

**SALTWATER RECREATIONAL FISHERIES LICENSE PROGRAM
ANNUAL PROJECT SUMMARIES**

Project Title: Fish Stock Enhancement Research: Evaluating A Responsible Approach to Marine Finfish Stock Enhancement of Red Drum, Cobia and Striped Bass.

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Project Duration: July 1, 2009 through June 30, 2010

Project Objectives:

- Red drum carrying capacity and recruitment limitation research program:
 - Produce and stock 500,000 small juveniles (22 mm TL) in Cherry Grove, Ashley River and North Edisto to complement SG funded project goals of evaluating contribution of three stocking size classes within multiple estuaries (North Edisto stockings in collaboration with BBNFH).
- Striped bass restoration and habitat evaluation in the Ashley River:
 - Produce and stock 20,000 phase I juveniles (25 mm TL) and 5,000 phase II juveniles (125 mm TL) of the 2009 YC to continue our ongoing evaluation in the Ashley River (in collaboration with OGBNFH).
 - Produce and stock 20,000 phase I juveniles of the 2010 YC in headwaters of the Ashley River to complement our SK funded project’s phase I and Phase II stockings in the downstream areas of the Ashley River.
- Cobia ecology and life history research program in Port Royal Sound:
 - Produce and stock 500 large juveniles (250 mm TL) and 100 yearlings (500 mm TL).
 - Conduct plankton sampling to characterize spawning activity.
 - Coordinate field sample collection through tournaments, cooperating anglers and directed fishing efforts for life history evaluation.
- Use genetic markers for genetic broodstock management and continue our assessment of the contribution of past stocking experiments for all three species.

Summary of Activities:

- Red Drum:
 - During the fall of 2009, 1,562,456 small juvenile (28-35 mm TL) red drum were stocked into selected SC estuaries (Table 1). From this total, 461,159 were released in the North Edisto River, 471,373 in the Colleton River and 629,924 in the Ashley River.

Table 1. Red drum stocking summary from SRFAC funding including the year class, average length at release and estuary where fish were stocked.

Year Class	Number Stocked	Mean TL (mm)	Estuary
2009	461,159	28.4	North Edisto
2009	471,373	44.9	Colleton River
2009	629,924	35.7	Ashley River

- The genetics lab has processed a total of 1993 red drum samples with SRFAC funds since last July. We have completed the analysis of the 2007 year class North Edisto, Winyah Bay, Murrells Inlet and Little River samples, 2008 year class Ashley River, Murrells Inlet, Winyah Bay and Cherry Grove samples as well as the 2009 and 2010 broodstock (Table 2). Collections have just been completed for the 2008 year class in the North Edisto and will be processed and analyzed shortly.

Table 2. Red drum contribution summary from past stockings for which SRFAC funds were used to process and analyze field collected samples.

Year Class	Estuary	Stocking Treatment	Treatment Contribution (%)	Overall Contribution (%)
2007	North Edisto	Small	21.0	21.0
2007	Winyah Bay	Small	13.7	14.7
		Medium	1.0	
2007	Murrells Inlet	Small	7.5	9.0
		Medium	1.5	
2007	Little River	Small	9.3	9.3
		Medium	0	
2008	Winyah Bay	Small	12.9	16.5
		Medium	3.6	
2008	Murrells Inlet	Small	2.6	21.8
		Medium	19.2	
2008	Cherry Grove	Small	13.4	14.6
		Medium	1.2	
2008	Ashley River	Larvae	0.4	29.9
		Small	0	
		Medium	29.5	

- **Striped Bass:**

- For the 2009 Year Class, a total of 175,692 Phase I striped bass were stocked in the Ashley River (Table 3) with 93,481 fish released in the freshwater portion and 82,221 released in the brackish portion of the system. A total of 15,448 Phase II striped bass were stocked in the Ashley River with 10,448 released in the freshwater portion and 5,000 released in the brackish portion.
- For the 2010 Year Class, 24,050 Phase I striped bass (38 mm TL) were produced and stocked into the headwaters of the Ashley River (Shultz Lake) this past spring.

Table 3. Striped bass stocking summary of 2009 Year Class in the Ashley River. FW: freshwater, BW: brackish water.

Production Treatment		Stocking Location	Number Stocked	Mean Size at Stocking (TL(mm))
Phase I	FW Produced	FW	54,752	32.5
	FW Produced	BW	48,600	35.6
	BW Produced	FW	38,729	38.8
	BW Produced	BW	33,611	37.6
Phase II	FW Produced	FW	5,448	151.1
	FW Produced	BW	---	---
	BW Produced	FW	5,000	241.6
	BW Produced	BW	5,000	242.7

- The genetics lab processed the 2009 Year Class striped bass broodstock samples (n=298) with SRFAC funds during the last year. These data have been subsequently used to evaluate the field-collected samples from the Ashley River (processed with SK funds). We have completed the analysis of the samples collected June through December 2009, with 100% contribution of the 2009 YC stocked fish with all release treatments represented.
- Cobia:
 - Two size classes of cobia were produced and stocked during the fall of 2009 (Table 4). From the 2009 Year Class, 1,392 large juveniles were released into the Port Royal Sound estuary and 54 yearlings from the 2008 Year Class were externally tagged and released at the same location.

Table 4. Cobia stocking summary from SRFAC funding including year class and average length at release.

Year Class	Number Stocked	Mean TL (mm)
2009	1,392	228
2008	54	533

- The genetics lab processed 328 cobia samples with SRFAC funds during the past year. We have completed the analysis of the 2009 field-collected samples as well as the 2009 and 2010 broodstock (Table 2). During their first potential year of recruitment to the collecting gear, the 2007 YC stocked fish made a 2.3% contribution to the entire population and ~50% contribution to the 2007 YC (estimates range from 33-66% depending on method of identifying year class). The 2010 field collections will allow for better evaluation of the 2007 YC as they will be fully recruited during that collection period.
- A total of 201 (2009 field-collected) samples from SC were processed for life history information such as length, weight and age. Additionally, 25 of the 48 plankton samples taken during the 2009 season have been sorted and cobia eggs and larvae have been identified in the samples suggesting they are spawning in Broad river.

- During spring 2010, approximately 220 field samples were collected for full analysis (length, weight, gonad histology, age, genetics) while an additional 35 samples were collected for length, weight and genetic analyses. Additionally, the third season of plankton sampling was completed, with a total of 50 plankton tows during 2010. Processing of these 2010 collected samples will begin this fall.