

Sapelo Island (SAP) NERR Water Quality Metadata
January-December 2003
Latest update: July 1, 2021

1. Principal investigator & contact persons:

Georgia Department of Natural Resources
P.O. Box 15
Sapelo Island, GA 31327
(912) 485-2296

Dorset Hurley, Research Coordinator
E-mail: dhurley@darientel.net (912) 485-2251
Jane Garbisch, Reserve Technician
E-mail: duplin@mac.com

2. Entry Verification:

The data are reviewed using the YSI computer program EcoWatch included with the YSI 6000/6600 data logger. After the file is uploaded from the data logger, EcoWatch is used to plot the data and perform basic statistical analyses (i.e., min., max., mean, std. dev.) The information obtained from this is used during file review to detect any gross outliers such as data taken when the data logger was removed from the water or those caused by instrument failure. The data are imported into a Microsoft Excel file that contains the current month's cumulative recordings. When a complete month of data has been recorded the file is ready for review. The data review includes several steps. The first step is to format the data using the Excel macros provided by CDMO. The CDMO macros will allow the user to automatically format column widths to the correct number of decimal places based on YSI sensor specifications. It also allows the user to QA/QC each data logger generated file for missing data points, fill all cells that do not contain data with periods, and find all data points that fall outside the range of what the data logger is designed to measure (i.e. outliers). The CDMO import.xls macro will allow PC users with 30-minute data to automatically create a monthly Excel file from a two-week deployment and insert periods for missing data. In addition, in November 1999 a graphing capability

was added to this macro allowing users to produce single parameter and missing data point graphs on a monthly basis. Secondly, the Excel macro is used to determine if there are any dates and times that data was not recorded due to maintenance, battery failure, or other causes. Missing dates and times are inserted into the file and a period is inserted into the cells where data would normally be. Periods were later removed for data dissemination purposes and left blank. The reason for the missing data are recorded in this metadata document.

Data that was outside the "normal" range of water quality for a particular site is investigated for validity based on weather data, field observations, QC checks, PC6000 printouts, and instrument diagnostics. If the data are rejected from the file a period is inserted to the cell(s) and an explanation for the missing dates and times are recorded in the metadata document. The completed metadata form is then submitted with the data file to the CDMO. Jane Garbisch was responsible for all 2003 data collection and management.

Upon submission to the CDMO, periods were removed for data dissemination purposes and left blank.

3. Research Objectives:

Hydrological studies (Ragotskie and Bryson, 1955; Imberger et al., 1983) have shown that there are three tidal excursions along the length of the Duplin River, resulting in three distinct water masses. The two monitoring sites in the Duplin River, called the Lower Duplin site and the Hunt Dock site, are located within the lower and upper water masses, respectively. Water passing the Lower Duplin site during flood tide has come from Doboy Sound, which receives input from the Altamaha River via the Intra-Coastal Waterway and from the Atlantic Ocean. The water in the lower water mass is pushed further up the Duplin or up smaller tidal creeks and some is pushed onto the marsh surface by the flood tide and recedes into the main channel during ebb tide. The water in

the upper water mass, which passes the Hunt Camp station, is pushed up small creek channels and onto the marsh at each high tide. Thus the two stations monitor conditions in two hydrological separate water masses, one of which is heavily influenced by exchanges with Doboy Sound and the other which is influenced by its twice-daily contact with the marsh surface.

Sapelo Island is only accessible by passenger ferry. Due to its isolation, the salt marsh and tidal waters of the SAP NERR show relatively little evidence of human impact. Thus the Marsh Landing dock, where the Lower Duplin site is located, the primary access point for the approximately 200-300 residents, commuters and daily visitors plus barge off loading was chosen as the most directly impacted site. The Lower Duplin site is also readily accessible and centrally located within the SAP NERR. The University of Georgia Marine Institute has used this as a monitoring site for years and SAP NERR continues to do so. The Hunt Dock site was selected in July 1999 for monitoring. It is a dock only used for transporting hunters during the fall season. It is further up the Duplin, where the primary usage of the river is for pleasure boating and crabbing. Therefore it is considered the least impacted site. The University of Georgia-Athens continues to monitor further up the Duplin and the Flume Dock site. The Flume Dock site is further up the river on the other side of Moses Hammock. It has the same site characteristics of the Hunt dock site and has been a monitoring site for many years. The SAP NERR has assumed the responsibility of this site to maintain a continuous data set that spans many years.

4. Research Methods:

The SAP NERR Water Quality Monitoring began in October of 1999, at the Marsh Landing Dock on the lower Duplin River. At that time we were only performing long term water quality monitoring and not a specific experiment. Prior to April 15, 1999 the University of Georgia-Athens Marine Institute (UGAMI) completed sampling. When SAP NERR took over the NERR monitoring from the

University of GA, a second site was set up at the Marsh Landing site to be the NERR monitoring station. In order to lesson the confusion between the 2 sites, the SAP NERR site is referred to as the Lower Duplin site (LD) and is monitored at a fixed depth from the bottom (0.5m). In June 2002, the reserve returned to including the University's monitoring sites. These sites are at a fixed depth just below the surface. The sites include the Marsh Landing site, (ML) and the Flume Dock (FD). They are both hung by stainless steel chains from floating docks at a fixed depth, approximately 1.5 m. The Hunt Dock (HD) site is just south of the Flume Dock site and also measures at 0.5m above the surface bottom. Because the ML and FD sites are surface deployments the amount of fouling is much worse when compared to the LD and HD sites. In an effort to improve the data, the YSI EDS sondes are used exclusively at these sites and the 6000 series and 6600 series sondes are used at the LD and HD sites. The EDS sondes reduce some of the fouling, but there is still considerable deterioration of probe sensitivity during deployment.

Before each YSI PC6000 data logger is deployed, calibration and maintenance is performed following the manufacturer's instructions. Calibration standards are only required for pH, conductivity, and turbidity, all other parameters are done as described in the manual. Buffer solutions for 2-point calibration (pH 7 and 10) are purchased from a scientific supply house. The conductivity standard is made using a 0.2 M solution of KCl ($24.82\text{mS/cm} = 14.92\text{g/L}$) or from serial dilution of a certified conductivity standard. The turbidity calibration uses distilled water made by the University of Georgia-Athens Marine Institute and a purchased 100 NTU certified standard. The dissolved oxygen membranes are replaced before deployment and are allowed to sit at least 24 hours prior to deployment. Calibration is then verified by running a standard as a sample after each calibration.

When deployed, the weather conditions and tidal stage are recorded in the

field observation log. The data logger is placed inside a length of PVC pipe attached to the dock. The Lower Duplin data logger is attached to the north side of a non-floating dock by a steel cable and run down a PVC pipe to rest 0.5m above the surface bottom. The Hunt Dock data logger is attached to the south side of a fixed dock by steel cable and run down a PVC pipe to take measurements 0.5m above the surface bottom. Because of the large tidal range, water is continually flushed through the PVC pipes, thus eliminating the problem of creating a stagnate column of water with in the pipe with data logger. Every 30 minutes during the sampling period measurements are taken for temperature, specific conductance, salinity, pH, dissolved oxygen concentration, percent saturation, depth and turbidity.

At the end of the sample period the data logger is retrieved and immediately replaced by another calibrated data logger. The data logger is then taken to the lab and runs QA/QC standards for pH, and conductivity, and dissolved oxygen, the data are uploaded, and the sonde is cleaned. data are removed if the post calibration standards fail or if technical problems are noted. All data removed is noted in the metadata.

5. Site Location and character:

Both the Marsh Landing (ML) and Lower Duplin (LD) monitoring sites (31 deg 25' 4" N, 81 deg 17' 46" W) are located on the Marsh Landing Dock in the Duplin River on Sapelo Island and consists of a bottom muddy habitat. Water passing the dock during flood tide originates from the Doboy Sound. The Doboy receives input from the Atlantic Ocean, and the Altamaha River via the Intra-Coastal Waterway. The water is pushed up the river or up smaller tidal creeks and some is pushed onto the marsh surface by the flood tide and recedes into the main channel during ebb tide. The Marsh Landing dock is used as the main dock to the island where the ferry makes several daily runs, with several small boats that are docked there. The surrounding area vegetation is dominated by salt marsh

with *Spartina* being the predominate flora. Tidal range maximum for both sampling sites is 14 feet and the salinity range is 5-35 ppt. The depth at these sampling stations ranges from 1.5 meters to 6.0 meters depending on tide.

The Hunt Dock monitoring site (31 deg 28' 43", 81 deg 16' 23" W) is located on the Duplin River, off of Moses Hammock, which is separated by Sapelo Island by a small tidal channel. The primary runoff at the site is from tidal creeks flowing through *Spartina* marsh and through the mud. Bottom habitat at this site includes soft mud and some oyster bed building along the shoreline with a tidal range maximum of 14 feet and a salinity range of 5-35 ppt. There is little human traffic this far up the Duplin and it is north of the people living on Sapelo. During the fall, the Hunt dock and Moses Hammock are the camping and docking site for deer hunters traveling to the island. These are controlled hunts and dates are available from the SAP NERR office if needed. The Flume Dock site is located further up the Duplin River, around Moses Hammock. Maximum tidal range is 14 feet and salinity ranges 5-35 ppt. The maximum depth at the Hunt Dock site is 4.27 meters.

The Flume Dock site (31 deg 28' 58" N, 81 deg 16' 3" W) has a sonde connected to a floating dock. They hang by stainless steel chain at a fixed depth approximately one meter below the surface of the water. Bottom habitat at this site includes soft mud and some oyster bed building along the shoreline. These sites were used since 1986 by the UGA Marine Institute. In June of 2002, the data collection was consolidated by the SAP NERR and the University. Because of the fixed placement of the sondes at the water surface the fouling of the probes is a continuous problem. The data will reflect this problem. Maximum tidal range is 14 feet and salinity ranges 5-35 ppt. The maximum depth at the Flume Dock site is 4.27 meters.

There are no current studies on pollutants in this area. Sapelo Island is typically considered a pristine environment, with the only pollutants nearby

being contributed by the ferry dock and ferry parking lot.

6. Data collection period: (listed by each deployment)
Deployment dates and times:

Flume dock

12/17/02 1200 -
1/7/03 1100-2/5/03 1330
2/5/03 1400-3/7/03 0930
3/10/03 1500 - 4/6/03 1130
4/21/03 1500- 5/4/03 1600
5/4/03 1700- 6/1/03 0730
6/1/03 0800 - 6/11/03 1530
6/11/03 1600 - 6/30/03 1100
6/30/03 1130 - 7/18/03 1500
7/18/03 1530 - 8/4/03 1330
8/4/03 1400 - 9/1/03 1530
9/1/03 sonde failure
9/18/03 1100- 10/15/03 1530
10/15/03 1600 - 10/25/03 1030
10/25/03 1100 - 11/6/03 1530
11/6/03 1730 - 11/29/03 0830
11/29/03 0900- 12/24/03 1530
12/24/03 1600 -1/10/04 1000

Hunt dock

1/7/03 1130 - 2/6/03 1000
2/6/03 1030 - 3/8/03 1000
3/11/03 1000 - 4/6/03 1130
4/6/ times missing, computer failure
4/21/03 1500 - 5/13/03 1400
5/13/03 1430 6/11/03 1530
6/11/03 1600 - 6/30/03 1100
6/30/03 1130 8/4/03 1330
8/4/03 1400 - 9/1/03 1500
9/1/03 1530 - 10/8/03 1530
10/8/03 1600 - 11/6/03 0900
11/6/03 1730 - 11/28/03 1500
11/28/03 1530 - 12/24/03 1330
12/24/03 1730 - 1/9/04 1130

lower duplin

12/23/02 1030 - 1/13/03 1600
1/13/03 1630 - 1/27/03 1600
1/27/03 1630 - 2/26/03 1600
2/27/03 1500 - 3/27/03 1530
4/1/03 1630 - 5/4/03 1400
5/4/03 1500 - 5/19/03 1330
5/19/03 11400 - 6/4/03 1630
6/4/03 1700 - 6/23/03 1430
6/23/03 1500- 7/28/03 1030
7/28/03 1100 -8/27/03 1000
9/1/03 1230 - 10/8/03 1600

10/8/03 1630 - 11/6/03 1500
11/6/03 1830 - 11/26/03 1530
11/26/03 1700 - 12/25/03 1030
12/25/03 1030 -1/04

marsh landing

12/23/02 1100 - 01/11/03 1730
1/16/03 1030 - 1/27/03 1600
1/27/03 1630 - 2/26/03 1530
2/26/03 1600 - 3/27/03 1530
3/27/03 1600 - 4/17/03 1430
4/17/03 1500 - 5/2/03 1530
5/2/03 1600 - 5/19/03 1330
5/19/03 1430 - 6/4/03 1630
6/4/03 1700 - 6/23/03 1430
6/23/03 1500 - 7/10/03 1130
7/10/03 1200- 7/28/03 1000 unsure of time discrepancy between this and
the
deployment above, used the data starting in this file at 1200
7/28/03 sonde failure no data retrieved
8/18/03 1000-9/1/03 1200
9/18/03 1130 - 10/8/03 1600
10/8/03 1630 -10/20/03 0900
10/20/03 1000 - 11/6/03 1500
11/6/03 1530 - 11/26/03 1500
11/26/03 1530 -12/25/03 1000
12/25/03 1100 - 1/04

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 retains 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 the 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 it subsequent use/misuse in any further analyses or comparisons. The Federal government does not assume liability to the Recipient of third persons, not 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 Section 2.2-1 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, Microsoft Excel spreadsheet format and comma-delimited format.

8. Associated researchers and projects:

Sapelo Island has a long history of maintaining research. In 1953, the University of Georgia Marine Institute (UGAMI) was formed and the island became a working laboratory for many. The research continues today with SAP NERR and UGAMI creating a unique partnership with much of the current research being done facilitated by SAP NERR and UGAMI together. Given UGAMI's long history on Sapelo, a bibliographic list of over 800 articles of current and previous research can be found on the UGAMI website. (<http://www.uga.edu/ugami>).

9. Variable sequence, range of measurements, units, resolution, and accuracy:

YSI 6000/6600 datalogger

Variable	Range of Measurements	Resolution	
Accuracy			
Date	1-12, 1-31, 00-99 (Mo,Day,Yr)	1 mo, 1 day, 1 yr	NA
Time	0-24, 0-60, 0-60 (Hr,Min,Sec)	1 hr, 1 min, 1 s	NA
Temp	-5 to 45 (c)	0.01 C	+/-
0.15C			
Sp COND	0-100 (mS/cm)	0.01mS/cm	+/-0.5%
Of			
reading + 0.001mS/Cm			

Salinity	0-70 Parts per thousand (ppt)	0.01 ppt	+/- 1%
of			
Reading or	0.1 ppt, (whichever is greater)		
DO	0-200 (% air saturation)	0.1% @air sat	+/-2%
@air			
Saturation			
DO	200-500 (% air saturation	0.1% @ air sat	+/- 6%
@			
Saturation			
DO	0-20 (mg/l)	0.01 mg/l	+/-
0.2mg/l			
DO	20-50 (mg/l)	0.01 mg/l	+/-
0.6mg/l			
Depth (shallow)	0-9.1 (m)	0.001m	+/-
0.018m			
PH	2-14 units	0.01 units	+/-
0.2units			
Turb	0-1000 NTU	0.1 NTU	+/- 5%
of			
Reading or	2 NTU (whichever is greater)		

Data columns are separated by tabs. Each file contains a two line column header at the top of the page which identifies measurements and units for each column.

10. Coded variable indicator and variable code definitions:

LD = Lower Duplin
 HD = Hunt Dock
 FD = Flume Dock
 ML = Marsh Landing

11. Data Anomalies

Flume dock

Due to the nature of the site's deployment heavy fouling occurs, often causing a steady deterioration of the data. Some of the data are removed and some retained. It is exceedingly difficult to determine the point to remove the data and is often a subjective decision.

January:

1/1/03 0:00 - 1/7/03 10:30 turbidity data deleted due to calibration error.
 1/7/03 10:30 - 1/7/03 11:00 slight increase in salinity and specific conductivity due to changing of sondes. Data retained.
 1/7/03 10:30 - 1/7/03 11:00 slight decrease in pH due to changing of sonde. Data retained.

February:

SpCond. Data and salinity data begin to deteriorate 2/22/03 due to fouling, data retained.
The following turbidity values negative(range -0001 to -0020), possibly due to calibration error. Post calibration readings were 73.7 NTU. Data deleted.
02/05/2003 14:00:00 - 2/28/2003 23:30:00

March:

3/2/03 10:30 turb. Spike cause unknown
3/12/03 18:00 turb. Spike cause unknown
3/23/03 2230 - 3/31/03 2330 DO% mg/L, salinity, and specific conductivity data removed due to probe fouling.
The following turbidity values negative(range -0001 to -0020), possibly due to calibration error. Post calibration readings were 73.7 NTU. Data deleted.
03/01/2003 00:00:00 - 3/07/2003 09:30:00
The following turbidity values negative (range -0001 to -0020) and/or zero. Data retained but suspect.
03/10/2003 15:00:00- 03/10/2003 16:00:00
03/11/2003 15:00:00 -03/11/2003 16:00:00
03/12/2003 03:30:00
03/12/2003 04:00:00 - 03/12/2003 16:30:00
03/13/2003 04:30:00 -03/13/2003 05:00:00
3/22/2003 18:00 -3/31/03 23:30 turbidity data removed, probe fouling and wiper missing.

April

4/01/03 0000 - 4/06/03 1130 DO% mg/L, salinity, and specific conductivity data removed due to probe fouling.
4/1/03 0:00 - 4/6 11:30 Turbidity data removed due to fouling
4/6/03 12:00-4/21/03 14:30 all data missing technical failure
4/26/03 18:30 Turbidity spike cause unknown.

May

All data deleted 5/2/03 1130 - 5/4/03 1600. Sonde was pulled prematurely.
5/11/03 10:30 - 5/31/03 23:30 turbidity data removed, spikes >1000
5/12/03 7:30-5/31/03 23:30 DO%,and mg/L removed due to fouling
5/26/03 9:00 all data missing sonde did not record

June

6/1/03 0:00 -7:30 Turbidity data removed due to fouling
6/3/03 0100-6/11/03 1530 DO data removed, membrane fell off during deployment
6/5/03 5:30 - 6/11 15:30 Turbidity data removed due to fouling
6/24/03 19:30- 6/30/03 11:00 Turbidity data removed due to fouling
Turbidity spikes retained in the data:
6/11/03 19:00

6/12/03 6:30
6/14/03 00:30-01:00, 15:30
6/22/03 19:30
6/23/03 03:30
6/23/03 20:30-6/30/03 11:00 DO data removed due to fouling

July

7/9/03 20:30-7/18/03 15:00 Turbidity data removed due to fouling
7/13/03 1:00- 7/18/03 15:00 DO data removed due to fouling
7/23/03 22:30- 7/31/03 23:30 Turbidity data removed due to fouling
7/26/03 9:30-7/31/03 23:30 DO data removed due to fouling

August

8/1/03 00:00 -8/4/03 13:30 Turbidity, DO data removed due to fouling
8/12/03 0:30 -8/31/03 23:30 DO data removed due to fouling
8/10/03 20:30 -8/31/03 23:30 Turbidity data removed due to fouling

September

9/1/03 00:00 - 15:30 Data towards the end of the deployment may be compromised
due to sonde being covered with sea squirts at time of retrieval. Data retained
but suspect.
Deployment 9/18/03 11:00 - 10/15/03 15:30. Dissolved Oxygen data suspect
due to
fouling. Post deployment calibration readings low (30%). Could possibly
be due
to Hurricane Isabel just north of coast, which caused an increase in surf
and
light wind. Data retained.
9/27/03 9:30 - 9/30 23:30 turbidity data removed due to fouling
9/1/03 0:00 -15:30 turbidity data removed due to fouling
9/1/03 16:00 - 9/18/03 10:30 all data missing, sonde failure
The following are negative turbidity values. Fouling of probe was noticed
at the
time of sonde retrieval. Data retained but suspect.
09/18/2003,11:00:00, - 09/18/2003,23:30:00
09/19/2003,00:00:00,- 09/19/2003,23:30:00
09/20/2003,00:00:00,- 09/20/2003,23:30:00
09/21/2003,00:00:00,- 09/21/2003,19:00:00
09/21/2003,20:30:00,- 09/21/2003,23:30:00
09/22/2003,00:00:00,- 09/22/2003,20:00:00
09/22/2003,21:30:00,- 09/22/2003,23:30:00
09/23/2003,00:00:00,- 09/23/2003,08:30:00
09/23/2003,09:30:00,- 09/23/2003,21:00:00
09/23/2003,22:30:00,- 09/23/2003,23:30:00
09/24/2003,00:00:00,- 09/24/2003,09:30:00
09/24/2003,11:30:00,- 09/24/2003,21:30:00
09/25/2003,00:30:00,- 09/25/2003,06:00:00
09/25/2003,07:30:00,- 09/25/2003,09:30:00
09/25/2003,13:00:00,- 09/25/2003,16:30:00
09/25/2003,17:30:00
09/25/2003,20:00:00,- 09/25/2003,22:30:00
09/26/2003,01:30:00,- 09/26/2003,06:00:00

09/26/2003,09:30:00,- 09/26/2003,10:30:00
09/26/2003,14:00:00- 09/26/2003,14:30:00
09/26/2003,16:30:00
09/26/2003,21:30:00,- 09/26/2003,23:00:00,-0001

October

Deployment 9/18/03 11:00 - 10/15/03 15:30. Dissolved Oxygen data suspect due to fouling. Post deployment calibration readings low (30%). Could possibly be due to Hurricane Isabel just north of coast, which caused an increase in surf and light wind. Data retained.
10/1/03 0:00- 10/18 09:00 turbidity data removed due to fouling
10/18/03 9:30 - 10/25/03 10:30 all data removed, temperature probe failure
10/15/03 16:00 -10/18/03 9:00 large increase in DO, specific conductivity, and salinity values with new deployment, cause unknown. Data retained because no definitive cause known.

November

11/25/03 21:30 turbidity spike, cause unknown

December

12/14/03 19:30-20:00 turbidity spike, cause unknown.

Hunt Dock

Due to the nature of this deployment site, the sonde is occasionally exposed above the water line at low tide. The data has been retained at the time of these exposures and will be apparent by the salinity values nearing 0 as well as depth.

January

1/1/03 0:00 - 1/7/03 1100 no turbidity probe deployed
1/7/03 1130-1/31/2330 all turbidity data removed, probe fouled

February

2/1/03 0:00 2/6/03 10:00 all turbidity data removed probe fouled
2/17/03 3:30 Turbidity spike, sonde exposed at low tide
2/22/03 1830 Turbidity spike, sonde exposed at low tide
2/23/03 0600 Turbidity spike, sonde exposed at low tide
Drop in pH due to low tide:
2/1/03 1500 - 1530
2/4/03 1700 - 1800
2/13/03 1200
2/14/03 1300
2/15/03 1300 - 1400
2/20/03 1700 - 1800
2/23/03 0800 - 1000

3/21/03 1600 - 1900

March

3/20/03 0300 and 3/25/03 0200 Turbidity spike, sonde exposed at low tide

April

4/3/03 1030 Turbidity spike, cause unknown

4/6/03 1200 -4/21/03 1430 all data missing due to computer failure

4/30/03 2130 Turbidity spike, cause unknown

4/5/03 1530 Turbidity spike, cause unknown

May

5/2/03 1930 -5/31/03 2330 pH probe broken, data removed

5/13/03 1430-5/31/03 2330 No turbidity probe deployed

5/5/03 2300 -5/13/03 1400 Turbidity data removed, probe heavily fouled

June

6/1/0000-6/11/1530 no turbidity probe deployed, turbidity data missing

6/1/03 0000-6/11/03 1530 pH probe broken

Drop in dissolved oxygen (8.2%) on 6/11/03 1230 anomalous, cause unknown.

Data

retained.

6/25/03 1730-6/30/03 2330 pH probe broken, data removed

The following are turbidity outliers, data retained because the post calibration

verification was within acceptable limits.

Date Time Turb

6/14/03 15:30:00 -1

6/15/03 15:00:00 -1

6/15/03 16:00:00 -1

6/19/03 16:00:00 2182

6/25/03 13:00:00 2146

6/28/03 15:00:00 2154

6/28/03 23:30:00 2150

6/29/03 0:00:00 2150

6/29/03 0:30:00 2148

6/29/03 1:30:00 2012

6/29/03 3:00:00 2136

6/29/03 4:00:00 2064

6/29/03 5:00:00 1266

6/29/03 8:00:00 2141

6/29/03 10:00:00 1090

6/29/03 11:30:00 1123

6/29/03 13:00:00 -1

6/29/03 15:30:00 2142

6/29/03 16:30:00 1561

6/29/03 17:30:00 1539

6/30/03 1:30:00 1086

6/30/03 7:30:00 1465

6/30/03 9:30:00 1188

6/30/03 11:00:00 1800

July

7/1/03 0:00 - 7/31/03 23:30 pH probe broken during deployment, pH data removed

7/5/03 20:00 Turbidity spike, cause unknown

7/27/03 10:00 Turbidity spike, cause unknown

7/1/03 8:00 - 7/31/03 23:30 DO %, mg/L removed due to post calibration verification failure.

August

8/1/03 0:00 -8/4/03 13:30 pH data removed due to probe failure.

8/4/03 0230 - 1330 DO mg/L and % removed due to post calibration verification failure.

8/4/03 14:30 -8/31/03 23:30 No turbidity data collected

8/5/03 21:30 - 8/30/03 23:30 DO values cycling higher than normal (up to 519.9%), data retained because post calibration verification (112%) within

acceptable limits. No explanation as to why this happened.

September

9/1/03 00:00 - 15:00 No turbidity data collected.

9/19/03 14:00 - 9/30/03 23:30 pH probe broken during deployment, data removed.

The following turbidity data are anomalous but was retained due to post calibration verification was within acceptable limits.

09/15/2003 09:30:00 1142.4

09/15/2003 14:30:00 1228

09/15/2003 15:00:00 1179

09/17/2003 13:30:00 1378.6

09/17/2003 15:30:00 1338.1

09/17/2003 17:30:00 1183.1

09/17/2003 20:00:00 1353.5

09/17/2003 22:00:00 1163.7

09/18/2003 00:30:00 1351.1

09/18/2003 02:30:00 1190.5

09/18/2003 05:00:00 1376

09/18/2003 07:00:00 1280.5

09/18/2003 09:00:00 1149.1

09/18/2003 12:00:00 1376.4

09/18/2003 14:00:00 1309.9

09/18/2003 16:30:00 1360.9

09/18/2003 18:30:00 1173.1

09/18/2003 20:30:00 1161

09/18/2003 21:00:00 1379.2

09/18/2003 23:00:00 1220.7

09/19/2003 01:00:00 -09/19/2003 02:30:00

09/19/2003 03:30:00 1377.9

09/19/2003 04:30:00 1258.1

09/19/2003 05:30:00 1173.8

09/19/2003 07:00:00 1351.6

09/19/2003 08:00:00 - 09/19/2003 08:30:00

09/19/2003 09:30:00 1374.3

09/19/2003 10:30:00 - 09/19/2003 11:00:00

09/19/2003 12:00:00 1377.2

09/19/2003 13:00:00 1328.6

09/19/2003 15:00:00 1162.5
09/19/2003 16:00:00 1015
09/19/2003 17:00:00 - 09/19/2003 17:30:00
09/19/2003 19:30:00 1233.8
09/19/2003 21:30:00 - 09/19/2003 22:00:00
09/19/2003 23:00:00 1374.2
09/20/2003 00:00:00 1378.3
09/20/2003 00:30:00 1378.4
09/20/2003 01:30:00 1378.2
09/20/2003 02:30:00 1112.6
09/20/2003 04:30:00 1378.4
09/20/2003 05:00:00 1378.1
09/20/2003 06:00:00 1377
09/20/2003 07:00:00 1376.2
09/20/2003 07:30:00 1375.7
09/20/2003 08:30:00 1375.3
09/20/2003 09:30:00 1167.6
09/20/2003 11:30:00 1376.5
09/20/2003 12:00:00 1376.9
09/20/2003 13:00:00 1374.8
09/20/2003 14:00:00 1119.4
09/20/2003 15:00:00 1320.3
09/30/2003 00:00:00 -0001

October

October Hunt season starts, increased activity at the hunt dock with both people

and boats now through December

10/1/03 0:00 10/1/03 11:30 pH probe broken during deployment, data removed

10/1/03 12:00 -10/8/03 1530 all data missing, sonde failure

10/8/03 1600 -10/31/03 2330 no turbidity probe deployed

10/14/03 1330 -10/31/03 Someone tampered with site and pulled the sonde up to the top of the tube. The sonde is exposed to air for unusually long intervals.

Data was retained because as tide rose the sonde was in the water for some time periods.

November

11/1/03 000-11/6/03 0900 no turbidity probe deployed

11/6/03 0930 -1700 all data missing, no sonde deployed

11/28/03 1530 - 11/30 2330 no turbidity probe deployed

11/24/03 2000 Turbidity spike, cause unknown

11/25/03 1300 Turbidity spike, cause unknown

11/26/03 0630 Turbidity spike, cause unknown

11/20/03 1030 Turbidity spike, cause unknown

11/22/03 1200 Turbidity spike, cause unknown

11/23/03 0730 Turbidity spike, cause unknown

December

12/1/03 0000- 12/24/03 1330 no turbidity probe deployed
12/24/03 1400 - 1700 no sonde deployed, all data missing

Lower Duplin

January

1/1/03 0000 - 1/13/03 1600 turbidity data missing, no turbidity probe deployed
1/27/03 1630 - 1/31/03 2330 no turbidity probe deployed, turbidity data missing
1/13/03 1630 - 1/27/03 1600 Battery compartment flooded during deployment, all data lost.

February

2/1/03 0000- 2/26/03 1600 no turbidity probe deployed, turbidity data missing

March

The following turbidity values negative (range -0001 to -0003) and/or zero. Post

calibration readings were 123.9 NTU. Data retained but suspect.

03/01/2003,00:30:00 - 03/01/2003,01:30:00,
03/05/2003,04:30:00
03/07/2003,23:00:00
03/08/2003,06:00:00
03/08/2003,20:00:00
03/08/2003,20:30:00
03/08/2003,23:30:00
03/09/2003,00:30:00
03/09/2003,11:30:00
03/09/2003,12:30:00
03/09/2003,23:30:00
03/10/2003,00:00:00
03/10/2003,01:00:00
03/10/2003,11:30:00 - 03/10/2003,13:30:00,
03/10/2003,14:30:00
03/10/2003,18:30:00 - 03/10/2003,19:30:00,
03/10/2003,21:00:00
03/10/2003,23:30:00
03/11/2003,00:00:00
03/11/2003,01:30:00 - 03/11/2003,02:30:00,
03/11/2003,03:30:00
03/11/2003,06:30:00
03/11/2003,07:00:00
03/11/2003,08:00:00
03/11/2003,10:30:00 - 03/11/2003,11:30:00,
03/11/2003,12:30:00
03/11/2003,13:30:00
03/11/2003,14:30:00
03/11/2003,18:00:00

03/11/2003,19:00:00 - 03/11/2003,21:00:00,
03/11/2003,22:00:00
03/11/2003,23:00:00
03/12/2003,00:00:00 - 00:30:00,
03/12/2003,02:00:00 - 03:00:00
03/12/2003,07:00:00
03/12/2003,08:00:00 - 09:00:00,
03/12/2003,10:30:00
03/12/2003,12:00:00 -12:30:00,
03/12/2003,13:30:00 - 15:00:00
03/12/2003,16:00:00
03/12/2003,17:00:00 - 19:00:00
03/12/2003,20:00:00 - 03/13/2003,00:00:00
03/13/2003,02:30:00 -04:00:00
03/13/2003,05:00:00 - 03/13/2003,05:30:00
03/13/2003,08:00:00 - 03/13/2003,09:00:00
03/13/2003,10:00:00 - 11:30:00
03/13/2003,13:00:00 - 03/13/2003,13:30:00
03/13/2003,14:30:00
03/13/2003,15:30:00 -16:00:00
03/13/2003,17:00:00 -18:00:00
03/13/2003,20:30:00
03/13/2003,22:00:00 - 23:30:00
03/14/2003,04:00:00 - 03/14/2003,05:30:00
03/14/2003,12:00:00 - 03/14/2003,12:30:00
03/14/2003,17:30:00
03/15/2003,01:00:00 - 01:30:00
03/25/2003,10:00:00
03/25/2003,20:00:00
03/26/2003,10:30:00
03/26/2003,15:00:00 -15:30:00
03/26/2003,20:30:00 -22:30:00
03/27/2003,05:00:00 -06:00:00
03/27/2003,10:00:00 -10:30:00
03/27/2003,11:30:00
03/27/2003,16:00:00

April

04/14/2003 15:30:00 1077.8 Turbidity spike, cause unknown
The following turbidity values are negative and/or zero, cause unknown.

Data

retained but suspect.

Date	Time
04/02/2003	02:00:00 - 03:00
04/02/2003	13:30:00 - 15:00:00
04/03/2003	02:30:00 - 03:30:00
04/03/2003	08:30:00
04/03/2003	09:30:00
04/03/2003	12:00:00
04/03/2003	14:30:00 - 16:00:00
04/04/2003	03:30:00 - 04:30:00
04/04/2003	07:00:00
04/04/2003	08:30:00
04/04/2003	09:30:00 - 10:30:00

04/04/2003 21:30:00 - 22:00:00
04/05/2003 08:00:00 - 10:00:00
04/05/2003 16:30:00
04/05/2003 22:00:00 - 23:30:00
04/06/2003 00:00:00
04/06/2003 03:30:00 - 06:30:00
04/06/2003 08:30:00
04/06/2003 10:00:00 - 11:30:00
04/06/2003 14:00:00
04/06/2003 15:30:00 - 16:00:00
04/06/2003 17:00:00 - 19:00:00
04/06/2003 20:30:00 - 21:00:00
04/06/2003 22:00:00
04/06/2003 23:00:00 - 04/07/2003 00:30:00
04/07/2003 04:30:00
04/07/2003 05:30:00 - 06:30:00
04/07/2003 08:00:00 - 09:00:00
04/07/2003 10:30:00 - 12:30:00
04/07/2003 17:30:00
04/07/2003 19:30:00
04/07/2003 21:30:00
04/07/2003 22:30:00 - 04/08/2003 01:30:00
04/08/2003 04:30:00 - 05:00:00
04/08/2003 06:30:00 - 08:30:00
04/08/2003 10:00:00 - 11:30:00
04/08/2003 12:30:00
04/08/2003 13:00:00 - 04/08/2003 14:00:00 -14:30:00
04/08/2003 19:00:00
04/08/2003 21:00:00
04/08/2003 22:00:00 - 22:30:00
04/08/2003 23:30:00
04/09/2003 06:00:00 - 06:30:00
04/09/2003 07:30:00 - 11:00:00
04/09/2003 12:30:00 - 15:00:00
04/09/2003 17:30:00 - 18:00:00
04/09/2003 20:00:00 - 21:30:00
04/09/2003 22:30:00
04/10/2003 01:30:00 - 02:00:00
04/10/2003 09:00:00 - 09:30:00
04/10/2003 13:00:00
04/10/2003 14:00:00 - 14:30:00
04/11/2003 03:00:00
04/11/2003 15:30:00 - 16:00:00
04/11/2003 19:30:00 - 20:00:00
04/11/2003 22:00:00
04/12/2003 00:00:00 - 00:30:00
04/12/2003 04:00:00 - 05:00:00
04/12/2003 09:30:00
04/12/2003 10:30:00
04/12/2003 21:30:00 - 22:00:00
04/12/2003 23:00:00 - 23:30:00
04/13/2003 10:30:00
04/13/2003 11:30:00
04/14/2003 12:30:00

04/22/2003 21:30:00
 04/23/2003 09:00:00
 04/23/2003 21:00:00
 04/24/2003 02:30:00
 04/24/2003 08:30:00
 04/24/2003 10:00:00
 04/24/2003 20:00:00 - 20:30:00
 04/24/2003 21:30:00 - 22:00:00
 04/24/2003 23:00:00 - 23:30:00
 04/25/2003 03:00:00
 04/25/2003 16:30:00
 04/25/2003 21:00:00 - 22:30:00
 04/26/2003 01:00:00
 04/26/2003 05:00:00 - 06:00:00
 04/26/2003 16:00:00
 04/26/2003 18:00:00
 04/26/2003 19:00:00
 04/26/2003 23:00:00 - 23:30:00
 04/27/2003 00:00:00 - 01:00:00
 04/27/2003 03:00:00
 04/27/2003 06:00:00
 04/27/2003 10:30:00
 04/27/2003 12:30:00 - 13:00:00
 04/27/2003 14:00:00
 04/27/2003 22:30:00
 04/28/2003 00:00:00
 04/28/2003 01:00:00 - 01:30:00
 04/28/2003 05:00:00
 04/28/2003 11:30:00 - 13:00:00
 04/28/2003 14:00:00
 04/29/2003 00:30:00 - 01:00:00
 04/29/2003 03:00:00
 04/29/2003 12:00:00 - 13:00:00
 04/30/2003 00:30:00 - 01:30:00
 04/30/2003 03:30:00 - 04:00:00
 04/30/2003 12:00:00 - 15:00:00
 04/30/2003 20:30:00

May

5/4/03 14:30 all data missing no sonde deployed

5/4/03 15:00-5/19 13:30 No turbidity probe deployed

The following turbidity data are anomalous, most likely due to fouling.

Date	Time	Turb
05/20/2003	02:00:00	2079.2
05/20/2003	03:00:00	2081.7
05/20/2003	04:00:00	2085.5
05/21/2003	03:30:00	2070
05/29/2003	23:00:00	2072.7
05/31/2003	14:00:00	2092.3

DO data fluctuates throughout the month, most likely due to fouling/organism activity on the sonde itself.

June

6/1/03 01:30 - 03:30 all data removed, sonde out of the water.

6/4/03 17:00-6/23/03 14:30 all data missing sonde failure

The following turbidity values negative and/or zero, cause unknown. Data retained but suspect.

Date Time Turb

06/24/2003	00:30:00	-0.6
06/24/2003	03:00:00	-0.2
06/24/2003	12:30:00	-0.2
06/28/2003	13:00:00	-0.1
06/30/2003	15:00:00	-0.3
06/30/2003	18:30:00	-0.2

July

7/28/03 14:00 A drop in specific conductivity, salinity, and depth.

There's a

possibility that the sonde was out of the water for this time, but cause unknown. Data retained.

The following turbidity values were reported as negative and/or zero values,

cause unknown. Data retained but suspect.

07/04/2003	07:00:00	
07/04/2003	21:00:00	
07/05/2003	18:30:00 - 19:00:00	
07/05/2003	23:30:00	
07/06/2003	08:30:00	
07/07/2003	01:30:00	
07/07/2003	09:30:00	
07/07/2003	21:00:00 - 21:30:00	
07/07/2003	22:30:00 - 23:30:00	
07/08/2003	23:30:00	
07/09/2003	00:00:00	
07/09/2003	03:00:00 - 03:30:00	
07/09/2003	10:00:00 - 10:30	
07/09/2003	13:30:00	
07/10/2003	01:00:00	
07/10/2003	03:30:00	
07/10/2003	11:00:00	
07/17/2003	23:30:00	
07/18/2003	17:30:00	
07/18/2003	18:30:00	
07/18/2003	19:30:00	
07/18/2003	22:30:00- 07/19/2003	00:30:00
07/19/2003	13:00:00	
07/19/2003	16:30:00 - 17:00	
07/19/2003	18:30:00 - 19:00	
07/19/2003	20:00:00	
07/19/2003	21:00:00 -21:30	
07/19/2003	22:30:00	
07/20/2003	00:00:00 - 01:30:00	
07/20/2003	07:30:00 - 8:00	
07/20/2003	09:00:00 - 10:00	
07/20/2003	11:30:00 - 13:30:00	
07/20/2003	20:00:00 - 23:30:00	
07/21/2003	00:30:00 - 02:00:00	

07/21/2003 08:00:00 - 08:30:00
07/21/2003 10:00:00 - 12:00:00
07/21/2003 13:00:00 - 14:30:00
07/21/2003 18:00:00
07/21/2003 18:30:00 - 20:00:00
07/21/2003 21:00:00 - 22:00:00
07/21/2003 23:00:00 - 07/22/2003 00:00:00
07/22/2003 01:00:00 - 03:30:00
07/22/2003 05:30:00
07/22/2003 06:30:00 - 07:00:00
07/22/2003 08:00:00
07/22/2003 09:00:00
07/22/2003 10:00:00 - 14:00:00
07/22/2003 19:00:00 - 23:30:00
07/23/2003 00:30:00
07/23/2003 01:00:00
07/23/2003 02:00:00 - 03:30:00
07/23/2003 04:30:00
07/23/2003 07:30:00 - 08:00:00
07/23/2003 11:00:00 - 13:00:00
07/23/2003 14:00:00 - 17:00:00
07/23/2003 19:30:00 - 23:30:00
07/24/2003 00:30:00 - 02:30:00
07/24/2003 03:30:00
07/24/2003 04:30:00 - 05:00:00
07/24/2003 07:30:00
07/24/2003 09:00:00 - 10:30:00
07/24/2003 11:30:00 - 16:30:00
07/24/2003 20:30:00 - 21:00:00
07/24/2003 22:30:00 - 07/25/2003 00:00:00
07/25/2003 01:00:00 - 03:00:00
07/25/2003 04:00:00 - 05:00:00
07/25/2003 10:30:00 - 13:00:00
07/25/2003 14:00:00 - 14:30:00
07/25/2003 16:00:00 - 16:30:00
07/25/2003 17:30:00 - 18:00:00
07/26/2003 00:00:00
07/26/2003 01:30:00 - 02:00:00
07/26/2003 04:00:00 - 04:30:00
07/26/2003 05:30:00 - 06:00:00
07/26/2003 10:30:00 - 14:00:00
07/26/2003 15:00:00
07/26/2003 16:00:00 -
07/26/2003 18:00:00 - 18:30:00
07/27/2003 00:30:00 - 01:00:00
07/27/2003 02:00:00 - 04:00:00
07/27/2003 05:30:00 - 06:30:00
07/27/2003 11:30:00
07/27/2003 12:30:00 - 16:00:00
07/28/2003 01:00:00 - 03:30:00
07/28/2003 05:30:00
07/28/2003 06:30:00 - 08:00:00
07/28/2003 11:00:00 - 17:00:00
07/28/2003 20:00:00 - 20:30:00

07/28/2003 23:30:00 - 07/29/2003 04:00:00
07/29/2003 05:30:00
07/29/2003 07:00:00 - 16:30:00
07/29/2003 18:00:00 - 18:30:00
07/29/2003 21:00:00 - 21:30:00
07/30/2003 02:00:00
07/30/2003 03:30:00
07/30/2003 04:30:00
07/30/2003 09:00:00 - 15:30:00
07/30/2003 16:30:00
07/30/2003 17:30:00
07/30/2003 22:00:00
07/31/2003 01:00:00 - 05:00:00
07/31/2003 05:30:00
07/31/2003 11:00:00
07/31/2003 13:00:00
07/31/2003 14:30:00
07/31/2003 15:00:00
07/31/2003 16:00:00 - 17:30:00
07/31/2003 22:30:00 -23:00:00

August

The following turbidity values were reported negative and/or zero, cause unknown. Data retained but suspect.

08/01/2003 02:00:00
08/01/2003 02:30:00 - 06:00:00
08/01/2003 07:00:00
08/01/2003 11:00:00 - 12:00:00
08/01/2003 15:00:00 - 18:30:00
08/01/2003 19:30:00
08/01/2003 23:30:00
08/02/2003 00:00:00
08/02/2003 03:00:00 - 07:00:00
08/02/2003 11:30:00 - 12:30:00
08/02/2003 15:30:00 - 20:30:00
08/02/2003 22:00:00 - 22:30:00
08/03/2003 00:30:00
08/03/2003 03:30:00 - 07:30:00
08/03/2003 08:30:00
08/03/2003 12:30:00 - 13:30:00
08/03/2003 16:30:00 - 21:30:00
08/03/2003 23:30:00 - 08/04/2003 01:30:00
08/04/2003 04:00:00 - 08:30:00
08/04/2003 09:30:00 - 10:00:00
08/04/2003 11:30:00
08/04/2003 14:00:00 - 14:30:00
08/04/2003 17:30:00 - 23:00:00
08/05/2003 01:30:00 - 02:30:00
08/05/2003 04:30:00 - 09:30:00
08/05/2003 11:30:00
08/05/2003 14:30:00 - 15:00:00
08/05/2003 18:30:00 - 23:00:00
08/06/2003 00:00:00 - 11:30:00
08/06/2003 12:30:00

08/06/2003 16:00:00
08/06/2003 19:00:00 - 23:30:00
08/07/2003 00:30:00
08/07/2003 02:00:00 - 11:30:00
08/07/2003 13:30:00
08/07/2003 16:30:00 - 17:00:00
08/07/2003 20:00:00 - 08/08/2003 01:30:00
08/08/2003 03:00:00 - 06:00:00
08/08/2003 08:00:00 - 10:30:00
08/08/2003 11:30:00 - 12:30:00
08/08/2003 18:30:00
08/08/2003 21:30:00 - 22:30:00
08/08/2003 23:30:00 - 08/09/2003 01:30:00
08/09/2003 02:30:00
08/09/2003 06:00:00 - 07:00:00
08/09/2003 09:30:00 - 10:30:00
08/09/2003 12:30:00 - 13:30:00
08/09/2003 19:00:00
08/09/2003 23:30:00 - 08/10/2003 02:30:00
08/10/2003 03:30:00
08/10/2003 06:30:00 - 07:00:00
08/10/2003 11:30:00
08/10/2003 13:30:00
08/10/2003 20:00:00 - 20:30:00
08/10/2003 23:30:00 - 08/11/2003 01:00:00
08/11/2003 02:00:00 - 02:30:00
08/11/2003 12:30:00
08/11/2003 16:30:00
08/11/2003 21:00:00
08/12/2003 00:30:00 - 04:00:00
08/12/2003 09:00:00
08/12/2003 12:30:00
08/12/2003 13:00:00 - 15:00:00
08/12/2003 21:30:00
08/13/2003 02:00:00 - 05:00:00
08/13/2003 14:00:00 - 15:30:00
08/13/2003 16:30:00 - 17:00:00
08/13/2003 18:00:00
08/13/2003 22:30:00
08/14/2003 02:00:00 - 02:30:00
08/14/2003 03:30:00 - 05:00:00
08/14/2003 06:30:00
08/14/2003 14:30:00 - 17:00:00
08/14/2003 18:30:00
08/14/2003 23:00:00 - 23:30:00
08/15/2003 02:30:00
08/15/2003 03:00:00 - 05:00:00
08/15/2003 07:30:00
08/15/2003 15:00:00 - 18:30:00
08/15/2003 19:30:00 - 20:30:00
08/15/2003 21:30:00
08/15/2003 23:00:00 - 08/16/2003 00:00:00
08/16/2003 02:30:00 - 06:00:00
08/16/2003 07:00:00 - 07:30:00

08/16/2003 12:00:00
 08/16/2003 16:00:00 - 16:30:00
 08/16/2003 17:30:00 - 18:30:00
 08/16/2003 19:30:00 - 22:00:00
 08/16/2003 23:00:00 - 08/17/2003 01:30:00
 08/17/2003 03:00:00 - 08:30:00
 08/17/2003 10:00:00 - 10:30:00
 08/17/2003 12:00:00 - 13:30:00
 08/17/2003 15:30:00 - 08/18/2003 19:30:00
 08/18/2003 21:00:00 - 21:30:00
 08/18/2003 23:00:00 - 08/19/2003 10:00:00
 08/19/2003 11:30:00 - 08/20/2003 10:30:00
 08/20/2003 12:00:00 - 08/23/2003 07:30:00
 08/23/2003 08:30:00 - 08/24/2003 02:30:00
 08/24/2003 03:30:00 - 19:30:00
 08/24/2003 21:30:00 - 08/25/2003 08:00:00
 08/25/2003 09:00:00
 08/25/2003 10:00:00 - 16:00:00
 08/25/2003 18:30:00 - 19:30:00
 08/25/2003 23:00:00 - 08/26/2003 03:00:00
 08/26/2003 04:00:00
 08/26/2003 07:30:00
 08/26/2003 11:00:00 - 15:00:00
 08/26/2003 16:00:00
 08/26/2003 19:30:00 - 20:30:00
 08/27/2003 00:30:00 - 04:30:00

September

Dissolved Oxygen for deployment 9/1/03 12:30 - 10/8/03 16:00 suspect,
 cause for
 increase of data unknown. Data retained.

October

Dissolved Oxygen for deployment 9/1/03 12:30 - 10/8/03 16:00 suspect,
 cause for
 increase of data unknown. Data retained.

The following times recorded negative and/or zero turbidity values, cause
 unknown. Data retained but suspect.

10/10/2003 03:00:00
 10/11/2003 03:00:00
 10/14/2003 04:30:00
 10/15/2003 04:30:00
 10/16/2003 04:00:00 - 04:30:00
 10/16/2003 06:00:00
 10/16/2003 21:30:00 - 10/17/2003 00:30:00
 10/17/2003 04:00:00 - 06:00:00
 10/17/2003 19:00:00
 10/17/2003 20:00:00 - 21:30:00
 10/17/2003 22:30:00
 10/18/2003 00:00:00
 10/18/2003 01:00:00 - 01:30:00
 10/18/2003 05:30:00
 10/18/2003 19:00:00 - 23:30:00
 10/19/2003 01:00:00

10/19/2003 07:00:00 - 07:30:00
 10/19/2003 08:30:00
 10/19/2003 10:00:00
 10/19/2003 20:30:00 - 10/20/2003 00:00:00
 10/20/2003 02:30:00
 10/20/2003 03:30:00 - 04:30:00
 10/20/2003 09:30:00
 10/20/2003 21:00:00 - 23:30:00
 10/21/2003 11:00:00

The following are turbidity spikes, cause unknown

10/19/2003 03:30:00 2474.9
 10/19/2003 06:30:00 2074.4
 10/23/2003 13:00:00 2465.5
 10/29/2003 08:30:00 2373.9

November

11/6/03 1830-11/26/03 1530 turbidity data removed, post calibration verification

failure

11/27/03 1030 turbidity spike, cause unknown

11/26/03 1700 - 11/30/03 2330 DO % and mg/L removed due to post calibration

verification (157%).

December

12/1/03 0700-0730 turbidity spikes cause unknown

12/1/03 0000 - 12/25/03 1000 DO % and mg/L removed due to post calibration

verification (157%).

12/11/03 0030 Turbidity spike cause unknown

The following times turbidity values were negative (range -0001 to -0014) and/or

zero. For unknown reasons. Data retained but suspect.

Date	Time	Turb
12/25/2003	15:30:00	-16:00:00
12/25/2003	17:00:00	- 17:30:00
12/25/2003	22:30:00	
12/26/2003	02:30:00	- 05:00:00
12/26/2003	06:30:00	- 07:00:00
12/26/2003	16:30:00	
12/26/2003	17:30:00	- 18:00:00
12/26/2003	19:30:00	
12/26/2003	23:00:00	
12/27/2003	04:00:00	- 07:00:00
12/27/2003	17:00:00	- 18:30:00
12/27/2003	19:00:00	
12/27/2003	20:00:00	
12/27/2003	21:00:00	- 21:30:00
12/28/2003	00:00:00	- 00:30:00
12/28/2003	04:00:00	- 07:30:00
12/28/2003	08:30:00	- 09:00:00
12/28/2003	17:30:00	- 20:30:00

12/28/2003	21:30:00	
12/29/2003	01:00:00	- 01:30:00
12/29/2003	04:30:00	- 07:00:00
12/29/2003	08:30:00	- 09:00:00
12/29/2003	10:00:00	
12/29/2003	17:00:00	- 23:00:00
12/30/2003	01:00:00	- 03:30:00
12/30/2003	05:00:00	- 09:30:00
12/30/2003	10:30:00	
12/30/2003	11:30:00	
12/30/2003	13:00:00	- 15:30:00
12/30/2003	16:30:00	- 22:30:00
12/30/2003	23:30:00	- 12/31/2003 01:30:00
12/31/2003	03:00:00	- 04:00:00
12/31/2003	05:30:00	- 13:00:00
12/31/2003	14:30:00	- 16:00:00
12/31/2003	17:00:00	- 23:30:00

Marsh Landing

Due to the nature of the site's deployment, heavy fouling occurs, often causing a steady deterioration of the data. Some of the data are removed and some retained. It is exceedingly difficult to determine the point to remove the data and is often a subjective decision.

January

1/7/03 1830 turbidity spike cause unknown

The following turbidity values negative (range -0001 to -0013), cause unknown.

Post calibration readings were 85.6 NTU. Data retained but suspect.

Date	Time	Turb
01/16/2003	10:30:00	- 21:00:00
01/16/2003	22:00:00	- 01/17/2003 02:00:00
01/17/2003	03:00:00	
01/17/2003	04:00:00	- 04:30:00
01/17/2003	05:30:00	- 06:00:00
01/17/2003	07:00:00	- 09:00:00
01/17/2003	11:30:00	- 14:30:00
01/17/2003	15:30:00	- 19:00:00
01/17/2003	20:00:00	- 21:00:00
01/17/2003	23:00:00	- 01/18/2003 03:00:00
01/18/2003	04:00:00	- 05:30:00
01/18/2003	07:30:00	- 09:30:00
01/18/2003	12:30:00	- 18:30:00
01/18/2003	21:00:00	- 21:30:00
01/19/2003	00:30:00	- 03:00:00
01/19/2003	05:00:00	- 05:30:00
01/19/2003	08:30:00	- 10:00:00
01/19/2003	13:00:00	- 16:00:00
01/19/2003	17:00:00	- 18:30:00
01/19/2003	20:30:00	- 22:00:00
01/20/2003	00:30:00	- 03:30:00

01/20/2003 04:00:00
 01/20/2003 05:00:00
 01/20/2003 09:00:00 - 11:00:00
 01/20/2003 14:00:00 - 19:00:00
 01/20/2003 22:00:00 - 23:00:00
 01/21/2003 01:30:00 - 05:30:00
 01/21/2003 07:00:00
 01/21/2003 10:30:00 - 11:30:00
 01/21/2003 15:00:00 - 17:30:00
 01/21/2003 19:30:00 - 20:00:00
 01/21/2003 22:00:00 - 01/22/2003 00:00:00
 01/22/2003 02:00:00 - 05:30:00
 01/22/2003 06:30:00
 01/22/2003 11:00:00
 01/22/2003 12:00:00 - 12:30:00
 01/22/2003 16:30:00 - 17:30:00
 01/22/2003 18:30:00 - 19:00:00
 01/22/2003 20:00:00
 01/23/2003 00:00:00 - 01:00:00
 01/23/2003 04:30:00 - 07:00:00
 01/23/2003 08:00:00 - 09:00:00
 01/23/2003 10:00:00
 01/23/2003 13:30:00
 01/23/2003 16:00:00 - 19:00:00
 01/23/2003 20:30:00 - 01/24/2003 02:30:00
 01/24/2003 05:00:00 - 10:30:00
 01/24/2003 13:30:00 - 14:00:00
 01/24/2003 17:00:00 - 19:00:00
 01/24/2003 20:00:00
 01/24/2003 20:30:00 - 01/25/2003 00:00:00
 01/25/2003 02:00:00 - 03:00:00
 01/25/2003 05:00:00 - 08:00:00
 01/25/2003 09:00:00
 01/25/2003 10:00:00
 01/25/2003 11:00:00 - 12:00:00
 01/25/2003 14:30:00 - 15:00:00
 01/25/2003 16:30:00 - 01/26/2003 01:00:00
 01/26/2003 03:00:00 - 04:30:00
 01/26/2003 06:30:00 - 12:30:00
 01/26/2003 15:30:00 - 16:00:00
 01/26/2003 17:00:00 - 21:30:00
 01/26/2003 22:30:00 - 01/27/2003 03:00:00
 01/27/2003 04:00:00 - 05:30:00
 01/27/2003 07:30:00 - 11:30:00
 01/27/2003 13:00:00
 01/27/2003 15:30:00 - 16:00:00

February
 No anomalies.

March
 3/16/03 00:30 - 3/27/03 15:30 DO values decrease, possibly due to
 fouling. Post
 deployment calibration readings were 22%. Data deleted.

Negative and/or zero turbidity for the following dates and times for unknown reason. Data retained but suspect.
03/12/2003 18:00:00 - 20:00:00

April

4/10/03 1900-4/17/03 1430 DO data removed, post deployment failure
4/20/03 22:00 - 4/30/03 2330 DO data removed, post calibration value too high

May

5/1/03 00:00 - 5/2/03 1530 DO data removed, post calibration value too high
5/8/03 1100-5/19/03 1400 pH data removed, post deployment verification failure
5/11/03 0900 - 5/19/03 1400 turbidity data removed due to fouling
5/14/03 0300 - 5/19/03 1400, DO data removed, fouled membrane
5/19/03 1430 - 5/31/03 2330 pH probe broken, data removed
5/31/03 2230 - 6/4/03 1630 DO data removed, membrane fell off

The following spikes in turbidity were reported, due to hydrozoans located on

sonde, apparent at retrieval of sonde.

05/02/2003	05:00:00	1274
05/02/2003	05:30:00	1635
05/02/2003	07:30:00	1635
05/02/2003	09:00:00	1634
05/02/2003	10:00:00	1638
05/02/2003	11:00:00	1641
05/02/2003	12:30:00	1643
05/02/2003	13:30:00 - 14:30:00	
05/02/2003	15:30:00	1649

June

5/31/03 2230 - 6/4/03 1630 DO data removed, membrane fell off
6/3/03 1700-6/4/03 1630 turbidity data removed, probe fouled
6/11/03 2100 - 6/23 1430 DO data removed due to deterioration of data caused by excess barnacles congregating on sonde.
6/23/03 1500 - 6/30/03 2330 turbidity removed, probe fouled
6/1/03 0000 - 6/4/03 1630 pH probe broken, data removed

July

7/1/03 0000-7/10/03 1130 Turbidity removed probe fouled
7/18/03 0600 - 7/28/03 1000 turbidity removed, probe fouled
7/28/03 1030 - 7/31/03 2330 no data reported, sonde failure
The following values for turbidity were reported as negative, most likely due to fouling. Data retained but suspect.
7/10 1800, 1900, 2230, 2330
7/11/03 0100-0130, 0230-0300, 1000, 1830-2000, 2330
7/12/03 0000-0130, 0230, 0330, 0700, 1030-1330, 1430, 1830, 1930-2030
7/13/03 0030-0230, 0330, 0430, 0800, 1130-1430, 2000-2130
7/14/03 0130-0330, 0430, 2030-2230

7/15/03 0300-0430,1030,1400-1600,1700,1830,2130-2300
7/16/03 0330-0500, 0600-0700, 1130, 1430-1630,1730, 20000-2330
7/17/03 0000,630-0730, 0300-0530, 1200-1230,1430-1830,1930-2330
7/18/03 000-0100, 0230-0530

The following turbidity spikes were reported, cause unknown. Data retained.

7/10/03 1830

7/11/03 0700, 1230

Low dissolved oxygen data for deployments 6/23/03 through 7/10/03 and 7/10/03

through 7/28/03 due to fouling. All data retained.

August

8/1/03 0000-8/18/03 0930 no data reported, sonde failure

8/27/03 0200 - 8/31/03 2330 DO data removed, DO began reading negative values,
cause unknown

The following are turbidity outliers (>1000 NTU and <0 NTU) most likely due to

fouling. Data retained but suspect.

Date	Time	Turb
08/18/2003	10:30:00 - 18:30:00	
08/18/2003	19:30:00 - 20:00:00	
08/18/2003	22:00:00	
08/19/2003	00:00:00 - 00:30:00	
08/19/2003	02:00:00 - 06:00:00	
08/19/2003	07:00:00 - 09:00:00	
08/19/2003	10:00:00 - 10:30:00	
08/19/2003	11:30:00 - 15:30:00	
08/19/2003	16:30:00 - 08/20/2003 08:00:00	
08/20/2003	09:00:00 - 13:00:00	
08/20/2003	14:00:00 - 02:30:00	
08/21/2003	03:30:00 - 08/24/2003 02:30:00	
08/24/2003	03:30:00 - 14:00:00	
08/24/2003	15:00:00 - 08/25/2003 01:00:00	
08/25/2003	02:00:00 - 14:30:00	
08/25/2003	16:00:00	
08/25/2003	18:00:00 - 20:00:00	
08/25/2003	23:00:00 - 08/26/2003 01:30:00	
08/26/2003	02:30:00 - 03:00:00	
08/26/2003	05:30:00	
08/26/2003	07:30:00 - 08:30:00	
08/26/2003	11:00:00 - 13:30:00	
08/26/2003	14:30:00 - 15:00:00	
08/26/2003	19:00:00 - 21:00:00	
08/27/2003	00:30:00 - 03:30:00	
08/27/2003	04:30:00	
08/27/2003	12:00:00 - 14:30:00	
08/27/2003	15:30:00	
08/27/2003	19:30:00 - 21:30:00	
08/28/2003	01:30:00 - 03:00:00	
08/28/2003	14:00:00 - 15:30:00	
08/28/2003	20:00:00 - 22:00:00	
08/29/2003	02:00:00 - 04:00:00	

08/29/2003	13:00:00	2126.4
08/29/2003	15:30:00 - 16:00:00	
08/29/2003	21:30:00 - 23:00:00	
08/30/2003	03:00:00 - 04:30:00	
08/30/2003	12:30:00 - 13:00:00	
08/30/2003	16:30:00	
08/30/2003	17:00:00	
08/30/2003	17:30:00	
08/30/2003	20:00:00	
08/30/2003	23:00:00	
08/30/2003	23:30:00	
08/31/2003	03:30:00	
08/31/2003	04:00:00	
08/31/2003	04:30:00	
08/31/2003	05:00:00	
08/31/2003	13:30:00	
08/31/2003	15:30:00	
08/31/2003	16:30:00	
08/31/2003	18:00:00	
08/31/2003	19:00:00	
08/31/2003	20:00:00	
08/31/2003	22:30:00	

September

9/1/03 0000-9/1/03 1200, DO data removed, probe reading negative values, cause unknown.

9/1/03 0000 - 9/1/03 1200 turbidity data removed, probe fouled

9/26/03 2330 - 9/30/03 2330 Turbidity data removed, probe fouled

The following values for turbidity were reported as negative, most likely due

fouling. Data retained.

9/18/03 1130-1600, 1800-2330

9/19/03 000-1200, 1300-2330

9/20/03 0000-1200, 1330-1730, 1900-2330

9/21/03 0000-1430, 1600-1800, 2030-2330

9/22/03 0000-1430, 1530-1900, 2130-2330

9/23/03 0000-0130, 0230-0400, 0500, 0630-0730, 1000-1500, 1800-1930, 2300-2330

9/24/03 0000-0330, 0730-0800, 1200-1400, 1530, 2000

9/25/03 0100-0230

October

10/1/03 0000-10/8/03 1600 turbidity removed, probe fouled

The following data are turbidity outliers (>1000 NTU), possibly due to fouling

10/20/2003	13:30:00	1365.8
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10/22/2003	08:00:00	1363.8
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10/25/2003	00:30:00	1361.2
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10/25/2003	09:00:00	1362.7
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10/25/2003	13:00:00	1362.4
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10/25/2003	20:30:00	1364.8
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10/26/2003	00:30:00	1362.9
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10/26/2003	02:00:00	1362.9
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10/26/2003	05:30:00	1362.8
10/26/2003	09:30:00	1363.5
10/26/2003	14:00:00	1366.4
10/26/2003	16:30:00	1365.8
10/26/2003	18:00:00	1366.2
10/26/2003	19:30:00	1365.7
10/26/2003	21:30:00	1366.9
10/27/2003	02:00:00	1365.5
10/27/2003	04:00:00	1365.6
10/27/2003	06:30:00	1365.1
10/27/2003	08:30:00	1365.3
10/27/2003	11:00:00	1041.7
10/27/2003	16:00:00	1367.4
10/27/2003	19:00:00	1366.7
10/27/2003	21:30:00	1366.2
10/28/2003	01:00:00	1366.0
10/28/2003	02:00:00	1364.2
10/28/2003	04:30:00	1365.9
10/28/2003	06:00:00	1365.4
10/28/2003	07:30:00	1169.9
10/28/2003	09:00:00	1365.4
10/28/2003	10:30:00	1365.1
10/28/2003	14:00:00	1365.7
10/28/2003	16:00:00	1365.9
10/28/2003	18:30:00	1365.5
10/28/2003	22:30:00	1364.7
10/29/2003	03:00:00	1364.1
10/29/2003	06:00:00	1363.6
10/29/2003	10:00:00	1363.2
10/29/2003	13:00:00	1364.8
10/29/2003	15:00:00	1366.1
10/29/2003	17:30:00	1366.8
10/29/2003	19:30:00	1365.2
10/29/2003	21:00:00	1365.7
10/29/2003	23:00:00	1364.4
10/30/2003	00:30:00	1364.0
10/30/2003	01:00:00	1339.0
10/30/2003	06:00:00	1363.9
10/30/2003	08:00:00	1362.6
10/30/2003	11:30:00	1362.6
10/30/2003	13:30:00	1363.5
10/30/2003	17:30:00	1366.6
10/30/2003	19:30:00	1366.3
10/30/2003	21:30:00	1365.8
10/31/2003	01:00:00	1363.8
10/31/2003	02:30:00	1363.7
10/31/2003	05:00:00	1364.6
10/31/2003	08:30:00	1364.3
10/31/2003	10:30:00	1364.3
10/31/2003	14:00:00	1362.6
10/31/2003	17:30:00	1366.0
10/31/2003	21:00:00	1366.2
10/31/2003	23:00:00	1365.1

November

11/7/03 0330 - 11/26/03 1500 temperature probe failed. Temperature, Spcond, salinity, pH, Do mg/L, depth and turbidity removed.

11/1/03 0000 - 11/6/03 1500 turbidity removed, probe fouled

The following turbidity data are negative (a range of -0001 to -0034NTU) and/or

zero. Data retained but suspect.

11/06/2003	16:00:00	
11/06/2003	16:30:00	
11/06/2003	19:30:00 - 20:30:00	
11/06/2003	23:30:00	
11/07/2003	00:00:00 - 03:00:00	
11/26/2003	15:30:00 - 11/27/2003	00:00:00
11/27/2003	02:30:00 - 08:00:00	
11/27/2003	09:00:00 - 09:30:00	
11/27/2003	10:30:00 - 12:30:00	
11/27/2003	16:30:00 - 11/28/2003	01:30:00
11/28/2003	03:00:00 - 09:00:00	
11/28/2003	10:00:00 - 10:30:00	
11/28/2003	11:30:00 - 13:30:00	
11/28/2003	17:00:00 - 11/29/2003	14:30:00
11/29/2003	15:30:00	
11/29/2003	16:30:00 - 11/30/2003	15:30:00
11/30/2003	16:30:00 - 23:30:00	

pH data suspect for deployment 11/26/03 1530 - 12/25/03 1000. pH not cycling as is normal for this site. Cause unknown, possible undetected probe failure.

December

The following turbidity values negative (range -0001 to -0034 NTU), cause unknown. Calibration readings were in reasonable range. Data retained but suspect.

Date	Time	Turb
12/01/2003	00:00:00 - 12/04/2003	02:30:00
12/04/2003	03:30:00 - 07:00:00	
12/04/2003	09:00:00 - 12/05/2003	05:00:00
12/05/2003	06:00:00 - 07:30:00	
12/05/2003	09:30:00 - 12/06/2003	08:00:00
12/06/2003	09:00:00 - 12/07/2003	08:30:00
12/07/2003	10:30:00 - 12/08/2003	06:00:00
12/08/2003	07:00:00 - 10:00:00	
12/08/2003	11:30:00 - 12/09/2003	10:00:00
12/09/2003	11:00:00 - 12/11/2003	08:30:00
12/11/2003	09:30:00 - 11:30:00	-
12/11/2003	13:30:00 - 12/12/2003	12:30:00
12/12/2003	14:00:00 - 12/13/2003	13:30:00
12/13/2003	15:00:00 - 12/14/2003	13:30:00
12/14/2003	14:30:00 - 12/15/2003	14:00:00
12/15/2003	15:00:00	
12/15/2003	16:00:00 - 12/17/2003	12:30:00
12/17/2003	13:30:00	
12/17/2003	14:30:00 - 12/19/2003	02:30:00

12/19/2003	03:30:00	-	12/20/2003	07:00:00
12/20/2003	09:30:00	-	12/20/2003	19:00:00
12/20/2003	20:00:00	-	12/21/2003	03:00:00
12/21/2003	04:30:00	-		07:30:00
12/21/2003	11:00:00	-		20:00:00
12/21/2003	22:00:00	-	12/22/2003	04:00:00
12/22/2003	06:30:00	-		08:30:00
12/22/2003	12:30:00	-		17:00:00
12/22/2003	19:00:00	-		21:00:00
12/23/2003	00:00:00			
12/23/2003	00:30:00	-		03:00:00
12/23/2003	04:00:00	-		04:30:00
12/23/2003	07:30:00			
12/23/2003	08:30:00	-		09:00:00
12/23/2003	13:30:00	-		15:30:00
12/23/2003	17:00:00	-		17:30:00
12/23/2003	20:00:00	-		22:00:00
12/24/2003	01:00:00	-		04:30:00
12/24/2003	05:30:00			
12/24/2003	06:30:00			
12/24/2003	08:00:00			
12/24/2003	09:30:00			
12/24/2003	10:00:00	-		10:30:00
12/24/2003	15:00:00	-		16:30:00
12/24/2003	18:00:00			
12/24/2003	20:30:00	-		22:30:00
12/25/2003	01:30:00	-		06:00:00
12/25/2003	07:30:00			

The following turbidity values negative (range -0001 to -0034 NTU), cause unknown. Post calibration readings were 84.0 NTU. Data retained but suspect.

12/25/2003	16:00:00	-		17:30:00
12/26/2003	03:30:00	-		05:00:00
12/26/2003	17:00:00	-		18:00:00
12/27/2003	04:30:00	-		06:30:00
12/27/2003	08:00:00			
12/27/2003	17:00:00	-		19:00:00
12/28/2003	04:30:00	-		08:00:00
12/28/2003	17:30:00	-		20:30:00
12/29/2003	02:00:00			
12/29/2003	04:30:00	-		10:00:00
12/29/2003	14:30:00			
12/29/2003	18:00:00	-		22:30:00
12/30/2003	02:00:00			
12/30/2003	03:00:00	-		03:30:00
12/30/2003	05:00:00	-		09:00:00
12/30/2003	10:30:00	-		11:30:00
12/30/2003	13:00:00	-		22:30:00
12/30/2003	23:30:00			
12/31/2003	00:00:00			
12/31/2003	01:00:00			
12/31/2003	03:00:00	-		04:00:00
12/31/2003	05:30:00	-		10:30:00
12/31/2003	11:30:00	-		16:00:00

12/31/2003 17:00:00 - 23:30:00

12. Missing Data:

Missing data are denoted by a period in the data set. Periods were later removed for data dissemination purposes and left blank. Data are missing due to equipment failure where no probes deployed, maintenance/calibration of equipment, elimination of obvious outliers, or elimination of data due to calibration (both pre and post problems. For more details on deleted data, see the Anomalous Data Section (11). To find out more details about missing data, contact the Research Coordinator at the site submitting the data.

13. Post Deployment information:

Hunt Dock:

Deployment File:	SpCond found/true	DO% found/true	pH	depth found/true	turb
Hd030107	25.76/24.8	109	7.58/7.41	-0.055	na
Hd030206	25.21/24.8	126	6.86/7.41	-0.096	107.6/100
Hd030311	24.62/24.8	112	7.25/7.41	-0.051	108/100
Hd030405	24.35/24.8	124	7.20/7.41	-0.30	na
Hd030421	25.94/24.8	115	broken	-0.144	
	fouled				
Hd030513	24.33/24.8	110	broken	-.074	103.4/100
Hd030611	24.9/24.8	110	broken	-0.105	
	113.8				
Hd030630	23.36/24.8	175	broken	-0.064	107
Hd030804	23.87 /24.8	112	7.0/7.41	-0.28	na
Hd030901	24.6/24.8	95	broken		114
Hd031008	sonde pulled out	of water approx.	10/14		
Hd031106	24.71/24.8	90	7.48/7.41	-0.143	98
Hd031128	24.75/24.8	110	7.49/7.41	-0.014	na
Hd031224	25.5/24.8	92	7.25/7.41	0.004	63.3

Flume dock:

Deployment File:	SpCond found/true	DO% found/true	pH	depth found/true	turb
Fd030107					
Fd030205	18.42/24.8	101	7.57/7.41	-0.108	73.7/100
Fd030310		13		-0.035	wiper fell off,
	fouled				
Fd030405	18.3/24.8	44	7.48/7.41		99.3/100
Fd030421	25.66/24.8	111	7.55/7.41	-0.087	106/100
Fd030504	20.46/24.8	96.9	8.0/7.41	-0.103	110/100
Fd030531	23.62/24.8	**	7.0/7.41	0.07	>1000

Fd030611	19.36/24.8	90	7.65/7.41	000	207/100
Fd030630		12	7.38/7.41	-0.054	85/100
Fd030718	22.7/24.8	6	7.42/7.41	-0.026	1356/100
Fd030804	18.11/24/8	70	7.0/7.41	-0.03	87.54/100
Fd030901					
Fd030918	23.10/24.8	30	7.18/7.41	-0.043	
Fd031015	temp probe not working, no data accepted				
Fd031025	24.3/24.8	99	7.51/7.4	-0.112	98/100
Fd031106	27.33/24.8	75	6.85/7.41	0.026	95/100
Fd031128	23.9/24.8	108	7.36/7.41	0.022	160/100
Fd031224	27.76/24.8	101	6.55/7.41	0.105	108/100

Lower Duplin

Deployment	SpCond		DO%	pH	depth	turb
File:	found/true		found/true		found/true	
Ld030113	sonde failure					
Ld030127	25.71/24.8	97.3	7.55/7.41	-0.148		na
Ld030227	24.43/24.8	105	7.69/7.41	-0.106		123.9
Ld030401	26.68/24.8	110	7.37/7.41	-0.080		95.8/100
Ld030504	25.8/24.8	110	7.33/7.41	.313	na	
Ld030519	25.96/24.8	110	9.65/7.41	-0.219		101.9/100
Ld030604	sonde failure					
Ld030623	26.60/24.8	102	7.15/7.41	-0.057		105.5/100
Ld030728	26.3/24.8	103	7.24/7.41	0.035	96.3/100	
Ld030901	24.65/24.8	85	7.43/7.41	-0.047		117
Ld031008	24.01/24.8	101	7.30/7.41	-0.058		107/100
Ld031106	25.6/24.8	106	7.33/7.4	-0.04	1353/100	
Ld031126	24.88/24.8	157	8.0/7.41	-0.003		100/100
Ld031225						

Marsh Landing

Deployment	SpCond		DO%	pH	depth	turb
File:	found/true		found/true		found/true	
Ml030116	22.96/24.8	100	10.1/10.4	-0.022		85.6/100
Ml030127	25.05/24.8	100	7.25/7.41	-0.075		104/100
Ml030226	18.71/24.8	22	7.78/7.41	0.093	115/100	
Ml030327	15/24.8	10	7.79/7.41	-0.140		
	162/100					
Ml030417	21.64/24.8	231	7.63/7.41	-0.105		128/100
Ml030502	19.18/24.8	73	9.67/7.41	0.069		
Ml030519	20.20/24.8	**	7.75/7.41	-0.112		130.8
Ml030604	barnacle growth severe, turb. Wiper missing					
Ml030623	24.89/24.8	76	7.55/7.41	0.06		
Ml030710	21.58/24.8	52	7.88/7.41	-0.094		800/100
Ml030818	23.72/24.8	78	7.30/7.41	-0.066		110/100
Ml030918	20.11/24.8	84	7.29/7.41	-0.105		175/100
Ml031008	25.4/24.8	150	7.20/7.41	-0.038		130/100
Ml031020	23.16/24.8	102	7.49/7.41	-0.077		103/100
Ml031106	temperature probe failed					
Ml031126	22.8/24.8	107	7.02/7.41	0.055	92/100	
Ml031225	25/24.8	106	7.34/7.41	0.114		84/100

14. Other remarks:

On 07/01/2021 this dataset was updated to include embedded QAQC flags for anomalous/suspect data. System-wide monitoring data beginning in 2007 were processed to allow for QAQC flags and codes to be embedded in the data files rather than detailed in the metadata alone (as in the anomalous/suspect, deleted, and missing data sections above). Prior to 2006, rejected data were deleted from the dataset so they are unavailable to be used at all, but suspect data were only noted in the metadata document. Suspect data flags <1> were embedded retroactively in order to allow suspect data to be easily identified and filtered from the dataset if desired for analysis and reporting purposes. No other flags or codes were embedded in the dataset and users should still refer to the detailed explanations above for more information.

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.

If the sonde was exposed at low tide, the data was retained. It will be self evident that the sonde was exposed at low tide by looking at salinity values and depth.