

Chesapeake Bay Virginia (CBV) NERR Water Quality Metadata
January - December 2005
Latest update: April 20, 2006

I. Data Set and Research Descriptors

1. Principal investigators and contact persons

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Additional monitoring program support in addition to above stated:
Alynda Miller (Laboratory Specialist), Betty Berry-Niekirk (Marine Scientist), Britt Anderson (Marine Scientist), Jessie Campbell (NERRS Graduate Research Fellow), Frank Parker (NERR Graduate Research Fellow), Jim Goins (Field Manager), Eduardo Miles (Marine Scientist), Steve Snyder (Laboratory Specialist), David Lange (Marine Scientist), and Chris Clapp (Stewardship Coordinator).

2. Entry verification

Deployment data are uploaded from the YSI data logger to a Personal Computer (IBM compatible). Data plots are produced and examined and erroneous data are detected using the PC6000 or EcoWatch software from YSI. Notes are made of any unusual data during that deployment. Files are exported from EcoWatch in a comma-delimited format (.CSV) and opened in Microsoft Excel for pre-processing with the EQWin format macro that was developed by the CDMO to reformat the header columns, insert station codes, insert a corrected time column and allow the technician to remove any pre- and post-deployment data from the file. Where deployment overlap occurs between files, the data produced by the newly calibrated sonde is accepted as being the most accurate. The pre-processed file is then ready to be copied into the EQWin water.eqi file where the data are QA/QC checked and archived in the database. EQWin queries, reports and graphs are used to identify data set outliers (values which fall outside the range that the instrument is designed to measure) and large sudden changes in parameter values. EQWin is also used to generate statistics, view graphs, create customized queries and reports of the data, cross query the water, weather and nutrient data and finally export the data to the CDMO. Joy Austin has been responsible for data management since January 2002.

3. Research objectives

Goodwin Islands (GI) component:

The Goodwin Islands represent marsh islands surrounded by intertidal flats, submerged aquatic vegetation (SAV) beds, oyster reefs, and shallow open estuarine waters. Because minimal human activities occur within upland portions, the Goodwin Islands are suitable as a reference or control site for non-point source water quality issues. Furthermore, due to extensive wetlands, intertidal, and submerged habitats, the Goodwin Islands are used extensively for SAV, material flux, fisheries science and trophic interaction research activities.

Claybank (CB) component:

The Claybank site represents a shallow (< 2m) littoral area approximately 300-400 meters in width and located within the mesohaline portion of the York River estuary. Prior to 1972, this area supported submersed aquatic vegetation (SAV) but current conditions are not conducive to SAV survival. This site is used extensively to study sediment dynamics and environmental stress on SAV.

Taskinas Creek (TC) component:

The Taskinas Creek watershed is representative of an inner coastal plain, rural watershed within the southern Chesapeake Bay system. This watershed is dominated by forested and agricultural land uses with an increasing urban land use component. The drainage basin is suited for investigating hydrologic and non-point source water quality issues associated with developing land use patterns.

Sweet Hall Marsh (SH) component:

Sweet Hall Marsh is the most downriver extensive tidal freshwater marsh located in the Pamunkey River, one of two major tributaries of the York River. Research activities are currently addressing the impacts of salinity intrusion due to relative sea level rise. In addition, Sweet Hall Marsh has been used extensively to study general ecology and material flux within tidal freshwater marshes.

4. Research methods

The following research methods apply for all stations.

A YSI 6600 EDS unvented datalogger was used to measure specific conductivity, pH, depth, percent dissolved oxygen saturation, temperature, and turbidity at 15-minute intervals throughout the 2005 deployment year (see Section 6 for deployment intervals). Salinity and dissolved oxygen concentration are calculated parameters. Water depth data for 2005 have been post-corrected for atmospheric pressure changes that occurred between time of calibration and field retrieval. CBNERRVA maintains atmospheric pressure sensors at Gloucester Point, Taskinas Creek, and Sweet Hall Marsh. Atmospheric pressure information is collected at 15-minute intervals. Calibration

pressure information was provided by measurements made within the laboratory at Gloucester Point, VA. At approximately one to two-week intervals, the datalogger was returned to the lab for downloading, cleaning, membrane replacement and recalibration. Maintenance intervals vary from year to year and site-to-site depending on the amount of biofouling and expected battery life. In general, YSI dataloggers were deployed for two-week intervals from the beginning of December to the end of May and one-week intervals from the beginning of June to the end of November. A second YSI datalogger was deployed following retrieval of the original YSI datalogger in order to maintain a continuous record.

Field verification samples for pH, dissolved oxygen, salinity, and temperature were taken during the deployment/retrieval procedure. Dissolved oxygen was determined by Winkler titrations in the field with a LaMotte kit. Temperature, pH, and salinity were determined in the field by using the YSI 600 XLM sonde and YSI 85 instrument. All YSI procedures are in accordance with the YSI operating manual methods, Sections 3 and 7. Standards for pH were purchased from Fisher. Standards for specific conductivity and turbidity were purchased from YSI. Data are reviewed and edited according to the YSI Data Review and Editing Protocol in Appendix C of the CDMO manual version 5.2.

Goodwin Islands (GI) component:

The Chesapeake Bay Virginia NERR maintains a long-term water quality monitoring station at Goodwin Islands. This station is located on the southeastern side of the main island in a shallow embayment, approximately 400 meters from shore. The station was established in 1997 and consisted of a stable structure composed of a 4 inch PVC pipe housed within a galvanized steel tower. The lower portion of the PVC pipe was milled to allow for water circulation within the pipe and around the datalogger sensors. The datalogger was suspended so that the sensors are maintained 0.5 m from the bottom substrate. On July 22, 2004 (12:15 EST), the station was moved approximately 25 meters southwest of the previous station in order to address sand shoaling and station maintenance issues. Other than the datalogger being suspended 0.25 m above the bottom substrate, the construction design of the new station is identical to the previous station.

Clay Bank (CB) component:

The Chesapeake Bay Virginia NERR maintains a long-term water quality monitoring station at Clay Bank. The station is located within a shallow (<2m) littoral area approximately 300-400 meters wide. A stable structure that consists of a 4 inch PVC pipe attached to a piling, was built in January 2001. The lower portion of the PVC pipe was milled to allow for water circulation within the pipe and around the datalogger sensors. The datalogger is suspended so that sensors are located 0.25 m from the bottom substrate. On June 17, 2004 (13:15 EST) the station was moved approximately 100 meters offshore of the previous station in order to address sand shoaling and station maintenance issues. The new structure is composed of a 4 inch PVC pipe, with the lower portion milled to allow for uninhibited water circulation, housed within a galvanized steel tower. The datalogger is suspended 0.31 m above the bottom substrate. The new station results in sensors being maintained 9 cm deeper as compared to the previous station.

Taskinas Creek (TC) component:

The Chesapeake Bay Virginia NERR maintains a long-term water quality monitoring station at Taskinas Creek. The station is located near the mouth of Taskinas Creek where the tidal marsh creek converges with the York River estuary. A simple deployment, consisting of a suspended wire attached to an overhanging tree, was established in September 1995. The datalogger was suspended at a fixed depth approximately 0.5 m above the creek-bed. In September 1997, the deployment was modified so that the datalogger remained secure and stable at all times within a 4 inch PVC housing attached to a piling system. The lower portion of the PVC pipe was milled to allow for water circulation within the pipe and around the datalogger sensors. The datalogger was suspended so that the sensors are maintained 0.5 m above the bottom substrate.

Sweet Hall Marsh (SH) component:

The Chesapeake Bay Virginia NERR maintains a long-term water quality station at Sweet Hall Marsh. This station, established in 2000, is located adjacent to a low-use boathouse where a 6-inch PVC pipe is attached to an adjacent pier piling. The datalogger was suspended so that the sensors remained 0.7 m from the bottom substrate. In contrast to above stations, the Sweet Hall Marsh station is maintained on a two-week deployment interval throughout the year.

5. Site location and character

(a) Goodwin Islands (Lat 37.21739; Long 76.3954)

The Goodwin Islands component of CBNERRVA is located on the southern side of the mouth of the York River. The station is located approximately 400 meters from shore, with an average water depth on the order of 1m. Goodwin Islands are a 315 ha (777 acre) archipelago of salt-marsh islands surrounded by inter-tidal flats and extensive beds of submerged aquatic vegetation dominated by eelgrass (*Zostera marina*) and Widgeon grass (*Ruppia maritima*). Water circulation patterns around the island are influenced by York River discharge and wind patterns of the Chesapeake Bay. Tides at the Goodwin Islands are semi-diurnal and display an average range of 0.7 m (range: 0.4 - 1.1 m). Mean seasonal water temperature values ranged from 13.7-15.6 °C for spring (March-May), 25.7-27.2 °C for summer (June-August), 18.0-19.2 °C for fall (September-November), and 4.7-8.2 °C for winter (January-February, and December). Mean seasonal salinity values ranged from 13.9-23.0 psu for spring, 17.2-23.0 psu for summer, 16.5-24.0 for fall, and 15.9-23.3 psu for winter. Summary water quality statistics were derived from 15-minute interval data for the years 1998-2004. The data logger probes are located 0.5 m above the sandy substrate bottom. Potential activities that could impact the site included, light recreational and commercial boating activity.

(b) Claybank (Lat 37.34855; Long 76.61123)

The Claybank station is located within a shallow (<2m) littoral area approximately 300-400 meters wide along the mesohaline portion of the York River estuary. The site is approximately 26 km upriver from the mouth of the estuary. The shoreline consists of a narrow fringe of salt marsh with some areas armored with bulkhead or stone. Tidal range is on the order of 0.85 meters. This station is located along the north shoreline of the estuary in an area that historically (prior to 1972) supported submersed aquatic vegetation. The sampling station is influenced by a secondary turbidity maximum that moves back and forth in a region of about 20-40 km from the mouth of the York River estuary. Substrate within the region varies from fine sediments to sand. The site is exposed to strong winds from the northwest and re-suspension of sediment during storm events can be high. There is no fresh water input at this site. Seasonal water quality conditions described here are from 2001 through 2003 (Spring: March-May; Summer: June-August; Fall: September-November; Winter: December-February). Mean seasonal water temperature ranged between 14.0-16.2 for spring, 26.1-27.7 for summer, 17.5-19.4 for fall, and 4.9-8.0 °C in winter. Mean seasonal salinity ranged between 15.7-20.3 for spring, 16.5-21.3 for summer, 13.2-21.6 for fall, and 14.3-20.0 ppt in winter.

(c) Taskinas Creek (Lat 37.41497; Long 76.71441)

Taskinas Creek Reserve, component of CBNERRVA, encompasses 397 ha (980 acres) and is located within the boundaries of York River State Park near the town of Croaker, Virginia. The small sub-estuary of the York River is located on the southern side of the river, approximately 37 km up river from the mouth of the York River. The Taskinas Creek watershed is representative of an inner coastal plain, rural watershed within the southern Chesapeake Bay system. The watershed is dominated by forested and agricultural land uses with an increasing residential land use component. The non-tidal portion of Taskinas Creek contains feeder streams that drain oak-hickory forests, maple-gum-ash swamps and freshwater marshes. Freshwater mixed wetlands are found in the upstream reaches of Taskinas Creek. The creek is roughly 2 meters deep and 20 meters wide towards the lower end of the creek where substrate is dominated by fine sediment. Mean tide range is 0.85 m. Mean seasonal water temperature values ranged from 15.2-19.0 °C for spring, 26.8-28.2 °C for summer, 15.7-18.3 °C for fall, and 3.6-9.0 °C for winter. Located within the meso-polyhaline region of the York River estuary, mean seasonal salinity values ranged from 4.0-14.0 psu for spring, 7.0-18.2 psu for summer, 6.9-17.0 for fall, and 5.8-15.3 psu for winter. Summary water quality statistics were derived from 15-minute interval data for the years 1998-2004. Potential activities that could impact the site include residential development, selective hardwood logging, and light recreational boating activity. Wildlife populations have been shown to influence microbiological water quality within the watershed.

(d) Sweet Hall Marsh (Lat 37.57138; Long 76.88424)

Sweet Hall Marsh is the most downriver extensive tidal freshwater marsh located in the Pamunkey River, one of two major tributaries of the York River. The marsh is located approximately 77 km upriver from the mouth of the York River estuary. The reserve is 353 ha (871 acres) in area and includes 331 ha (818 acres) of emergent fresh-water marsh, 14 ha (35 acres) of permanently flooded broad-leaved forested wetlands and approximately 4 ha (9 acres) of scrub-shrub. The marsh community is classified as freshwater mixed. Mean tidal range at Sweet Hall Marsh is on the order of 0.9 m. The Pamunkey River, which surrounds Sweet Hall Marsh, can reach depths up to 15 meters. Substrate within the littoral zone and channel is dominated by fine sediment. Mean seasonal water temperature values ranged from 14.7-16.7 °C for spring, 26.7-27.9 °C for summer, 18.6-19.1 °C for fall, and 4.7-6.3 °C for winter. Located within the oligohaline, lower freshwater reaches of the Pamunkey River, mean seasonal salinity values ranged from 0.1-3.4 psu for spring, 0.1-8.4 psu for summer, 0.3-8.4 psu for fall, and 0.1-3.2 psu for winter. Summary water quality statistics were derived from 15-minute interval data for the years 2002-2004. Potential activities that could impact the site include minor municipal point source discharges above and below river of Sweet Hall Marsh, a major industrial discharge site (pulp mill) in the town of West Point and significant groundwater withdrawal near the confluence of the Pamunkey and York Rivers.

6. Data collection period

Sampling at Claybank (CB), Goodwin Islands (GI), Sweet Hall Marsh (SH), and Taskinas Creek (TC) began January 2005. Sampling was continuous through December 2005. Occasional time skips occurred at all sites due to low batteries, water leakage into the battery compartment, and for no apparent reason.

Claybank (CB)

Deployment Date/Time (MM/DD/YY)(HH:MM:SS)	Retrieval Date/Time (MM/DD/YY)(HH:MM:SS)
12/16/04 13:30:00	01/05/05 10:15:00
01/05/05 10:30:00	01/12/05 11:45:00
01/12/05 12:00:00	01/24/05 12:00:00
01/24/05 12:15:00	02/09/05 11:15:00
02/09/05 11:30:00	02/22/05 11:15:00
02/22/05 11:30:00	03/16/05 12:45:00
03/16/05 13:00:00	03/30/05 11:45:00
03/30/05 12:00:00	04/14/05 10:30:00
04/14/05 10:45:00	04/27/05 11:30:00
04/27/05 11:45:00	05/10/05 12:00:00
05/10/05 12:15:00	05/25/05 12:45:00
05/25/05 13:00:00	06/01/05 10:00:00
06/01/05 10:15:00	06/08/05 11:00:00
06/08/05 11:30:00	06/16/05 10:45:00
06/16/05 11:00:00	06/22/05 11:15:00
06/22/05 11:30:00	06/29/05 09:00:00
06/29/05 09:15:00	07/06/05 11:15:00
07/06/05 11:30:00	07/13/05 08:30:00

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07/20/05	11:00:00
07/27/05	08:30:00
08/03/05	11:15:00
08/10/05	11:00:00
08/17/05	14:00:00
08/24/05	08:00:00
08/31/05	10:45:00
09/07/05	14:45:00
09/14/05	10:15:00
09/21/05	11:15:00
09/28/05	09:30:00
10/05/05	12:00:00
10/12/05	11:45:00
10/19/05	09:00:00
11/01/05	10:00:00
11/16/05	10:15:00
11/28/05	12:15:00
12/07/05	09:15:00
12/19/05	10:00:00

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08/31/05	10:30:00
09/07/05	14:30:00
09/14/05	10:00:00
09/21/05	11:00:00
09/28/05	09:15:00
10/05/05	11:45:00
10/12/05	11:30:00
10/19/05	08:45:00
11/01/05	09:45:00
11/16/05	10:00:00
11/28/05	12:00:00
12/07/05	09:00:00
12/19/05	09:45:00
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Goodwin Islands (GI)
Deployment Date/Time
(MM/DD/YY) (HH:MM:SS)

12/16/04	11:00:00
01/05/05	08:30:00
01/12/05	09:30:00
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03/16/05	09:45:00
03/30/05	10:15:00
04/18/05	08:30:00
04/27/05	08:15:00
05/10/05	08:45:00
05/25/05	09:45:00
06/01/05	08:00:00
06/08/05	09:15:00
06/16/05	08:30:00
06/22/05	09:15:00
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04/18/05	08:15:00
04/27/05	08:00:00
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05/25/05	09:30:00
06/01/05	07:45:00
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06/22/05	09:00:00
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09/21/05	09:00:00
09/28/05	07:30:00
10/05/05	09:00:00
10/12/05	08:30:00
10/19/05	11:15:00
10/26/05	10:15:00
11/09/05	11:00:00
11/28/05	10:00:00
12/07/05	11:45:00
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11/09/05	10:45:00
11/28/05	09:45:00
12/07/05	11:30:00
12/19/05	11:30:00
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Sweet Hall Marsh (SH)
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03/15/05	12:30:00
03/29/05	12:30:00
04/05/05	13:15:00
04/18/05	12:15:00
05/02/05	12:15:00
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Taskinas Creek (TC)

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7. Distribution

According to the Ocean and Coastal Resource Management Data Dissemination Policy for the NERRS System-wide Monitoring Program, NOAA/ERD retains the right to analyze, synthesize and publish summaries of the NERRS System-wide Monitoring Program data. The PI (s) retain the right to be fully credited for having collected and processed the data. Following academic courtesy standards, the PI and NERR site where the data were collected will be contacted and fully acknowledged in any subsequent publications in which any part of the data are used. Manuscripts resulting from this NOAA/OCRM supported research that are produced for publication in open literature, including refereed scientific journals, will acknowledge that the research was conducted under an award from the Estuarine Reserves Division, Office of Ocean and Coastal Resource Management, National Ocean Service, National Oceanic and Atmospheric Administration. 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.

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 <http://cdmo.baruch.sc.edu/>. Data are available in text tab-delimited format.

8. Associated researchers and projects

Additional water quality monitoring programs within the York River system include:

a) USEPA Chesapeake Bay Mainstem and Tributary Monitoring Program. Since 1984, biweekly to monthly water quality sampling at a series of sites located along the mid-river channel has been conducted as part of the Chesapeake Bay Program (www.chesapeakebay.net). Station ID's: York River proper (WE4.2, LE4.3, LE4.2, LE4.1, RET4.3), the Pamunkey River (RET4.1, TF4.2) and Mattaponi River (RET4.2 and TF4.4).

b) VIMS Shoal Survey. Since 1984, biweekly to monthly water quality sampling at a series of sites located along the shoal areas of the lower York River estuary has been conducted by the Biological Sciences Department at the Virginia Institute of Marine Science. Station ID's include: Guinea Marsh, Goodwin Island, VIMS, Yorktown, Mumfort Islands, Catlett Islands and Clay Bank.

c) Alliance for the Chesapeake Bay Volunteer Monitoring Program. Physical and chemical (limited nutrients) data are collected by a volunteer network along the York River system (www.Acb-online.org). Station ID's include: Thorofare Creek, Wormley

Creek, Blackwell Landing, Pamunkey Trail, Timberneck Creek, Yorktown Naval Weapons Station, Gloucester Point, West Point and Croaker Landing. Note: Some stations may be inactive.

d) VIMS Juvenile Abundance Monitoring Survey. As part of their Juvenile Abundance Monitoring Surveys, water quality and hydrographic data has been collected since 1968 along a series of sites in the York River estuary (includes the Mattaponi and Pamunkey River systems) by the Fisheries Science Department (www.fisheries.vims.edu/research.html) at the Virginia Institute of Marine Science. Surveys include the VIMS Trawl Survey, the Striped Bass Seine Survey and the Juvenile Shad/River Herring Pushnet Survey.

e) Virginia Department of Health. The Virginia Department of Health, Division of Shellfish Sanitation's (www.vdh.state.va.us/shellfish) Seawater Sampling Program collects microbial and general water quality and hydrographic data along a series of sites in the York River estuary (includes lower portions of the Mattaponi and Pamunkey River systems).

f) USEPA Chesapeake Bay Shallow Water Monitoring Program. Since May 2003, CBNERRVA has maintained additional continuous water monitoring stations within the York River estuary system. Measurements for this program include: temperature, specific conductivity, dissolved oxygen, pH, turbidity, insitu fluorescence, and depth. Stations are located at Gloucester Point and Yorktown (on the York River proper), Muddy Point and Walkerton (Mattaponi River), and White House (Pamunkey River). This additional surface water quality mapping program, which monitors the above stated paramaters, occurs on a monthly basis in the York River estuary.

II. Physical Structure Descriptors

9) Sensor specifications

YSI 6600EDS data logger

Parameter: Temperature
Units: Celsius (C)
Sensor Type: Thermistor
Model #: 6560
Range: -5 to 45 °C
Accuracy: +/-0.15 °C
Resolution: 0.01 °C

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

Accuracy: +/-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: +/- 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, +/- 2 % of the reading or 2 % air saturation, whichever is greater; 200-500 % air saturation, +/- 6 % of the reading
Resolution: 0.1 % air saturation

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

Parameter: Non-Vented Level - Shallow (Depth)
Units: feet or meters (ft or m)
Sensor Type: Stainless steel strain gauge
Range: 0 to 30 ft (9.1 m)
Accuracy: +/- 0.06 ft (0.018 m)
Resolution: 0.001 ft (0.001 m)

Parameter: pH (EDS probe)
Units: 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 ° scatter, with mechanical cleaning
Model #: 6136
Range: 0 to 1000 NTU
Accuracy: +/- 5 % reading or 2 NTU (whichever is greater)
Resolution: 0.1 NTU

Dissolved Oxygen qualifier: The reliability of the dissolved oxygen (DO) data 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). Many reserves have upgraded to the YSI 6600 EDS data sondes, which increases DO accuracy and longevity by reducing the environmental effects of fouling. The user is therefore advised to consult the metadata and to exercise caution when utilizing the DO data beyond the initial 96-hour time period. However, this 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. The Research Coordinator at the specific NERR site should be contacted concerning the reliability of the DO data because of the site and seasonal variation in the fouling of the DO sensor.

Depth qualifier: The NERR System-Wide Monitoring Program utilizes YSI data sondes that can be equipped with either depth or water level sensors. Both sensors measure water depth, but by convention, level sensors refer to atmospherically vented measurements and depth refers to non-vented measurements. Standard calibration protocols for the non-vented sensor use the atmospheric pressure at the time of calibration. Therefore, changes in atmospheric pressure between calibrations appears as changes in water depth. The error is equal to approximately 1.03cm for every 1 millibar change in atmospheric pressure. This error is eliminated for level sensors because they are vented to the atmosphere throughout the deployment time interval. If proper atmospheric pressure data are available, non-vented sensor depth measurements can be corrected for deployments between calibrations. Water depth data for 2005 have been post-corrected for atmospheric pressure changes that occurred between time of calibration and field retrieval. Readings for both vented and non-vented are automatically compensated for water density changes due to variations in temperature and salinity.

10. Coded variable definitions

Sampling station:	Sampling site code:	Station code:
Claybank	CB	cbvcbwq
Goodwin Islands	GI	cbvgiwq
Sweet Hall Marsh	SH	cbvshwq
Taskinas Creek	TC	cbvtcwq

11. Anomalous/Suspect Data

Specific dates and time ranges of potentially influenced

data are listed with each respective month. Starting with January, data were extracted in accordance with Version 5.2 of the CDMO Manual. Significantly elevated single point spike turbidity values which occurred between background values were considered to be a product of sensor interference. Single point spike turbidity values greater than 200 NTUs for Goodwin Island, SweetHall Marsh, and 300 NTUs for Claybank and Taskinas Creek were deleted. Values between 39-200 NTUs for Goodwin Island, 230-300 NTUs for Taskinas Creek, 105-300 NTUs for Claybank, 179-200 NTUs for Sweet Hall Marsh were reported as suspect and retained. These suspect values exceeded 3 standard deviation from mean values based on 2002 and 2003 site specific data; Goodwin Island: 2 year mean = 6.0, 2 year STDEV = 11.4, 3 STDEV plus mean = 39.4; Claybank: 2 year mean = 17.9, 2 year STDEV = 29.0, 3 STDEV plus mean = 105; Taskinas Creek: 2 year mean = 62.4 2 year STDEV = 55.7, 3 STDev plus mean = 229.5; Sweet Hall Landing: 2 year mean = 43.6, 2 year STDEV = 44.1, 3 STDEV plus mean = 178.2.

JANUARY

Claybank:

a) For the following dates and times, specific conductance and salinity values are anomalous as compared to pre and post measurements. Data retained.

01/23/05 11:00:00

b) For the following dates and times, turbidity readings are suspect. Data retained.

01/14/05 09:00:00 326 NTU

01/14/05 09:15:00 304 NTU

c) For the following dates and times, pH readings are suspect due to reasons unknown. Data retained.

01/12/05 12:00:00 - 01/24/05 12:00:00

Goodwin Island:

a) For the following dates and times, pH readings are suspect due to reasons unknown. Post calibration within specifications of probe. Data retained.

01/01/05 00:00:00 – 01/05/05 08:15:00

01/12/05 09:30:00 – 01/24/05 10:45:00

b) For the following dates and times, DO % saturation and DO mg/L values were suspect due to a slow decrease in oxygen concentrations throughout the deployment. Post calibration 60.6%. Data retained.

01/01/05 00:00:00 - 01/05/05 08:15:00

Sweet Hall Marsh:

a) For the following dates and times, turbidity readings are suspect due to station maintenance. Data retained.

01/04/05 12:15:00 - 01/04/05 13:00:00

Taskinas Creek:

(No Suspect Data)

FEBRUARY

Claybank:

a) For the following dates and times, specific conductance and salinity values are anomalous as compared to pre and post measurements. Data retained.

02/04/05 07:45:00

02/25/05 08:45:00

02/25/05 10:15:00 - 02/25/05 11:00:00

02/27/05 23:45:00

02/28/05 00:00:00

02/28/05 08:15:00

02/28/05 11:15:00 - 02/28/05 12:00:00

02/28/05 23:15:00

02/28/05 23:45:00

b) For the following dates and times, DO% sat and DO mg/L data are suspect. Data retained.

02/06/05 17:15:00

c) For the following dates and times, turbidity readings are suspect. Data retained.

02/10/05 20:30:00 223 NTU

d) For the following dates and times, pH readings are suspect due to reason unknown. Post calibration within specifications of probe. Data retained.

02/22/05 11:30:00 - 02/28/05 23:45:00

Goodwin Island:

a) For the following dates and times, pH readings are suspect due to reasons unknown. Post calibration within specifications of probe. Data retained.

02/09/05 09:30:00 – 02/22/05 09:15:00

Sweet Hall Marsh:

a) For the following dates and times, depth values occasionally reported negative and/or zero due to sensor precision. Data retained.

02/10/05 07:15:00 - 02/10/05 08:00:00
02/11/05 07:00:00 - 02/11/05 09:45:00
02/11/05 19:15:00 - 02/11/05 22:00:00
02/12/05 07:45:00 - 02/12/05 10:45:00
02/12/05 19:30:00 - 02/12/05 23:00:00
02/13/05 08:30:00 - 02/13/05 11:30:00
02/13/05 20:30:00 - 02/13/05 23:15:00
02/14/05 10:45:00 - 02/14/05 11:00:00
02/14/05 23:15:00 - 02/15/05 00:00:00
02/15/05 23:15:00 - 02/16/05 00:15:00
02/16/05 11:45:00 - 02/16/05 14:15:00
02/20/05 03:45:00

b) For the following dates and times, pH readings are suspect due to station maintenance. Data retained.

02/02/05 13:00:00 - 02/02/05 13:15:00
02/17/05 14:30:00 - 02/17/05 14:45:00

c) For the following dates and times, turbidity readings are suspect due to station maintenance. Data retained.

02/17/05 14:00:00 - 02/17/05 14:45:00

Taskinas Creek:

a) For the following dates and times, turbidity readings are suspect. Data retained.

02/20/05 22:15:00 394 NTU
02/27/05 09:00:00 418 NTU
02/27/05 09:15:00 203 NTU

MARCH

Claybank:

a) For the month of March, depth values occasionally reported negative and/or zero due to sensor precision. Data retained.

b) For the following dates and times, pH readings are suspect due to reason unknown. Post calibration within specifications of probe. Data retained.

03/01/05 00:00:00 - 03/16/05 12:45:00

Goodwin Island:

a) For the following dates and times, turbidity readings are suspect. Data retained.

03/26/05 08:00:00 121 NTU

b) For the following dates and times, pH readings are suspect due to reason unknown. Post calibration within specifications of probe. Data retained.

03/16/05 09:45:00 - 03/30/05 10:00:00

c) For the following dates and times, specific conductance and salinity values were significantly different as compared to pre and post measurement, which occurred at low tide and may indicate probe exposure. Data retained.

03/09/05 13:45:00

03/09/05 15:30:00

Sweet Hall Marsh:

a) For the following dates and times, depth values occasionally reported negative and/or zero due to sensor precision. Data retained.

03/02/05 10:15:00 - 03/02/05 12:45:00

03/12/05 20:15:00 - 03/12/05 20:45:00

03/15/05 21:45:00

b) For the following dates and times, turbidity readings are suspect due to station maintenance. Data retained.

03/29/05 12:30:00 - 03/29/05 13:00:00

c) For the following dates and times, specific conductance and salinity values were significantly different as compared to pre and post measurement, which occurred at low tide and may indicate probe exposure. Data retained.

03/02/05 21:15:00

03/03/05 00:45:00

03/03/05 11:00:00
03/03/05 14:15:00
03/03/05 22:45:00
03/04/05 01:15:00
03/09/05 04:45:00
03/09/05 06:00:00
03/09/05 17:15:00
03/10/05 07:45:00
03/10/05 17:45:00
03/11/05 07:15:00
03/11/05 08:30:00

Taskinas Creek:

a) For the following dates and times, turbidity readings are suspect. Data retained.

03/27/05 16:30:00 558 NTU
03/27/05 16:45:00 190 NTU

b) For the following dates and times, DO% sat and DO mg/L data are suspect. Data retained.

03/21/05 08:00:00

APRIL

Claybank:

a) For the following dates and times, turbidity readings are suspect. Data retained.

04/02/05 21:15:00 238 NTU
04/03/05 15:00:00 275 NTU

b) For the following dates and times, DO% sat and DO mg/L data are suspect. Data retained.

04/26/05 14:00:00

Goodwin Island:

(No suspect data)

Sweet Hall Marsh:

a) For the following dates and times, depth values occasionally reported negative and/or zero due to sensor precision. Data retained.

04/21/05 04:15:00
04/24/05 05:45:00 - 04/24/05 07:45:00
04/24/05 17:15:00 - 04/24/05 20:00:00
04/25/05 06:00:00 - 04/25/05 08:45:00
04/25/05 17:45:00 - 04/25/05 20:00:00
04/26/05 07:45:00 - 04/26/05 08:00:00
04/26/05 19:45:00 - 04/26/05 20:30:00

Taskinas Creek:

(No suspect data)

MAY

Claybank:

a) For the following dates and times, specific conductance and salinity values are anomalous as compared to pre and post measurements. Data retained.

05/26/05 00:00:00 - 05/26/05 00:15:00
05/26/05 11:30:00
05/27/05 19:45:00
05/28/05 20:45:00
05/28/05 23:00:00
05/29/05 23:15:00

b) For the following dates and times, turbidity readings are suspect. Data retained.

05/17/05 13:30:00 200 NTU
05/18/05 19:30:00 194 NTU
05/23/05 22:15:00 720 NTU
05/25/05 01:00:00 310 NTU
05/25/05 12:45:00 160 NTU
05/29/05 06:00:00 309 NTU
05/29/05 06:15:00 331 NTU

Goodwin Island:

(No suspect data)

Sweet Hall Marsh:

a) For the following dates and times, turbidity readings are suspect due to station maintenance. Data retained.

05/02/05 12:15:00 - 05/02/05 13:00:00
05/16/05 11:45:00
05/31/05 11:15:00 - 05/31/05 11:45:00

Taskinas Creek:

(No suspect data)

JUNE

Claybank:

a) For the following dates and times, turbidity readings are suspect. Data retained.

06/01/05 06:15:00 301 NTU
06/13/05 09:00:00 265 NTU
06/21/05 04:00:00 348 NTU
06/21/05 18:30:00 248 NTU

b) For the following dates and times, DO% sat and DO mg/L data are suspect. Data retained.

06/11/05 12:30:00
06/11/05 13:45:00 - 6/11/05 14:15:00

c) For the following dates and times, specific conductance and salinity values are anomalous as compared to pre and post measurements. Data retained.

06/18/05 22:30:00
06/19/05 09:45:00

Goodwin Island:

a) For the following dates and times, depth values are suspect. Data retained.

06/19/05 18:30:00

Sweet Hall Marsh:

a) For the following dates and times, turbidity readings are suspect due to station maintenance. Data retained.

06/15/05 12:15:00
06/28/05 10:45:00 - 06/28/05 11:00:00

Taskinas Creek:

a) For the following dates and times, turbidity readings are suspect. Data retained.

06/13/05 22:00:00 868 NTU
06/13/05 22:15:00 215 NTU
06/17/05 08:15:00 416 NTU
06/27/05 05:45:00 819 NTU
06/29/05 23:30:00 441 NTU
06/29/05 23:45:00 268 NTU

b) For the following dates and times, specific conductance and salinity values are anomalous as compared to pre and post measurements. Data retained.

06/27/05 00:15:00

JULY

Claybank:

a) For the following dates and times, turbidity readings are suspect. Data retained.

07/07/05 12:45:00 340 NTU
07/07/05 13:00:00 239 NTU
07/12/05 15:45:00 222 NTU

b) For the following dates and times, turbidity values were elevated due to station maintenance. Data retained.

07/13/05 08:45:00 21 NTU

c) For the following dates and times, specific conductance and salinity values are anomalous as compared to pre and post measurements. Data retained.

07/16/05 09:00:00
07/17/05 08:30:00
07/19/05 11:00:00
07/19/05 11:30:00
07/21/05 16:45:00
07/22/05 18:45:00
07/26/05 10:00:00
07/26/05 13:00:00
07/27/05 00:45:00

d) For the following dates and times, turbidity values were elevated compared to replacement sonde for the next deployment. Post calibration within standard specifications. Data suspect, data retained.

07/26/05 13:30:00 - 07/27/05 08:15:00

Goodwin Island:

a) For the following dates and times, DO membrane puncture, no obvious point of puncture. Post calibration 48.6%, entire deployment suspect. Data retained.

07/27/05 11:00:00 - 07/31/05 23:45:00

Sweet Hall Marsh:

a) For the following dates and times, turbidity readings are suspect due to station maintenance. Data retained.

07/14/05 10:45:00 – 07/14/05 11:15:00

07/27/05 09:30:00 - 07/27/05 10:15:00

Taskinas Creek:

a) For the following dates and times, turbidity readings are suspect. Data retained.

07/13/05 07:30:00 573 NTU

07/13/05 08:00:00 505 NTU

07/13/05 08:45:00 271 NTU

07/13/05 09:00:00 501 NTU

b) For the following dates and times, DO membrane puncture, no obvious point of puncture. Post calibration 52.9%, entire deployment suspect. Data retained.

07/05/05 11:30:00 - 07/13/05 09:45:00

c) For the following dates and times, specific conductance and salinity values are anomalous as compared to pre and post measurements. Data retained.

07/16/05 21:45:00

07/22/05 11:15:00

AUGUST

Claybank:

a) For the following dates and times, turbidity readings are suspect. Data retained.

08/16/05 07:45:00 200 NTU

08/23/05 15:15:00 466 NTU

08/23/05 15:30:00 438 NTU

b) For the following dates and times, DO% sat and DO mg/L data are suspect. Data retained.

08/08/05 22:45:00

c) For the following dates and times, DO membrane puncture, no obvious point of puncture. Post calibration 15.6%, entire deployment suspect. Data retained.

08/17/05 14:00:00 - 08/24/05 07:45:00

d) For the following dates and times, turbidity readings are suspect due to low post calibration value, 99.9 NTU. LED sensor failed. Entire deployment suspect. Data retained.

08/03/05 11:15:00 – 08/10/05 10:45:00

Goodwin Island:

a) For the following dates and times, DO membrane puncture, no obvious point of puncture. Post calibration 48.6%, entire deployment suspect. Data retained.

08/01/05 00:00:00 - 08/03/05 08:15:00

b) For the following dates and times, DO membrane puncture, no obvious point of puncture. Post calibration 45.2%, entire deployment suspect. Data retained.

08/17/05 09:15:00 - 08/24/05 10:15:00

c) For the following dates and times, DO membrane puncture, no obvious point of puncture. Post calibration 51.2%, entire deployment suspect. Data retained.

08/24/05 10:30:00 - 08/31/05 08:45:00

d) For the following dates and times, turbidity readings are suspect. Data retained.

08/07/05 14:30:00 98 NTU
08/08/05 16:45:00 832 NTU
08/08/05 17:00:00 938 NTU
08/10/05 01:45:00 127 NTU
08/23/05 09:45:00 50 NTU
08/23/05 10:30:00 78 NTU
08/23/05 11:30:00 98 NTU

Sweet Hall Marsh:

a) For the following dates and times, turbidity readings are suspect due to station maintenance. Data retained.

08/09/05 10:30:00 – 08/09/05 11:00:00

08/23/05 11:15:00 - 08/23/05 11:45:00

Taskinas Creek:

a) For the following dates and times, specific conductance and salinity values are anomalous as compared to pre and post measurements. Data retained.

08/02/05 17:45:00

08/04/05 22:15:00

08/16/05 10:30:00 – 08/16/05 14:00:00

b) For the following dates and times, turbidity readings are suspect. Data retained.

08/06/05 11:45:00 767 NTU

08/06/05 12:00:00 823 NTU

08/07/05 18:15:00 708 NTU

08/07/05 20:45:00 661 NTU

08/17/05 09:45:00 328 NTU

c) For the following dates and times, turbidity readings are suspect due heavy fouling on wiper. Data suspect.

08/08/05 10:15:00 – 08/09/05 08:15:00

SEPTEMBER

Claybank:

a) For the following dates and times, DO membrane puncture, no obvious point of puncture. Post calibration 15.6%, entire deployment suspect. Data retained.

09/07/05 14:45:00 - 09/14/05 10:00:00

b) For the following dates and times, turbidity readings are suspect. Data retained.

09/12/05 20:15:00 186 NTU

Goodwin Island:

a) For the following dates and times, DO% sat and DO mg/L data are suspect. Data retained.

09/10/05 03:45:00 - 09/10/05 04:30:00

b) For the following dates and times, turbidity readings are suspect. Data retained.

09/15/05 06:45:00 281 NTU

09/19/05 18:45:00 250 NTU

Sweet Hall Marsh:

a) For the following dates and times, turbidity readings are suspect due to station maintenance. Data retained.

09/17/05 12:00:00 – 09/07/05 12:15:00

09/20/05 11:30:00 – 09/20/05 15:00:00

Taskinas Creek:

b) For the following dates and times, turbidity readings are suspect. Data retained.

09/15/05 11:30:00 248 NTU

08/16/05 13:45:00 697 NTU

09/16/05 14:00:00 916 NTU

09/18/05 15:15:00 292 NTU

09/19/05 01:15:00 209 NTU

OCTOBER

Claybank:

a) For the following dates and times, depth values occasionally reported negative and/or zero due to sensor precision. Data retained.

10/18/05 03:15:00 - 03:45:00

Goodwin Island:

a) For the following dates and times, DO membrane puncture, no obvious point of puncture. Post calibration 52.8%, entire deployment suspect. Data retained.

10/26/05 10:15:00 - 10/31/05 23:45:00

b) For the following dates and times, depth values are suspect due to a storm event. Data retained.

10/24/05 13:00:00 - 10/24/05 22:15:00

c) For the following dates and times, specific conductance and salinity values are anomalous as compared to pre and post measurements. Data retained.

10/28/05 03:00:00

d) For the following dates and times, turbidity readings are suspect. Data retained.

10/27/05 11:45:00 349 NTU

10/27/05 12:00:00 32 NTU

e) For the following dates and times, turbidity values were elevated compared to replacement sonde for the next deployment. Post calibration within standard specifications. Data suspect, data retained.

10/19/05 11:15:00 - 10/26/05 10:00:00

Sweet Hall Marsh:

a) For the following dates and times, turbidity readings are suspect due to low post calibration value, 100.3 NTU. LED sensor failed. Entire deployment suspect. Data retained.

10/18/05 11:45:00 – 10/31/05 23:45:00

b) For the following dates and times, depth values occasionally reported negative and/or zero due to sensor precision. Data retained.

10/17/05 17:45:00 - 10/17/05 18:00:00

10/17/05 18:30:00 - 10/17/05 19:30:00

10/18/05 05:45:00 - 10/18/05 07:45:00

Taskinas Creek:

a) For the following dates and times, specific conductance and salinity values are anomalous as compared to pre and post measurements. Data retained.

10/27/05 10:00:00 - 10/27/05 10:15:00

10/27/05 11:30:00 - 10/27/05 11:45:00

NOVEMBER

Claybank:

a) For the following dates and times, turbidity readings are suspect. Data retained.

11/22/05 18:15:00 220 NTU

b) For the following dates and times, turbidity readings are suspect due to low post calibration value, 99.0 NTU. Entire deployment suspect. Data retained.

11/28/05 12:15:00 – 11/30/05 23:45:00

c) For the following dates and times, pH readings are suspect due to reasons unknown. Post calibration within specifications of probe. Data retained.

11/01/05 10:00:00 - 11/16/05 10:00:00

11/28/05 12:15:00 - 11/30/05 23:45:00

Goodwin Island:

a) For the following dates and times, DO membrane puncture, no obvious point of puncture. Post calibration 52.8%, entire deployment suspect. Data retained.

11/01/05 00:00:00 - 11/09/05 10:45:00

b) For the following dates and times, DO membrane puncture, no obvious point of puncture. Post calibration 55.5%, entire deployment suspect. Data retained.

11/09/05 11:00:00 - 11/28/05 09:45:00

Sweet Hall Marsh:

a) For the following dates and times, turbidity readings are suspect due to station maintenance. Data retained.

11/03/05 12:45:00 – 11/03/05 13:45:00

11/14/05 13:00:00 – 11/14/05 13:45:00

11/30/05 11:15:00 – 11/30/05 11:45:00

b) For the following dates and times, turbidity readings are suspect due to low post calibration value, 100.3 NTU. LED sensor failed. Entire deployment suspect. Data retained.

11/01/05 00:00:00 – 11/03/05 12:30:00

c) For the following dates and times, depth values occasionally reported negative and/or zero due to sensor precision. Data retained.

11/04/05 07:00:00 - 11/04/05 08:00:00

11/04/05 20:00:00 - 11/04/05 21:00:00

11/05/05 07:15:00 - 11/05/05 09:15:00

11/11/05 14:30:00 - 11/11/05 15:30:00

11/24/05 00:30:00 - 11/24/05 01:15:00

Taskinas Creek:

a) For the following dates and times, turbidity readings are suspect. Data retained.

11/30/05 12:45:00 996 NTU

b) For the following dates and times, specific conductance and salinity values are anomalous as compared to pre and post measurements. Data retained.

11/07/05 10:00:00 - 11/07/05 10:45:00

11/16/05 08:00:00

c) For the following dates and times, DO membrane puncture, no obvious point of puncture. Post calibration 60.5%, entire deployment suspect. Data retained.

11/30/05 10:00:00 - 11/30/05 23:45:00

DECEMBER

Claybank:

a) For the following dates and times, turbidity readings are suspect due to low post calibration value, 99.0 NTU. Entire deployment suspect. Data retained.

12/01/05 00:00:00 – 12/07/05 09:15:00

b) For the following dates and times, DO% sat and DO mg/L data are suspect. Data retained.

12/27/05 16:30:00

c) For the following dates and times, pH readings are suspect due to reasons unknown. Post calibration within specifications of probe. Data retained.

12/01/05 00:00:00 - 12/07/05 09:15:00

12/19/05 10:00:00 - 12/31/05 23:45:00

Goodwin Island:

a) For the following dates and times, DO % saturation and DO mg/L values were suspect due to a slow decrease in oxygen concentrations throughout the deployment. Post calibration 65.2%. Data retained.

12/19/05 11:45:00 - 12/31/05 23:45:00

b) For the following dates and time, depth values occasionally reported negative and/or zero due to sensor precision. Data retained.

12/08/05 20:15:00 - 12/08/05 21:00:00

Sweet Hall Marsh:

a) For the following dates and times, turbidity readings are suspect due to station maintenance. Data retained.

12/12/05 12:00:00 – 12/12/05 13:15:00
12/20/05 11:15:00 – 12/20/05 14:30:00

b) For the following dates and times, specific conductance and salinity values were significantly different as compared to pre and post measurement, which occurred at low tide and may indicate probe exposure. Data retained.

12/04/05 08:15:00
12/04/05 08:30:00

c) For the following dates and times, depth, specific conductance, salinity, and DO concentration are values were significantly different as compared to pre and post measurement, which occurred at low tide and may indicate probe exposure. Data retained.

12/09/05 14:30:00

Taskinas Creek:

a) For the following dates and times, DO membrane puncture, no obvious point of puncture. Post calibration 60.5%, entire deployment suspect. Data retained.

12/01/05 00:00:00 - 12/12/05 10:00:00

b) For the following dates and times, turbidity readings are suspect. Data retained.

12/09/05 04:45:00 453 NTU

12. Deleted data

JANUARY

Claybank:

(No deleted data)

Goodwin Island:

a) For the following dates and times, turbidity values greater than 1000 were deleted.

01/11/05 01:45:00 1171 NTU

Sweet Hall Marsh:

a) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

01/19/05 13:00:00 225 NTU

b) For the following dates and times, depth values were deleted.

01/23/05 18:30:00 - 01/23/05 21:15:00

Taskinas Creek:

a) For the following dates and times, all data were deleted due to exchange of datalogger.

01/19/05 11:15:00

b) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

01/13/05 02:30:00 676 NTU

01/31/05 16:30:00 577 NTU

FEBRUARY

Claybank:

(No deleted data)

Goodwin Island:

(No deleted data)

Sweet Hall Marsh:

a) For the following dates and times, pH values high due to station maintenance. Data deleted.

02/02/05 12:30:00 – 02/02/05 12:45:00

02/17/05 14:00:00 – 02/17/05 14:15:00

Taskinas Creek:

(No deleted data)

MARCH

Claybank:

(No deleted data)

Goodwin Island:

a) For the following dates and times, all data were deleted due to datalogger being out of the water.

03/09/05 14:00:00 - 03/09/05 15:15:00

b) For the following dates and times, DO % sat and DO mg/L data were deleted due to membrane puncture.

03/04/05 13:30:00 - 03/16/05 09:30:00

Sweet Hall Marsh:

a) For the following dates and times, all data were deleted due to datalogger being out of the water.

03/02/05 21:30:00 - 03/03/05 00:30:00

03/03/05 11:15:00 - 03/03/05 14:00:00

03/03/05 23:00:00 - 03/04/05 01:00:00

03/09/05 05:00:00 - 03/09/05 05:45:00

03/09/05 17:30:00 - 03/09/05 19:30:00

03/10/05 05:30:00 - 03/10/05 07:30:00

03/10/05 18:00:00 - 03/10/05 19:45:00

03/11/05 07:30:00 - 03/11/05 07:45:00

Taskinas Creek:

a) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

03/30/05 06:30:00 825 NTU

APRIL

Claybank:

a) For the following dates and times, turbidity values greater than 1000 were deleted.

04/03/05 07:00:00 2287 NTU
04/04/05 08:30:00 2323 NTU
04/05/05 12:30:00 1179 NTU
04/07/05 01:30:00 2415 NTU
04/13/05 17:45:00 2404 NTU
04/20/05 13:30:00 1129 NTU

b) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

04/03/05 10:45:00 316 NTU
04/09/05 05:15:00 353 NTU
04/16/05 11:15:00 417 NTU
04/29/05 11:30:00 932 NTU

Goodwin Island:

a) For the following dates and times, depth values were deleted due to exchange of datalogger.

04/18/05 08:30:00 - 04/18/05 08:45:00

Sweet Hall Marsh:

(No deleted data)

Taskinas Creek:

a) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

04/14/05 05:30:00 556 NTU
04/30/05 16:15:00 546 NTU

MAY

Claybank:

a) For the following dates and times, turbidity values greater than 1000 were deleted.

05/16/05 21:00:00 1139 NTU

05/19/05 07:45:00 1129 NTU
05/19/05 12:45:00 1133 NTU
05/19/05 15:30:00 1133 NTU
05/19/05 16:15:00 1135 NTU
05/19/05 16:30:00 1133 NTU
05/23/05 11:45:00 1129 NTU
05/23/05 15:30:00 1146 NTU
05/24/05 01:30:00 1128 NTU
05/24/05 02:30:00 1128 NTU
05/24/05 10:30:00 1124 NTU
05/24/05 14:45:00 1127 NTU
05/25/05 10:15:00 1123 NTU
05/25/05 12:00:00 1123 NTU

b) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

05/06/05 11:00:00 452 NTU
05/19/05 08:30:00 584 NTU
05/19/05 15:45:00 879 NTU
05/23/05 05:45:00 688 NTU
05/23/05 19:45:00 772 NTU
05/31/05 19:30:00 373 NTU

c) For the following dates and times, turbidity values were deleted due to sensor malfunction. Data deleted.

05/19/05 17:00:00 - 05/22/05 22:30:00

Goodwin Island:

(No deleted data)

Sweet Hall Marsh:

(No deleted data)

Taskinas Creek:

a) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

05/12/05 12:30:00 418 NTU
05/13/05 20:15:00 474 NTU
05/27/05 01:15:00 354 NTU
05/27/05 11:15:00 365 NTU

05/27/05 12:15:00 364 NTU

b) For the following dates and times, turbidity values greater than 1000 were deleted.

05/14/05 15:00:00 1278 NTU

05/18/05 10:45:00 1628 NTU

JUNE

Claybank:

a) For the following dates and times, turbidity values greater than 1000 were deleted.

06/14/05 09:30:00 2728 NTU

06/19/05 13:30:00 1547 NTU

06/20/05 06:00:00 1529 NTU

06/20/05 07:15:00 1528 NTU

06/20/05 09:15:00 1467 NTU

06/20/05 12:15:00 1529 NTU

06/20/05 21:30:00 1528 NTU

06/20/05 22:30:00 1523 NTU

06/21/05 04:45:00 1282 NTU

06/21/05 08:15:00 1525 NTU

06/21/05 12:30:00 1041 NTU

06/22/05 06:00:00 1057 NTU

b) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

06/01/05 00:00:00 389 NTU

06/09/05 18:30:00 439 NTU

06/14/05 19:30:00 393 NTU

06/19/05 14:15:00 878 NTU

06/19/05 14:30:00 304 NTU

06/20/05 17:15:00 413 NTU

06/21/05 00:45:00 655 NTU

Goodwin Island:

(No deleted data)

Sweet Hall Marsh:

(No deleted data)

Taskinas Creek:

a) For the following dates and times, turbidity values greater than 1000 were deleted.

06/04/05 00:45:00 1273 NTU

b) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

06/11/05 00:00:00 937 NTU

06/12/05 07:45:00 630 NTU

06/13/05 00:30:00 916 NTU

06/14/05 00:15:00 602 NTU

06/14/05 02:00:00 899 NTU

06/23/05 02:30:00 820 NTU

06/24/05 16:30:00 323 NTU

c) For the following dates and times, turbidity values were deleted due to sensor malfunction. Data deleted.

06/27/05 10:00:00 - 06/28/05 08:15:00

JULY

Claybank:

a) For the following dates and times, turbidity values greater than 1000 were deleted.

07/12/05 15:15:00 2800 NTU

07/15/05 08:00:00 1513 NTU

07/19/05 08:15:00 1616 NTU

07/24/05 02:15:00 2160 NTU

07/26/05 13:15:00 1253 NTU

07/27/05 05:15:00 1900 NTU

07/27/05 06:45:00 1972 NTU

07/27/05 07:30:00 2125 NTU

b) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

07/03/05 16:30:00 900 NTU

07/17/05 16:00:00 435 NTU

c) For the following dates and times, DO % sat and DO mg/L data were deleted due to membrane puncture.

07/24/05 15:15:00 - 07/27/05 08:15:00

07/30/05 15:45:00 - 07/31/05 23:45:00

Goodwin Island:

a) For the following dates and times, turbidity values greater than 1000 were deleted.

07/31/05 14:30:00 1479 NTU

Sweet Hall Marsh:

(No deleted data)

Taskinas Creek:

a) For the following dates and times, turbidity values greater than 1000 were deleted.

07/13/05 08:30:00 1165 NTU

07/23/05 15:45:00 1217 NTU

07/24/05 08:45:00 1189 NTU

07/24/05 09:00:00 1187 NTU

07/27/05 09:15:00 1202 NTU

07/27/05 10:00:00 1071 NTU

b) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

07/23/05 18:30:00 411 NTU

07/24/05 16:00:00 568 NTU

07/27/05 05:30:00 934 NTU

07/27/05 06:45:00 503 NTU

07/27/05 07:15:00 348 NTU

07/27/05 07:45:00 663 NTU

07/27/05 08:15:00 566 NTU

07/27/05 08:45:00 681 NTU

07/27/05 10:15:00 555 NTU

c) For the following dates and times, depth values were deleted due to exchange of datalogger.

07/19/05 10:00:00

AUGUST

Claybank:

a) For the following dates and times, DO % sat and DO mg/L data were deleted due to membrane puncture.

08/01/05 00:00:00 - 08/03/05 11:00:00

b) For the following dates and times, turbidity values greater than 1000 were deleted.

08/06/05 18:15:00 2711 NTU

08/09/05 03:00:00 1522 NTU

08/09/05 14:30:00 2026 NTU

08/28/05 10:30:00 1620 NTU

08/28/05 22:45:00 1625 NTU

c) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

08/09/05 15:30:00 571 NTU

08/15/05 08:15:00 587 NTU

Goodwin Island:

a) For the following dates and times, turbidity values greater than 1000 were deleted.

08/08/05 11:45:00 1000 NTU

08/08/05 18:30:00 1041 NTU

08/08/05 18:45:00 1166 NTU

08/09/05 05:30:00 1356 NTU

08/09/05 06:30:00 1446 NTU

08/09/05 07:00:00 1432 NTU

08/09/05 13:30:00 1534 NTU

08/09/05 14:30:00 1477 NTU

08/09/05 17:30:00 1530 NTU

08/09/05 18:30:00 1384 NTU

08/10/05 00:45:00 1529 NTU

08/10/05 02:30:00 1526 NTU

08/10/05 05:30:00 1516 NTU

08/23/05 13:00:00 1557 NTU

08/23/05 19:15:00 1547 NTU

08/23/05 21:30:00 1550 NTU

08/23/05 22:00:00 1167 NTU

08/24/05 19:15:00 1444 NTU

b) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

08/05/05 10:45:00 849 NTU
08/06/05 11:45:00 307 NTU
08/06/05 18:45:00 938 NTU
08/07/05 14:00:00 964 NTU
08/08/05 18:00:00 843 NTU
08/08/05 19:00:00 746 NTU
08/09/05 05:45:00 420 NTU
08/09/05 07:15:00 789 NTU
08/09/05 13:00:00 807 NTU
08/09/05 17:15:00 637 NTU
08/09/05 18:00:00 747 NTU
08/10/05 01:30:00 951 NTU
08/10/05 02:15:00 776 NTU
08/10/05 06:00:00 342 NTU
08/23/05 11:00:00 707 NTU
08/23/05 19:00:00 551 NTU
08/23/05 23:45:00 936 NTU
08/25/05 13:00:00 458 NTU

Sweet Hall Marsh:

(No deleted data)

Taskinas Creek:

a) For the following dates and times, all data were deleted due to exchange of datalogger.

08/23/05 09:30:00

b) For the following dates and times, turbidity values greater than 1000 were deleted.

08/08/05 11:00:00 1056 NTU
08/08/05 16:45:00 1364 NTU
08/08/05 17:15:00 1362 NTU
08/09/05 05:30:00 1208 NTU
08/09/05 08:00:00 1349 NTU
08/14/05 05:00:00 1202 NTU
08/14/05 06:45:00 1201 NTU
08/14/05 07:15:00 1037 NTU
08/14/05 07:45:00 1162 NTU
08/14/05 08:15:00 1040 NTU
08/17/05 11:45:00 1383 NTU
08/27/05 03:15:00 1054 NTU

c) For the following dates and times, turbidity values were deleted due to sensor malfunction. Data deleted.

08/14/05 08:45:00 - 08/16/05 10:15:00

d) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

08/08/05 03:30:00 728 NTU

08/08/05 10:00:00 746 NTU

08/08/05 19:30:00 854 NTU

08/08/05 22:45:00 868 NTU

SEPTEMBER

Claybank:

a) For the following dates and times, turbidity values greater than 1000 were deleted.

09/03/05 00:00:00 1349 NTU

09/14/05 19:00:00 1300 NTU

09/19/05 10:45:00 1311 NTU

09/30/05 23:45:00 1212 NTU

Goodwin Island:

a) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

09/19/05 18:45:00 250 NTU

Sweet Hall Marsh:

a) For the following dates and times, all data were deleted due to datalogger being out of the water.

09/07/05 11:45:00

Taskinas Creek:

a) For the following dates and times, turbidity values greater than 1000 were deleted.

09/03/05 04:15:00 1220 NTU

09/08/05 14:00:00 1059 NTU

09/15/05 00:15:00 1345 NTU

09/16/05 11:00:00 1344 NTU

09/17/05 01:45:00 1349 NTU

09/18/05 12:00:00 1019 NTU

09/19/05 00:30:00 1256 NTU
09/19/05 03:15:00 1226 NTU

b) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

09/03/05 14:30:00 845 NTU
09/19/05 05:45:00 865 NTU
09/19/05 13:30:00 984 NTU
09/19/05 15:30:00 862 NTU
09/20/05 01:00:00 791 NTU

OCTOBER

Claybank:

a) For the following dates and times, DO % sat and DO mg/L data were deleted due to membrane puncture.

10/13/05 08:30:00 - 10/19/05 08:45:00

Goodwin Island:

(No deleted data)

Sweet Hall Marsh:

(No deleted data)

Taskinas Creek:

a) For the following dates and times, turbidity values greater than 1000 were deleted.

10/21/05 01:15:00 1250 NTU

NOVEMBER

Claybank:

a) For the following dates and times, turbidity values greater than 1000 were deleted.

11/29/05 18:00:00 1131 NTU

b) For the following dates and times, DO values elevated due to sensor malfunction. Data deleted.

11/13/05 08:15:00 - 11/16/05 10:00:00

Goodwin Island:

(No deleted data)

Sweet Hall Marsh:

(No deleted data)

Taskinas Creek:

a) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

11/03/05 12:15:00 983 NTU

DECEMBER

Claybank:

a) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

12/02/05 10:45:00 936 NTU

b) For the following dates and times, turbidity values greater than 1000 were deleted.

12/06/05 15:00:00 1103 NTU

Goodwin Island:

(No deleted data)

Sweet Hall Marsh:

a) For the following dates and times, all data were deleted due to datalogger being out of the water.

12/09/05 14:45:00 - 12/09/05 15:00:00

Taskinas Creek:

a) For the following dates and times, elevated single point turbidity values deleted due to sensor interference. Data deleted.

12/03/05 14:00:00 947 NTU
12/03/05 18:15:00 945 NTU
12/03/05 19:45:00 310 NTU
12/23/05 10:45:00 505 NTU

13. Missing data

Data are missing due to equipment failure, specific probes not being deployed, and time of maintenance or calibration of equipment. For more details on deleted data, see the Deleted Data Section (12.). If additional information on missing data are needed, contact the Research Coordinator at the reserve submitting the data.

JANUARY

Sweet Hall Marsh:

a) For the following dates and times, all data are missing due to an internal error within the sonde.

04/05/05 13:15:00 - 04/18/05 12:00:00

14. Post-deployment Information

End of deployment Post-calibration Readings in Standard Solutions:
na = no data available for that particular standard

Claybank:

Date (post cal)	Cond (ms) (Std:10)	DO (AirSat) (Std: 100%)	pH (Std:7)	Turb (Std:0)	Depth (Std:0)
01/06/05	9.964	100.0	6.91	-0.1	-0.212
01/13/05	10.070	101.4	6.94	0.0	-0.005
01/25/05	10.020	100.2	6.97	-0.1	-0.049
02/10/05	10.090	99.5	NA	-0.2	-0.344
02/23/05	10.060	99.3	7.03	0.1	0.025
03/17/05	10.150	94.8	7.13	-0.2	-0.045
03/31/05	9.860	101.9	7.17	0.4	-0.031
04/15/05	10.100	102.1	7.10	0.3	0.312
04/28/05	9.986	98.8	7.08	0.0	0.036
05/11/05	9.809	99.2	7.06	0.0	0.008
05/26/05	9.752	99.6	7.05	-0.2	NA
06/02/05	10.040	101.7	6.97	0.2	0.159
06/09/05	10.060	99.4	7.10	-0.1	0.013
06/17/05	10.030	98.5	7.02	-0.3	-0.090
06/23/05	9.936	14.0	7.02	0.0	0.178
06/30/05	10.100	94.6	7.10	0.1	0.253

07/07/05	9.959	16.1	7.01	0.0	-0.030
07/14/05	10.080	101.1	7.02	-0.2	-0.009
07/21/05	9.869	95.2	7.04	0.0	0.018
07/28/05	9.775	2.0	6.99	0.1	-0.396
08/04/05	9.915	5.3	7.02	-0.1	0.072
08/11/05	10.030	91.8	7.06	-0.5	-0.256
08/18/05	9.938	98.2	7.06	0.0	0.002
08/25/05	9.991	15.6	6.99	-0.5	0.064
09/01/05	9.890	97.6	7.05	0.1	-0.011
09/08/05	10.050	99.0	7.22	0.4	-0.001
09/14/05	9.938	44.7	7.01	0.0	-0.142
09/22/05	9.959	97.6	7.01	-0.1	0.049
09/29/05	10.010	95.0	7.01	0.0	-0.072
10/06/05	10.010	99.2	7.15	-0.2	0.036
10/13/05	9.912	96.2	7.06	0.0	-0.118
10/20/05	9.992	51.4	6.96	-0.1	0.024
11/02/05	9.981	98.3	7.06	-0.5	0.113
11/16/05	9.697	101.3	7.04	-0.4	-0.020
11/29/05	9.935	97.1	6.96	0.0	-0.094
12/08/05	9.981	96.8	7.08	-1.0	0.183
12/20/05	9.930	99.7	6.99	-0.3	0.008
01/05/06	10.070	92.8	7.25	-0.3	-0.141

Goodwin Island:

Date (post cal)	Cond (ms) (Std:10)	DO (AirSat) (Std: 100%)	pH (Std:7)	Turb (Std:0)	Depth (Std:0)
01/06/05	10.140	60.6	6.88	-0.4	-0.196
01/13/05	9.891	76.9	7.02	0.2	-0.060
01/25/05	10.120	101.1	7.04	-0.1	-0.048
02/10/05	10.180	99.0	6.99	0.0	-0.207
02/23/05	10.160	98.7	7.15	0.4	0.025
03/17/05	10.350	73.3	7.02	0.2	0.018
03/31/05	9.964	94.2	7.44	0.1	-0.041
04/19/05	10.110	91.8	7.08	0.0	0.257
04/28/05	10.040	100.7	7.07	-0.2	-0.037
05/11/05	9.898	72.7	7.06	0.1	0.039
05/26/05	9.778	96.9	7.03	-0.4	-0.093
06/02/05	10.080	97.5	7.04	0.0	0.130
06/09/05	10.020	100.9	7.04	0.3	-0.013
06/17/05	10.050	91.9	7.05	0.0	-0.058
06/23/05	9.924	100.9	6.98	-0.2	0.176
06/30/05	9.995	95.3	7.09	0.1	-0.067
07/07/05	9.954	98.0	6.99	0.0	0.049
07/14/05	10.070	91.8	7.01	-0.1	-0.019

07/21/05	9.824	96.3	7.00	-0.2	-0.031
07/28/05	9.894	50.9	7.04	0.1	0.026
08/04/05	9.913	48.6	6.92	0.5	0.038
08/11/05	9.969	98.3	7.03	0.1	-0.026
08/18/05	9.794	92.7	7.10	0.3	-0.025
08/25/05	9.929	45.2	7.06	0.0	0.077
09/01/05	9.869	51.2	7.07	-0.1	-0.034
09/08/05	9.998	95.1	6.95	-0.2	0.085
09/15/05	9.915	97.4	7.08	0.1	-0.150
09/22/05	9.909	96.2	6.99	0.1	0.048
09/29/05	9.869	95.9	7.04	0.1	-0.069
10/06/05	9.911	99.6	7.06	0.0	0.055
10/13/05	9.933	105.0	7.15	-0.4	-0.120
10/20/05	10.010	96.0	7.02	-0.1	-0.013
10/27/05	9.959	101.3	7.05	0.1	NA
11/10/05	9.977	52.8	7.03	0.0	0.090
11/29/05	9.949	55.5	7.04	0.0	-0.012
12/08/05	9.993	96.2	7.02	0.0	0.154
12/20/05	9.990	98.2	6.94	-0.5	0.017
01/05/06	9.970	65.2	7.02	0.0	-0.169

Sweethall Landing:

Date (post cal)	Cond (ms) (Std:10)	DO (AirSat) (Std: 100%)	pH (Std:7)	Turb (Std:0)	Depth (Std:0)
01/06/05	10.180	102.4	7.00	-0.3	0.129
01/20/05	10.320	101.8	7.04	0.2	-0.167
02/03/05	10.440	101.4	7.00	0.2	-0.137
02/18/05	10.080	96.9	7.06	0.1	-0.095
03/03/05	10.150	100.9	7.03	0.2	-0.059
03/16/05	10.080	99.0	7.03	-0.3	0.213
03/30/05	10.150	100.3	7.05	-0.1	0.036
04/06/05	10.080	100.9	6.99	-0.1	0.229
04/19/05	10.010	102.8	7.00	0.0	0.068
05/03/05	10.190	101.5	7.00	0.0	0.005
05/17/05	10.050	99.9	7.06	-0.5	0.016
06/01/05	10.050	102.6	7.03	0.4	0.084
06/16/05	10.100	100.1	7.02	-0.1	-0.115
06/29/05	10.110	101.7	7.00	0.0	0.100
07/15/05	10.030	101.1	7.04	-0.1	-0.045
07/28/05	10.050	101.1	7.09	0.0	0.024
08/10/05	10.040	98.9	7.13	0.0	0.036
08/24/05	10.140	101.9	7.08	0.0	-0.046
09/08/05	10.080	101.3	7.05	-0.1	0.081
09/21/05	9.978	101.8	6.99	-0.1	-0.074
10/05/05	10.020	85.1	7.07	0.1	0.009

10/19/05	10.020	97.5	7.02	0.0	-0.126
11/04/05	9.988	101.3	7.10	-0.3	0.063
11/15/05	10.050	100.9	7.03	0.1	0.053
12/01/05	9.932	100.5	7.12	0.3	-0.101
12/13/05	10.050	101.5	7.08	0.1	0.114
12/21/05	9.989	99.7	6.96	0.1	0.156
01/05/06	10.040	100.8	7.00	0.0	-0.168

Taskinas Creek:

Date	Cond (ms) (Std:10)	DO (AirSat) (Std: 100%)	pH (Std:7)	Turb (Std:0)	Depth (Std:0)
01/06/05	10.160	102.7	6.99	0.0	0.117
01/20/05	10.310	100.7	6.92	0.1	-0.163
02/03/05	10.070	101.5	7.05	0.0	-0.143
02/17/05	10.130	98.1	7.06	-0.2	-0.164
03/03/05	10.020	97.4	7.08	0.0	-0.065
03/16/05	10.210	97.4	7.00	0.0	0.123
03/30/05	10.040	99.9	6.98	-0.3	0.021
04/06/05	10.000	99.4	7.04	-0.1	0.225
04/19/05	9.990	102.6	6.97	-0.2	0.053
05/03/05	10.120	99.3	7.09	0.2	-0.014
05/17/05	10.010	100.7	7.02	0.0	0.019
06/01/05	10.090	99.5	7.02	-0.3	0.084
06/07/05	10.020	98.7	6.97	0.1	-0.028
06/15/05	10.030	98.9	7.03	-0.3	-0.100
06/21/05	10.050	98.4	7.06	0.0	0.058
06/29/05	10.130	99.5	7.06	0.1	-0.048
07/06/05	9.898	100.0	7.00	0.3	-0.086
07/14/05	10.100	52.9	6.99	-0.2	-0.022
07/20/05	10.010	100.7	6.99	-0.4	0.016
07/28/05	10.010	98.9	6.98	-0.2	-0.009
08/10/05	10.060	90.9	7.00	0.0	0.038
08/17/05	10.030	99.0	7.07	0.0	-0.062
08/24/05	10.020	92.9	7.01	0.1	0.002
08/30/05	10.020	98.1	7.00	0.0	0.002
09/08/05	10.060	96.8	7.02	-0.1	0.055
09/14/05	10.020	100.5	6.98	-0.1	-0.135
09/21/05	9.997	90.0	7.00	-0.1	0.038
09/28/05	10.040	99.6	7.02	-0.1	-0.025
10/05/05	10.040	99.9	7.01	0.0	0.087
10/19/05	10.150	98.0	6.97	0.0	-0.127
11/04/05	10.080	95.4	7.07	0.0	0.053
11/15/05	10.140	100.5	6.99	-0.1	0.052
12/01/05	9.920	97.7	7.00	0.1	-0.102
12/13/05	10.060	60.5	7.13	-0.1	0.114
12/21/05	10.040	100.5	7.04	0.0	0.152

01/05/06	10.020	98.0	7.06	-0.1	-0.173
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Field verifications were recorded with a YSI-85 and/or a YSI 600 XLM, and LaMotte titration kit immediately prior to sonde retrieval.

na = no data available

Claybank:

Date	Salinity ppt	pH	Water Temp C	Secchi m	DO mg/L
01/05/05	12.46	8.03	7.68	0.75	11.1/11.2
01/12/05	16.07	8.07	8.09	0.40	11.1/10.9
01/24/05	11.66	7.99	0.87	0.50	11.5/12.2
02/09/05	14.24	7.85	5.19	0.55	11.8/11.7
02/22/05	13.50	8.11	6.63	0.90	11.1/11.4
03/16/05	11.49	8.16	7.74	1.10	11.6/11.8
03/30/05	11.89	7.77	10.75	0.80	9.8/9.6
04/14/05	9.28	7.82	13.55	0.40	9.0/9.1
04/27/05	12.40	8.28	20.64	0.60	10.0/9.8
05/10/05	14.45	7.71	16.97	0.50	7.8/8.0
05/25/05	NA	NA	NA	NA	6.2/6.4
06/01/05	13.11	7.48	21.34	0.60	6.1/6.1
06/08/05	11.43	7.62	24.78	1.60	6.2/6.6
06/16/05	11.45	7.90	27.34	0.80	7.1/7.1
06/22/05	NA	NA	NA	NA	NA
06/29/05	15.37	7.72	26.58	0.75	6.2/6.1
07/06/05	16.48	7.97	27.91	0.80	6.6/6.6
07/13/05	17.08	7.61	29.13	0.80	5.4/5.5
07/20/05	17.08	7.61	29.13	0.80	5.4/5.5
07/27/05	17.25	7.50	30.15	0.50	4.9/4.9
08/03/05	17.10	7.90	29.77	0.80	5.8/6.0
08/10/05	16.96	7.64	28.95	0.80	5.2/5.3
08/17/05	18.18	7.80	30.39	0.60	6.5/6.4
08/24/05	17.55	7.50	27.55	0.50	5.1/5.0
08/31/05	17.62	7.80	28.32	0.70	6.5/6.5
09/07/05	20.47	7.90	26.49	0.40	6.8/6.8
09/14/05	19.54	7.75	25.96	0.80	5.0/5.2
09/21/05	18.93	7.55	26.93	0.80	5.6/5.6
09/28/05	19.02	7.97	24.43	0.70	6.6/6.7
10/05/05	20.60	7.56	24.30	0.90	3.7/3.7
10/12/05	19.20	7.62	22.28	0.90	5.7/5.8
10/19/05	18.35	7.64	18.81	0.90	7.0/7.1
11/01/05	17.96	7.85	14.78	1.10	8.3/8.4
11/16/05	18.82	7.89	15.97	0.90	8.1/8.2
11/28/05	17.78	8.04	11.25	0.90	9.8/9.9

12/07/05	15.21	7.91	6.56	0.80	10.6/10.8
12/19/05	13.24	7.90	5.55	0.80	11.4/11.6
01/04/06	15.50	7.82	6.69	0.80	11.1/11.2

Goodwin Island:

Date	Salinity ppt	pH	Water Temp C	Secchi m	DO mg/L
01/05/05	16.68	8.27	8.88	0.80	12.6/12.2
01/12/05	15.53	8.32	7.37	1.30	10.9/11.0
01/24/05	14.42	8.13	0.88	0.85	11.8/11.4
02/09/05	15.40	8.08	3.80	1.24	12.8/12.8
02/22/05	15.77	8.27	6.12	0.10	11.2/11.2
03/16/05	17.66	8.34	6.98	0.70	11.7/11.8
03/30/05	16.60	8.30	11.01	1.20	10.4/10.8
04/18/05	13.00	8.49	12.23	0.90	9.9/9.75
04/27/05	17.94	8.28	13.18	0.70	7.8/8.0
05/10/05	15.65	8.35	15.83	0.80	9.7/9.9
05/25/05	NA	NA	NA	NA	8.2/8.3
06/01/05	15.86	8.33	21.06	0.90	7.8/8.0
06/08/05	15.55	8.24	24.78	1.00	7.2/7.6
06/16/05	17.18	8.26	25.07	1.15	7.5/7.7
06/22/05	16.78	8.24	24.35	1.00	7.8/6.2
06/29/05	17.28	8.11	25.60	0.75	5.8/6.0
07/06/05	18.33	8.17	27.01	1.20	6.1/6.2
07/13/05	18.60	8.31	27.69	1.20	7.2/7.3
07/20/05	19.82	8.07	28.58	1.20	6.1/6.1
07/27/05	20.20	7.77	30.97	1.00	6.2/6.3
08/03/05	18.48	8.32	28.57	1.00	5.8/5.8
08/10/05	19.00	8.14	27.83	0.90	5.8/6.0
08/17/05	19.38	8.01	28.49	0.70	5.7/5.9
08/24/05	20.65	7.81	28.08	0.40	5.8/5.8
08/31/05	20.68	8.07	27.94	0.70	6.4/6.4
09/07/05	21.62	8.03	24.90	0.70	6.8/7.0
09/14/05	20.81	8.12	25.28	1.30	6.0/6.2
09/21/05	20.92	7.99	26.33	1.00	6.3/6.4
09/28/05	21.16	8.16	23.49	0.80	6.3/6.4
10/05/05	22.16	8.08	23.47	1.00	6.7/6.9
10/12/05	21.53	7.74	21.60	1.00	6.7/6.8
10/19/05	21.95	8.05	19.59	1.10	8.8/8.9
10/26/05	21.29	7.95	14.12	1.00	8.5/8.5
11/09/05	21.60	8.33	16.59	0.80	10.6/10.8
11/28/05	20.75	8.21	10.66	1.00	10.2/10.4
12/07/05	21.10	8.15	7.85	1.00	10.9/11.0
12/19/05	20.19	8.18	6.11	1.20	11.7/11.8
01/04/06	19.78	8.14	6.42	1.30	10.4/10.4

Sweethall Landing:

Date	Salinity ppt	pH	Water Temp C	Secchi m	DO mg/L
01/04/05	0.05	7.50	6.73	0.25	11.6/11.4
01/19/05	0.00	7.36	4.30	0.15	11.1/11.4
02/02/05	0.04	8.08	2.12	0.20	12.4/12.6
02/17/05	0.05	7.58	4.42	0.30	11.0/11.2
03/02/05	0.06	8.11	8.04	0.21	11.4/11.2
03/15/05	0.05	8.15	9.01	0.20	11.4/11.6
03/29/05	0.05	7.82	11.37	0.50	9.2/9.3
04/05/55	0.04	7.80	15.33	0.50	9.6/9.4
04/18/05	0.04	7.63	16.16	0.50	10.0/9.8
05/02/05	0.06	7.70	17.82	0.35	10.0/9.8
05/16/05	0.16	7.50	21.27	0.25	8.4/8.6
05/31/05	0.10	NA	22.22	0.38	7.2/7.1
06/15/05	0.10	6.93	28.36	0.40	5.7/6.0
06/28/05	2.21	6.78	27.83	0.30	5.2/5.4
07/14/05	1.90	6.80	28.73	0.50	6.0/6.1
07/27/03	1.74	6.91	31.18	0.30	5.3/5.0
08/09/03	1.46	6.92	30.04	0.58	5.2/5.2
08/23/05	2.51	6.91	29.33	0.60	4.4/4.1
09/07/05	3.98	7.31	26.60	0.50	8.0/7.8
09/20/05	4.77	6.96	27.54	0.40	5.0/4.7
10/04/05	6.23	7.30	23.63	0.25	6.0/6.1
10/18/05	2.87	7.44	19.67	0.20	6.8/6.5
11/03/05	1.37	7.38	14.98	0.18	8.7/8.9
11/14/05	3.61	7.27	14.84	0.25	7.5/7.6
11/30/05	2.25	7.89	12.15	0.25	9.3/9.2
12/12/05	0.36	7.52	6.81	0.15	10.1/10.2
12/20/05	0.10	8.15	4.75	0.10	10.1/10.2
01/04/06	0.10	6.82	5.71	0.10	11.0/11.1

Taskinas Creek:

Date	Salinity ppt	pH	Water Temp C	Secchi m	DO mg/L
01/04/05	3.16	7.42	10.26	0.35	8.6/8.7
01/19/05	3.40	7.64	0.40	0.35	11.4/11.6
02/02/05	3.54	7.18	1.07	0.47	11.8/11.9
02/16/05	2.20	7.61	9.45	0.34	9.2/9.1
03/02/05	1.80	8.21	3.70	0.30	11.8/11.8
03/15/05	4.19	7.63	7.48	0.35	10.4/10.2
03/29/05	9.63	7.66	11.32	0.10	8.4/7.9
04/05/05	3.91	7.55	13.56	0.25	8.5/8.5
04/18/05	2.21	7.45	14.05	0.30	7.9/7.8

05/02/05	3.09	7.23	17.45	0.20	5.2/5.0
05/16/05	2.95	7.16	20.56	0.20	3.6/3.8
05/31/05	7.10	NA	22.10	0.19	4.2/4.2
06/06/05	9.17	6.81	27.01	0.20	4.6/5.0
06/14/05	4.25	7.49	29.74	0.20	5.1/5.2
06/20/05	11.29	7.14	23.55	0.20	4.2/4.8
06/28/05	9.49	7.14	27.09	0.35	4.4/4.2
07/05/05	14.51	7.33	28.19	0.20	3.2/3.4
07/13/05	8.35	7.18	29.45	0.32	3.3/3.2
07/19/05	14.31	7.18	30.28	0.20	4.1/4.2
07/27/05	12.34	7.23	31.93	0.30	4.4/4.2
08/09/05	7.57	7.12	27.25	0.30	3.6/3.8
08/16/05	2.17	6.96	26.98	0.15	2.7/2.5
08/23/05	13.93	7.26	27.62	0.30	4.6/4.3
08/29/05	13.64	7.43	27.29	0.30	5.6/5.6
09/07/05	14.72	7.62	23.46	0.10	6.8/6.4
09/13/05	11.18	7.37	24.07	0.20	4.4/4.3
09/20/05	16.70	7.21	25.21	0.25	4.0/3.9
09/27/05	12.81	7.40	24.35	0.40	5.4/5.6
10/04/05	16.10	7.52	22.04	0.20	5.4/5.7
10/18/05	16.09	7.58	15.16	0.22	6.8/6.8
11/03/05	14.54	7.69	12.30	0.30	8.4/8.4
11/14/05	15.34	7.65	14.57	0.38	7.9/7.8
11/30/05	16.14	7.85	13.40	0.25	8.7/8.8
12/12/05	11.89	7.58	5.49	0.25	10.2/10.0
12/20/05	9.67	7.39	3.78	0.60	9.2/9.6
01/04/06	10.86	7.70	6.30	0.20	10.9/11.0

15. Other remarks

a) Negative depth values can be due to extremely low water conditions, low-pressure systems, or probes being out of the water. In the event where probes were clearly out of the water, as verified by specific conductance values, data were deleted. When specific conductance values did not indicate probe exposure, negative depth values were retained and data was marked as suspect. Significant negative depth values were observed at Sweet Hall Marsh during the months of January through March; data reflects tidal patterns and were retained.

b) Any time a reference is made to turbidity data being negative and/or zero, it was recorded as a negative in the raw data file and a zero in the edited data file due to the formatting of Excel. The technician edited none of these data points by hand nor did he/she delete any of them.

c) Latitudes and longitudes of the fixed monitoring stations reflect re-surveying of the sites conducted in 2004 using Trimble Real Time Kinenmatic (RTK) survey equipment.

d) Please note: Time skips can occur due to low batteries, water leakage into the battery compartment, and for no apparent reason.