

North Carolina (NOC) NERR Water Quality Metadata
January - December 2000
Revised July 1, 2021

I. Data Set & Research Descriptors

1) Principal Investigator(s) and Contacts:

Principal Investigator:

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2) Entry Verification Process:

The data are uploaded using the computer program EcoWatch that accompanies the YSI 6000 datalogger. After the file is uploaded from the water quality instrument, EcoWatch is used to plot the data and perform basic statistical analysis (i.e., min., max., mean, std. dev.). This information is printed out and attached to the Field Log for the particular deployment. This printout is used during file review to detect any gross outliers such as data taken when the water quality instrument removed from the water or those caused by instrument failure. The data are exported as a .cdf file and then opened in a Microsoft Excel file that contains the current month's cumulative recordings. As each

deployment is added the data are reviewed for overlapping dates and times, and edited to only include the measurements taken while the instrument is in the water. Once a complete month of data is acquired the file is reviewed to make sure the parameter columns are in the correct order and that depth had been measured in meters. The data is also checked for data gaps that may have resulted from sonde exchanging. If gaps are found they are documented on the Water Quality Editing Log. The monthly data file is then cut and pasted into the form sheet of the CDMO Import macro. The Import macro is used to insert periods into cells where data would normally be and to change feet to meters (if necessary). Next, the data file is saved and monthly graphs for each parameter are generated and reviewed. The data file is then filtered using the CDMO cdmomac3 macro to format columns, tabulate the number of recordings per month, and to find variable outliers, readings outside the instrument measurement range. Data outside the instrument range are removed from the file and a period is inserted into the cell(s), with the exception of turbidity and depth, which are manually reviewed. An explanation for the missing dates and times are recorded in the Water Quality Editing Log. Data outside the "normal" range of water quality for a particular site are 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 into the cell(s) and an explanation for the missing dates and times is recorded on the Water Quality Data Editing Log. The metadata for the monitoring year is updated based on the information from the Water Quality Data Editing Log and any other changes that have been made during the year. The metadata form is then submitted with the data file to the CDMO. William Thompson, Research Technician, and Tara Nye, Research Biologist, are responsible for data management during 2000.

3) Research Objectives:

Water quality instruments are deployed at the Research Creek and Zeke's Island components of North Carolina's National Estuarine Research Reserve and are anchored to the bottom of the selected sites. Measurements are taken at 30-minute intervals for approximately two-week periods. These sites are relatively unimpacted by manmade perturbations and are considered long term monitoring locations. The goal is to establish long-term water quality monitoring at relatively unimpacted sites by collecting data for each day of the year.

4) Research Methods:

The Estuarine Water Quality Monitoring Program began on 2 March 1992 at the Research Creek component, and 19 May 1994 at the Zeke's Island component. The procedures described below were instituted in June 1995 and thus do not cover data recorded previously. At this time we are only performing long term water quality monitoring and not a specific experiment.

Before each YSI 6000 is deployed, calibration and maintenance are performed following the manufacturer's instructions (YSI Manual addendum 7/94, sections 3,4, and 7). Calibration standards are only required for pH, turbidity and salinity; all other parameters are done as described in the manual. Buffer solutions for a two-point pH calibration (pH 7 and 10) are purchased pre-made from a scientific supply house. The conductivity standard is obtained from YSI. The dissolved oxygen membranes are replaced before deployment and are allowed to settle at least 24 hrs prior to deployment.

During deployment the weather conditions and tide stage are recorded in the field observation log. The water quality instrument is placed inside a locked steel cage, then anchored approximately 10cm off the bottom, and chained to a post at the monitoring site. Every 30 minutes during the sampling period measurements are taken for temperature, specific conductance, salinity, dissolved oxygen saturation, dissolved oxygen concentration, depth, pH, and

turbidity. As part of a preliminary performance check of the YSI chlorophyll probe (YSI 6025), the sensor was deployed every other deployment at Masonboro Island from June until November. Although the data are not reported here, information can be obtained by contacting the Research Coordinator at the NOC NERR (see above contact information).

At the end of the sample period the water quality instrument is brought back to the laboratory. The weather and water quality measurements are again noted in the field observation log. The calibration drift and the effect of biofouling on the water quality instrument are checked by comparing data readings in calibration standards. The water quality data are then uploaded, and the instrument is cleaned and calibrated as noted previously.

5) Site Location and Character:

The four components of North Carolina's National Estuarine Research Reserve (from north to south) are: Currituck Banks, Rachel Carson, Masonboro Island and Zeke's Island. They are located along the southeastern coast of the United States in the Atlantic Ocean. Currently, only data from Masonboro and Zeke's Island components are transferred to the CDMO. The two sites are:

1. Research Creek, Masonboro Island (RC)

The Masonboro Island site is 0.72 km north east from the mouth of Whiskey Creek, and east of the Intracoastal Waterway (ICW), in a small navigable channel called

Research Creek at 34 deg 09'21.7" latitude and 77 deg 50'59.9" longitude. The

site has a salinity range of 18-35 ppt and a tidal range that averages 1.2

meters. Depth varies, but typically it can be found to range from 0.38 to 2.11

meters. Bottom type substratum consists of sand and detritus based sediment.

There are no major pollutants from the land, and the sole freshwater source for

Masonboro Island is from rain. The site is removed from the shoreline, in a

creek surrounded by salt marsh that has minimal to no boat traffic.

2. East Cribbing, Zeke's Island (EC)

The Zeke's Island site is located 1.8 km south of Federal Point boat launch in a

tidal basin estuary at 33 deg 56'23.5" latitude and 77 deg 56'28.1" longitude.

This site receives minimal freshwater input from leakage of the Cape Fear River

through the 5.6 km rock jetty that separate the two bodies of water. The New

Inlet, which opened in 1761 and remained stable until artificial closure in

1881, has provided ocean water to the estuary in the past. It has opened and

closed throughout its history at the whim of each passing hurricane. The inlet

closed after hurricane Bonnie in 1998 and has remained closed for this set of

data. The site has a salinity range of 15-35 ppt and a tidal range that averages 2 meters. Depth varies, but typically it can be found to range from

0.11 to 2.30 meters. Bottom type substratum consists of sand and detritus based

sediment. There are no pollutants from land. The site is surrounded by marsh

and dunes, not accessible to road traffic and minimal boat traffic.

6) Data Collection Period

Research Creek data collection began on 2 March 1992, while East Cribbing data collection commenced on 19 May 1994. All monitoring is considered long term.

Deployment and Retrieval Dates for 2000

Began	Ended
Research Creek:	
12/03/99, 10:30	01/10/00, 11:30
01/10/00, 12:30	02/08/00, 10:00
02/08/00, 10:30	03/28/00, 15:00
03/28/00, 15:30	04/19/00, 09:30
04/19/00, 09:30	04/24/00, 14:00
04/24/00, 15:00	05/09/00, 13:00
05/09/00, 14:00	05/10/00, 10:00
05/10/00, 11:00	05/25/00, 14:00
05/25/00, 14:00	05/26/00, 12:00
05/26/00, 12:30	05/31/00, 09:00
05/31/00, 10:00	06/02/00, 08:30
06/02/00, 08:30	06/16/00, 08:00
06/16/00, 09:00	06/30/00, 08:30
06/30/00, 09:00	07/14/00, 09:00
07/14/00, 09:00	07/28/00, 15:00
07/28/00, 15:00	07/31/00, 10:30
07/31/00, 11:30	08/15/00, 09:00
08/15/00, 09:00	08/29/00, 09:30
08/29/00, 09:30	09/06/00, 09:30
09/06/00, 10:00	09/22/00, 10:00

09/22/00, 10:00	10/03/00, 09:30
10/03/00, 10:00	10/24/00, 15:00
10/24/00, 15:00	10/26/00, 14:30
10/26/00, 15:30	11/10/00, 10:00
11/10/00, 10:30	11/13/00, 16:30
11/13/00, 17:00	11/28/00, 11:30
11/28/00, 12:30	12/12/00, 10:00
12/12/00, 11:30	12/19/00, 14:00
12/19/00, 14:00	01/12/01, 11:00

East Cribbing:

12/22/99, 11:00	01/10/00, 13:00
01/10/00, 13:00	02/16/00, 17:00
02/16/00, 18:30	03/24/00, 12:00
03/24/00, 12:00	04/18/00, 09:00
04/18/00, 09:00	05/03/00, 09:00
05/03/00, 09:00	05/17/00, 09:00
05/17/00, 09:30	06/06/00, 13:00
06/06/00, 13:30	06/20/00, 11:00
06/20/00, 11:30	07/10/00, 16:00
07/10/00, 16:30	08/02/00, 11:00
08/02/00, 12:00	08/16/00, 10:30
08/16/00, 10:30	09/01/00, 10:30
09/01/00, 11:00	09/19/00, 13:30
09/19/00, 14:30	10/06/00, 15:30
10/06/00, 15:30	10/26/00, 09:00
10/26/00, 09:00	11/15/00, 12:30
11/15/00, 12:30	11/29/00, 12:00
11/29/00, 12:00	12/18/00, 16:00
12/18/00, 16:00	01/11/01, 10:00

7) Distribution

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 this NOAA/OCRM supported research that are produced for publication in open literature, including refereed scientific journals, will acknowledge that the research was conducted under an award from the Estuarine Reserves Division, Office of Ocean and 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 reimburses or indemnifies 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

Projects are ongoing and continually changing. Check with the Research Coordinator or other contact person for an updated list of research.

Ross, S./NOC NERR

Grimshaw, P./NOC NERR

Effects of non-point source pollution on estuarine water quality

II. Physical Structure Descriptors

9) Sensor specifications, range of measurements, units, resolution, and accuracy:

YSI 6000 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)			

YSI 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)	0.001-0.1 mS/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)			

10) Coded variable indicator and variable code definitions:

Site definitions: RC= South Research Creek, Masonboro Island*
EC= East Cribbing, Zeke's Island*

File definitions: site/month/year (ex.: zi0800 = Zeke's Island data from August of 2000).

*The RC site was formerly designated as Masonboro Island (MS) and EC was formerly designated as Zeke's Island (ZI). Name changes were made on 1/11/2011 to be consistent with later station designations made necessary by the addition of an additional station in each component, and to clearly indicate that the station location throughout the North Carolina Reserve's historical data set. Raw file names were not changed. Please contact the Reserve directly or the NERRS Centralized Data Management Office for more information on this update.

11) Data anomalies (suspect data):

This section lists and explains all anomalous (suspect) data that has either been deleted or still remains in the data set. The data are either extreme for the aquatic system being monitored or are outside the measurement range of the instrument. The cause of such anomalies may be a bad calibration, boat traffic disturbances, or malfunction of the instrument. It's also possible that the datalogger may be measuring a real event.

Research Creek, January

pH data anomalous for 01/22/00 15:00:00 - 01/31/00 23:30:00, data retained

All parameters missing due to sonde exchange on the following date and time
01/10/2000 12:00

DO data deleted 01/12/00 23:00:00 - 01/31/00 23:30:00 due to puncture in membrane.

During the following dates the turbidity data were outside of the sensor's

range, however the data were retained:

01/07/2000 11:00:00 - 14:00:00
01/07/2000 16:30:00 - 18:00:00
01/07/2000 21:00:00 - 22:00:00
01/07/2000 23:00:00 - 01/08/2000 00:00:00
01/08/2000 01:00:00
01/08/2000 06:30:00
01/08/2000 10:00:00 - 11:00:00
01/08/2000 12:00:00 - 15:00:00
01/08/2000 17:00:00
01/08/2000 18:30:00 - 19:00:00
01/08/2000 22:00:00 - 23:00:00
01/09/2000 07:00:00
01/09/2000 11:00:00
01/09/2000 20:30:00

01/09/2000 22:30:00
01/10/2000 11:30:00
01/12/2000 23:00:00
01/15/2000 18:00:00
01/16/2000 09:30:00
01/17/2000 11:30:00
01/20/2000 01:00:00

Anomalous specific conductivity and salinity (01/18 11:30 - 01/31 23:30), and pH data (01/10 12:30 - 01/31 23:30), possibly due to fouling. Consider this data suspect; however, it's possible that the sensors are responding to a real event.

Research Creek, February

DO data deleted 02/01/00 00:00:00 - 02/08/00 10:00:00 due to puncture in membrane.

Anomalous specific conductivity, salinity and pH data, possibly due to fouling. Considered suspect, however, the data may be representing a real event. 02/01/00 00:00:00 to 02/08/00 10:00:00

During the following dates the turbidity data were outside of the sensors range,

however the data were retained:

02/08/00 19:00:00 - 19:30:00
02/08/00 21:00:00 - 21:30:00
02/08/00 22:00:00 - 22:30:00
02/11/00 11:00:00 - 11:30:00
02/11/00 12:00:00
02/11/00 17:30:00
02/17/00 17:30
02/17/00 20:00:00
02/18/00 04:30:00

DO probe failure, data deleted
02/14/2000 16:00 - 02/25/2000 11:00

All parameters missing due to sonde exchange
02/22/2000, 12:30

Research Creek, March

During the following dates the turbidity data were outside of the sensors range,

however the data were retained:

03/06/2000 07:30:00
03/06/2000 22:00:00
03/12/2000 23:00:00
03/13/2000 12:30:00

All parameters are missing due to sonde exchange
03/28/2000 15:00

During the following dates the turbidity data were negative, data deleted
03/31/2000 15:00:00
03/31/2000 15:30:00
03/31/2000 23:30:00

Research Creek, April

Negative turbidity values, data deleted.

04/01/2000 05:30:00
04/01/2000 14:30:00
04/01/2000 21:00:00
04/02/2000 03:00:00
04/02/2000 10:30:00
04/02/2000 22:30:00
04/04/2000 00:00:00
04/04/2000 03:30:00
04/04/2000 07:00:00
04/05/2000 11:30:00
04/05/2000 14:00:00
04/05/2000 20:00:00
04/05/2000 20:30:00
04/06/2000 01:30:00
04/07/2000 02:00:00
04/08/2000 06:30:00
04/14/2000 06:30:00
04/17/2000 00:00:00
04/17/2000 01:00:00
04/17/2000 01:30:00
04/18/2000 01:30:00

Turbidity values above range of probe, data retained.

04/27/2000 06:00:00
04/27/2000 07:00:00
04/27/2000 07:30:00
04/27/2000 08:00:00

All parameters missing data due to sonde exchange
04/24/2000 14:30

Research Creek, May

All parameters missing data due to sonde exchange
05/09/2000 13:30
05/10/2000 10:30
05/31/2000 09:30

Suspect the DO probe was covered with sediment, DO data removed
05/26/2000 05:00-12:00

05/29/2000 12:00:00 - 05/31/2000 09:00

Turbidity data out of probe range, data retained

05/11/2000 06:00:00
05/11/2000 06:30:00
05/22/2000 01:00:00
05/29/2000 09:00:00
05/29/2000 09:30:00
05/31/2000 17:00:00

Research Creek, June

Suspect DO, conductivity, and pH probes covered with sediment, data deleted

06/01/2000 23:00-06/02/2000 08:30

Consider DO data suspect, post deployment calibration was 80.7%

06/27/2000 21:30 - 06/30/2000 08:00

All parameters missing data due to sonde exchange

06/30/2000 08:30

Turbidity -1, possible calibration stray, value changed to 0

06/30/2000 18:30:00
06/30/2000 19:30:00

Turbidity data out of probe range, data retained

06/05/2000 05:00:00
06/05/2000 09:00:00
06/05/2000 21:00:00
06/06/2000 08:30:00
06/08/2000 04:30:00
06/09/2000 21:30:00
06/23/2000 03:30:00
06/29/2000 23:00:00

Research Creek, July

All parameters data missing due to sonde exchange

07/31/2000 11:00

Suspect probes were out of water at low tide, all data deleted

07/10/00 23:30:00
07/11/00 00:00:00
07/11/00 10:30:00 - 13:30:00
07/12/00 00:00:00 - 01:30:00
07/12/00 11:00:00 - 14:00:00
07/13/00 01:00:00 - 02:00:00
07/13/00 12:30:00 - 14:00:00
07/14/00 02:00:00
07/14/00 02:30:00
07/14/00 13:00:00 - 14:30:00

07/15/00 03:00:00
07/15/00 14:30:00
07/15/00 15:00:00
07/16/00 03:30:00
07/16/00 04:00:00
07/16/00 14:30:00 - 16:00:00
07/17/00 03:30:00 - 04:30:00
07/17/00 15:00:00 - 16:30:00
07/18/00 04:30:00
07/18/00 05:00:00
07/18/00 16:00:00 - 17:00:00
07/19/00 05:00:00 - 06:00:00
07/19/00 16:30:00 - 18:00:00
07/20/00 06:00:00 - 07:00:00
07/20/00 16:30:00 - 19:00:00
07/21/00 06:30:00
07/21/00 07:00:00
07/21/00 18:30:00
07/22/00 07:00:00
07/22/00 07:30:00
07/22/00 19:30:00
07/23/00 07:30:00 - 08:30:00
07/23/00 20:00:00 - 21:00:00
07/24/00 08:00:00 - 09:30:00
07/24/00 21:00:00
07/24/00 21:30:00
07/25/00 08:30:00 - 10:30:00
07/26/00 09:30:00 - 11:30:00
07/26/00 23:00:00 - 00:00:00
07/27/00 10:30:00 - 12:30:00
07/28/00 00:30:00
07/28/00 01:00:00
07/28/00 11:30:00 - 13:30:00
07/29/00 01:30:00 - 02:30:00
07/29/00 13:00:00 - 14:30:00
07/30/00 02:30:00
07/30/00 03:00:00
07/30/00 14:00:00 - 15:30:00
07/31/00 03:30:00 - 04:30:00
07/31/00 15:30:00 - 16:30:00

Turbidity -1, possible calibration stray, value changed to 0

07/01/2000 07:00:00
07/01/2000 08:00:00
07/01/2000 19:00:00 - 21:00:00
07/02/2000 07:30:00
07/02/2000 08:00:00
07/02/2000 20:00:00 - 21:30:00
07/03/2000 09:30:00
07/03/2000 21:30:00
07/04/2000 22:00:00
07/04/2000 22:30:00
07/05/2000 23:30:00
07/06/2000 00:00:00

07/06/2000 11:30:00 - 12:30:00
07/06/2000 23:00:00 - 07/07/2000 01:00:00
07/07/2000 12:00:00 - 13:30:00
07/08/2000 00:00:00 - 02:00:00
07/08/2000 13:30:00
07/08/2000 14:00:00
07/09/2000 02:00:00
07/09/2000 14:00:00 - 15:00:00
07/10/2000 03:00:00
07/10/2000 15:30:00
07/10/2000 16:00:00
07/11/2000 16:30:00
07/11/2000 17:00:00
07/12/2000 18:00:00
07/13/2000 05:00:00
07/13/2000 05:30:00
07/13/2000 17:00:00 - 18:00:00

Turbidity value above probe range, data retained

07/07/2000 09:00:00
07/08/2000 05:30:00
07/08/2000 06:30:00
07/12/2000 05:30:00
07/16/2000 02:30:00

Research Creek, August

Turbidity values above probe range, data retained

08/01/2000 20:00:00
08/22/2000 14:30:00 - 16:00:00
08/23/2000 04:00:00
08/23/2000 05:30:00
08/25/2000 00:30:00
08/25/2000 01:00:00
08/25/2000 01:30:00
08/25/2000 05:30:00
08/25/2000 09:30:00
08/25/2000 11:30:00
08/26/2000 09:30:00 - 11:30:00

Suspect DO probe covered with sediment, data deleted.

08/29/2000 11:30:00 to 08/29/2000 17:00:00
08/29/2000 23:30:00 to 08/30/2000 05:30:00
08/30/2000 12:30:00 to 08/30/2000 17:30:00
08/31/2000 00:30:00 to 08/31/2000 07:00:00
08/31/2000 11:30:00
08/31/2000 13:00:00 to 08/31/2000 19:00:00

Research Creek, September

Turbidity value above probe range, data retained

09/04/2000 19:00:00
09/06/2000 06:00:00

09/19/2000 00:30:00
09/20/2000 09:30:00
09/26/2000 16:00:00
09/27/2000 08:30:00

Suspect DO probe covered with sediment, data deleted.

09/01/2000 01:00:00 - 09/01/2000 08:00:00
09/01/2000 12:00:00 - 09/02/2000 08:00:00
09/02/2000 13:00:00 - 09/06/2000 13:00:00

Research Creek, October

All parameters data missing due to sonde exchange
10/26/2000 15:00

Turbidity values above probe range, data retained

10/07/2000 03:00:00
10/07/2000 04:30:00
10/19/2000 15:00:00 - 17:30:00
10/20/2000 06:00:00
10/20/2000 06:30:00
10/20/2000 08:30:00
10/20/2000 09:00:00
10/20/2000 10:30:00
10/20/2000 12:00:00 - 13:00:00
10/20/2000 15:00:00 - 17:30:00
10/22/2000 07:30:00
10/22/2000 11:30:00
10/22/2000 13:00:00
10/23/2000 07:30:00 - 09:00:00
10/23/2000 10:00:00 - 12:00:00
10/23/2000 13:00:00 - 14:30:00
10/23/2000 15:30:00
10/23/2000 17:00:00
10/23/2000 17:30:00
10/24/2000 08:00:00 - 10:30:00
10/24/2000 12:00:00
10/24/2000 13:00:00 - 14:30:00

Turbidity -1, possible calibration stray, value changed to 0

10/26/2000 19:00:00 - 20:30:00
10/27/2000 08:30:00 - 10:30:00
10/28/2000 20:30:00
10/28/2000 21:30:00
10/28/2000 22:00:00
10/29/2000 09:30:00
10/29/2000 22:00:00
10/29/2000 22:30:00
10/30/2000 09:30:00
10/30/2000 10:30:00 - 12:00:00
10/30/2000 21:30:00 - 22:30:00
10/31/2000 09:00:00 - 13:00:00

10/31/2000 18:30:00 - 20:00:00
10/31/2000 21:00:00 - 23:30:00

Research Creek, November

All parameters data missing due to sonde exchange
11/28/2000 12:00

Turbidity -1, possible calibration stray, value changed to 0

11/01/2000 00:00:00
11/01/2000 01:00:00
11/01/2000 05:00:00
11/01/2000 08:30:00 - 09:30:00
11/01/2000 10:30:00 - 12:00:00
11/01/2000 13:00:00 - 14:00:00
11/01/2000 19:30:00 - 22:00:00
11/02/2000 00:00:00 - 01:00:00
11/02/2000 02:00:00
11/02/2000 03:30:00
11/02/2000 04:00:00
11/02/2000 05:30:00
11/02/2000 06:00:00
11/02/2000 07:30:00 - 10:30:00
11/02/2000 11:30:00
11/02/2000 12:30:00
11/02/2000 13:00:00
11/02/2000 14:30:00
11/02/2000 19:30:00
11/02/2000 20:00:00
11/02/2000 21:00:00
11/02/2000 21:30:00
11/02/2000 22:30:00 - 23:30:00
11/03/2000 00:30:00 - 02:00:00
11/03/2000 03:00:00 - 05:00:00
11/03/2000 06:00:00 - 07:00:00
11/03/2000 09:00:00 - 11:30:00
11/03/2000 12:30:00 - 15:30:00
11/03/2000 16:30:00
11/03/2000 23:00:00 - 11/04/2000 03:00:00
11/04/2000 04:00:00 - 06:00:00
11/04/2000 10:30:00
11/04/2000 11:30:00
11/04/2000 12:30:00 - 14:30:00
11/04/2000 23:30:00
11/05/2000 00:30:00 - 02:30:00
11/05/2000 03:30:00
11/05/2000 09:30:00
11/05/2000 12:30:00 - 14:00:00
11/05/2000 15:00:00 - 16:00:00
11/05/2000 17:00:00
11/05/2000 17:30:00
11/05/2000 21:30:00
11/05/2000 23:30:00

11/06/2000 01:30:00
11/06/2000 02:30:00 - 05:00:00
11/06/2000 13:00:00 - 16:30:00
11/06/2000 17:30:00
11/06/2000 18:30:00
11/06/2000 20:30:00
11/07/2000 01:00:00
11/07/2000 02:00:00 - 06:00:00
11/07/2000 15:00:00 - 18:00:00
11/07/2000 20:00:00
11/08/2000 03:00:00 - 06:30:00
11/08/2000 15:30:00
11/08/2000 16:30:00 - 19:00:00
11/09/2000 04:00:00 - 08:00:00
11/09/2000 15:30:00
11/09/2000 16:00:00
11/09/2000 17:00:00 - 19:00:00
11/09/2000 20:30:00
11/10/2000 05:00:00
11/10/2000 06:00:00 - 07:00:00
11/13/2000 20:30:00 - 22:00:00
11/14/2000 09:30:00
11/14/2000 10:30:00
11/14/2000 22:00:00 - 23:00:00
11/15/2000 22:30:00
11/15/2000 23:00:00
11/16/2000 11:30:00
11/16/2000 12:00:00
11/17/2000 00:00:00
11/17/2000 12:30:00
11/17/2000 13:00:00
11/18/2000 00:30:00 - 02:00:00
11/18/2000 12:30:00 - 14:00:00
11/19/2000 01:00:00 - 03:00:00
11/19/2000 12:30:00 - 13:30:00
11/19/2000 16:00:00
11/19/2000 17:00:00
11/20/2000 03:00:00
11/20/2000 04:30:00
11/20/2000 09:30:00
11/20/2000 14:30:00
11/20/2000 19:30:00
11/20/2000 23:30:00
11/21/2000 04:30:00
11/21/2000 05:30:00
11/21/2000 15:30:00 - 16:30:00
11/21/2000 17:30:00
11/22/2000 05:00:00
11/22/2000 06:00:00
11/22/2000 11:30:00
11/22/2000 16:30:00 - 18:30:00
11/23/2000 00:30:00
11/23/2000 01:00:00
11/23/2000 05:30:00

11/23/2000 06:00:00
11/23/2000 07:00:00
11/23/2000 09:30:00
11/23/2000 12:30:00
11/23/2000 13:30:00
11/23/2000 17:30:00 - 19:00:00
11/23/2000 21:30:00
11/24/2000 01:30:00
11/24/2000 02:00:00
11/24/2000 06:00:00 - 07:00:00
11/24/2000 08:00:00
11/24/2000 18:30:00 - 20:30:00
11/25/2000 07:00:00 - 09:30:00
11/25/2000 19:30:00

Suspect spec. conductivity and salinity data 11/10/2000 19:30 -
11/14/2000
18:30 due to probes covered with sediment or plastic bag. Data retained.

pH suspect 11/11/2000 11:00:00 - 11/13/2000 16:30:00, probes covered with
sediment or plastic bag, data retained.

DO probe covered with sediment, data deleted 11/11/2000 11:00:00 -
11/13/2000
16:30:00.

Research Creek, December

Suspect DO probe covered with sediment, data deleted
12/10/2000 16:00 - 12/12/2000 10:30
12/14/2000 14:00 - 12/19/2000 13:00

All parameters missing due to sonde exchange 12/12/00 11:00:00

DO data may be suspect 12/12/2000 11:30 - 12/14/2000 13:30, prior and
post DO
data deleted (see above)

Suspect conductivity (12/01/2000 00:00 - 12/12/2000 10:30), pH
(12/07/2000 23:30
- 12/12/2000 10:30), and turbidity (12/10/2000 08:00 - 12/19/2000 13:30).
Suspect the probes were covered with sediment, data retained.

Turbidity values above probe range, data retained
12/29/2000 00:30:00
12/29/2000 12:00:00

East Cribbing, January

pH data suspect 01/01/00 00:00:00 - 01/10/00 10:00:00, data retained

DO% data suspect 01/10/00 10:00:00, DO data spike. This is the first measurement of a new deployment, the DO sensor may have still been settling in. The data seems a bit unstable initially. Previous post-deployment calibration check good (DO% = 98%). Data retained.

Suspect probes out of water at low tide because salinity data rapidly dropped off. All data deleted
01/11/2000 05:30:00 - 07:30:00
01/13/2000 20:30:00 - 22:00:00
01/19/2000 01:30:00
01/19/2000 02:00:00
01/21/2000 03:00:00 - 04:30:00
01/24/2000 06:30:00
01/24/2000 19:00:00
01/30/2000 23:00:00 - 01:00:00

Turbidity data above probe range, data retained
01/15/2000 23:30:00
01/30/2000 11:30:00

East Cribbing, February

All parameters data missing due to sonde exchange
02/16/2000 17:30 - 18:00

Suspect probes out of water at low tide, all data deleted
02/03/2000 14:30:00 - 16:00:00
02/04/2000 02:00:00 - 04:00:00
02/04/2000 15:30:00
02/04/2000 16:00:00
02/05/2000 02:30:00 - 04:00:00
02/09/2000 18:30:00
02/09/2000 19:00:00
02/11/2000 19:00:00 - 21:30:00
02/12/2000 07:30:00 - 10:00:00
02/13/2000 20:30:00 - 23:00:00
02/14/2000 21:30:00 - 02/15/2000 01:00:00

Turbidity values above probe range, data retained
02/06/2000 03:00:00
02/06/2000 17:30:00
02/08/2000 17:00:00

East Cribbing, March

Turbidity values above probe range, data retained
03/16/2000 05:00:00
03/16/2000 18:30:00

East Cribbing, April
No data anomalies.

East Cribbing, May

Turbidity values above probe range, data retained
05/02/2000 08:30

Data from all parameters lost, except temperature, due to battery
compartment
leak
05/03/2000 09:00:00 - 12:30:00

All parameters data lost due to equipment failure
05/03/2000, 13:00 - 05/05/2000, 20:00
05/06/2000, 07:00 - 05/17/2000, 09:00
05/19/2000, 05:30 - 05/31/2000, 23:30

East Cribbing, June

All data lost due to equipment failure
06/01/2000 00:00:00 - 06/06/2000 13:00:00
06/07/2000 06:30:00 - 06/20/2000 11:00:00

East Cribbing, July

DO probe failure, data deleted
07/02/2000 20:00 - 07/09/2000 14:30

Anomalous pH data, possibly due to low battery voltage, data retained
07/09/2000 10:00 - 14:30

Equipment failure, possibly due to low battery voltage. No data
collected.
07/09/00, 15:00 to 07/10/00, 16:00

Suspect probes out of water at low tide, all data deleted
07/10/2000 23:30:00
07/11/2000 00:00:00
07/11/2000 10:30:00 - 13:30:00
07/12/2000 00:00:00 - 01:30:00
07/12/2000 11:00:00 - 14:00:00
07/13/2000 01:00:00 - 02:00:00
07/13/2000 12:30:00 - 14:00:00
07/14/2000 02:00:00
07/14/2000 02:30:00
07/14/2000 13:00:00 - 14:30:00
07/15/2000 03:00:00
07/15/2000 14:30:00

07/15/2000 15:00:00
07/16/2000 03:30:00
07/16/2000 04:00:00
07/16/2000 14:30:00 - 16:00:00
07/17/2000 03:30:00 - 04:30:00
07/17/2000 15:00:00
07/17/2000 15:30:00 - 16:30:00
07/18/2000 04:30:00
07/18/2000 05:00:00
07/18/2000 15:30:00 - 17:00:00
07/19/2000 05:00:00 - 06:00:00
07/19/2000 16:30:00 - 18:00:00
07/20/2000 06:00:00 - 07:00:00
07/20/2000 16:30:00 - 19:00:00
07/21/2000 06:00:00 - 07:00:00
07/21/2000 18:30:00
07/22/2000 07:00:00
07/22/2000 07:30:00
07/22/2000 19:30:00
07/23/2000 07:30:00 - 08:30:00
07/23/2000 20:00:00 - 21:00:00
07/24/2000 08:00:00 - 09:30:00
07/24/2000 21:00:00
07/24/2000 21:30:00
07/25/2000 08:30:00 - 10:30:00
07/26/2000 09:30:00 - 11:30:00
07/26/2000 23:00:00 - 07/27/2000 00:00:00
07/27/2000 10:30:00 - 12:30:00
07/28/2000 00:30:00
07/28/2000 01:00:00
07/28/2000 11:30:00 - 13:30:00
07/29/2000 01:30:00 - 02:30:00
07/29/2000 13:00:00 - 14:30:00
07/30/2000 02:30:00
07/30/2000 03:00:00
07/30/2000 14:00:00 - 15:30:00
07/31/2000 03:30:00 - 04:30:00
07/31/2000 15:30:00 - 16:30:00

Turbidity values above probe range, data retained

07/22/2000 15:00:00
07/25/2000 12:30:00
07/25/2000 18:00:00 - 21:30:00
07/26/2000 01:00:00
07/30/2000 22:00:00
07/31/2000 06:00:00

East Cribbing, August

All parameters missing data due to sonde exchange
08/02/2000, 11:30

Problem with Specific conductivity probe, conductivity and salinity data deleted

08/02/00 12:00:00 - 08/03/00 12:00:00

DO membrane punctured, DO data deleted

08/27/2000, 15:30 to 08/31/00, 23:30

Suspect probes out of water at low tide, all data deleted

08/01/2000, 04:30-05:30

08/01/2000, 16:00-17:30

08/02/2000, 05:00-06:30

Turbidity data above probe range, data retained

08/01/2000 20:00:00

08/01/2000 21:00:00

08/01/2000 21:30:00

08/02/2000 01:30:00

08/02/2000 02:30:00

08/02/2000 04:00:00

08/02/2000 04:30:00

08/02/2000 10:00:00

08/02/2000 10:30:00

08/29/2000 02:30:00

08/29/2000 03:30:00

08/29/2000 09:30:00 - 08/29/2000 19:00:00

08/29/2000 20:00:00 - 08/31/2000 20:30:00

08/31/2000 21:30:00 - 08/31/2000 23:00:00

Specific conductivity data suspect 08/24/00 06:30:00 - 09/01/00 10:30:00, data

retained, post deployment calibration check was 50 mS/cm

East Cribbing, September

DO membrane punctured, DO data deleted 09/01/00 00:00:00 - 10:30:00

,

All parameters missing data due to sonde exchange

09/19/2000 14:00

Turbidity values above probe range, data retained

09/01/2000 00:00:00 - 10:30:00

09/07/2000 18:30:00

09/15/2000 10:00:00

09/15/2000 10:30:00

09/15/2000 15:00:00 - 18:00:00

09/15/2000 22:30:00

09/15/2000 23:30:00

09/16/2000 01:30:00

09/16/2000 03:00:00 - 06:00:00

09/16/2000 07:00:00

09/16/2000 09:30:00

09/16/2000 11:30:00 - 13:00:00

09/16/2000 14:00:00 - 15:30:00

09/17/2000 03:00:00
09/17/2000 04:00:00 - 05:00:00
09/17/2000 11:30:00
09/17/2000 12:30:00
09/17/2000 14:30:00 - 16:00:00
09/17/2000 18:30:00 - 21:00:00
09/18/2000 01:00:00 - 02:30:00
09/18/2000 03:30:00
09/18/2000 15:30:00
09/18/2000 16:30:00 - 18:30:00
09/18/2000 20:00:00 - 22:00:00
09/19/2000 01:30:00
09/19/2000 02:00:00
09/19/2000 04:00:00
09/19/2000 05:00:00 - 13:30:00
09/27/2000 09:00:00

East Cribbing, October
No data anomalies

East Cribbing, November

Turbidity data above probe range, data retained
11/19/2000 15:00

East Cribbing, December
No data anomalies

11) Missing data:

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

12) Notes:

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.

High turbidity values above instrument's top range (1000 NTU), caused by blockage of light transmittance by an obstruction are left in the file.

Start of each sample was delayed during the deployment of 05/09/00 to 05/10/00 at Research Creek by one minute past the hour and half hour. Time was corrected in the file to on the hour and half hour.

Start times during the deployment of 05/26/00 to 05/31/00 at Research Creek were corrected in the file from three minutes past the hour and half hour to on the hour and half hour.

Start times of each sample was delayed during the deployment of 06/02/00 to 06/16/00 at Research Creek by 15 minutes after the hour and half hour. Time was corrected in the file to the hour and half hour.

Start times of each sample were off by 52 seconds and were corrected to the hour and half hour in each of the following deployments:

At Masonboro	East Cribbing
06/16/00-06/30/00	08/02/00-08/16/00
07/14/00-07/31/00	zi0900
ms0800	10/01/00-10/06/00
ms0900	10/26/00-10/31/00
ms1000	zi1100
ms1100	zi1200
ms1200	

Negative or zero depth readings were not deleted because the salinity and DO readings indicated that the sonde was submerged during these periods.