

**FISHERY MANAGEMENT PLAN UPDATE
BLACK SEA BASS NORTH OF CAPE HATTERAS
AUGUST 2020**

STATUS OF THE FISHERY MANAGEMENT PLAN

Fishery Management Plan History

Original FMP Adoption: Incorporated into the Summer Flounder FMP through Amendment 9 in 1996

Amendments:

- Amendment 9 in 1996
- Amendment 10 in 1997
- Amendment 11 in 1998
- Amendment 12 in 1999
 - Framework 1 in 2001
 - Addendum IV in 2001
 - Addendum VI in 2002
- Amendment 13 in 2003
 - Framework 5 in 2004
 - Addendum XII in 2004
 - Addendum XIII in 2004
 - Addendum XVI in 2005
- Amendment 16 in 2007
 - Framework 7 in 2007
 - Addendum XIX in 2007
 - Addendum XX in 2009
- Amendment 15 in 2011
 - Addendum XXI in 2011
 - Addendum XXII in 2012
- Amendment 19 (Recreational Accountability Amendment) in 2013
 - Addendum XXIII in 2013
 - Addendum XXV in 2014
- Amendment 17 in 2015
 - Framework 8 in 2015
- Amendment 18 in 2015
 - Addendum XXVII in 2016
- Amendment 20 in 2017
 - Framework 10 in 2017
 - Addendum XXX in 2018
 - Framework 11 in 2018
 - Framework 13 in 2018
 - Addendum XXXI in 2018
 - Addendum XXXII in 2018

ASMFC AND FEDERALLY-MANAGED SPECIES WITH N.C. INDICES – BLACK SEA BASS (NORTH)

Revisions:	None
Supplements:	None
Information Updates:	None
Schedule Changes:	None
Next Benchmark Review:	2022

Because of their presence in, and movement between, state waters (0-3 miles) and federal waters (3-200 miles), the Mid-Atlantic Fishery Management Council (MAFMC) manages black sea bass (*Centropristis striata*) north of Cape Hatteras cooperatively with the Atlantic States Marine Fisheries Commission (ASMFC). The two management entities work in conjunction with the National Marine Fisheries Service (NMFS) as the federal implementation and enforcement entity. The Summer Flounder, Scup and Black Sea Bass Fishery Management Plan (FMP) and amendments use output controls (catch and landings limits) as the primary management tool, with landings divided between the commercial (49 percent) and recreational (51 percent) fisheries. The FMP also includes minimum fish sizes, bag limits, seasons, gear restrictions, permit requirements, and other provisions to prevent overfishing and ensure sustainability of the fisheries. Recreational bag and size limits and seasons are determined on a state and regional basis in state waters and coastwide measures in federal waters. The commercial quota is divided into state-by-state quotas.

Specific details for each Amendment include:

Amendment 9 - incorporated black sea bass into the Summer Flounder FMP; established black sea bass management measures including commercial quotas, recreational harvest limits, size limits, gear restrictions, permits, and reporting requirements.

Amendment 10 - modified commercial minimum mesh requirements; continued commercial vessel moratorium permit; prohibited transfer of summer flounder at sea; established a special permit for the summer flounder party/charter sector.

Amendment 11 - modified certain provisions related to vessel replacement and upgrading, permit history transfer, splitting, and permit renewal regulations.

Amendment 12 - revised the Summer Flounder, Scup, and Black Sea Bass FMP to comply with the Sustainable Fisheries Act and established a framework adjustment process; established quota set-aside for research for summer flounder, scup and black sea bass; established state-specific conservation equivalency measures; allowed the rollover of the winter scup quota; revised the start date for the scup summer quota period; established a system to transfer scup at sea.

ASMFC AND FEDERALLY-MANAGED SPECIES WITH N.C. INDICES – BLACK SEA BASS (NORTH)

- Framework 1 - established quota set-aside for research for summer flounder, scup and black sea bass.
- Addendum IV - provided that upon the recommendation of the relevant monitoring committee and joint consideration with the Mid-Atlantic Fishery Management Council, the ASMFC's Summer Flounder, Scup, and Black Sea Bass Management Board will decide the state regulations rather than forward a recommendation to the National Marine Fisheries Science center; made states responsible for implementing the ASMFC's Summer Flounder, Scup, and Black Sea Bass Management Boards decisions on regulations.
- Addendum VI - provided a mechanism for initial possession limits, triggers, and adjusted possession limits to be set during the annual specification setting process without the need for further Emergency Rules.
- Amendment 13 - revised black sea bass commercial quota system; addressed other black sea bass management measures; established multi-year specification setting of quota for summer flounder, scup and black sea bass; established region-specific conservation equivalency measures for summer flounder; built flexibility into process to define and update status determination criteria for each plan species. Amendment 13 also removed the necessity for fishermen who have both a Northeast Region (NER) black sea bass permit and a Southeast Region (SER) snapper/grouper permit to relinquish their permits for a six-month period prior to fishing south of Cape Hatteras during the northern closure.
- Framework 5 - established multi-year specification setting of quota for summer flounder, scup, and black sea bass.
- Addendum XII - continued the use of a state-by-state allocation system, managed by the ASMFC on an annual coastwide commercial quota.
- Addendum XIII - modified the Summer Flounder, Scup, and Black Sea Bass FMP so that Total Allowable Landings for summer flounder, scup, and/or black sea bass can be specified for up to three years.
- Addendum XVI - established guidelines for delayed implementation of management strategies.
- Amendment 16 - standardized bycatch reporting methodology.
- Framework 7 - built flexibility into process to define and update status determination criteria for each plan species.

Addendum XIX - continued the state-by-state black sea bass commercial management measures, without a sunset clause; broadened the descriptions of stock status determination criteria contained within the Summer Flounder, Scup, and Black Sea Bass FMP to allow greater flexibility in those definitions, while maintaining objective and measurable status determination criteria for identifying when stocks or stock complexes covered by the fishery management plan are overfished.

Addendum XX - set policies to reconcile commercial quota overages to address minor inadvertent quota overages; streamlined the quota transfers process and established clear policies and administrative protocols to guide the allocation of transfers from states with underages to states with overages; allowed for commercial quota transfers to reconcile quota overages after a year's end.

Amendment 15 - established annual catch limits and accountability measures.

Addendum XXI - allowed more flexibility in setting recreational measures for the 2011 fishing year and proposed state-by-state or regional management measures for the 2011 black sea bass fishery.

Addendum XXII - divided the recreational black sea bass coastwide allocations into state-by-state management for 2012 only.

Amendment 19 - (Recreational Accountability Amendment) modified the accountability measures for the MAFMC recreational fisheries.

Addendum XXIII - established regional management for the 2013 recreational black sea bass fishery.

Addendum XXV - established regional management for the 2014 recreational black sea bass and summer flounder fishery.

Amendment 17 - implemented standardized bycatch reporting methodology.

Framework 8 - allowed the black sea bass recreational fishery to begin on May 15 of each year, instead of May 19, to provide additional fishing opportunities.

Amendment 18 - eliminated the requirement for vessel owners to submit "did not fish" reports for the months or weeks when their vessel was not fishing; removed some of the restrictions for upgrading vessels listed on federal fishing permits.

- Addendum XXVII - continued regional management of the recreational summer flounder fishery, extended ad hoc regional management of the black sea bass recreational fishery for the 2016 and 2017 fishing year and addressed the discrepancies in recreational summer flounder management measures within Delaware Bay.
- Amendment 20 - implemented management measures to prevent the development of new, and the expansion of existing, commercial fisheries on certain forage species in the Mid-Atlantic.
- Framework 10 - implemented a requirement for vessels that hold party/charter permits for Council-managed species to submit vessel trip reports electronically (eVTRs) while on a trip carrying passengers for hire.
- Addendum XXX - established 2018 recreational black sea bass management with options for regional allocations that require uniform regulations and other alternatives to the current North/South regional delineation (MA-NJ/DE-NC)
- Framework 11 - established a process for setting constant multi-year Acceptable Biological Catch (ABC) limits for Council-managed fisheries, clarified that the Atlantic Bluefish, Tilefish, and Atlantic Mackerel, Squid, and Butterfish FMPs will now automatically incorporate the best available scientific information in calculating ABCs (as all other Mid-Atlantic Council management plans do) rather than requiring a separate management action to adopt them, clarified the process for setting ABCs for each of the four types of ABC control rules.
- Framework 13 - modified the accountability measures required for overages not caused by directed landings (i.e., discards) in the summer flounder, scup, and black sea bass fisheries.
- Addendum XXXI - established conservation equivalency for black sea bass and transit provisions in federal waters around Block Island, Rhode Island for recreational and commercial fishermen which allows permitted fishermen to pass through federal waters legally.
- Addendum XXXII - established a specifications process instead of an addendum process to implement recreational management measures more quickly for summer flounder and black sea bass.
- Framework 14 - gives the Council the option to waive the federal recreational black sea bass measures in favor of state measures through conservation equivalency; implements a transit zone for commercial and recreational summer flounder, scup, and black sea bass fisheries in Block Island Sound; and allows for the use of a maximum size limit in the recreational summer flounder and black sea bass fisheries.

Specific details for each amendment and addendum under development include:

Summer Flounder, Scup, and Black Sea Bass Commercial/Recreational Allocation Amendment is underway. The objective of this Amendment is to consider modifications to the current allocations between the commercial and recreational sectors for summer flounder, scup, and black sea bass. As of June 2020, the ASMFC and MAFMC has reviewed public comment from the scoping period and is in the process of developing a range of draft alternatives to be included for consideration in the amendment. Any action resulting from the Amendment is scheduled for late 2021 or early 2022.

In October of 2019, the ASMFC initiated the development of an addendum to consider changes to black sea bass commercial state allocations. In December of 2019, the MAFMC voted to make this a joint action. Under the Council plan this action must take place as an amendment. The MAFMC and ASMFC are now developing a joint action to consider adjusting the allocations of the black sea bass commercial quota among states (State Allocation Amendment). The Council and Commission initiated this action to jointly consider whether changes should be made to the state allocations and whether these allocations should be managed under both the Commission and Council Fishery Management Plans, rather than only under the Commission’s FMP as is currently the case.

To ensure compliance with interstate requirements, North Carolina also manages this species under the North Carolina Fishery Management Plan for Interjurisdictional Fisheries (IJ FMP). The goal of the IJ FMP is to adopt fishery management plans, consistent with N.C. law, approved by the MAFMC, South Atlantic Fishery Management Council, or the ASMFC by reference and implement corresponding fishery regulations in North Carolina to provide compliance or compatibility with approved fishery management plans and amendments, now and in the future. These plans were established under the Magnuson-Stevens Fishery Conservation and Management Act (federal council plans) and the Atlantic Coastal Fisheries Cooperative Management Act (ASMFC plans) with the goal, like the Fisheries Reform Act of 1997, to “ensure long-term viability” of these fisheries (NCDMF 2015).

Management Unit

U.S. waters in the western Atlantic Ocean from Cape Hatteras northward to the U.S.-Canadian border.

Goal and Objectives

The objectives of the Summer Flounder, Scup and Black Sea Bass FMP are to:

1. Reduce fishing mortality in the summer flounder, scup and black sea bass fisheries to assure that overfishing does not occur;
2. Reduce fishing mortality on immature summer flounder, scup and black sea bass to increase spawning stock biomass;

3. Improve the yield from these fisheries;
4. Promote compatible management regulations between state and federal jurisdictions;
5. Promote uniform and effective enforcement of regulations;
6. Minimize regulations to achieve the management objectives stated above.

The 2011 Omnibus Amendment contains Amendment 15 to the Summer Flounder, Scup and Black Sea Bass FMP. The amendment is intended to formalize the process of addressing scientific and management uncertainty when setting catch limits for the upcoming fishing year(s) and to establish a comprehensive system of accountability for catch (including both landings and discards) relative to those limits, for each of the managed resources subject to this requirement. Specifically: (1) Establish allowable biological catch control rules, (2) Establish a MAFMC risk policy, which is one variable needed for the allowable biological catch control rules, (3) Establish annual catch limits, (4) Establish a system of comprehensive accountability, which addresses all components of the catch, (5) Describe the process by which the performance of the annual catch limit and comprehensive accountability system will be reviewed, (6) Describe the process to modify the above objectives (1-5) in the future.

STATUS OF THE STOCK

Life History

Black sea bass are split into two stocks but together are found along the Atlantic coast from the Gulf of Maine to the Florida Keys. The northern stock is located from the Gulf of Maine to Cape Hatteras, North Carolina while the southern stock is located from Cape Hatteras, North Carolina to the Florida Keys. Black sea bass have a unique life history in that they are protogynous hermaphrodites which means they begin life as female and then change to male once they reach age 2 to 5 or when they reach 9 to 13 inches in total length. During the spawning season, dominant males develop a large nuchal (nape of the neck) hump, whereas subordinate males do not and are typically smaller in size. Spawning for the northern stock typically occurs offshore on the inner continental shelf during the months from May to July. Juveniles and adults move nearshore during the summer. Seasonal migration is common for black sea bass (north of Cape Hatteras). Black sea bass have a maximum age of 12 years. They are likely to stay near rock pilings, wrecks and jetties and prey on fish, crabs, mussels and razor clams (Steimle 1999).

Stock Status

The 2019 black sea bass operational stock assessment included data through 2018 and incorporated new recreational harvest estimates. It indicated that the stock was not overfished, and overfishing was not occurring in 2018 relative to newly revised reference points.

Stock Assessment

The 2019 black sea bass operational stock assessment estimated fishing mortality and stock sizes using an age-based statistical catch at age model calculated by using the Age Structured

Assessment Program. This indicated that the fishing mortality rate was below the threshold reference point and the spawning stock biomass was above the target reference point, so the stock was not overfished and overfishing was not occurring.

STATUS OF THE FISHERY

Current Regulations

Commercial: 11-inch total length minimum size limit in Atlantic Ocean and internal coastal waters north of Cape Hatteras. Landings windows are set by proclamation with variable harvest limits by gear and time-period to prevent landings from exceeding North Carolina's commercial quota (see most recent North Carolina Division of Marine Fisheries (NCDMF) proclamation).

Recreational: 12 ½-inch total length minimum size limit and 15-fish creel limit in Atlantic Ocean and internal coastal waters north of Cape Hatteras. Season for the recreational fishery is typically May 15 to December 31. However, to account for harvest that occurred during the February 1 to February 28, 2019 season, the 2019 season changed to May 17 to December 31.

Commercial Landings

All black sea bass landings are reported through the North Carolina Trip Ticket Program. Most black sea bass landings from north of Cape Hatteras were from trawls, although fish pots caught much smaller numbers (Figure 1). Landings generally declined from 1994 through 2012 but have increased notably since 2013. The low landings in 2012 to 2013 were partly due to the closure of Oregon Inlet to large vessels (such as trawlers) and the consequent transfer of most of North Carolina's black sea bass quota allocation to Virginia and other states. During 2014 through 2019, more winter trawl vessels returned to North Carolina to land catches rather than transferring quota to Virginia and other states (Table 1, Figure 2).

Recreational Landings

Recreational estimates across all years have been updated and are now based on the National Ocean and Atmospheric Administration (NOAA) Marine Recreational Information Program (MRIP) new Fishing Effort Survey-based calibrated estimates. For more information on MRIP see <https://www.fisheries.noaa.gov/topic/recreational-fishing-data>. All black sea bass harvest is reported through the NOAA Marine Recreational Information Program. Recreational harvest of black sea bass from north of Cape Hatteras was variable from 1994 through 2019 (Table 1).

MONITORING PROGRAM DATA

Fishery-Dependent Monitoring

Two NCDMF sampling programs collect biological data on commercial and recreational fisheries that catch black sea bass north of Cape Hatteras. Program 433 (Winter Trawl Fishery) is the primary program that collects harvest length data. Additionally, Program 438 (Offshore Live Bottom Fishery) collects some harvest length data but is not as active as Program 433. Other

commercial sampling programs focusing on fisheries that do not target black sea bass rarely collect biological data. NCDMF sampling of the recreational fishery occurs through the NOAA Marine Recreational Information Program which collects harvest and length data.

There were no clear trends in commercial length data from 1994 through 2019. Annual mean lengths were fairly consistent for the time-series. The number of measurements totaled 4,124 in 2019 (Table 2). Otoliths have been collected since 2013 but have not been processed. Age data for North Carolina black sea bass north of Cape Hatteras is not currently used in the stock assessment but will continue to be collected in case it is ever needed.

Length data in the recreational fishery was variable and sample size was low from 1994 through 2019. Mean lengths have gradually increased over the time-series but tend to be variable given low sample size. The number of measurements increased in 2019 over recent years (Table 3). Age data were not collected for black sea bass north of Cape Hatteras from recreational fisheries.

Fishery-Independent Monitoring

NCDMF independent sampling programs rarely encounter black sea bass north of Cape Hatteras and the few fish that we do see are mostly from Program 120 (Estuarine Trawl Survey) and from Program 195 (Pamlico Sound Survey), which collect samples of black sea bass juveniles from inshore waters. However, it is not clear that samples collected inshore north of Cape Hatteras are from the northern or southern stock of black sea bass; this combined with the small sample numbers means that these data cannot be used in an abundance index. NCDMF currently does not have independent sampling programs in Atlantic Ocean waters north of Cape Hatteras.

MANAGEMENT STRATEGY

Management of black sea bass (north of Cape Hatteras) has been based on results from NMFS Northeast Fisheries Science Center (NEFSC) stock assessments. Results from the 2019 operational stock assessment are being used to guide management. Projections based on stock assessments are used to set the coastwide quota level each year. Amendments to the FMP are undertaken as issues arise that require action.

RESEARCH NEEDS

Updated research needs from the 2016 62nd Stock Assessment Workshop are provided below. The research needs listed below start with the most recent. Text in parentheses indicates known progress made to address these needs.

- Expand on previous genetic studies with smaller spatial increments in sampling (progress unknown at this time).
- Consider the impact of climate change on black sea bass, particularly in the Gulf of Maine (progress unknown at this time).
- Evaluate population sex change and sex ratio, particularly comparing dynamics among communities (progress unknown at this time).

- Study black sea bass catchability in a variety of survey gear types (progress unknown at this time).
- Investigate and document social and spawning dynamics of black sea bass (progress unknown at this time).
- Increase work to understand habitat use in sea bass and seasonal changes (progress unknown at this time).
- Evaluate use of samples collected by industry study fleets (progress unknown at this time).
- The panel recommended multiple age-structured models be evaluated for use in future models. Examples include a simple separable model with smoothing on F among years, a more complex, spatially structured model with 6 month time step within independent stock areas in spring and mixing in winter with natal homing, and tag return data in an age-structured assessment model (some progress has been made).
- Continue and expand the tagging program to provide increased age information and increased resolution on mixing rates among putative populations (some progress has been made).
- Continue and expand genetic studies to evaluate the potential of population structure north of Cape Hatteras (some progress has been made).
- Continue research on rate, timing and occurrence of sex-change in this species. Recent research findings discussed at the stock assessment review committee lead to the hypothesis that protogyny is not obligate in this species – some individuals may never have been female before maturing as a male (research is ongoing).
- The validity of the age data used in the assessment requires further evaluation, in particular the reliability of scale-based ageing needs to be determined. A scale-otolith intercalibration exercise might be of utility (some progress has been made).

LITERATURE CITED

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TABLES

Table 1. Black sea bass (north of Cape Hatteras) recreational harvest and number released (NOAA Marine Recreational Information Program) and commercial harvest (North Carolina Trip Ticket Program) for 1994-2019. All weights are in pounds.

Year	Recreational		Landed	Commercial Weight (lb)	Total Weight (lb)
	Landed	# Released			
1994	13,464	127,309	14,746	700,523	715,269
1995	52,181	279,414	25,298	488,479	513,777
1996	17,373	53,235	14,948	466,158	481,106
1997	17,249	102,069	22,482	345,778	368,260
1998	19,229	315,269	25,353	248,515	273,868
1999	44,785	386,011	48,213	128,562	176,775
2000	11,875	179,458	13,828	152,668	166,496
2001	5,706	201,487	8,872	167,171	176,043
2002	11,638	267,317	18,862	159,507	178,369
2003	27,468	51,566	20,195	373,807	394,002
2004	2,521	124,332	2,531	374,883	377,414
2005	1,710	220,159	5,203	368,400	373,603
2006	23,781	388,422	26,459	334,080	360,539
2007	18,147	329,655	55,565	195,460	251,025
2008	12,636	407,420	14,948	208,726	223,674
2009	3,984	543,285	8,283	176,748	185,031
2010	17,183	211,057	24,471	107,996	132,467
2011	73,207	266,289	111,538	98,505	210,043
2012	3,625	413,879	8,231	61,187	69,418
2013	16,119	136,016	21,617	88,242	109,859
2014	768	111,327	1,269	212,488	213,757
2015	2,955	149,347	6,224	241,538	247,762
2016	1,188	117,664	1,591	225,405	226,996
2017	23,720	152,491	33,421	388,858	422,279
2018	6,762	96,604	9,494	317,565	327,059
2019	6,267	159,129	11,639	280,008	291,647
Average	16,752	222,700	21,357	265,818	287,175

ASMFC AND FEDERALLY-MANAGED SPECIES WITH N.C. INDICES – BLACK SEA BASS (NORTH)

Table 2. Black sea bass (north of Cape Hatteras) length (total length, inches) data from commercial fish house samples, 1994-2019.

Year	Mean Total Length (in)	Minimum Total Length (in)	Maximum Total Length (in)	Total Number Measured
1994	11	8	22	3,018
1995	12	8	20	2,070
1996	13	8	23	1,213
1997	12	8	19	727
1998	13	8	24	593
1999	14	10	21	27
2000	14	8	28	1,414
2001	13	9	22	826
2002	14	8	23	2,169
2003	15	9	24	7,416
2004	15	8	24	6,810
2005	16	9	26	6,899
2006	15	9	24	5,323
2007	15	9	26	3,213
2008	15	9	26	6,378
2009	15	9	26	3,936
2010	15	9	25	5,254
2011	15	9	25	2,946
2012	15	11	21	725
2013	15	9	24	1,452
2014	15	8	24	3,740
2015	15	9	24	7,192
2016	16	9	28	6,526
2017	16	10	24	5,372
2018	16	10	29	6,247
2019	15	9	24	4,124

ASMFC AND FEDERALLY-MANAGED SPECIES WITH N.C. INDICES – BLACK SEA BASS (NORTH)

Table 3. Black sea bass (north of Cape Hatteras) length (total length, inches) data from NOAA Marine Recreational Information Program recreational samples, 1994-2019.

Year	Mean Total Length (in)	Minimum Total Length (in)	Maximum Total Length (in)	Total Number Measured
1994	11	5	28	74
1995	9	6	21	80
1996	12	7	20	80
1997	13	8	20	61
1998	13	7	19	75
1999	13	8	19	126
2000	13	9	23	59
2001	14	10	17	34
2002	14	11	23	128
2003	11	9	21	110
2004	14	11	19	7
2005	20	11	24	42
2006	13	8	23	64
2007	18	13	22	26
2008	14	11	20	48
2009	15	12	24	48
2010	14	12	21	29
2011	14	11	22	36
2012	17	13	20	14
2013	14	9	20	14
2014	14	13	18	4
2015	17	13	17	5
2016	14	12	21	16
2017	13	12	17	11
2018	14	13	21	23
2019	17	12	21	32

FIGURES

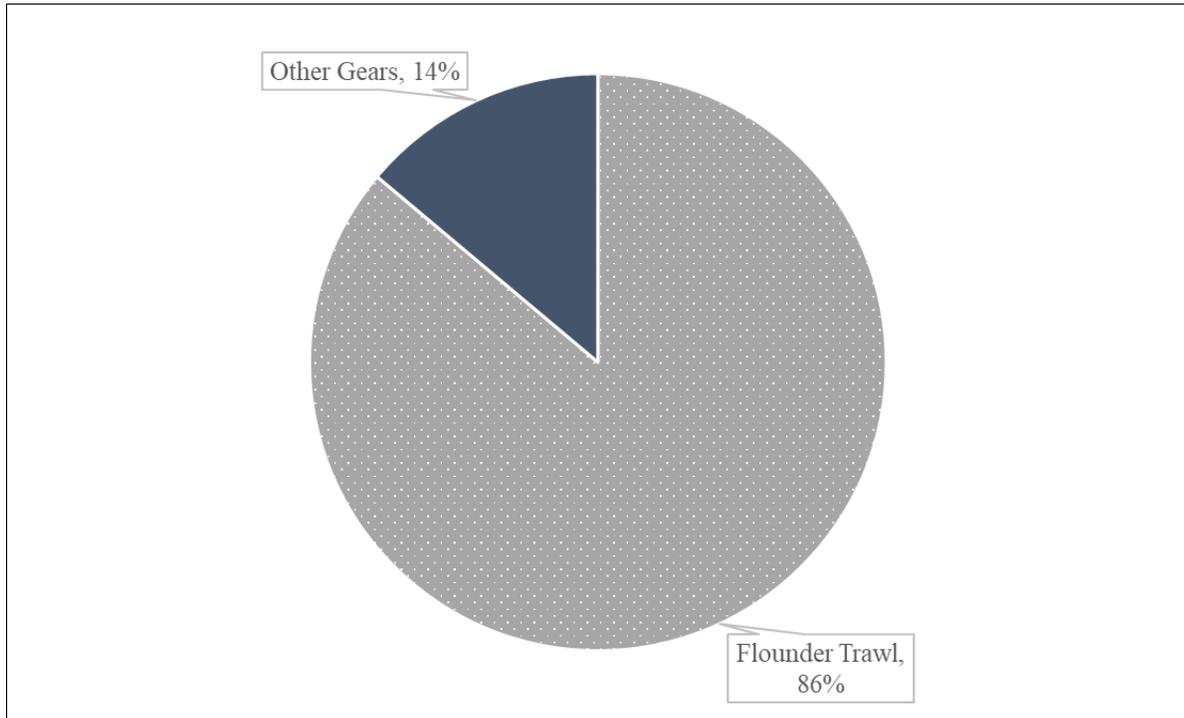


Figure 1. Commercial harvest of black sea bass (north of Cape Hatteras) in North Carolina by gear type in 2019.

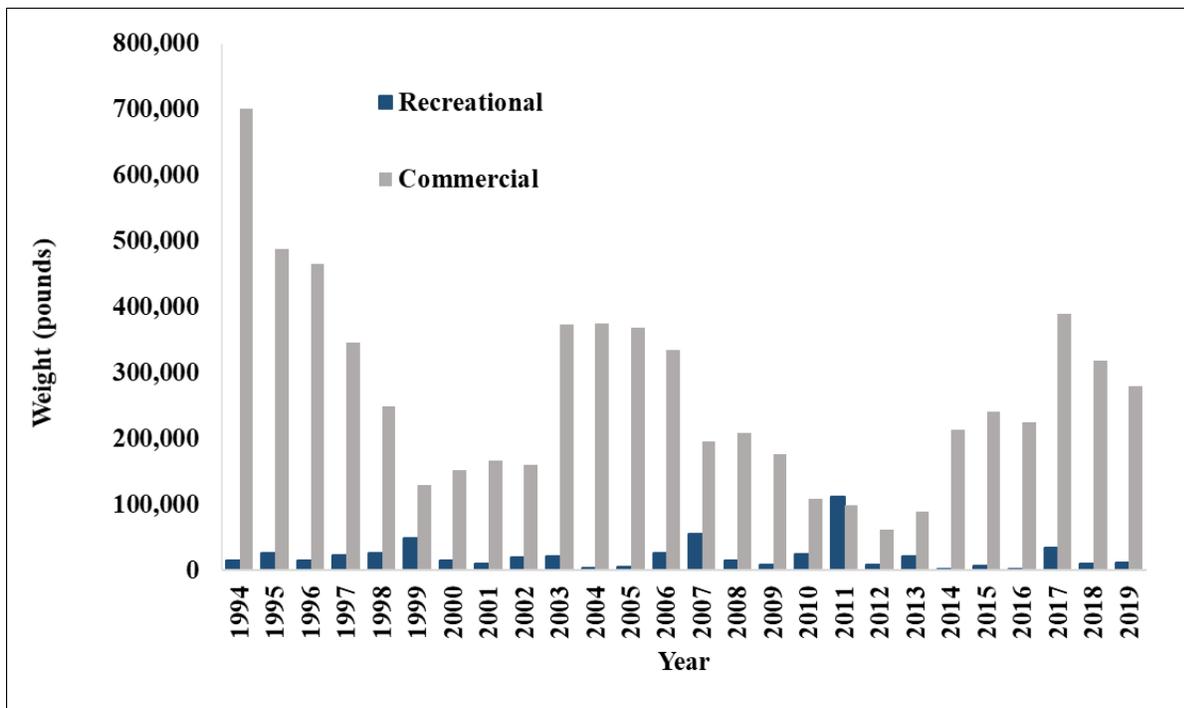


Figure 2. Annual commercial and recreational landings in pounds for black sea bass (north of Cape Hatteras) in North Carolina from 1994-2019.