Mackerel Cobia Advisory Panel
Spanish Mackerel Fishery Performance Report
April 2018

At their April 2018 meeting, the South Atlantic Fishery Management Council's (Council) Mackerel Cobia Advisory Panel (AP) and Cobia Sub-Panel (Sub-Panel) reviewed fishery information for Atlantic migratory group Spanish mackerel (Atlantic Spanish mackerel) and developed this fishery performance report (FPR). The purpose of the FPR is to assemble information from AP members' experience and observations on the water and in the marketplace to complement scientific and landings data. The FPR for Atlantic Spanish mackerel will be provided to the Scientific and Statistical Committee (SSC) and the Socio-Economic Panel (SEP) to complement material being used in stock assessments and to inform future management.

Advisory Panel Members:

Ira Laks (Chairman; Charter/FL)
Stephen Swann (Vice-Chairman; Recreational/FL)
Stephen Donalson (Recreational/FL)
Steve English (Commercial/FL)
Skip Feller (Mid-Atlantic Liaison/VA)
Ryan Howard (Charter/GA)
Bill Kelly (Commercial/FL)
Keith Bowen (Commercial/FL)
Robert Olsen (Recreational/SC)
Greg Peralta (Recreational/SC)
Gary Robinson (Commercial/FL)
Tom Roller (Charter/NC)
Randy McKinley (Commercial/NC)
Chris Elkins (NGO/NC)

Sub-Panel Members:

Wes Blow (Recreational/VA)
Collins Doughtie (Recreational/SC)
Bill Gorham (Recreational/NC)
Bill Weeks (Recreational/GA)
Patrick Link (Recreational/VA)

Fishery Overview:

Summary information on the Atlantic Spanish mackerel fishery is presented in a Fishery Information Document (**Appendix A**) intended to provide an overview of several aspects of the fishery including life history of the species, stock status, management overview, and trends in landings and fishery economics for both the commercial and recreational (for-hire and private) sectors. The information was provided as background to elicit the discussion presented in this Fishery Performance Report. The Fishery Information Document presents data from 2000 through 2016.

Observations on Stock Abundance:

North Carolina

In southeastern North Carolina, fishermen are no longer catching Spanish mackerel along the piers or the beaches. There is still some fishing offshore, but fishermen aren't seeing as many Spanish mackerel as they did a few years ago. Though, the trolling fleet has been catching a lot of undersized Spanish mackerel, which may be due to an increase in their food source.

In the fall the Spanish mackerel will leave North Carolina and head offshore. By the time they reach central Florida they've moved within three or four miles of the coast and once they've reached the Port Salerno area they are within a mile of the shore. In the spring the fish begin to head back up the beach toward North Carolina.

Florida
Spanish mackerel begin showing up in the St. Augustine area around April and remain until the winter. By November and December recreational fishermen report seeing very few Spanish mackerel. When fishermen begin catching Spanish mackerel out on the beach, that is usually a good sign that the fish can be easily caught offshore as well.

In south Florida, Spanish mackerel used to be primarily an inshore fishery through the spring and winter, but in recent years fishermen haven't been seeing Spanish mackerel along the beaches and piers.

Observations on Fish Size:

South Carolina and Georgia
In South Carolina, fishermen have been seeing an increase in the number of small Spanish mackerel in the estuaries. Approximately two miles offshore fishermen report seeing very large Spanish mackerel.

Florida
In northeastern Florida, commercial fishermen are seeing smaller fish and as a result are moving to a smaller mesh size to target them. Hook and line fishermen are also seeing smaller fish. In southeastern Florida, off Palm Beach County, large Spanish mackerel tend to sit at the edge of the reef in approximately 110-feet of water. The number of large fish fluctuates from year to year, but there have been fewer fish in recent years. The decrease in large Spanish mackerel could be attributed to sharks.

Observations on Effort Shifts:

North Carolina
In North Carolina both the commercial and recreational sectors are experiencing a shift in effort toward Spanish mackerel. For-hire and private recreational fishermen do not specifically target Spanish mackerel but will harvest them when they are available. In recent years, there have been fewer king mackerel nearshore and as a result for-hire fishermen have shifted their effort toward the larger Spanish mackerel that congregate around nearshore reefs in August and September. As a result, there is a lot of pressure on those populations and they are getting harder and harder to find. Charity fishing tournaments for Spanish mackerel are also incredibly popular in North Carolina.

The commercial drift gillnet fishery in North Carolina, which targets Spanish mackerel among other species, has grown in popularity with some of the larger vessels operating in the state.

Florida
In southeastern Florida, Spanish mackerel is a staple of the inshore charter fleet. On the other

hand, offshore charter vessels will only target Spanish mackerel opportunistically.

After Florida banned gillnets in state waters (1995), commercial fishing effort shifted to Spanish mackerel because it was readily available. Fishing using a cast net allowed fishermen to bring in 2000 to 3000 pounds of Spanish mackerel in just a few hours. However, in recent years the fish appear to have adjusted their behavior in response to the fishing pressure. Additionally, commercial fishermen report increased interactions with sharks and porpoises.

Fishermen who usually operate in the Gulf of Mexico will travel up to the Vero Beach area to target Spanish mackerel during certain times of the year.

Observations on Recruitment and Spawning:

North Carolina
In North Carolina, the larger, egg-laying Spanish mackerel are targeted during the summer months, with a peak in June. Spawning fish a usually seen in the sounds.

South Carolina
In South Carolina, fishermen report seeing fish in spawning condition during May and June and occasionally into the first part of July. Over the last five years, these spawning fish haven't been as abundant. However, this past year the spawning fish have come back into the harbors and inlets. This trend coincides with the return of king mackerel to the area.

Florida
In Florida, fish are rarely seen in spawning conditions. MC AP members noted that Spanish mackerel are typically sold whole rather than gutted. As a result, the commercial industry does not know much about key spawning periods.

Observations on Price and Demand:

North Carolina
In North Carolina, prices for Spanish mackerel average around $1.50 to $2.00 for a medium sized mackerel. Fishermen targeting Spanish mackerel from the beach rarely make a lot of money. Spanish mackerel is not a marketable fish and as a result as soon as any amount comes on the market prices will drop. Majority of Spanish mackerel landed in North Carolina is sold to northern markets such as: New York, Boston and Canada. There is no local demand for Spanish mackerel in North Carolina.

Overall demand for charter trips has improved, but this is likely in response to improvements in the economy rather than changes in the Spanish mackerel fishery. In North Carolina, there is increasing demand for half-day, family charter trips. Demand has increased so much that for hire captains are purchasing extra boats to run half-day trips. During the time demand for those trips is high, Spanish mackerel are readily available inshore. The charter fleets in Virginia and Georgia are experiencing the same trend.

Florida
In Florida, market price for Spanish mackerel fluctuates throughout the season. During the

winter months, prices are a little higher than the rest of the year. However, the most recent fishing season has seen a glut of Spanish mackerel on the market, resulting in very low prices.

Prior to the ban on gillnets in Florida state waters (1995) prices for Spanish mackerel were stable. After the net ban and the subsequent shift in effort towards the cast net and hook and line fisheries the price began to increase. However, over the last three years, prices for Spanish mackerel have decreased. The decrease in price corresponds to an increase in fishing effort.

For-hire customers booking charters in Florida are not focused on Spanish mackerel, they just want to catch a fish. In fact, Spanish mackerel are rarely targeted by for-hire captains in Florida. This is because deeper waters are more accessible in Florida than in other South Atlantic states and it can be challenging to sell customers on inshore trips.

Recreational fishermen also got rid of their larger boats during the recession and low bag-limits for snapper and grouper species has resulted in a shift in effort toward both king and Spanish mackerel.

Observations on Community Dependence:

The Virginia, North Carolina, South Carolina, and Georgia for-hire fleets are very dependent on Spanish mackerel. It is one of the most important summer fisheries because the fish are east to target inshore, which allows charter fishermen to run multiple trips a day.

North Carolina

Many the larger for-hire vessels operating out of Morehead City and Beaufort were able to make it through periods of low demand during the recession by booking half-day charters that would primarily land Spanish mackerel. In northeastern North Carolina, Spanish trolling has become a staple of many charter trip packages.

For commercial fishermen in North Carolina, one of the biggest challenges is the loss of fish houses. The few that are remaining don't like to give ice out to fishermen because they don't have enough supply to go around and conflict has become commonplace. This is a big problem in North Carolina where fishermen must travel long distances to get offshore. Fish that haven't been on ice are lower quality and have a lower market value.

Florida

Communities in central and southern Florida, especially Port Salerno, are highly dependent on the commercial Spanish mackerel fishery. The commercial infrastructure in the area, specifically docks and fish houses, is supported by Spanish mackerel landings.

Throughout Florida, the commercial Spanish mackerel fleet has shifted to primarily trailer boats. Commercial fishermen had to adapt because there are fewer fish houses on the water, most are now located a few miles inland. Charter fishermen are starting to move towards trailers as well due to increasing dockage fees. The number of trailers ramps is insufficient to support the number of boats and this has resulted in conflict among users.

Commercial Spanish mackerel fishermen have adapted to regulatory changes, namely the gillnet

ban in Florida waters, by perfecting the use of alternative gears.

Observations on Management Measures:

The MC AP agreed that the 12-inch minimum size limit for Spanish mackerel was appropriate. The commercial sector targets fish that are 16-inch or larger because the smaller fish are not marketable. However, charter boats that target marlin use Spanish mackerel for bait and they want smaller 12-inch to 14-inch fish. The commercial sector is able to use gear to target fish of a certain size, so modifying the size limit is unnecessary. Additionally, private recreational fishermen who fish off the pier usually catch 12-inch fish and the lower minimum size allows them to keep fish,

In North Carolina, an MC AP member noted that some of the charter boats use heavier tackle that kills sub-legal Spanish mackerel and it can be frustrating to throw the fish back.

In general, the MC AP members felt that the allocation between the recreational and commercial sectors (45% and 55%, respectively) was appropriate. The commercial fishery doesn't have enough market space to add more fish. However, if demand increases, sector allocations may need to be addressed.

Allocations between the Northern Zone and the Southern Zone (19.9% and 80.1%, respectively) may need to be addressed. Effort in North Carolina has increased over the last few years, especially as other species have become harder to access. During the 2017/2018 season, the Northern Zone fishery shut down early, even after receiving a transfer of 100,000 pounds of quota from the Southern Zone. It may be possible to mitigate the problem using other regulatory mechanisms, such as lower trip limits or gear requirements.

Some of the MC AP members felt that Council should consider a limited entry program for commercial Spanish mackerel fishery. If there are a limited number of fish available to harvest, there should be a limited number of fishermen. A limited entry system would help limit the number of boats participating in the fishery and would professionalize the fleet. MC AP members felt that with the increase in effort, a limited entry system would head off any problems and prevent the market from being flooded with Spanish mackerel, lowering the price. Additionally, if the Council chooses to move forward with limited entry for the commercial sector, a gillnet permit or endorsement would be appropriate, as the gillnet fishery operates as a separate sector.

MC AP members also suggested that the Northern Zone move to an adjusted quota system, similar to what is used in the Southern Zone.

Environmental Observations:

<u>North Carolina</u>
In North Carolina, the availability of Spanish mackerel is closely tied to weather conditions. In the spring (May and June), the inshore waters tend to be clear and the fish will move closer to the beach. Once it becomes rainy and windy in the summer months, water quality decreases, salinity drops, and fish move away from the beach. The fish will return in August and September, if there

hasn’t been a significant amount of tropical weather.

Other Observations:

North Carolina

In North Carolina there is very little conflict between recreational and commercial Spanish mackerel fishermen. In general, commercial fishermen operate in the middle of the Albemarle and Pamlico Sounds, whereas recreational fishermen operate in the inlets where there is minimal tide. Alternatively, in Port Salerno, Florida the Spanish mackerel are found along a two mile stretch of reef. As a result, commercial and recreational fishermen are operating near each other, which has resulted in friction between the sectors.

In Florida and North Carolina, Spanish mackerel is becoming a more specialized fishery. Along the North Carolina coast, fly fishing has become a key component of charter trips.

Appendix A: Spanish Mackerel Informational Document

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General Biology

Spanish mackerel (*Scomberomorus maculatus*) are migratory and move into specific areas to spawn and mature at age 1-2 years. They primarily eat other fish species (herring, sardines, and menhaden) and to a lesser extent crustaceans and squid at all life stages (larvae to adult). They are eaten primarily by larger pelagic predators like sharks, tuna, and bottlenose dolphin.

Spanish mackerel is also a pelagic species occurring in depths up to 75 meters (225 feet) but primarily found in depths of 20 meters (60 feet) or less. They occur in coastal zones of the western Atlantic from southern New England to the Florida Keys and throughout the Gulf of Mexico (Collette and Russo 1979). Adults usually are found from the low-tide line to the edge of the continental shelf, and along coastal areas. They inhabit estuarine areas (especially higher salinity areas) during seasonal migrations but are considered rare and infrequent in many Gulf estuaries.

Spawning occurs along the inner continental shelf from April to September (Powell 1975). Eggs and larvae occur most frequently offshore over the inner continental shelf at temperatures between 20°C (68°F) and 32°C (89.6°F) and salinities between 28 and 37 ppt. They are found frequently in water depths from 9 meters (27 feet) to about 84 meters (252 feet) but are most common in < 50 meters (150 feet).

Juveniles are most often found in coastal and estuarine habitats and at temperatures greater than 25°C (77°F) and salinities greater than 10 ppt. Although they occur in waters of varying salinity, juveniles appear to prefer marine salinity levels and generally are not considered estuarine-dependent. Like king mackerel, adult Spanish mackerel are migratory, generally moving from wintering areas of south Florida and Mexico to more northern latitudes in spring and summer. Spanish mackerel generally mature at age 1 to 2 and have a maximum age of approximately 11 years (Powell 1975).

Stock Status (SEDAR 28)

Gulf and Atlantic Spanish mackerel were assessed in SEDAR 28 (2013c, d). The assessments determined that Gulf and Atlantic Spanish mackerel were **not overfished and were not experiencing overfishing**.

Management Overview

The CMP FMP was approved in 1982 and implemented by regulations effective in February of 1983. Managed species included king mackerel, Spanish mackerel, and cobia. The FMP treated king and Spanish mackerel as unit stocks in the Atlantic and Gulf of Mexico. The FMP established allocations for the recreational and commercial sectors harvesting these stocks, and the commercial allocations were divided between net and hook-and-line fishermen.

Amendment 1: Implemented in September of 1985. Provided a framework procedure for pre-season adjustment of total allowable catch (TAC). Eliminated commercial allocations among gear users, except purse seines. Established minimum size limits for Spanish mackerel at 12 in fork length (FL) or 14 in total length (TL).

Amendment 2: Implemented in July 1987. Recognized two migratory groups. Established commercial (76%) and recreational (24%) allocations for TAC, established April 1st to March 31st fishing year, established Dade/Monroe county line as the migratory group boundary, and set commercial quotas and bag limits. A bag limit of 4-fish in FL and 10-fish in NC, SC, and GA. Charter boat permits were required.

Amendment 3: Implemented in April 1990. Prohibited drift gillnets for coastal pelagic species and purse seines for the overfished migratory groups of mackerels.

Amendment 4: Implemented in October 1989. Reallocated Atlantic migratory group Spanish mackerel equally between recreational and commercial fishermen.

Amendment 5: Implemented in August 1990. Extended the management area for Atlantic migratory groups of mackerels through the Mid-Atlantic Council's area of jurisdiction. Redefined recreational bag limits as daily limits. Deleted a provision specifying that bag limit caught mackerel may be sold. Size limit for Spanish mackerel is 12" FL or 14" TL. Bag limit is 4-fish from area off FL and 10-fish north of FL.

Amendment 6: Implemented in November 1992. Provided for commercial Atlantic Spanish mackerel possession limits. Discontinued the reversion of the bag limit to 0 when the recreational quota is filled. Modified the recreational fishing year to the calendar year. Changed commercial permit requirements to allow qualification in one of three preceding years. Changed all size limits to fork length only. Minimum size limit is 12-inches FL. In northern zone, boats are restricted to possession limits of 3,500 pounds. In southern zone trip limit are 1,500 pounds per vessel per day during April 1 to November 30. From December 1 until 80% of quota is taken: unlimited harvest on Monday, Wednesday, and Friday; 1,500 pounds per vessel per day on Tuesday and Thursday; 500 pounds per vessel per day on Saturday and Sunday. Trip limit 1,000 pounds per vessel per day when 80% of quota is reached.

Amendment 8: Implemented March 1998. Established allowable gear in the South Atlantic and Mid-Atlantic areas. Increased the income requirement for a king or Spanish mackerel permit to 25% of earned income or $10,000 from commercial sale of catch or charter or head boat fishing in one of the three previous calendar years, but allowed for a one-year grace period to qualify under permits that are transferred.

Amendment 9: Implemented in April 2000. Allowed the retention and sale of cut-off (damaged), legal-sized king and Spanish mackerel within established trip limits.

Amendment 10: Implemented July 2000. Incorporated essential fish habitat provisions for the South Atlantic.

Amendment 11: Partially approved in December 1999. Addressed Sustainable Fishery Act Definitions.

Amendment 15: Implemented August 2005. Changed the fishing season to March 1st through February 28/29th for the Atlantic migratory groups of king and Spanish mackerel.

Amendment 18: Implemented in January 2012. Established annual catch limits and accountability measures for Gulf and Atlantic migratory groups for cobia, king mackerel, and Spanish mackerel.

Amendment 19: Implemented in July 2010. Established coral habitat areas of particular concern (HAPCs).

Amendment 20A: Implemented in July 2014. Prohibited sale of recreationally caught king and Spanish mackerel, with an exception for sale of fish caught on for-hire trips on dual- permitted vessels in the Gulf region, and an exception for sale of fish caught in state-permitted tournaments in both the Gulf and Atlantic regions and donated to a state or federally permitted dealer, as long as the proceeds from the dealer sale are donated to charity.

Amendment 20B: Implemented in March 2015. Created a transit provision for areas closed to king mackerel. Established Northern and Southern zones with separate commercial quotas for Atlantic king and Spanish mackerel.

Amendment 21: Implemented in January 2012. Addressed recreational fishing measures in South Carolina Special Management Zones (SMZs).

Amendment 22: Implemented in January 2014. Required weekly electronic reporting for headboats in the South Atlantic.

Amendment 23: Implemented in August 2014. Required Atlantic king mackerel and Spanish mackerel permit holders to sell to a federal dealer; required weekly electronic reporting for federal dealers.

Framework Amendment 1: Implemented in December 2014. Updated the ACLs for Gulf and Atlantic Spanish mackerel.

Framework Amendment 2: Implemented in August 2015. Modified the quota and trip limit system for commercial harvest of Atlantic migratory group Spanish mackerel in the Southern Zone (3,500 pounds for the Southern Zone. When 75% of adjusted Southern Zone quota is met or projected to be met, the trip limit would be reduced to 1,500 pounds. When 100% of adjusted Southern Zone quota is met or projected to be met, the trip limit is reduced to 500 pounds until the end of the fishing year or until the Southern Zone commercial quota is met or projected to be met, at which time the commercial sector in the Southern Zone would be closed to harvest of Spanish mackerel).

Framework Amendment 5: Implemented in August 2017. Removed the restriction on fishing for or retaining the recreational bag and possession limits of king and Spanish mackerel on a vessel with a Federal commercial permit for king or Spanish mackerel when commercial harvest of king or Spanish mackerel in a zone or region is closed.

Fishery Performance

The following summary of Spanish mackerel landings was prepared using various data sources, including:

ALS: The Accumulated Landings System (ALS) is the system used by the Southeast Fisheries Science Center (SEFSC) to track commercial landings in the South Atlantic. It includes commercial dealer reports. These data are provided to the Council each year.

SEFSC: These are the recreational data, which are a combination of the Marine Recreational Information Program (MRIP) survey data and the Southeast Region Headboat Survey (SRHS) data. The MRIP data are provided to the SEFSC in numbers and are subsequently converted to weight using a method unique to the Southeast Region. These data are transmitted to the Council each year.

MRIP: These are the recreational data collected directly by the Marine Recreational Information Program (MRIP). Landings are estimated from intercepted trips and a separate phone survey for effort. The SEFSC uses a different methodology to convert the recreational catch in numbers to weight than MRIP does. Headboat landings are not collected through MRIP but through the SRHS mentioned above.

ACCSP: In addition to submitting reports to the SEFSC, commercial dealers and fishermen submit reports to the Atlantic Coastal Cooperative Statistics Program (ACCSP). The commercial value information (reported by dealers) presented below were obtained from ACCSP.

To access an online tool displaying data presented in this summary, click here.

Commercial Sector

Commercial landings of Atlantic migratory group Spanish mackerel in pounds (as reported) from 2000 through 2016 by zone are presented in **Table 1**. Data were not yet available for January and February of 2017. Those landings were estimated by taking the average landings in each month for the most recent three years of available data (2014, 2015, 2016). Landings by zone are presented graphically in **Figure 1** and total landings relative to the quota/ACL are shown in **Figure 2**. Landings are presented by zone to maintain confidentiality. The Northern zone includes North Carolina and the Mid-Atlantic states. The Southern Zone includes South Carolina, Georgia, and Florida.

Table 1. Atlantic migratory group Spanish mackerel total commercial landings (pounds) and ACL 2000 through 2016, by zone. From 2000-2004 the fishing year started on April 1st. In subsequent years, the fishing year started on March 1st.

Year	Fishing Year	Northern Zone	Southern Zone	Total	Commercial ACL
2000	2000-2001	659,325	1,892,607	2,551,932	3,870,000
2001	2001-2002	653,490	2,162,003	2,815,493	3,870,000
2002	2002-2003	698,828	2,354,067	3,052,895	3,870,000
2003	2003-2004	539,797	3,151,738	3,691,535	3,870,000
2004	2004-2005	522,576	3,129,649	3,652,225	3,870,000
2005	2005-2006	486,676	2,667,777	3,154,453	3,870,000
2006	2006-2007	515,388	3,156,272	3,671,660	3,620,000
2007	2007-2008	537,230	2,520,826	3,058,056	3,620,000
2008	2008-2009	568,592	2,591,622	3,160,214	3,620,000
2009	2009-2010	1,101,977	3,073,997	4,175,974	3,620,000
2010	2010-2011	959,621	3,600,921	4,560,542	3,620,000
2011	2011-2012	906,885	3,095,993	4,002,878	3,880,660
2012	2012-2013	934,187	2,208,754	3,142,941	3,130,000
2013	2013-2014	628,668	2,517,549	3,146,217	3,130,000
2014	2014-2015	682,167	2,189,814	2,871,981	3,330,000
2015	2015-2016	575,920	2,043,861	2,619,781	3,330,000
2016	2016-2017	639,846	2,381,927	3,021,773	3,330,000

Source: ALS

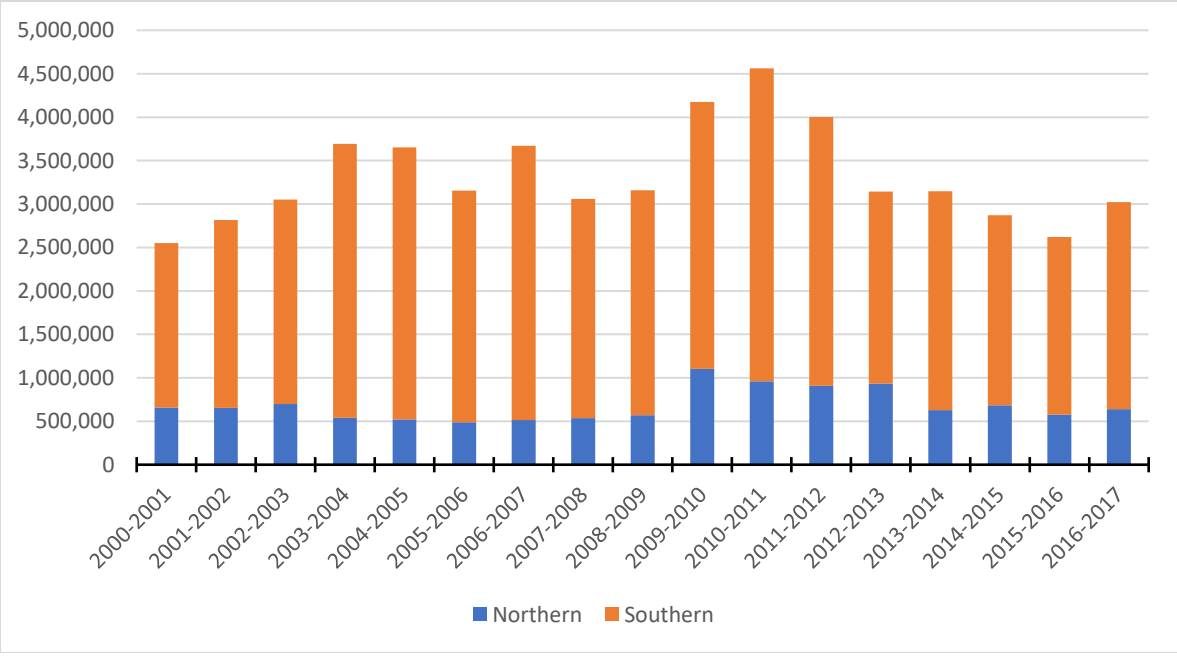

Figure 1. Commercial landings (pounds) of Atlantic migratory group Spanish mackerel from 2000 through the 2016, by zone. From 2000-2004 the fishing year started on April 1st. In subsequent years, the fishing year started on March 1st.
Source: ALS

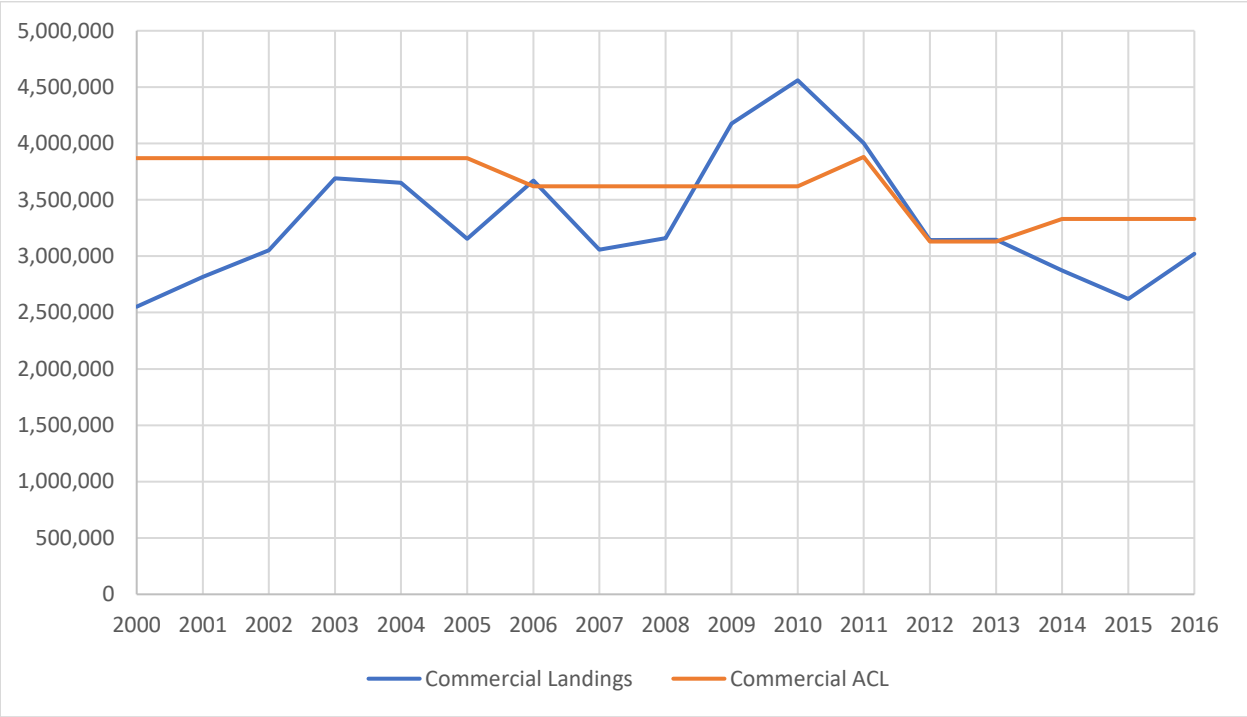

Figure 2. Commercial landings (pounds) of Atlantic migratory group Spanish mackerel from 2000 through 2016 (blue line) and quota/commercial ACL (orange line). From 2000-2004 the fishing year started on April 1st. In subsequent years, the fishing year started on March 1st.
Source: ALS

Atlantic Spanish mackerel commercial landings since 2000 have ranged from a low of 2,551,932 pounds in 2000 to a high of 4,560,542 pounds in 2010 (**Table 1**). The majority of Atlantic Spanish mackerel landed commercially in the Northern Zone are landed in the North Carolina. Southern Zone commercial landings are primarily from Florida. Over the time period examined, landings have generally fluctuated. After peaking in 2010, commercial landings of Atlantic Spanish mackerel decreased until 2015. Generally, landings over the time period have averaged around 3.3 million pounds (**Figures 1 & 2**).

Figures 3 and **4** show the seasonality and distribution of commercial landings, respectively. **Figure 3** displays the average monthly commercial landings of Atlantic Spanish mackerel from 2000 through 2016. **Figure 4** displays the same information by zone. The commercial fishery for Atlantic Spanish mackerel occurs mainly during the winter in the Southern Zone. In the Northern Zone, the commercial fishery occurs mainly in the summer. Commercial landings of Atlantic Spanish mackerel peak annually during the month of January in the Southern Zone and during the month of September in the Northern Zone (**Figure 4**). **Figure 4** shows that Atlantic Spanish mackerel are primarily harvested in the Southern Zone.

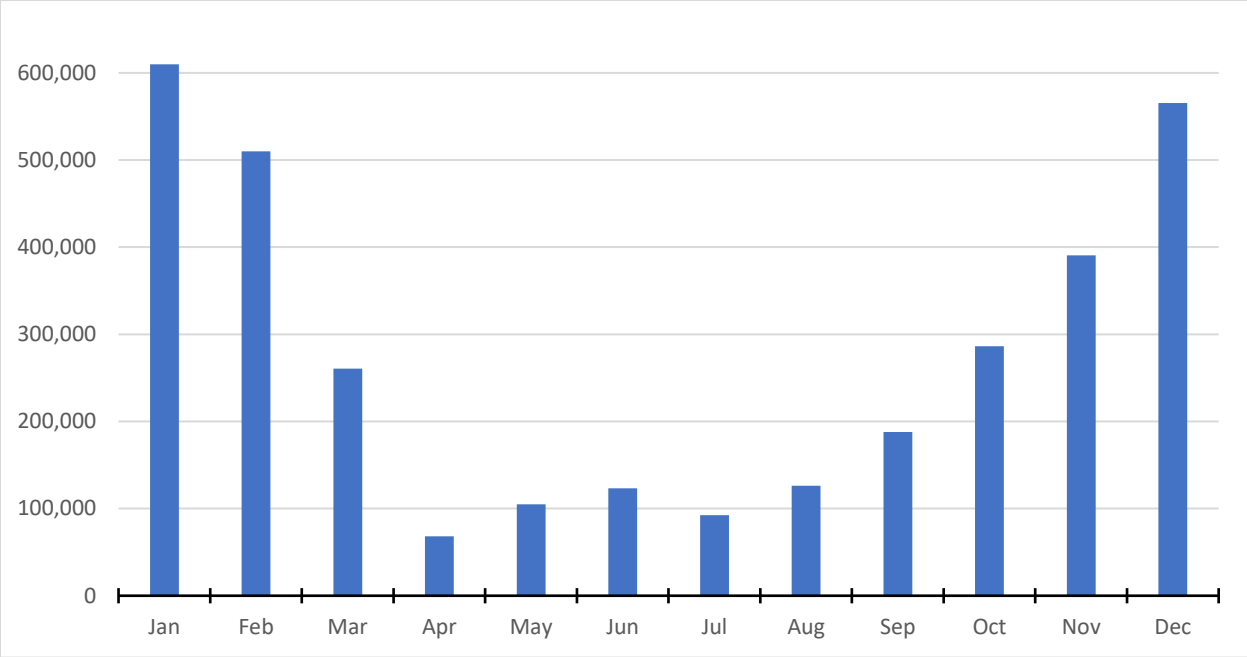

Figure 3. Average monthly commercial landings (pounds) of Atlantic migratory group Spanish mackerel, 2000-2016.
Source: ALS

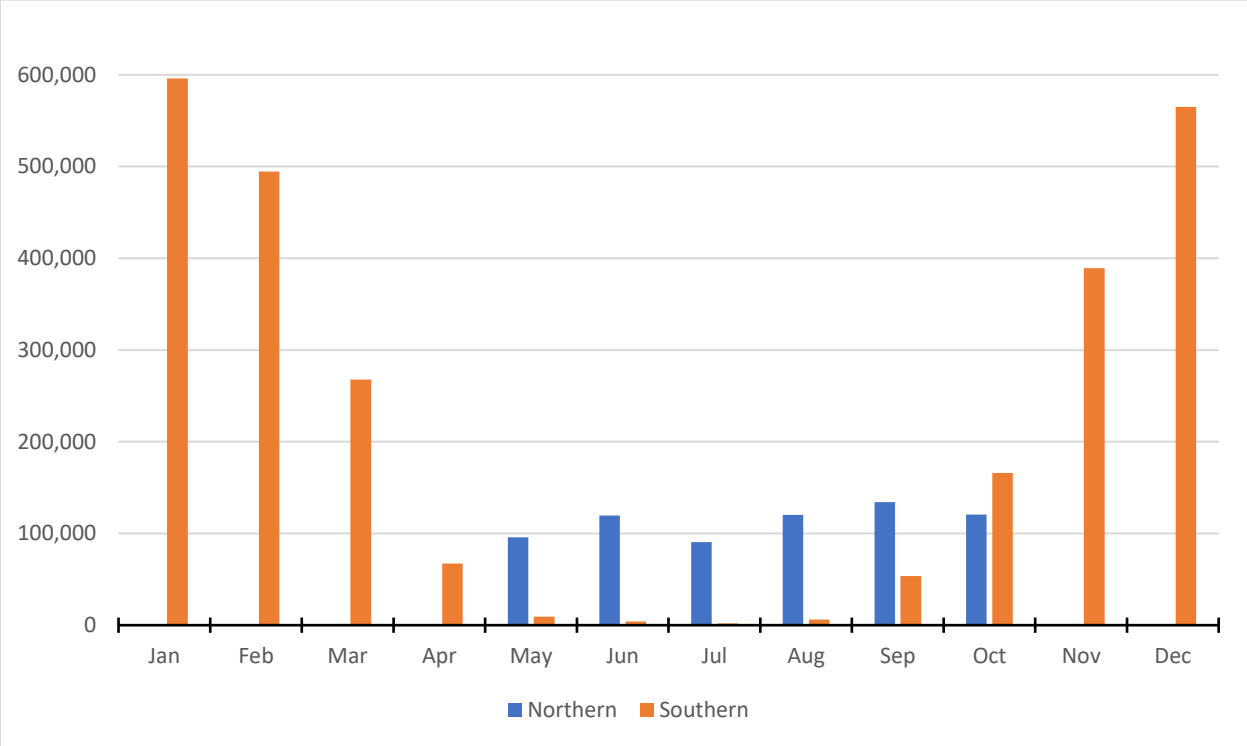

Figure 4. Average monthly commercial landings (pounds) of Atlantic migratory group Spanish mackerel by zone from 2000 through 2016.
Source: ALS

Recreational Sectors

Recreational landings of Atlantic migratory group Spanish mackerel in pounds whole weight from 2000 through 2016 by zone are presented in **Table 2**. Landings by zone are presented graphically in **Figure 5**. Recreational landings of Atlantic Spanish mackerel have ranged from a low of 857,098 pounds whole weight in 2015 to a high of 2,014,442 pounds in 2000 (**Table 2**). In terms of geographical distribution, like commercial landings, recreational landings of Atlantic Spanish mackerel can be attributed to mainly to North Carolina in the Northern Zone and Florida in the Southern Zone. During the time period examined, Atlantic Spanish mackerel recreational landings in peaked in the Northern Zone in 2009 and in the Southern Zone in 2000. (**Figure 5**). Total landings by year are shown in **Figure 6**. The recreational ACL for Atlantic Spanish mackerel was specified in 2012 and revised in CMP Framework Amendment 1 based on the results from SEDAR 28 (2012). Recreational landings of Atlantic Spanish mackerel have not exceeded the recreational ACL since it was established in 2012.

Table 2. Atlantic migratory group Spanish mackerel total recreational landings (pounds whole weight) and recreational ACL (where applicable) from 2000 through 2016, by zone. From 2000-2004 the fishing year started on April 1st. In subsequent years, the fishing year started on March 1st.

Year	Fishing Year	Northern Zone	Southern Zone	Total	Recreational ACL
2000	2000-2001	769,444	1,244,998	2,014,442	
2001	2001-2002	514,972	1,189,090	1,704,062	
2002	2002-2003	519,328	1,139,406	1,658,735	
2003	2003-2004	428,718	1,086,739	1,515,458	
2004	2004-2005	524,006	633,792	1,157,798	
2005	2005-2006	325,071	830,020	1,155,090	
2006	2006-2007	453,937	936,097	1,390,033	
2007	2007-2008	703,802	833,398	1,537,200	
2008	2008-2009	904,626	1,005,373	1,909,999	
2009	2009-2010	816,978	1,095,918	1,912,896	
2010	2010-2011	611,204	870,029	1,481,233	
2011	2011-2012	468,388	741,479	1,209,867	
2012	2012-2013	629,732	519,743	1,149,475	2,560,000
2013	2013-2014	674,871	920,040	1,594,911	2,560,000
2014	2014-2015	472,333	384,764	857,098	2,727,000
2015	2015-2016	456,027	365,802	821,829	2,727,000
2016[1]	2016-2017	468,113	495,821	963,934	2,727,000

Source: SEFSC

[1]The data for Wave 1 of fishing year 2016/2017 (January/February) are from MRIP. They do not include headboat data and they do not use the SEFSC's weight conversion methodology, which differs from the MRIP methodology for converting numbers to weight.

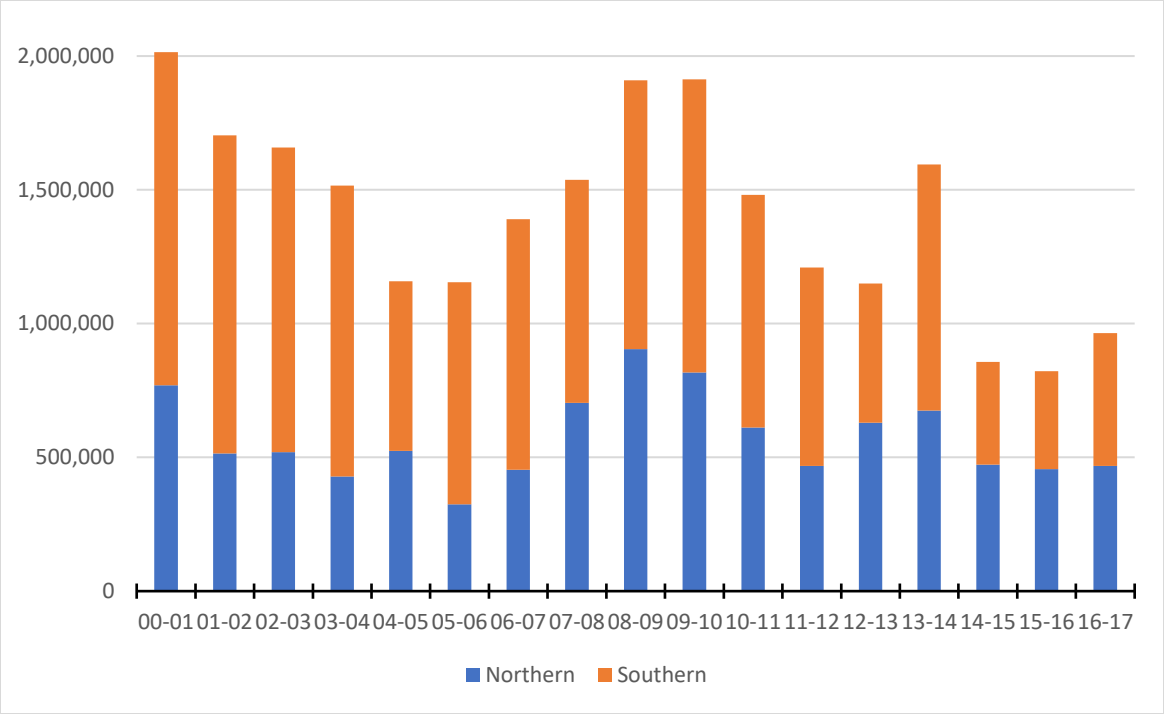

Figure 5. Recreational landings (pounds whole weight) of Atlantic migratory group Spanish mackerel by zone from 2000 through 2016. From 2000-2004 the fishing year started on April 1st. In subsequent years, the fishing year started on March 1st.
Source: SEFSC
Note: The data for Wave 1 of fishing year 2016/2017 (January/February) are from MRIP.

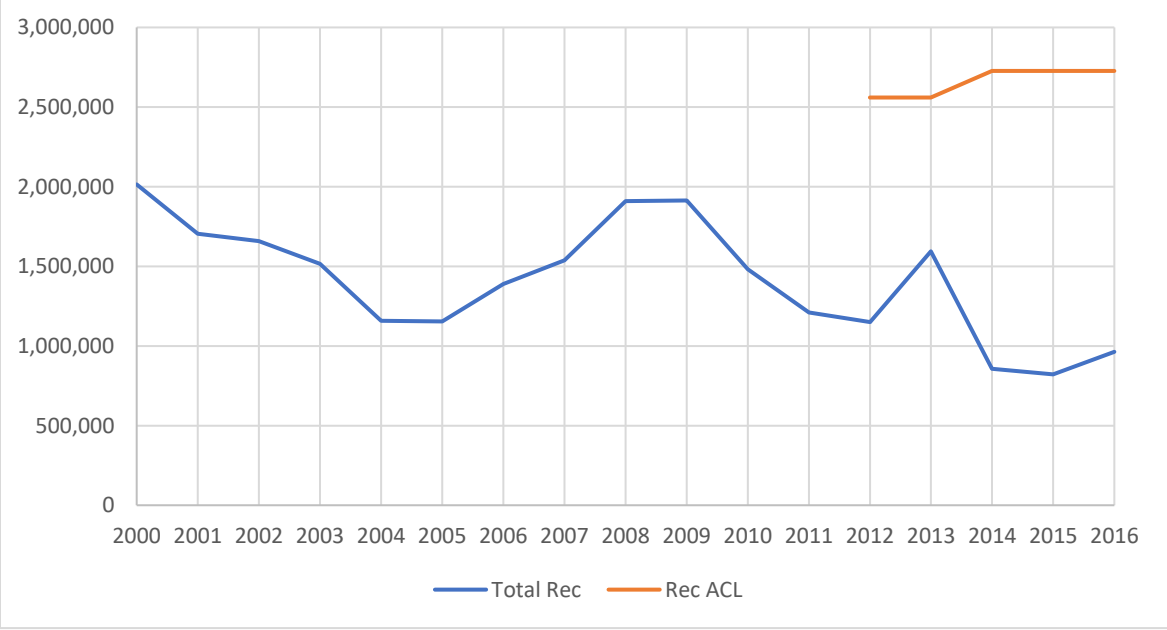

Figure 6. Total recreational landings (pounds whole weight) of Atlantic migratory group Spanish mackerel from 2000 through 2016 (blue line). Recreational ACL (red line) is shown since 2012, when first implemented. From 2000- 2004 the fishing year started on April 1st. In subsequent years, the fishing year started on March 1st.
Source: SEFSC
Note: The data for Wave 1 of fishing year 2016/2017 (January/February) are from MRIP.

Average recreational landings of Atlantic Spanish mackerel by zone and by 2-month wave (as reported through the MRIP) are shown in **Figure 7**. As expected, the majority of Atlantic Spanish mackerel landings in the Southern Zone occur in Wave 1 (January-February) and Wave 6 (November-December). Majority of Atlantic Spanish mackerel landings in the Northern Zone occur during Wave 3 (May-June) (**Figure 7**). Directed (target or harvest) Atlantic Spanish mackerel recreational trips are summarized in **Figure 8**. The number of directed trips for Atlantic Spanish mackerel an increasing trend from 2007 to 2009, then again from 2012 to 2016 (**Figure 8**).

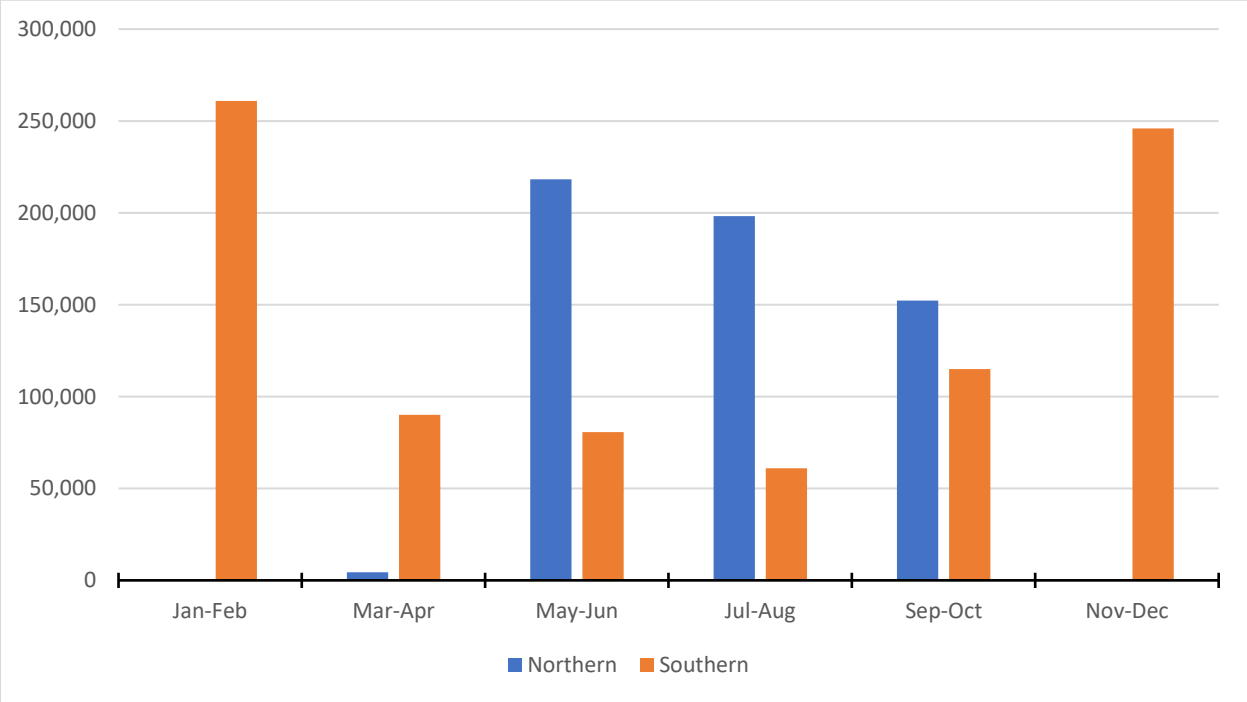

Figure 7. Average recreational landings of Atlantic migratory group Spanish mackerel by wave and by zone from 2000 through 2016.
Source: SEFSC
Note: The data for Wave 1 of fishing year 2016/2017 (January/February) are from MRIP.

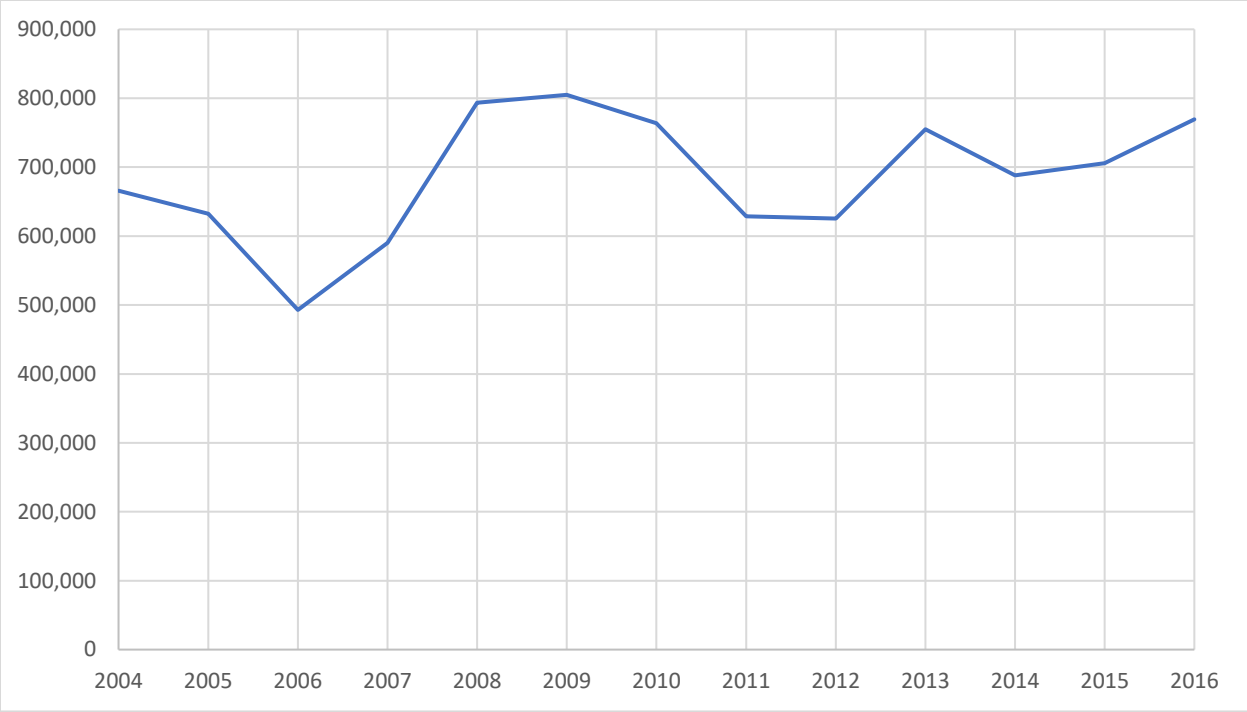

Figure 8. Directed Atlantic migratory group Spanish mackerel recreational trips (targeted or harvest) from 2000 through 2016. From 2000-2004 the fishing year started on April 1st. In subsequent years, the fishing year started on March 1st.
Source: SEFSC
Note: The data for Wave 1 of fishing year 2016/2017 (January/February) are from MRIP.

Economic Performance

Metrics that are often readily available to evaluate economic trends for the commercial sector on a species by species basis (such as price per pound or ex-vessel value) are not available for the recreational sector. Nevertheless, trends in harvest and effort are often linked to economic trends in a recreational fishery, with harvest often being associated with economic value and effort (the number of fishing trips) being associated with both value and economic impacts (i.e. jobs, income, business sales). As such, trends in harvest and effort can be used to broadly evaluate likely trends in the economic performance of a recreational fishery. Examining recreational effort (**Figure 8**) from 2004/05 through 2015/16, the economic performance of the recreational Spanish mackerel fishery has been upward, hitting its peak in 2009/10 and remaining relatively high. When examining recreational harvest over the same time period (**Figure 6**), the opposite trend is apparent, with harvest peaking in 2008/09 and generally decreasing through 2015/16. Since economic impacts are often associated with fishing effort and economic value is often linked to harvest, it is possible that the recreational Spanish mackerel fishery has exhibited an increasing trend in economic impacts and a decreasing trend in economic value. Regardless, out of the approximate 60 species of finfish that the South Atlantic Fishery Management Council manages, Spanish mackerel accounted for the most directed (harvest or target) trips and fifth highest recreational landings in 2016, signaling that the species is among the most economically important species for the recreational sector.

Changing focus to the commercial sector, **Figure 9** shows the average inflation adjusted price per pound for Spanish mackerel regionally and state by state (in 2016 dollars) from 2000/01 through 2015/16. Total ex-vessel value for Spanish mackerel in the South Atlantic and Mid-Atlantic Region is presented in **Figure 10** in inflation adjusted figures (2016 dollars). For the South Atlantic Region, the ex-vessel price per pound for Spanish mackerel was fairly flat until the 2010/11 fishing year, after which prices tended to increase and remain higher. The overall ex-vessel value peaked in 2012/13 at approximately $4.2 million (2016 dollars), with the ex-vessel value decreasing to $3.8 million in 2015/16 (2016 dollars). In relation to the approximate 60 species of finfish that the South Atlantic Fishery Management Council manages, Spanish mackerel accounted for the third highest ex-vessel value of any species in 2016, indicating that the species is of great economic importance to the commercial sector.

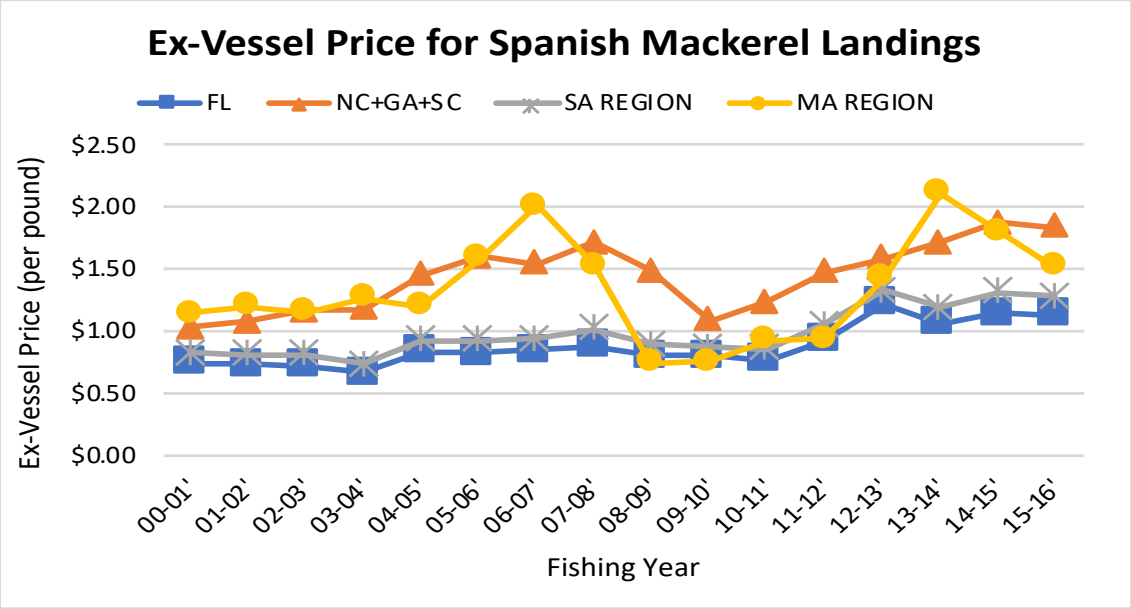

Figure 9. Average annual ex-vessel price per pound (2016 dollars) by state for commercial Atlantic migratory group Spanish mackerel landings in the South Atlantic and Mid-Atlantic Regions from fishing year 2000-2001 through 2015-2016. Data for Georgia and South Carolina were aggregated with that for North Carolina due to confidentiality concerns. Inflation adjustments use the U.S. GDP deflator. Sources: U.S. Bureau of Economic Analysis and ACCSP.

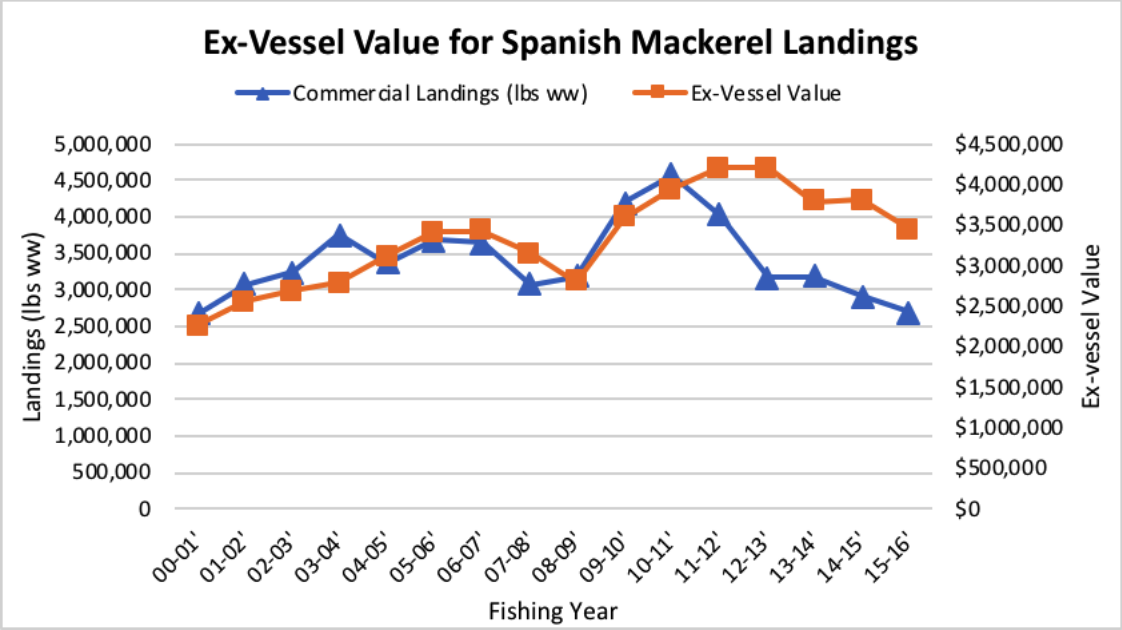

Figure 10. Weight and inflation adjusted (2016 dollars) ex-vessel value of commercial Spanish mackerel landings in the South Atlantic and Mid-Atlantic Regions from fishing year 2000-2001 through 2015-2016. Inflation adjustments use the U.S. GDP deflator.
Sources: U.S. Bureau of Economic Analysis and ACCSP.

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