

ATLANTIC STATES MARINE FISHERIES COMMISSION

REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN

FOR SPANISH MACKEREL
(Scomberomorus maculatus)

2016 FISHING YEAR



Prepared by the Plan Review Team

Approved by the South Atlantic Management
Board February 2018

Table of Contents

I.	Status of the Plan	1
II.	Status of the Stocks.....	2
III.	Status of the Fishery	5
IV.	Status of Assessment Advice	3
V.	Status of Research and Monitoring	3
VI.	Status of Management Measures.....	4
VII.	Implementation of FMP Compliance Requirements for 2015	7
VIII.	Recommendations of the Plan Review Team	7
IX.	References	8
X.	Figures.....	10
XI.	Tables	11

I. Status of the Plan

<u>Date of FMP Approval:</u>	Original FMP – November 1990
<u>Amendments:</u>	Omnibus Amendment to Spanish Mackerel, Spot, and Spotted Seatrout (Amendment 2)- August 2011 Addendum I- August 2013
<u>Management Area:</u>	The Atlantic coast distribution of the resource from New York through the east coast of Florida
<u>Active Boards/Committees:</u>	South Atlantic State/Federal Fisheries Management Board; Spanish Mackerel Plan Review Team; South Atlantic Species Advisory Panel

The Fishery Management Plan (FMP) for Coastal Migratory Pelagic Resources (1983 and subsequent amendments) and the Interstate Fishery Management Plan for Spanish Mackerel (1990) manage Atlantic group Spanish mackerel in federal and state Atlantic waters from New York through the east coast of Florida. All states in that range, excluding Pennsylvania, have a declared interest in the Interstate FMP for Spanish mackerel. The South Atlantic State/Federal Fisheries Management Board serves to manage Spanish mackerel for the Commission. The Interstate FMP for Spanish mackerel is a flexible document intended to track the federal FMP; thus, the South Atlantic Fishery Management Council (SAFMC) has the lead on Atlantic group Spanish mackerel management.

The SAFMC manages Atlantic group Spanish mackerel based on guidance from its Scientific and Statistical Committee (SSC). The SAFMC determines needed adjustments to regulatory measures, including allowable catch, bag limits, size limits, and trip limits. The SAFMC deliberations are assisted by a Mackerel Cobia Committee that includes representatives from the Mid-Atlantic Fishery Management Council, and an Advisory Panel with South Atlantic and Mid-Atlantic industry representation. Since the Coastal Migratory Pelagic Resources FMP is a joint plan with the Gulf of Mexico Fishery Management Council (GMFMC), any amendments to this FMP must be approved by both Councils.

The SAFMC and GMFMC approved Amendment 18 to the Coastal Migratory Pelagic Resources FMP in December 2011 which established a new Allowable Biological Catch (ABC) based on the SSC recommendation of using median landings of the last 10 years (2001-2011). With this change, the ABC was set equal to the Annual Catch Limit (ACL) and Optimum Yield (OY) [ABC=ACL=OY] at approximately 5.29 million lbs. With this the commercial ACL was 3.13 million lbs and the recreational ACL was 2.56 million lbs.

Under the federal FMP, the 2015-2016 fishing year ran from March 1, 2015 to February 28, 2016. The 2016-2017 fishing year began on March 1st, 2016. The federal FMP divides the commercial fishery into a quota system between the Atlantic and Gulf migratory groups. Within the Atlantic migratory group, there are two zones- the Northern (consisting of the states from New York through North Carolina) and the Southern (South Carolina to Florida). For the Atlantic migratory

group, the 2013/2014 year, the full quota was 3.13 million pounds and the adjusted quota was 2.88 million pounds. The adjusted quota was used to determine trip limit reductions off the Florida east coast. For the 2015/2016 fishing season, the full quota was increased to 3.33 million pounds following CMP Framework Amendment 1 (See *Section VI*).

The federal commercial trip limit was a year-round 3,500 pound daily possession/landings limit for the states from New York through Georgia, with Florida's commercial trip limit varying depending on the percent of quota remaining. Following the implementation of Amendment 20B and CMP Framework Amendment 2, the federal trip limit for the Southern zone (SC through FL) decreases as quota is caught. When 75% of the "adjusted" Southern Zone quota¹ (1,812,998 lbs ww) is caught, the trip limit is reduced from 3,500 lbs to 1,500 lbs. When 100% of the adjusted Southern Zone quota (2,417, 330 lbs ww) is caught, the commercial trip limit is further reduced to 500 lbs. When 100% of the Southern Zone quota is met, harvest is prohibited for the remainder of the fishing year. In both the Northern and Southern zones, the recreational bag limit is set at 15 fish. The minimum size limit for both fisheries is 12" fork length or 14" total length.

The goals of the interstate FMP are to complement federal management in state waters, to conserve the Atlantic group Spanish mackerel resource throughout its range, and to achieve compatible management among the states that harvest Spanish mackerel. In accordance with the 2011 Omnibus Amendment, the updated FMP's objectives are to: (1.) Manage the Spanish mackerel fishery by restricting fishing mortality to rates below the threshold fishing mortality rates to provide adequate spawning potential to sustain long-term abundance of the Spanish mackerel populations. (2.) Manage the Spanish mackerel stock to maintain the spawning stock biomass above the target biomass levels. (3.) Minimize endangered species bycatch in the Spanish mackerel fishery. (4.) Provide a flexible management system that coordinates management activities between state and federal waters to promote complementary regulations throughout Spanish mackerel's range which minimizes regulatory delay while retaining substantial ASMFC, Council, and public input into management decisions; and which can adapt to changes in resource abundance, new scientific information and changes in fishing patterns among user groups or by area. (5.) Develop research priorities that will further refine the Spanish mackerel management program to maximize the biological, social, and economic benefits derived from the Spanish mackerel population. See Table 1 for state Spanish mackerel regulations in 2016.

II. Status of the Stocks

The resource is not overfished, nor experiencing overfishing (SEDAR 2012). The SEDAR 28 Stock Assessment Report estimates current stock biomass at $SSB_{2011}/MSST=2.29$, and current fishing level (exploitation rate) at $F_{2009-2011}/F_{MSY}=0.526$, with $F_{2011}/F_{MSY}=0.521$. The overfished ratio (B/B_{MSY}) shows that high fishing mortality caused a decline in biomass, though biomass has increased in recent years and remains above B_{MSY} (Figure 1). The overfishing ratio (F/F_{msy}) shows that fishing mortality increased from the late 1970s through 1994 but has since declined (Figure 2). Fishery-dependent data also indicate increasing biomass, excepting the decline seen over the last four years. The current fishing mortality rate does not seem to be inhibiting stock growth.

¹ The adjusted quota is the Southern Zone quota minus 250,000 lbs.

III. Status of the Fishery

Spanish mackerel are an important recreational and commercial fishery in South Atlantic waters, with limited and sporadic recreational landings north of Maryland (Tables 2 and 4). Trip limits implemented in state and federal waters continue to prevent premature closure of the commercial fishery. Total landings of Spanish mackerel in 2016 are estimated at 4.4 million pounds (compared to the 6.063 million pound ACL). The commercial fishery harvested approximately 70% of the total, and the recreational fishery about 30%.

From 1950 to 2016, commercial landings of Atlantic coast Spanish mackerel have ranged between 1.8 and 11.1 million pounds, although only 4 years in that timespan have exceeded 6 million pounds. Since 1981, total landings have averaged 3.6 million pounds. Coastwide commercial landings have generally been below 4 million pounds since 1995 (exception of 2010 and 2011; landings of 4.52 and 4.35 million pounds, respectively); this coincided with the entanglement net ban in Florida. Gill nets were the dominant commercial gear in Florida prior to the ban. After the ban was instituted, the use of cast nets increased. The 2016 commercial landings were 3.10 million pounds (Figure 3), of which 2.46 million pounds (79% of coastwide commercial harvest) were landed in Florida and 601,615 pounds (19%) were landed in North Carolina (Table 2).

Recreational anglers harvested 957,282 Spanish mackerel (1.3 million pounds) in 2016, an increase from the 627,632 fish caught in 2015 (Tables 3 and 4). The number of recreationally harvested fish appears to show a cyclical trend, with low harvests in the early to mid-80s and mid to late 90s, interspersed with higher harvests (Figure 4). Florida and North Carolina have historically accounted for the majority of recreational landings in both number and weight. In 2016, Florida harvested 38% and North Carolina harvested 44% of recreational fish. The number of recreational releases of Spanish mackerel has generally increased over time, reaching a peak of over one million fish in 2008 (Table 5, Figure 4). Recreational releases in 2016 were 413,220 fish, slightly increased from 406,561 fish in 2015.

IV. Status of Assessment Advice

The most recent stock assessment was completed in 2012 through the Southeast Data, Assessment, and Review (SEDAR) process (SEDAR, 2012). The input data (through 2011) were applied to two assessment models, with the primary model being a statistical catch at age model called the Beaufort Assessment Model (BAM); while a secondary surplus-production model (ASPIC) provided a comparison of model results. The Review Panel concluded that the statistical catch at age model was the most appropriate model to characterize the stock status for management purposes.

The SSC reviewed the assessment during its December 2012 meeting and accepted the SEDAR 28 Spanish mackerel stock assessment as best available science. The SSC concurred with the Review Panel's conclusion that the stock is not experiencing overfishing and the stock is not overfished.

V. Status of Research and Monitoring

The National Marine Fisheries Service (NMFS) Southeast Fisheries Science Center (SEFSC) continues to monitor length and weight at age and size frequencies, fishing mortality, and

migration; collect age data and catch per unit effort by area, season, fishery, and gear; monitor shrimp trawl bycatch; investigate methods to predict year class strength; calculate estimates of recruitment, and develop conservation gear to reduce bycatch. The NMFS is also collecting discard data through a bycatch logbook in the mackerel and snapper-grouper fisheries. The Gulf and South Atlantic Fisheries Development Foundation and several states (North Carolina, South Carolina, Georgia, and Florida) have evaluated finfish bycatch in the southeastern shrimp trawl fishery, including bycatch of Spanish mackerel. The South Atlantic component of the Southeast Area Monitoring and Assessment Program (SEAMAP) collects Spanish mackerel data in its coastal trawl survey from Cape Hatteras to Cape Canaveral. Additionally, the Northeast Area Monitoring and Assessment Program (NEAMAP) began regular spring and fall surveys between Martha's Vineyard and Cape Hatteras in the fall of 2007.

Abundance trends continue to be monitored primarily through fishery-dependent sources. The states and the SEFSC monitor catch data through the cooperative commercial statistics collection program and the recreational fisheries survey. Commercial trip reports are tallied more frequently in the winter and early spring by the state of Florida and NMFS as the commercial quota is approached.

North Carolina also conducts fishery independent monitoring. Three fishery independent gill net surveys were initiated by the North Carolina Division of Marine Fisheries in May of 2001, 2003 and 2008, respectively. These surveys utilize a stratified random sampling scheme designed to characterize the size and age distribution for key estuarine species in Atlantic Ocean and Pamlico Sound as well as the Pamlico, Pungo, Neuse, Cape Fear and New rivers. The overall Spanish mackerel CPUE from these surveys was extremely low and therefore lacks the desired precision and confidence needed for the data to be used for management purposes.

VI. Status of Management Measures

2008 Framework Adjustment (Federal)

In February 2008, NOAA Fisheries finalized a framework adjustment to change the beginning date for trip limits in the Atlantic Spanish mackerel fishery off the east coast of Florida. The 3,500 pound trip limit begins March 1 each year to correspond with the beginning of the fishing year (as changed in Amendment 15).

Omnibus Amendment (Interstate)

In August 2011, the Management Board approved an amendment to the Spanish Mackerel FMP to address three issues: compliance measures, consistency with federal management in the exclusive economic zone, and alignment with Commission standards. Through the Omnibus Amendment, the following fisheries management measures are required for states within the management unit range;

Recreational Fishery

- 12" Fork Length (FL) or 14" Total Length (TL) minimum size limit
- 15 fish creel limit
- Must be landed with head and fins intact
- Calendar year season
- Prohibited gear: Drift gill nets prohibited south of Cape Lookout, NC

- Decrease in the recreational quota the following year via reduced bag limits if the Total Annual Catch Limit (ACL) is exceeded and stock is overfished.

Commercial Fishery

- Prohibited: purse seines; drift gill nets south of Cape Lookout, NC
- 12" FL or 14" TL minimum size limit
- March 1 – end of February season
- Trip limits (per vessel, per day)
 - NY-GA: 3500 lbs
 - FL: 3500 lbs, 3/1-11/30;
 - 3500 lbs Mon-Fri & 1500 lbs Sat-Sun, 12/1 until 75% adjusted quota taken;
 - 1500 lbs, when 75% adjusted quota taken until 100% adjusted quotas taken;
 - 500 lbs after 100% of adjusted quotas taken (the adjusted quota compensates for estimated catches of 500 lbs per vessel per day to the end of the season)
- Commercial quotas decreased the following year if Total ACL is exceeded and stock is overfished

Amendment 18 (Federal)

In August 2011, the Gulf of Mexico and South Atlantic, Fishery Management Councils approved Amendment 18 to the joint FMP for Coastal Migratory Pelagics. The primary action under consideration established Annual Catch Limits (ACLs) and Accountability Measures (AMs) for the cobia, king mackerel, and Spanish mackerel. The amendment designates ACLs and Annual Catch Targets (ACTs) for each of the two migratory groups of Spanish mackerel (Atlantic and Gulf). For the Atlantic migratory group, the commercial sector ACL is set equivalent to the commercial sector quota of 3.13 million pounds. The AM for the commercial sector is that the commercial sector will close when the commercial quota is reached or projected to be reached. In addition, current trip limit adjustments will remain in place. When the commercial sector closes, harvest and possession of Spanish mackerel would be prohibited for persons aboard a vessel for which a commercial permit for Spanish mackerel has been issued.

For the recreational sector, the ACT is set to 2.32 million pounds, while the ACL is set at 2.56 million pounds. Regarding the AM, if the stock ACL is exceeded in any year, the bag limit will be reduced the next fishing year by the amount necessary to ensure recreational landings achieve the recreational ACT, but do not exceed the recreational ACL in the following fishing year. A payback will be assessed if the Atlantic migratory group Spanish mackerel is determined to be overfished and the stock ACL is exceeded. The payback will include a reduction in the sector ACL for the following year by the amount of the overage by that sector in the prior fishing year.

Addendum I

In August 2013, the Commission's South Atlantic State-Federal Fisheries Management Board approved Addendum I to the Omnibus Amendment to for Spanish mackerel, Spot, and Spotted Seatrout.

Addendum I to the Omnibus Amendment establishes a pilot program that would allow states to reduce the Spanish mackerel minimum size limit for the commercial pound net fishery to 11 ½ inches during the summer months of July through September for the 2013 and 2014 fishing years

only. The measure is intended to reduce waste of these shorter fish, which are discarded dead in the summer months, by converting them to landed fish that will be counted against the quota.

The Addendum responds to reports about the increased incidence of Spanish mackerel $\frac{1}{4}$ to $\frac{1}{2}$ inch short of the 12 inch fork length minimum size limit in pound nets during the summer months. While the fish are alive in the pound, once the net is bunted and bailing commences, they die before being released. This may be due to a combination of temperature, stress and crowding. While individual fishermen have experimented with different wall or panel mesh sizes depending on the target species, there is no consistent use of cull panels. Those who have used cull panels have noted the difficulty and lack of success in being able to release the undersized fish quickly enough to prevent dead discards during this time of year.

The measures in Addendum I only applied for the 2013 and 2014 fishing seasons. In August 2015, the South Atlantic Board formally extended the provisions of Addendum I for the 2015 and 2016 fishing seasons. Reports by North Carolina, the only state to reduce their minimum size, will be reviewed annually.

Amendment 20A (Federal)

Effective July 2014, this Amendment addresses the sale of bag limit caught Spanish mackerel. The amendment rose from concerns that the recreational sales of bag limit caught fish, which are counted toward commercial quotas, are contributing to early closures of the commercial sector. In addition potential double counting of these fish could be causing erroneous landings estimates. In response, the Amendment prohibits bag limit sales with the exception of recreationally caught fish from state permitted tournaments in the South Atlantic region. This amendment also included an action to remove income requirements for federal CMP permits.

South Atlantic CMP Framework Action (Federal)

Effective December 2014, this action allows Spanish mackerel, harvested with gillnet gear in the South Atlantic EEZ off Florida (north of the Miami-Dade/Monroe County line) that is in excess of the trip limit, to be transferred to another federally permitted vessel that has not yet harvested the trip limit. The Framework stipulates that the transfer can only occur if: 1) allowable gillnet gear was used to harvest Spanish mackerel; 2) the transfer takes place in federal waters between vessels with valid commercial permits; 3) the receiving vessel does not have more than 3 gillnets aboard after the transfer; 4) all fish remain entangled in the meshes of the net until the transfer; 5) the quantity of the fish transferred does not exceed the daily trip limit; and 6) there is only one transfer per vessel per day.

CMP Framework Amendment 1 (Federal)

This Framework Amendment, effective December 2014, increases the Atlantic Spanish mackerel ACL to 6.063 million pounds. The modification to the ACL followed the 2013 stock assessment which concluded that the stock is not overfished and overfishing is not occurring. The Amendment divides the ACL between the commercial sector (3.33 million pounds) and the recreational sector (2.727 million pounds).

Amendment 20B (Federal)

Effective March 2015, this Amendment separates commercial quotas of Atlantic Spanish mackerel between a Northern zone (north of NC/SC line) and a Southern zone (South of NC/SC

line). The Amendment rose from concerns that the commercial quota could be filled by fishermen in one state before fish are available to fishermen in another state. In order to prevent this from happening, a zone is closed when its respective quota is met. Quota for each zones was based on landings from 2002/2003-2011/2012.

CMP Framework Amendment 2 (Federal)

Implemented July 2015, this Amendment modifies the commercial trip limit system in the Southern zone. The rule establishes a trip limit of 3,500 lbs for Spanish mackerel in Federal waters offshore of South Carolina, Georgia, and Florida. When 75% of the adjusted southern zone commercial quota is caught, the commercial trip limit is reduced to 1,500 lbs. When 100% of the adjusted southern zone commercial quota is met, the commercial trip limit is further reduced to 500 lbs. This limit remains until the end of the year or the quota is met.

VII. Implementation of FMP Compliance Requirements for 2016

All states must implement the requirements specified in section 5 (5.1 Mandatory Compliance Elements for States; 5.1.1 Mandatory Elements of State Programs; 5.1.1.1 Regulatory Requirements). The PRT finds all states in compliance.

De Minimis Requests

A state qualifies for *de minimis* status if its previous three-year average combined commercial and recreational catch is less than 1% of the previous three-year average coastwide combined commercial and recreational catch. Those states that qualify for *de minimis* are not required to implement any monitoring requirements, as none are included in the plan.

The states of New Jersey, Delaware, and Georgia request *de minimis* status. The PRT notes that all three states meet the requirements of *de minimis*.

Regulation Changes

No state regulatory changes were reported for 2016. In 2017, Framework Amendment 5 to the Fishery Management Plan for Coastal Migratory Pelagics in the Gulf of Mexico and Atlantic Regions was approved by the SAFMC and GMFMC. This Framework Amendment allows commercially permitted vessels to operate as private recreational vessels when the commercial season is closed for Spanish or king mackerel.

VIII. Recommendations of the Plan Review Team

Research and Monitoring Recommendations

High Priority

- Length, sex, age, and CPUE data are needed for improved stock assessment accuracy. Simulations on CPUE trends should be explored and impacts on VPA and assessment results determined. Data collection is needed for all states, particularly from Virginia north.
- Evaluation of weight and especially length at age of Spanish mackerel.
- Development of fishery-independent methods to monitor stock size of Atlantic Spanish mackerel (consider aerial surveys used in south Florida waters).
- More timely reporting of mid-Atlantic catches for quota monitoring.

- Provide better estimates of recruitment, natural mortality rates, fishing mortality rates, and standing stock. Specific information should include an estimate of total amount caught and distribution of catch by area, season, and type of gear.
- Develop methodology for predicting year class strength and determination of the relationship between larval abundance and subsequent year class strength.
- Commission and member states should support and provide the identified data & input needed to improve the SAFMC's SEDAR process.
- The full implementation of ecosystem-based management and the implementation of monitoring/research efforts needed to support ecosystem-based management needs should be conducted.

Medium Priority

- Yield per recruit analyses should be conducted relative to alternative selective fishing patterns.
- Determine the bycatch of Spanish mackerel in the directed shrimp fishery in Atlantic Coastal waters (partially met: Branstetter, 1997; Ottley et al., 1998; Gaddis et al., 2001; Page et al., 2004).
- Evaluate potential bias of the lack of appropriate stratification of the data used to generate age-length keys for Atlantic and Gulf Spanish mackerel.
- Evaluate CPUE indices related to standardization methods and management history, with emphasis on greater temporal and spatial resolution in estimates of CPUE.
- Consideration of MRFSS add-ons or other mechanisms for collection of socioeconomic data for recreational and commercial fisheries.
- Determine normal Spanish mackerel migration routes and changes therein, as well as the climatic or other factors responsible for changes in the environmental and habitat conditions which may affect the habitat and availability of stocks.
- Determine the relationship, if any, between migration of prey species (i.e., engraulids, clupeids, carangids), and migration patterns of the Spanish mackerel stock.

Low Priority

- Final identification of Spanish mackerel stocks through multiple research techniques.
- Complete research on the application of assessment and management models relative to dynamic species such as Spanish mackerel.
- Delineation of spawning areas and areas of larval abundance through temporal and spatial sampling.

IX. References

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X. Figures

Figure 1. Estimated total biomass (metric tons) at start of year. Horizontal dashed line indicates B_{MSY} (SEDAR, 2012).

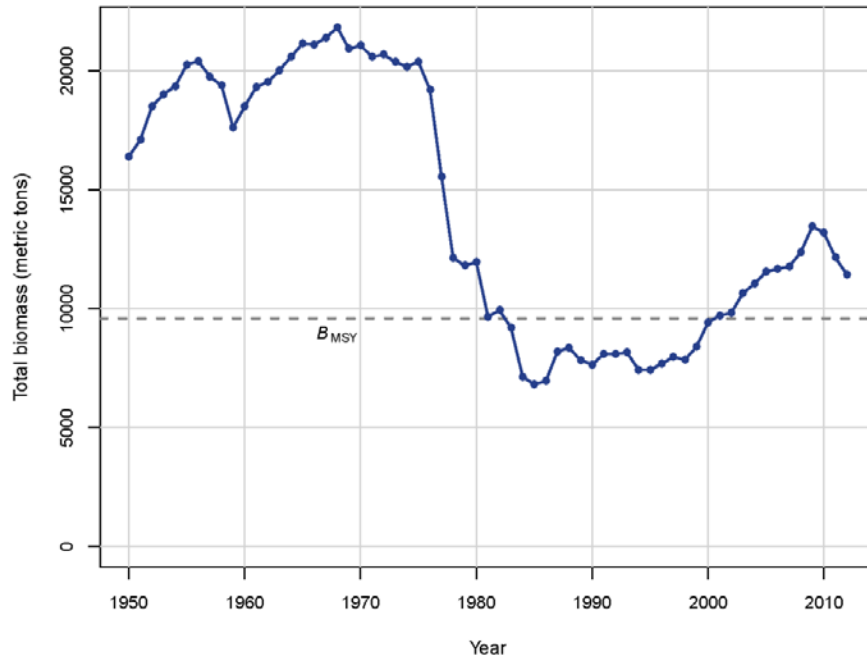


Figure 2. Estimated time series of Atlantic group Spanish mackerel fishing mortality rate (F) relative to F_{MSY} benchmark. Solid line indicates estimates from base run of the Beaufort Assessment Model; gray error bands indicate 5th and 95th percentiles of the Monte Carlo Bootstrap analysis trials (SEDAR, 2012).

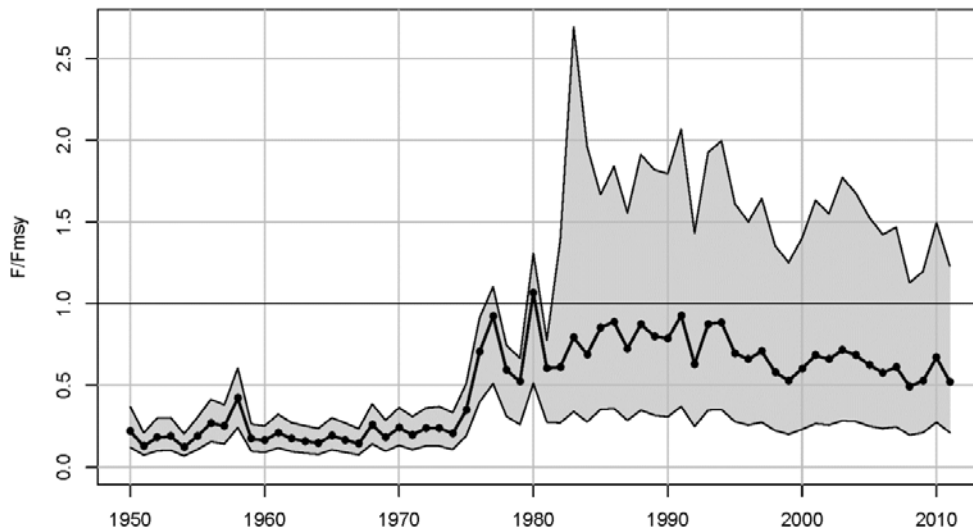


Figure 3. Commercial and recreational harvest (pounds) of Spanish mackerel, 1950-2016.
 (Recreational data available from 1981-present only; see Tables 2 and 4 for values and sources)

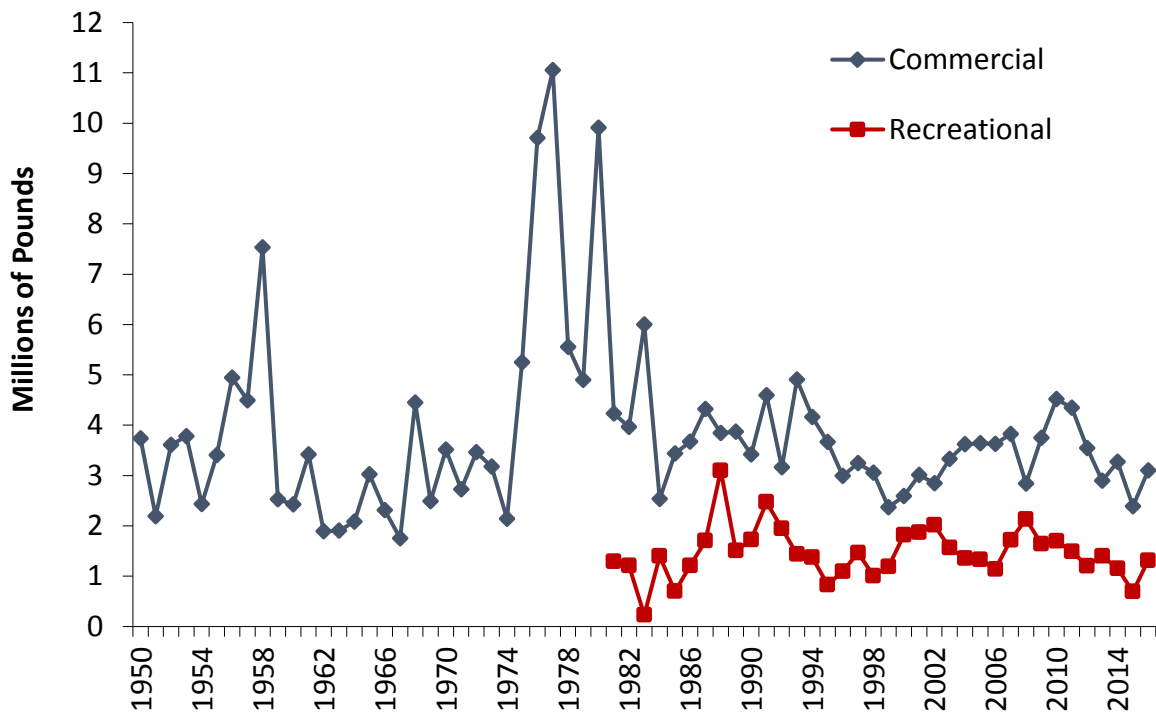
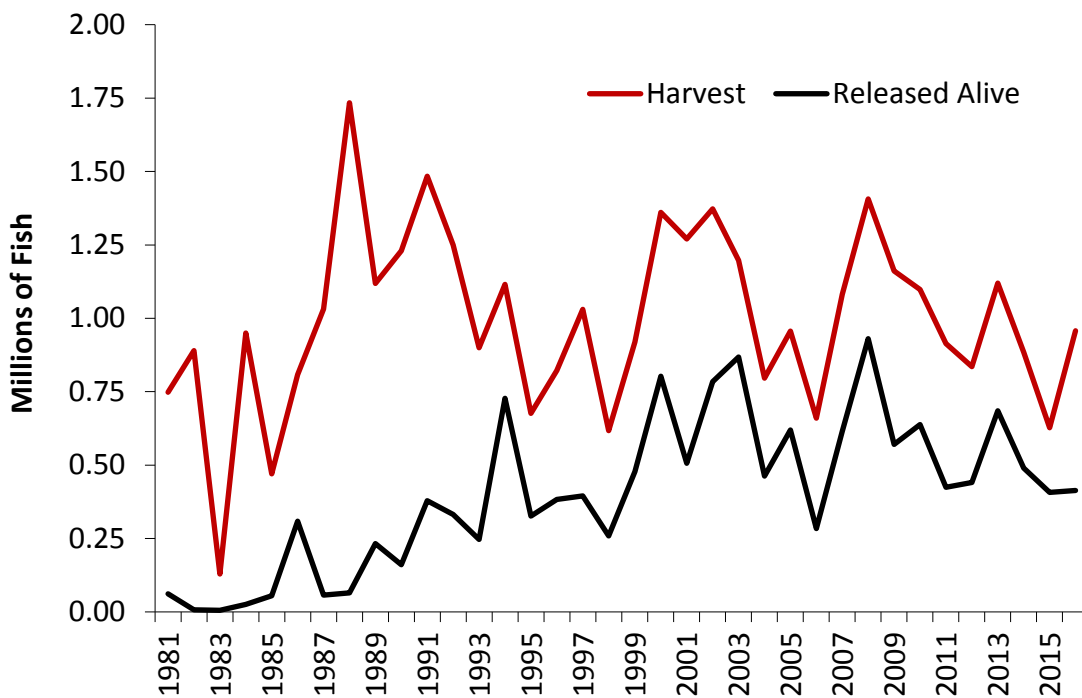


Figure 4. Recreational harvest and releases (numbers of fish) of Spanish mackerel, 1981-2016.
 (See Tables 3 and 5 for values and sources)



XI. Tables

Table 1. Summary of state regulations for Spanish mackerel in 2016.

Notes: A commercial license is required to sell Spanish mackerel in all states; other general gear restrictions apply to the harvest of Spanish mackerel. Purse seines and drift gill nets are prohibited south of Cape Lookout, NC.

State	Recreational	Commercial
NY	14" TL, 15 fish	14" TL. 3,500 lb trip limit.
NJ	14" TL, 10 fish	14" TL. 3,500 lb trip limit.
DE	14" TL, 15 fish	14" TL. 3,500 lb trip limit.
MD	14" TL, 15 fish	14" TL. 3,500 lb trip limit. March-Feb.
PRFC	14" TL, 15 fish	14" TL. Closure if/when MD and VA fisheries close.
VA	14" TL, 15 fish	14" TL. 3,500 lb trip limit. Closure if/when federal waters close.
NC	12" FL, 15 fish	12" FL; 11.5" FL in pound net fishery July 4 th – Sept 30 th , 2016. 3,500 lb trip limit for combined Spanish and king mackerel landings.
SC	12" FL, 15 fish	12" FL. 15 fish. 3,500 lb trip limit. March-Feb. Closure if/when federal waters close.
GA	12" FL, 15 fish	12" FL. 3,500 lb trip limit.
FL	12" FL or 14" TL, 15 fish. Cast nets less than 14' and beach or haul seines within 2" stretched mesh allowed	12" FL or 14" TL. Trip limits: April 1 until Nov. 30 - 3500 lb; Dec. 1 until 75% of adjusted quota reached – 3500 lb Mon-Fri. & 1500 lb Sat-Sun; >75% adjusted quota until quota filled -1500 lb; > 100% of adjusted quota - 500 lb. Restricted Species Endorsement Required Allowed gear: beach or haul seine, cast net, hook and line, or spearing.

Table 2. Commercial landings (pounds, calendar year) of Spanish mackerel by state, 1997-2016. (Source: ACCSP for 2015 and earlier for all jurisdictions, except PRFC; annual compliance reports for 2016 and for all PRFC years. Starred values are confidential. Total values adhere to the ACCSP rule of 3, i.e. totals are reflective of the true total if 0 or at least 3 states' data are confidential in a given year. Otherwise, they are sums of non-confidential data. Data dating back to 1950 are available upon request to ACCSP.)

Year	NY	NJ	DE	MD	PRFC	VA	NC	SC	GA	FL	Total
1997	31,107	12,122		*	557	164,113	766,958	66	*	2,269,289	3,244,212
1998	37,238	13,242		*	2,513	118,854	372,415	160	*	2,498,458	3,042,880
1999	47,831	17,144		*	31,945	222,113	459,100		*	1,566,706	2,344,839
2000	35,825	11,757		*	46,972	*	659,726	192	*	1,675,458	2,578,262
2001	13,851	9,401	*	*	25,970	152,833	653,673		*	2,115,774	2,990,224
2002	18,741	11,196		20,232	14,922	87,988	698,448	9	*	1,994,195	2,845,732
2003	18,339	5,432		4,684	21,267	*	456,784	214	*	2,739,176	3,245,896
2004	16,921	3,060		4,797	917	66,146	456,242		*	3,065,324	3,613,407
2005	5,197	2,074	*	7,539	2,725	41,065	446,001		*	3,132,626	3,637,227
2006	*	*	*	230	2,019	*	470,662	*		3,141,531	3,628,686
2007	7,240	2,075		3,297	4,915	53,607	487,879	*	*	3,263,245	3,822,259
2008	2,512	1,210	*	6,912	3,253	150,547	415,405		*	2,262,504	2,842,342
2009	3,463	3,324	*	*	494	137,573	961,811			2,629,343	3,736,009
2010	3,712	829		4,939	68	47,373	911,866	*		3,551,357	4,520,144
2011	1,147	305		5,088	675	35,601	871,217			3,432,932	4,346,965
2012	2,293	2,806		3,634	270	18,047	916,439			2,596,917	3,540,407
2013	4,467	265		2,395	302	7,602	620,752			2,265,390	2,901,172
2014	2,550	292		1,632	12	7,859	673,974	*		2,585,281	3,271,599
2015	1,357	2,746		2,222	6	14,493	561,407	28		1,807,967	2,390,227
2016	813	1,997	0	16,205	548	33,242	601,615	133		2,461,334	3,101,783

2017 REVIEW OF THE ASMFC SPANISH MACKEREL FMP

Table 3. Recreational harvest (numbers) of Spanish mackerel by state, state, 1997-2016. (Source: MRIP for 2015 and earlier and annual compliance reports for 2016. Data dating back to 1981 are available upon request to the NMFS Fisheries Statistics Division via MRIP.)

Year	NY	NJ	DE	MD	VA	NC	SC	GA	FL	Total
1997			0		68,517	585,765	101,067	28,396	246,885	1,030,630
1998		4,046	186	3,633	33,140	239,052	65,584	28,002	244,235	617,878
1999	0	1,335	226	1,220	75,972	476,019	27,477	9,007	327,621	918,877
2000	4,453	923	0	15,219	71,249	671,353	28,283	20,545	547,315	1,359,340
2001	802	0	0	8,025	29,590	400,706	43,501	11,013	774,065	1,267,702
2002				0	17,433	401,982	24,235	1,927	926,600	1,372,177
2003				6,975	17,063	349,170	24,879	11,235	784,385	1,193,707
2004		813		4,180	28,301	326,781	56,524	7,412	368,998	793,009
2005				14,348	10,573	335,760	70,124	12,852	512,607	956,264
2006		1,079		4,408	40	306,274	23,529	1,555	322,789	659,674
2007				20,049	16	495,476	94,636	15,539	455,689	1,081,405
2008		344		7,515	83,903	744,139	52,725	14,682	503,398	1,406,706
2009		215		19,901	16,451	677,787	73,611	4,476	368,615	1,161,056
2010				5,580	20,524	483,956	70,351	4,955	512,295	1,097,661
2011				10,554	35,054	367,086	87,109	7,486	406,068	913,357
2012				2,962	11,847	491,238	80,204	2,119	246,866	835,236
2013			31	2,905	61,260	497,329	22,414	1,299	534,042	1,119,280
2014				5,494	15,776	398,398	80,935	1,903	381,839	884,345
2015				11,366	12,072	388,157	133,446	527	82,064	627,632
2016			9	11,465	75,068	424,341	78,100	1,510	366,789	957,282

2017 REVIEW OF THE ASMFC SPANISH MACKEREL FMP

Table 4. Recreational harvest (pounds) of Spanish mackerel by state, 1997-2016. (Source: MRIP for 2015 and earlier and annual compliance reports for 2016. Data dating back to 1981 are available upon request to the NMFS Fisheries Statistics Division via MRIP.)

Year	NY	NJ	DE	MD	VA	NC	SC	GA	FL	Total
1997					22,234	862,497	143,297	37,877	400,148	1,466,053
1998		9,190	380	5,724	57,467	305,631	106,208	112,563	408,871	1,006,034
1999		2,207	240	1,715	79,602	469,259	44,915	10,030	578,124	1,186,092
2000	10,799	1,119		20,642	83,297	671,615	30,542	47,136	946,396	1,811,546
2001	1,168			14,526	42,047	499,828	46,945	23,055	1,232,506	1,860,075
2002					12,163	475,741	47,057	4,796	1,475,233	2,014,990
2003				9,761	22,030	446,052	29,108	34,854	1,021,204	1,563,009
2004		2,150		7,534	38,606	493,666	73,795	7,819	730,736	1,354,306
2005				26,281	14,459	294,537	101,618	17,910	873,527	1,328,332
2006		2,022		9,327	57	509,357	41,945	2,197	576,979	1,141,884
2007				39,708	25	699,809	97,677	34,667	847,028	1,718,914
2008		513		11,558	113,127	968,108	84,244	36,154	919,711	2,133,415
2009		302		37,284	22,131	824,225	96,827	6,909	651,494	1,639,172
2010				11,383	27,503	565,830	103,956	5,383	983,764	1,697,819
2011				22,630	41,325	470,541	73,605	9,439	873,222	1,490,762
2012				5,223	17,806	665,201	98,316	4,536	411,935	1,203,017
2013			43	6,949	68,165	625,035	50,865	2,158	646,996	1,400,211
2014				12,440	17,597	449,709	126,345	2,356	544,791	1,153,238
2015				16,820	10,746	431,082	108,423	1,879	124,199	693,149
2016			8	18,995	71,869	411,353	74,475	2,853	732,652	1,312,205

2017 REVIEW OF THE ASMFC SPANISH MACKEREL FMP

Table 5. Recreational releases (numbers) of Spanish mackerel by state, 1997-2016. (Source: MRIP for 2015 and earlier and annual compliance reports for 2016. Data dating back to 1981 are available upon request to the NMFS Fisheries Statistics Division via MRIP.)

Year	NY	NJ	DE	MD	VA	NC	SC	GA	FL	Total
1997			338		22,658	140,704	62,356	0	168,815	394,871
1998		0	0	1,075	49,429	80,700	32,087	7,351	87,804	258,446
1999	1,415	2,670	0	0	36,276	205,870	46,400	495	185,106	478,232
2000	0	0	608	1,656	82,227	300,384	47,273	16,479	353,042	801,669
2001	1,657	4,907	825	7,265	30,158	160,591	9,711	3,188	285,738	504,040
2002				4,449	9,923	196,967	9,206	8,641	554,743	783,929
2003				6,994	20,539	164,787	223,116	6,501	445,965	867,902
2004		0		386	14,456	149,542	84,747	2,900	207,784	459,815
2005				2,169	0	180,326	184,637	4,056	248,636	619,824
2006		0		564	8,504	96,413	27,640	9,236	140,986	283,343
2007				8,461	279	257,841	96,779	54,044	197,529	614,933
2008		0		6,951	37,850	449,095	67,686	5,300	363,542	930,424
2009		26,741		3,630	20,980	313,030	55,600	982	149,825	570,788
2010				0	33,103	294,350	28,200	65	282,252	637,970
2011				0	28,526	170,926	67,144	10,131	147,399	424,126
2012				0	17,150	234,905	98,371	1,724	88,592	440,742
2013			94	0	5,583	289,216	24,862	0	365,107	684,862
2014				881	3,450	240,731	36,082	851	208,266	490,261
2015				357	4,224	216,011	99,530	466	85,973	406,561
2016			213	0	14,072	187,878	69,882	137	141,038	413,220