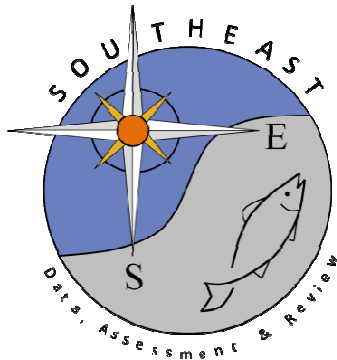


South Carolina Department of Natural Resources State Finfish Survey (SFS)

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SEDAR25-DW15

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Date: 4/22/2011
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For: SEDAR 25 Black Seabass Data Workshop, April 2011

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 is conducted year-round (January- December) using a questionnaire and interview procedure similar to those of MRFSS. This report is a summary of the catch, disposition, and size information collected through this survey from 1988 – 2010.

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.

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 – 2010: 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:

SFS creel clerks conduct interviews primarily at public boat landings and typically intercept anglers targeting inshore species. From 1988-2010 a total of 3,414 fishing parties were interviewed where black seabass were caught, representing between 3.9% - 13.8% of the total number of interviews in each year. A total of 37,313 black seabass were caught by fishing parties interviewed through the SFS survey from 1988-2010. Of those fish, a total of 8,308 were harvested (plus 43 harvested for use as bait) and 3,454 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 | 165 | 11 | 4 | 5 | 2 | 6.67% |
| 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 | 2302 | 284 | 17 | 266 | 1 | 12.34% |
| 2000 | 1968 | 206 | 4 | 202 | 0 | 10.47% |
| 2001 | 1981 | 217 | 1 | 216 | 0 | 10.95% |
| 2002 | 2239 | 205 | 5 | 199 | 1 | 9.16% |
| 2003 | 2821 | 312 | 4 | 307 | 1 | 11.06% |
| 2004 | 2984 | 360 | 2 | 357 | 1 | 12.06% |
| 2005 | 2297 | 317 | 0 | 315 | 2 | 13.80% |
| 2006 | 2377 | 244 | 1 | 243 | 0 | 10.27% |
| 2007 | 2285 | 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% |
| Total | 37320 | 3414 | 43 | 3358 | 13 | 9.15% |

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 | 2991 | 15 | 2335 | 638 | 3 | 0 |
| 2000 | 1886 | 9 | 1407 | 470 | 0 | 0 |
| 2001 | 3065 | 132 | 2475 | 458 | 0 | 0 |
| 2002 | 2117 | 91 | 1486 | 534 | 6 | 0 |
| 2003 | 3216 | 112 | 2620 | 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 |
| Total | 37314 | 1473 | 27477 | 8308 | 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 | | ML | 285.68 | 49.65 | 220 | 450 |
| 1989 | 2 | | 2 | | ML | 292.00 | 53.74 | 254 | 330 |
| 1990 | 23 | | 23 | | ML | 298.04 | 64.52 | 190 | 410 |
| 1991 | 111 | | 111 | | ML | 250.87 | 50.65 | 179 | 432 |
| 1992 | 43 | | 43 | | ML | 264.14 | 55.03 | 196 | 441 |
| 1993 | 149 | | 145 | 4 | ML | 257.85 | 51.43 | 161 | 445 |
| 1994 | 26 | | 26 | | ML | 250.88 | 54.70 | 169 | 364 |
| 1995 | 49 | | 49 | | ML | 291.33 | 68.40 | 173 | 420 |
| 1996 | 177 | | 177 | | ML | 272.25 | 31.48 | 206 | 386 |
| 1997 | 0 | | | | | | | | |
| 1998 | 96 | | 95 | 1 | ML | 298.25 | 61.04 | 165 | 481 |
| 1999 | 351 | 50 | 301 | | ML | 299.58 | 47.02 | 164 | 455 |
| 2000 | 172 | 66 | 106 | | ML | 301.81 | 42.35 | 239 | 498 |
| 2001 | 208 | 1 | 207 | | ML | 314.45 | 47.83 | 203 | 492 |
| 2002 | 251 | 12 | 237 | 2 | ML | 300.39 | 35.78 | 195 | 405 |
| 2003 | 258 | 4 | 254 | | ML | 319.52 | 55.03 | 200 | 496 |
| 2004 | 450 | | 450 | | ML | 331.96 | 49.30 | 130 | 571 |
| 2005 | 225 | | 223 | 2 | ML | 314.10 | 43.40 | 178 | 485 |
| 2006 | 149 | | 149 | | ML | 316.66 | 44.53 | 255 | 460 |
| 2007 | 183 | | 183 | | ML | 317.09 | 39.98 | 257 | 430 |
| 2008 | 99 | | 99 | | ML | 331.02 | 29.17 | 290 | 458 |
| 2009 | 53 | | 53 | | ML | 331.66 | 23.50 | 305 | 414 |
| 2009 | 105 | | 105 | | TL | 339.72 | 27.27 | 290 | 436 |
| 2010 | 233 | | 233 | | TL | 362.43 | 36.73 | 295 | 453 |

ADDENDUM: 4/29/2011

Duplicate records were found in the SCDNR dataset used to develop SEDAR25_DW15. The duplicate records were removed at the data workshop and the final data discussed and used at the workshop are found in the text and tables below.

Data Summary:

From 1988-2010 a total of 3,414 fishing parties were interviewed where black seabass were caught, representing between 3.9% - 13.8% of the total number of interviews in each year. A total of 37,329 black seabass were caught by fishing parties interviewed through the SFS survey from 1988-2010. Of those fish, a total of 8,323 were harvested (plus 43 harvested for use as bait) and 3,372 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 |
|-------|-----------------------|-----------------------------------|--|--|-----------------------------------|-----------------------------|
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| 1989 | 151 | 12 | 1 | 11 | 0 | 7.95% |
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| 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 | 2302 | 284 | 17 | 266 | 1 | 12.34% |
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| 2001 | 1981 | 217 | 1 | 216 | 0 | 10.95% |
| 2002 | 2239 | 205 | 5 | 199 | 1 | 9.16% |
| 2003 | 2821 | 312 | 4 | 307 | 1 | 11.06% |
| 2004 | 2984 | 360 | 2 | 357 | 1 | 12.06% |
| 2005 | 2297 | 317 | 0 | 315 | 2 | 13.80% |
| 2006 | 2377 | 244 | 1 | 243 | 0 | 10.27% |
| 2007 | 2285 | 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% |
| Total | 37320 | 3414 | 43 | 3358 | 13 | 9.15% |

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 | 3065 | 132 | 2475 | 458 | 0 | 0 |
| 2002 | 2117 | 91 | 1486 | 534 | 6 | 0 |
| 2003 | 3216 | 112 | 2620 | 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 |
| Total | 37329 | 1473 | 27477 | 8323 | 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 | | ML | 285.68 | 49.65 | 220 | 450 |
| 1989 | 2 | | 2 | | ML | 292.00 | 53.74 | 254 | 330 |
| 1990 | 23 | | 23 | | ML | 298.04 | 64.52 | 190 | 410 |
| 1991 | 111 | | 111 | | ML | 250.87 | 50.65 | 179 | 432 |
| 1992 | 43 | | 43 | | ML | 264.14 | 55.03 | 196 | 441 |
| 1993 | 149 | | 145 | 4 | ML | 257.85 | 51.43 | 161 | 445 |
| 1994 | 26 | | 26 | | ML | 250.88 | 54.70 | 169 | 364 |
| 1995 | 49 | | 49 | | ML | 291.33 | 68.40 | 173 | 420 |
| 1996 | 177 | | 177 | | ML | 272.25 | 31.48 | 206 | 386 |
| 1997 | 0 | | | | | | | | |
| 1998 | 96 | | 95 | 1 | ML | 298.25 | 61.04 | 165 | 481 |
| 1999 | 350 | 50 | 300 | | ML | 299.20 | 47.06 | 164 | 455 |
| 2000 | 172 | 66 | 106 | | ML | 301.81 | 42.35 | 239 | 498 |
| 2001 | 208 | 1 | 207 | | ML | 314.45 | 47.83 | 203 | 492 |
| 2002 | 251 | 12 | 237 | 2 | ML | 300.39 | 35.78 | 195 | 405 |
| 2003 | 258 | 4 | 254 | | ML | 319.52 | 55.03 | 200 | 496 |
| 2004 | 450 | | 450 | | ML | 331.96 | 49.30 | 130 | 571 |
| 2005 | 225 | | 223 | 2 | ML | 314.10 | 43.40 | 178 | 485 |
| 2006 | 149 | | 149 | | ML | 316.66 | 44.53 | 255 | 460 |
| 2007 | 125 | | 125 | | ML | 320.80 | 38.30 | 257 | 430 |
| 2008 | 76 | | 76 | | ML | 331.33 | 30.12 | 290 | 458 |
| 2009 | 53 | | 53 | | ML | 331.66 | 23.50 | 305 | 414 |
| 2009 | 105 | | 105 | | TL | 339.72 | 27.27 | 290 | 436 |
| 2010 | 233 | | 233 | | TL | 362.43 | 36.73 | 295 | 453 |