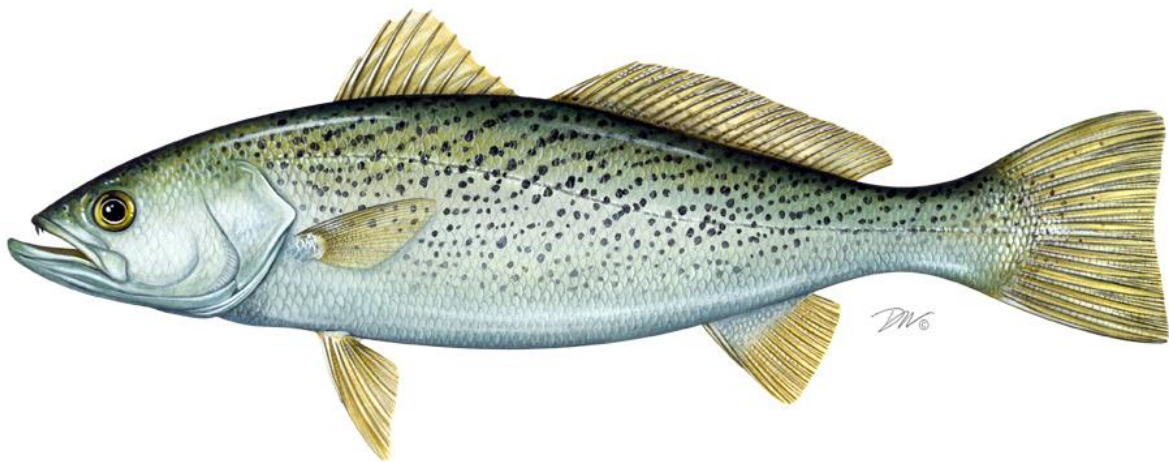


ATLANTIC STATES MARINE FISHERIES COMMISSION

REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN

FOR WEAKFISH
(Cynoscion regalis)

2020 FISHING YEAR



Prepared by the Plan Review Team
Approved November 2021



Sustainable and Cooperative Management of Atlantic Coastal Fisheries

DRAFT FOR BOARD REVIEW

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I. Status of the Fishery Management Plan

<u>Date of FMP Approval:</u>	Original FMP – October 1985
<u>Amendments & Addenda:</u>	Amendment 1 – March 1992 Amendment 2 – December 1994 Amendment 3 – May 1996 Addendum I to Amendment 3– October 2000 Amendment 4 – November 2022 Addendum I – December 2005 Addendum II – February 2007 Addendum III – May 2007 Addendum IV – November 2009
<u>Management Areas:</u>	The Atlantic coast distribution of the resource from Rhode Island through Florida
<u>Active Boards/Committees:</u>	Weakfish Management Board; Weakfish Technical Committee and Plan Review Team; Weakfish Advisory Panel

The Atlantic States Marine Fisheries Commission (Commission) adopted its first [Fishery Management Plan \(FMP\) for Weakfish](#) in 1985. [Amendment 1](#) to the FMP (1992) unsuccessfully aimed to improve the status of Weakfish. [Amendment 2](#) (1995) resulted in some improvement to the stock, but several signs indicated that further improvement was necessary. Thus, [Amendment 3](#) (1996) was implemented to increase the sustainability of the fishery. [Addendum I to Amendment 3](#) was approved in 2000 in order to extend the management program until the next amendment was implemented.

[Amendment 4](#), approved in 2002, strives to establish two goals. One is the utilization of interstate management so that Atlantic coastal weakfish recover to healthy levels that will maintain commercial and recreational harvest consistent with a self-sustaining spawning stock. The second goal is to provide for restoration and maintenance of essential habitat (ASMFC 2002). The management objectives are to:

1. establish and maintain an overfishing definition which includes target and threshold fishing mortality rates and a threshold spawning stock biomass in order to prevent overfishing and to maintain a sustainable weakfish population;
2. restore the weakfish age and size structure to that necessary for the restoration of the fishery;
3. return weakfish to their previous geographic range;

4. achieve compatible and equitable management measures among jurisdictions throughout the fishery management unit, including states' waters and the federal EEZ;
5. promote cooperative interstate research, monitoring, and law enforcement necessary to support management of weakfish;
6. promote identification and conservation of habitat essential for the long term stability in the weakfish population; and
7. establish standards and procedures for both the implementation of Amendment 4 and for determination of states' compliance with provisions of the management plan.

Amendment 4 established target and threshold fishing mortality rates and a threshold spawning stock biomass level to determine overfishing and overfished stock status. The amendment requires states to implement recreational and commercial management measures to achieve annual fishing mortality targets. Some management measures are specified (e.g., minimum size limit, minimum mesh size, bycatch limit), while the Amendment provides the states flexibility in implementing other regulations (e.g., trip limits, area or season closures). States may request implementation of alternative management plans with conservationally equivalent measures. States deemed to have insignificant landings were exempt from the recreational and commercial requirements, with the exception of the bycatch reduction device requirements.

The Commission adopted [Addendum I to Amendment 4](#) (2005) to replace the biological sampling program in Section 3.0 of Amendment 4. In response to a significant decline in stock abundance and increasing total mortality since 1999, the Commission approved [Addendum II to Amendment 4](#) (2007) to reduce the recreational creel limit and commercial bycatch limit, and set landings levels that when met will trigger a re-evaluation of management measures. [Addendum III to Amendment 4](#) (2007) altered the bycatch reduction device certification requirements in Section 4.2.8 of Amendment 4 for consistency with the South Atlantic Fishery Management Council's Shrimp FMP. The Commission approved [Addendum IV to Amendment 4](#) in 2009 to respond to the results of the 2009 benchmark stock assessment (additional information is provided in Section VI. Status of Management Measures and Issues).

Weakfish are managed under this plan as a single stock throughout their coastal range. All Atlantic coast states from Rhode Island through Florida. Other interested parties include the Potomac River Fisheries Commission and the National Marine Fisheries Service (NOAA Fisheries). See Table 1 for a summary of state-by-state regulations in 2020.

II. Status of the Stock

The most recent benchmark stock assessment, conducted in 2016, concluded that the weakfish stock was depleted and overfishing was not occurring (ASMFC 2016). A stock assessment update was completed in 2019 (ASMFC 2019), applying the Bayesian statistical catch-at-age model from

the 2016 benchmark assessment to data through 2017. This update also incorporated the new, calibrated estimates of recreational catch by the Marine Recreational Information Program.

Estimates of recruitment, spawning stock biomass, and total abundance remained low in recent years. Estimates of fishing mortality were moderately high in recent years, although not near the time-series highs of the mid- to late-2000s, or the earliest years. Natural mortality remained high, averaging 0.92 in the most recent 10 years, compared to 0.16 over the first 10 years of the time series.

Spawning stock biomass in 2017 was estimated at 1,922 mt, below the SSB threshold of 6,170 mt, indicating the stock is depleted. SSB has shown a slight increasing trend in recent years, but is still well below the SSB threshold.

Total mortality in 2017 was estimated at 1.45, above both the Z target = 1.03 and the Z threshold = 1.43, indicating total mortality on the stock is too high.

III. Status of the Fishery

In 2020, total coastwide landings of weakfish were 675,367 pounds, a 38% increase from 2019. The commercial fishery (193,949 lb) accounted for 29% of the total 2020 landings, and the recreational fishery (481,418 lb) accounted for 71% (Table 2).

Commercial Fishery

Commercial data are cooperatively collected and compiled by the Atlantic Coastal Cooperative Statistics Program (ACCSP) and state fishery agencies from state mandated trip-tickets, landing weigh-out reports from seafood dealers, federal logbooks, shipboard and portside interviews, and biological sampling of catches. In this report, commercial landings from 2019 and earlier are from ACCSP and landings from 2020 are from state compliance reports, unless otherwise stated (see notes for Table 3).

Commercial harvest of weakfish peaked in 1980 at 36 million pounds, but has declined since then (Figure 3 & 4). Commercial landings have not exceeded 1 million pounds since 2004. Landings, including bycatch, in 2020 were 232,684 pounds. North Carolina (49%), New York (17%) and Virginia (15%) landed the largest shares of the 2020 coastwide commercial weakfish harvest (Table 3).

Recreational Fishery

Recreational catch statistics are collected by NOAA Fisheries. Effort data are collected through telephone interviews. Catch expansions are based on angler interviews and biological sampling conducted by trained interviewers stationed at fishing access sites. Recreational data from 2016 and earlier in this report are from the Fisheries Statistics Division of NOAA Fisheries, queried from the Marine Recreational Information Program (MRIP; 2019), except as noted in Section VI of this report for Florida's estimates. Some states also monitor and report recreational landings through

their own sampling and estimation efforts. Recreational landings for 2020 are calculated from landings reported in state compliance reports.

The recreational fishery catches weakfish using live or cut bait, jigging, trolling, and chumming. Coastwide recreational landings peaked at 20 million pounds in 1987, but have generally declined since then through the present (Figure 3 & 4). Recreational landings have not exceeded 1 million pounds since 2008. In 2020, recreational landings were 481,418 pounds or 319,778 fish. South Carolina harvested the largest percentage of the 2020 recreational harvest (40% by pounds), followed by North Carolina (22%), and New York (19%).

The number of fish released alive by anglers has typically been above 1 million fish since 1991. In 2020, 1,220,228 fish were released (Figure 4). North Carolina had the largest share of releases (31%), followed by Virginia (26%), and New York (20%).

The size of fish sampled to provide the MRIP weight estimates has historically varied in a latitudinal fashion, with larger fish caught in the north and smaller fish caught in the south. The mean weight per fish sampled throughout the recreational time series (1981-2020) is roughly 1.44 pounds for all states from Florida through Virginia and an average of 2.3 pounds for all states north of Virginia. In 2020, the mean weights for fish caught in New Jersey, Delaware, Virginia, North Carolina, South Carolina, Georgia, and Florida (1.45, 2.71, 1.83, 1.29, 1.23, 1.31, and 1.54 lb, respectively) were greater than each state's time series mean, and the mean weights for fish caught in Connecticut, New York, Maryland, and North Carolina. (3.03, 2.72, and 0.77 respectively) were less than each state's time series mean.

IV. Status of Assessment Advice

The 2016 benchmark assessment was completed by the ASMFC Weakfish Stock Assessment Subcommittee (SAS) and peer reviewed by the ASMFC Weakfish Stock Assessment Review Panel (ASMFC 2016). The benchmark assessment includes fishery data and survey indices through 2014. An update to this assessment was conducted by the Weakfish TC in 2019, with data through 2017 and updated recreational catch estimates from the MRIP (ASMFC 2019).

As a result of the update, the Weakfish TC recommends maintaining the Z and SSB reference points as re-calculated by the update, along with a two-stage control rule for evaluating weakfish stock status and management response.

Under conditions of time-varying natural mortality, there is no long-term stable equilibrium population size, so an SSB target is not informative for management. The Weakfish TC recommends an SSB threshold of $SSB_{30\%} = 6,170$ mt that is equivalent to 30% of the projected SSB under average natural mortality and no fishing. When SSB is below that threshold, the stock is considered depleted.

SSB in 2017 was estimated at 1,922 mt, below the SSB threshold of 6,170 mt, indicating the stock is depleted (Figure 1). SSB has shown a slight increasing trend in recent years, but is still well below the SSB threshold.

The TC recommends the use of total mortality (Z) benchmarks to prevent an increase in fishing pressure when F is low but M is high. When Z is below the Z target, F reference points can be used to assess overfishing status.

Total mortality in 2017 was estimated at 1.45, above both the Z target = 1.03 and the Z threshold = 1.43, indicating total mortality on the stock is too high (Figure 1).

The 2019 stock assessment update adds three additional years of data and indicates that the weakfish stock is depleted. In 2017, SSB was 4.24 million pounds which is well below the 30% threshold of 13.6 million pounds. The assessment proposes a total mortality target of 1.03 and threshold of 1.43. Total mortality in 2017 was 1.45, which is above both the threshold and target, indicating that total mortality is too high. Overfishing is not occurring due to low levels of harvest in recent years, but high levels of total mortality (fishing mortality and natural mortality) prevent the stock from recovering.

V. Status of Research and Monitoring

Fishery-Independent Data

Young-of-year indices of relative abundance are provided by Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, and Florida. Connecticut, New Jersey, Delaware, Maryland, North Carolina, South Carolina, and Florida provide age- 0+ or 1+ indices of relative abundance. The Northeast Fisheries Science Center Groundfish Trawl Survey also produces an age-structured index for the Mid-Atlantic coast, while the Southeast Area Monitoring and Assessment Program (SEAMAP) survey produces another index for the South Atlantic Coast. The Northeast Area Monitoring and Assessment Program (NEAMAP) began spring and fall surveys between Martha's Vineyard and Cape Hatteras in the fall of 2007, and provided an Age 1+ index which is included in the 2016 assessment. Stomach content analysis was also done to assess food habit changes and investigate the possible decrease in preferred food availability as a driver of natural mortality, however results were inconclusive. The Chesapeake Bay Multispecies Monitoring and Assessment Program (ChesMMAP), which began in 2002, collects data on relative abundance, length, weight, age, sex, and trophic interactions in the Bay. See Table 7 for the indices provided in the 2020 compliance reports. While only the most recent years of data are shown, full data sets for each survey are available upon request to the state or Commission.

Fishery-Dependent Data

The coastal states and NOAA Fisheries collect data on commercial and recreational landings. Addendum I to Amendment 4 requires the collection of otoliths and lengths to characterize the catch; the number of samples required is based on the magnitude of each state's fisheries. Each spring, the states are required to submit biological sampling plans, and each fall, through the

compliance reports, the states are required to provide the actual sampling levels completed. See Section VII for more information.

VI. Status of Management Measures and Issues

Fishery Management Plan

Addendum IV to Amendment 4 was approved in November 2009, and was implemented in May 2010. In response to the 2009 stock assessment results, the addendum implements more appropriate biological reference points in response to recent stock dynamics and reduces harvest while attempting to minimize unnecessary bycatch waste. Addendum IV requires all states in the management unit (including those that are *de minimis*) to implement a recreational creel limit no greater than 1 fish, commercial trip and bycatch limits no greater than 100 pounds, and a finfish trawl fishery allowance for up to 100 undersized fish. The addendum adopted percentage based biological reference points with an overfished/depleted threshold of 20% SSB and a target of 30% SSB. The biological sampling requirements under Addendum I are unchanged, and all regulations previously enacted to protect weakfish and reduce bycatch are to remain effective.

No additional amendments or addenda are under development.

Florida Management Area and Landings Data

In November 2009, the Management Board approved a proposal from Florida to reduce the state's weakfish management area to a small area in northeast Florida where pure weakfish are known to occur based on genetics data. The revision is intended to address the misidentification of weakfish, sand seatrout, silver seatrout, and their hybrids, and the consequential law enforcement issue. Inside the newly established weakfish management area (St. Mary's River only), any fish that resembles weakfish will be considered weakfish for enforcement purposes, both for commercial and recreational limits. Outside the weakfish management area, all fish that resemble weakfish will be considered sand seatrout.

As a result of the approved proposal, the commercial and recreational landings data provided in Florida's compliance reports represent the best estimate of pure weakfish landings in the state. Commercial landings data from Florida's trip ticket program and recreational landings from the NMFS's Marine Recreational Fisheries Statistics Survey include only weakfish landed in Nassau and Duval counties, as revised on the basis of the genome proportions within the *Cynoscion*-complex found in the counties (48% weakfish in Nassau County and 17% in Duval County).

De Minimis Status

Amendment 4 permits states to request *de minimis* status if, for the last two years, their combined average commercial and recreational landings (by weight) constitute less than 1% of the coastwide commercial and recreational landings for the same two year period.

Three states requested *de minimis* status in their 2020 compliance reports: Massachusetts, Connecticut, and Florida. Massachusetts (0.8379%) and Florida (0.23%) remain below the 1% threshold, but Connecticut (1.67%) does not.

VII. Implementation of FMP Compliance Requirements for 2020

Mandatory compliance elements for 2020 were provided by Amendment 4 and its four addenda.

Regulatory Requirements

The management program includes regulatory requirements for non *de minimis* states as follows:

- Recreational management measures including minimum size limits and a maximum creel limit of one fish (see Addenda II and IV to Amendment 4)
- Commercial management measures including minimum size limits, minimum mesh size limits, landings limits, trip limits, bycatch limits, closed seasons and areas, and bycatch reduction device requirements (see Section 4.2 of Amendment 4, and Addendum IV)

The PRT no inconsistencies among states regarding the FMP's compliance requirements.

See Table 1 for a summary of state commercial and recreational regulations in 2020.

Monitoring Requirements

Addendum I implemented monitoring requirements for non *de minimis* states as follows:

- Maintenance of at least the 2005 level of recreational sampling of individual lengths through the Marine Recreational Fisheries Statistics Survey;
- Collection of six individual fish lengths for each metric ton of weakfish landed commercially;
- Collection of three individual fish ages for each metric ton of total weakfish landed, with a maximum of 1000 ages annually per state [Samples may come from commercial and/or recreational fishery as long as they come from the same general area (inshore versus offshore) that those fisheries are prosecuted in.

Table 9 provides the otolith and length collection requirements for 2020. These are based on the best available 2020 landings data provided to the Commission by the ACCSP, NMFS, and the states. Sampling efforts are based on recreational harvests estimated using the FES. Several states were unable to conduct or complete sampling efforts due to the ongoing COVID-19 pandemic. The PRT recommends not penalizing any state for failing to meet sampling requirements due to the unforeseen circumstances surrounding the pandemic.

VIII. Recommendations of the Plan Review Team

Research recommendations can be found in the [2019 Stock Assessment Update Report](#).

Management and Regulatory Recommendations

- The PRT noted that Connecticut's harvest is slightly above the *de minimis* threshold for the second year in a row. However, Connecticut has maintained *de minimis* status since 2003. The PRT discussed whether to recommend another year of *de minimis*

status or not. Concerns over MRIP data in 2020 due to COVID-19 and potential changes to those 2020 values lead the PRT to support maintaining Connecticut's *de minimis* status for one more year. If Connecticut exceeds the *de minimis* threshold again next year, then the PRT will recommend against granting *de minimis* status. The PRT will continue to monitor the situation and recommends the Board approve the *de minimis* requests from Massachusetts, Connecticut, and Florida.

- Increased collection of information regarding discards and bycatch of weakfish in both commercial and recreational fisheries by way of increased observer coverage, logbook reporting, and other fishery-dependent data collection methods.
- The PRT recommends focusing on better understanding the potential range expansion and additional research into links between weakfish population dynamics and life history variability in response to environmental factors such as land use patterns, climate change, etc. This includes a better understanding of their winter migration offshore and subsequent spawning events based on a recent tagging studies in 2020 (Krause et al. 2020a, 2020b).

IX. References

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X. Tables

Table 1. Summary of state regulations for weakfish in 2020.

	Commercial	Recreational	Implementation Date
MA	16", open 1/1-12/31, 100 lb possession limit.	16", 1 fish	June 2010
RI	16"; open 6/1-6/30 & 8/7-11/8, 100 lb possession limit. Other times of year: 100 pound bycatch limit with at least an equal poundage of other species as weakfish. Trawl codend mesh size ≥ 4.5 " diamond or 4.0" square.	16", 1 fish	April 28, 2010
CT	16"; open 1/1-12/31, 100 lb possession limit.	16", 1 fish	April 25, 2010
NY	16" (12" dressed & 10" filleted); Hook and line open 4/1-6/24 & 8/28-11/15; 0 lb bycatch limit. All other gears open 4/1-6/24 and 8/28-11/15; 100 lb bycatch limit.	16" (12" dressed, 10" fillet), 1 fish	By May 1, 2010
NJ	Gill net: 13"; open 1/1-5/20 & 9/3-10/19 & 10/27-12/31, 100 lb possession limit; mesh ≥ 3.25 " stretched except 2.75 - 3.25" allowed within 2nm for permitted fishermen doing monthly reporting. Otter trawl: 13"; open 1/1-7/31 & 10/13-12/31, 100 lb possession limit; mesh ≥ 3.75 " diamond or 3.375 square. Pound net: 13"; open 1/1-6/6 & 7/1-12/31, 100 lb possession limit. 100 lb bycatch limit & 50% rule. Hook & line: 13", 1 fish, open 1/1-12/31.	13", 1 fish	March 25, 2010
DE	Gill net: 12"; only nets with stretch mesh ≥ 3.125 " allowed in water 4/1-6/30, none permitted weekends and legal holidays 5/10-9/30, 100 lb possession limit. Drift gill net: open 1/1-12/31 except 34 specified days of gear out of water in May and June. Anchor gill net: open 1/1-5/9 and 10/1-12/31, otherwise gear out of water. Hook & line: 13"; 100 lb possession limit 4 days/week during 5/1-10/31, 1 fish creel limit all other times.	13", 1 fish	April 11, 2010
MD	12". Ocean all gears: 100 lb bycatch limit & 50% rule. Chesapeake Bay hook & line: open 8/1-9/30, 50 lb possession limit, 0 lb bycatch. Chesapeake Bay all other gears: 50 lb bycatch limit & 50% rule. Gillnet: mesh ≥ 3.0 " stretched. Trawl: mesh ≥ 3.375 " square or 3.75" diamond.	13", 1 fish	June 28, 2010
PRFC	12"; open 7/28-12/31, 50 lb possession limit; 50 lb bycatch limit & 50% rule for certified pound nets with approved cull panels, and 0 lb bycatch for all other gears. Pound net: limited entry.	12", 1 fish	January 1, 2010

Table 1. (continued)

State	Commercial	Recreational	Implementation Date
VA	Gill net: 12"; open 3/16-5/13 & 10/21-12/30, 100 lb possession limit. Pound net: no minimum size; limited entry; open 4/1-4/30 & 5/23-9/12 unless exempted by license forfeit, 100 lb possession limit. Haul seine: no minimum size; open 4/16-6/10 & 8/21-9/24, 100 lb possession limit. Out of state trawl: 12" except 100 undersized fish allowed; open 4/1-9/25, 100 lb possession limit; codend mesh \geq 3.0". Hook & line: 12"; open 1/1-12/31, 100 lb possession limit. 100 lb bycatch limit (per vessel), 50% rule for all gears during closed seasons.	12", 1 fish	May 1, 2010
NC	12", except 10" for long haul seines & pound nets in internal waters 4/1-11/15; open 1/1-12/31, 100 lb trip limit. Gill net: mesh \geq 2.875" stretch. Gill nets and flynets that do not meet mesh requirements can only take weakfish as bycatch provided the weight of weakfish doesn't exceed 50% of catch up to 100lb, 100lb limit in shrimp or crab trawl. BRDs in shrimp trawls.	12", 1 fish	August 20, 2010
SC	12", 1 fish. BRDs in shrimp trawls.	12", 1 fish	July 1, 2010
GA	13", 1 fish. BRDs in shrimp trawls.	13", 1 fish	June 3, 2010
FL	12", 100 lb possession limit. BRDs in shrimp trawls.	12", 1 fish	July 27, 2010

Table 2. Commercial and recreational Atlantic coast weakfish landings from 2011 to 2020 (see Tables 3 and 4 for source information and state-specific landings).

Year	Recreational Landings (lb)	Commercial Landings (lb)	Total Landings (lb)	% Com
2011	102,754	110,528	213,282	52%
2012	671,631	211,489	883,120	24%
2013	466,930	309,775	776,705	40%
2014	218,581	179,133	397,714	45%
2015	451,266	129,819	581,085	22%
2016	228,857	151,047	379,904	40%
2017	436,042	159,464	595,506	27%
2018	125,602	102,492	228,094	45%
2019	299,312	191,023	490,335	39%
2020	481,418	232,684	714,102	33%

Table 3. Commercial landings (pounds) of weakfish by state, 2011-2020 (Source: ACCSP for 2019 and earlier and state compliance reports for 2020, except as noted below). “C” values are confidential.

Year	MA	RI	CT	NY	NJ	DE	MD
2011	615	5,766	2,105	17,136	13,324	C	646
2012	616	17,908	4,723	63,119	19,291	C	2,078
2013	3,400	31,826	5,960	108,656	14,829	C	3,344
2014	918	15,583	3,343	33,303	8,415	C	2,126
2015	473	6,327	1,666	24,487	9,655	C	1,394
2016	882	12,022	2,731	30,714	6,596	C	914
2017	2,175	17,243	3,956	36,671	5,875	C	858
2018	1,190	8,785	2,004	23,070	7,693	800	555
2019	291	7,107	4,506	21,189	4,758	1,503	884
2020	204	24,276	6,857	39,779	6,594	C	1,639
	PRFC	VA	NC	SC	GA	FL	Total
2011	45	4,386	65,897	C	C	608	110,528
2012	98	10,274	91,383	C	C	1,999	211,489
2013	24	20,484	120,188	C	C	1,065	309,775
2014	10	9,633	105,246	C	C	557	179,133
2015	3	4,843	80,230	C	C	741	129,819
2016	C	12,610	83,958	C	C	621	151,047
2017	5	5,560	85,442	C	C	1,680	159,464
2018	C	22,882	35,133	C	C	381	102,492
2019	C	35,007	115,638	C	C	140	191,023
2020	C	35,312	91,374	C	C	328	207,880

Notes: FL: state-reported landings (NMFS-reported landings limited to Nassau and Duval Counties and adjusted on the basis of the genome proportions of weakfish within the Cynoscion-complex in those counties' waters).

Table 4. Recreational landings (pounds) of weakfish by state, 2009-2020 (Source: MRIP FES-calibrated estimates, except as noted below).

Year	MA	RI	CT	NY	NJ	DE	MD
2011				164	6,845	27	241
2012				43,385	373,328	11,621	42,885
2013		4,063		85,934	226,756	21,522	7,539
2014				14,916	61,426	7,118	2,808
2015				5,852	53,485	2,293	68,225
2016	571		4,240	29,573	26,616	3,601	1,947
2017	3,108			20,962	225,225	2,385	5,926
2018	756		1,404	19,593	24,407	4,199	
2019			8,238	75,405	38,886	13,941	9,604
2020	8,692	20,575	528	91,862	14,716	6,231	34
	VA	NC	SC	GA	FL		Total
2011	14,185	62,543	17,028	1,191	530		102,754
2012	51,999	95,952	45,528	6,265	668		671,631
2013	4,657	66,720	45,031	3,771	937		466,930
2014	26,220	70,988	28,773	5,570	762		218,581
2015	66,528	157,269	96,416	1,096	102		451,266
2016	44,242	83,702	29,448	4,264	653		228,857
2017	15,649	55,944	58,510	47,776	557		436,042
2018	6,788	29,924	19,930	16,492	2,109		125,602
2019	30,573	43,252	72,949	4,538	1,926		299,312
2020	30,398	105,729	191,454	10,897	302		481,418

Notes: FL: state-reported landings 1983-present (NMFS-reported, FES-calibrated estimates limited to Nassau and Duval Counties and adjusted on the basis of the genome proportions of weakfish within the Cynoscion-complex found in those counties' waters.

Table 5. Recreational landings (numbers) of weakfish by state, 2011-2020 (Source: MRIP FES-calibrated estimates, except as noted below).

Year	MA	RI	CT	NY	NJ	DE	MD
2011				106	8,393	34	284
2012				12,895	276,856	11,077	38,598
2013		737		20,659	89,805	16,325	3,736
2014				1,838	16,146	6,624	1,542
2015				2,123	73,062	1,511	12,567
2016	327		1,601	4,626	12,344	1,440	2,100
2017	1,880		0	16,534	78,831	1,365	9,175
2018	393		466	9,086	16,177	1,782	
2019			2,535	36,672	35,089	2,470	7,191
2020	3584	6840	174	33,819	10,157	2,301	44
	VA	NC	SC	GA	FL		Total
2011	18,999	48,727	17,834	1,796	471		96,644
2012	46,275	96,947	51,947	7,436	988		543,019
2013	4,336	63,090	28,117	4,407	2,086		233,298
2014	32,380	71,912	24,733	7,896	905		163,976
2015	10,286	143,543	74,085	1,673	143		318,993
2016	37,664	77,341	22,843	5,328	1,251		166,865
2017	14,405	51,795	45,836	55,471	848		276,140
2018	5,556	30,935	10,705	13,805	1,404		90,309
2019	38,292	39,061	57,772	3,961	2,180		225,223
2020	16,597	82,124	155,637	8,305	196		319,778

Notes: FL: state-reported landings 1983-present (NMFS-reported, FES-calibrated estimates limited to Nassau and Duval Counties and adjusted on the basis of the genome proportions of weakfish within the Cynoscion-complex found in those counties' waters).

Table 6. Recreational releases (numbers) of weakfish by state, 2011-2020 (Source: MRIP FES-calibrated estimates, except as noted below). Atlantic coastal releases that occurred outside the management area (ME-NH) are included in the Total though not shown at the state level.

Year	MA	RI	CT	NY	NJ	DE	MD
2011				118,616	288,439	13,584	50,974
2012				29,613	1,383,894	212,573	72,092
2013		32,344		18,652	330,665	51,611	19,847
2014			724	794	193,962	55,077	27,392
2015				14,459	598,126	33,522	340,850
2016	4,130		1,932	8,767	278,043	62,864	161,159
2017	557		791	138,156	146,036	38,219	41,674
2018	8,072	1,139	2,206	124,349	40,600	26,657	5,029
2019		735	13,257	310,830	202,390	105,288	19,260
2020	3,210	1208	4,641	245,752	90,689	57,257	5,186
	VA	NC	SC	GA	FL		Total
2011	743,528	374,910	19,138	21,044	520		1,630,753
2012	273,507	381,441	332,241	85,553			2,770,914
2013	205,203	252,362	23,534	21,012	561		955,791
2014	374,944	1,067,230	568,787	7,640	614		2,297,164
2015	232,363	1,608,036	215,117	48,052			3,090,525
2016	1,467,470	1,091,422	118,374	16,152			3,210,313
2017	454,456	351,433	186,547	95,061			1,452,930
2018	233,912	300,195	85,941	31,987	512		860,599
2019	817,168	269,146	117,236	33,313	1,014		1,889,637
2020	316,620	386,364	93,047	16,239	15		1,220,228

Notes: FL: state-reported landings 1983-present (NMFS-reported, FES-calibrated estimates limited to Nassau and Duval Counties and adjusted on the basis of the genome proportions of weakfish within the Cynoscion-complex found in those counties' waters).

Table 7. Indices of relative weakfish abundance from 2011 to 2020. (Source: State compliance reports)

Year	MA Tr BB & VS YOY	MA Tr BB & VS 1+	RI Tr Coast YOY	CT Tr LIS YOY	CT Tr LIS 1+	NY Tr Coast YOY	NJ Tr DE Bay YOY	NJ Tr Ocean 1+	DE Tr DE Bay YOY	DE Tr Inland YOY	DE Tr DE Bay 1+
	mean#/ tow	mean#/ tow	mean #/ tow	GM#/ tow	GM#/ tow	AM#/ tow	GM#/ tow	GM#/ tow	GM#/ tow	GM#/ tow	#/ nm
2011			70.63	11.64	0.68	34.50	15.80	22.32	7.89	3.30	89.22
2012			122.30	21.96	0.73	9.40	1.26	0.23	7.55	3.44	106.43
2013			13.20	7.01	0.52	22.60	15.55	0.39	13.49	4.47	71.78
2014			1.27	41.53	0.08	97.70	4.87	0.98	13.67	4.71	38.01
2015	0.21		46.47	30.91	0.46	56.00	2.27	1.44	10.22	3.88	76.46
2016	23.00	0.29	4.14	5.87	0.81	57.60	2.34	1.34	7.47	3.00	154.40
2017	0.30	0.00	32.25	8.20	0.43	59.20	4.13	3.74	5.18	1.44	101.98
2018	3.89	0.03	60.85	25.66	0.56	139.90	7.19	2.67	6.92	2.45	133.19
2019			7.19	14.33	1.26	42.3	5.9	2.28	7.02	3.05	213.02
2020			44.51	0*	0*	129.9	0*	0*	5.80*	5.09*	89.46*

*Some surveys did not run or were impacted in 2020 due to the COVID-19 pandemic

Table 7 (continued). Indices of relative weakfish abundance from 2011 to 2020. (Source: State compliance reports)

Year	MD Tr ChesBay YOY	MD Tr Coast YOY	VA Tr ChesBay YOY	NC Tr Pamlico YOY	NC Tr Pamlico 1+	NC Gn Pamlico 1+	SC Tr Inshore YOY	SC SEAMAP Summer 0+/1+	SC SEAMAP Fall 0+/1+	GA Tr Coast 0+	FL Tr Jax YOY	FL Tr IR & Jax 1+
	GM#/tow	GM#/ha	GM#/tow	#/tow	#/tow	#/set	#/tow	#/tow	#/tow	#/obs hr	med/tow	med/tow
2011	2.04	1.90	5.23	33.69	38.09	0.36		74.10	13.90	104.20	0.74	0.52
2012	0.46	0.46	3.02	40.66	23.84	0.92		18.80	9.80	91.64	1.79	0.65
2013	2.15	1.02	9.41	58.53	24.48	0.69		25.50	0.20	131.52	0.69	0.12
2014	2.95	1.28	3.77	32.83	50.26	0.50		12.00	7.60	64.16	0.62	0.19
2015	2.23	0.88	3.77	43.30	24.51	0.30	19.30	18.20	257.80	89.84	1.08	0.03
2016	0.71	1.69	1.44	43.00	34.46	0.30	22.60	14.50	24.30	62.40	0.69	0.21
2017	0.65	0.54	2.41	41.90	19.11	0.31	26.60	1.46	5.73	44.30	0.49	0.27
2018	1.03	1.48		16.68	14.39	0.23	20.16	4.00	38.70	94.90	0.00	0.23
2019	2.11	0.19	1.02	24	18.88	0.29	37.00	15.4	17.8	35.6	0.00	0.31
2020	2.03	1.73	2.36*	33.2*	37.42	0*	4.00	0*	0*	15.3	0.00	0.25

*Some surveys did not run or were impacted in 2020 due to the COVID-19 pandemic

Table 8. Biological sampling of weakfish in 2020, Massachusetts-Florida (Sampling requirements are based on Addendum I to Amendment 4 and 2020 landings data and are reported in state compliance reports.) Many states were not able to collect samples due to the COVID-19 pandemic in 2020.

	Samples Required		Samples Completed		Fisheries Sampled
	Ages	Lengths	Ages	Lengths	
MA*	12	1	0	0	NA
RI	61	66	27	27	RIDFW Trawl Survey
CT*	10	19	0	0	NA
NY	179	108	36	36	commercial (GN, TR, PN, H&L)
NJ	29	18	5	5	commercial, recreational
DE	10	4	0	0	None
MD	2	4	3	6	commercial (PN)
PRFC	0	1	0	0	NA
VA	89	96	246	626	commercial (GN, PN, HS)
NC	302	316	724	1,004	commercial (SN, GN, PN, HS, TR, H&L), recreational
SC	261	0	0	50	fishery independent
GA	15	0	5	5	recreational
FL*	1	1	0	0	NA

**de minimis* in 2020; not required to conduct sampling; sample numbers provided to show from what states were exempt

NA=not applicable, GN= gill net, PN=pound net, H&L=hook and line, HS=haul seine, SN=sink net

XI. Figures

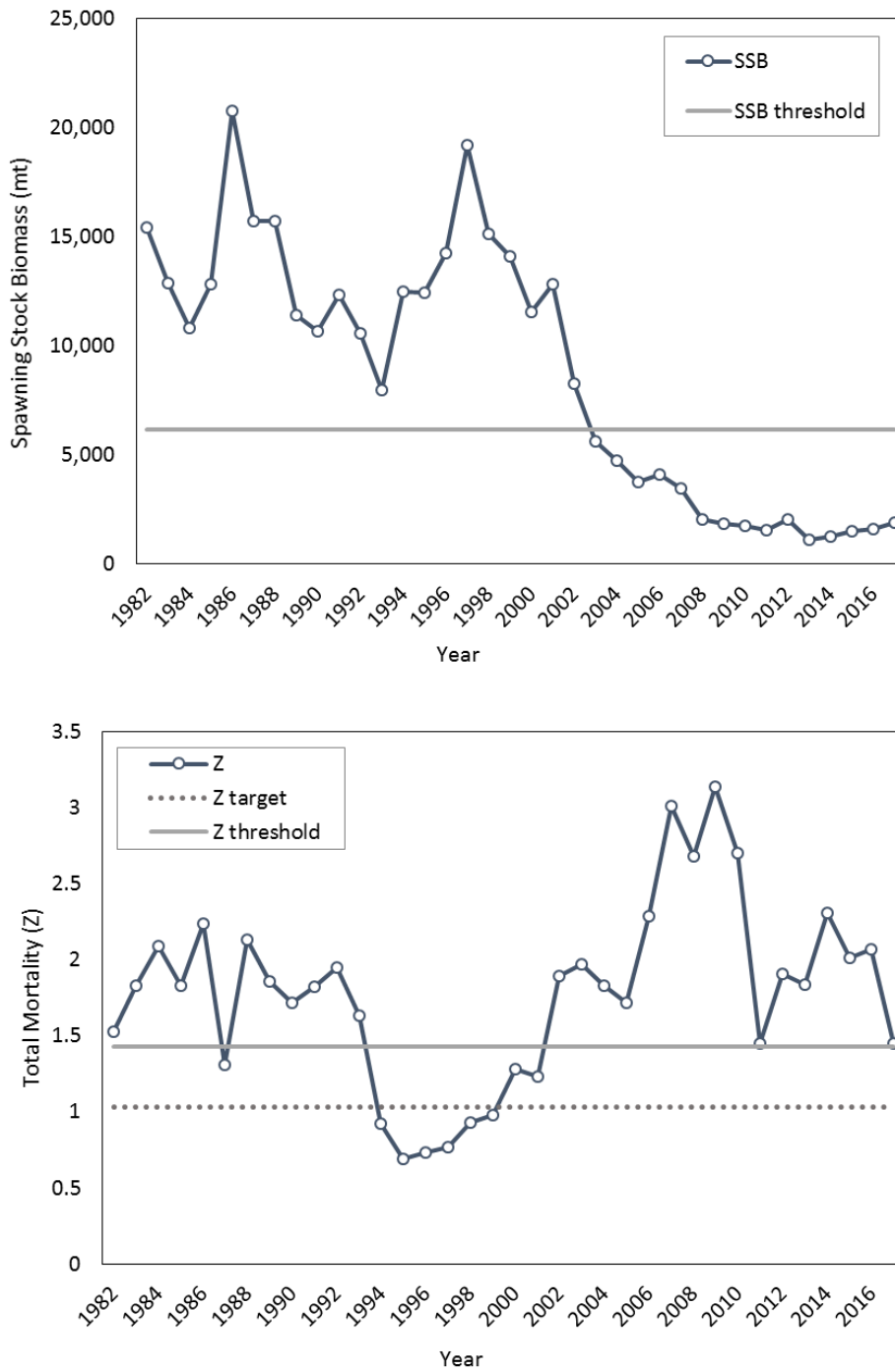


Figure 1. Spawning stock biomass (top) and total mortality (bottom) plotted with their respective targets and thresholds, where defined (ASMFC 2019).

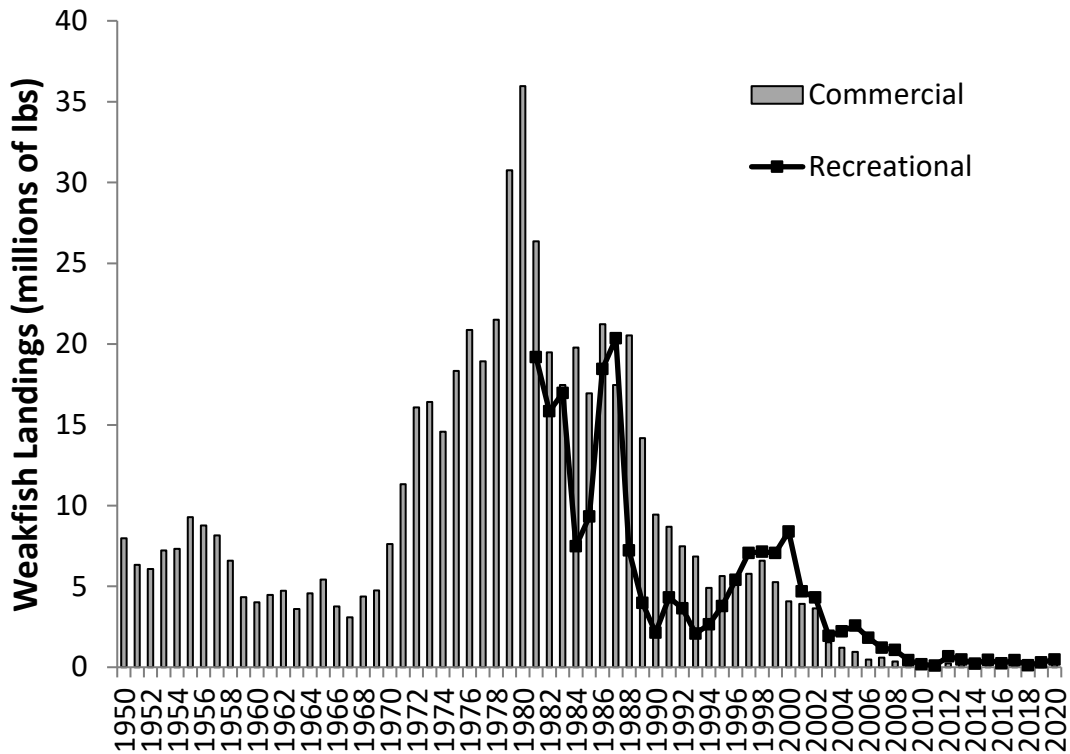


Figure 2. Commercial and recreational weakfish harvest (pounds), from 1950 to 2020 (see Tables 3 and 4 for source information and values). Recreational data is unavailable prior to 1981.

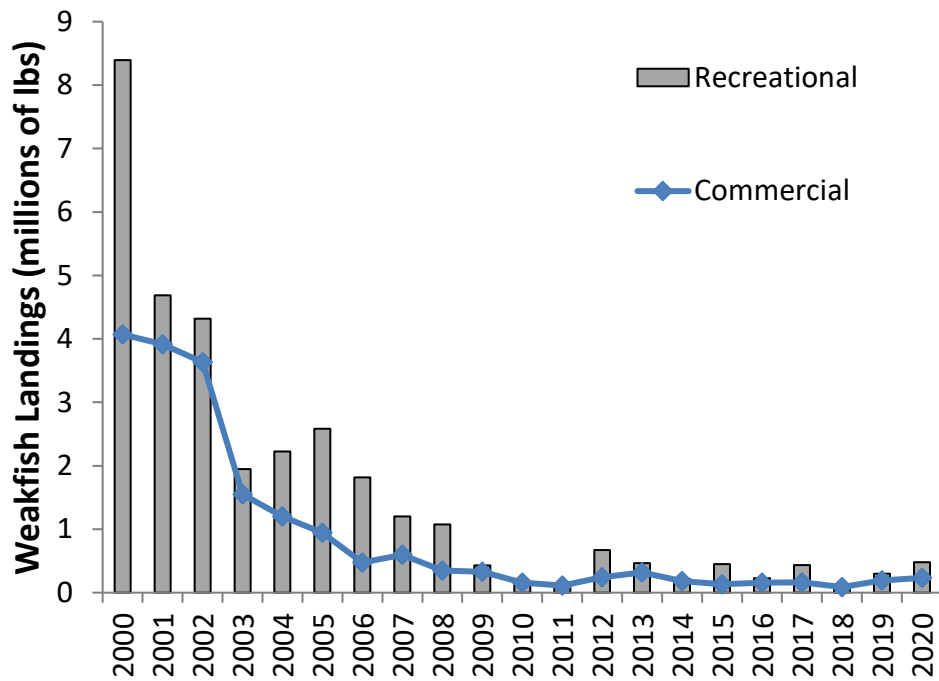


Figure 3. Commercial and recreational weakfish harvest (pounds), from 2000 to 2020 (see Tables 3 and 4 for source information and values).

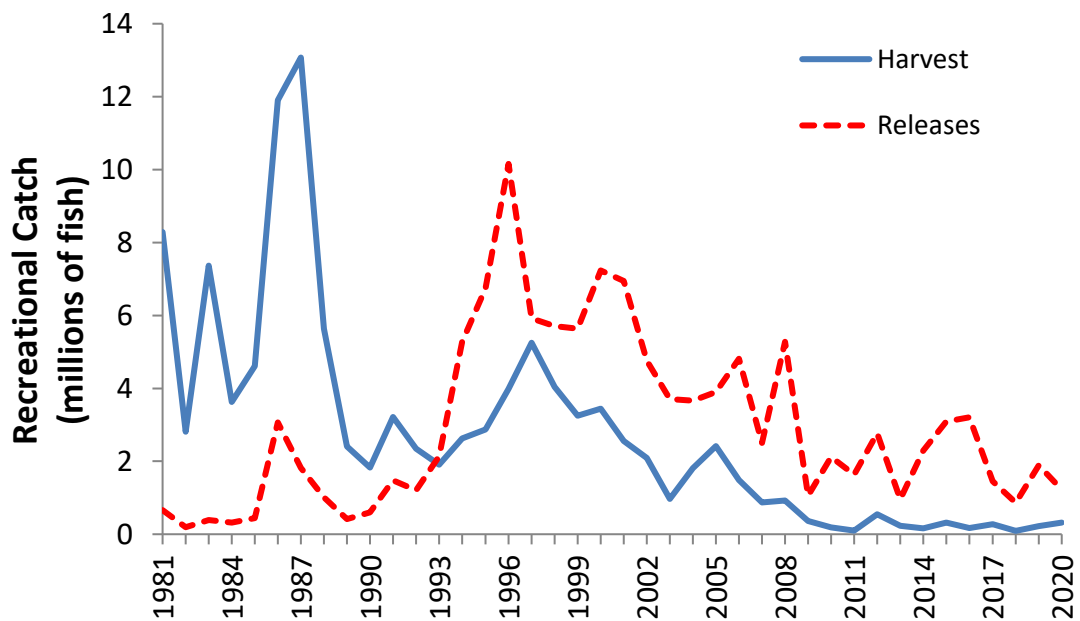


Figure 4. Recreational weakfish harvest and releases (number of fish), from 1981 to 2020 (see Tables 5 and 6 for source information and values).