreational release mortality (ASMFC 2019f). In 2020, the development of Amendment 7 began, which combined the addenda under Amendment 6 and established new requirements around management triggers, established new measures for reducing recreational mortality, and established new requirements for ASMFC's stock rebuilding plan (ASMFC 2022b).

The 2022 stock assessment update reflected 2 years of management under Addendum VI and shows that management measures to rebuild the stock and reduce fishing mortality are working. While SSB in 2021 was still below both reference points (i.e., the stock remains overfished), 2021 F was below both reference points, and maintaining the 2021 F value had a 70.2% chance of allowing the stock to reach the SSB threshold in 2023 and a 78.6% chance of allowing the stock to reach the SSB target by 2029, the stock rebuilding deadline (ASMFC 2022a). SSB and F reference points in this assessment were adjusted to reflect data through 2021 and to reflect the use of low recruitment assumptions, based on the Maryland juvenile survey exhibiting low indices (ASMFC 2022a), making reference points more conservative. But preliminary data from the 2022 season, which management does not expect to significantly differ from the final 2022 data, showed an increase in F, bringing total fishing mortality to between the target and reference points, rather than below both points (Atlantic Striped Bass Technical Committee and Stock Assessment Subcommittee 2023). These preliminary data also significantly reduced the probability of stock rebuilding by 2029. While the probability that SSB exceeds the SSB threshold (is no longer overfished) in 2029 (using F in 2022) may be as high as 94%, the probability that SSB also exceeds the SSB target (is rebuilt) in 2029, as required for stock recovery, may be as low as 11%.

Based on the 2022 data, management took emergency action steps in 2023 to address the 2022 high fishing mortality rates. These actions include changing recreational size limits (now 31" maximum for ocean fisheries) and consideration of i) reducing bag limits in the recreational sector, and ii) reducing the quota in the commercial sector (ASMFC 2023d). Management is also aiming to bring fishing mortality to the target level in 2024 and projected that the new emergency measures could reduce F by 30% from 2022 to 2023. In early 2024, Addendum II to Amendment 7 was passed, which focuses on how to achieve this F target level. This addendum i) updates recreational fisheries' bag and size limits, ii) mirrors these limits in the Chesapeake Bay trophy fishery, iii) requires some states to introduce additional measures to reduce recreational removals in high fishing pressure areas, iv) sets commercial size limits at 2022 limit levels, and v) reduces commercial state quotas from 2022 levels (ASMFC 2024). Managers also noted that the new stock assessment in 2024 may further be used to shift management via additional addenda or amendments, if the assessment finds that the probability that the rebuilding deadline is met needs to increase.

The 2024 stock assessment aligned with preliminary 2022 data results, indicating that the stock remains overfished without overfishing occurring, but that fishing mortality is between reference points (ASMFC 2024b). While the stock assessment indicated that 2023 and preliminary 2024 F levels would achieve the SSB target reference point by 2029 with a 50% probability, it also noted that increasing F in 2025 would reduce this probability (ibid). Based on stock results from 2022 to 2024, the management board met in December 2024 to discuss further rebuilding management measures for 2026.

Because handlines also encounter and land bluefish, its management is considered here.

Bluefish

Bluefish, like striped bass, is managed on the East Coast by ASMFC, which regularly performs stock assessments for the species. SSB reference points are in place, though there is only one fishing mortality reference point used in bluefish management. After a previous stock assessment determined bluefish to be in an overfished state, a rebuilding plan was developed by ASMFC. Though the 2022 stock assessment for bluefish found that the stock is no longer overfished, managers are maintaining the 7-year rebuilding plan (initiated in 2021) until the stock reaches its target SSB reference point. Northeast states follow the

commercial restrictions (e.g., trip limits) set out by ASMFC, though minimum landing size restrictions differ between states. Currently, Rhode Island's minimum size restriction for bluefish is the largest at 18 inches (DEM 2023).

Though bluefish management is making strong rebuilding progress and the emergency actions taken for striped bass in 2023 may improve the stock's chance of rebuilding, the score for management effectiveness is limited by the lack of rebuilding progress in 2022 and the unknown effectiveness of the newest management actions for striped bass. Therefore, this factor is scored moderately effective.

Supplementary Information

The table presents a summary of the 2022 striped bass commercial regulations across states (ASMFC 2023g). Minimum sizes and slot size limits are in total length (TL). *Commercial quota reallocated to recreational bonus fish program.

Table 9

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.	June 16–November 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. General category (mostly rod & reel): 34" min. five fish/vessel/day limit.	Total: 148,889 lbs., split 39:61 between the trap and general category. Gill netting prohibited.	Traps: April 1–December 31 General: May 20–June 30, July 1–December 31, or until quota reached. Closed Fridays, Saturdays, and Sundays during July–December.
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, gillnets (6–8" stretched mesh), hook and line.	May 15–December 15, or until quota reached. Limited entry permit only.
NJ*	Commercial fishing prohibited; bonus program: one fish/permit at 24" to <28"	215,912 lbs.	May 15–December 31 (permit required)
PA	Commercial fishing prohibited		
DE	Gill net: 20" min. in Delaware Bay/River during spring season. 28" in all other waters/seasons. Hook and line: 28" min.	Gillnet: 135,350 lbs. No fixed nets in Delaware River. Hook and line: 7,124 lbs.	Gillnet: February 15–May 31 (February 15–March 30 for Nanticoke River) and November 15–December 31; drift nets only February 15–28 and May 1–31; no trip limit. Hook and line: April 1–December 31, 200 lbs./day trip limit

MD	Chesapeake Bay and Rivers: 18–36". Common pool trip limits—hook and line: 250 lbs./license/week; gillnet: 300 lbs./license/week. Ocean: 24" minimum	Chesapeake Bay and Rivers: 1,445,394 lbs. (part of Bay-wide quota) Ocean: 89,094 lbs.	Bay pound net: June 1–December 31 Bay haul seine: January 1–February 28; June 1–December 31 Bay hook and line: June 1–December 31 Bay drift gillnet: January 1–February 28, December 1–31 Ocean: January 1–May 31, October 1–December 31
PRFC	18" min. all year; 36" max February 15–March 25	572,861 lbs. (split between gear types; part of Bay-wide quota)	Hook and line: January 1–March 25, June 1–December 31 Pound net and other: February 15–March 25, June 1–December 15 Gillnet: November 9, 2021–March 25, 2022 Misc. gear: February 15–March 25, June 1–December 15
VA	Chesapeake Bay and Rivers: 18" min; 28" max size limit March 15–June 15 Ocean: 28" min	Chesapeake Bay and Rivers: 983,393 lbs. (part of Bay-wide quota) Ocean: 125,034 lbs.	January 16–December 31 (both)

NC	Ocean: 28" min	295,495 lbs. (split between gear types)	Seine fishery was not opened. Gillnet fishery was not opened. Trawl fishery was not opened.

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Moderately Effective

Atlantic Striped Bass

Atlantic striped bass is managed under an FMP implemented by ASMFC and by individual states that implement their own regulations and restrictions for both commercial and recreational fisheries. Commercial fishing occurs in Massachusetts, Rhode Island, Delaware, Maryland, Virginia, North Carolina, New York, and the Potomac River (ASMFC 2022b). A quota system is in place through the FMP that provides a quota for the Chesapeake Bay (split between Maryland, Virginia, and the Potomac River Fisheries Commission) and the ocean region. These quotas and other management measures can be adjusted via amendments or addenda when management triggers are tripped, based on results of the stock assessment updates and benchmark stock assessments.

The 2018 benchmark stock assessment found that the striped bass stock had been overfished since 2013 and that overfishing was occurring (ASMFC 2019b). Based on these results, Addendum VI was added to Amendment 6 of the FMP. This addendum put in place measures to reduce removals by 18% relative to 2017 removals, introduced a size limit into the Chesapeake Bay, and put in place circle hook requirements in recreational fisheries to reduce recreational release mortality (ASMFC 2019f). In 2020, the development of Amendment 7 began, which combined the addenda under Amendment 6 and established new requirements around management triggers, established new measures for reducing recreational mortality, and established new requirements for ASMFC's stock rebuilding plan (ASMFC 2022b).

The 2022 stock assessment update reflected 2 years of management under

Addendum VI and shows that management measures to rebuild the stock and reduce fishing mortality are working. While SSB in 2021 was still below both reference points (i.e., the stock remains overfished), 2021 F was below both reference points, and maintaining the 2021 F value had a 70.2% chance of allowing the stock to reach the SSB threshold in 2023 and a 78.6% chance of allowing the stock to reach the SSB target by 2029, the stock rebuilding deadline (ASMFC 2022a). SSB and F reference points in this assessment were adjusted to reflect data through 2021 and to reflect the use of low recruitment assumptions, based on the Maryland juvenile survey exhibiting low indices (ASMFC 2022a), making reference points more conservative. But preliminary data from the 2022 season, which management does not expect to significantly differ from the final 2022 data, showed an increase in F, bringing total fishing mortality to between the target and reference points, rather than below both points (Atlantic Striped Bass Technical Committee and Stock Assessment Subcommittee 2023). These preliminary data also significantly reduced the probability of stock rebuilding by 2029. While the probability that SSB exceeds the SSB threshold (is no longer overfished) in 2029 (using F in 2022) may be as high as 94%, the probability that SSB also exceeds the SSB target (is rebuilt) in 2029, as required for stock recovery, may be as low as 11%.

Based on the 2022 data, management took emergency action steps in 2023 to address the 2022 high fishing mortality rates. These actions include changing recreational size limits (now 31" maximum for ocean fisheries) and consideration of i) reducing bag limits in the recreational sector, and ii) reducing the quota in the commercial sector (ASMFC 2023d). Management is also aiming to bring fishing mortality to the target level in 2024 and projected that the new emergency measures could reduce F by 30% from 2022 to 2023. In early 2024, Addendum II to Amendment 7 was passed, which focuses on how to achieve this F target level. This addendum i) updates recreational fisheries' bag and size limits, ii) mirrors these limits in the Chesapeake Bay trophy fishery, iii) requires some states to introduce additional measures to reduce recreational removals in high fishing pressure areas, iv) sets commercial size limits at 2022 limit levels, and v) reduces commercial state quotas from 2022 levels (ASMFC 2024). Managers also noted that the new stock assessment in 2024 may further be used to shift management via additional addenda or amendments, if the assessment finds that the probability that the rebuilding deadline is met needs to increase.

The 2024 stock assessment aligned with preliminary 2022 data results, indicating that the stock remains overfished without overfishing occurring, but that fishing mortality is between reference points (ASMFC 2024b). While the stock assessment

indicated that 2023 and preliminary 2024 F levels would achieve the SSB target reference point by 2029 with a 50% probability, it also noted that increasing F in 2025 would reduce this probability (ibid). Based on stock results from 2022 to 2024, the management board met in December 2024 to discuss further rebuilding management measures for 2026.

Because pound net fisheries in the Northwest Atlantic may also land Atlantic menhaden, scup, and bluefish, management of these species is considered here.

Atlantic Menhaden

Atlantic menhaden, like striped bass, is managed at the federal level by ASMFC, under an Interstate FMP. The stock is managed using ecological reference points that are based on its importance as a striped bass prey species, allowing managers to manage the stock so that it can sufficiently feed striped bass (ASMFC 2023e). Regular stock assessments are performed, with the 2021 stock assessment indicating that the stock is not overfished and no overfishing is occurring. TACs in the FMP are adjusted based on updated stock status and ensuring “conservative risk” of exceeding the target ecological reference point.

Scup

Scup is jointly managed by ASMFC and MAFMC in a multispecies FMP. Several amendments have been added to this FMP to adapt to changes in scup data and abundance. Many of these changes, such as a new harvest control rule, have focused only on the recreational sector. Regular stock assessments are performed, with the 2023 assessment indicating that the stock is healthy.

Bluefish

Bluefish, like striped bass, is managed on the East Coast by ASMFC, which regularly performs stock assessments for the species. SSB reference points are in place, though there is only one fishing mortality reference point used in bluefish management. After a previous stock assessment determined bluefish to be in an overfished state, a rebuilding plan was developed by ASMFC. Though the 2022 stock assessment for bluefish found that the stock is no longer overfished, managers are maintaining the 7-year rebuilding plan (initiated in 2021) until the stock reaches its target SSB reference point. Northeast states follow the commercial restrictions (e.g., trip limits) set out by ASMFC, though minimum landing size restrictions differ between states. Currently, Rhode Island’s minimum size restriction for bluefish is the largest at 18 inches (DEM 2023).

While management measures for menhaden and bluefish are effective, and measures for striped bass resulted in significant improvements by 2021, rebuilding progress for striped bass slowed in 2022, resulting in a moderately effective rating for this factor.

Supplementary Information

The table presents a summary of the 2022 striped bass commercial regulations across states (ASMFC 2023g). Minimum sizes and slot size limits are in total length (TL). *Commercial quota reallocated to recreational bonus fish program.

Table 10

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 and line only.	June 16–November 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.
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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, gillnets (6–8" stretched mesh), hook and line.	May 15–December 15, or until quota reached. Limited entry permit only.
NJ*	Commercial fishing prohibited; bonus program: one fish/permit at 24" to <28"	215,912 lbs.	May 15–December 31 (permit required)
PA	Commercial fishing prohibited		
DE	Gillnet: 20" min in Delaware Bay/River during spring season. 28" in all other waters/seasons. Hook and line: 28" min.	Gillnet: 135,350 lbs. No fixed nets in Delaware River. Hook and line: 7,124 lbs.	Gillnet: February 15–May 31 (February 15–March 30 for Nanticoke River) and November 15–December 31; drift nets only February 15–28 and May 1–31; no trip limit. Hook and line: April 1–December 31, 200 lbs./day trip limit

MD	Chesapeake Bay and Rivers: 18–36". Common pool trip limits—hook and line: 250 lbs./license/week; gillnet: 300 lbs./license/week. Ocean: 24" minimum	Chesapeake Bay and Rivers: 1,445,394 lbs. (part of Bay-wide quota) Ocean: 89,094 lbs.	Bay pound net: June 1–December 31 Bay haul seine: January 1–February 28; June 1–December 31 Bay hook and line: June 1–December 31 Bay drift gillnet: January 1–February 28, December 1–31 Ocean: January 1–May 31, October 1–December 31
PRFC	18" min all year; 36" max February 15–March 25	572,861 lbs. (split between gear types; part of Bay-wide quota)	Hook and line: January 1–March 25, June 1–December 31 Pound net and other: February 15–March 25, June 1–December 15 Gillnet: November 9, 2021–March 25, 2022 Misc. gear: February 15–March 25, June 1–December 15

VA	Chesapeake Bay and Rivers: 18" min; 28" max size limit March 15–June 15 Ocean: 28" min	Chesapeake Bay and Rivers: 983,393 lbs. (part of Bay-wide quota) Ocean: 125,034 lbs.	January 16–December 31 (both)
NC	Ocean: 28" min	295,495 lbs. (split between gear types)	Seine fishery was not opened. Gillnet fishery was not opened. Trawl fishery was not opened.

3.2 Bycatch Strategy

Chesapeake Bay | America, North - Inland Waters | United States | Handlines and hand-operated pole-and-lines

Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines

Highly effective

Handline fisheries—in the Chesapeake Bay and the Northwest Atlantic—are generally highly selective for striped bass. But this gear does also occasionally encounter and land bluefish, which may make up at least 5% of the total catch in these fisheries. Bluefish is also a commercially targeted species on the U.S. East Coast, and, as a previously overfished stock, is currently in a rebuilding plan. This plan includes commercial quota limits, which thus far seem to be successful because the stock is no longer considered overfished. In addition, captured bluefish are generally kept or released alive, because their commercial dead discards “are considered negligible” (ASMFC 2022d). Because the only additional capture species is commercially targeted (rather than a nontarget bycatch species) and is well managed with catch limits in place, this factor is scored highly effective.

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Moderately Effective

Pound nets for striped bass are typically multispecies gears, so true bycatch (nontarget catch) is typically low. In the Chesapeake Bay, pound nets also capture blue catfish, bluefish, common carp, gizzard shad, white perch, and Atlantic menhaden in significant quantities. Of these, most species are commercially targeted and managed by ASMFC and/or at the state level, but common carp and gizzard shad are not commercially targeted and lack management, including bycatch management. Because pound nets are not entangling and sit in the water column before they are hauled in, discard mortality rates tend to be lower than in other gear types (ASMFC 2020). Although the majority of landings are commercially targeted species and no species of concern are captured, some nontarget species lack bycatch management measures, so this factor is scored moderately effective.

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets

Moderately Effective

Gillnets for striped bass in the Chesapeake Bay encounter several species alongside striped bass. Maryland's winter gillnet fishery encounters fewer species than Virginia's gillnet fishery because many species are only seasonally present in the Bay. Blue catfish is captured in Virginia's gillnets and is increasingly commercially targeted due to its invasive status. Menhaden is commercially targeted and managed by ASMFC, but gizzard shad may be kept or discarded. Discards are likely low in these fisheries because the majority of capture species are commercially targeted. Endangered, threatened, and protected (ETP) species are not captured in gillnets in either state, including species captured in Virginia gillnets that make up <5% of the total catch. But no formal bycatch management plans are in place for nontarget species such as gizzard shad. Although the majority of landings are commercially targeted species and no species of concern are captured, the lack of a bycatch management plan leads this factor to be scored moderately effective.

Northwest Atlantic | United States | Gillnets and entangling nets

Moderately Effective

Striped bass gillnets in the Northwest Atlantic encounter and land several additional species, but only bluefish are landed in significant quantities (5%-plus of the total catch). Gillnets are not allowed in commercial striped bass fisheries in Rhode Island or Massachusetts, so states with commercial ocean gillnetting north of the Chesapeake include only New York and Delaware. Gillnets in New York are limited to mesh sizes between 6 and 8 inches (DEC 2021). Delaware gillnets used in February are limited to a 4-in. maximum mesh size when they are not driftnets (Delaware General Assembly 2021). Implementing gillnet mesh size restrictions can aid in avoiding the capture of undersized target species and bycatch species. These measures may help reduce bycatch, and few bycatch species are landed in significant quantities; however, some catch of other species does occur, and a more thorough bycatch management plan is not in place in either state, resulting in a score of moderately effective.

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Highly effective

Pound nets for striped bass are typically multispecies gears, so true bycatch (nontarget catch) is typically low. In the Northwest Atlantic, pound nets also capture scup, bluefish, and Atlantic menhaden—three commercially targeted species—in significant quantities. Other species that are landed but individually make up less than 5% of the total catch include summer flounder and smooth dogfish, both of which are managed by ASMFC and are commercially targeted. Therefore, discards are likely low in this fishery. Further, because pound nets are not entangling and sit in the water column before they are hauled in, discard mortality rates tend to be lower than in other gear types (ASMFC 2020). Because the majority of landings are commercially targeted species and no species of concern are captured, this factor is scored highly effective.

3.3 Scientific Research And Monitoring

Chesapeake Bay | America, North - Inland Waters | United States | Handlines and hand-operated pole-and-lines

Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines

Highly effective

Throughout the fishery, comprehensive fishery-dependent and -independent monitoring are in place, which include mandatory catch reporting, mandatory catch sampling, and mandatory fishery independent surveys (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)(ASMFC 2016e). Juvenile abundance surveys are required in some states, as well as spawning stock sampling (ASMFC 2022e). Stakeholders also participate in voluntary tagging programs, which have been useful in gauging fishing mortality and fish migration (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)(ASMFC 2016e). Commercial discards are estimated through a mandatory self-reporting system, limited at-sea observer data, and a tag-based recovery system. There has been extensive research on the effects of hook and line release mortality on this stock. Recreational catches are by far the largest removals associated with this stock (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)(ASMFC 2016e). Removals (including mortality due to catch-and-release fishing) are generally well estimated, though some uncertainty does exist, based on area gaps in recreational harvest data, post-release mortality assumptions, and data gaps from the COVID-19 pandemic (NEFSC 2019)(ASMFC 2022e). Still, stock assessment modeling is thorough and attempts to account for sources of uncertainty. Commercial tagging programs to limit illegal striped bass removals are mandated in all states via Amendment 7 to the striped bass FMP and have been in place since 2013 (ASMFC 2022b).

Atlantic striped bass status is updated every year or every other year, with a benchmark assessment conducted every 5 years. The most recent benchmark assessment was released in 2019, with a new benchmark assessment planned for 2024. Managers and the Technical Committee review landings, important indices, state-by-state regulations, and fishery performance yearly. Bycatch is quite low in handline fisheries, so an observer program for capture of sensitive species is not needed in these highly selective fisheries. This is rated as highly effective.

Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets

Moderately Effective

Throughout the fishery, comprehensive fishery-dependent and -independent monitoring are in place, which include mandatory catch reporting, mandatory catch sampling, and mandatory fishery independent surveys (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)(ASMFC 2016e). Juvenile abundance surveys are required in some states, as well as spawning stock sampling (ASMFC 2022e). Stakeholders also participate in voluntary tagging programs, which have been useful in gauging fishing mortality and fish migration (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)

(ASMFC 2016e). Commercial discards are estimated through a mandatory self-reporting system, limited at-sea observer data, and a tag-based recovery system. There has been extensive research on the effects of hook and line release mortality on this stock. Recreational catches are by far the largest removals associated with this stock (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)(ASMFC 2016e). Removals (including mortality due to catch-and-release fishing) are generally well estimated, though some uncertainty does exist, based on area gaps in recreational harvest data, post-release mortality assumptions, and data gaps from the COVID-19 pandemic (NEFSC 2019)(ASMFC 2022e). Still, stock assessment modeling is thorough and attempts to account for sources of uncertainty. Commercial tagging programs to limit illegal striped bass removals are mandated in all states via Amendment 7 to the striped bass FMP and have been in place since 2013 (ASMFC 2022b).

Atlantic striped bass status is updated every year or every other year, with a benchmark assessment conducted every 5 years. The most recent benchmark assessment was released in 2019, with a new benchmark assessment planned for 2024. Managers and the Technical Committee review landings, important indices, state-by-state regulations, and fishery performance yearly.

Maryland does not have a bycatch monitoring program in place, though the winter gillnet fishery encounters fewer potentially at-risk species because of their seasonal migration patterns.

A comprehensive regime for research and monitoring is in place fishery-wide, but data and monitoring on bycatch in the gillnet fishery is lacking. Research is underway to better document and reduce these gaps (NMFS 2013). This is rated as moderately effective.

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Moderately Effective

Throughout the fishery, comprehensive fishery-dependent and -independent monitoring are in place, which include mandatory catch reporting, mandatory catch sampling, and mandatory fishery independent surveys (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)(ASMFC 2016e). Juvenile abundance surveys are required in some states, as well as spawning stock sampling (ASMFC 2022e). Stakeholders also participate in voluntary tagging programs, which have been useful in gauging fishing mortality and fish migration (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)

(ASMFC 2016e). Commercial discards are estimated through a mandatory self-reporting system, limited at-sea observer data, and a tag-based recovery system. There has been extensive research on the effects of hook and line release mortality on this stock. Recreational catches are by far the largest removals associated with this stock (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)(ASMFC 2016e). Removals (including mortality due to catch-and-release fishing) are generally well estimated, though some uncertainty does exist, based on area gaps in recreational harvest data, post-release mortality assumptions, and data gaps from the COVID-19 pandemic (NEFSC 2019)(ASMFC 2022e). Still, stock assessment modeling is thorough and attempts to account for sources of uncertainty. Commercial tagging programs to limit illegal striped bass removals are mandated in all states via Amendment 7 to the striped bass FMP and have been in place since 2013 (ASMFC 2022b).

Atlantic striped bass status is updated every year or every other year, with a benchmark assessment conducted every 5 years. The most recent benchmark assessment was released in 2019, with a new benchmark assessment planned for 2024. Managers and the Technical Committee review landings, important indices, state-by-state regulations, and fishery performance yearly.

Virginia has a monitoring program in place for gillnets that may also sample pound net fisheries but does not consistently do so. There is no bycatch monitoring program in place in Maryland.

A comprehensive regime for research and monitoring is in place fishery-wide, but data and monitoring on bycatch in the pound net fisheries are lacking. Research is underway to better document and reduce these gaps (NMFS 2013). This is rated as moderately effective.

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Highly effective

Throughout the fishery, comprehensive fishery-dependent and -independent monitoring are in place, which include mandatory catch reporting, mandatory catch sampling, and mandatory fishery independent surveys (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)(ASMFC 2016e). Juvenile abundance surveys are required in some states, as well as spawning stock sampling (ASMFC 2022e). Stakeholders also participate in voluntary tagging programs, which have been useful in gauging

fishing mortality and fish migration (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b) (ASMFC 2016e). Commercial discards are estimated through a mandatory self-reporting system, limited at-sea observer data, and a tag-based recovery system. There has been extensive research on the effects of hook and line release mortality on this stock. Recreational catches are by far the largest removals associated with this stock (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)(ASMFC 2016e). Removals (including mortality due to catch-and-release fishing) are well estimated, though some uncertainty does exist, based on area gaps in recreational harvest data, post-release mortality assumptions, and data gaps from the COVID-19 pandemic (NEFSC 2019)(ASMFC 2022e). Still, stock assessment modeling is thorough and attempts to account for sources of uncertainty. Commercial tagging programs to limit illegal striped bass removals are mandated in all states via Amendment 7 to the striped bass FMP and have been in place since 2013 (ASMFC 2022b).

Although bycatch occurs in the fishery, the Virginia Marine Resources Commission (VMRC) has a Protected Species Observer Program in place, with a goal of observing 1% of all Virginia gillnet trips.

Atlantic striped bass status is updated every year or every other year, with a benchmark assessment conducted every 5 years. The most recent benchmark assessment was released in 2019, with a new benchmark assessment planned for 2024. Managers and the Technical Committee review landings, important indices, state-by-state regulations, and fishery performance yearly, and bycatch is monitored by VMRC. This is rated as highly effective.

Northwest Atlantic | United States | Gillnets and entangling nets

Moderately Effective

Throughout the fishery, comprehensive fishery-dependent and -independent monitoring are in place, which include mandatory catch reporting, mandatory catch sampling, and mandatory fishery-independent surveys (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)(ASMFC 2016e). Juvenile abundance surveys are required in some states, as well as spawning stock sampling (ASMFC 2022e). Stakeholders also participate in voluntary tagging programs, which have been useful in gauging fishing mortality and fish migration (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b) (ASMFC 2016e). Commercial discards are estimated through a mandatory self-reporting system, limited at-sea observer data, and a tag-based recovery system. There has been extensive research on the effects of hook and line release mortality

on this stock. Recreational catches are by far the largest removals associated with this stock (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)(ASMFC 2016e). Removals (including mortality due to catch-and-release fishing) are generally well estimated, though some uncertainty does exist, based on area gaps in recreational harvest data, post-release mortality assumptions, and data gaps from the COVID-19 pandemic (NEFSC 2019)(ASMFC 2022e). Still, stock assessment modeling is thorough and attempts to account for sources of uncertainty. Commercial tagging programs to limit illegal striped bass removals are mandated in all states via Amendment 7 to the striped bass FMP and have been in place since 2013 (ASMFC 2022b).

Atlantic striped bass status is updated every year or every other year, with a benchmark assessment conducted every 5 years. The most recent benchmark assessment was released in 2019, with a new benchmark assessment planned for 2024. Managers and the Technical Committee review landings, important indices, state-by-state regulations, and fishery performance yearly.

States with gillnet fisheries in the Northwest Atlantic Ocean include New York and Delaware. New York has a self-reported Vessel Trip Reports program, in which fishers report their own landings, but there is no formal observer program in place.

A comprehensive regime for research and monitoring is in place fishery-wide, but data and monitoring on bycatch in the gillnet fisheries are lacking. Research is underway to better document and reduce these gaps (NMFS 2013). This is rated as moderately effective.

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Moderately Effective

Throughout the fishery, comprehensive fishery-dependent and -independent monitoring are in place, which include mandatory catch reporting, mandatory catch sampling, and mandatory fishery independent surveys (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)(ASMFC 2016e). Juvenile abundance surveys are required in some states, as well as spawning stock sampling (ASMFC 2022e). Stakeholders also participate in voluntary tagging programs, which have been useful in gauging fishing mortality and fish migration (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)(ASMFC 2016e). Commercial discards are estimated through a mandatory self-reporting system, limited at-sea observer data, and a tag-based recovery system. There has been extensive research on the effects of hook and line release mortality

on this stock. Recreational catches are by far the largest removals associated with this stock (ASMFC 2013)(ASMFC 2015a)(ASMFC 2015b)(ASMFC 2016e). Removals (including mortality due to catch-and-release fishing) are generally well estimated, though some uncertainty does exist, based on area gaps in recreational harvest data, post-release mortality assumptions, and data gaps from the COVID-19 pandemic (NEFSC 2019)(ASMFC 2022e). Still, stock assessment modeling is thorough and attempts to account for sources of uncertainty. Commercial tagging programs to limit illegal striped bass removals are mandated in all states via Amendment 7 to the striped bass FMP and have been in place since 2013 (ASMFC 2022b).

Atlantic striped bass status is updated every year or every other year, with a benchmark assessment conducted every 5 years. The most recent benchmark assessment was released in 2019, with a new benchmark assessment planned for 2024. Managers and the Technical Committee review landings, important indices, state-by-state regulations, and fishery performance yearly.

States with pound net fisheries in the Northwest Atlantic Ocean include New York, Rhode Island, and Delaware. New York has a self-reported Vessel Trip Reports program, in which fishers report their own landings, but there is no formal observer program in place.

A comprehensive regime for research and monitoring is in place fishery-wide, but data and monitoring on bycatch in the pound net fisheries are lacking. Research is underway to better document and reduce these gaps (NMFS 2013). Pound nets tend to target multiple species, so catch composition is monitored somewhat thoroughly through fisher reports of landings, but official observer programs are lacking. This is rated as moderately effective.

3.4 Enforcement Of Management Regulations

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets

Northwest Atlantic | United States | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Handlines and hand-operated pole-and-lines

Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Highly effective

The striped bass FMP requires states to submit annual compliance reports for both commercial and recreational fisheries. The most common violations seen in these reports are captures of undersized or oversized striped bass in recreational fisheries (ASMFC 2022e). The most recent FMP review did not note any commercial violations based on state compliance reports. The review did note three inconsistencies in how states adopted management measures and regulations, all of which were rectified and only one of which dealt with commercial fisheries. Otherwise, states all adopted management programs consistent with Amendment 6 and its provisions and addenda (ASMFC 2022e). Less than 100% of both the ocean and Chesapeake Bay quotas were used in 2020 and 2021, so no overages occurred. The 2021 biennial Atlantic striped bass report to Congress also noted no concerns about compliance issues (NOAA Fisheries 2021b). Further, mandatory commercial tagging programs have been in place since 2013, which aim to limit illegal striped bass removals (ASMFC 2022b).

But several recent news reports have cited issues with illegal poaching of striped bass. Most reports of illegal poaching and regulatory noncompliance stemmed from recreational anglers not following recreational fishing laws, but some poachers may have been commercial fishers. One report cited an issue with fishing outside the 3-mile zone within the EEZ (where striped bass fishing is illegal), and the perpetrator was charged and fined (DEM 2022). Although there remains an issue with illegal poaching, this is primarily in the recreational sector, and no commercial noncompliance issues are noted in the latest reports, resulting in a highly effective score for this factor.

Supplementary Information

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

*Part or all of the monitoring program could not be conducted due to COVID-19.

Figure 7: Status of compliance with monitoring and reporting requirements in the 2021 fishing season. JAI = juvenile abundance index survey, SSB = spawning stock biomass survey, TAG = participation in coastwide tagging program, Y = compliance standards met, N = compliance standards not met, NA = not applicable, R = recreational, C = commercial. Source: ASMFC 2021 Atlantic Striped Bass FMP Review.

3.5 Stakeholder Inclusion

Chesapeake Bay | America, North - Inland Waters | United States |Virginia | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States |Maryland | Gillnets and entangling nets

Northwest Atlantic | United States | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States |Handlines and hand-operated pole-and-lines

Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines

Chesapeake Bay | America, North - Inland Waters | United States |Stationary uncovered pound nets

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Highly effective

ASMFC has a highly transparent process that includes peer review of scientific information, public and stakeholder participation, and notification throughout the process. Stakeholders can comment at management board meetings, at public hearings, and by contacting their representatives on the management boards on the advisor process (ASMFC 2016a). This is rated as highly effective.

Criterion 4: Impacts on the Habitat and Ecosystem

This Criterion assesses the impact of the fishery on seafloor habitats, and increases that base score if there are measures in place to mitigate any impacts. The fishery's overall impact on the ecosystem and food web and the use of ecosystem-based fisheries management (EBFM) principles is also evaluated. Ecosystem Based Fisheries Management aims to consider the interconnections among species and all natural and human stressors on the environment. The final score is the geometric mean of the impact of fishing gear on habitat score (factor 4.1 + factor 4.2) and the Ecosystem Based Fishery Management score. The Criterion 4 rating is determined as follows:

- Score >3.2 = **Green** or Low Concern
- Score >2.2 and ≤3.2 = **Yellow** or Moderate Concern
- Score ≤2.2 = **Red** or High Concern

Guiding principles

- Avoid negative impacts on the structure, function or associated biota of marine habitats where fishing occurs.
- Maintain the trophic role of all aquatic life.
- Do not result in harmful ecological changes such as reduction of dependent predator populations, trophic cascades, or phase shifts.
- Ensure that any enhancement activities and fishing activities on enhanced stocks do not negatively affect the diversity, abundance, productivity, or genetic integrity of wild stocks.
- Follow the principles of ecosystem-based fisheries management.

Rating cannot be Critical for Criterion 4.

Criterion 4 Summary

Fishery	Impact of Fishing Gear on the Habitat/Substrate	Modifying Factor: Mitigation of Gear Impacts	Ecosystem-based Fisheries Management	Score
Chesapeake Bay | America, North - Inland Waters | United States | Handlines and hand-operated pole-and-lines	Score: 5	Score: 0	Moderate Concern	Green (3.873)
Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets	Score: 3	Score: 0	Moderate Concern	Yellow (3.000)
Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets	Score: 3	Score: 0	Moderate Concern	Yellow (3.000)
Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets	Score: 3	Score: 0	Moderate Concern	Yellow (3.000)
Northwest Atlantic | United States | Gillnets and entangling nets	Score: 3	Score: 0	Moderate Concern	Yellow (3.000)
Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines	Score: 5	Score: 0	Moderate Concern	Green (3.873)
Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets	Score: 3	Score: 0	Moderate Concern	Yellow (3.000)

Criterion 4 Assessment

Scoring Guidelines

Factor 4.1 - Physical Impact of Fishing Gear on the Habitat/Substrate

Goal: The fishery does not adversely impact the physical structure of the ocean habitat, seafloor or associated biological communities.

- *5 - Fishing gear does not contact the bottom*
- *4 - Vertical line gear*
- *3 - Gears that contacts the bottom, but is not dragged along the bottom (e.g. gillnet, bottom longline, trap) and is not fished on sensitive habitats.*

Or bottom seine on resilient mud/sand habitats. Or midwater trawl that is known to contact bottom occasionally. Or purse seine known to commonly contact the bottom.

- *2 - Bottom dragging gears (dredge, trawl) fished on resilient mud/sand habitats. Or gillnet, trap, or bottom longline fished on sensitive boulder or coral reef habitat. Or bottom seine except on mud/sand. Or there is known trampling of coral reef habitat.*
- *1 - Hydraulic clam dredge. Or dredge or trawl gear fished on moderately sensitive habitats (e.g., cobble or boulder)*
- *0 - Dredge or trawl fished on biogenic habitat, (e.g., deep-sea corals, eelgrass and maerl)*
  Note: When multiple habitat types are commonly encountered, and/or the habitat classification is uncertain, the score will be based on the most sensitive, plausible habitat type.

Factor 4.2 - Modifying Factor: Mitigation of Gear Impacts

Goal: Damage to the seafloor is mitigated through protection of sensitive or vulnerable seafloor habitats, and limits on the spatial footprint of fishing on fishing effort.

- *+1 —>50% of the habitat is protected from fishing with the gear type. Or fishing intensity is very low/limited and for trawled fisheries, expansion of fishery's footprint is prohibited. Or gear is specifically modified to reduce damage to seafloor and modifications have been shown to be effective at reducing damage. Or there is an effective combination of 'moderate' mitigation measures.*
- *+0.5 —At least 20% of all representative habitats are protected from fishing with the gear type and for trawl fisheries, expansion of the fishery's footprint is prohibited. Or gear modification measures or other measures are in place to limit fishing effort, fishing intensity, and spatial footprint of damage caused from fishing that are expected to be effective.*
- *0 —No effective measures are in place to limit gear impacts on habitats or not applicable because gear used is benign and received a score of 5 in factor 4.1*

Factor 4.3 - Ecosystem-Based Fisheries Management

Goal: All stocks are maintained at levels that allow them to fulfill their ecological role and to maintain a functioning ecosystem and food web. Fishing activities should not seriously reduce ecosystem services provided by any retained species or result in harmful changes such as trophic cascades, phase shifts or reduction of genetic

diversity. Even non-native species should be considered with respect to ecosystem impacts. If a fishery is managed in order to eradicate a non-native, the potential impacts of that strategy on native species in the ecosystem should be considered and rated below.

- *5 — Policies that have been shown to be effective are in place to protect species' ecological roles and ecosystem functioning (e.g. catch limits that ensure species' abundance is maintained at sufficient levels to provide food to predators) and effective spatial management is used to protect spawning and foraging areas, and prevent localized depletion. Or it has been scientifically demonstrated that fishing practices do not have negative ecological effects.*
- *4 — Policies are in place to protect species' ecological roles and ecosystem functioning but have not proven to be effective and at least some spatial management is used.*
- *3 — Policies are not in place to protect species' ecological roles and ecosystem functioning but detrimental food web impacts are not likely or policies in place may not be sufficient to protect species' ecological roles and ecosystem functioning.*
- *2 — Policies are not in place to protect species' ecological roles and ecosystem functioning and the likelihood of detrimental food impacts are likely (e.g. trophic cascades, alternate stable states, etc.), but conclusive scientific evidence is not available for this fishery.*
- *1 — Scientifically demonstrated trophic cascades, alternate stable states or other detrimental food web impact are resulting from this fishery.*

4.1 Impact of Fishing Gear on the Habitat/Substrate

Chesapeake Bay | America, North - Inland Waters | United States | Handlines and hand-operated pole-and-lines

Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines

Score: 5

Hook and line fishing for striped bass occasionally encounters the bottom; however, two of the largest estuaries where fishing occurs, Chesapeake and Delaware Bays, have bottom types that comprise sand, silt, and clay muds (Chesapeake Bay Benthic Habitat Integration 2009). Therefore, this gear does not pose a risk to bottom habitat and is scored a 5.

Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets

Score: 3

Bottom gillnets not anchored on rocky reefs/boulder or corals receive a score of 3 for physical impact on the habitat.

Supplementary Information

Bottom gillnets contact bottom habitat through their anchors set in substrate, bottom leadlines resting on substrate, and net resting on substrate (DFO 2010). These components of the gear are most likely to create an impact when currents are swift enough to shift the nets or when gear is removed from the water (Sorenson et al. 2015).

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Score: 3

Pound nets operate similarly to fish traps, using a fence leader to guide fish into a trap (NOAA Fisheries 2019). Bottom traps not set on rocky reefs/boulder and corals receive a score of 3 for physical impact on the habitat.

Supplementary Information

Fish traps like pound nets sit on the sandy/gravel/muddy bottoms. During the setting and retrieval of pound nets, bottom habitat may be affected due to gear dragging and/or movement (Stevens 2020).

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Score: 3

A mixture of drift and anchored gillnets are used in Virginia, so the more precautionary score from these is used. Bottom gillnets not anchored on rocky reefs/boulder or corals receive a score of 3 for physical impact on the habitat.

Supplementary Information

Bottom gillnets contact bottom habitat through their anchors set in substrate, bottom leadlines resting on substrate, and net resting on substrate (DFO 2010). These components of the gear are most likely to create an impact when currents are swift enough to shift the nets or when gear is removed from the water (Sorenson et al. 2015).

Northwest Atlantic | United States | Gillnets and entangling nets

Score: 3

A mixture of drift and anchored gillnets are used in the Northwest Atlantic, so the more precautionary score from these is used. Bottom gillnets not anchored on rocky reefs/boulder or corals receive a score of 3 for physical impact on the habitat.

Supplementary Information

Bottom gillnets contact bottom habitat through their anchors set in substrate, bottom leadlines resting on substrate, and net resting on substrate (DFO 2010). These components of the gear are most likely to create an impact when currents are swift enough to shift the nets or when gear is removed from the water (Sorenson et al. 2015).

4.2 Modifying Factor: Mitigation of Gear Impacts

Chesapeake Bay | America, North - Inland Waters | United States | Handlines and hand-operated pole-and-lines

Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines

Score: 0

Not applicable because hook and line gear is benign and received a score of 5 in Factor 4.1.

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Score: 0

Although some areas and even states are closed to pound net fishing (ASMFC 2015a), such closures are generally to reduce harvest, to reduce bycatch, or because commercial fishing is not allowed (ASMFC 2015a)(ASMFC 2015b). Overall, these closures do not reach the threshold of moderate mitigation because the bulk of the commercial harvest comes from Chesapeake Bay and its tributaries, which are open to gillnet fishing. Hence, a score of 0, or no mitigation, has been given.

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets

Northwest Atlantic | United States | Gillnets and entangling nets

Score: 0

Although some areas and even states are closed to gillnet fishing (ASMFC 2015a), such closures are generally to reduce mortality, to reduce bycatch, or because commercial fishing is not allowed (ASMFC 2015a). Overall, these closures do not reach the threshold of moderate mitigation because the bulk of the commercial harvest comes from Chesapeake Bay and its tributaries, which are open to gillnet fishing. Hence, a score of 0, or no mitigation, has been given.

4.3 Ecosystem-based Fisheries Management

Chesapeake Bay | America, North - Inland Waters | United States | Virginia | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Maryland | Gillnets and entangling nets

Northwest Atlantic | United States | Gillnets and entangling nets

Chesapeake Bay | America, North - Inland Waters | United States | Handlines and hand-operated pole-and-lines

Northwest Atlantic | United States | Handlines and hand-operated pole-and-lines

Chesapeake Bay | America, North - Inland Waters | United States | Stationary uncovered pound nets

Northwest Atlantic | United States | Stationary uncovered pound nets | Fyke nets

Moderate Concern

While some prey species of striped bass are managed in a way that incorporates their ecosystem role as forage and prey species, striped bass are not managed according to their ecosystem function. The 2019–23 ASMFC strategic plan notes the increased desire for ecosystem-based management, and the ASMFC Habitat Program helps develop ecosystem-based management efforts, goals, and tools (ASMFC 2019g). These efforts are not currently incorporated into striped bass management. Ecosystem-based reference points and harvest control rules are currently in place for Atlantic menhaden and Atlantic herring; however, none of the other important forage species for striped bass, nor striped bass themselves, are currently managed in an ecosystem context. Striped bass can place predation pressure on vulnerable forage stocks such as river herring, shad, and weakfish (Davis et al. 2012){Hartman and Brandt 1995}. Currently, no measures are in place that examine the top-down role of striped bass and its potential consumption of these vulnerable stocks; however, it is not expected that the striped bass fishery contributes to detrimental food web impacts, such as trophic cascades. This is partly because similar roles are occupied by other predators, such as bluefish, weakfish, and spiny dogfish (ASMFC 2012b). Thus, a score of moderate concern was assigned.

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Scientific review does not constitute an endorsement of the Seafood Watch® program, or its seafood recommendations, on the part of the reviewing scientists. Seafood Watch® is solely responsible for the conclusions reached in this report.

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Appendix A: Updates to Striped Bass Report

Updates to the November 7, 2016 Striped Bass report were made on December 20, 2019:

Overall Recommendations for striped bass caught by handlines and hand-operated pole-and-lines downgraded to “Good Alternative” and striped bass caught via set gillnets and stationary uncovered pound nets downgraded to “Avoid.” Changes are due to recently updated stock status changes (C1 and C2) and updated scoring for management strategies as outlined below.

Updates included:

- C1: Downgraded from low concern to high concern (C1.1) and moderate concern to high concern (C1.2) for all fisheries because of an updated stock assessment stating that striped bass is overfished and undergoing overfishing. Scoring and Summary changed.
- C2.2: Weakfish downgraded from moderate concern to high concern for the gillnet fishery because of an updated stock assessment, stating that total mortality on this species is too high. This did NOT change the impacts on other species scoring overall.
- C2.2: Weakfish downgraded from low concern to high concern for the pound net fishery because of an updated stock assessment stating that total mortality on this species is too high. This did NOT change the impacts on other species scoring overall.
- C3.1 (Management Strategy): Downgraded from highly effective to moderately effective because of continued overfishing of striped bass, uncertain effectiveness of new policies, and moderately effective management of other landed species. Scoring changed.
- Executive Summary verbiage was also updated to reflect any changes appropriately.

Appendix B: Updates to Striped Bass Report

Updates to the March 2, 2020 Striped Bass report were made on June 3, 2024:

Overall Recommendations for striped bass caught by handlines and hand-operated pole-and-lines maintained a Yellow rating. Striped bass caught by gillnets and pound nets improved from a Red to a Yellow rating. Changes within individual criteria are the result of recently updated stock status changes, landings data (C1 and C2), and management effectiveness (C3) as outlined below.

Updates included:

- Overall: The previous striped bass report included one fishery each for handlines, pound nets, and gillnets. But updated information from managers across different states indicated that catch composition was likely different between Chesapeake Bay fisheries and open ocean (Northwest Atlantic) fisheries. Therefore, the new report separates fisheries by both gear type and region. Further, gillnets in the Chesapeake Bay were split into two separate fisheries because of differences in seasonality (and therefore catch composition) between Maryland and Virginia striped bass gillnets.
- C1: Moved from high concern to moderate concern (C1.2) for all fisheries because of an updated stock assessment stating that striped bass is no longer undergoing overfishing. But preliminary 2022 data add uncertainty to the overfishing status of the stock, because fishing mortality seemingly increased from 2021 to 2022. Scoring and Summary changed. C1.1 remains the same because the stock remains overfished.
- C2: Main species for Chesapeake Bay fisheries were adapted from the previous striped bass report. Blue catfish was added as a bycatch species in some Chesapeake Bay fisheries because it is an invasive species often targeted alongside striped bass in gillnets and pound nets. White perch was downgraded from low concern to moderate concern for C2.2 in the Chesapeake Bay pound net fishery because the latest assessment in Maryland shows fishing mortality to be between the target and threshold reference points. Common carp, bluefish, and gizzard shad were added to some Chesapeake Bay fisheries because data from Virginia and/or statements from Maryland managers indicate that these species are caught in significant numbers in striped bass fisheries. The Northwest Atlantic Ocean fisheries' main species were based on catch composition data reported by New York fishers. These data were used as a proxy for all Northwest Atlantic

Ocean fisheries, because there were no data available from other states with commercial striped bass fisheries. Finally, several C2 species from the previous report were removed based on updated information from Maryland and Virginia managers, including Atlantic sturgeon, American shad, river herring, and weakfish. Shad and river herring are only in the Bay seasonally, and their seasonal presence does not overlap with most of the striped bass commercial seasons. Atlantic sturgeon is not reported as a species that interacts with either Maryland or Virginia fisheries. Weakfish is encountered in quite small numbers in Virginia fisheries (<0.1% of observed landings) and is not typically seen in Maryland striped bass fisheries. These changes collectively improved the C2 score overall for gillnet and pound net fisheries, resulting in a mixture of green and yellow C2 scores.

- C3: Management strategy (C3.1) was altered in gillnets and pound nets to include management of blue catfish and other new C2 species (and removal of some previous C2 species). No scoring impacts resulted from this addition. Bycatch strategy (3.2) language was also updated, and the score for one pound net fishery improved, based on updated C2 species and their management.
- Some language updates were made to reflect recent stock assessments and management documents, even if scoring did not change as a result of this new information.
- Executive Summary verbiage was also updated to reflect any changes appropriately.

Appendix C: Supplemental Edits to Striped Bass Report (2025)

The text in this assessment was edited on February 3, 2025 to reflect the most recent stock assessment. Text changes include:

- Including information in C1.1 and 1.2 text outlining the 2024 stock assessment results (which were consistent with previous stock assessment results)
- Including information in C3.3 outlining the 2024 stock assessment results and resulting management actions
- Text changes in the executive summary to reflect inclusion of the 2024 stock assessment