



Black Sea Bass Advisory Panel Information Document¹

June 2014

Management System

The Fishery Management Plan (FMP) for black sea bass became effective in 1997 when it was incorporated into the Summer Flounder and Scup FMP. The FMP established the management unit for black sea bass (*Centropristis striata*) as the U.S. waters in the western Atlantic Ocean from Cape Hatteras, North Carolina to the U.S.-Canadian border. The FMP additionally included measures to ensure effective management of the black sea bass resource. Two management entities work cooperatively to develop fishery regulations for black sea bass: the Atlantic States Marine Fisheries Commission (ASMFC), and the Mid-Atlantic Fishery Management Council (MAFMC). The National Marine Fisheries Service (NMFS) works in conjunction with the MAFMC as the federal implementation and enforcement entity. This cooperative management endeavor was developed because significant portions of black sea bass catch are taken from both state (0-3 miles offshore) and Federal waters (3-200 miles offshore).

The commercial and recreational black sea bass fisheries are managed using catch and landings limits, commercial quotas, recreational harvest limits, minimum fish sizes, gear regulations, permit requirements, and other provisions as prescribed by the FMP. Black sea bass was under a stock rebuilding strategy beginning in 2000 until it was declared rebuilt in 2009. The FMP, including subsequent Amendments and Frameworks, is available on the Council website at: <http://www.mafmc.org/fisheries/fmp/sf-s-bsb>.

Basic Biology

Detailed information on black sea bass life history and habitat requirements can be found in the documents titled "Essential Fish Habitat Source Document: Black Sea Bass, *Centropristis striata*, Life History and Habitat Characteristics" (Steimle et al. 1999) as well as in an update of that document, "Essential Fish Habitat Source Document: Black Sea Bass, *Centropristis striata*, Life History and Habitat Characteristics (2nd Edition)" (Drohan et al. 2007). Electronic versions are available at the following website: <http://www.nefsc.noaa.gov/nefsc/habitat/efh/>. Information contained in these documents is summarized here.

The northern population of black sea bass spawns in the Middle Atlantic Bight over the continental shelf during the spring through fall, primarily between Virginia and Cape Cod, Massachusetts. Spawning begins in the spring in the southern portion of the population range, i.e., off North Carolina and Virginia, and progresses north into southern New England waters in the summer and fall. Collections of ripe fish and egg distributions indicate that the species

¹ Data employed in the preparation of this document are from unpublished National Marine Fisheries Service (NMFS) Dealer, Vessel Trip Reports (VTRs), Permit, and Marine Recreational Statistics (MRFSS/MRIP) databases, as of May 2014, unless otherwise noted.

spawns primarily on the inner continental shelf between Chesapeake Bay and Montauk Pt., Long Island. The duration of the larval stage and habitat-related settlement cues are unknown; therefore, distribution and habitat use of this pelagic stage may only partially overlap with that of the egg stage. Adult black sea bass are also very structure oriented, especially during their summer coastal residency. Unlike juveniles, they tend to enter only larger estuaries and are most abundant along the coast. Larger fish tend to be found in deeper water than smaller fish. A variety of coastal structures are known to be attractive to black sea bass, including shipwrecks, rocky and artificial reefs, mussel beds and any other object or source of shelter on the bottom. In the warmer months, inshore, resident adult black sea bass are usually found associated with structured habitats. During the summer, adult black sea bass share complex coastal habitats with other fishes including tautog, hakes, conger eel, sea robins and other transient species. Essential Fish Habitat for black sea bass consists of pelagic waters, structured habitat (e.g., sponge beds), rough bottom shellfish, and sand and shell, from the Gulf of Maine through Cape Hatteras, North Carolina.

Black sea bass attain a maximum size of around 60 cm (23.6 in) and 4 kg (8.8 lb), with a maximum age for females of 8 and age 12 for males (DPSWG 2009). Maturity data is routinely collected on Northeast Fisheries Science Center (NEFSC) survey cruises and model estimates for length suggest 50 percent maturity occurs at 20.4 cm (8.0 inches) with 95 percent maturity attained by 28 cm (11.0 inches).

Adult black sea bass are generalist carnivores that feed on a variety of infaunal and epibenthic invertebrates, especially crustaceans (including juvenile lobster, crabs, and shrimp), small fish, and squid. The NEFSC food habits database lists the spiny dogfish, Atlantic angel shark, skates, spotted hake, summer flounder, windowpane, and goosefish as predators of black sea bass.

Status of the Stock

The most recent accepted benchmark assessment on black sea bass, which used a statistical catch at length (SCALE) model, was peer-reviewed and accepted in December 2008 by the Data Poor Stock Working Group (DPSWG) Peer Review Panel (DPSWG 2009). Reports on “Stock Status,” including annual assessment and reference point update reports, Stock Assessment Workshop (SAW) reports, Stock Assessment Review Committee (SARC) panelist reports, and DPSWG reports and peer-review panelist reports are available online at the NEFSC website: <http://www.nefsc.noaa.gov/saw/>.

The latest assessment update was completed in July 2012, and concluded that the stock was not overfished and overfishing was not occurring in 2011, relative to the DPSWG biological reference points. The 2011 stock was at 102% of the spawning stock biomass at maximum sustainable yield (SSB_{MSY}). Fishing mortality (F_{MULT}) in 2011 was $F = 0.21$, a decrease from $F=0.41$ in 2010 (Figure 1). This point estimate of F in 2011 is below the fishing mortality threshold of $F=0.44$. Estimates for 2011 total biomass were at 28.0 million lb (12,700 mt), above the value for B_{MSY} . Spawning stock biomass (SSB) in 2011 was estimated at 24.6 million lb (11,145 mt). 2011 SSB was 102% of SSB_{MSY} (24.0 million lb, 10,880 mt; Figure 2). Recruitment estimated by the model was relatively constant through the time series with the exception of the 1999 and 2001 year classes. These cohorts appeared to be the driving force behind the increase in biomass and SSB. The estimated average recruitment (age one) in 2011 (2010 cohort) was 21.0 million fish.

The DPSWG Panel noted that despite acceptance of the assessment model there was “*considerable uncertainty with respect to stock status.*” The review Panel also recommended that the SSC “*recognize and allow for the sizeable uncertainty in stock status when establishing catch limits.*”

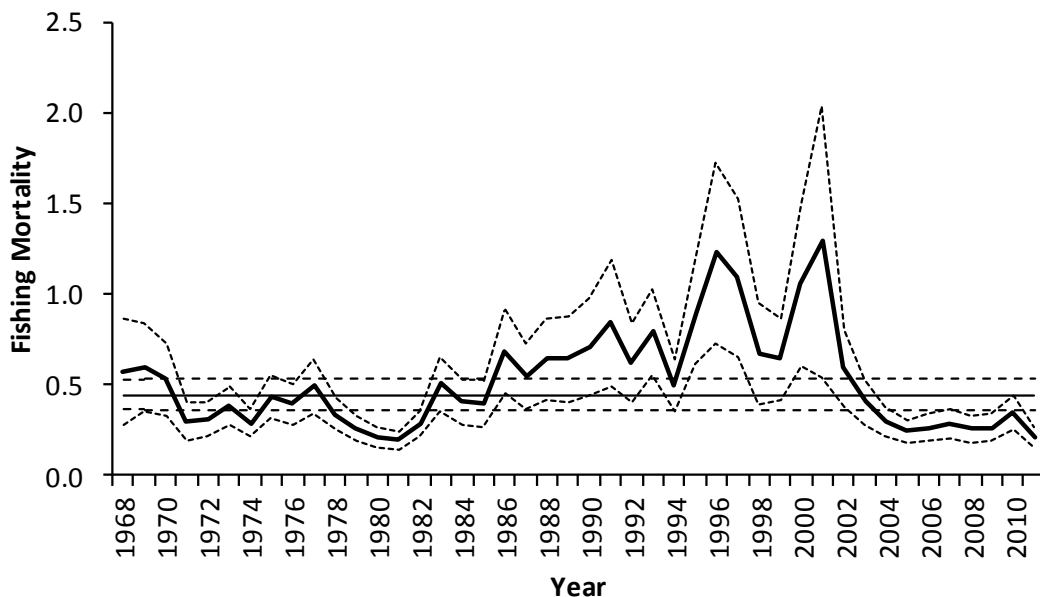


Figure 1: Estimated fishing mortality (+/- 2 standard deviations) of black sea bass from 1968-2011. Horizontal lines are $F_{MSY} \pm 80\%$ confidence interval. Source: Shepherd 2012.

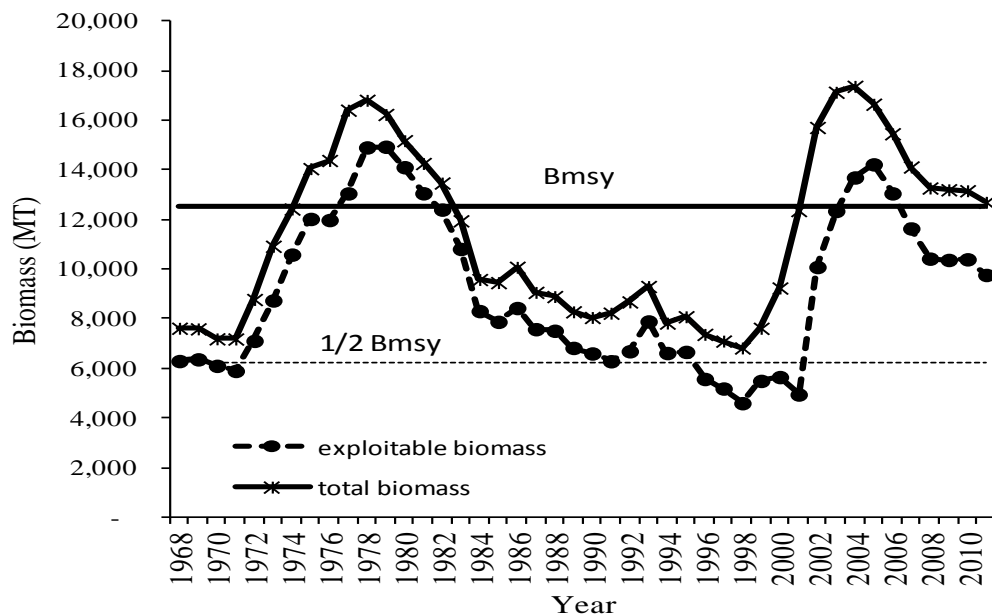


Figure 2: Estimated black sea bass total and exploitable biomass (mt) from SCALE model update, 1968-2011. Also shown are the biological reference points associated with total biomass. Source: Shepherd 2012.

Fishery Performance

There are significant commercial and recreational fisheries for black sea bass. Black sea bass is managed primarily using output controls (catch and landings limits), with 49 percent of the landings being allocated to the commercial fishery as a commercial quota and 51 percent allocated to the recreational fishery as a recreational harvest limit.

Table 1 summarizes the black sea bass management measures for the 2004-2015 fishing years. Acceptable biological catch (ABC) levels have been identified for this stock since 2010, and recreational and commercial annual catch limits (ACLs), with a system of overage accountability for each ACL, were first implemented in 2012. It should be noted that catch limits include both projected landings and discards, whereas the commercial quotas and recreational harvest limits are landings based (i.e., harvest).

Total landings (commercial and recreational) peaked in the late 1980's at 15.8 million lb, and in 2013 were about 4.7 million lb total (Figure 3).

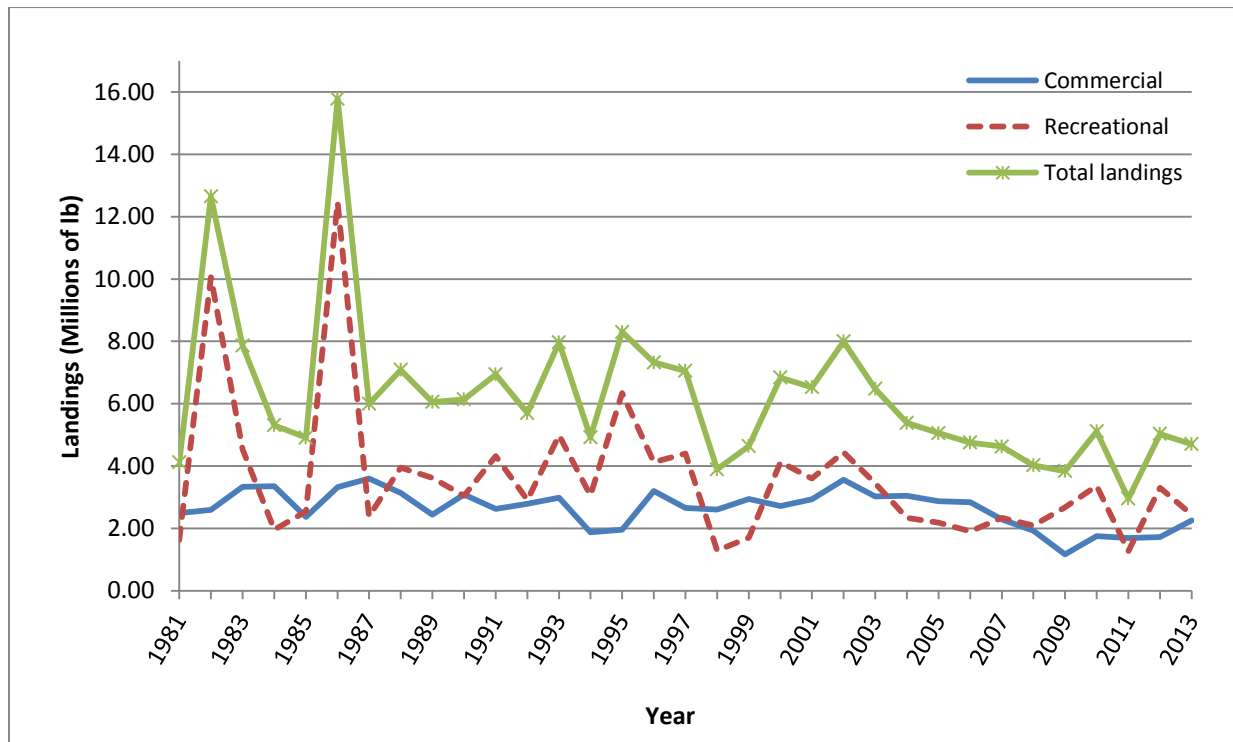


Figure 3: Commercial and Recreational U.S. Black Sea Bass Landings (Pounds) from Maine-North Carolina, 1981-2013.

Table 1: Summary of management measures and landings for 2004 through 2015.

Management measures	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 ^a
ABC (m lb)	NA	NA	NA	NA	NA	NA	4.500	4.500	4.500	5.50	5.50	5.50
TAC (m lb)	NA	NA	NA	NA	NA	2.300	4.500	4.500	4.500	5.50	5.50	5.50
Commercial ACL (m lb)	NA	NA	NA	NA	NA	NA	NA	NA	1.980	2.60	2.60	2.60
Com. quota-adjusted (m lb) ^b	3.77	3.95	3.83	2.38	2.03	1.09	1.76	1.71	1.71	2.17	2.17	2.17
Commercial landings (m lb)	3.04	2.87	2.84	2.29	1.93	1.17	1.75	1.69	1.72	2.26	NA	NA
Recreational ACL (m lb)	NA	NA	NA	NA	NA	NA	NA	NA	1.860	2.90	2.90	2.90
Rec. harvest limit-adjusted (m lb) ^b	4.01	4.13	3.99	2.47	2.11	1.14	1.83	1.78	1.32	2.26	2.26	2.26
Recreational landings (m lb) ^c	2.34	2.18	1.91	2.34	2.09	2.67	3.36	1.27	3.31	2.44	NA	NA
Com. fish size (in)	11	11	11	11	11	11	11	11	11	11	11	11
Com. min. mesh size (in, diamond)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Threshold (lb)	500/100	500/100	500/100	500/100	500/100	500/100	500/100	500/100	500/100	500/100	500/100	500/100
Vent size (in)	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8
Recreational measures (minimum fish size (total length), possession limit, and open season)	12-in TL, 25 fish, 1/1-9/7 and 9/22-11/30	12-in TL, 25 fish, 1/1-12/31	12-in TL, 25 fish, 1/1-12/31	12-in TL, 25 fish, 1/1-12/31	12-in TL, 25 fish, 1/1-12/31	12.5-in TL, 25 fish, 1/1-10/5	12.5-in TL, 25 fish, 5/22-10/11 and 11/1-12/31	12.5-in TL, 25 fish, 5/22-10/11 and 11/1-12/31	12.5-in TL, 25 fish, 5/19-10/14 and 11/1-12/31	12.5-in TL, 20 fish, 5/19-10/14 and 11/1-12/31	12.5-in TL, 15 fish, 5/19-9/18 and 10/18-12/31	NA

^aThese reflect the regulations currently set for black sea bass in 2015, however, the Council and ASFMC will review these catch limits and management measures in August 2014 and may revise as necessary. ^bAdjusted for RSA and projected discards. ^cIncludes landings from all of North Carolina. NA=Not applicable or not yet available.

Commercial Fishery

In Federal waters, commercial fishermen holding a moratorium permit may fish for black sea bass. Permit data for 2013 indicate that 736 vessels held commercial permits for black sea bass. The ASMFC divides the black sea bass commercial quota among the states based on the allocation percentages given in Table 2, and states set measures to achieve their state-specific commercial quotas.

Table 2: The ASFMC black sea bass allocation formula for the commercial fisheries in each state.

State	Allocation (percent)
ME	0.5
NH	0.5
MA	13.0
RI	11.0
CT	1.0
NY	7.0
NJ	20.0
DE	5.0
MD	11.0
VA	20.0
NC	11.0
Totals	100

National Marine Fisheries Service statistical areas are shown in Figure 4, with areas that accounted for more than 5 percent of the black sea bass catch in 2013 highlighted. Vessel trip report (VTR) data suggest that statistical areas 615, 616 (includes Hudson canyon), and 621 were responsible for the largest percentage of the catch. Statistical area 537 had the majority of trips that caught black sea bass (Table 3).

Table 3: Statistical areas that accounted for at least 5 percent of the commercial black sea bass catch in 2013, with associated number of trips. Source: NMFS VTR data.

Statistical Area	Black Sea Bass Catch (percent)	Black Sea Bass Trips (N)
615	16.18	173
616	14.78	351
621	13.69	261
537	7.07	741
622	6.26	103
631	5.13	69

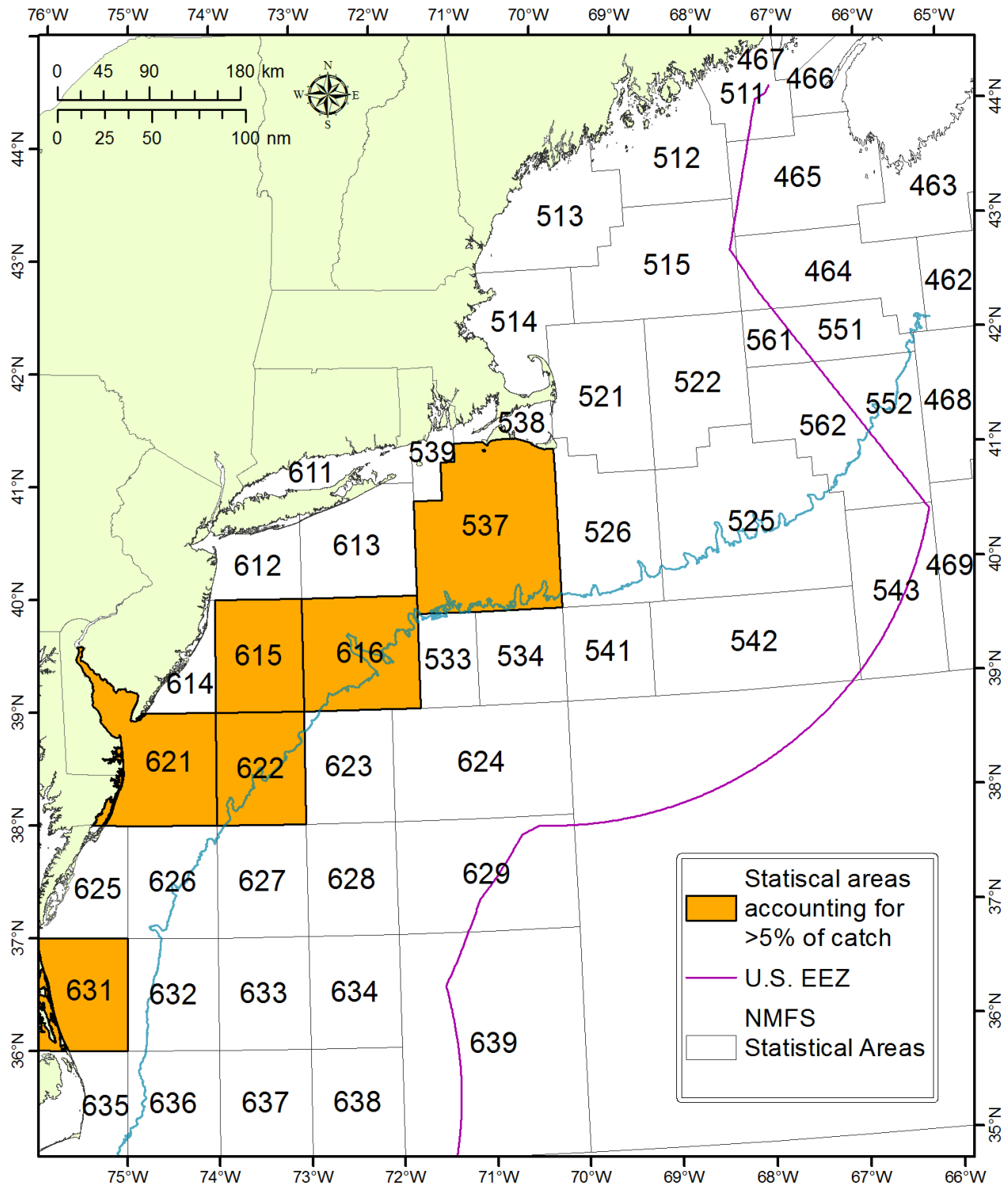


Figure 4: National Marine Fisheries Service Statistical Areas, showing areas accounting for more than 5% of the commercial black sea bass catch in 2013.

Based on VTR data for 2013, the majority of black sea bass landings were reported to be taken by bottom otter trawls (61 percent), followed by pots and traps (26 percent), offshore lobster pots (7 percent), and hand lines (5 percent). Other gear types each accounted for less than 1 percent of landings. Current regulations state that large trawl nets are required to possess a minimum of 75 meshes of 4.5 inch diamond mesh in the codend, or the entire net must have a minimum mesh size of 4.5 inch throughout. The threshold level used to trigger the minimum mesh requirement size is 500 lb from January through March and 100 lb from April through December (Table 1). In addition, the minimum vent size requirements for black sea bass pots/traps are 2.5 inches for circle vents, 2 inches for square vents, or 1.375 by 5.75 inches for rectangular vents. Two vents are required in the parlor portion of the pot/trap.

Black sea bass ex-vessel revenues, based on dealer data, have ranged from \$2.2 to \$7.7 million for the 1994 through 2013 period. The mean price for black sea bass (unadjusted) has ranged from a low of \$1.14/lb in 1996 to a high of \$3.33/lb in 2012 (Figure 5). In 2013, 2.26 million pounds of black sea bass were landed in the commercial fishery, generating \$7.36 million in revenues (\$3.26/lb).

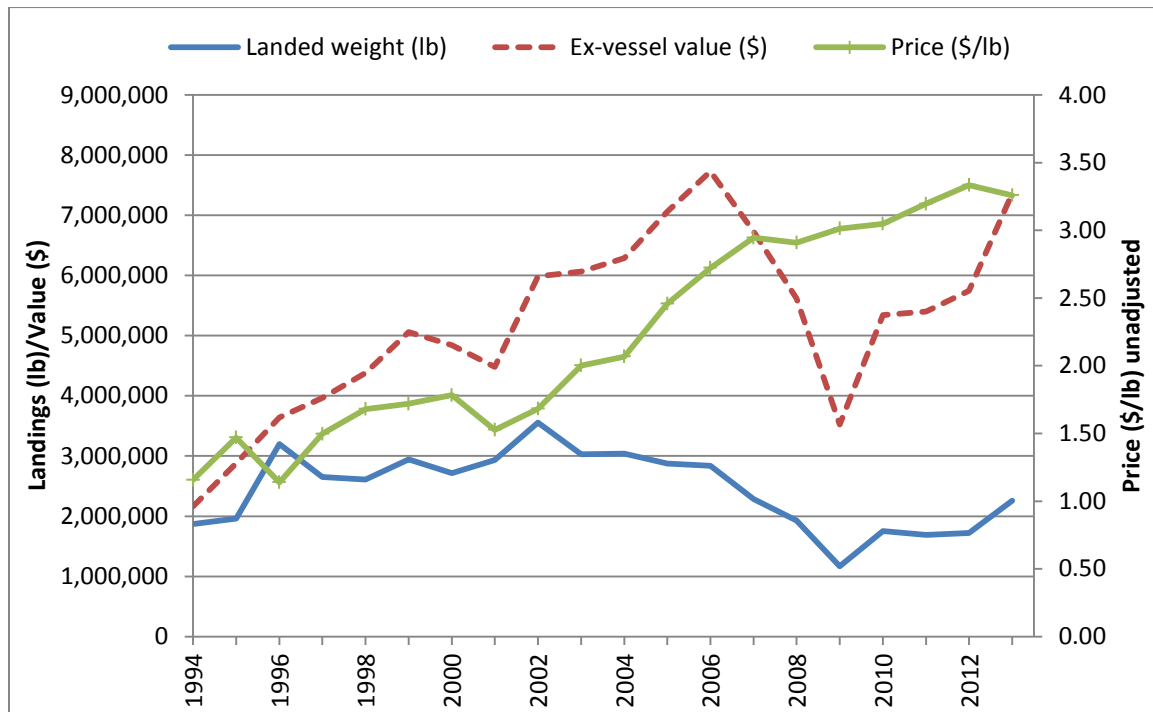


Figure 5: Landings, ex-vessel value, and price (unadjusted) for black sea bass, Maine through North Carolina, 1994-2013.

2013 NMFS dealer data were used to examine recent landings patterns among ports. The top commercial landings ports for black sea bass by pounds landed are shown in Table 4. A “top port” is defined as any port that landed at least 100,000 lb of black sea bass. Related data for the recreational fisheries are shown in subsequent sections. However, due to the nature of the recreational database, it is inappropriate to desegregate to less than state levels. The ports and communities that are dependent on black sea bass are fully described in Amendment 13 to the FMP. Additional information on "Community Profiles for the Northeast US Fisheries" can be found at:
http://www.nefsc.noaa.gov/read/socialsci/community_profiles/.

Table 4: Top ports of landing (in lb) for black sea bass (BSB), based on NMFS 2013 dealer data. Since this table includes only the “top ports,” it may not include all of the landings for the year.

Port	Landings of BSB (lb)	# BSB Vessels
OCEAN CITY, MD	219,321	13
PT. PLEASANT, NJ	205,324	40
CAPE MAY, NJ	193,623	38
PT. JUDITH, RI	183,922	135
HAMPTON, VA	151,484	30
CHINCOTEAGUE, VA	143,567	23
NEWPORT NEWS, VA	142,957	29
INDIAN RIVER, DE	C	C
VIRGINIA BEACH, VA	101,806	4

Among the states from Maine through North Carolina, New York had the highest number of Federally permitted dealers (54) who bought black sea bass in 2013 (Table 5). All dealers bought approximately \$7.36 million of black sea bass in 2013.

Table 5: Dealers reporting buying black sea bass, by state in 2013.

Number of Dealers	MA	RI	CT	NY	NJ	DE	MD	VA	NC
	38	38	13	54	26	3	5	17	24

Recreational Fishery

There is a significant recreational fishery for black sea bass in state waters, which occurs seasonally when the fish migrate inshore during the warm summer months. In Federal waters, the recreational black sea bass fishery is managed on a coastwide basis. For the past four years (2011-2014), state waters measures have been set on a state or regional basis, as the result of ASMFC FMP Addendums that have been passed in each of these years. The 2014 recreational fishing measures in Federal waters are given in Table 1, and the 2014 state-specific measures are given in Table 6.

Table 6: Black sea bass recreational fishing measures in 2014, by state.

State	Minimum Size (inches)	Possession Limit	Open Season
New Hampshire	13	10 fish	January 1-December 31
Massachusetts (Private and For-hire)	14	8 fish	May 17- September 15
Massachusetts (For-hire with Letter of Authorization from MA DMF)	14	8 fish	May 17- May 31
		20 fish	September 1- September 30
Rhode Island	13	3 fish	June 29- August 31
		7 fish	September 1- December 31
Connecticut (Private and Shore)	13	3 fish	June 21- August 31
		8 fish	September 1- December 31
CT Authorized Party/Charter Monitoring Program Vessels		8 fish	June 21-December 31
New York	13	8 fish	July 15- December 31
New Jersey	12.5	3 fish	July 1- August 31
		15 fish	May 19- June 30; September 1- September 6; October 18- December 31
Delaware	12.5	15 fish	May 19 - September 18 and October 18 - December 31
Maryland	12.5	15 fish	May 19 - September 18 and October 18 - December 31
PRFC	12.5	15 fish	May 19 - September 18 and October 18 - December 31
Virginia	12.5	15 fish	May 19 - September 18 and October 18 - December 31
North Carolina (North of Cape Hatteras 35° 15'N Latitude)	12.5	15 fish	May 19 - September 18 and October 18 - December 31

Recreational data have been available through the Marine Recreational Information Program (MRIP) since 2004, and prior to 2004 were available through the Marine Recreational Fishery Statistics Survey (MRFSS). Recreational catch and landings peaked in 1986 with landings in numbers and weight at the lowest levels in 2011 (Table 7). When anglers are intercepted through the surveys conducted for the recreational statistics programs, they are asked about where the majority of their fish were caught (i.e., inland, state waters (≤ 3 miles), exclusive economic zone (EEZ; > 3 miles)). While these data are somewhat imprecise, they do provide a general indication of where the majority of black sea bass are landed recreationally, and indicate that a majority of the landings are now occurring in state waters (Table 8).

Table 7: Recreational black sea bass landings and data from the NMFS recreational statistics databases, 1981-2013, Maine through North Carolina.

Year	Catch ('000 of fish)	Landings ('000 of fish)	Landings ('000 lb)
1981	5,301	2,734	1,628
1982	11,615	10,249	10,054
1983	8,707	5,631	4,530
1984	4,330	2,491	1,961
1985	7,131	4,216	2,540
1986	29,167	21,904	12,461
1987	5,912	3,467	2,392
1988	9,363	4,060	3,945
1989	7,000	4,649	3,621
1990	9,622	4,269	3,047
1991	11,224	5,458	4,316
1992	8,296	3,869	2,914
1993	9,451	6,197	4,985
1994	7,688	3,571	3,054
1995	14,481	6,887	6,339
1996	8,437	3,764	4,125
1997	11,088	4,868	4,399
1998	5,699	1,259	1,290
1999	7,758	1,412	1,697
2000	17,667	3,755	4,122
2001	14,626	3,006	3,596
2002	15,080	3,421	4,442
2003	12,649	3,392	3,449
2004	8,884	1,925	2,340
2005	8,358	1,489	2,181
2006	8,729	1,392	1,911
2007	9,601	1,630	2,338
2008	11,102	1,342	2,092
2009	9,875	1,909	2,672
2010	11,133	2,335	3,361
2011	5,794	881	1,267
2012	14,553	1,946	3,305
2013	10,912	1,276	2,441

Table 8: Percentage of black sea bass recreational landings (MRIP Type A+B1 in number of fish) by area (state vs. Federal waters), Maine through North Carolina, 2004-2013. Area information is self-reported based on the area where the majority of fishing activity occurred per angler trip.

Year	State <= 3 mi	EEZ > 3 mi
2004	25.6%	74.4%
2005	29.9%	70.1%
2006	34.9%	65.1%
2007	34.8%	65.2%
2008	60.3%	39.7%
2009	67.5%	32.5%
2010	72.1%	27.9%
2011	63.8%	36.2%
2012	72.6%	27.4%
2013	68.8%	31.2%
Avg. 2004 - 2013	53.0%	47.0%
Avg. 2011 - 2013	68.4%	31.6%

Table 9: State contribution (as a percentage) to total recreational landings of black sea bass, (MRIP Type A+B1 in number of fish), from Maine through North Carolina, 2012 and 2013.

State	2012	2013
Maine	0.0	0.0
New Hampshire	0.2	1.0
Massachusetts	26.7	23.8
Rhode Island	5.3	6.0
Connecticut	5.7	8.3
New York	16.5	26.4
New Jersey	37.8	25.8
Delaware	2.1	2.0
Maryland	1.7	0.6
Virginia	0.2	1.7
North Carolina	3.9	4.5
Total	100%	100%

In 2013, there were 773 recreational vessels (i.e., party and charter vessels) that held black sea bass Federal recreational permits. Many of these vessels also hold recreational permits for summer flounder and scup. Landings by mode indicate that although party/charter fishermen have historically been responsible for the majority of black sea bass landings, the private/rental fishery has accounted for the majority of landings in recent years (Table 10).

Table 10: The number of black sea bass landed from Maine through North Carolina by mode, 1981-2013.

Year	Shore	Party/Charter	Private/Rental
1981	452,103	1,440,169	841,478
1982	81,445	8,104,204	2,063,334
1983	222,012	4,005,707	1,403,508
1984	98,227	1,128,294	1,264,897
1985	163,448	2,393,049	1,659,700
1986	1,021,525	16,695,387	4,187,084
1987	71,956	1,157,243	2,238,159
1988	140,754	1,691,300	2,227,901
1989	237,970	1,991,672	2,419,654
1990	289,378	2,268,915	1,710,455
1991	250,675	2,586,145	2,621,271
1992	45,369	2,043,190	1,780,224
1993	54,676	4,579,662	1,562,227
1994	243,347	2,005,883	1,321,629
1995	275,982	5,197,231	1,413,571
1996	70,523	2,631,733	1,062,027
1997	8,337	3,950,336	908,836
1998	7,073	777,874	474,069
1999	19,231	621,354	771,260
2000	177,489	1,797,702	1,780,240
2001	14,035	1,826,852	1,164,977
2002	16,618	2,066,232	1,338,448
2003	10,760	2,073,132	1,308,493
2004	9,462	698,453	1,217,160
2005	13,110	605,932	869,467
2006	49,080	730,749	612,618
2007	9,865	909,869	709,901
2008	9,447	479,682	852,619
2009	23,992	442,107	1,442,842
2010	6,096	519,529	1,809,046
2011	8,177	310,760	561,730
2012	6,443	701,777	1,237,668
2013	12,205	228,574	1,035,530
% of total, 1981 - 2013	3%	60%	37%
% of total, 2009 - 2013	1%	26%	73%

The NMFS angler expenditure survey summarizes a variety of costs associated with recreational fishing in the Northeast (Table 11). In addition, Steinback et al., 2009 summarized the reasons for fishing, with a majority of anglers (about 85 percent) fishing either mostly or fully for recreational purposes (Table 12).

Table 11: Average daily trip expenditures by recreational fishermen in the Northeast region by mode, in 2011. Source: Lovell et al. 2013.

Expenditures	\$		
	Party/Charter	Private/Rental	Shore
Auto Fuel	24.92	13.50	13.25
Auto Rental	0.43	0.00	0.09
Bait	0.47	4.98	5.09
Boat Rental	0.52	18.40	0.00
Charter Fees	113.44	0.05	0.00
Crew Tips	9.95	0.00	0.00
Fish Processing	0.01	0.00	0.00
Food from Grocery Stores	12.09	6.11	6.22
Food from Restaurants	11.25	2.28	4.07
Gifts & Souvenirs	3.57	0.03	0.57
Ice	0.56	1.04	0.57
Lodging	17.42	1.35	7.69
Parking & Site Access	0.67	0.82	1.27
Public Transportation	1.56	0.05	0.15
Tournament Fees	3.77	0.00	0.00
Total	200.63	48.62	38.96

Table 12: Purpose of Marine Recreational Fishing in the Northeast. Source: Steinback et al., 2009.

	Percent	Number of anglers in 2005 (thousands)
All for food or income	2.1	92.4
Mostly for food or income	<1.0	34.3
Both for recreation and for food or income	11.7	514.8
Mostly for recreation	13.2	580.8
All for recreation	72.2	3,176.8

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Summer Flounder, Scup, and Black Sea Bass Fishery Performance Reports July 2014

The Mid-Atlantic Fishery Management Council's (Council's) Summer Flounder, Scup, and Black Sea Bass Advisory Panel met jointly with the Atlantic States Marine Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Advisory Panels on July 1, 2014 to review fishery information documents for all three species and develop Fishery Performance Reports (FPRs) based on advisor perspectives on catch and landings patterns and other trends in these fisheries. **Please note:** Advisor comments described below reflect the broader discussion and are not necessarily consensus statements.

Council Advisory Panel members present: Greg DiDomencio* (NJ), Skip Feller* (VA), Harry Doernte (VA), James Fletcher (NC)

Commission Advisory Panel members present: James Tietje (MA), Robert Busby (NY), Marc Hoffman (NY), Paul Risi (NY), Paul Forsberg (NY), Skip Feller* (VA), Bill Shillingford (NJ), Bob Meimbresse (NJ), Greg DiDomencio* (NJ), Mike Fedosh (NJ)

Others present: Kiley Dancy (MAFMC Staff), Kirby Rootes-Murdy (ASMFC Staff), Mike Luisi (MAFMC/ASMFC), John Boreman (MAFMC SSC)

*Serve on both Council and Commission Advisory Panels.

Summer Flounder

Market and Economic Issues

The closure of Oregon Inlet continues to drastically affect the ability to land summer flounder in North Carolina. The Council and Board should allow for increased commercial landings flexibility between states. One advisor noted that managers are currently managing for the benefit of the resource only, and not considering benefits to the fishermen or consumer.

Management Issues & Management Induced Effort Shifts

In the 2014 recreational measures, the New York/New Jersey/Connecticut region has a 45-day limit on the number of days that can be open during wave 3 (May/June). One advisor remarked that there was confusion about where this limitation originated, and that it has had a negative impact on the for-hire fleet in New York.

Advisors commented that current recreational data collection under MRIP is no different from MRFSS. Similar to last year, advisors noted that the MRIP survey has not advanced to the point where it can adequately capture reductions in effort. One advisor described an effort reduction of about 30% in New York and New Jersey (residual effort reduction from Super storm Sandy in 2012) which is not reflected in the MRIP estimates and will result in estimated landings which could be inflated. All components of the new MRIP methodology need to be implemented.

A few advisors expressed a desire for recreational management to move back to state-by-state conservation equivalency. Others commented that if regional conservation equivalency continues to be used, the Commission should look into splitting certain states into separate regions. The advisors gave the example of possibly splitting the southern portion of New Jersey into a region with the states of Delaware through Virginia, while leaving the northern portion of the state with New York and Connecticut. One reason cited for this is that different sized fish are caught in these areas. One advisor noted that a split in the state of New Jersey would be preferable even if regional management is not continued.

Advisors noted recreational effort shifts based on regulations under regional conservation equivalency. For example, Rhode Island has a higher bag limit compared to Massachusetts. Due to this difference, one advisor noted that Massachusetts is seeing fewer charter trips and catching fewer fish. The bag limit drives the perception of customers and encourages more anglers to come to Rhode Island. Another example is the regional split between Delaware and New Jersey, which is negatively impacting business in Southern New Jersey, as more people are driving to Delaware to fish under a lower size limit. Advisors noted that there will always be issues when regulations differ between bordering states.

Similar to last year, advisors noted that high size limits continue to direct the most fishing pressure on large female summer flounder.

Other Issues

One advisor pointed out that the requirement for aluminum TEDs in North Carolina, rather than allowing pre-stressed cable, was affecting landings to the southern range of the management unit and resulting in major effort shifts. This advisor noted that there are plenty of fish available in south, but management measures such as these TED requirements are preventing landings that would otherwise be occurring in southern areas.

Research Recommendations

Research suggestions proposed by advisors included:

- Research into use of different hook types to reduce discard mortality in the recreational summer flounder fishery.
- Explore wider uses of smartphone applications and other electronic monitoring for voluntary angler surveys.

Scup

Market and Economic Issues

One advisor commented that the increase in the minimum fish size over the years has impacted markets for scup. There used to be a market for smaller scup that fit into a frying pan, but that market has transitioned to imported tilapia since the Council has put the larger size limits in place. Managers should work towards total utilization for the commercial fishery, where all catch must be brought ashore and any size can be sold.

One advisor commented that prices for scup are down because of the abundance of the fish, and noted that the price per fish would go up if biomass would go down. Another advisor expressed

that in the commercial fishery, the markets have experienced the growing pains of rebuilding, but are starting to see benefits. Recent management changes will make benefits more pronounced in the commercial fishery (e.g., the increased Winter II trip limit). Scup are now increasingly part of the value-added market in many places, and increasingly placed on restaurant menus. The market for scup is returning, albeit from a different group of consumers.

The price of fuel is affecting every facet of the fishery, predominately by increasing overall costs, and the trend only seem to be getting worse. Fuel prices have had a big economic impact on party/charter fishery, by affecting rates and therefore participation.

One advisor noted that for the first time, he is seeing marinas that are not full. There are fewer boats and less money available. In bad economic times, people will not spend money on recreational fishing. Low income participants used to be able to easily justify the costs of a fishing trip. Now, recreational participants often can't justify the cost if they are not able to balance fees with what they are able to catch and keep. One advisor suggested changing size limits to total cumulative length, which would allow for increased retention of scup.

Environmental and Ecological Issues

Scup are eating juveniles of other species, specifically crabs and lobsters. There is a need to consider how the high biomass of scup impacts other species. One advisor noted that scup biomass should be reduced to reduce significant impacts to other species.

Management Issues & Management Induced Effort Shifts

Advisors commented that current recreational data collection under MRIP is no different from MRFSS. Similar to last year, advisors noted that the MRIP survey has not advanced to the point where it can adequately capture reductions in effort. One advisor described an effort reduction of about 30% in New York and New Jersey, which is not reflected in the MRIP estimates and will result in estimated landings which could be inflated. All components of the new MRIP methodology need to be implemented.

Advisors generally agreed that managers should encourage and incentivize more scup catch given high biomass estimates (200% of the target biomass, based on 2012 stock assessment update), and that the strong, healthy stock can support liberalization of some measures. Several advisors consider it imperative that action be taken to reduce the scup biomass, given concerns of potential predation on other commercially valuable species. Both commercial and recreational minimum sizes could be much smaller, and could always be increased later if there are problems. Smaller minimum sizes will greatly reduce discards. Smaller size limits should be considered before increased trip limits (for both commercial and recreational fisheries) because it would increase availability to all sectors/user groups and would reduce waste. Shore fishermen would have increased opportunity to take home fish with smaller size limits. The scup fishery is strong enough to support these changes, and advisors would not expect fishery to decline back to levels seen in the 80s, when draggers had smaller mesh nets. Gear restrictions are helping to maintain the stock by reducing dead discards.

Fishing Behavior Issues

Advisors noted that managers should consider the subsistence fishing aspect of the scup fishery. In the 80s, there used to be a 100 fish trip limit, with 8-hour trips, with customers predominately

freezing these larger quantities of fish to eat over time. Now with reduced trip limits, the time needed to reach a trip limit is quicker, so trips are shorter, with charter boats booking multiple day trips. While two trips instead of one has been good for for-hire businesses, it's somewhat inefficient for participants (and more expensive, which disadvantages lower-income participants). The various changes in size limits, trip expenses, and availability of fish over past three decades has changed the clientele. A lot of scup trips are tourist trips now. Managers should consider the range of participants that they would like the fishery to be available to in the future.

Other Issues

One advisor noted that the Coast Guard targets commercial fishermen, but should be putting equal effort into checking recreational vessels as well.

Research Recommendations

Research suggestions proposed by advisors included:

- Adding a research recommendation for quantifying the role of scup as a predator, not just as a prey species. There was also support for quantifying the role of juvenile scup as a forage species.
- Recommendation #5 in the draft 5-year research plan (incorporating ecological relationships and oceanic events into the stock assessment model) should be designated as a higher priority.
- Research into cooking methods for cooking the whole fish (with bones), which could lead to improved markets for scup.
- A financial reward system should be created that anyone could access in exchange for contributing to research work, since the current process has become a "closed system."

Black sea bass

Environmental and Ecological Issues

Advisors commented that sea bass are wiping out other species, in particular feeding on juvenile lobsters. Some advisors noted concern about black sea bass biomass movement northward in search of food and potential impact on the lobster industry throughout New England. Increased biomass has led to increased predation on other species.

Advisors noted that there's such a high biomass of fish in the north that they are becoming nearly invasive in some areas. The biomass needs to be regulated to control impacts on other species. One advisor noted that the NEAMAP survey shows that sea bass indices are off the chart, similar to scup. The NEAMAP survey has never been wrong, and there is no reason to have the restrictions that we currently have.

Management Issues & Management Induced Effort Shifts

Advisors agreed that black sea bass is facing a critical management situation that needs to be addressed immediately. Despite Magnuson Act restrictions, the Council and Commission need to approach these issues with more common sense. Waiting until a potential 2016 benchmark assessment will be too late. The current quota is punitive and based on bad information. Faith in

the management system is being lost, and now is the time to break the rules and experiment with different solutions.

Southern states need different recreational regulations than northern states. The recreational season in Virginia has been closed when they most need it open. The highest landings for Virginia are reported in July according to MRIP, however, one advisor noted that they catch far more in the winter. Wave 1 has been closed due to lack of catch accounting, but the wave 1 fishery is primarily larger party/charter boats who file VTRs. VTR data should be used in general (not just in wave 1), as this is good data going unused in favor of lower quality estimates. Managers should also consider also requiring and using state VTR data. Advisors also noted that many people are being shut out of most or all of the sea bass season in some areas (e.g., shore based fishermen). The sea bass fishery can withstand an extended season and increased bag limit, and a limited winter fishery should be open with VTR requirements. One advisor suggested looking at reducing size limits, or going to total (cumulative) length.

Advisors commented that current recreational data collection under MRIP is no different from MRFSS. Similar to last year, advisors noted that the MRIP survey has not advanced to the point where it can adequately capture reductions in effort. One advisor described an effort reduction of about 30% in New York and New Jersey, which is not reflected in the MRIP estimates and will result in estimated landings which could be inflated. All components of the new MRIP methodology need to be implemented.

The average size of black sea bass is increasing, but as the result of harvest limits that are in pounds, fishermen can catch fewer total numbers of fish.

Advisors are frustrated with high discards of black sea bass. Boats need to go farther offshore to catch bigger fish, but this means fishing in deeper waters, where discard mortality is higher. Many participants don't know how to vent and properly release. FishSmart¹ should be disseminated to a greater degree among recreational fishermen. There are ongoing efforts to reduce mortality from barotrauma, and hopefully in the future, mortality estimates and resulting catch limits will give anglers credit for this reduced discard mortality.

In Nantucket Sound (part of which is nursery habitat for sea bass), there used to be big pot fishery that was significantly restricted. If managers are able to increase catch limits, they should let pot fishermen get back to fishing.

Research Recommendations

Research suggestions proposed by advisors included:

- Exploring the feasibility of a slot limit in the recreational fishery and research into finding an appropriate range of a potential slot limit.
- Quantifying shifts in distribution and abundance resulting from climate change.
- Effects of chemicals to increase growth rate and influence sex change, and aquaculture research on stock enhancement potential.

¹ <http://www.fishsmart.org/>

Black Sea Bass 2012-2013 Catch and Survey information

Northeast Fisheries Science Center

June 27, 2014

Commercial Fishery

Landings in 2013 were 1027 mt, predominately from otter trawls and fish pots, an increase from 782 mt in 2012. The majority of landings were reported from the Mid-Atlantic statistical areas between New York and Delaware.

Table 1. Commercial black sea bass landings (kg) by region, market category and year.

By Statistical Area

Market Category							
2013 kg							
area	uncl	large	jumbo	medium	small	total	Pct
512-539	14,355	76,359	87,402	45,056	12,400	235,572	23%
611-623	22,733	220,399	223,245	167,130	16,603	650,111	63%
625-636	91	41,136	26,321	54,594	19,148	141,291	14%
	37,179	337,894	336,968	266,780	48,151		
	4%	33%	33%	26%	5%	1,026,974	
2012							
area	uncl	large	jumbo	medium	small	total	Pct
512-539	7,758	50,177	75,563	19,428	8,065	160,991	21%
611-623	20,597	161,640	155,255	165,155	13,497	516,143	66%
625-636	1,037	26,400	23,527	38,357	15,611	104,933	13%
	29,392	238,217	254,344	222,940	37,173		
	4%	30%	33%	29%	5%	782,067	

Table 2. Commercial black sea bass landings (kg) by gear type, market category and year.

By Gear

2013 kg							
	uncl	large	jumbo	medium	small	total	
POTS + TRAPS,FISH	9,939	60,909	49,832	91,365	28,065	240,110	23%
TRAWL,OTTER,BOTTOM,FISH	5,566	222,814	260,773	90,128	14,799	594,079	58%
HANDLINE	4,170	34,232	20,680	28,385	2,159	89,625	9%
OTHER	4,433	23,791	23,823	47,386	3,727	103,159	10%
2012 kg							
	uncl	large	jumbo	medium	small	total	
POTS + TRAPS,FISH	10,042	55,871	49,434	114,524	23,518	253,390	32%
TRAWL,OTTER,BOTTOM,FISH	7,342	144,943	146,224	58,220	9,073	365,801	47%
HANDLINE	7,767	24,956	46,460	13,062	2,637	94,881	12%
OTHER	4,241	12,448	12,227	37,134	1,944	67,995	9%

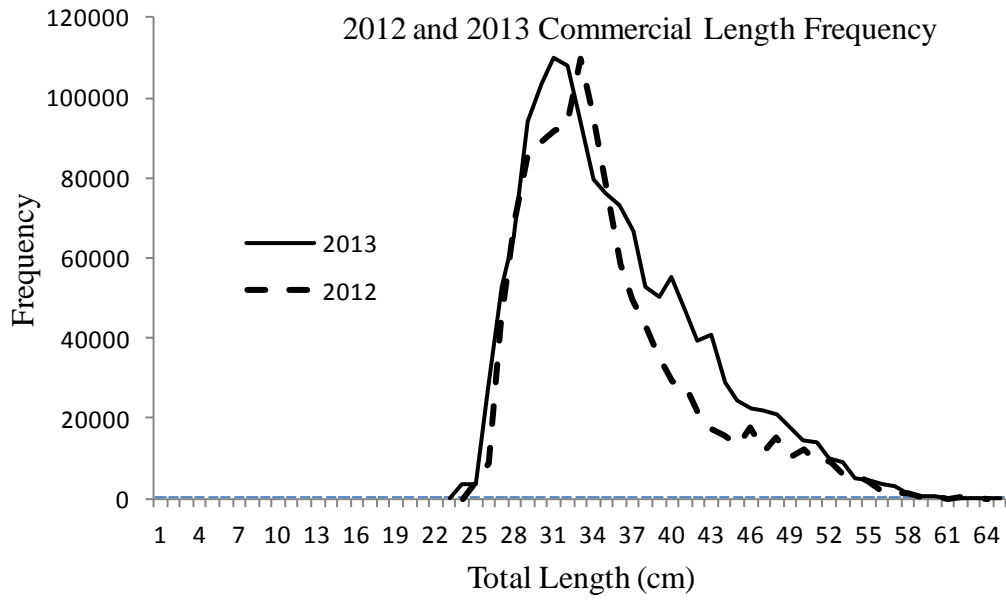


Figure 1. Length frequency of 2012 and 2013 black sea bass commercial landings.

Commercial discards from otter trawls were estimated from Northeast Fisheries Observer trips discard to kept all ratios. All other gears were estimated from discard to kept sea bass recorded in Vessel Trip Reports expanded to total sea bass landings by gear. Mortality rates as used in previous assessment.

Table 3. Commercial black sea bass discards (mt) by gear and year.

2013	mt	mortality rate	losses (mt)
Bottom otter trawl	148.4	1.00	148.4
handline	11.1	0.15	1.7
fish pot	31.1	0.15	4.7
lobster pot-offshore	1.7	0.15	0.3
other	2.9	1.00	2.9

total discard mt	195.2		
total discard loss mt			157.9

2012	mt	mortality rate	losses (mt)
Bottom otter trawl	91.8	1.00	91.8
handline	12.9	0.15	1.9
fish pot	21.2	0.15	3.2
lobster pot-offshore	21.6	0.15	3.2
other	11.2	1.00	11.2

total discard mt	158.8		
total discard loss mt			111.4

Recreational Fishery

Recreational landings in 2013 for Maine through Cape Hatteras, NC were 1.221 million fish equal to 1.054 mt. Associated discards (B2 only) were 8.283 million fish. Assuming a discard mortality rate of 15%, discard losses equal 1.232 million fish. Landings in 2012 equaled 1.874 million with discards of 10.606 million. 2012 discard losses equaled 1.590 million fish.

Table 4. Recreational black sea bass catch (number) by year. A mortality rate of 15% applied to live discards (B2).

Number	AB1	B2	B2 mortality
2012	1,874,267	10,606,249	1,590,937
2013	1,220,958	8,282,715	1,242,407

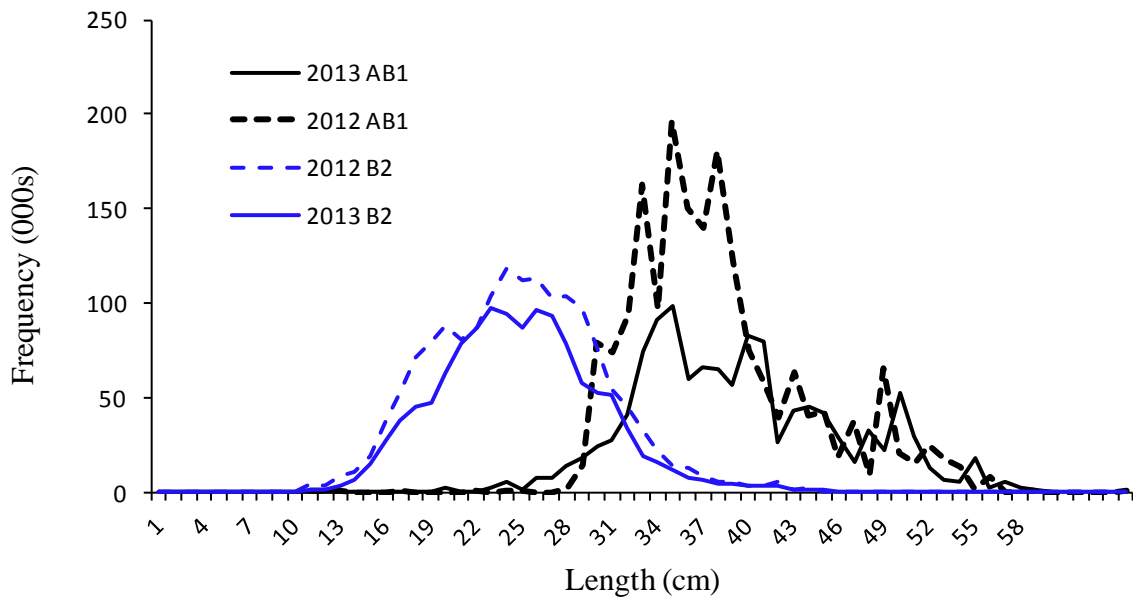


Figure 2. Length frequency (TL cm) of 2012 and 2013 black sea bass recreational landings and discards, ME- NC (Cape Hatteras).

Table 5. Total black sea bass catch (MT, landings plus discard mortalities) , 1981-2013 for northern stock.

Year	Landings	Discard losses	Landings	Discard losses	Total
	Com	Com	Rec (AB1)	Rec (B2*15%)	
1981	1129	67	625	35	1,857
1982	1177	70	1243	40	2,530
1983	1513	90	1860	114	3,577
1984	1519	105	666	36	2,326
1985	1075	89	1002	45	2,210
1986	1508	101	1824	95	3,528
1987	1635	98	929	36	2,698
1988	1424	102	1324	90	2,940
1989	1105	82	1502	39	2,727
1990	1402	53	1283	92	2,830
1991	1190	19	1876	92	3,176
1992	1264	91	1219	82	2,657
1993	1353	179	2167	64	3,762
1994	848	34	1355	80	2,318
1995	889	36	2753	124	3,802
1996	1448	483	1804	91	3,826
1997	1198	31	1920	112	3,261
1998	1171	136	588	86	1,981
1999	1305	36	802	112	2,255
2000	1205	42	1800	263	3,310
2001	1299	187	1556	295	3,336
2002	1587	24	1968	372	3,952
2003	1359	58	1512	301	3,230
2004	1405	370	817	140	2,733
2005	1298	29	902	153	2,383
2006	1285	16	945	166	2,413
2007	1037	57	1052	192	2,338
2008	875	37	771	242	1,925
2009	523	165	1088	226	2,002
2010	751	110	1373	251	2,485
2011	765	135	512	133	1,546
2012	782	111	1444	387	2,724
2013	1027	158	1054	300	2,539

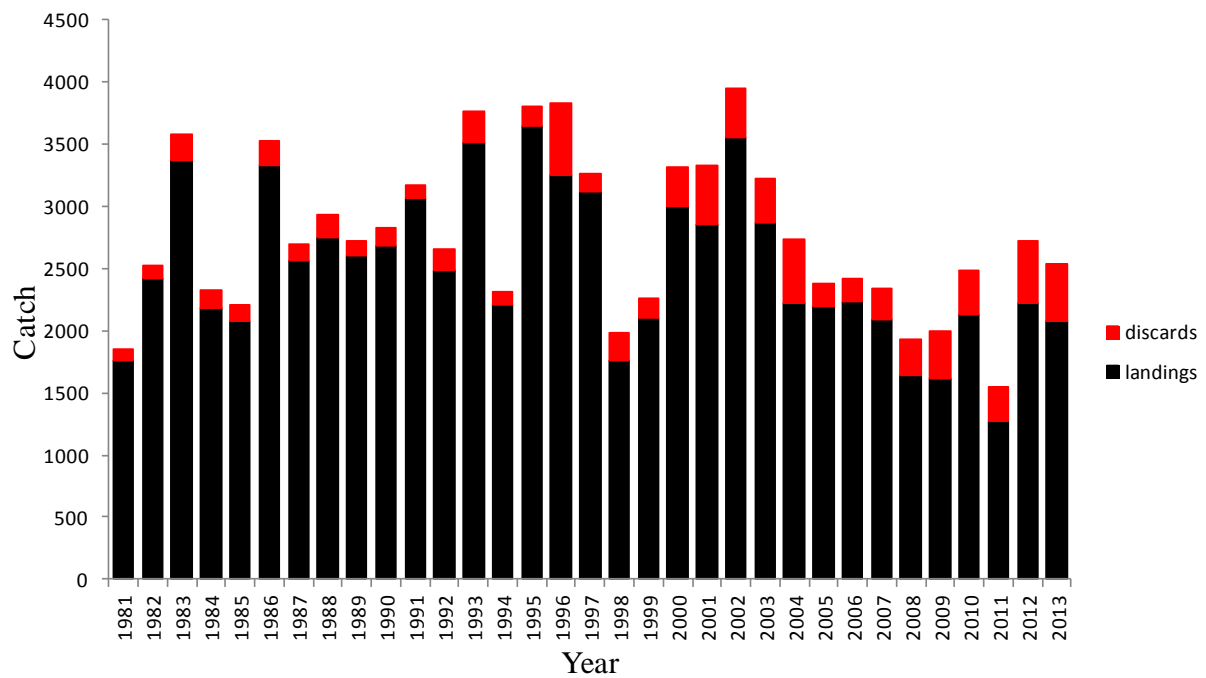


Figure 3. Black sea bass catch, 1981-2013.

Survey

Northeast Fisheries Science Center spring offshore index increased in 2013 to 4.531 fish per tow, compared to 1.613 per tow in 2012 (Bigelow indices calibrated to Albatross units). The large 2011 year class was evident as age 1 in spring of 2012 and age 2 in 2013.

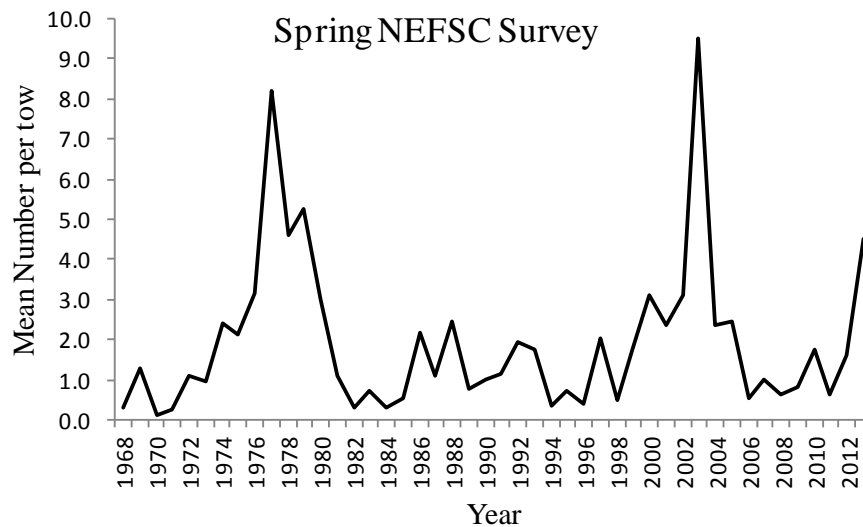


Figure 4. NEFSC spring offshore stratified mean number per tow of black sea bass, 1968-2013. 2009-2013 Bigelow data calibrated to Albatross units.

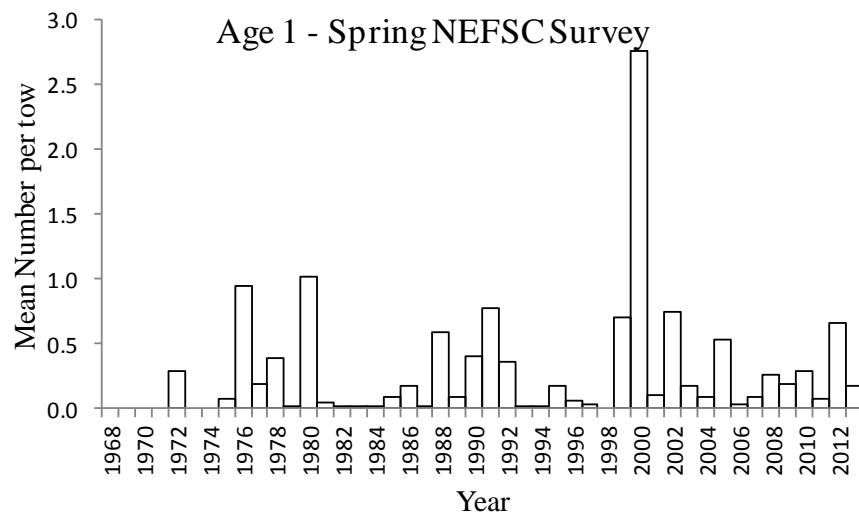


Figure 5. Indices of black sea bass recruitment (mean #/tow, age 1) from NEFSC spring offshore survey.

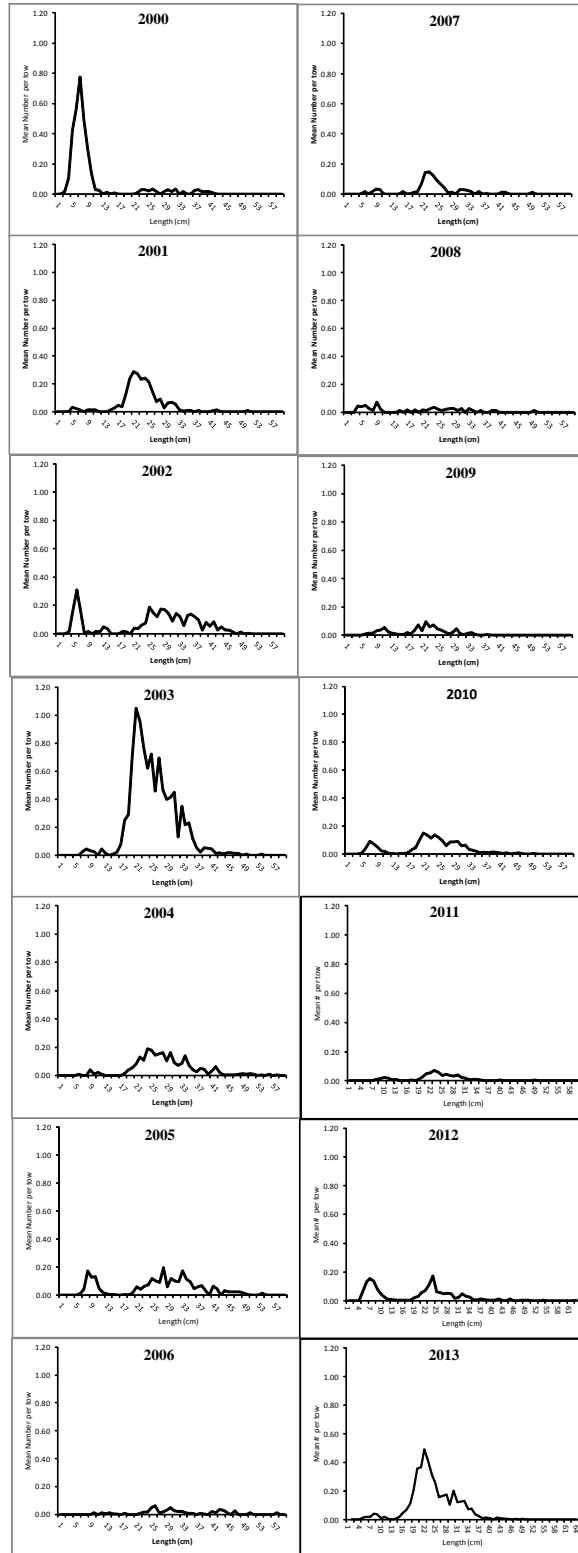


Figure 6. Length frequency distributions of black sea bass from NEFSC spring offshore survey, 2000-2013

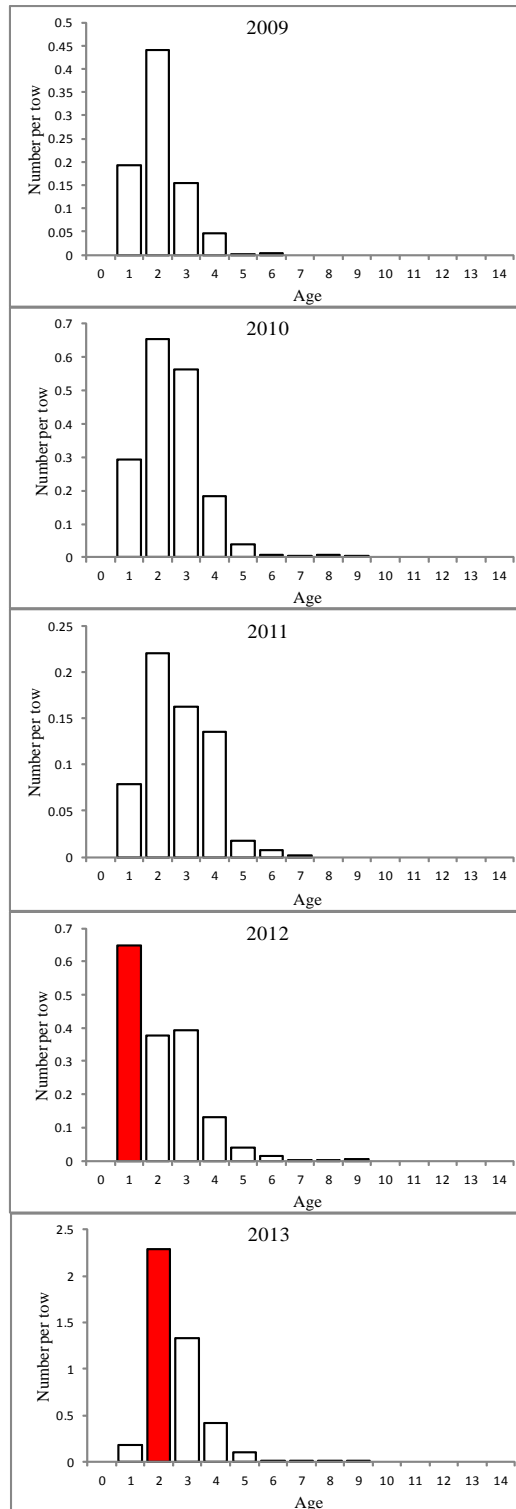


Figure 7. Mean number per tow at age of black sea bass from NEFSC spring offshore survey, 2009-2013. 2011 year class highlighted in red.

Table 6. Survey indices for black sea bass at age 1 (or equal length bin) from state and federal surveys. 2011 cohort indices highlighted in yellow. Indices have been standardized to the individual series means.

age 1	<i>relative to series average</i>					<= 14 cm		
	spring		<=14cm		MA	NEFSC	NEFSC	NEAMAP
	VA	MD age NJ	CT	RI		spring	winter	
1984					0.00	0.00	0.02	
1985					0.00	1.05	0.30	
1986					0.90	1.03	0.56	
1987					0.00	0.00	0.08	
1988				0.15	0.00	0.00	1.82	
1989	1.17	0.12	0.15	0.00	0.00	0.00	0.26	
1990	3.29	1.31	0.00	0.15	0.00	0.49	1.24	
1991	1.56	1.27	0.92	0.59	0.77	0.00	2.38	
1992	1.79	0.96	0.26	0.00	0.00	0.00	1.13	0.33
1993	0.31	0.14	0.26	0.00	0.00	0.00	0.02	0.06
1994	1.47	0.75	0.25	0.00	0.00	0.00	0.05	0.19
1995	1.48	1.86	1.79	0.00	0.00	0.61	0.57	0.32
1996	0.70	0.06	0.05	0.00	0.00	0.54	0.18	1.17
1997	0.50	0.99	0.19	0.00	0.77	0.51	0.09	0.12
1998	0.64	0.32	0.01	0.00	0.00	0.00	0.00	0.06
1999	0.80	1.55	0.34	0.15	0.78	0.00	2.17	0.50
2000	0.81	1.79	1.62	2.52	8.24	5.65	8.52	3.04
2001	1.03	1.18	0.79	0.00	0.00	0.00	0.30	0.60
2002	1.80	2.18	8.33	7.27	1.96	2.44	2.31	3.50
2003	0.89	0.89	0.46	0.00	0.00	0.00	0.53	2.35
2004	0.17	0.29	0.05	0.00	0.00	0.00	0.28	0.24
2005	0.08	0.26	1.56	0.00	0.00	0.00	1.67	0.58
2006	0.27	1.17	0.20	0.15	2.01	2.30	0.11	0.68
2007	0.61	1.39	1.65	1.93	0.78	0.00	0.28	2.27
2008	1.16	2.93	0.29	2.08	3.22	2.47	0.81	0.34
2009	0.57	0.60	1.26	1.34	0.45	1.29	0.60	0.89
2010	0.45	0.85	0.41	0.00	0.00	1.07	0.90	0.11
2011	1.55	0.44	0.54	0.30	0.38	0.00	0.24	0.86
2012	0.91	0.98	2.32	9.35	8.62	9.62	2.03	1.71
2013		0.70	1.32	1.04	1.12	0.94	0.56	2.09

Table 7. Mean number per tow of black sea bass from NEAMAP survey series. Ages provided by VIMS.

NEAMAP

fall	Age					all	spring	Age				all
	0	1	2	3	4+			1	2	3	4+	
2007	0.35	0.39	0.26	0.17	0.06	0.85	2007					
2008	0.21	0.15	0.08	0.06	0.06	0.45	2008	0.09	0.48	0.67	0.7	1.68
2009	0.27	0.3	0.2	0.15	0.07	0.66	2009	0.24	0.46	0.55	0.49	1.64
2010	0.13	0.12	0.08	0.05	0.07	0.36	2010	0.03	0.44	0.55	0.58	1.3
2011	0.2	0.22	0.16	0.08	0.16	0.69	2011	0.23	0.45	0.54	0.78	1.99
2012	0.28	0.51	0.36	0.09	0.2	1.05	2012	0.46	0.72	0.62	0.69	2.36
2013	0.2	0.22	0.33	0.18	0.3	0.89	2013	0.56	2.71	1.08	1.54	5.66
							2014					

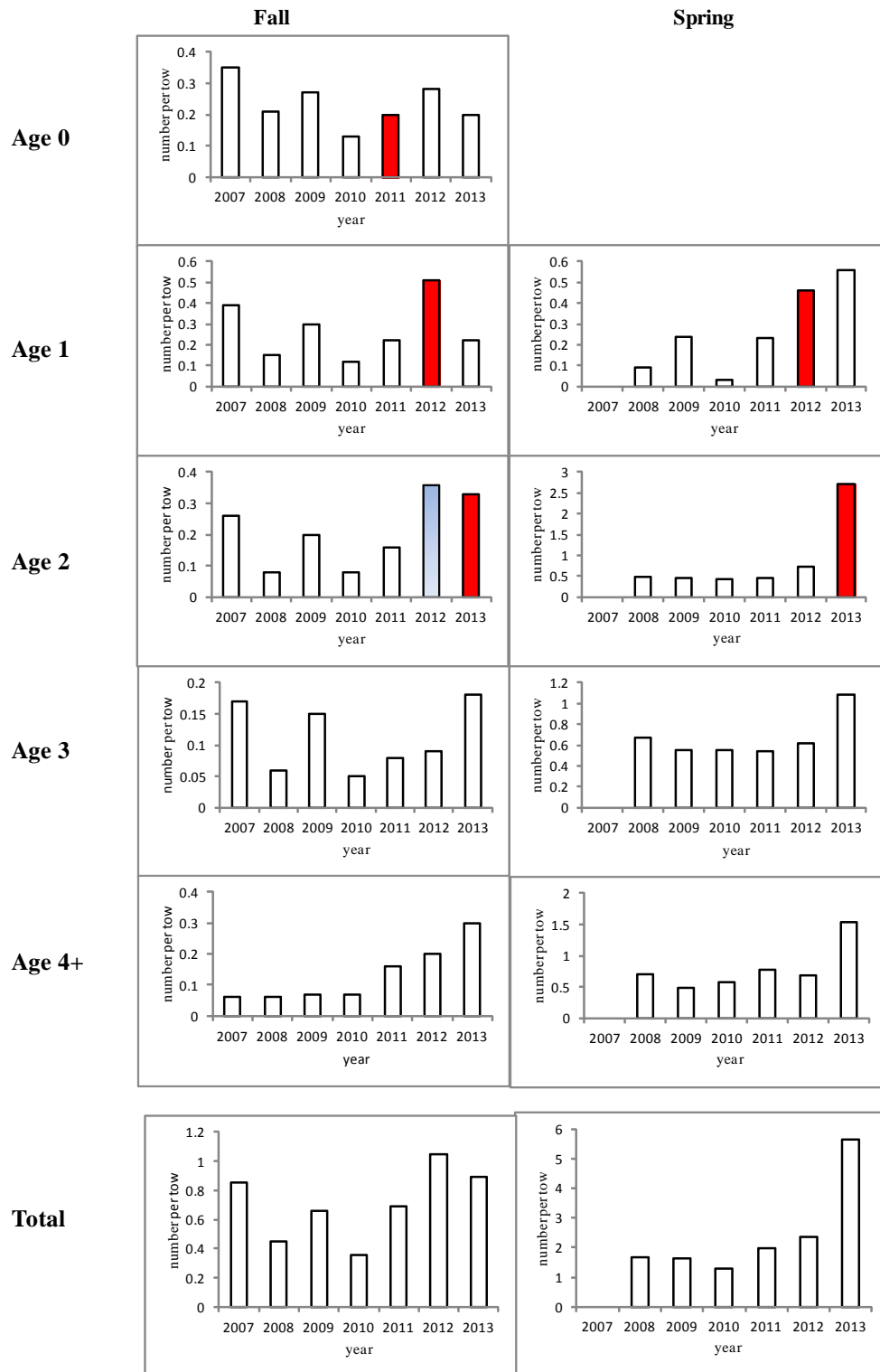


Figure 8. Mean number per tow at age from NEAMAP survey.



Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901-3910
Phone: 302-674-2331 | Toll Free: 877-446-2362 | FAX: 302-674-5399 | www.mafmc.org
Richard B. Robins, Jr., Chairman | Lee G. Anderson, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

DATE: July 8, 2014

TO: Chris Moore, Executive Director

FROM: Kiley Dancy, Staff

SUBJECT: Review of Black Sea Bass Management Measures for 2015

Executive Summary

In 2013, two-year specifications were implemented for black sea bass, establishing management measures for the 2014 and 2015 fishing years. Catch and landings limits are already in place for 2015 and may remain unchanged if the Scientific and Statistical Committee (SSC), Council, and ASMFC's Summer Flounder, Scup, and Black Sea Bass Board determine that the previously recommended Acceptable Biological Catch (ABC) for 2015 (5.50 mil lb; 2,494 mt) is still appropriate. Similarly, the Monitoring Committee will review recent fishery performance and make a recommendation to the Council and Board regarding any necessary modifications to the implemented 2015 commercial management measures.

Based on the latest stock assessment update in July of 2012, the black sea bass stock was not overfished and overfishing was not occurring in 2011. The 2011 stock was estimated to be at 102% of the spawning stock biomass at maximum sustainable yield (SSB_{MSY}).

Staff recommends maintaining the specified ABC (5.50 mil lb) as the basis for management measures in 2015. This ABC resulted in a commercial Annual Catch Limit (ACL) of 2.60 million lb (1,180 mt), and a recreational ACL of 2.90 million lb (1,314 mt). Based on the recommendation of the Monitoring Committee, both the commercial Annual Catch Target (ACT) and the recreational ACT were set equal to their respective sector ACLs for 2015. Last year, the Council recommended that up to 3% of the commercial and recreational quotas be reserved for research set-aside (RSA) in 2015.¹ After adjusting for projected discards and 3% RSA, the 2015 commercial quota is 2.17 mil lb, and the recreational harvest limit is 2.26 mil lb (Table 1).

Staff does not recommend any change to the current minimum fish size (11 inch total length) or gear requirements (4.5 inch mesh with 500/100 lb trigger; current pot/trap vent requirements).

¹The Council is scheduled to have a separate discussion at the August 2014 meeting regarding the future of the RSA program.

Table 1: Current multi-year catch and landings limits for black sea bass in 2014 and 2015. (Numbers may not add precisely due to rounding error.)

Management Measure	Current (2014)		2015		Basis
	mil lb.	mt	mil lb.	mt	
ABC	5.50	2,494	5.50	2,494	Projections
ABC Landings Portion	4.56	2,070	4.56	2,070	Projections
ABC Discards Portion	0.94	424	0.94	424	Projections
Commercial ACL (=ACT)	2.60	1,180	2.60	1,180	49% of ABC landings portion (per FMP) + 39% of ABC discards portion
Comm. discards (projected)	0.36	166	0.36	166	39% of ABC discards portion, based on 2010-2011 average % discards by sector
RSA deduction (3%)	0.07	32	0.07	32	3% of pre-RSA Comm. Quota
Commercial quota (adjusted)	2.17	984	2.17	984	Comm. ACT less discards and RSA
Recreational ACL (=ACT)	2.90	1,314	2.90	1,314	51% of ABC landings portion (per FMP) + 61% of ABC discards portion
Rec. discards (projected)	0.57	258	0.57	258	61% of ABC discards portion, based on 2010-2011 average % discards by sector
RSA deduction (3%)	0.07	30	0.07	30	3% of pre-RSA RHL
Recreational Harvest Limit (adjusted)	2.26	1,024	2.26	1,024	Rec. ACT less discards and RSA

Introduction

The Magnuson-Stevens Act (MSA) requires each Council's Scientific and Statistical Committee (SSC) to provide ongoing scientific advice for fishery management decisions, including recommendations for ABC, preventing overfishing, and maximum sustainable yield. The Council's catch limit recommendations for the upcoming fishing year(s) cannot exceed the ABC recommendation of the SSC. In addition, the Monitoring Committees established by the Fishery Management Plan (FMP) are responsible for developing recommendations for management measures designed to achieve the recommended catch limits.

Multi-year specifications may be set for black sea bass for up to three years at a time. For fishing year 2015, the SSC previously recommended an ABC for black sea bass as part of the multi-year specifications setting process for the 2014 and 2015 fishing years. The SSC recommended an ABC that addresses scientific uncertainty, while the Monitoring Committee recommended an annual catch target (ACT) and management measures that address management uncertainty. Both the SSC and Monitoring Committee will review the measures currently implemented and determine if any changes may be warranted. Based on the SSC and Monitoring Committee recommendations, the Council will make a recommendation to the

National Marine Fisheries Service (NMFS) Greater Atlantic Regional Administrator, if changes are believed to be warranted. Because the FMP is cooperatively managed with the Atlantic States Marine Fisheries Commission, the Commission's Summer Flounder, Scup, and Black Sea Bass Board will meet jointly with the Council to revisit black sea bass management measures. In this memorandum, information is presented to assist the SSC and Monitoring Committee in developing recommendations for the Council and Board to consider for the 2015 fishing year for black sea bass.

Additional relevant information about the fishery and past management measures is presented in the Fishery Performance Report for black sea bass developed by the Council and Commission Advisory Panels, as well as in the corresponding Black Sea Bass Fishery Information Document prepared by Council staff.

Catch and Landings Update

According to the Black Sea Bass Data Update for 2014, commercial landings in 2013 were 2.26 million lb (1,027 mt), and recreational landings were 2.32 million lb (1,054 mt).² The 2014 commercial landings as of the week ending June 21, 2014, indicate that 54% of the coastwide commercial quota has been landed (Table 2).

Table 2: 2014 black sea bass commercial quota and landings by state as of week ending June 21, 2014.

State	Cumulative Landings (lb)	Quota (lb)	Percent of Quota (%)	Research Set-Aside Landings (lb)
ME	0	--	--	0
NH	16	--	--	0
MA	7,399	--	--	915
RI	119,511	--	--	3,258
CT	10,934	--	--	0
NY	59,007	--	--	19,189
NJ	242,613	--	--	7,094
DE	22,008	--	--	0
MD	202,227	--	--	0
VA	287,691	--	--	401
NC	223,458	--	--	0
Other	1,589	--	--	0
Totals	1,176,453	2,174,312	54	30,857

Source: NMFS Weekly Quota Report for week ending June 21, 2014.

Stock Status and Biological Reference Points

The most recent accepted benchmark assessment on black sea bass was peer-reviewed and accepted in December 2008 by the DPSWG Peer Review Panel. Documentation associated with this assessment and previous stock assessments, such as reports on stock status, including annual assessment and reference point update reports, Stock Assessment Workshop (SAW) reports, and Stock Assessment Review Committee (SARC) panelist reports, are available online at the NEFSC website: <http://www.nefsc.noaa.gov/saw/>.

²Recreational landings for Maine through Cape Hatteras, NC.

The biological reference points for black sea bass were updated as part of the 2012 assessment update³, as the result of several changes made to the information incorporated into the SCALE model. The updated fishing mortality threshold for black sea bass is $F_{MSY} = F_{40\%}$ (as F_{MSY} proxy) = 0.44, and SSB_{MSY} is 24.00 million lb (10,880 mt). The minimum stock size threshold, one-half SSB_{MSY} is estimated to be 12.00 million lb (5,440 mt).

The July 2012 assessment update indicates the black sea bass stock was not overfished and overfishing is not occurring in 2011, relative to the biological reference points. Fishing mortality (F_{MULT}) in 2011 was $F = 0.21$, below the fishing mortality threshold of $F=0.44$. Total stock biomass in 2011 was estimated at 28.0 million lb (12,700 mt), above B_{MSY} . SSB in 2011 was estimated at 24.57 million lb (11,145 mt), and was at 102% of SSB_{MSY} . Recruitment estimated by the model was relatively constant through the time series with the exception of the 1999 and 2001 year classes. These cohorts appeared to be the driving force behind the increase in biomass and SSB. The estimated average recruitment (age one) in 2011 (2010 cohort) was 21.0 million fish.

Regulatory Review

As described above, the last assessment update for black sea bass was completed in 2012 (with data through 2011). The overfishing limit (OFL) provided by the assessment update was specified as 7.00 million lb (3,175 mt), based on an F_{MSY} proxy of $F_{40\%} = 0.44$. However, the SSC did not endorse this estimate because of concerns about the unresolved uncertainty in the OFL related to stock mixing, life history, and natural mortality. For each year 2010-2013, the SSC had recommended an ABC of 4.50 million lb (2,041 mt), based on a constant catch approach. However, in January 2013, the SSC met to reconsider that ABC recommendation, after reviewing new information relative to fishery performance (including recent catch data) and abundance and recruitment (i.e., state survey data).

The SSC concluded that there was little information in these data that would lead to a change in the ABC recommendation, the constant catch approach, or the designation of the assessment as level 4. However, the SSC believed it was appropriate to re-evaluate whether the constant catch level used since 2010 (4.50 mil lb) was still appropriate. The SSC evaluated the performance of the ABC and concluded that its continued application in 2013 and 2014 was overly conservative, and recommended a 2013-2014 ABC based on a constant catch level of 5.50 million lb (2,494 mt). This results in a commercial ACL (=ACT) of 2.60 million lb (1,180 mt) and a recreational ACL (=ACT) of 2.90 million lb (1,314 mt).

In September 2013, the SSC met to review the existing 2014 ABC recommendations for black sea bass to determine if changes were necessary, and to consider recommending an ABC for 2015. The SSC determined that available scientific evidence was not compelling enough to warrant a change to its ABC recommendation for 2014 (5.50 mil lb), and additionally recommended extending this same ABC into the 2015 fishing year.

³Shepherd, G.R. 2012. Black Sea Bass Assessment Summary for 2012. Northeast Fisheries Science Center.

The SSC considered black sea bass to be a level 4 assessment, and considered the following to be the most significant sources of uncertainty:

- Difficulty in determining appropriate reference points due to atypical life history strategy (protogynous hermaphrodite);
- Assessment assumes a completely mixed stock, while tagging analyses suggesting otherwise;
- Uncertainty exists with respect to M because of the unusual life history strategy the current assumption of a constant M in the model for both sexes may not adequately capture the dynamics in M); and
- Concern about the application of trawl calibration coefficients (ALBATROSS IV vs BIGELOW) and their influence on the selectivity pattern and results of the assessment.

Management measures in the commercial fishery other than quotas and harvest limits (i.e., minimum fish size, gear requirements, etc.) have remained constant since 2006.

Basis for 2015 Staff Recommendation

Input from the Council's Visioning and Strategic Planning processes as well as from the Advisory Panel Fishery Performance Reports highlight stakeholder interest in increasing the stability of fishery management measures. Last year, multi-year specifications were set for black sea bass for 2014 and 2015, with the understanding that recent fishery data would be reviewed in 2014 to identify any potentially critical issues in the fishery or problems with maintaining the implemented measures.

In April 2013, a black sea bass data workshop was sponsored by the Partnership for Mid-Atlantic Fisheries Science (PMFAS) and conducted by the Atlantic States Marine Fisheries Commission (ASMFC). The working group concluded that consideration of additional indices and datasets were not likely to result in any near-term changes in the perception of uncertainty in the assessment. Additionally, an assessment update would not likely be used for management purposes given the existing perception of uncertainty in the assessment. The working group recommended delaying a black sea bass benchmark stock assessment to 2016 or later, to allow for progress to be made on interim analyses and advances in modeling approaches.

Since establishing a new basis for a constant catch ABC recommendation in January 2013, the SSC has revisited those specifications and concluded that there was no compelling evidence at the time to warrant a change in the ABC, nor was there new information upon which to base a revised ABC recommendation. While progress has been made toward reducing uncertainties in the assessment, work is ongoing and currently there is little new information available to support changing the implemented specifications. Thus, staff recommends no changes to the implemented 2015 catch limits and commercial measures for black sea bass.

Other Management Measures

Recreational and Commercial ACLs

As defined by the Omnibus ACLs and AMs Amendment, the ABC is equivalent to the total allowable catch (TAC), and is equal to the sum of the commercial and recreational ACL (Figure 1).

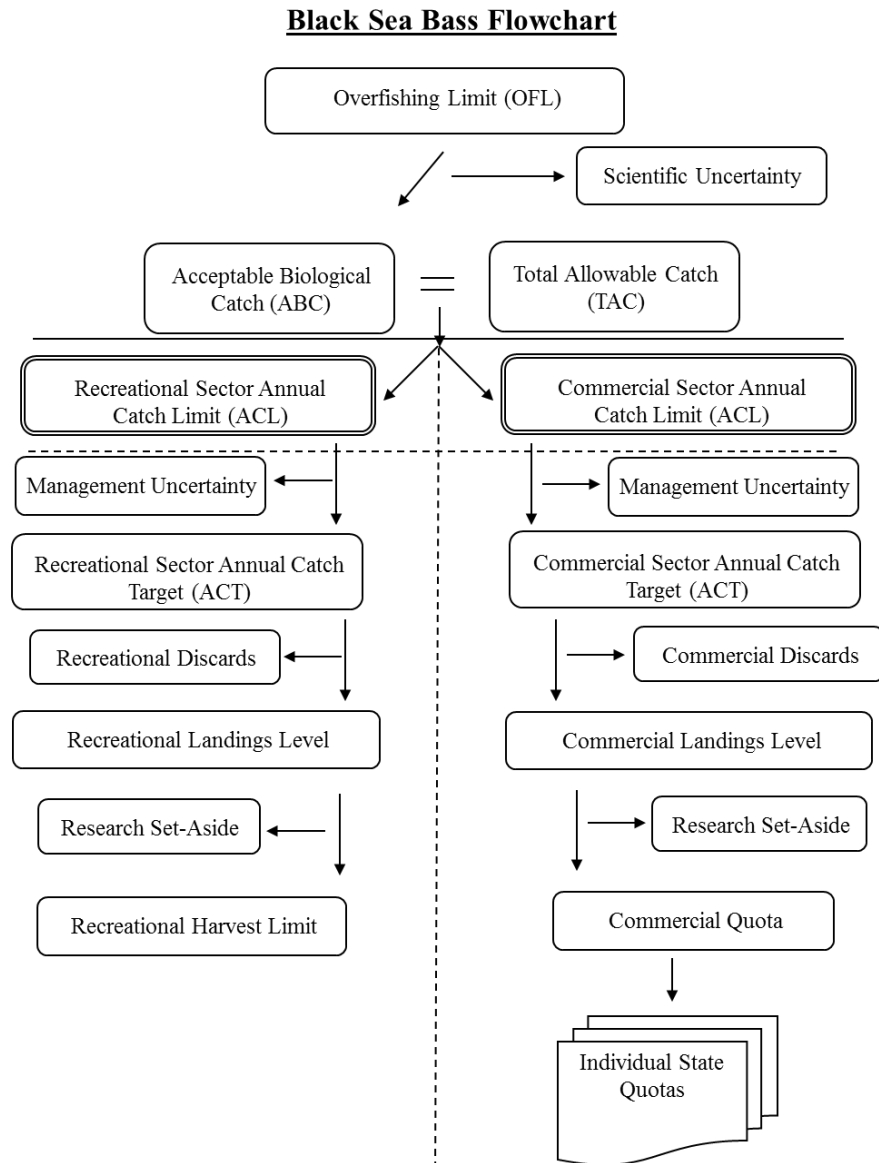


Figure 1: Flowchart for black sea bass catch and landings limits.

The ABC in place for 2015 is comprised of both landings and discards. Based on the allocation percentages in the FMP, 49% of the landings are allocated to the commercial fishery, and 51% to the recreational. Discards are apportioned based on the contribution from each fishing sector using the 2010-2011 average ratios; 61% of dead discards are attributable to the recreational fishery, 39% to the commercial (Table 1).

Annual Catch Targets

The Black Sea Bass Monitoring Committee is responsible for recommending ACTs for the Council to consider. The relationship between the recreational and commercial ACTs, and other catch components are given in Figure 1. The Monitoring Committee may provide other recommendations relevant to setting catch limits consistent with the Magnuson Stevens Act. The Monitoring Committee is responsible for considering all relevant sources of management uncertainty in the black sea bass fishery and providing the technical basis, including any formulaic control rules, for any reduction in catch when recommending an ACT. The ACTs, technical basis for ACT recommendations, and sources of management uncertainty would be described and provided to the Council.

Management uncertainty is comprised of two parts: uncertainty in the ability of managers to control catch and uncertainty in quantifying the true catch (i.e., estimation errors). Management uncertainty can occur because of a lack of sufficient information about the catch (e.g., due to late reporting, underreporting, and/or misreporting of landings or bycatch) or because of a lack of management precision (i.e., the ability to constrain catch to desired levels).

The sector-specific landings performance in recent years indicates that the recreational fishery has been variable in its performance relative to the harvest limits, but has periodically experienced large overages, including a significant overage in 2012. In 2013, the recreational fishery landings were much closer to, but slightly above the harvest limit (Table 3). For 2014 and 2015, the Monitoring Committee indicated that it would address recreational management uncertainty during the process for setting recreational measures in each year. Therefore, staff recommends no modifications to the current ACTs, which are set equal to the sector-specific ACLs for 2015.

Table 3: Black sea bass commercial and recreational fishery performance relative to quotas and harvest limits, 2009-2013.

Year	Commercial Landings (mil lb)	Commercial Quota (mil lb)	Percent Overage(+)/ Underage(-)	Recreational Landings (mil lb)¹	Recreational Harvest Limit (mil lb)	Percent Overage(+)/ Underage(-)
2009	1.17	1.09	+7%	2.40	1.14	+111%
2010	1.75	1.76	-1%	3.03	1.83	+66%
2011	1.69	1.71	-1%	1.13	1.78	-37%
2012	1.72	1.71	+1%	3.18	1.32	+141%
2013	2.26	2.17	+4%	2.32	2.26	+3%
5-yr Avg.	-	-	+2%	-	-	+57%

¹Recreational landings north of Cape Hatteras, NC.

Commercial Quota, Recreational Harvest Limit, and Research Set-Aside

The landings-based allocations (49% commercial, 51% recreational) were maintained in the derivation of the sector-specific ACLs and ACTs, such that the sums of the sector-specific TALs (total allowable landings for each sector) are equal to overall TAL. Based on the implemented ACLs and ACTs given above and a 3% research set-aside deduction, the adjusted commercial quota in 2015 is 2.17 mil lb (986 mt), and the adjusted recreational harvest limit is 2.26 mil lb (1,026 mt; Table 1). The ASMFC allocates the commercial quota to each state based on the allocation percentages given in Table 4.

Table 4: The Commission state-by-state commercial allocation percentages.

State	Allocation (percent)
ME	0.5
NH	0.5
MA	13.0
RI	11.0
CT	1.0
NY	7.0
NJ	20.0
DE	5.0
MD	11.0
VA	20.0
NC	11.0
Totals	100

Specific management measures that will be used to achieve the harvest limit for the recreational fishery in 2015 will not be determined until after the first four waves of 2014 recreational landings are reviewed. These data will be available in October 2014. The Monitoring Committee will meet in November to review landings data and make recommendations regarding changes in the recreational management measures (i.e., possession limit, minimum size, and season). Given the performance of the recreational fishery relative to the recreational harvest limit in recent years, management measures (i.e., minimum size, possession limits, and seasons) should be implemented that are designed to achieve the recreational ACT, while preventing the recreational ACL from being exceeded.

Commercial Gear Regulations and Minimum Fish Size

Amendment 9 established minimum fish sizes for black sea bass in federal and state waters. The Council and Commission increased the size limit to 11-inch total length (TL) in 2002. Staff recommends that the size limit remain at 11 inch-TL. Amendment 9 also established gear regulations that became effective in December of 1996. Current regulations state that large trawl nets are required to possess a minimum of 75 meshes of 4.5 inch diamond mesh in the codend, or the entire net must have a minimum mesh size of 4.5 inch throughout. The threshold level used to trigger the minimum mesh requirement size is 500 lb from January through March and 100 lb from April through December. Staff recommends no change in these trawl mesh regulations.

The Council and Commission adopted modifications to the circle vent size in black sea bass pots/traps, effective in 2007, based on the findings of a Council and Commission sponsored workshop. The minimum circle vent size requirements for black sea bass pots/traps were increased from 2.375 inch to 2.5 inch. The requirements of 1.375 inch x 5.75 inch for rectangular vents and 2 inch for square vents remained unchanged. In addition, 2 vents are required in the parlor portion of the pot/trap. Staff recommends no change in these pot/trap regulations.