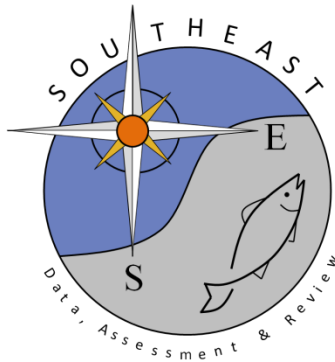


**South Carolina Tidal Creek Temperatures  
Preliminary Data Summary  
James Island Creek Temperature Monitoring Program**

Eric Hiltz

SEDAR-PW6-WP09

Submitted: 24 June 2014



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South Carolina Tidal Creek Temperatures  
Preliminary Data Summary  
James Island Creek Temperature Monitoring Program

Eric Hiltz, SCDNR

SEDAR-PW6-WP09

### Abstract:

From 2007 to 2012 the SCDNR monitored the temperatures of tidal creeks around the area of James Island near Charleston, SC. The monitoring system consisted of 7 to 9 HOBOWare temperature loggers hung off of private docks that recorded temperatures every 15 minutes.

### Introduction:

In May of 2007 SCDNR implemented a temperature monitoring system in the tidal creeks of James Island in Charleston, SC. Initially this system consisted of 7 HOBOWare temperature loggers hung and weighted to the ground off of private docks in various creeks (Figure 1). In 2011, 2 other monitors were added to the system to represent creeks outside of the James Island area. These temperature loggers recorded the temperature of the water every 15 minutes which was uploaded to a database every 3 months. The creeks that the loggers were placed in were both secondary and primary tidal creeks which ranged in depth from 1 to 10 feet on low tide (Table 1). For an overview of daily averages of temperatures collected see Figure 2. Due to loggers being removed from docks, equipment malfunctions, and a reduction in workforce the program was terminated in late 2012. It is recommended that this data be used along with tidal frequencies and air and nearby major water body temperatures to create a predictive model of tidal creek temperatures.

Tables:

Table 1. Temperature logger location details. Logger ID identifies the loggers on the map in Figure 1.

Logger ID	Depth at Low Tide (ft)	Creek Type	Area
1	4	Secondary	James Island Creek
2	6	Secondary	James Island Creek
3	10	Primary	James Island Creek
4	7	Primary	James Island Creek
5	2	Primary	James Island Creek
6	1.5	Secondary	James Island Creek
7	1	Secondary	James Island Creek
8	5	Secondary	Ashley River
9	2	Secondary	Folly River

## Figures:

Figure 1. Locations of temperature loggers used in the SCDNR tidal creek monitoring system. See Table 1 for details about each location.

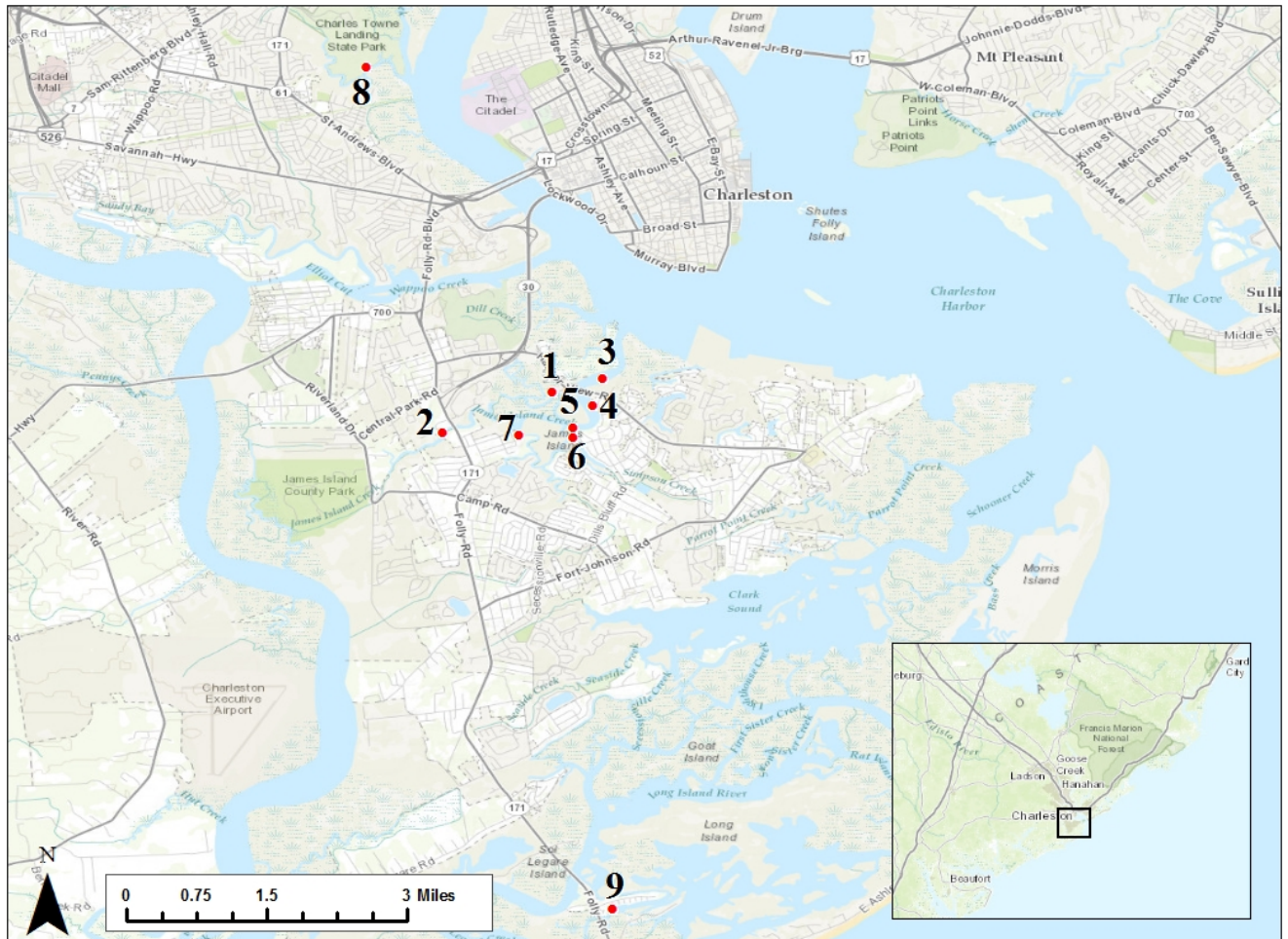


Figure 2. Average daily temperatures of James Island creeks versus the average daily temperatures of Charleston harbor from 2008 to 2011.

