SCDNR State Finfish Survey: Black Seabass Data

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Abstract:
The State Finfish Survey (SFS) collects finfish intercept data in South Carolina through a non-random intercept survey at public boat landings along the SC coast. The SFS focuses on known productive sample sites and targets primarily private boat mode. The survey was conducted year-round (January- December) from 1988-2012 and is not conducted only in January and February using a questionnaire and interview procedure similar to those of MRIP. This report is a summary of the catch, disposition, and size information collected through this survey from 1988 – 2016.

Background:
Implemented in 1988, the State Finfish Survey (SFS) was designed to address specific data gaps, within the MRFSS, as identified by SCDNR staff. These data gaps included the lack of length data from species of concern to the SCDNR and the lack of seasonal and area-specific catch frequencies. Another concern was the lack of catch and effort data from private boat anglers, which make up a majority of the angling trips in South Carolina coastal waters. These data gaps were initially addressed by interviewing inshore anglers targeting red drum and spotted seatrout at specific sample locations. Since 2002, more emphasis has been placed on acquiring length data from all finfish retained by anglers, canvassing at additional sampling locations, and interviewing all private fishing boats within all SC coastal areas. Broadening the scope of the survey may decrease some of the bias associated with the previous SFS protocol, which could potentially allow for better catch estimates and length frequency data. Starting in 2013, the SCDNR took over the sampling duties for the MRIP survey in the state. Because of this, the SFS is not only performed in the months of January and February because the MRIP survey is not performed during those months. Since SEDAR 25, there have been multiple QA/QC procedures run on this data set. Any discrepancies between this data set and the SEDAR 25 data set are due to error corrections resulting from the QA/QC procedures.

SFS Protocol and Design:
Sampling is conducted at public and selected private (with owner's permission) boat landings from January through December using a questionnaire and interview protocols similar to those of the MRFSS. However, the SFS questionnaire focuses on vessel surveys rather than individual angler surveys and primarily targets private boats. Interviews are obtained from cooperative anglers at each sampling site. If an angler is unwilling to participate; they can decline to be interviewed. Assigned Creel Clerks interview as many anglers as time allows at any given site.

The sampling schedule is determined by "needs assessments" of the SCDNR Marine Resources Division and creel clerks. Individual Creel Clerks are assigned to a sampling region and will determine their daily sampling schedules based on local conditions (i.e. weather, landing closures, or events), additional job duties, and research and management initiatives. Attempts are made to assess all sampling sites equally, and individual creel clerks randomly rotate between all sampling locations within their region. Creel clerks will remain at landings with fishing activity. If landings have little or no fishing activity creel clerks will move on to alternative sampling locations in close proximity.

Data collected for the SFS questionnaire include:

1) Mode fished (i.e. private, charter, shore)
2) Specific body of water fished
3) Area fished (inshore, 0-3 miles, > 3 miles)
4) Utilization of artificial reef/reef name
5) Resident county of boat owner

6) Species targeted
7) Number of anglers participating on the vessel
8) Amount of time spent fishing for the trip
9) Expense of the trip (all anglers)
10) Angling trips the previous year, average of all anglers participating
11) Catch and disposition by species (includes both landed and released fish)
12) Length measurements obtained, with anglers permission, for retained species;
    1988 – March 2009: length measurements mid-line length (ML)
    April 2009 – Present: length measurements total length (TL)

Intercept data are coded and key entered into an existing Access database. Queries are used to look for and correct anomalous data and a component of the database records are checked against the raw intercept forms.

Data Summary:

From 1988-2016 a total of 3,769 fishing parties were interviewed where black seabass were caught, representing between 1.7% - 13.8% of the total number of interviews in each year. A total of 40,246 black seabass were caught by fishing parties interviewed through the SFS survey from 1988-2016. Of those fish, a total of 8,448 were harvested (plus 43 harvested for use as bait) and 3,438 length measurements were obtained.

Table 1. Annual number of SCDNR State Finfish Survey interviews, number of interviews with black seabass catch by mode, and percentage of total interviews with black seabass catch.

Year	Total # of Interviews	Total # Interviews with BSB Catch	# of Charter Interviews with BSB Catch	# Private Boat Interviews with BSB Catch	# Shore Interviews With BSB Catch	% Interviews with BSB Catch
1988	141	11	4	5	2	7.80%
1989	151	12	1	11	0	7.95%
1990	284	11	0	11	0	3.87%
1991	706	28	0	28	0	3.97%
1992	568	13	0	13	0	2.29%
1993	2369	137	1	135	1	5.78%
1994	548	25	0	24	1	4.56%
1995	552	26	0	26	0	4.71%
1996	1712	47	0	47	0	2.75%
1997	1080	54	3	51	0	5.00%
1998	1669	206	0	204	2	12.34%
1999	2303	284	17	266	1	12.33%
2000	1968	206	4	202	0	10.47%
2001	1983	219	1	218	0	11.04%
2002	2246	205	5	199	1	9.13%
2003	2829	314	4	309	1	11.10%
2004	2995	360	2	357	1	12.02%
2005	2297	317	0	315	2	13.80%
2006	2377	244	1	243	0	10.27%
2007	2286	146	0	145	1	6.39%
2008	2391	189	0	189	0	7.90%
2009	1995	215	0	215	0	10.78%
2010	1876	149	0	149	0	7.94%
2011	2005	158	3	154	1	7.88%
2012	1946	178	5	173	0	9.15%
2013	71	3	0	3	0	4.23%
2014	59	1	1	0	0	1.69%
2015	180	3	0	3	0	1.67%
2016	106	4	0	4	0	3.77%
2017	71	4	0	4	0	5.63%
Total	41764	3769	52	3703	14	

Table 2. Annual number of black seabass caught by disposition from fishing parties interviewed through the SCDNR State Finfish Survey, all modes combined.

Year	Total Black Seabass Caught	Black Seabass Caught and Released (legal)	Black Seabass Caught and Released (illegal)	Black Seabass Kept To Eat	Black Seabass Kept For Bait	Black Seabass Thrown Back Dead
1988	198	38	0	160	0	0
1989	38	32	0	6	0	0
1990	169	65	0	104	0	0
1991	421	98	12	311	0	0
1992	98	2	5	87	4	0
1993	929	122	475	332	0	0
1994	386	60	112	211	3	0
1995	226	55	42	124	5	0
1996	592	13	184	395	0	0
1997	577	21	46	510	0	0
1998	1759	22	1331	404	0	2
1999	3006	15	2335	653	3	0
2000	1886	9	1407	470	0	0
2001	3099	132	2505	462	0	0
2002	2117	91	1486	534	6	0
2003	3218	112	2622	463	20	1
2004	4435	249	3254	931	1	0
2005	3632	161	2673	792	1	5
2006	3154	35	2604	513	0	2
2007	1498	54	1220	221	0	3
2008	1945	5	1834	106	0	0
2009	2644	29	2350	265	0	0
2010	1338	53	1012	273	0	0
2011	778	74	678	26	0	0
2012	1540	238	1283	19	0	0
2013	118	0	103	15	0	0
2014	120	0	100	20	0	0
2015	137	20	104	13	0	0
2016	132	0	112	20	0	0
2017	56	0	48	8	0	0
Total	40246	1805	29937	8448	43	13

Table 3. SCDNR State Finfish Survey number of black seabass measured (total and by mode), mean length, standard deviation of length, and minimum and maximum size range (all modes combined). No length measurements were recorded during 1997. Two rows of summary data are included for 2009 due to a change in the length measurement protocol. In April 2009 SCDNR staff began measuring total length (TL) as opposed to mid-line length (ML). Summary data was provided for mid-line length measurements from Jan. - Mar. 2009 and total length measurements from Apr. - Dec. 2009.

Year	Number of Black Seabass Measured	Number of fish measured by mode			Length Measurement	Mean Length (mm)	SD Length (mm)	Minimum Length (mm)	Maximum Length (mm)
		Charter	Private	Shore					
1988	41	16	25	0	ML	285.68	49.65	220	450
1989	2	0	2	0	ML	292.00	53.74	254	330
1990	23	0	23	0	ML	298.04	64.52	190	410
1991	111	0	111	0	ML	250.87	50.65	179	432
1992	43	0	43	0	ML	264.14	55.03	196	441
1993	149	0	145	4	ML	257.85	51.43	161	445
1994	26	0	26	0	ML	250.88	54.70	169	364
1995	49	0	49	0	ML	291.33	68.40	173	420
1996	177	0	177	0	ML	272.25	31.48	206	386
1998	96	0	95	1	ML	298.25	61.04	165	481
1999	350	50	300	0	ML	299.20	47.06	164	455
2000	172	66	106	0	ML	301.81	42.35	239	498
2001	212	1	211	0	ML	314.34	47.45	203	492
2002	251	12	237	2	ML	300.39	35.78	195	405
2003	258	4	254	0	ML	319.52	55.03	200	496
2004	450	0	450	0	ML	331.96	49.30	130	571
2005	225	0	223	2	ML	314.10	43.40	178	485
2006	149	0	149	0	ML	316.66	44.53	255	460
2007	125	0	125	0	ML	320.80	38.30	257	430
2008	76	0	76	0	ML	331.33	30.12	290	458
2009	53	0	53	0	ML	331.66	23.50	305	414
2009	105	0	105	0	TL	339.72	27.27	290	436
2010	233	0	233	0	TL	362.43	36.73	295	453
2011	26	0	26	0	TL	336.69	20.60	305	395
2012	3	0	3	0	TL	343.00	19.08	323	361
2013	4	0	4	0	TL	393.50	17.92	368	406
2015	5	0	5	0	TL	397.40	15.81	384	420
2016	20	0	20	0	TL	366.75	9.04	356	383
2017	4	0	4	0	TL	350.50	9.85	341	359