

Sapelo Island (SAP) NERR Water Quality Metadata
January-December 2001
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2. Entry Verification:

The data are reviewed using the YSI computer program Ecwin included with the YSI 6000/6600 data logger. After the file is uploaded from the data logger, Ecwin 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, which 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. The reason for the missing data is recorded on the 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 is/are rejected from the file a period is inserted to the cell(s) and an explanation for the missing dates and times are recorded onto metadata document. The completed metadata form is then submitted with the data file to the CDMO. Jane Garbisch was responsible for all 2001 data collection and management.

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

Camp 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 (LD) 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 (HD) 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.

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 this time we are only performing long term water quality monitoring and not a specific experiment. Prior to April 15, 1999 sampling was completed by the University of Georgia-Athens Marine Institute (UGAMI). 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 lessen 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). The University continues to monitor at a fixed depth just below the surface (Marsh Landing) but this site is no longer considered a NERR monitoring station. The Flume Dock (FD) is also monitored by the University; but, data is no longer reported to the SAP NERR. Therefore the Hunt Dock (HD) site was established just south of the Flume Dock site as the new upper Duplin site and also measures at 0.5m above the surface bottom.

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 within 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.

During the stage of deployment the data logger is checked for fouling and cleaned. This can be one to three times a week depending on the time of year.

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 is uploaded, and the sonde is cleaned. Data is removed if the post calibration standards fail or if technical problems are noted. All data removed is noted for the metadata.

5. Site Location and character:

The monitoring site is located on the Marsh Landing Dock in the Duplin River on Sapelo Island. Water passing the Marsh Landing site 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 dock itself is used as the main dock to the island where the ferry makes several daily runs. There are also several small boats that are docked there. The surrounding area vegetation is dominated by salt marsh with *Spartina* being the predominate flora. Latitude and longitude for Lower Duplin site is as follows: 31 deg 25' 4" N, 81 deg 17' 46" W); Latitude and longitude for Hunt Dock site is as follows: (31 deg 28' 43", 81 deg 16' 23" W); Tidal range maximum for both sites is 14 feet and the salinity range is 5-35 ppt.

The Hunt Dock monitoring site 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. 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.

6. Data collection period: (listed by each deployment)

Lower Duplin:

12/26/2000 15:00 - 1/1/2001 0:00 technical malfunction
1/18/01 12:30 - 2/10/01 15:30
2/10/01 16:00 - 3/6/01 16:30
3/6/01 17:00 - 3/27-01 10:00
3/27/01 10:30 - 4/21/01 14:30
4/21/01 15:00 - 5/13/01 14:30

5/13/01 15:30 - 6/2/01 14:30
6/2/01 15:00 - 6/22/01 13:30
6/22/01 14:00 - 7/14/01 10:30
7/14/01 11:30 - 8/2/01 13:00
8/2/01 13:30 - 8/16/01 15:00
8/16/01 15:30 - 9/2/01 10:00
9/2/01 12:00 - 9/23/01 16:00
9/23/01 16:30 - 10/16/01 14:30
10/16/01 15:30 - 11/2/01 17:30
11/2/01 18:00 - 11/25/01 9:30
11/25/01 17:00 - 12/12/01 14:30
12/12/01 15:00 - 1/3/02 sonde malfunction, data not retrieved.

Hunt Dock:

12/26/00 - 1/18/01 15:00
1/18/01 16:00 - 2/10/01 14:30
2/10/01 21:30 - 3/6/01 7:00
3/6/01 17:30 - 3/27/01 10:00
3/27/01 10:30 - 4/3/01 9:30
4/3/01 11:30 - 4/22/01 18:30
4/22/01 19:00 - 5/13/01 18:30
5/13/01 19:00 - 6/6/01 13:00
6/6/01 16:00 - 6/24/01 12:00
6/24/01 1230 - 7/16/01 16:00
7/16/01 16:30 - 8/7/01 13:30
8/7/01 14:00 - 8/21/01 13:00
8/21/01 13:30 - 9/2/01 11:00
9/2/01 12:00 - 9/23/01 15:30
9/23/01 16:00 - 10/23/01 14:00
10/25/01 14:00 - 10/29/01 18:00
11/18/01 10:00 - 11/22/01 9:00
12/8/01 13:00 - 1/6/02 11:00

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 its subsequent use/misuse in any further analyses or comparisons. The Federal government does not assume liability to the Recipient of 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 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://inlet.geol.sc.edu/cdmohome.html>. 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 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

11. Data Anomalies:

Hunt Dock

January

1/18/2001 16:00-01/31/2001 23:30 all turbidity data removed due to post deployment calibration failure.

1/1/2001 0:00 - 1/18/2001 15:00 no turbidity, not deployed

1/18/2001 15:30 no data taken, sonde between deployments

The following times had all data removed due to exposure above the water's

surface during low tide:

1/1/2001 1800-1930

1/4/2001 2100-2230

1/5/2001 1000-1030

1/5/2001 2130-1/6/2001 0:00

1/6/2001 1030 -1200

1/6/2001 2230- 1/7/2001 0:30

1/7/2001 1130-1300

1/7/2001 2300-1/8/2001 130

1/8/2001 1200-1430

1/8/2001 2330-1/9/2001 330

1/9/2001 1230-1600

1/10 030-400

1/10 1400-1630

1/11 130-430

1/11 1430-1730

1/12 230-530

1/12 1530-1830

1/13 400-600

1/13 1700-1830

1/14 1800-1900

1/15 630-800
1/15 1830-2000
1/16 730-830
1/16 1930-2100
1/18 2230
1/19 1100
1/19 2230-1/20 030
1/20 1030-1330
1/20 2200-1/21 200
1/21 1130-1330
1/21 2330-1/22 200
1/22 1330-1400
1/23 100-200
1/24 130-300
1/24 1430-1530
1/25 130-400
1/25 1430-1630
1/26 300-330
1/26 1530-1700
1/27 300-500
1/27 1530-1730
1/28 330-530
1/28 1600-1800
1/29 500-530
1/29 1700-1830
1/30 530-630
1/30 1700-1930
1/31 600-730
1/31 1730-2000

February

2/01/2001 00:00 - 2/15/2001 01:00 turbidity removed due to post deployment

calibration verification failure

The following times had all data removed due to exposure above the water's surface during low tide:

2/1 630-900
2/1 1830-2100
2/2 730-930
2/2 2000-2200
2/3 830-1030
2/3 2130- 2300
2/4 1030-1130
2/4 2200-2/5 000
2/5 1100-1300
2/5 2230-2/6 200
2/6 1130-1430
2/6 2330-2/7 0300
2/7 1230-1530
2/8 030-400
2/8 1330-1630
2/9 130- 500

2/9 1400-1730
2/10 230-530
2/11 100-900
2/11 1400-2100
2/12 300-1000
2/12 1430-2230
2/13 300-1100
2/13 1430-2330
2/14 300-1200
2/14 1500- 2/15 100
2/15 400-1330
2/15 1530-2/16 130
2/16 500-1430
2/16 1630- 2/17 230
2/17 630- 1600
2/17 1730-2/18 300
2/18 730- 1600
2/18 1900-2/19 330
2/19 900-1630
2/19 2000-2/20 430
2/20 900-1730
2/20 2030-2/21 530
2/21 930-1800
2/21 2100- 2/22 630
2/22 1030- 1830
2/22 2230-2/23 600
2/23 1100-1900
2/23 2330-2/24 0700
2/24 1200-1930
2/24 2330- 2/25 730
2/25 1200-2000
2/26 000-830
2/26 1230-2100
2/27 030-900
2/27 1300-2100
2/28 130-1000
2/28 1330-2130

March

03/24/2001 12:30:00 0163 Turbidity spike, cause unknown
The following times had all data removed due to exposure above the
water's surface during low tide:

03/01/2001 02:30:00
03/01/2001 03:00:00
03/01/2001 03:30:00
03/01/2001 04:00:00
03/01/2001 04:30:00
03/01/2001 05:00:00
03/01/2001 05:30:00
03/01/2001 06:00:00
03/01/2001 06:30:00
03/01/2001 07:00:00
03/01/2001 07:30:00

03/01/2001	08:00:00
03/01/2001	08:30:00
03/01/2001	09:00:00
03/01/2001	09:30:00
03/01/2001	10:00:00
03/01/2001	10:30:00
03/01/2001	11:00:00
03/01/2001	14:30:00
03/01/2001	15:00:00
03/01/2001	15:30:00
03/01/2001	16:00:00
03/01/2001	16:30:00
03/01/2001	17:00:00
03/01/2001	17:30:00
03/01/2001	18:00:00
03/01/2001	18:30:00
03/01/2001	19:00:00
03/01/2001	19:30:00
03/01/2001	20:00:00
03/01/2001	20:30:00
03/01/2001	21:00:00
03/01/2001	21:30:00
03/01/2001	22:00:00
03/01/2001	22:30:00
03/02/2001	03:00:00
03/02/2001	03:30:00
03/02/2001	04:00:00
03/02/2001	04:30:00
03/02/2001	05:00:00
03/02/2001	05:30:00
03/02/2001	06:00:00
03/02/2001	06:30:00
03/02/2001	07:00:00
03/02/2001	07:30:00
03/02/2001	08:00:00
03/02/2001	08:30:00
03/02/2001	09:00:00
03/02/2001	09:30:00
03/02/2001	10:00:00
03/02/2001	10:30:00
03/02/2001	11:00:00
03/02/2001	11:30:00
03/02/2001	12:00:00
03/02/2001	14:30:00
03/02/2001	15:00:00
03/02/2001	15:30:00
03/02/2001	16:00:00
03/02/2001	16:30:00
03/02/2001	17:00:00
03/02/2001	17:30:00
03/02/2001	18:00:00
03/02/2001	18:30:00
03/02/2001	19:00:00
03/02/2001	19:30:00

03/02/2001	20:00:00
03/02/2001	20:30:00
03/02/2001	21:00:00
03/02/2001	21:30:00
03/02/2001	22:00:00
03/02/2001	22:30:00
03/02/2001	23:00:00
03/02/2001	23:30:00
03/03/2001	00:00:00
03/03/2001	03:30:00
03/03/2001	04:00:00
03/03/2001	04:30:00
03/03/2001	05:00:00
03/03/2001	05:30:00
03/03/2001	06:00:00
03/03/2001	06:30:00
03/03/2001	07:00:00
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03/03/2001	22:30:00
03/03/2001	23:00:00
03/03/2001	23:30:00
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03/04/2001	01:00:00
03/04/2001	05:00:00
03/04/2001	05:30:00
03/04/2001	06:00:00
03/04/2001	06:30:00

03/04/2001	07:00:00
03/04/2001	07:30:00
03/04/2001	08:00:00
03/04/2001	08:30:00
03/04/2001	09:00:00
03/04/2001	09:30:00
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03/04/2001	11:30:00
03/04/2001	12:00:00
03/04/2001	12:30:00
03/04/2001	13:00:00
03/04/2001	13:30:00
03/04/2001	14:00:00
03/04/2001	16:30:00
03/04/2001	17:00:00
03/04/2001	17:30:00
03/04/2001	18:00:00
03/04/2001	18:30:00
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03/04/2001	19:30:00
03/04/2001	20:00:00
03/04/2001	20:30:00
03/04/2001	21:00:00
03/04/2001	21:30:00
03/04/2001	22:00:00
03/04/2001	22:30:00
03/04/2001	23:00:00
03/04/2001	23:30:00
03/05/2001	00:00:00
03/05/2001	00:30:00
03/05/2001	01:00:00
03/05/2001	01:30:00
03/05/2001	02:00:00
03/05/2001	02:30:00
03/05/2001	03:00:00
03/05/2001	03:30:00
03/05/2001	04:00:00
03/05/2001	04:30:00
03/05/2001	05:00:00
03/05/2001	05:30:00
03/05/2001	06:00:00
03/05/2001	06:30:00
03/05/2001	07:00:00
03/05/2001	07:30:00
03/05/2001	08:00:00
03/05/2001	08:30:00
03/05/2001	09:00:00
03/05/2001	09:30:00
03/05/2001	10:00:00
03/05/2001	10:30:00
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03/05/2001	11:30:00

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03/07/2001 00:30:00
03/07/2001 01:00:00
03/07/2001 01:30:00
03/07/2001 12:00:00
03/07/2001 12:30:00
03/07/2001 13:00:00
03/08/2001 00:00:00
03/08/2001 00:30:00
03/08/2001 01:00:00
03/08/2001 01:30:00
03/08/2001 02:00:00
03/08/2001 13:00:00
03/08/2001 13:30:00
03/08/2001 14:00:00
03/08/2001 14:30:00
03/09/2001 01:00:00
03/09/2001 01:30:00
03/09/2001 02:00:00
03/09/2001 02:30:00
03/09/2001 03:00:00

03/09/2001	03:30:00
03/09/2001	13:30:00
03/09/2001	14:00:00
03/09/2001	14:30:00
03/09/2001	15:00:00
03/09/2001	15:30:00
03/10/2001	01:30:00
03/10/2001	02:00:00
03/10/2001	02:30:00
03/10/2001	03:00:00
03/10/2001	03:30:00
03/10/2001	04:00:00
03/10/2001	15:00:00
03/10/2001	15:30:00
03/10/2001	16:00:00
03/11/2001	03:00:00
03/11/2001	03:30:00
03/11/2001	04:00:00
03/11/2001	04:30:00
03/11/2001	15:00:00
03/11/2001	15:30:00
03/11/2001	16:00:00
03/11/2001	16:30:00
03/11/2001	17:00:00
03/12/2001	03:30:00
03/12/2001	04:00:00
03/12/2001	04:30:00
03/12/2001	05:00:00
03/12/2001	05:30:00
03/12/2001	15:30:00
03/12/2001	16:00:00
03/12/2001	16:30:00
03/12/2001	17:00:00
03/12/2001	17:30:00
03/12/2001	18:00:00
03/13/2001	04:00:00
03/13/2001	04:30:00
03/13/2001	05:00:00
03/13/2001	05:30:00
03/13/2001	06:00:00
03/13/2001	06:30:00
03/13/2001	16:30:00
03/13/2001	17:00:00
03/13/2001	17:30:00
03/13/2001	18:00:00
03/13/2001	18:30:00
03/14/2001	05:00:00
03/14/2001	05:30:00
03/14/2001	06:00:00
03/14/2001	06:30:00
03/14/2001	07:00:00
03/14/2001	17:00:00
03/14/2001	17:30:00
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03/14/2001	18:30:00
03/14/2001	19:00:00
03/15/2001	18:30:00
03/15/2001	19:00:00
03/21/2001	12:00:00
03/21/2001	12:30:00
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03/22/2001	01:00:00
03/22/2001	01:30:00
03/22/2001	13:00:00
03/22/2001	13:30:00
03/22/2001	14:00:00
03/23/2001	00:30:00
03/23/2001	01:00:00
03/23/2001	01:30:00
03/23/2001	02:00:00
03/23/2001	14:00:00
03/24/2001	01:30:00
03/24/2001	02:00:00
03/24/2001	02:30:00
03/24/2001	13:30:00
03/24/2001	14:00:00
03/24/2001	14:30:00
03/24/2001	15:00:00
03/25/2001	01:30:00
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03/25/2001	02:30:00
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03/26/2001	15:30:00
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03/26/2001	16:30:00
03/27/2001	02:30:00
03/27/2001	03:00:00
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03/27/2001	04:30:00
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03/31/2001 07:30:00
03/31/2001 18:30:00
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03/31/2001 19:30:00

April

4/22/2001 21:00 -5/13/2001 14:30 DO% and DO mg/L data removed due to post deployment calibration verification failure

Turbidity spikes, data retained:

04/12/2001 22:00 373 NTU, cause unknown

No turbidity probe deployed 04/22/2001 19:00 - 04/30/2001 23:30, therefore no

turbidity data is available.

The following times had all data removed due to exposure above the water's surface during low tide:

04/01/2001 07:30:00
04/01/2001 08:00:00
04/01/2001 18:30:00
04/01/2001 19:00:00
04/01/2001 19:30:00
04/01/2001 20:00:00
04/01/2001 20:30:00
04/01/2001 21:00:00
04/01/2001 21:30:00
04/02/2001 09:00:00
04/02/2001 21:00:00
04/02/2001 21:30:00
04/02/2001 22:00:00
04/03/2001 22:00:00
04/03/2001 22:30:00
04/03/2001 23:00:00
04/03/2001 23:30:00
04/04/2001 00:00:00
04/04/2001 10:30:00
04/04/2001 11:00:00
04/04/2001 11:30:00
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04/04/2001 23:30:00
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04/05/2001 00:30:00
04/05/2001 12:00:00
04/05/2001 12:30:00
04/05/2001 13:00:00
04/06/2001 00:00:00

04/06/2001	00:30:00
04/06/2001	01:00:00
04/06/2001	01:30:00
04/06/2001	02:00:00
04/06/2001	12:00:00
04/06/2001	12:30:00
04/06/2001	13:00:00
04/06/2001	13:30:00
04/06/2001	14:00:00
04/06/2001	14:30:00
04/07/2001	00:00:00
04/07/2001	00:30:00
04/07/2001	01:00:00
04/07/2001	01:30:00
04/07/2001	02:00:00
04/07/2001	02:30:00
04/07/2001	03:00:00
04/07/2001	12:30:00
04/07/2001	13:00:00
04/07/2001	13:30:00
04/07/2001	14:00:00
04/07/2001	14:30:00
04/07/2001	15:00:00
04/07/2001	15:30:00
04/08/2001	01:00:00
04/08/2001	01:30:00
04/08/2001	02:00:00
04/08/2001	02:30:00
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04/08/2001	03:30:00
04/08/2001	04:00:00
04/08/2001	13:00:00
04/08/2001	13:30:00
04/08/2001	14:00:00
04/08/2001	14:30:00
04/08/2001	15:00:00
04/08/2001	15:30:00
04/08/2001	16:00:00
04/09/2001	02:00:00
04/09/2001	02:30:00
04/09/2001	03:00:00
04/09/2001	03:30:00
04/09/2001	04:00:00
04/09/2001	04:30:00
04/09/2001	05:00:00
04/09/2001	14:00:00
04/09/2001	14:30:00
04/09/2001	15:00:00
04/09/2001	15:30:00
04/09/2001	16:00:00
04/09/2001	16:30:00
04/09/2001	17:00:00
04/10/2001	02:30:00
04/10/2001	03:00:00

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04/10/2001	04:00:00
04/10/2001	04:30:00
04/10/2001	05:00:00
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04/10/2001	15:00:00
04/10/2001	15:30:00
04/10/2001	16:00:00
04/10/2001	16:30:00
04/10/2001	17:00:00
04/11/2001	04:00:00
04/11/2001	04:30:00
04/11/2001	05:00:00
04/11/2001	05:30:00
04/11/2001	16:00:00
04/11/2001	16:30:00
04/11/2001	17:00:00
04/12/2001	05:00:00
04/12/2001	05:30:00
04/12/2001	06:00:00
04/12/2001	17:30:00
04/13/2001	18:00:00
04/13/2001	18:30:00
04/19/2001	11:00:00
04/19/2001	11:30:00
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04/20/2001	11:30:00
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04/21/2001	13:30:00
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04/22/2001	00:30:00
04/22/2001	01:00:00
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04/22/2001	02:30:00
04/22/2001	12:30:00
04/22/2001	13:00:00
04/22/2001	13:30:00
04/22/2001	14:00:00
04/22/2001	14:30:00
04/22/2001	15:00:00
04/23/2001	01:00:00
04/23/2001	01:30:00
04/23/2001	02:00:00
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04/23/2001	13:30:00
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04/26/2001	16:30:00
04/26/2001	17:00:00
04/27/2001	04:30:00
04/27/2001	05:00:00
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04/27/2001	16:00:00
04/27/2001	16:30:00
04/27/2001	17:00:00
04/27/2001	17:30:00
04/28/2001	05:30:00
04/28/2001	06:00:00
04/28/2001	17:00:00
04/28/2001	17:30:00
04/28/2001	18:00:00
04/28/2001	18:30:00
04/29/2001	06:00:00
04/29/2001	06:30:00

May/June

5/27/2001 18:30 - 06/06/2001 13:00 DO% and mg/L were removed after post-deployment calibration verification failed. It was at 18:30 where a large DO spike occurred, possibly from membrane failure. No turbidity probe deployed for the month of May, therefore no turbidity data is available.

No turbidity probe deployed 06/01/2001 00:00 - 06/06/2001 13:30, therefore no turbidity data is available.

No turbidity probe deployed 06/24/2001 12:30 - 06/30/2001 23:30, therefore no turbidity data is available.

06/24/2001 12:30 - 06/30 23:30 DO% and mg/L were deleted due to probe failure.

The following times had all data removed due to exposure above the water's surface during low tide:

05/02/2001 10:00:00
05/02/2001 22:30:00
05/03/2001 10:30:00
05/03/2001 11:00:00
05/03/2001 11:30:00
05/03/2001 12:00:00
05/03/2001 23:00:00
05/03/2001 23:30:00
05/04/2001 00:00:00
05/04/2001 00:30:00
05/04/2001 11:00:00
05/04/2001 11:30:00
05/04/2001 12:00:00
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05/06/2001 14:30:00
05/07/2001 02:30:00
05/08/2001 15:00:00
05/08/2001 15:30:00
05/09/2001 03:30:00
05/09/2001 04:00:00
05/09/2001 04:30:00

05/09/2001	15:30:00
05/09/2001	16:00:00
05/10/2001	04:30:00
05/10/2001	05:00:00
05/11/2001	05:30:00
05/20/2001	12:00:00
05/20/2001	12:30:00
05/21/2001	12:30:00
05/21/2001	13:00:00
05/21/2001	13:30:00
05/22/2001	01:30:00
05/22/2001	12:30:00
05/22/2001	13:00:00
05/22/2001	13:30:00
05/22/2001	14:00:00
05/22/2001	14:30:00
05/23/2001	01:00:00
05/23/2001	01:30:00
05/23/2001	02:00:00
05/23/2001	02:30:00
05/23/2001	03:00:00
05/23/2001	13:30:00
05/23/2001	14:00:00
05/23/2001	14:30:00
05/23/2001	15:00:00
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05/24/2001	03:00:00
05/24/2001	03:30:00
05/24/2001	14:30:00
05/24/2001	15:00:00
05/24/2001	15:30:00
05/25/2001	03:00:00
05/25/2001	03:30:00
05/25/2001	04:00:00
05/25/2001	04:30:00
05/25/2001	15:00:00
05/25/2001	15:30:00
05/25/2001	16:00:00
05/25/2001	16:30:00
05/26/2001	04:00:00
05/26/2001	04:30:00
05/26/2001	05:00:00
05/26/2001	16:00:00
05/26/2001	16:30:00
05/26/2001	17:00:00
05/26/2001	17:30:00
05/27/2001	05:00:00
05/27/2001	05:30:00
05/27/2001	06:00:00
05/27/2001	17:30:00
05/27/2001	18:00:00
05/28/2001	06:00:00
05/28/2001	06:30:00
05/28/2001	07:00:00

05/28/2001	18:30:00
05/28/2001	19:00:00
05/28/2001	19:30:00
05/29/2001	06:30:00
05/29/2001	07:00:00
05/29/2001	07:30:00
05/29/2001	08:00:00
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05/30/2001	08:00:00
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05/31/2001	09:00:00
05/31/2001	09:30:00
05/31/2001	10:00:00
(June)	
06/01/2001	10:00:00
06/01/2001	10:30:00
06/01/2001	11:00:00
06/01/2001	22:30:00
06/01/2001	23:00:00
06/01/2001	23:30:00
06/02/2001	00:00:00
06/02/2001	10:00:00
06/02/2001	10:30:00
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06/03/2001	11:00:00
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06/03/2001	13:00:00
06/04/2001	00:00:00
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06/04/2001	02:00:00
06/04/2001	11:30:00
06/04/2001	12:00:00
06/04/2001	12:30:00
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06/14/2001	21:00:00
06/14/2001	21:30:00
06/15/2001	08:30:00
06/16/2001	09:30:00
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06/16/2001	23:00:00
06/17/2001	11:00:00
06/18/2001	11:30:00
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06/23/2001	02:30:00
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06/24/2001	03:30:00
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06/30/2001 10:00:00
06/30/2001 10:30:00
06/30/2001 23:00:00

July

07/01/2001 00:00 - 07/16/2001 16:30 DO% and mg/L were removed after post-deployment calibration verification failed.

No turbidity probe deployed 07/01/2001 00:00 - 07/31/2001 23:30, therefore no

turbidity data is available.

The following data for DO% is unusually high, the data is kept in the data set because post calibration verification passed within acceptable limits. The cause of this increase in DO is unknown.

07/18/2001 16:00:00 620.8
07/18/2001 16:30:00 620.5
07/18/2001 17:00:00 620.6
07/18/2001 17:30:00 620.3
07/18/2001 18:00:00 620.1
07/18/2001 18:30:00 620.3
07/18/2001 19:00:00 620.5
07/18/2001 19:30:00 620.5
07/18/2001 20:00:00 620.7
07/18/2001 20:30:00 621.3
07/18/2001 21:00:00 621.8
07/18/2001 21:30:00 622.4
07/18/2001 22:00:00 623.1
07/18/2001 22:30:00 623.6
07/18/2001 23:00:00 623.8
07/18/2001 23:30:00 624.3
07/19/2001 01:30:00 625.8
07/19/2001 02:00:00 625.3
07/19/2001 02:30:00 625.6
07/19/2001 03:00:00 624.9
07/19/2001 03:30:00 624.5
07/19/2001 04:00:00 623.9
07/19/2001 04:30:00 623.8
07/19/2001 05:00:00 623.8
07/19/2001 05:30:00 623.8
07/19/2001 06:00:00 623.8
07/19/2001 06:30:00 623.8
07/19/2001 07:00:00 623.7
07/19/2001 07:30:00 623.7
07/19/2001 08:00:00 624
07/19/2001 08:30:00 624.4

07/19/2001	09:00:00	624.2
07/19/2001	09:30:00	624
07/19/2001	10:00:00	623.2
07/19/2001	10:30:00	621.3
07/19/2001	11:00:00	619.7
07/19/2001	14:30:00	613.6
07/19/2001	15:00:00	602.5
07/19/2001	15:30:00	598.7
07/19/2001	16:00:00	616
07/19/2001	16:30:00	600.5
07/19/2001	17:00:00	590
07/19/2001	17:30:00	579.7
07/19/2001	18:00:00	568.5
07/19/2001	18:30:00	566.6
07/19/2001	19:00:00	555.2
07/19/2001	19:30:00	549.1
07/19/2001	20:00:00	547.7
07/19/2001	20:30:00	546.8
07/19/2001	21:00:00	537.5
07/19/2001	21:30:00	533.3
07/19/2001	22:00:00	527.7
07/19/2001	22:30:00	523.6
07/19/2001	23:00:00	514.6
07/19/2001	23:30:00	505.4
07/20/2001	00:00:00	502.6

07/16/2001 17:00 note increase in salinity and pH. This point is where the sondes were switched. The increase is most likely due to clean probes put out compared to the sonde that has been deployed for some time.

The following times had all data removed due to exposure above the water's

surface during low tide:

07/01/2001	10:30:00
07/01/2001	11:00:00
07/01/2001	11:30:00
07/02/2001	00:00:00
07/02/2001	00:30:00
07/02/2001	11:00:00
07/02/2001	11:30:00
07/02/2001	12:00:00
07/02/2001	12:30:00
07/03/2001	00:00:00
07/03/2001	00:30:00
07/03/2001	01:00:00
07/03/2001	01:30:00
07/03/2001	12:00:00
07/03/2001	12:30:00
07/03/2001	13:00:00
07/04/2001	01:30:00
07/04/2001	02:00:00
07/04/2001	13:00:00
07/04/2001	13:30:00
07/04/2001	14:00:00

07/05/2001	02:00:00
07/05/2001	02:30:00
07/05/2001	03:00:00
07/05/2001	13:30:00
07/05/2001	14:00:00
07/05/2001	14:30:00
07/05/2001	15:00:00
07/06/2001	02:00:00
07/06/2001	02:30:00
07/06/2001	03:00:00
07/06/2001	03:30:00
07/06/2001	14:00:00
07/06/2001	14:30:00
07/06/2001	15:00:00
07/06/2001	15:30:00
07/07/2001	03:00:00
07/07/2001	03:30:00
07/07/2001	04:00:00
07/17/2001	10:30:00
07/17/2001	11:00:00
07/17/2001	23:30:00
07/18/2001	11:00:00
07/18/2001	11:30:00
07/18/2001	12:00:00
07/18/2001	12:30:00
07/19/2001	00:00:00
07/19/2001	00:30:00
07/19/2001	01:00:00
07/19/2001	11:30:00
07/19/2001	12:00:00
07/19/2001	12:30:00
07/19/2001	13:00:00
07/19/2001	13:30:00
07/19/2001	14:00:00
07/20/2001	00:30:00
07/20/2001	01:00:00
07/20/2001	01:30:00
07/20/2001	02:00:00
07/20/2001	02:30:00
07/20/2001	12:00:00
07/20/2001	12:30:00
07/20/2001	13:00:00
07/20/2001	13:30:00
07/20/2001	14:00:00
07/20/2001	14:30:00
07/21/2001	01:30:00
07/21/2001	02:00:00
07/21/2001	02:30:00
07/21/2001	03:00:00
07/21/2001	14:30:00
07/22/2001	15:00:00
07/22/2001	15:30:00
07/22/2001	16:00:00
07/23/2001	03:30:00

07/23/2001 04:00:00
07/23/2001 04:30:00
07/23/2001 15:30:00
07/23/2001 16:00:00
07/23/2001 16:30:00
07/23/2001 17:00:00
07/24/2001 04:00:00
07/24/2001 04:30:00
07/24/2001 05:00:00
07/24/2001 05:30:00
07/24/2001 06:00:00
07/24/2001 16:00:00
07/24/2001 16:30:00
07/24/2001 17:00:00
07/24/2001 17:30:00
07/24/2001 18:00:00
07/24/2001 18:30:00
07/25/2001 04:30:00
07/25/2001 05:00:00
07/25/2001 05:30:00
07/25/2001 06:00:00
07/25/2001 06:30:00
07/25/2001 17:30:00
07/25/2001 18:00:00
07/25/2001 18:30:00
07/25/2001 19:00:00
07/26/2001 06:00:00
07/26/2001 06:30:00
07/26/2001 07:00:00
07/26/2001 19:00:00
07/26/2001 19:30:00
07/26/2001 20:00:00
07/27/2001 06:30:00
07/27/2001 07:00:00
07/27/2001 07:30:00
07/27/2001 08:00:00
07/27/2001 08:30:00
07/27/2001 20:00:00
07/27/2001 20:30:00
07/27/2001 21:00:00
07/28/2001 08:00:00
07/28/2001 08:30:00
07/28/2001 09:00:00
07/30/2001 09:30:00
07/30/2001 10:00:00
07/30/2001 10:30:00
07/30/2001 11:00:00

August

No turbidity probe deployed 08/01/2001 00:00 - 08/31/2001 23:30,
therefore no

turbidity data is available.

The following times had all data removed due to exposure above the
water's surface during low tide:

08/04/2001	02:00:00
08/04/2001	02:30:00
08/05/2001	03:00:00
08/05/2001	03:30:00
08/05/2001	15:00:00
08/06/2001	04:00:00
08/08/2001	05:00:00
08/11/2001	06:30:00
08/13/2001	08:00:00
08/13/2001	08:30:00
08/13/2001	09:00:00
08/14/2001	08:30:00
08/14/2001	09:00:00
08/14/2001	09:30:00
08/14/2001	10:00:00
08/14/2001	10:30:00
08/14/2001	22:00:00
08/14/2001	22:30:00
08/15/2001	10:00:00
08/15/2001	10:30:00
08/15/2001	11:00:00
08/16/2001	11:00:00
08/16/2001	11:30:00
08/16/2001	12:00:00
08/16/2001	12:30:00
08/17/2001	00:30:00
08/17/2001	01:00:00
08/17/2001	11:30:00
08/17/2001	12:00:00
08/17/2001	12:30:00
08/17/2001	13:00:00
08/17/2001	13:30:00
08/17/2001	14:00:00
08/18/2001	00:30:00
08/18/2001	01:00:00
08/18/2001	01:30:00
08/18/2001	02:00:00
08/18/2001	02:30:00
08/18/2001	12:30:00
08/18/2001	13:00:00
08/18/2001	13:30:00
08/18/2001	14:00:00
08/18/2001	14:30:00
08/18/2001	15:00:00
08/19/2001	01:00:00
08/19/2001	01:30:00
08/19/2001	02:00:00
08/19/2001	02:30:00
08/19/2001	03:00:00
08/19/2001	03:30:00
08/19/2001	13:00:00
08/19/2001	13:30:00
08/19/2001	14:00:00
08/19/2001	14:30:00

08/19/2001	15:00:00
08/19/2001	15:30:00
08/19/2001	16:00:00
08/20/2001	02:00:00
08/20/2001	02:30:00
08/20/2001	03:00:00
08/20/2001	03:30:00
08/20/2001	04:00:00
08/20/2001	04:30:00
08/20/2001	14:00:00
08/20/2001	14:30:00
08/20/2001	15:00:00
08/20/2001	15:30:00
08/20/2001	16:00:00
08/20/2001	16:30:00
08/20/2001	17:00:00
08/21/2001	03:00:00
08/21/2001	03:30:00
08/21/2001	04:00:00
08/21/2001	04:30:00
08/21/2001	05:00:00
08/21/2001	05:30:00
08/21/2001	15:00:00
08/21/2001	15:30:00
08/21/2001	16:00:00
08/21/2001	16:30:00
08/21/2001	17:00:00
08/21/2001	17:30:00
08/22/2001	03:30:00
08/22/2001	04:00:00
08/22/2001	04:30:00
08/22/2001	05:00:00
08/22/2001	05:30:00
08/22/2001	16:30:00
08/22/2001	17:00:00
08/22/2001	17:30:00
08/23/2001	04:30:00
08/23/2001	05:00:00
08/23/2001	05:30:00
08/23/2001	06:00:00
08/23/2001	18:00:00
08/23/2001	18:30:00
08/24/2001	05:30:00
08/24/2001	06:00:00
08/24/2001	06:30:00
08/24/2001	07:00:00
08/24/2001	18:30:00
08/24/2001	19:00:00
08/24/2001	19:30:00
08/29/2001	10:30:00
08/29/2001	11:00:00
08/30/2001	11:30:00
08/30/2001	12:00:00
08/31/2001	00:30:00

08/31/2001 12:30:00

September

No turbidity probe deployed 09/01/2001 00:00 - 09/30/2001 23:30,
therefore no

turbidity data is available.

The following times had all data removed due to exposure above the
water's surface during low tide:

09/01/2001 00:30:00
09/01/2001 01:00:00
09/01/2001 01:30:00
09/01/2001 13:00:00
09/02/2001 01:30:00
09/02/2001 02:00:00
09/05/2001 04:00:00
09/06/2001 05:30:00
09/16/2001 14:00:00
09/17/2001 02:00:00
09/17/2001 02:30:00
09/17/2001 14:00:00
09/17/2001 14:30:00
09/17/2001 15:00:00
09/17/2001 15:30:00
09/18/2001 02:30:00
09/18/2001 03:00:00
09/18/2001 03:30:00
09/18/2001 15:00:00
09/18/2001 15:30:00
09/18/2001 16:00:00
09/19/2001 03:00:00
09/19/2001 03:30:00
09/19/2001 04:00:00
09/19/2001 04:30:00
09/19/2001 15:30:00
09/19/2001 16:00:00
09/19/2001 16:30:00
09/19/2001 17:00:00
09/20/2001 04:00:00
09/20/2001 04:30:00
09/20/2001 05:00:00
09/20/2001 05:30:00
09/20/2001 17:00:00
09/20/2001 17:30:00
09/21/2001 05:00:00
09/21/2001 05:30:00
09/21/2001 06:00:00
09/21/2001 18:30:00

October

No turbidity probe deployed 10/01/2001 00:00 - 10/31/2001 23:30,
therefore no

turbidity data is available.

10/15/2001 14:30 DO read a negative value, cause unknown.

10/15/2001 14:30 - 10/23 14:00 DO% and mg/L were deleted due to possible membrane puncture. The DO probe reported a negative value on 10/15/2001 14:30, which may have been the beginning of membrane failure. Sonde battery read 10.5

volts during this time, ruling out complete battery failure.

The following times had all data removed due to exposure above the water's surface during low tide:

10/14/2001 12:00:00
10/14/2001 12:30:00
10/14/2001 13:00:00
10/14/2001 23:30:00
10/15/2001 00:00:00
10/15/2001 00:30:00
10/15/2001 01:00:00
10/15/2001 01:30:00
10/16/2001 01:00:00
10/16/2001 01:30:00
10/16/2001 02:00:00
10/16/2001 13:00:00
10/16/2001 13:30:00
10/16/2001 14:00:00
10/16/2001 14:30:00
10/17/2001 01:00:00
10/17/2001 01:30:00
10/17/2001 02:00:00
10/17/2001 02:30:00
10/17/2001 03:00:00
10/17/2001 14:30:00
10/17/2001 15:00:00
10/17/2001 15:30:00
10/18/2001 02:30:00
10/18/2001 03:00:00
10/18/2001 03:30:00

November

No turbidity probe deployed 11/01/2001 00:00 - 11/30/2001 23:30, therefore no

turbidity data is available.

11/18/2001 10:00 - 11/22/2001 9:00 DO once again is reading higher than typical for this site. Cause unknown. sonde had technical failure during mid

deployment so it was not possible to monitor the end of this DO event, and

because of battery failure, post calibration QA/QC was not run, therefore this data is highly suspect.

December

No turbidity probe deployed 12/01/2001 00:00 - 12/31/2001 23:30, therefore no

turbidity data is available.

12/16/2001 10:30-11:00 DO% and mg/L reads negative value, cause unknown.

The following times had all data removed due to exposure above the water's

surface during low tide:

12/09/2001 09:30:00
12/09/2001 10:00:00
12/09/2001 10:30:00
12/11/2001 11:30:00
12/11/2001 12:00:00
12/11/2001 23:30:00
12/12/2001 00:00:00
12/12/2001 00:30:00
12/12/2001 12:30:00
12/12/2001 13:00:00
12/13/2001 00:00:00
12/13/2001 00:30:00
12/13/2001 01:00:00
12/13/2001 01:30:00
12/13/2001 13:30:00
12/13/2001 14:00:00
12/13/2001 14:30:00
12/14/2001 01:00:00
12/14/2001 01:30:00
12/14/2001 02:00:00
12/14/2001 02:30:00
12/14/2001 14:00:00
12/14/2001 14:30:00
12/14/2001 15:00:00
12/15/2001 01:00:00
12/15/2001 01:30:00
12/15/2001 02:00:00
12/15/2001 02:30:00
12/15/2001 03:00:00
12/15/2001 14:30:00
12/15/2001 15:00:00
12/15/2001 15:30:00
12/16/2001 03:00:00
12/18/2001 03:30:00
12/18/2001 04:00:00
12/18/2001 04:30:00
12/18/2001 05:00:00
12/18/2001 05:30:00
12/18/2001 17:00:00
12/18/2001 17:30:00
12/26/2001 22:30:00
12/26/2001 23:00:00
12/26/2001 23:30:00
12/27/2001 00:00:00
12/27/2001 00:30:00
12/27/2001 12:00:00
12/27/2001 23:00:00
12/27/2001 23:30:00
12/28/2001 00:00:00
12/28/2001 00:30:00
12/28/2001 01:00:00

12/29/2001 00:00:00
12/29/2001 00:30:00
12/29/2001 01:00:00
12/29/2001 01:30:00
12/29/2001 02:00:00
12/29/2001 13:30:00
12/30/2001 00:30:00
12/30/2001 01:00:00
12/30/2001 01:30:00
12/30/2001 02:00:00
12/30/2001 02:30:00
12/30/2001 03:00:00
12/30/2001 14:00:00
12/30/2001 14:30:00
12/30/2001 15:00:00
12/30/2001 15:30:00
12/31/2001 01:30:00
12/31/2001 02:00:00
12/31/2001 02:30:00
12/31/2001 03:00:00
12/31/2001 03:30:00
12/31/2001 14:30:00
12/31/2001 15:00:00
12/31/2001 15:30:00
12/31/2001 16:00:00
12/31/2001 16:30:00

Lower Duplin:

January

1/18/2001 12:30 - 4/21/2001 14:30 turbidity not deployed.

February

No anomalies to report

March

3/24/2001 20:00 all data not reported. The sonde recorded data at 19:30 and then at 20:30, skipping over 20:00 completely.

April

The following times show anomalous turbidity values. The negative readings typically occur when the water is clear and the value recorded is at the low end of the calibration curve.

4/29/2001 20:00:00 0
4/29/2001 20:30:00 -1
4/30/2001 10:30:00 -1
4/30/2001 11:00:00 -1
4/30/2001 11:30:00 -1

May

5/13/2001 15:00 all data missing, sonde not deployed.

The following times show anomalous turbidity values. The negative readings typically occur when the water is clear and the value recorded is at the low end of the calibration curve.

05/04/2001	00:30:00	0000
05/08/2001	04:30:00	0000
05/09/2001	06:00:00	0000
05/10/2001	07:00:00	0000
05/10/2001	10:30:00	0000
05/10/2001	22:30:00	0000
05/11/2001	08:30:00	-0001
05/11/2001	09:00:00	0000
05/11/2001	11:30:00	-0001
05/12/2001	10:00:00	0000
05/12/2001	11:00:00	0000
05/12/2001	18:30:00	0000
05/12/2001	19:00:00	0000
05/13/2001	10:00:00	-0001
05/13/2001	11:00:00	0000
05/13/2001	11:30:00	0000
05/13/2001	12:30:00	-0001
05/13/2001	13:00:00	-0001

June

6/2/2001 15:00 -7/14/2001 10:30 no turbidity deployed
6/17/2001 5:00 DO data drops to an unusually low value, cause unknown.
6/18/2001 2:30 DO data drops to an unusually low value, cause unknown.
6/20/2001 2:00, 13:30, 14:00 DO data drops to an unusually low value, cause unknown.
6/21/2001 13:00, 14:30-15:00 DO data drops to an unusually low value, cause unknown
6/22/2001 3:30 DO data drops to an unusually low value, cause unknown
6/25/2001 18:00 DO data drops to an unusually low value, cause unknown
6/27/2001 20:30 DO data drops to an unusually low value, cause unknown
6/29/2001 9:30 DO data drops to an unusually low value, cause unknown.
6/30/2001 10:00-10:30 DO data drops to an unusually low value, cause unknown

July

7/14/2001 11:00 all data missing, sonde not deployed.
7/19/2001 13:00 all data removed, sonde exposed during low tide.
7/19/2001 17:00 High turbidity value recorded (845 NTU) due to possible presence of debris. Value retained.
7/20/2001 13:30 -14:00 all data removed, sonde exposed during low tide.
7/20/2001 22:00 High turbidity value recorded (946 NTU) due to possible presence of debris. Value retained.

August

8/2/2001 13:30 -8/16/2001 15:00 turbidity data removed, post calibration verification failed.

8/16/2001 15:30 - 9/2/2001 11:30 all data removed because the sonde became hung up in the pvc pipe during deployment, this made the depth values off and the sonde regularly exposed during tide fluctuations. Sonde also shorted out when pulled out from the pipe and stopped collecting data. Therefore, none of the data collected is reliable.
8/16/2001 15:30 - 12/31/2001 no turbidity probe deployed.

September

9/19/2001 12:30 no data, sonde did not record data during this time period. The cause for this programming problem is unknown.
9/2/2001 12:00 - 9/23/2001 14:30 DO% and mg/L data removed. DO data often reading negative but did pass post calibration verification. The data was removed because at a later deployment this same probe was found to need reconditioning.
For the following times, all data were deleted due to sonde being exposed at low tides:
9/17/2001 02:00 - 02:30
9/17/2001 14:00 - 15:30
9/18/2001 02:30 - 03:30
9/18/2001 15:00 - 16:00
9/19/2001 03:30 - 04:30
9/19/2001 16:00 - 17:00
9/20/2001 04:00 - 05:30
9/20/2001 17:00 - 17:30
9/21/2001 05:00 - 06:00
9/23/2001 16:00 no data reported, sonde not deployed.

October

10/16/2001 15:00 all data missing, sonde not deployed
10/16/2001 15:30-11/2/2001 17:30 DO% and mg/L data removed due to post calibration verification failure. Probe required reconditioning.

November

11/25/2001 17:30 - 12/12/2001 14:30 Turbidity data removed, unable to calibrate properly before deployment but sonde still collected the data.
11/25/2001 10:00-11/25/2001 16:30 All data missing. Sonde not deployed

December

12/12/2001 15:00 - 12/31/2001 all data missing sonde malfunctioned and had to be sent in for repairs, all data lost.

12. Missing Data:

Missing data are denoted by a period in the data set. 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 bout missing data, contact the Research Coordinator at the site submitting the data.

13. Post Deployment information:

Hunt Dock:

deployment date	SpCond found/true	DO% found/true	pH found/true	depth	turb found/true
12/26/2000	20.20/20.15	99.5	7.23/7.41		
1/18/2001	19.3/20.15	108	7.24/7.41	0.081	19/100
2/10/2001	20.15/20.15	104.5	7.32/7.41		103.4/100
3/6/2001	23.36/24.8	125.4	7.14/7.41	0.036	1.00/0
3/27/2001	20.18/20.15	100.5	7.38/7.41	-0.12	0.8/0
4/3/2001	22.25/20.15	122	7.15/7.41	0.049	2.8/0
4/22/2001	24.5/24.8	65	7.39/7.41	0.045	na
5/13/2001	48.71/49.64	>200	7.33/7.41	-0.029	na
6/6/2001	20.52/20.15	114	7.13/7.41	-0.041	1.3/0
6/24/2001		208		-0.01	na
7/16/2001	18.53/20.15	106.5	7.46/7.41	-0.034	na DO failed
hi/Lo test					
8/7/2001	19.83/20.15	104	7.38/7.41	-0.054	na
8/21/2001	20.55/20.15	113	7.50/7.00	-0.089	na
9/2/2110	22.51/24.8		7.95/7.41	0.029	na
9/23/2001	24.78/24.8	88	7.02/7.00	-0.025	na
10/25/2001	batteries died during mid deployment				
11/18/2001	batteries died during mid deployment				
12/8/2001	24.74/24.8	95.4	7.29/7.00	-0.018	na

Lower Duplin:

12/26/2000 "sonde malfunction, not operating at post deployment therefore post cal csv's not run"

1/18/2001	19.98/20.15	102	7.6/7.41	0.018	na
2/10/2001	24.12/24.8	109.6	7.40/7.41	-0.079	na
3/6/2001	24.85/24.8	112	7.79/7.41	0.192	na
3/27/2001	20.23/20.15	110	7.46/7.41	0.19	na
4/21/2001	24.62/24.85	106.8	7.55/7.41	-1.57	-0.2
5/13/2001	19.82/20.15	119.3	7.39/7.41	-0.121	0.1/0
6/2/2001	19.53/20.15	102.2	7.41/7.45	-0.057	na
6/22/2001	22.53/20.15	93	7.63/7.41	-0.009	na
7/14/2001	24.75/24.83	109	7.47/7.41	0.009	1.3/0
8/2/2001	20.4/20.15	100.7	7.08/7.00	-0.064	47.5/100

turbidity data removed

8/16/2001 "sonde malfunction, not operating at post deployment therefore post cal csv's not run"

9/2/2001	22.51/20.15	107.4	7.95/7.41	0.029	na
9/23/2001	23.4/24.8	98.6	7.01/7.00	0.423	na

10/16/2001 23.56/24.8 152.6*7.16/7.00 0.023 na "**DO did
not pass hi/lo probe black at tip, data removed"
11/2/2001 25.8/24.8 107 7.09/7.00 -0.004 na
11/25/2001 28.52/24.8 105.3 7.22/7.00 0.002 "Turb. Would not
calibrate prior to deployment, all data removed."
12/12/2001 "sonde malfunction, not operating at post deployment
therefore post cal csv's not run"

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.

During the month of February the hunt dock site had extreme low tides due to the right combination of tide and strong winds.

Coastal Georgia has been stricken with drought, and the year 2001 brought no relief. There was very little rainfall, and no large tropical disturbances.