

ACE Basin (ACE) National Estuarine Research Reserve Water Quality Metadata
January-December 2012 Report
Latest Update: 06/08/2020

I. Data Set and Research Descriptors

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2) Entry verification

Deployment data are uploaded from the YSI data logger to a Personal Computer (IBM compatible). Files are exported from EcoWatch in a comma-delimited format (.CDF), EcoWatch Lite in a comma separated file (CSV) or KOR Software in an Excel File (.XLS) and uploaded to the CDMO where they undergo automated primary QAQC; automated depth/level corrections for changes in barometric pressure (cDepth or cLevel parameters); and become part of the CDMO's online provisional database. All pre- and post-deployment data are removed from the file prior to upload. During primary QAQC, data are flagged if they are missing or out of sensor range. The edited file is then returned to the Reserve for secondary QAQC where it is opened in Microsoft Excel and processed using the CDMO's NERRQAQC Excel macro. The macro inserts station codes, creates metadata worksheets for flagged data and summary statistics, and graphs the data for review. It allows the user to apply QAQC flags and codes to the data, remove any overlapping deployment data, append files, and export the resulting data file for upload to the CDMO. Upload after secondary QAQC results in ingestion into the database as provisional plus data, recalculation of cDepth or cLevel parameters, and finally tertiary QAQC by the CDMO and assimilation into the CDMO's authoritative online database. Where deployment overlap occurs between files, the data produced by the newly calibrated sonde is generally accepted as being the most accurate. For more information on QAQC flags and codes, see Sections 11 and 12.. Amanda Fornal, Chuck Tucker and Saundra Upchurch were responsible for these tasks. In 2016, the CDMO allowed the ACE Basin NERR to edit the 2012 data prior to the CDMO reviewing it. This editing process was accomplished by Denise Sanger, Saundra Upchurch, Amanda Fornal, and Meghan Miller.

3) Research objectives

Long-term water quality monitoring in the ACE Basin provides a unique opportunity to increase understanding of how various environmental factors influence estuarine processes. Based on discussions with local Coastal Zone Management (CZM) personnel and ACE Basin NERR staff knowledge of land use within the Reserve, the South Edisto River drainage basin was selected because it is well suited for studying contrasting hydrographic conditions and land use patterns.

The two major objectives of the ACE Basin monitoring program are: 1) compare water quality conditions in shallow creeks along a salinity gradient and at different levels of development in the South Edisto River watershed and 2) track changes to the saltwater demarcation line in the South Edisto River as a result of prolonged drought, extraction of river water, and sea level rise.

The program began on March 3, 1995 in two tributaries of the South Edisto River, Big Bay Creek and St. Pierre Creek; in October 2002, monitoring stations were established in Fishing Creek and in Mosquito Creek, tributaries of the South Edisto River.

Four primary monitoring stations (Big Bay Creek, Fishing Creek, Mosquito Creek and St. Pierre Creek) are used to study contrasting land use patterns in the reserve. The two “treatment” sites are Big Bay Creek and Mosquito Creek, where boat traffic is moderate to heavy and residential and commercial development is medium to dense. St. Pierre Creek and Fishing Creek, where boat traffic is light and development is sparse, are designated as “control” sites. The four sites are located along a salinity gradient ranging from the polyhaline (Big Bay Creek & St. Pierre Creek) to mesohaline (Mosquito Creek) to oligohaline (Fishing Creek). See *Section 5 - Site Location and Character* for detailed descriptions of the sites.

YSI electronic data loggers are deployed to monitor the water temperature, specific conductance, dissolved oxygen, water level, pH and turbidity conditions, approximately 0.5 meters above the creek bottom. Turbidity monitoring was added to the program on April 11, 1996. Initially the loggers measured the parameters at 15 minute intervals; on August 11, 1995, the sampling interval was changed to 30 minutes; and on December 12, 2007, the sampling interval was changed back to 15 minutes

4) Research methods

One YSI 6600 series data logger is deployed at each monitoring station (Big Bay Creek, St. Pierre Creek, Fishing Creek, and Mosquito Creek). The data logger is attached to a deployment mount at each station to ensure that the sensor is positioned approximately 0.5 m from the creek bottom during a deployment. At each monitoring station, the deployment mount consists of a PVC pipe that is attached vertically to a stable structure. To facilitate water flow across the sensors, approximately two-inch diameter holes are drilled into the PVC pipes.

A Sutron Sat-Link2 transmitter was installed at the St. Pierre station on 06/28/2006 and transmits data to the NOAA GOES satellite, NESDIS ID #3b02f20a. The St. Pierre transmissions are scheduled hourly and contain four (4) data sets reflecting fifteen minute data sampling intervals. Upon receipt by the CDMO, the data undergoes the same automated primary QAQC process detailed in Section 2 above. The “real-time” telemetry data become part of the provisional dataset until undergoing secondary and tertiary QAQC and assimilation in the CDMO’s authoritative online database. Provisional and authoritative data are available at <http://cdmo.baruch.sc.edu>.

To minimize fouling (i.e. settlement of barnacles and sponges) of data loggers, new sensors are wrapped in nonconductive copper tape. A plastic mesh is wrapped around the sensor guard to keep out large animals (i.e. crabs, fish). In addition, fouling organisms within the PVC deployment mounts are removed during sampling (bimonthly during April to September and monthly during October to March).

The data loggers are deployed for one to two weeks during the summer months (April – September), and the sampling period is extended up to one month during the cooler months (October – March). A data logger is retrieved and replaced with a newly calibrated data logger prior to a 15-minute reading to prevent interruption of data collection. The final reading of a deployment is a check against the newly deployed data logger to determine how much drift in the readings occurred during the previous deployment. This was conducted by removing the deployed logger from the deployment tube and placing it at a non-standardized depth next to the newly calibrated logger. Meteorological conditions (i.e. precipitation and wind speed and direction) also are recorded at Bennett's Point.

When the data loggers are retrieved, they are taken to the laboratory for cleaning, post-deployment checks and servicing, in accordance with guidelines set by YSI Operating and Service Manual. Upon returning to the laboratory, the data are downloaded, and the dataset is reviewed to determine if any equipment malfunctions occurred during deployment that need immediate attention. Post-deployment checks of all the parameters except turbidity are done before cleaning the data loggers. Turbidity checks are performed after cleaning the data loggers to prevent contamination of the standard. Sensors are immersed in the appropriate standard solutions (i.e. pH) and readings are recorded. A DO membrane integrity test also is conducted to determine if the membrane was damaged during deployment.

A series of diagnostic values, including dissolved oxygen charge, dissolved oxygen gain, and pH millivolt value at pH 7 and at pH 10, are recorded during calibration and post-deployment checks of data loggers. These diagnostic values are strong indicators of the individual sensor performance, and they are used to determine the accuracy of the data.

Before the data loggers are deployed, dissolved oxygen (DO) membranes are changed and allowed to stretch for 24 hours, and the voltage of the batteries are checked. Next, the pH, conductivity, and turbidity sensors are calibrated, using the following standards: pH 7 and 10, 50 mS/cm potassium chloride solution, and 0 and 126 NTU solutions. The water depth sensor is zeroed in air, and the barometric pressure in the laboratory is recorded. Before leaving the laboratory the following day, the DO sensor is calibrated in air-saturated water at the barometric pressure reading (mmHg) within the lab. For additional information regarding the depth sensor and how an offset is used please refer to the section labeled "Depth Qualifier." In addition to the procedures outlined in the CDMO manual, we conduct a DO membrane integrity test prior to deployment to determine if the membrane was installed properly or was damaged during calibration.

5) Site location and character

ACE Basin National Estuarine Research Reserve is one of the largest undeveloped estuaries on the East Coast. The study area encompasses the Ashpoo, Combahee and South Edisto River basins, which empty into St. Helena Sound. The NERR consists of approximately 60,702 ha (150,000 acres) of diverse estuarine wetlands providing preserved habitats for fish and wildlife.

The South Edisto River has a drainage area of approximately 394,176 ha (974,030 ac), encompassing the area between Four Holes Swamp and St. Helena Sound. The river receives considerable input of freshwater (average annual streamflow is 74 m³/s, 2613.29 ft³/sec). The official saltwater-freshwater demarcation line on the river lies at river mile 20 (32.19 km); however, during periods of very low flow, the saltwater interface can intrude to river mile 32 (51.5 km), which is approximately 12 river miles (19.31 km) from the inland boundary of the reserve. Salt marshes of smooth cordgrass (*Spartina alterniflora*) dominate the wetlands in the polyhaline and mesohaline, while waterfowl impoundments are the dominant land cover in the oligohaline and limnetic waters.

The average tidal range in the South Edisto River is approximately 2.0 m (6.6 ft), with a maximum of 2.8 m (9.2 ft) and a minimum of 1.4 m (4.6 ft). The bottom habitat at all stations consists of mud which is intermixed with dead shell hash at the saltwater sites.

Station Code	SWMP Status	Station Name	Location	Active Dates	Reason Decommissioned	Notes
acebbwq	P	Big Bay	32.4941 N -80.3241 W	03/01/1995 00:00 - current	NA	NA
acefcwq	P	Fishing Creek	32.63593 N -80.36556 W	10/01/2002 00:00 - current	NA	NA
acemcwq	P	Mosquito Creek	32.5558 N -80.4380 W	10/01/2002 00:00 - current	NA	NA
acespwq	P	St. Pierre	32.52800 N -80.36144 W	03/01/1995 00:00 - current	NA	NA
acercwq	P	Rock Creek	32.54850 N -80.50361 W	03/01/1996 00:00 - 05/01/1996 00:00	see Rock Creek description	NA

Primary Monitoring Stations

Three of the four primary stations (Edisto Island, Fishing Creek, and St. Pierre Creek) are in tributaries of the South Edisto River and one station (Mosquito Creek) is in a tributary of both the South Edisto and Ashepoo rivers. The descriptions of the sites are as follow:

Big Bay (BB) - GPS coordinates: 32.4941 N and -80.3241 W

This monitoring station is in Big Bay Creek proper, approximately 2 km (1.24 mi) from the mouth of the creek and is located about 5 m (16.41 ft) from the southern bank of the creek. In 2012, the mean depth at the station was 2.29 m (7.51 ft), and the mean salinity was 33.4 parts per thousand (ppt).

This monitoring station was in Big Bay Creek proper, approximately 2 km (1.24 mi) from the mouth of the creek and was located about 5 m (16.41 ft) from the southern bank of the creek. It was a "treatment" site because it was subject to nonpoint source pollution and was surrounded by moderate level of development. The southern bank of the Big Bay Creek near this station was bordered by residential and commercial development, with little setback from the bordering *Spartina alterniflora* marsh. For instance, there are over forty private docks, two commercial seafood docks and a marina with 75 slips, three paved boat ramps, and two fueling areas along the southern bank. Docks and bulkheads are constructed of concrete, or creosote, CCA-treated or Wolmanized material. Boat traffic was heavy, especially during the warmer months, and the creek is closed to shellfish harvesting because of the surrounding human activities. The major sources of nonpoint source pollution were surface runoff from lawns, golf courses, and paved ramps that contain fertilizers, pesticides, herbicides and PAHs. All of the high ground along the southern bank was developed (i.e., residential homes, condominiums and restaurants); and maritime plant communities have been replaced by golf courses, lawns and ornamental gardens. Small patches of a few maritime species (i.e. live oak (*Quercus virginiana*), cabbage palmetto (*Sabal palmetto*), and Southern red cedar (*Juniperus silicicola*)) are found along the roads. In contrast, the northern bank was bordered by a wide expanse of *Spartina alterniflora* marsh, and no high ground is present. American oyster (*Crassostrea virginica*) forms a reef along the creek banks, especially the northern side, and on intertidal mud flats within the creek. The site was moved to Edisto Island due to the dock upon which it was located was owned by a private individual that was not maintaining the structure. Water quality data was collected at both stations for 8 months and the overall results were very similar.

Fishing Creek (FC) – GPS coordinates: 32.6358 N and -80.3655 W

This monitoring station is in a tributary of Fishing Creek, approximately 2 km (1.08 nautical miles) from the mouth of the creek and is located approximately 5 m (16.41 ft) from the northern bank of the creek. The tributary flows through the eastern half of Jehossee Island, a Wildlife Management Area (WMA) protected by the USFWS, and Fishing Creek forms the northeast border of the island. The station is surrounded by extensive *Spartina cynosuroides* marsh and vast mud flats. The upland area is characterized by slash pine, live oak, and cabbage palmetto. In 2012, the mean depth at the station was 2.07 m (6.79 ft), and the mean salinity was 12.5 parts per thousand (ppt).

Fishing Creek monitoring station is designated as a "control" site because there is no development in the immediate area, and boat traffic is relatively light in the creek. The WMA contains impoundments (formerly rice fields) that are managed as wildlife habitat for endangered fauna and migratory waterfowl. No pesticides or herbicides are applied to the wetlands. Water level in the wetland is regulated by rice trunks that control the flow of water between the impoundment and the South Edisto River.

Mosquito Creek (MC) – GPS coordinates: 32.5558 N and -80.4380 W

This monitoring station is in Mosquito Creek (a tributary of both the South Edisto and Ashepoo rivers), approximately 2.51 km (1.36 nautical miles) from the Ashepoo River and 12 km (6.48 nautical miles) from the South Edisto River, and it is approximately 5 m (16.41 ft) from the southern bank of the creek. In 2012, the mean depth at the station was 3.55 m (11.65 ft), and the mean salinity was 25.3 parts per thousand (ppt).

Mosquito Creek station is designated as a "treatment" site because of the land use practices in the surrounding area. Agriculture fields and impounded wetlands are found upstream of the monitoring station. Approximately fifteen docks constructed of creosote, concrete, Wolmanized or CCA treated wood; a public boat landing; a commercial seafood business with commercial shrimp boats and a fueling dock are located approximately 1.00 km (0.54 nautical miles) downstream of the monitoring station. The major contributor of nonpoint source pollution to the monitoring station is surface runoff from the impoundments and agricultural lands that contain high levels of nutrients and, at times, herbicides and pesticides. Impoundment trunks open and drain into the creek increasing the nutrient load and possibly introducing herbicides and pesticides. Vegetation in the area includes salt marsh dominated by *Spartina alterniflora* and *Juncus roemerianus*. Upland fringe areas consist of cabbage palmetto, live oaks and pine trees.

St. Pierre Creek (SP) - GPS coordinates: 32.52800 N and -80.36144 W

This monitoring station is in a small tributary of St. Pierre Creek, approximately 0.25 km (0.13 nautical miles) from the mouth of the creek, and it is approximately 5 m (16.41 ft) from the northern bank of the creek. The tributary flows through the southern portion of Bailey Island, and the creek forms the eastern border of the island. The monitoring station is surrounded by a wide expanse of *Spartina alterniflora* marsh. Extensive mud flats and oyster reefs fringe the banks. Maritime forest communities comprised of species such as wax myrtles (*Morella cerifera*), live oaks (*Quercus virginiana*), and palmettos dominate the upland areas. In 2012, the mean depth at the station was 2.13 m (6.99 ft), and the mean salinity was 32.7 parts per thousand (ppt).

The St. Pierre Creek station is designated as a "control" site because development in the immediate area was sparse when the station was established on March 3, 1995, and the tributary is subject to relatively light boat traffic. In 1996, the 695-acre island was sold, and the owners partnered with The Nature Conservancy to design a conservation-based development. Four hundred and three acres in the center of Bailey Island were set aside as a nature preserve that is managed by The Nature Conservancy, and the number of residential lots on the remaining 292 acres is limited to 67. Access to the island is limited to one bridge and all roads on the island are single lane and made of crushed seashells. In addition, a conservation manual was developed for the property owners that provide specific lot designs and construction guidelines as well as landscaping guidelines to protect the maritime and estuarine habitats.

Inactive Monitoring Stations

Rock Creek is an inactive station, and the description of the site is as follows:

The Rock Creek site was located near an impoundment on North Hutchinson Island. The site was surrounded by *Spartina alterniflora* marsh, and the upland areas were dominated by maritime forest with wax myrtles, live oaks, and palmettos. An impoundment (a managed wildlife habitat) bordered the *Spartina alterniflora* marsh near the site, and the outlet canal for the impoundment was about one meter away from the site. There was no development and very little boat traffic in this portion of the Reserve. The site was discontinued due to the loss of the deployment mount and data logger in July 1995.

6) Data collection period

The end times below marked with an asterisk (*) coincide with the last actual reading in that deployment so the times will not be in consecutive order with the following deployment begin time. The gap between the end time of one deployment and the begin time of the next deployment is attributed to either missing or rejected data due to in field maintenance, in-situ readings, battery failure, or collector error. For further information refer to the “Data Flagging and Editing” section.

Big Bay

BEGAN	ENDED	SONDE
12/14/2011 – 13:15	* 01/17/2012 – 08:15	6600 EDS/V2
01/17/2012 – 08:45	* 02/14/2012 – 11:15	6600 EDS/V2
02/22/2012 – 12:45	* 03/21/2012 – 10:45	6600 EDS/V2
03/21/2012 – 11:15	* 04/04/2012 – 10:15	6600 EDS/V2
04/04/2012 – 10:45	* 04/18/2012 – 09:45	6600 EDS/V2
04/18/2012 – 10:15	* 05/02/2012 – 10:15	6600 EDS/V2
05/02/2012 – 11:00	* 05/16/2012 – 09:00	6600 EDS/V2
05/16/2012 – 09:30	* 06/13/2012 – 08:00	6600 EDS/V2
06/13/2012 – 08:30	* 06/29/2012 – 09:15	6600 EDS/V2
06/29/2012 – 09:45	* 07/18/2012 – 11:00	6600 EDS/V2
07/18/2012 – 11:30	* 07/31/2012 – 09:30	6600 EDS/V2
07/31/2012 – 10:00	* 08/15/2012 – 09:30	6600 EDS/V2
08/15/2012 – 10:00	* 08/27/2012 – 11:00	6600 EDS/V2
08/27/2012 – 11:30	09/12/2012 – 09:00	6600 EDS/V2
09/12/2012 – 09:15	09/26/2012 – 10:00	6600 EDS/V2
09/26/2012 – 10:15	* 10/21/2012 – 23:30	6600 EDS/V2
10/24/2012 – 08:45	11/29/2012 – 12:15	6600 EDS/V2
11/29/2012 – 12:30	12/12/2012 – 12:00	6600 EDS/V2
12/12/2012 – 12:15	01/09/2013 – 10:45	6600 EDS/V2

Fishing Creek

BEGAN	ENDED	SONDE
12/14/2011 – 14:15	* 01/17/2012 – 11:15	6600 EDS/V2
01/17/2012 – 11:45	* 02/22/2012 – 13:15	6600 EDS/V2
02/22/2012 – 13:45	* 03/21/2012 – 12:30	6600 EDS/V2
03/21/2012 – 13:00	* 04/04/2012 – 11:15	6600 EDS/V2
04/04/2012 – 11:45	* 04/18/2012 – 10:45	6600 EDS/V2
04/18/2012 – 11:15	* 05/02/2012 – 11:45	6600 EDS/V2
05/02/2012 – 12:15	* 05/16/2012 – 10:00	6600 EDS/V2
05/16/2012 – 10:30	* 06/13/2012 – 08:45	6600 EDS/V2
06/13/2012 – 09:15	* 06/29/2012 – 10:15	6600 EDS/V2
06/29/2012 – 10:45	* 07/18/2012 – 12:00	6600 EDS/V2
07/18/2012 – 12:30	* 07/31/2012 – 10:30	6600 EDS/V2
07/31/2012 – 11:00	* 08/15/2012 – 10:30	6600 EDS/V2
08/15/2012 – 11:00	* 08/27/2012 – 12:00	6600 EDS/V2
08/27/2012 – 12:30	09/12/2012 – 10:00	6600 EDS/V2
09/12/2012 – 10:15	09/26/2012 – 11:00	6600 EDS/V2
09/26/2012 – 11:15	10/24/2012 – 09:15	6600 EDS/V2
10/24/2012 – 09:30	12/12/2012 – 12:45	6600 EDS/V2
12/12/2012 – 13:00	01/09/2013 – 11:45	6600 EDS/V2

Mosquito Creek

BEGAN	ENDED	SONDE
12/14/2011 – 15:00	* 01/17/2012 – 10:30	6600 EDS/V2
01/17/2012 – 11:00	* 02/22/2012 – 14:30	6600 EDS/V2
02/22/2012 – 15:00	* 03/21/2012 – 11:30	6600 EDS/V2
03/21/2012 – 12:00	* 04/04/2012 – 12:15	6600 EDS/V2
04/04/2012 – 12:45	* 04/18/2012 – 11:45	6600 EDS/V2
04/18/2012 – 12:15	* 05/02/2012 – 09:00	6600 EDS/V2
05/02/2012 – 09:30	* 05/16/2012 – 11:00	6600 EDS/V2
05/16/2012 – 11:30	* 06/13/2012 – 09:30	6600 EDS/V2
06/21/2012 – 12:45	* 06/29/2012 – 11:00	6600 EDS/V2
06/29/2012 – 11:30	* 07/18/2012 – 13:30	6600 EDS/V2
07/18/2012 – 14:00	* 07/31/2012 – 11:15	6600 EDS/V2
07/31/2012 – 11:45	* 08/15/2012 – 11:30	6600 EDS/V2
08/15/2012 – 12:00	* 08/27/2012 – 09:30	6600 EDS/V2
08/27/2012 – 10:00	09/12/2012 – 10:45	6600 EDS/V2
09/12/2012 – 11:00	09/26/2012 – 11:45	6600 EDS/V2
09/26/2012 – 12:00	10/24/2012 – 10:00	6600 EDS/V2
10/24/2012 – 10:15	11/29/2012 – 14:00	6600 EDS/V2
11/29/2012 – 14:15	12/12/2012 – 13:45	6600 EDS/V2
12/12/2012 – 14:00	01/09/2013 – 12:30	6600 EDS/V2

St. Pierre Creek

BEGAN	ENDED	SONDE
12/14/2011 – 12:30	* 01/12/2012 – 13:15	6600 EDS/V2
01/12/2012 – 13:45	* 01/25/2012 – 10:45	6600 EDS/V2
01/25/2012 – 11:15	* 02/22/2012 – 11:30	6600 EDS/V2
02/22/2012 – 12:00	* 03/21/2012 – 09:45	6600 EDS/V2
03/21/2012 – 10:15	* 04/04/2012 – 09:30	6600 EDS/V2
04/04/2012 – 10:00	* 04/18/2012 – 09:00	6600 EDS/V2
04/18/2012 – 09:30	* 05/02/2012 – 09:45	6600 EDS/V2
05/02/2012 – 10:15	* 05/16/2012 – 08:15	6600 EDS/V2
05/16/2012 – 08:45	* 06/13/2012 – 07:30	6600 EDS/V2
06/13/2012 – 08:00	* 06/29/2012 – 08:45	6600 EDS/V2
06/29/2012 – 09:15	* 07/18/2012 – 10:30	6600 EDS/V2
07/18/2012 – 11:00	* 07/31/2012 – 09:00	6600 EDS/V2
07/31/2012 – 09:30	* 08/15/2012 – 09:00	6600 EDS/V2
08/15/2012 – 09:30	* 08/27/2012 – 10:30	6600 EDS/V2
08/27/2012 – 11:00	09/12/2012 – 08:30	6600 EDS/V2
09/12/2012 – 08:45	* 09/26/2012 – 09:30	6600 EDS/V2
09/26/2012 – 10:00	10/24/2012 – 08:00	6600 EDS/V2
10/24/2012 – 08:15	11/29/2012 – 11:30	6600 EDS/V2
11/29/2012 – 11:45	12/12/2012 – 11:30	6600 EDS/V2
12/12/2012 – 11:45	01/09/2013 – 10:15	6600 EDS/V2

7) Distribution

NOAA retains the right to analyze, synthesize and publish summaries of the NERRS System-wide Monitoring Program data. The NERRS retains the right to be fully credited for having collected and process the data. Following academic courtesy standards, the NERR site where the data were collected should be contacted and fully acknowledged in any subsequent publications in which any part of the data are used. The data set enclosed within this package/transmission is only as good as the quality assurance and quality control procedures outlined by the enclosed metadata reporting statement. The user bears all responsibility for its subsequent use/misuse in

any further analyses or comparisons. The Federal government does not assume liability to the Recipient or third persons, nor will the Federal government reimburse or indemnify the Recipient for its liability due to any losses resulting in any way from the use of this data.

Requested citation format:

NOAA National Estuarine Research Reserve System (NERRS). System-wide Monitoring Program. Data accessed from the NOAA NERRS Centralized Data Management Office website: <http://www.nerrdata.org/>; accessed 12 October 2012.

NERR water quality data and metadata can be obtained from the Research Coordinator at the individual NERR site (please see Principal Investigators and Contact Persons), from the Data Manager at the Centralized Data Management Office (please see personnel directory under the general information link on the CDMO home page) and online at the CDMO home page www.nerrdata.org. Data are available in comma delimited format.

8) Associated researchers and projects

As part of the System-wide Monitoring Program (SWMP), nutrient and weather data are gathered at the ACE NERR in conjunction with water quality data obtained by YSI 6600-EDS data loggers and meteorological data obtained by a Campbell Scientific CR1000 data logger. Diel nutrient samples are gathered once per month at the St. Pierre water quality monitoring station, and grab samples are obtained at each of the four sites once per month. The concentrations of the following parameters are measured and recorded for the nutrient monitoring program: ammonium (NH₄), nitrite + nitrate (NO₂ + NO₃), ortho-phosphate (PO₄), and chlorophyll-A (Chl-a). Real-time weather data are gathered 24/7 and is transmitted to the Centralized Data Management Office (CDMO). Historic water quality, nutrient, and weather data can be obtained at <http://cdmo.baruch.sc.edu>. Information about other studies conducted in the ACE Basin may be obtained from the ACE NERR Research Coordinator.

II. Physical Structure Descriptors

9) Sensor specifications

ACE NERR deployed only 6600 EDS/V2 data loggers at the four sites (Big Bay [BB], Fishing Creek [FC], Mosquito Creek [MC], and St. Pierre Creek [SP]) in 2012. All 6600 data loggers were configured the same.

YSI 6600EDS/V2 data sonde:

Parameter: Temperature
Units: Celsius (C)
Sensor Type: Thermistor
Model#: 6560
Range: -5 to 50 C
Accuracy: +/- 0.15
Resolution: 0.01 C

Parameter: Conductivity
Units: milli-Siemens per cm (mS/cm)
Sensor Type: 4-electrode cell with auto ranging
Model#: 6560
Range: 0 to 100 mS/cm

Accuracy: $\pm 0.5\%$ of reading + 0.001 mS/cm
Resolution: 0.001 mS/cm to 0.1 mS/cm (range dependent)

Parameter: Salinity
Units: parts per thousand (ppt)
Sensor Type: Calculated from conductivity and temperature
Range: 0 to 70 ppt
Accuracy: $\pm 1.0\%$ of reading or 0.1 ppt, whichever is greater
Resolution: 0.01 ppt

Parameter: Dissolved Oxygen % saturation
Units: percent air saturation (%)
Sensor Type: Rapid Pulse - Clark type, polarographic
Model#: 6562
Range: 0 to 500% air saturation
Accuracy: 0-200% air saturation: $\pm 2\%$ of the reading or 2% air saturation, whichever is greater; 200 to 500% air saturation: $\pm 6\%$ of the reading
Resolution: 0.1% air saturation

Parameter: Dissolved Oxygen mg/L (Calculated from % air saturation, temperature, and salinity)
Units: milligrams/Liter (mg/L)
Sensor Type: Rapid Pulse - Clark type, polarographic
Model#: 6562
Range: 0 to 50 mg/L
Accuracy: 0 to 20 mg/L: $\pm 2\%$ of the reading or 0.2 mg/L, whichever is greater
20 to 50 mg/L: $\pm 6\%$ of the reading
Resolution: 0.01 mg/L

Parameter: Depth (non-vented level – medium)
Units: meters (m)
Sensor Type: 6600 integrated stainless steel strain gauge
Model#: 6600 EDS/V2
Range: 0 to 61 m
Accuracy: ± 0.12 m
Resolution: 0.001 m

Parameter: pH – bulb probe
Units: pH units
Sensor Type: Glass combination electrode
Model#: 6561
Range: 0 to 14 units
Accuracy: ± 0.2 units
Resolution: 0.01 units

Parameter: Turbidity
Units: nephelometric turbidity units (NTU)
Sensor Type: Optical, 90 degree scatter, with mechanical cleaning
Model#: 6136
Range: 0 to 1000 NTU
Accuracy: $\pm 2\%$ of reading or 0.3 NTU (whichever is greater)
Resolution: 0.1 NTU

Dissolved Oxygen Qualifier (Rapid Pulse / Clark type sensor):

The reliability of dissolved oxygen (DO) data collected with the rapid pulse / Clark type sensor after 96 hours post-deployment for non-EDS (Extended Deployment System) data sondes may be problematic due to fouling which forms on the DO probe membrane during some deployments (Wenner et al. 2001). Some Reserves utilize the YSI 6600 EDS data sondes, which increase DO accuracy and longevity by reducing the environmental effects of fouling. Optical DO probes have further improved data reliability. The user is therefore advised to consult the metadata for sensor type information and to exercise caution when utilizing rapid pulse / Clark type sensor DO data beyond the initial 96-hour time period. Potential drift is not always problematic for some uses of the data, i.e. periodicity analysis. It should also be noted that the amount of fouling is very site specific and that not all data are affected. If there are concerns about fouling impacts on DO data beyond any information documented in the metadata and/or QAQC flags/codes, please contact the Research Coordinator at the specific NERR site regarding site and seasonal variation in fouling of the DO sensor.

Depth Qualifier:

The NERR System-Wide Monitoring Program utilizes YSI data sondes that can be equipped with either vented or non-vented depth/level sensors. Readings for both vented and non-vented sensors are automatically compensated for water density change due to variations in temperature and salinity; but for all non-vented depth measurements, changes in atmospheric pressure between calibrations appear as changes in water depth. The error is equal to approximately 1.03 cm for every 1 millibar change in atmospheric pressure and is eliminated for vented sensors because they are vented to the atmosphere throughout the deployment time interval.

Beginning in 2006, NERR SWMP standard calibration protocol calls for all non-vented depth sensors to read 0 meters at a (local) barometric pressure of 1013.25 mb (760 mm/hg). To achieve this, each site calibrates their depth sensor with a depth offset number, which is calculated using the actual atmospheric pressure at the time of calibration and the equation provided in the SWMP calibration sheet or digital calibration log. This offset procedure standardizes each depth calibration for the entire NERR System. If accurate atmospheric pressure data are available, non-vented sensor depth measurements at any NERR can be corrected.

In 2010, the CDMO began automatically correcting depth/level data for changes in barometric pressure as measured by the Reserve's associated meteorological station during data ingestion. These corrected depth/level data are reported as cDepth and cLevel, and are assigned QAQC flags and codes based on QAQC protocols. Please see sections 11 and 12 for QAQC flag and code definitions.

NOTE: older depth data cannot be corrected without verifying that the depth offset was in place and whether a vented or non-vented depth sensor was in use. No SWMP data prior to 2006 can be corrected using this method. The following equation is used for corrected depth/level data provided by the CDMO beginning in 2010: $((1013-BP)*0.0102)+\text{Depth/Level} = \text{cDepth/cLevel}$

Salinity Units Qualifier:

In 2013, EXO sondes were approved for SWMP use and began to be utilized by Reserves. While the 6600 series sondes report salinity in parts per thousand (ppt) units, the EXO sondes report practical salinity units (psu). These units are essentially the same and for SWMP purposes are understood to be equivalent, however psu is considered the more appropriate designation. Moving forward the NERR System will assign psu salinity units for all data regardless of sonde type.

Turbidity Qualifier:

In 2013, EXO sondes were approved for SWMP use and began to be utilized by Reserves. While the 6600 series sondes report turbidity in nephelometric turbidity units (NTU), the EXO sondes use formazin nephelometric units (FNU). These units are essentially the same but indicate a difference in sensor methodology, for SWMP purposes they will be considered equivalent. Moving forward, the NERR System will use FNU/NTU as the designated

units for all turbidity data regardless of sonde type. If turbidity units and sensor methodology are of concern, please see the Sensor Specifications portion of the metadata.

Chlorophyll Fluorescence Disclaimer:

YSI chlorophyll sensors (6025) are designed to serve as a proxy for chlorophyll concentrations in the field for monitoring applications and complement traditional lab extraction methods; therefore, there are accuracy limitations associated with the data that are detailed in the YSI manual including interference from other fluorescent species, differences in calibration method, and effects of cell structure, particle size, organism type, temperature, and light on sensor measurements.

10) Coded variable definitions

Sampling Station:	Sampling site code:	Station Code:
St. Pierre Creek	SP	acespwq
Big Bay Creek	BB	acebbwq
Fishing Creek	FC	acefcwq
Mosquito Creek	MC	acemcwq

11) QAQC flag definitions

QAQC flags provide documentation of the data and are applied to individual data points by insertion into the parameter's associated flag column (header preceded by an F_). During primary automated QAQC (performed by the CDMO), -5, -4, and -2 flags are applied automatically to indicate data that is missing and above or below sensor range. All remaining data are then flagged 0, passing initial QAQC checks. During secondary and tertiary QAQC 1, -3, and 5 flags may be used to note data as suspect, rejected due to QAQC, or corrected.

- 5 Outside High Sensor Range
- 4 Outside Low Sensor Range
- 3 Data Rejected due to QAQC
- 2 Missing Data
- 1 Optional SWMP Supported Parameter
- 0 Data Passed Initial QAQC Checks
- 1 Suspect Data
- 2 Open - reserved for later flag
- 3 Calculated data: non-vented depth/level sensor correction for changes in barometric pressure
- 4 Historical Data: Pre-Auto QAQC
- 5 Corrected Data

12) QAQC Code Definitions

QAQC codes are used in conjunction with QAQC flags to provide further documentation of the data and are also applied by insertion into the associated flag column. There are three (3) different code categories, general, sensor, and comment. General errors document general problems with the deployment or YSI datasonde, sensor errors are sensor specific, and comment codes are used to further document conditions or a problem with the data. Only one general or sensor error and one comment code can be applied to a particular data point, but some comment codes (marked with an * below) can be applied to the entire record in the F_Record column.

General Errors

GIC	No instrument deployed due to ice
GIM	Instrument malfunction
GIT	Instrument recording error; recovered telemetry data
GMC	No instrument deployed due to maintenance/calibration

GNF	Deployment tube clogged / no flow
GOW	Out of water event
GPF	Power failure / low battery
GQR	Data rejected due to QA/QC checks
GSM	See metadata
Corrected Depth/Level Data Codes	
GCC	Calculated with data that were corrected during QA/QC
GCM	Calculated value could not be determined due to missing data
GCR	Calculated value could not be determined due to rejected data
GCS	Calculated value suspect due to questionable data
GCU	Calculated value could not be determined due to unavailable data

Sensor Errors

SBO	Blocked optic
SCF	Conductivity sensor failure
SCS	Chlorophyll spike
SDF	Depth port frozen
SDG	Suspect due to sensor diagnostics
SDO	DO suspect
SDP	DO membrane puncture
SIC	Incorrect calibration / contaminated standard
SNV	Negative value
SOW	Sensor out of water
SPC	Post calibration out of range
SQR	Data rejected due to QAQC checks
SSD	Sensor drift
SSM	Sensor malfunction
SSR	Sensor removed / not deployed
STF	Catastrophic temperature sensor failure
STS	Turbidity spike
SWM	Wiper malfunction / loss

Comments

CAB*	Algal bloom
CAF	Acceptable calibration/accuracy error of sensor
CAP	Depth sensor in water, affected by atmospheric pressure
CBF	Biofouling
CCU	Cause unknown
CDA*	DO hypoxia (<3 mg/L)
CDB*	Disturbed bottom
CDF	Data appear to fit conditions
CFK*	Fish kill
CIP*	Surface ice present at sample station
CLT*	Low tide
CMC*	In field maintenance/cleaning
CMD*	Mud in probe guard
CND	New deployment begins
CRE*	Significant rain event
CSM*	See metadata
CTS	Turbidity spike
CVT*	Possible vandalism/tampering
CWD*	Data collected at wrong depth
CWE*	Significant weather event

13) Post-deployment Information

Probe Identification:

Turbidity 6136 Probe

pH 6561 Probe

Specific Conductivity 6560 Probe

Standards for Calibration:

YSI 6073G Turbidity Standard

126 NTU

RICCA CHEMICAL COMPANY LLC.

Buffer 7.00 and 10.00

YSI 3169 Conductivity Calibrator 50 mS/cm +/- 1%

Big Bay

Deployment Date (m/d/y)	Post-Deployment Checks							
	SpCond (ms/cm)	DO 1 (100% sat)	DO 2 (100% sat)	pH (7)	pH (10)	Turb (NTU)	Turb (NTU)	Depth (m)
01/17/2012	50.09	108.9	109.0	7.11	10.13	0.3	124.0	-0.092
02/22/2012	49.75	101.8	101.9	7.12	10.10	0.1	121.4	0.069
03/21/2012	50.18	105.6	105.4	7.13	10.10	1.6	120.3	-0.111
04/04/2012	49.83	98.2	98.2	7.02	10.01	0.2	119.2	-0.012
04/18/2012	49.58	103.3	103.1	7.14	10.09	0.3	118.3	0.045
05/02/2012	50.76	95.0	94.7	7.17	10.05	0.3	114.3	-0.032
05/16/2012	50.68	102.5	102.5	7.10	9.87	0.2	113.2	0.022
06/13/2012	50.60	100.7	100.6	7.08	10.13	0.1	111.6	-0.010
06/29/2012	49.43	102.3	102.2	7.11	10.05	0.0	126.2	0.016
07/18/2012	50.42	77.5	77.4	7.15	10.11	0.6	122.7	-0.043
07/31/2012	49.60	106.0	106.0	7.07	10.16	1.3	123.3	-0.010
08/15/2012	48.87	98.5	98.2	7.04	9.98	0.0	123.1	-0.030
08/27/2012	51.48	107	107.1	7.12	10.03	0.1	127.3	0.075
09/12/2012	49.94	100.6	100.7	7.08	10.07	0.2	126.0	0.044
09/26/2012	49.58	99.7	100.1	7.01	9.87	0.0	126.0	0.013
10/24/2012	50.52	93.9	93.9	7.12	10.07	0.4	127.0	0.113
11/29/2012	50.15	103.1	104.5	7.09	10.14	0.2	127.1	0.067
12/12/2012	49.88	94.0	94.1	7.06	10.02	0.1	126.4	0.112

Fishing Creek

Deployment Date (m/d/y)	Post-Deployment Checks							
	SpCond (ms/cm)	DO 1 (100% sat)	DO 2 (100% sat)	pH (7)	pH (10)	Turb (NTU)	Turb (NTU)	Depth (m)
1/17/2012	50.28	98.0	98.1	7.09	10.11	0.6	124.3	-0.091
2/22/2012	49.71	108.9	109.3	7.10	10.11	0.1	119.9	0.063
3/21/2012	49.87	100.2	101.4	7.01	9.99	0.5	120.8	-0.113
4/4/2012	49.40	101.2	102.2	7.04	10.04	-0.4	120.3	-0.003
4/18/2012	49.79	102.2	102.3	7.08	10.05	0.1	119.1	0.037
5/2/2012	50.03	102.8	103.1	7.10	10.07	0.2	115.4	-0.046
5/16/2012	49.88	105.9	106.0	7.10	9.83	0.0	112.6	0.026
6/13/2012	49.90	108.1	108.2	7.04	10.10	0.0	111.4	-0.015
6/29/2012	49.50	105.4	106.1	7.08	10.03	0.0	126.6	0.023
7/18/2012	49.49	105.3	105.4	7.07	10.04	0.4	122.6	-0.053
7/31/2012	48.70	102.0	101.9	7.02	10.07	0.1	121.6	-0.009
8/15/2012	49.46	102.3	102.1	7.06	10.01	0.0	125.0	-0.028
8/27/2012	51.72	109.6	109.9	7.06	10.02	0.1	127.3	0.067
9/12/2012	50.33	100.7	100.7	7.02	10.06	0.2	126.0	0.036
9/26/2012	49.30	103.2	103.0	7.11	10.04	0.3	126.4	0.009
10/24/2012	51.56	100.6	100.6	7.07	9.99	0.0	128.7	-0.041
12/12/2012	49.15	102.8	102.8	7.09	10.05	0.0	127.5	0.120

Mosquito Creek

Deployment Date (m/d/y)	Post-Deployment Checks							
	SpCond (ms/cm)	DO 1 (100% sat)	DO 2 (100% sat)	pH (7)	pH (10)	Turb (NTU)	Turb (NTU)	Depth (m)
1/17/2012	51.11	102.9	102.9	7.19	10.25	0.1	124.3	-0.095
2/22/2012	49.54	108.4	107.6	7.07	10.04	0.1	121.9	0.071
3/21/2012	50.62	101.3	101.0	7.06	10.04	0.0	120.2	-0.109
4/4/2012	49.64	102.2	101.4	6.96	9.97	0.2	118.6	-0.002
4/18/2012	50.25	104.4	104.1	7.14	10.10	0.2	119.2	0.047
5/2/2012	50.28	96.4	96.7	7.05	10.03	0.0	115.9	-0.038
5/16/2012	50.64	112.5	112.5	7.08	10.05	0.0	119.2	0.037
6/21/2012	33.07	103.0	102.0	7.11	10.08	0.1	112.4	0.015
6/29/2012	48.93	110.8	110.6	7.01	9.83	0.0	127.7	0.024
7/18/2012	49.46	103.0	103.0	7.14	10.11	0.1	124.2	-0.042
7/31/2012	49.19	105.7	106.3	6.90	9.97	-0.1	123.3	0.006
8/15/2012	47.16	98.1	98.2	7.08	10.01	0.0	123.7	-0.002
8/27/2012	52.30	108.8	108.9	7.11	10.07	0.5	126.9	0.080
9/12/2012	48.16	99.7	99.8	7.10	10.15	0.1	126.2	0.056
9/26/2012	49.17	109.4	110.0	7.16	10.13	0.0	127.3	0.013
10/24/2012	52.13	100.6	100.9	7.15	10.10	0.4	128.3	0.125
11/29/2012	50.82	102.5	103.0	7.01	10.06	0.0	126.7	0.087
12/12/2012	49.86	97.9	97.9	7.04	10.03	0.2	126.9	0.131

St. Pierre Creek

Deployment Date (m/d/y)	Post-Deployment Checks							
	SpCond (ms/cm)	DO 1 (100% sat)	DO 2 (100% sat)	pH (7)	pH (10)	Turb (NTU)	Turb (NTU)	Depth (m)
1/12/2012	50.50	103.1	102.9	7.11	10.07	0.2	127.8	0.049
1/25/2012	49.48	96.7	96.7	7.17	10.22	-0.1	125.3	-0.094
2/22/2012	49.88	105.4	107.6	7.10	10.08	0.2	121.3	0.069
3/21/2012	50.84	101.7	101.8	7.09	10.08	-0.2	120.2	-0.153
4/4/2012	51.09	101.1	101.0	7.03	10.03	0.3	119.3	-0.002
4/18/2012	49.78	100.3	100.2	7.30	10.28	0.0	118.9	0.002
5/2/2012	52.43	99.5	97.5	7.14	10.11	0.3	115.7	-0.041
5/16/2012	32.04	103.5	103.2	7.16	9.68	0.1	113.0	0.035
6/13/2012	53.22	98.1	98.0	7.07	10.11	0.1	111.9	-0.006
6/29/2012	49.45	102.2	103.8	7.16	10.10	0.1	126.5	0.009
7/18/2012	51.81	97.2	98.6	7.09	10.07	0.3	122.6	-0.055
7/31/2012	49.23	103.5	105.0	7.05	10.06	-0.1	123.8	-0.046
8/15/2012	49.65	99.5	99.5	7.12	10.08	0.0	123.6	-0.023
8/27/2012	52.12	107.1	107.3	7.18	10.17	0.6	127.4	0.050
9/12/2012	49.79	100.9	101.0	7.13	10.16	0.2	125.8	0.048
9/26/2012	49.42	98.7	98.6	7.06	9.92	0.0	126.0	-0.021
10/24/2012	51.45	104.6	106.4	7.26	10.05	0.5	128.5	0.113
11/29/2012	50.07	102.4	105.4	7.10	10.26	0.0	127.0	0.060
12/12/2012	49.26	84.7	84.8	7.12	10.12	0.2	127.6	0.131

14) Other remarks/notes

Data are missing due to equipment or associated specific probes not being deployed, equipment failure, time of maintenance or calibration of equipment, or repair/replacement of a sampling station platform. Any NANs in the dataset stand for “not a number” and are the result of low power, disconnected wires, or out of range readings. If additional information on missing data is needed, contact the Research Coordinator at the reserve submitting the data.

ACE NERR Water Quality Site Histories

Big Bay:

1995 - Big Bay water quality station was installed in **March** (Coordinates: 32.4941 N and -80.3241 W).

2001 - Big Bay site replaced in **October** due to old age and excessive biofouling of oysters (Coordinates changed: 32 29 38.72125 N 80 19 21.69864 W very accurate).

2003 - Big Bay site moved to a new location in **July** after embankment collapsed near data logger, causing sedimentation issues and poor data (Coordinates: 32.4941 N and 80.3241 W).

2005 - Big Bay site modified in **December**.

2009 - Big Bay site mount replaced in **January** (about 0.3 meters deeper).

2012 - Big Bay site PVC tube replaced in **June**.

Fishing Creek:

2002 - Fishing Creek site installed in **October** (Coordinates: 32.63593 N and -80.36556 W).

2009 - Fishing Creek site PVC tube replaced in **May** (Approximately 0.2 meters deeper).

2009 - Fishing Creek site destroyed in **October**.

2010 - Fishing Creek sign post mount was replaced in **January** with a 40-ft, 8-in diameter pressure-treated piling.

2012 - Fishing Creek site PVC tube replaced on **May 31** - Fasteners used to attach tube to the piling.

Mosquito Creek:

2002 - Mosquito Creek site installed in **October** (Coordinates: 32.5558 N and -80.4380 W).

2007 - Mosquito Creek mount installed 0.5 meters away from old mount in **August**. This is a deeper location.

2008 - Mosquito Creek site mount attached to original mount after new mount broke in **October** (about 0.2 meters shallower).

2008 - Mosquito Creek site mount was destroyed and repaired in **December** (about 0.2 meters shallower).

2009 - Mosquito Creek site mount moved due to demolition of old bridge and construction of new one at same location in **August** (about 0.2 meters deeper).

2012 - Mosquito Creek site PVC tube was leaning during **May 2** and **May 16** deployments.

2012 - Mosquito Creek site PVC tube replaced on **May 31** - Fasteners used to attach tube to the bridge.

St. Pierre Creek:

1995 - St. Pierre water quality station was installed in **October** (Coordinates: 32.52800 N and -80.36144 W).

1997 - St. Pierre site moved away from bank in **February, March, and other times** due to sedimentation issues and biofouling readings.

2000 - St Pierre site moved to other side of channel and station modified in **April** (Coordinates changed: 32.5279 N -80.3615W).

2001 - St. Pierre station replaced in **September**.

2006 - St. Pierre station PVC replaced in **April**.

2006 - St Pierre sign post mount was replaced in **May** - with a 40-ft, 8-in diameter pressure-treated piling.

2006 - Sutron Sat-Link2 transmitter installed in **June** to transmit real-time data.

2009 - St. Pierre site PVC tube replaced in **June** (about 0.06 meters deeper).

2012 - St. Pierre site PVC tube replaced on **June 1** - Fasteners used to attach tube to the piling.

Rock Creek:

1996 - Rock Creek water quality station was installed in **March** (Coordinates: 32.54850 N and -80.50361 W).

1996 - Rock Creek water quality station was vandalized in **July** and never replaced.

Blanket Statements: All Stations

Effect of Freshwater Input on Water Quality

Water quality at the SWMP sites are influenced by the river water level and streamflow rate in the South Edisto River at the USGS gauging station at Givhans Ferry. We observe a negative correlation between salinity and the river stage - significant salinity decreases when river crests above flood level (+10 feet) and salinity increases when the river level falls below 5 feet. The same negative correlation is observed between streamflow and salinity, regardless of the river stage - decreases in salinity when streamflow is above 15,000 ft³/sec and increases when streamflow is below 5,000 ft³/sec.

Effect of Significant Rain Events on Water Quality

Water quality at the SWMP sites are influenced by significant rain events during low tides. We observe dips in salinity and dissolved oxygen levels and spikes in turbidity during slack low tide at the sites.

Sonde Exchange In-Situ Readings

In-situ readings were collected by taking readings at the same time with the retrieved and newly deployed data logger attached to the same rope about 1 meter below the surface. The newly deployed sonde was then deployed within the PVC tube to begin taking readings. Starting on September 12, 2012, a 600XL sonde with hand held display was used for in-situ readings. The 600XL was positioned next to the PVC tube to collect a reading at the same time as the last reading for the retrieved sonde.

Dissolved Oxygen Hypoxia Coding

Dissolved oxygen percent and mg/L readings are coded <0> (CDA) when a hypoxic event is recorded as (≤ 3 mg/L).

Turbidity Spike Coding

For YSI 6000 series sondes, turbidity values between 300 and 1000 NTU are coded <1> [STS]. These spikes are typically observed during low tides, max flood tides, and/or rain events.

Turbidity readings above 1000 NTU for YSI 6000 series sondes are rejected and are coded <-3> [STS]. These values are above the sensor specifications.

Turbidity Negative Readings Coding

Negative turbidity values are rejected and are coded <-3> [SNV]. These values are below the sensor specifications.

Wiper Brush Malfunctioning Coding

Wiper brush used to clean sensors during deployment was lost during some deployments. All post calibration checks were in the acceptable range. Values are flagged as <1> [SWM]. Any other data concerns that occurred during the deployment are listed under the appropriate parameter heading.

Significant Weather Events

The significant weather event data listed in the table below is from the National Hurricane Center administered by the National Oceanic and Atmospheric Administration (NOAA). All events listed are ones that have impacted the South Carolina Coast beginning in 2012. As the National Hurricane Center updates their information concerning the events this table will be updated to reflect that information.

Significant Weather Event	Date Started	Date Ended	Max Wind Speed
			NA

Data Editing/Flagging Notes: Organized by Station, Parameter, and Code

Big Bay

All Parameters Blanket Statement for Big Bay

The data were collected at the wrong depth from 01/01/2012 - 00:00 to 06/01/2012 - 09:00. When PVC tube was swapped out during summer of 2011, the new tube was positioned higher on deployment mount. The temperature, specific conductance/salinity, dissolved oxygen, pH, and turbidity did not change because the S. Edisto River is a well-mixed system and the tube was in the same thermocline. The depth values are flagged as <1> (CWD), and the other parameters as <0> (CWD). Other errors that occurred during this time period are listed under the appropriate parameter heading or in a blanket statement. The F_Record column is flagged as {CSM}. Note: the tube was positioned at the correct position before the 09:30 reading on 06/01/2012.

Rejected Data <-3>

The intermittent data collected during the following time periods were rejected due to low battery voltage. The values collected occurred after the initial power failure due to low battery voltage. The data collected were within the range typically observed at this site. The values are flagged as <-3> [GPF] (CSM).

02/14/2012 - 11:30 to 02/20/2012 - 02:00

10/23/2012 - 05:30 to 05/24/2012 - 08:00

Missing Data (Flag <-2>)

The data collected during the following times were missing due to in field maintenance. The sonde was outside the tube when these readings were taken. The values are flagged as <-2> [GSM] (CMC).

01/17/2012 - 08:30

06/13/2012 - 08:15

03/21/2012 - 11:00

06/29/2012 - 09:30

04/04/2012 - 10:30

07/18/2012 - 11:15

04/18/2012 - 10:00

07/31/2012 - 09:45

05/02/2012 - 10:30 & 10:45

08/15/2012 - 09:45

05/16/2012 - 09:15

08/27/2012 - 11:15

06/01/2012 - 09:15

The intermittent data collected during the following time periods were missing due to low battery voltage. The missing values are flagged as <-2> [GPF] (CSM).

02/14/2012 - 11:30 to 02/22/2012 - 12:30

10/21/2012 - 23:45 to 10/24/2012 - 08:30

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

Temperature

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

Specific Conductivity/Salinity

Rejected Data (Flag <-3>)

The data collected from 01/01/2012 - 0:00 to 01/17/2012 - 08:15 during the December 14th, 2011 deployment (12/14/2011 - 13:00 to 01/17/2012 - 08:15) were rejected due to the post calibration out of range. The post-

deployment check of 55.20 mS/cm is outside the accepted range of 47 - 53 mS/cm. The data were rejected because the readings were outside the range typically observed at this site. The values are flagged as <-3> [SPC] (CSM).

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

The data collected from 03/03/2012 - 18:45 to 03/10/2012 - 23:45 during the February 22nd deployment (02/22/2012 - 12:45 to 03/21/2012 - 10:45) were not suspect. The post-deployment check and sensor diagnostics were within an acceptable range. The decrease in salinity is attributed to the high streamflow in the South Edisto River during this time period. The values are flagged as <0> [GSM] (CDF).

DO Percent/mg/L

Rejected Data (Flag <-3>)

The DO mg/L data collected from 01/01/2012 - 0:00 to 01/17/2012 - 08:15 during the December 14th, 2011 deployment (12/14/2011 - 13:00 to 01/17/2012 - 08:15) were rejected due to conductivity sensor failure. However, the DO readings were within the range typically observed at this site. The values are flagged as <-3> [SCF] (CSM).

The data collected from 01/17/2012 - 08:45 to 02/14/2012 - 11:15 during the January 17th deployment (01/17/2012 - 08:45 to 02/22/2012 - 12:30) were rejected due to QAQC checks. The pre and post-deployment checks and sensor diagnostics are within the acceptable range and there was no report of biofouling on the logs. The cause of the erratic and higher readings is unknown at this time. The values are flagged as <-3> [SQR] (CSM).

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

The data collected during the April 4th deployment (04/04/2012 - 10:45 to 04/18/2012 - 09:45) were suspect. The pre-deployment DO charge of 80.8 is outside the acceptable range of 25 - 75, but the post-deployment check and DO charge are within the acceptable ranges. The values are flagged as <1> [SDO] (CSM).

The data collected from 05/08/2012 - 00:00 to 05/16/2012 - 09:00 during the May 2nd deployment (05/02/2012 - 11:00 to 05/16/2012 - 09:00) were suspect due to sensor drift. The pre and post-deployment checks and sensor diagnostics are within the acceptable ranges and there was no report of biofouling in the logs. The cause of the downward drift in the readings is unknown at this time. The values are flagged as <1> [SSD] (CSM).

The data collected during the following deployments were suspect due to sensor diagnostics. The post-deployment DO charge is outside the acceptable range of 25 - 75, but the post-deployment checks are within the acceptable range. The data were not rejected because the readings were outside the range typically observed at this site, and the difference between the last reading of these deployments and the adjacent deployments were similar. The values are flagged as <1> [SDG] (CSM).

05/16/2012 - 09:30 to 06/13/2012 - 08:00 (79.8) 08/27/2012 - 11:30 to 09/12/2012 - 09:00 (82.6)
07/31/2012 - 10:00 to 08/15/2012 - 09:30 (78.5).

The data collected during the July 18th deployment (07/18/2012 - 11:30 to 07/31/2012 - 09:30) were suspect due to post calibration out of range. The post-deployment check of 77.4 % is outside the accepted range of 90 - 110%. The values are flagged as <1> [SPC] (CSM).

The data collected from 09/26/2012 - 10:15 to 10/23/2012 - 05:00 during the September 26th deployment (09/26/2012 - 10:15 to 10/24/2012 - 08:30) were suspect due to sensor diagnostics. The pre-deployment DO charge of 83.9 is outside the acceptable range of 25 - 75, but the post-deployment checks were acceptable. The data were not rejected because the readings were within the range typically observed at this site, and the difference

between the last reading of this deployment and the adjacent deployment were similar. The values are flagged as <1> [SDG] (CSM).

Passed Initial QAQC Checks (Flag <0>)

Depth

Rejected Data (Flag <-3>)

The data collected from 01/01/2012 - 0:00 to 01/17/2012 - 08:15 during the December 14th, 2011 deployment (12/14/2011 - 13:00 to 01/17/2012 - 08:15) were rejected due to conductivity sensor failure. However, the depth readings were within the range typically observed at this site. The values are flagged as <-3> [SCF] (CSM)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

pH

Rejected Data (Flag <-3>)

The data collected from 01/17/2012 - 08:45 to 02/14/2012 - 11:15 during the January 17th deployment (01/17/2012 - 08:45 to 02/22/2012 - 12:30) were rejected due to QAQC checks. The pre and post-deployment checks and sensor diagnostics are within acceptable range, and there was no biofouling was reported on the logs. The cause of the higher than normal readings is unknown at this time; however, they were too high to be considered only suspect. The values are flagged as <-3> [SQR] (CSM).

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

The data collected during the October 24th deployment (10/24/2012 - 08:45 to 11/29/2012 - 12:15) were suspect due to sensor drift. The pre and post-deployment checks and sensor diagnostics are within the accepted ranges. The algae on the sensors may have attributed to the higher readings that are typically observed at the site. The values are flagged as <1> [SSD] (CSM).

Passed Initial QAQC Checks (Flag <0>)

Turbidity

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

Fishing Creek

All Parameters Blanket Statement for Fishing Creek

The data were collected at the wrong depth from 01/01/2012 – 00:00 to 05/31/2012 - 11:15. When PVC tube was swapped out during summer of 2011, the new tube was positioned higher on deployment mount. The temperature, specific conductance/salinity, dissolved oxygen, pH, and turbidity did not change because the S. Edisto River is a well-mixed system and the tube was in the same thermocline. The depth values are flagged as <1> (CWD), and the other parameters as <0> (CWD). Other errors that occurred during this time period are listed under the appropriate parameter heading or in a blanket statement. The F_Record column is flagged as {CSM}.

Rejected Data (Flag <-3>)

The data collected from 05/31/2012 from 11:15 to 11:45 were rejected due to in field maintenance. The sonde was outside the tube when these readings were taken. The values are flagged as <-3> [GSM] (CMC).

The intermittent data collected from 11/22/2012 - 01:15 to 12/10/2012 - 11:00 during the October 24th deployment (10/24/2012 - 09:30 to 12/12/2012 - 12:45) were rejected due to low battery voltage and overall lack of data. The values are flagged as <-3> [GPF] (CSM).

Missing Data (Flag <-2>)

The data collected during the following times were missing due to in field maintenance. The sonde was outside the tube when these readings were taken. The values are flagged as <-2> [GSM] (CMC).

01/17/2012 - 11:30	05/02/2012 - 12:00	07/31/2012 - 10:45
02/22/2012 - 13:30	05/16/2012 - 10:15	08/15/2012 - 10:45
03/21/2012 - 12:45	06/13/2012 - 09:00	08/27/2012 - 12:15
04/04/2012 - 11:30	06/29/2012 - 10:30	
04/18/2012 - 11:00	07/18/2012 - 12:15	

The intermittent data collected from 11/21/2012 - 15:00 to 12/12/2012 - 12:45 during the October 24th deployment (10/24/2012 - 09:30 to 12/12/2012 - 12:45) were missing due to low battery voltage. The missing values are flagged as <-2> [GPF] (CSM).

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

Temperature

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

Specific Conductivity/Salinity

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

DO Percent/mg/L

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

The data collected during the March 21st deployment (03/21/2012 - 13:00 to 04/04/2012 - 11:15) were suspect due to sensor diagnostics. The pre-deployment DO charge of 87.0 is outside the acceptable range of 25 - 75, but the post-deployment checks are within the acceptable ranges. The data were not rejected because the readings were within the range typically observed at the site. The values are flagged as <1> [SDG] (CSM).

The data collected during the following deployments were suspect due to sensor diagnostics. The pre and post-deployment DO charges are outside the acceptable range of 25 - 75. The readings were within the range typically observed at the site. The values are flagged as <1> [SDG] (CSM).

04/18/2012 - 11:15 to 05/02/2012 - 11:45 (93.1, 88.5) 05/16/2012 - 10:30 to 06/13/2012 - 08:45 (85.9, 84.9)

The data collected during the June 13th deployment (06/13/2012 - 09:15 to 06/29/2012 - 10:15) were suspect due to sensor diagnostics. The post-deployment DO charge of 82.9 is outside the acceptable range of 25 - 75, but the post-deployment DO check is within the acceptable range. The readings were within the range typically observed at the site. The values are flagged as <1> [SDG] (CSM).

Passed Initial QAQC Checks (Flag <0>)

Depth

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

pH

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

Turbidity

Rejected Data (Flag <-3>)

The data collected from 07/08/2012 - 10:45 to 07/18/2012 - 12:00 during the June 29th deployment (06/29/2012 - 10:45 to 07/18/2012 - 12:00) were rejected due to biofouling. The post-deployment checks were within an acceptable range because the sensor was cleaned before the checks were performed. The sustained values above 100 are not typical of this site and therefore the readings were rejected. Values are flagged as <-3> [GSM] (CBF).

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

Mosquito Creek

All Parameter Blanket Statement for Mosquito Creek

The data collected from 03/03/2012 - 18:45 to 03/10/2012 - 23:45 during the February 22nd deployment (02/22/2012 - 15:00 to 03/21/2012 - 11:30) were not suspect. The pre/post-deployment checks and sensor diagnostics are within the acceptable range. The decrease in salinity was attributed to the high streamflow in the South Edisto River. The values are flagged in the F_Record column is flagged as {CWE}.

The data were collected at wrong depth from 06/08/2012 - 00:00 to 06/13/2012 - 09:30 during the May 16th deployment (05/16/2012 - 11:30 to 06/13/2012 - 09:30). The stop pin at bottom of the PVC tube broke, and the sonde fell out; however, according to the depth readings, the sonde rope prevented the sonde from dropping more than 0.1 meters. The turbidity readings did not increase so the sonde was not sitting on the bottom sediments. The difference in depth is not considered significant because the S. Edisto River and the creek are well-mixed systems. The depth values are flagged as <1> (CWD), and the other parameters as <0> (CWD). Other errors that occurred during this time period are listed under the appropriate parameter heading or in a blanket statement. The F_Record column is flagged as {CSM}. Note: A new PVC tube was installed on 06/21/2012, and a newly calibrated sonde was deployed before the 12:45 reading.

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

The data collected during the following times were missing due to in field maintenance. The sonde was outside the tube when these readings were taken. The values are flagged as <-2> [GSM] (CMC).

01/17/2012 - 10:45	04/18/2012 - 12:00	07/18/2012 - 13:45
02/22/2012 - 14:45	05/02/2012 - 09:15	07/31/2012 - 11:30
03/21/2012 - 11:45	05/16/2012 11:15	08/15/2012 - 11:45
04/04/2012 - 12:30	06/29/2012 - 11:15	08/27/2012 - 09:45

The data collected from 09:30 to 09:45 on 05/31/2012 were missing due to in-field maintenance. It was observed on May 2 that the tube was leaning because of broken fasteners, but the depth readings did not change during this period, indicating that the vertical position of the sonde in the tube did not change. On May 16, the damaged tube was secured with a rope to the mount; a new PVC tube was installed on 05/31/2012, and the same sonde was re-deployed before the 10:00 reading. The values are flagged as <-2> [GMC] (CSM).

The data collected from 06/13/2012 - 09:45 to 06/21/2012 - 12:30 were missing because no instrument deployed. The tube was damaged, and the sonde was removed from the tube after 09:30 on 06/13/2012. A new PVC tube was installed on 06/21/2012, and a newly calibrated sonde was deployed before the 12:45 reading. The values are flagged as <-2> [GMC] (CSM).

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

Temperature

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

Specific Conductivity/Salinity

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

The data collected during the following deployments were suspect due to the post calibration out of range. The post-deployment deployment check is outside the acceptable range of 47 - 53 mS/cm. The data were not rejected because readings were within the range typically observed at this site. The values are flagged as <1> [SPC] (CSM).

6/21/2012 - 12:45 to 06/29/2012 - 11:00 (33.07) 8/15/2012 - 12:00 to 08/27/2012 - 09:30 (47.16)

The data collected from 11/05/2012 – 18:15 to 11/29/2012 – 14:00 during the October 24th deployment (10/24/2012 – 10:15 to 11/29/2012 – 14:00) are suspect due to potential sensor drift. The values start to increase at the latter half of the deployment. The values decrease with the deployment of a new sonde. The post-deployment check was within the accepted range. The values collected are within the range typically observed at this site. The cause for the sensor drift is unknown. The values are flagged as <1> [SSD] (CSM).

Passed Initial QAQC Checks (Flag <0>)

DO Percent/mg/L

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

The data collected during the March 21st deployment (03/21/2012 - 12:00 to 04/04/2012 - 12:15) were suspect due to sensor diagnostics. The pre-deployment DO charge of 75.7 is outside the acceptable range of 25 - 75, but the post-deployment checks are within the acceptable ranges. The data were not rejected because the readings were within the range typically observed at this site. The values are flagged as <1> [SDG] (CSM).

The data collected during the following deployments were suspect due to post calibration out of range. The post-deployment check is outside the acceptable range of 90 - 110%, but the post sensor diagnostics are within the acceptable ranges. The data were not rejected because the readings were within the range typically observed at this site. The values are flagged as <1> [SPC] (CSM).

05/16/2012 - 11:30 to 06/13/2012 - 09:30 (112.5%) 09/26/2012 - 12:00 to 10/24/2012 - 10:00 (110.0%)
06/29/2012 - 11:30 to 07/18/2012 - 13:30 (110.6%)

Passed Initial QAQC Checks (Flag <0>)

Depth

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

pH

Rejected Data (Flag <-3>)

The data collected during the January 17th deployment (01/17/2012 - 11:00 to 02/22/2012 - 14:30) were rejected due to a sensor malfunction. The pre and post-deployment checks of 7.19 (7.00) and 10.25 (10.00) and the sensor diagnostics are within the acceptable ranges. The exact cause for the higher values during this deployment is unknown at this time; the sensor was used multiple times after this deployment, and there was no problem with the sensor. The values are flagged as <-3> [SSM] (CSM).

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

Turbidity

Rejected Data (Flag <-3>)

The data collected from 05/11/2012 - 00:00 to 05/16/2012 - 11:00 during the May 2nd deployment (05/02/2012 - 09:30 to 05/16/2012 - 11:00) were rejected due to biofouling. When sonde was retrieved, amphipods covered the sensors. The post-deployment checks are within an acceptable range because the sensor was cleaned before the checks were performed. High readings sustained over a five-day period is not typically observed at the site and therefore the readings were rejected. The values are flagged as <-3> [GSM] (CBF).

The data collected from 07/07/2012 - 09:30 to 07/18/2012 - 13:30 during the June 29th deployment (06/29/2012 - 11:30 to 07/18/2012 - 13:30) were rejected due to biofouling. Mud was on the optic when sonde was retrieved. The post-deployment checks are within an acceptable range because the sensor was cleaned before the checks were performed. High readings sustained over five-day period is not typically observed at the site and therefore the readings were rejected. The values are flagged as <-3> [GSM] (CBF).

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

St. Pierre Creek

All Parameter Blanket Statement for St. Pierre Creek

Data during the following time periods are flagged for significant rain events. There was a dip in salinity during rains at low tide. The values are flagged in the F_Record column as {CRE}.

08/28/2012 - 10:45 to – 15:15

The data collected from 03/03/2012 - 18:45 to 03/10/2012 - 23:45 during the February 22nd deployment (02/22/2012 - 12:00 to 03/21/2019 - 09:45) were not suspect. The pre and post-deployment checks and sensor diagnostics are within the acceptable ranges. The decrease in salinity were attributed to the high streamflow in the South Edisto River. The values are flagged in the F_Record column as {CWE}.

Rejected Data (Flag <-3>)

The data collected from 06/01/2012 from 10:00 to 10:30 were rejected due to in field maintenance. The sonde was outside the tube when these readings were taken. The values are flagged as <-3> [GSM] (CMC).

Missing Data (Flag <-2>)

The data collected during the following times were missing due to in field maintenance. The sonde was outside the tube when these readings were taken. The values are flagged as <-2> [GSM] (CMC).

01/12/2012 - 13:30	04/18/2012 - 09:15	07/18/2012 - 10:45
01/25/2012 - 11:00	05/02/2012 - 10:00	07/31/2012 - 09:15
02/22/2012 - 11:45	05/16/2012 - 08:30	08/15/2012 - 09:15
03/21/2012 - 10:00	06/13/2012 - 07:45	08/27/2012 - 10:45
04/04/2012 - 09:45	06/29/2012 - 09:00	09/26/2012 - 09:45

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

Temperature

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

Specific Conductivity/Salinity

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

The data collected during the following deployments were suspect due to post calibration out of range. The data were not rejected because the readings were within the range typically observed at this site. The values are flagged as <1> [SPC] (CSM).

06/13/2012 - 08:00 to 06/29/2012 - 08:45 (53.22)

The data collected during the May 16th deployment (05/16/2012 – 08:45 to 06/13/2012 – 07:30) were suspect due to sensor out of range. The post-deployment check of 32.04 mS/cm is outside our accepted range of 47 – 53 mS/cm. The sensor was heavily fouled with barnacles during the post-deployment check. The data were not rejected because the readings were within the range typically observed at this site. The values are flagged as <1> [SPC] (CSM).

Passed Initial QAQC Checks (Flag <0>)

DO Percent/mg/L

Rejected Data (Flag <-3>)

The data collected from 01/04/2012 - 00:00 to 01/12/2012 - 13:15 during the December 14th, 2011 deployment (12/14/2011 - 12:30 to 01/12/2012 - 13:15) were rejected due to the post calibration out of range. The post-deployment checks of 83.9 % and 84.3% are outside the acceptable range of 90 - 110%; the post-deployment sensor

diagnostics is within the acceptable range. The data were rejected because the downward drift in the readings indicated biofouling. The values are flagged as <-3> [SPC] (CSM).

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

The data collected from 01/01/2012 - 00:00 to 01/03/2012 - 23:45 during the December 14th, 2011 deployment (12/14/2011 - 11:45 to 01/12/2012 - 13:15) were suspect due to the post calibration out of range. The post-deployment check of 83.9% and 84.3% are outside the acceptable range of 90 - 110%; the post-deployment sensor diagnostics is within the acceptable range. The data were not rejected because data were within the range typically observed at this site but were later in deployment rejected. The values are flagged as <1> [SPC] (CSM).

The data collected from 09/02/2012 - 00:00 to 09/12/2012 - 08:30 during the August 27th deployment (08/27/2012 - 11:00 to 09/12/2012 - 08:30) were suspect due to biofouling. The pre and post-deployment checks and sensor diagnostics are within the acceptable ranges; however, algal growth was on the sensor when sonde was retrieved. The readings were not rejected because the readings were within the range typically observed at the site. The values are flagged as <1> [GSM] (CBF).

Passed Initial QAQC Checks (Flag <0>)

Depth

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

Passed Initial QAQC Checks (Flag <0>)

pH

Rejected Data (Flag <-3>)

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

The data collected from 01/01/2012 - 00:00 to 01/12/2012 - 13:15 during the December 14th deployment (12/14/2011 - 12:30 to 01/12/2012 - 13:15) were suspect due to sensor drift. The pre and post-deployment checks and sensor diagnostics are within the acceptable ranges, and no biofouling was observed when sonde was retrieved. The values were suspect because they were higher than those of the previous and following deployments, but they were not rejected because they were within the range typically observed at the site. The cause for the higher values is unknown. The values are flagged as <1> [SSD] (CSM).

The data collected during the May 16th deployment (05/16/2012 - 08:45 to 06/13/2012 - 07:30) were suspect due to post calibration out of range. The post-deployment pH 10 check of 9.68 is outside the acceptable range of 9.7 - 10.3, but the pH slope is within the acceptable range. The values were within the range typically observed at this site. The values are flagged as <1> [SPC] (CSM).

The data collected during the November 29th deployment (11/29/2012 - 11:45 to 12/12/2012 - 11:30) were suspect due to sensor drift. The pre and post-deployment checks and pH slope are within the acceptable ranges, and no biofouling was reported in the logbook. The values were suspect because they were higher than the previous and following deployments, but not rejected because they were within the range typically observed at the site. The cause for the higher values is unknown. The values are flagged as <1> [GSM] (CCU).

Passed Initial QAQC Checks (Flag <0>)

The data collected during the October 24th deployment (10/24/2012 - 08:15 to 11/29/2012 - 11:30) were not suspect but fish eggs were on the pH bulb when sonde was retrieved. The pre and post-deployment 7 and 10 checks and the pH slopes are within the acceptable ranges. The readings were in the range typically observed at the site. The values are flagged as <0> [GSM] (CBF).

Turbidity

Rejected Data (Flag <-3>)

The data collected from 05/28/2012 - 00:00 to 06/13/2012 - 07:30 during the May 16th deployment (05/16/2012 - 08:45 to 06/13/2012 - 07:30) were rejected due to biofouling. Heavy biofouling by algae was on sensor when sonde was retrieved. The post-deployment checks are within an acceptable range because the sensor was cleaned before the checks were performed. High readings sustained over a two-week period is not typically observed at the site and therefore the readings were rejected. The values are flagged as <-3> [GSM] (CBF). Note: the last reading is missing.

Missing Data (Flag <-2>)

Suspect Data (Flag <1>)

The data collected from 07/17/2012 - 13:15 to 07/18/2012 - 10:30 during the June 26th deployment (06/26/2012 - 08:45 to 07/18/2012 - 10:30) were suspect due to biofouling. Mud was on the sensors when sonde was retrieved. The post-deployment checks are within an acceptable range because the sensor was cleaned before the checks were performed. The readings were higher than expected but they were not rejected because they were within the range typically observed at the site. The values are flagged as <1> [GSM] (CBF).

Passed Initial QAQC Checks (Flag <0>)