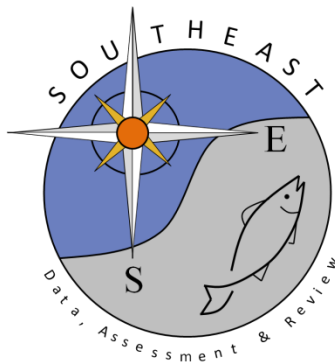


South Carolina Recreational Shrimp Baiting Preliminary Data Summary: Shrimp Baiting Mail Survey

Eric Hiltz

SEDAR-PW6-WP07

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South Carolina Recreational Shrimp Baiting
Preliminary Data Summary
Shrimp Baiting Mail Survey

Eric Hiltz, SCDNR

SEDAR-PW6-WP07

Abstract:

Since 1987 the South Carolina Department of Natural Resources has issued an annual mail survey containing questions pertaining to the recreational shrimp baiting fishery in South Carolina. Data collected by this survey include the number of shrimp baiting trips taken, amount of shrimp caught, area where trips were taken, and the month the trips were taken. This survey is one of the few data sets that can be used to obtain statistics on the recreational aspect of the shrimp fishery in South Carolina.

Introduction:

In the mid 1980's the recreational shrimp baiting fishery started receiving public attention due to the apparent increase in activity and complaints by the commercial shrimp fishery. To help legislative and management decisions regarding this fishery, the SCDNR initiated a study to monitor the effort and catch of this fishery (Theiling 1988). The 1987 study was the first study of the recreational shrimp baiting fishery in SC and it has continued in the form of a mail survey every year since.

After the initial study was completed, the SC Shrimp Baiting Act of 1988 was signed into law. Among other requirements, this law created a 60 day shrimp baiting fishing season that is set variably between September 1 and November 15 as well as required anyone shrimp baiting in state waters to hold a shrimp baiting permit and tags.

Since the inception of the shrimp baiting mail survey, the methodology has remained somewhat consistent through the years. The results and methods of the surveys have been summarized in numerous reports (Theiling 1988; Waltz and Hens 1989; Low 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2001, 2002, 2003a, and 2003b; Liao 1993; Low and Waltz 2000; Byrd 2006 and 2007). Prior to 2003, the only data available on the survey is summary data from the reports, but since 2003 the raw data has been stored in an Access database. Starting in 2009, an online option of filling out the survey was implemented.

The current methodology consists of mailing post card surveys post-seasonally to approximately 4,000 registered shrimp baiters after the season is completed (see appendix A and B for current survey and supplementary materials sent with the survey). These individuals are randomly selected from all shrimp baiting license holders in SC using a SAS program. Responses are only accepted for up to 2 months to limit recall bias.

Results:

Since 2000 the mean return rate of the survey has been 36.01% (Table 1). Since 2003 the mean percentage of license holders that use their licenses is 74.39% (Table 2). These active participants had a mean of 2 assistants with them and took a mean of 4.57 trips per season. Each active participant caught a mean of 20.18 quarts of heads on shrimp per trip (44.98 lbs using the conversion of 1 quart of heads on shrimp equals 1.48 lbs). By applying the above results to the entire active shrimp baiting population in SC, the mean number of participants (including assistants with or without permits) is 20,953, the mean number of total trips is 31,216, and the mean lbs of shrimp harvested annually by recreational shrimp baiters in SC is 957,904 (Table 2 and Figure 1). Results of this survey indicate that the recreational shrimp baiting fishery accounts for a mean of 28% of the annual shrimp harvest in SC (Figure 2).

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Tables:

Table 1. Survey response rates and population sizes.

Year	Total Permits	Surveys Mailed	% of Permit Holders	Surveys Returned	Return Rate
2000	15,929	3,925	24.64%	1487	37.89%
2001	13,698	3,934	28.72%	1558	39.60%
2002	13,903	3,940	28.34%	1324	33.60%
2003	12,445	4,001	32.15%	1358	33.94%
2004	10,609	4,001	37.71%	1540	38.49%
2005	9,001	3,999	44.43%	1508	37.71%
2006	10,091	4,000	39.64%	1522	38.05%
2007	9,488	4,000	42.16%	1320	33.00%
2008	8,346	4,000	47.93%	1511	37.78%
2009	8,262	4,000	48.41%	1438	35.95%
2010	8,219	4,000	48.67%	1568	39.20%
2011	8,051	4,000	49.68%	1353	33.83%
2012	7,767	4,000	51.50%	1362	34.05%
2013	6,552	3,945	60.21%	1223	31.00%
Mean	10,169	3,982	41.73%	1,434	36.01%

Table 2. Annual harvest and participation estimates of the South Carolina recreational shrimp baiting fishery.

Year	Percent active permits	Mean assistants per permit holder	Estimated participants	Mean number of trips per permit holder	Estimated total Trips	Average quarts of shrimp per trip	Estimated annual harvest (Millions of whole lbs)	Mean lbs per participant
2003	80.49%	2.14	31,476	5.71	57,221	23.26	1.97	62.57
2004	72.79%	2.12	24,110	5.06	39,060	18.66	1.08	44.74
2005	75.00%	2.07	20,747	4.67	31,555	23.33	1.09	52.53
2006	70.93%	1.97	21,258	4.21	30,117	20.62	0.92	43.23
2007	77.95%	2.15	23,269	4.79	35,429	22.48	1.18	50.67
2008	69.35%	2.12	18,071	3.97	23,000	20.53	0.70	38.67
2009	70.83%	2.08	17,999	4.04	23,653	18.64	0.65	36.25
2010	76.38%	2.37	21,139	4.81	30,222	26.08	1.17	55.18
2011	76.51%	2.19	19,660	4.66	28,717	20.00	0.85	43.24
2012	76.15%	2.08	18,216	4.33	25,591	14.22	0.54	29.58
2013	71.92%	2.09	14,548	3.99	18,813	14.17	0.39	27.12
Mean	74.39%	2.13	20,953.91	4.57	31,216.18	20.18	0.96	43.98

Figures:

Figure 1. Estimated annual harvest of and number of participants in the South Carolina recreational shrimp baiting fishery.

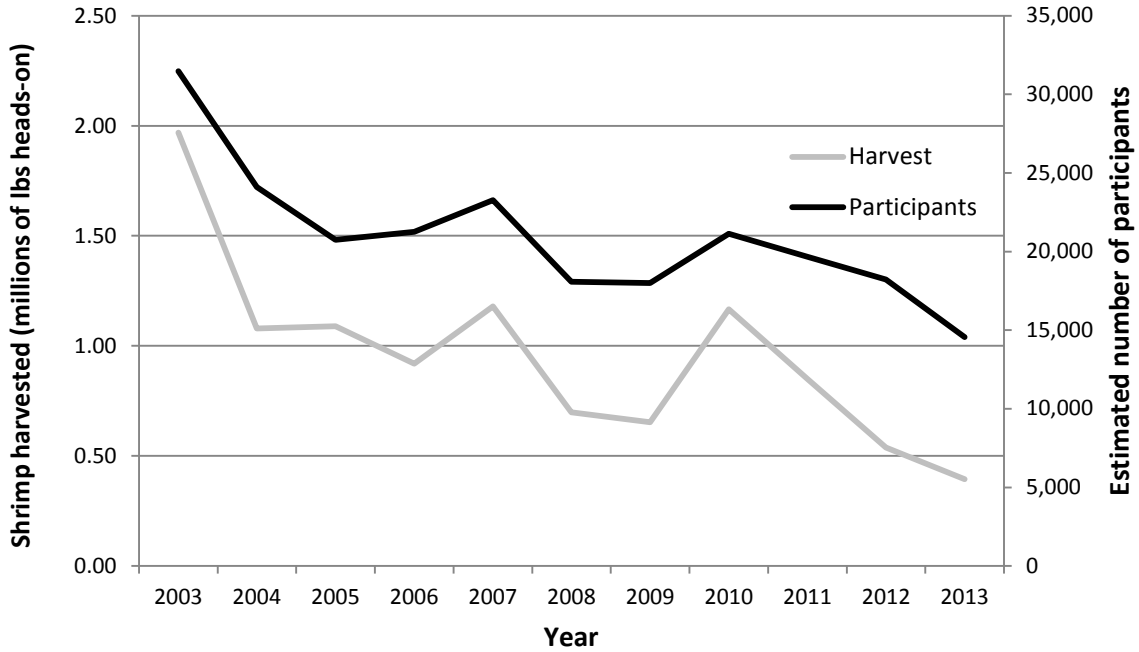
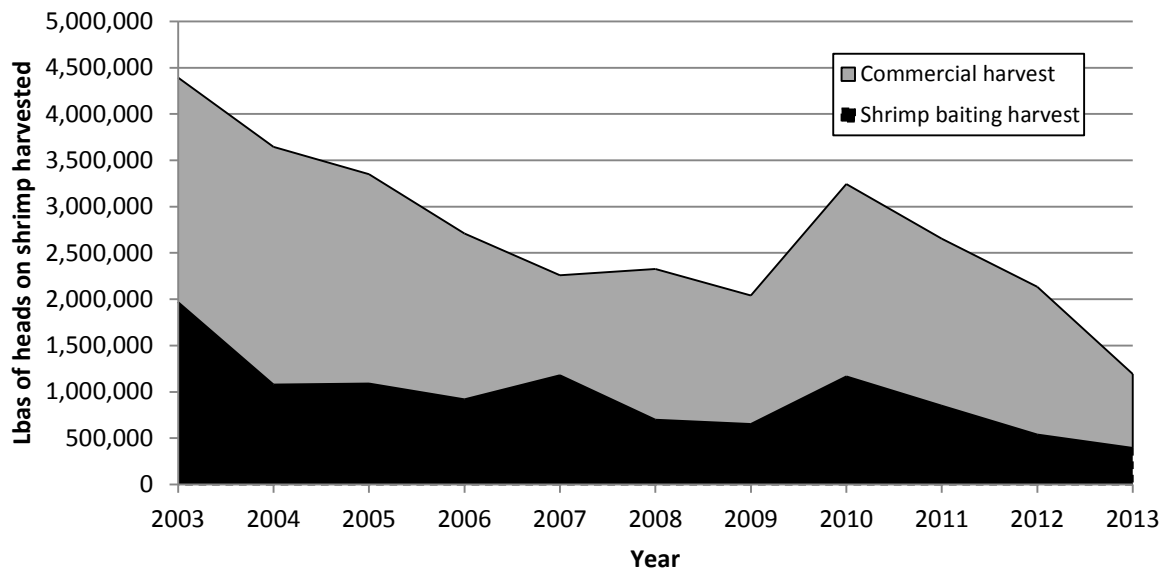


Figure 2. Estimated annual harvest of the recreational shrimp baiting fishery as compared to the commercial shrimp fishery harvest from September to November in South Carolina.



Appendix A Survey

1. What County do you live in? _____
2. How many Trips did you make using **YOUR** permit and gear?
_____ Sept. _____ Oct. _____ Nov. _____ All Season
3. Please indicate the number of Trips you made in each Area.
(Refer to map on cover letter)
_____ Beaufort _____ Charleston _____ St. Helena Sd.
_____ Bulls Bay _____ Wadmalaw/Edisto Is. _____ Georgetown
4. How many Different People assisted you on your boat? _____
5. What was your Average Catch Per Trip in quarts of whole shrimp? _____
6. What was your Total Catch for the season? _____ quarts of whole shrimp
7. In the past 2 years have you used a modified cast net to go deep hole
shrimping? YES NO If YES, how many TRIPS PER YEAR? _____
(Circle one.)
8. Would you be willing to participate in future surveys online? YES NO
(Circle one.)

Appendix B Supplemental Survey Document

South Carolina Department of Natural Resources



DNR

Alvin A. Taylor
Director

Robert Boyles
Deputy Director for
Marine Resources

Recreational Shrimp Baiting Survey 2013

Each year, the SCDNR conducts a survey to provide estimates of participation, effort, and catch within the shrimp baiting fishery. This year you have been randomly selected from the permit file to take part in this effort. The survey is voluntary and confidential. **YOU HAVE TWO EASY WAYS TO RESPOND TO THIS SURVEY:** Complete the enclosed postage-paid post card and drop it in the mail **OR** using a computer, type in the following address in your web browser: <http://www.dnr.sc.gov/shrimp/>. You must use the ID number on your post card if you want to respond via our Internet site. Base your responses only on shrimping you did with **YOUR** permit, tags, and poles. The map below will help you identify general areas where you shrimped for question 3 on the post card survey. **It is important to participate in the survey even if you were unable to go shrimp baiting this season (2013).**

Thank you for your help.



Georgetown (GH) – Horry and Georgetown counties, including Winyah Bay.

Bulls Bay (BB) – from the southern boundary of Georgetown County (near the Santee River) to the north end of Isle of Palms.

Charleston (CH) – from the north end of Isle of Palms to the Stono River, including Charleston Harbor, the ICWW, and the Folly, Ashley, Cooper and Wando Rivers.

Wadmalaw/Edisto Is. (WE) – from the Stono River to the South Edisto River, including the Stono River, Johns Island, Kiawah, Seabrook, Wadmalaw, and Edisto.

St. Helena Sd. (SH) – from the South Edisto River and the southern end of Edisto Island to the south end of St. Helena Island, including Morgan and Coosaw Rivers.

Beaufort (BF) – from the south end of St. Helena Island to the Savannah River, including the Broad and Beaufort Rivers.