North Carolina (NOC) NERR Water Quality Metadata
January - December 2001
Revised July 1, 2021

I. Data Set & Research Descriptors

1) Principal Investigator(s) and Contacts:

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2) Entry Verification Process:

The data are uploaded using the computer program EcoWatch that accompanies the YSI 6000 series dataloggers. 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 was removed from the water or those caused by instrument failure. The data are exported as a .csv file and then opened 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 then reviewed. The

first step is to format the data so that the parameter columns are in the correct order and the data have the correct number of decimal place holders. The CDMO 5.0 Excel macro is used to check for any dates and times that data were 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. An explanation for the missing data is recorded onto the Water Quality Editing Log. Next, the data are filtered using an Excel macro to find readings outside the instrument measurement range and the "normal" range for the site in question. Data outside the instrument range are removed from the file and a period is inserted into the cell(s). An explanation for the missing dates and times are recorded onto the Water Quality Editing Log. Data outside the "normal" range of water quality for a particular site were 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 are recorded onto metadata form. The metadata form is then submitted with the data file to the CDMO. Tara Nye, Research Biologist, was responsible for data management during 2001.

3) Research Objectives:

Water quality instruments are deployed at the Masonboro Island 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 Masonboro Island 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 is 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.

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 Island and Zeke's Island components are
transferred to the CDMO.

1. Research Creek, Masonboro Island
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° 09'21.7" latitude and 77° 50'59.9" longitude. The
site has a salinity range from 18-35 ppt and a tidal range that averages 1.7
meters. The creek bottom is characterized by sand and detritus based sediment
with areas of soft mud with a depth ranging from 0.34 to 2.45 m. The sole
source for freshwater is rain. Spartina spp. marsh and dunes surround the site,
which is relatively unimpacted by manmade perturbations and is not accessible to
road traffic. The site does experience minimal boat traffic.

2. East Cribbing, Zeke's Island
The Zeke's Island site is located 1.8 km south of Federal Point boat launch in a
tidal basin estuary at 33(56'23.5" latitude and 77(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 site
has a salinity range from 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 2001

Began	Ended
Research Creek:	
12/19/00, 14:00	01/12/00, 10:30
01/12/01, 11:30	02/09/01, 10:30
02/09/01, 11:00	02/28/01, 12:00
02/28/01, 12:30	03/22/01, 11:30
03/22/01, 12:00	04/11/01, 12:00
04/11/01, 13:00	05/09/01, 11:30
05/09/01, 13:30	05/23/01, 14:00
05/23/01, 14:30	06/06/01, 10:30
06/06/01, 11:00	06/19/01, 15:00
06/19/01, 15:30	07/05/01, 12:30
07/05/01, 13:00	07/19/01, 09:00
07/19/01, 09:30	08/02/01, 14:30
08/02/01, 15:00	08/16/01, 15:00
08/16/01, 15:30	09/07/01, 10:00
09/07/01, 11:00	09/13/01, 15:00
09/13/01, 17:00	10/16/01, 11:30
10/16/01, 12:30	11/01/01, 10:30
11/01/01, 11:00	11/20/01, 13:30
11/20/01, 14:00	12/12/01, 14:30
12/12/01, 15:00	01/10/02, 14:30
East Cribbing:	
12/18/00, 16:00	01/11/01, 09:30
01/11/01, 10:00	01/31/01, 13:30
01/31/01, 14:30	03/02/01, 13:00
03/02/01, 13:30	03/23/01, 10:00
03/23/01, 11:00	04/16/01, 15:30
04/16/01, 16:00	05/11/01, 12:30
05/11/01, 13:30	05/25/01, 09:30
05/25/01, 10:30	06/07/01, 10:00
06/07/01, 10:30	06/20/01, 09:30
06/20/01, 10:00	07/06/01, 09:30
07/06/01, 10:30	07/20/01, 08:30
07/20/01, 09:30	08/03/01, 09:30
08/03/01, 10:00	08/09/01, 11:00
08/09/01, 12:00	08/30/01, 09:00
08/30/01, 09:30	09/17/01, 10:00
09/17/01, 10:30	10/18/01, 11:00
10/18/01, 11:30	11/02/01, 10:30
11/02/01, 11:00	11/19/01, 11:30
11/19/01, 12:30	12/13/01, 10:30
12/13/01, 11:30	01/09/02, 16:30

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 form 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 6000/6600 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:

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

File definitions: site/wq/month/year (ex.: ZIwq0899 = Zeke's Island data from August of 1999).

*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, malfunction of the instrument, or the measurements may be correct.

Research Creek, January

All parameters missing due to sonde exchange on the following date and time.
01/12/01 11:00

Anomalous specific conductivity, salinity and DO data, possibly due to fouling.
Consider this data suspect. However, it's possible that the sensors are responding to a real event.
01/01/01 00:00 - 01/12/01 10:30

Anomalous pH data possibly due to fouling. Consider these data suspect. Data
were retained.
01/11/01 13:00 - 01/12/01 10:30

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if a fish gets caught in the probe guard cup.

1/7/01	8:00:00	1323
1/9/01	19:30:00	1474
1/11/01	13:30:00	1478
1/11/01	14:00:00	1481
1/11/01	14:30:00	1483
1/11/01	15:00:00	1484
1/11/01	15:30:00	1484
1/11/01	16:30:00	1484
1/11/01	23:30:00	1476
1/12/01	0:00:00	1476
1/12/01	3:00:00	1477
1/12/01	6:00:00	1477

Research Creek, February

During the following dates the DO data were high, especially for the time of

year. Data should be considered suspect. DO sensor passed the post deployment
calibration check. Data were retained.
02/05/01 12:00-13:30
02/06/01 12:30-14:30
02/07/01 13:00-15:00
02/08/01 14:00-16:30
02/15/01 10:30 - 11:00
During the following dates, DO data were noisy, due to membrane puncture. Data
deleted.
02/15/01 21:00 - 02/28/01 12:00

Anomalous specific conductivity data were noted during the following dates, just
prior to retrieval. Within an hour, specific conductivity values increased in
relatively large increments from 39 to 46 to 51 mS/cm. Data were retained.
02/28/01 11:30-12:30

During the following date the turbidity data point was outside of the sensors
range. The datum was retained. The high value reflects the turbid conditions
that occur during heavy rainfall and high wind events, when the probe is covered
by sediment, or if a fish gets caught in the probe guard cup.
02/20/01 10:30 1330

Research Creek, March

During the following dates specific conductivity, DO, turbidity and pH all seem
to be responding to something, possibly caused by sediment and fouling. When
the sonde was retrieved, it was covered with sediment and algae, and smelled of
sulfur. In the presence of sulfur, the DO probe will not work properly.
Sensors tested OK during post deployment calibration check. Data were retained.
03/13/01 18:30 - 03/22/01 11:30

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if a fish gets caught in the probe guard cup.
3/10/01 10:00:00 1152

3/10/01	11:00:00	1259
3/13/01	0:00:00	1508
3/13/01	2:30:00	1513
3/13/01	3:00:00	1514
3/13/01	12:00:00	1341
3/13/01	12:30:00	1419
3/14/01	4:30:00	1513
3/14/01	17:30:00	1538
3/14/01	21:00:00	1528
3/14/01	23:00:00	1520
3/15/01	4:00:00	1035
3/15/01	9:00:00	1517
3/15/01	15:00:00	1500
3/15/01	19:00:00	1528
3/16/01	3:30:00	1372
3/22/01	15:00:00	1211
3/27/01	20:30:00	1127
3/29/01	3:00:00	1498
3/29/01	4:30:00	1498
3/29/01	6:30:00	1406
3/29/01	9:30:00	1460
3/29/01	16:30:00	1224
3/29/01	20:00:00	1506
3/29/01	20:30:00	1079
3/29/01	21:00:00	1035
3/29/01	22:30:00	1475
3/30/01	10:00:00	1042
3/31/01	2:00:00	1515
3/31/01	3:30:00	1059
3/31/01	22:00:00	1078
3/31/01	23:30:00	1090

During the following dates the turbidity readings were small negative values,
which were probably caused by contaminated zero turbidity standard. Data were
retained.

3/22/01	21:30:00	-1
3/22/01	23:00:00	-1
3/22/01	23:30:00	-1
3/23/01	0:00:00	-2
3/23/01	0:30:00	-2
3/23/01	1:00:00	-3
3/23/01	1:30:00	-3
3/23/01	2:00:00	-1
3/23/01	2:30:00	-1
3/23/01	10:00:00	-1
3/23/01	10:30:00	-1
3/23/01	11:30:00	-1
3/23/01	12:00:00	-1
3/23/01	13:00:00	-1
3/23/01	13:30:00	-2
3/23/01	14:00:00	-2

3/23/01	21:00:00	-1
3/23/01	21:30:00	-1
3/23/01	22:00:00	-1
3/23/01	22:30:00	-1
3/23/01	23:00:00	-1
3/23/01	23:30:00	-1
3/24/01	0:00:00	-2
3/24/01	0:30:00	-1
3/24/01	1:00:00	-2
3/24/01	1:30:00	-3
3/24/01	2:00:00	-3
3/24/01	3:00:00	-3
3/24/01	3:30:00	-3
3/24/01	9:30:00	-2
3/24/01	10:00:00	-2
3/24/01	10:30:00	-1
3/24/01	11:00:00	-2
3/25/01	2:00:00	-1
3/25/01	4:00:00	-1
3/25/01	15:00:00	-1
3/26/01	10:30:00	-1
3/26/01	15:00:00	-1
3/26/01	21:00:00	-1
3/26/01	22:00:00	-1
3/26/01	22:30:00	-2
3/26/01	23:00:00	-1
3/27/01	0:00:00	-1
3/27/01	0:30:00	-2
3/27/01	1:00:00	-2
3/27/01	1:30:00	-1
3/27/01	2:00:00	-1
3/27/01	3:00:00	-2
3/27/01	3:30:00	-3
3/27/01	4:00:00	-2
3/27/01	4:30:00	-1
3/27/01	5:00:00	-2
3/27/01	5:30:00	-1
3/27/01	6:00:00	-1
3/27/01	7:30:00	-1
3/27/01	8:00:00	-1
3/27/01	9:00:00	-1
3/27/01	9:30:00	-2
3/27/01	10:00:00	-2
3/27/01	11:00:00	-2
3/27/01	11:30:00	-2
3/27/01	12:00:00	-2
3/27/01	12:30:00	-2
3/27/01	23:30:00	-2
3/28/01	1:30:00	-2
3/28/01	2:00:00	-3
3/28/01	2:30:00	-2
3/28/01	3:00:00	-2
3/28/01	3:30:00	-1
3/28/01	4:00:00	-1

3/28/01 5:00:00 -1
3/28/01 7:00:00 -2
3/28/01 8:00:00 -1
3/28/01 12:00:00 -2
3/28/01 13:00:00 -2
3/28/01 13:30:00 -1
3/28/01 15:30:00 -1
3/28/01 17:00:00 -2
3/28/01 20:30:00 -1
3/29/01 1:30:00 -1
3/29/01 5:30:00 -1
3/29/01 6:00:00 -1
3/31/01 6:30:00 -2
3/31/01 7:00:00 -2
3/31/01 8:30:00 -1

Research Creek, April

All parameters missing data due to sonde exchange.
04/11/01 12:30

An anomalous DO data point was recorded at the following date and time. Do not
know if this was an error or if a real event caused a sudden drop in DO. The
data point was retained.
04/08/01 22:30 3.6%

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if a fish gets caught in the probe guard cup.
4/1/01 3:00:00 1503
4/1/01 4:30:00 1518
4/1/01 15:30:00 1042
4/1/01 16:30:00 1207
4/1/01 17:00:00 1344
4/1/01 17:30:00 1257
4/2/01 12:30:00 1506
4/2/01 13:30:00 1021
4/2/01 14:00:00 1482
4/3/01 11:30:00 1111
4/3/01 15:00:00 1507
4/16/01 10:30:00 1243
4/26/01 11:00:00 1471
4/27/01 11:30:00 1475

During the following dates the turbidity readings were small negative values,

which were probably caused by contaminated zero turbidity standard. Data were
retained.

4/3/01	17:00:00	-1
4/3/01	19:30:00	-1
4/4/01	7:30:00	-1
4/4/01	11:30:00	-1
4/4/01	18:00:00	-2
4/4/01	18:30:00	-2
4/4/01	19:00:00	-1
4/4/01	19:30:00	-1
4/4/01	20:00:00	-1
4/4/01	21:00:00	-1
4/4/01	21:30:00	-2
4/5/01	8:00:00	-1
4/5/01	9:00:00	-1
4/5/01	9:30:00	-1
4/5/01	10:00:00	-1
4/5/01	12:30:00	-1
4/5/01	13:00:00	-1
4/5/01	22:00:00	-1
4/5/01	22:30:00	-1
4/5/01	23:00:00	-1
4/6/01	1:30:00	-1
4/6/01	2:00:00	-2
4/6/01	2:30:00	-1
4/6/01	8:30:00	-2
4/6/01	9:00:00	-1
4/6/01	13:00:00	-1
4/6/01	18:00:00	-1
4/6/01	19:00:00	-2
4/8/01	8:00:00	-1
4/8/01	9:00:00	-1
4/8/01	10:00:00	-1
4/8/01	10:30:00	-1
4/8/01	11:00:00	-1
4/8/01	22:30:00	-1
4/9/01	5:00:00	-1
4/9/01	8:30:00	-2
4/9/01	9:00:00	-3
4/9/01	10:00:00	-2
4/9/01	10:30:00	-1
4/9/01	15:00:00	-1
4/9/01	22:00:00	-2
4/9/01	22:30:00	-2
4/9/01	23:00:00	-1
4/10/01	0:30:00	-2
4/10/01	3:00:00	-1
4/10/01	9:30:00	-1
4/10/01	10:00:00	-1
4/10/01	10:30:00	-3
4/10/01	11:30:00	-2
4/10/01	12:00:00	-1
4/10/01	13:00:00	-1

4/10/01	16:30:00	-2
4/10/01	17:00:00	-1
4/10/01	21:00:00	-2
4/10/01	21:30:00	-2
4/10/01	22:00:00	-1
4/10/01	23:00:00	-2
4/10/01	23:30:00	-2
4/11/01	2:00:00	-1
4/11/01	3:00:00	-2
4/11/01	3:30:00	-3
4/11/01	4:00:00	-3
4/11/01	4:30:00	-1
4/11/01	5:00:00	-1
4/11/01	5:30:00	-2
4/11/01	7:30:00	-1
4/11/01	9:00:00	-2
4/11/01	10:00:00	-2
4/11/01	10:30:00	-2
4/11/01	11:30:00	-3
4/11/01	12:00:00	-3

Research Creek, May

During the following time period DO data were noisy, due to a membrane puncture.
DO data were removed.
05/05/01 13:00 - 05/09/01 11:30

During the following dates DO data were low and erratic. Data should be considered suspect.
05/26/01 14:00 - 05/31/01 23:30

Specific conductivity and pH data drifted downward during deployment dated
05/09/0113:30 to 05/23/01 14:00. Data near the end of this time period may be
suspect,
including DO in mg/l. Drifting was probably caused by excessive fouling. There
was also an increase in turbidity during this same time period (see below comment). Post deployment calibration check for both of these sensors was good.
Data retained.

Specific conductivity displayed anomalous data at the following date and time.
The specific conductivity values decreased and then increased by a relatively
large amount in a short period of time. Data were retained.
05/26/01 15:30 - 17:30
05/23/01 14:00 - 14:30

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if a fish gets caught in the probe guard cup.

05/03/2001	13:30:00	1497
05/05/2001	12:30:00	1183
05/05/2001	19:00:00	1467
05/06/2001	07:00:00	1099
05/21/2001	18:30:00	1533
05/21/2001	19:00:00	1533
05/21/2001	22:00:00	1195
05/23/2001	12:30:00	1533
05/23/2001	13:00:00	1550
05/23/2001	13:30:00	1480
05/23/2001	14:00:00	1555
05/27/2001	08:30:00	1348
05/28/2001	19:30:00	1538

Research Creek, June

DO data erratic and low during the following dates. Sonde retrieved with a hole
in DO membrane. The following data were deleted.
06/01/01 00:00 - 06/06/01 10:30

Gradual declines in conductivity, DO, and pH can be seen during deployment,
06/06/0112:00 - 06/19/01 19:00. It did rain fairly regularly in June, especially from 13-
16 June. Sensors were also probably becoming gradually fouled causing data to
be suspect. DO and pH sensors passed the post deployment calibration check.
All data were retained.

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if a fish gets caught in the probe guard cup.

6/14/01	22:30:00	1582
6/19/01	8:30:00	1039
6/20/01	0:30:00	1532
6/27/01	18:30:00	1453
6/30/01	9:30:00	1550
6/30/01	20:30:00	1546
6/30/01	22:30:00	1539

Research Creek, July

DO data showed a great deal of noise during the following dates. There was a
toadfish and a blenny in the datalogger probe guard cup upon retrieval. However,
the post deployment calibration check was good, so data were retained.
07/03/01 12:00 - 07/05/01 12:30

The conductivity data appears to have drifted during the deployment from
07/05/01 - 07/19/01. Data should be considered suspect, including DO (mg/l)
data. Data were retained.

During the following period the DO data were deleted due to compromised probe
membrane integrity.
07/21/01 19:00 - 07/31/01 23:30

During the deployment the pH bulb broke. Data during the following period were
deleted.
07/22/01 00:00 - 07/31/01 23:30

The conductivity and salinity data were deleted for the following dates. The
drop in data may have been caused by sediment covering the sensor.
07/24/01 12:00 - 07/30/01 17:30

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if an animal gets caught in the probe guard cup.

7/3/01	18:30:00	1533
7/18/01	19:30:00	2082
7/18/01	20:00:00	2000
7/18/01	20:30:00	1232
7/18/01	21:00:00	2080
7/18/01	22:30:00	2080
7/24/01	23:30:00	1558
7/25/01	2:30:00	1559
7/25/01	3:00:00	1559
7/25/01	3:30:00	1558
7/25/01	4:00:00	1558
7/25/01	4:30:00	1557
7/25/01	5:00:00	1557
7/25/01	5:30:00	1556
7/25/01	6:00:00	1556

7/25/01	6:30:00	1555
7/25/01	7:00:00	1556
7/25/01	7:30:00	1556
7/25/01	8:00:00	1556
7/25/01	8:30:00	1557
7/25/01	9:00:00	1163
7/25/01	9:30:00	1558
7/25/01	10:00:00	1558
7/25/01	10:30:00	1262
7/25/01	11:00:00	1492
7/25/01	12:00:00	1497
7/25/01	12:30:00	1558
7/25/01	13:00:00	1560
7/25/01	13:30:00	1562
7/25/01	14:00:00	1202
7/25/01	14:30:00	1565
7/25/01	15:00:00	1124
7/25/01	15:30:00	1437
7/25/01	16:00:00	1567
7/25/01	16:30:00	1266
7/25/01	17:00:00	1569
7/25/01	17:30:00	1568
7/25/01	18:00:00	1567
7/25/01	18:30:00	1144
7/25/01	19:00:00	1132
7/25/01	19:30:00	1566
7/25/01	20:00:00	1393
7/25/01	20:30:00	1566
7/25/01	21:00:00	1566
7/25/01	21:30:00	1325
7/25/01	22:00:00	1312
7/25/01	22:30:00	1565
7/25/01	23:00:00	1421
7/25/01	23:30:00	1563
7/26/01	0:30:00	1561
7/26/01	1:00:00	1413
7/26/01	1:30:00	1492
7/26/01	2:00:00	1561
7/26/01	2:30:00	1147
7/26/01	3:00:00	1522
7/26/01	3:30:00	1270
7/26/01	4:00:00	1199
7/26/01	4:30:00	1560
7/26/01	5:00:00	1343
7/26/01	5:30:00	1188
7/26/01	6:00:00	1558
7/26/01	6:30:00	1291
7/26/01	7:00:00	1191
7/26/01	8:00:00	1436
7/26/01	8:30:00	1453
7/26/01	9:00:00	1355
7/26/01	10:00:00	1166
7/26/01	10:30:00	1262
7/26/01	11:00:00	1353

7/26/01	11:30:00	1561
7/26/01	12:00:00	1173
7/26/01	12:30:00	1124
7/26/01	13:00:00	1296
7/26/01	13:30:00	1542
7/26/01	14:00:00	1294
7/26/01	14:30:00	1052
7/26/01	15:00:00	1281
7/26/01	15:30:00	1548
7/26/01	16:00:00	1126
7/26/01	16:30:00	1409
7/26/01	17:00:00	1057
7/26/01	18:00:00	1417
7/26/01	19:00:00	1058
7/26/01	19:30:00	1291
7/26/01	20:00:00	1412
7/26/01	21:30:00	1166
7/26/01	22:00:00	1561
7/26/01	22:30:00	1077
7/27/01	1:30:00	1150
7/27/01	3:30:00	1090
7/27/01	7:30:00	1511
7/27/01	8:00:00	1556
7/27/01	10:30:00	1557
7/27/01	11:30:00	1092
7/29/01	4:00:00	1366
7/29/01	5:00:00	1555
7/29/01	14:30:00	1557
7/29/01	20:00:00	1543
7/30/01	2:30:00	1558
7/30/01	5:30:00	1428
7/30/01	6:30:00	1547
7/30/01	7:00:00	1051
7/30/01	9:30:00	1181
7/30/01	14:30:00	1023
7/31/01	12:00:00	1561

Research Creek, August

During the following period the DO data were deleted due to a compromised probe
membrane integrity.
08/01/01 00:00 - 08/02/01 14:30

During the deployment the pH bulb broke. The following data were deleted.
08/01/01 00:00 - 08/02/01 14:30

Towards the end of deployment dated 08/02/01 - 08/16/01 DO readings appear noisy
and unstable. This may be due to fouling of or sediment covering the DO

membrane. Corresponds to high turbidity readings (see below). DO data were
deleted.
08/14/01 21:30 - 08/16/01 15:00

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if a fish gets caught in the probe guard cup.

8/10/01	14:00:00	1153
8/13/01	10:00:00	1612
8/13/01	20:00:00	1231
8/13/01	20:30:00	1617
8/13/01	21:00:00	1617
8/13/01	21:30:00	1617
8/13/01	22:00:00	1617
8/13/01	22:30:00	1618
8/13/01	23:00:00	1620
8/13/01	23:30:00	1622
8/14/01	0:00:00	1621
8/14/01	0:30:00	1622
8/14/01	1:00:00	1621
8/14/01	1:30:00	1621
8/14/01	2:00:00	1620
8/14/01	2:30:00	1620
8/14/01	3:00:00	1617
8/14/01	3:30:00	1616
8/14/01	4:00:00	1615
8/14/01	4:30:00	1614
8/14/01	5:00:00	1613
8/14/01	5:30:00	1612
8/14/01	6:00:00	1611
8/14/01	6:30:00	1609
8/14/01	7:00:00	1609
8/14/01	7:30:00	1608
8/14/01	8:00:00	1609
8/14/01	8:30:00	1609
8/14/01	9:00:00	1608
8/14/01	9:30:00	1600
8/14/01	10:00:00	1603
8/14/01	10:30:00	1601
8/14/01	11:00:00	1609
8/14/01	11:30:00	1613
8/14/01	12:00:00	1615
8/14/01	12:30:00	1616
8/14/01	13:00:00	1617
8/14/01	13:30:00	1618
8/14/01	14:00:00	1618
8/14/01	14:30:00	1617
8/14/01	15:00:00	1616
8/14/01	15:30:00	1616

8/14/01	16:00:00	1616
8/14/01	16:30:00	1616
8/14/01	17:00:00	1617
8/14/01	17:30:00	1618
8/14/01	18:00:00	1618
8/14/01	18:30:00	1618
8/14/01	19:00:00	1618
8/14/01	19:30:00	1618
8/14/01	20:00:00	1617
8/14/01	20:30:00	1616
8/14/01	21:00:00	1615
8/14/01	21:30:00	1614
8/14/01	22:00:00	1613
8/14/01	22:30:00	1614
8/14/01	23:00:00	1614
8/14/01	23:30:00	1615
8/15/01	0:00:00	1615
8/15/01	0:30:00	1616
8/15/01	1:00:00	1616
8/15/01	1:30:00	1616
8/15/01	2:00:00	1616
8/15/01	2:30:00	1616
8/15/01	3:00:00	1616
8/15/01	3:30:00	1614
8/15/01	4:00:00	1615
8/15/01	4:30:00	1614
8/15/01	5:00:00	1613
8/15/01	5:30:00	1611
8/15/01	6:00:00	1610
8/15/01	6:30:00	1609
8/15/01	7:00:00	1609
8/15/01	7:30:00	1608
8/15/01	8:00:00	1608
8/15/01	8:30:00	1611
8/15/01	9:00:00	1613
8/15/01	9:30:00	1613
8/15/01	10:00:00	1615
8/15/01	10:30:00	1616
8/15/01	11:00:00	1616
8/15/01	11:30:00	1618
8/15/01	12:00:00	1614
8/15/01	12:30:00	1616
8/15/01	13:00:00	1616
8/15/01	13:30:00	1617
8/15/01	14:00:00	1618
8/15/01	14:30:00	1617
8/15/01	15:00:00	1616
8/15/01	15:30:00	1616
8/15/01	16:00:00	1616
8/15/01	16:30:00	1616
8/15/01	17:00:00	1616
8/15/01	17:30:00	1617
8/15/01	18:00:00	1619
8/15/01	18:30:00	1620

8/15/01	19:00:00	1619
8/15/01	19:30:00	1618
8/15/01	20:00:00	1618
8/15/01	20:30:00	1618
8/15/01	21:00:00	1619
8/15/01	21:30:00	1618
8/15/01	22:00:00	1617
8/15/01	22:30:00	1615
8/15/01	23:00:00	1614
8/15/01	23:30:00	1615
8/16/01	0:00:00	1615
8/16/01	0:30:00	1615
8/16/01	1:00:00	1616
8/16/01	1:30:00	1617
8/16/01	2:00:00	1617
8/16/01	2:30:00	1616
8/16/01	3:00:00	1616
8/16/01	3:30:00	1616
8/16/01	4:00:00	1615
8/16/01	4:30:00	1615
8/16/01	5:00:00	1614
8/16/01	5:30:00	1614
8/16/01	6:00:00	1613
8/16/01	6:30:00	1613
8/16/01	7:00:00	1612
8/16/01	7:30:00	1612
8/16/01	8:00:00	1613
8/16/01	8:30:00	1613
8/16/01	9:00:00	1615
8/16/01	9:30:00	1617
8/16/01	10:00:00	1621
8/16/01	10:30:00	1623
8/16/01	11:00:00	1625
8/16/01	11:30:00	1625
8/16/01	12:00:00	1625
8/16/01	12:30:00	1626
8/16/01	13:00:00	1620
8/16/01	13:30:00	1619
8/16/01	14:00:00	1619
8/16/01	14:30:00	1620
8/16/01	15:00:00	1620
8/17/01	20:00:00	1059

Research Creek, September

Data from all the parameters were not recorded due to sonde exchange and deployment structure maintenance.
09/07/01 10:30
09/13/01 15:30-16:30

Conductivity readings drifted downward throughout the month after each

deployment. Consider the data on the following dates suspect, including DO
(mg/l).
09/03/01 22:00 - 09/07/01 10:00
09/07/01 11:00 - 09/13/01 15:00

Conductivity and pH data showed downward drift in the following time periods.
They were either both responding to a real event, or were covered by sediment.
Turbidity data were exceedingly high during the same time period values (see
turbidity comment below), corroborating the presence of sediment or other interfering object. Data were retained, but should be considered suspect,
including DO (mg/l). Both conductivity and pH rebounded prior to datalogger
retrieval.
09/13/01 17:00 - 09/30/01 13:30

Conductivity and pH data both make anomalous jumps up in value. It's possible
that whatever was causing the downward drift (see above comment) moved or changed. All data were retained.
09/30/01 13:30-14:00

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if a fish gets caught in the probe guard cup.

9/3/01	17:00:00	1390
9/4/01	15:00:00	2054
9/16/01	16:00:00	2106
9/16/01	17:30:00	2112
9/16/01	22:30:00	1458
9/18/01	11:30:00	2114
9/18/01	12:00:00	1775
9/18/01	12:30:00	1830
9/19/01	12:30:00	2113
9/19/01	13:00:00	2115
9/19/01	13:30:00	2115
9/19/01	14:00:00	2116
9/19/01	14:30:00	2118
9/19/01	15:00:00	2120
9/19/01	15:30:00	2123
9/19/01	16:00:00	2123
9/19/01	16:30:00	2123
9/19/01	17:00:00	1454
9/19/01	17:30:00	2117
9/19/01	18:00:00	2116
9/19/01	18:30:00	2116

9/19/01	19:00:00	2115
9/19/01	19:30:00	2115
9/19/01	20:00:00	2115
9/19/01	20:30:00	2115
9/19/01	21:00:00	2115
9/19/01	21:30:00	2115
9/19/01	22:00:00	2115
9/19/01	22:30:00	2114
9/19/01	23:00:00	2113
9/19/01	23:30:00	2113
9/20/01	0:00:00	2113
9/20/01	0:30:00	2112
9/20/01	1:00:00	2112
9/20/01	1:30:00	2112
9/20/01	2:00:00	2111
9/20/01	2:30:00	2110
9/20/01	3:00:00	2109
9/20/01	3:30:00	2109
9/20/01	4:00:00	2109
9/20/01	4:30:00	2109
9/20/01	5:00:00	2109
9/20/01	5:30:00	2109
9/20/01	6:00:00	2110
9/20/01	6:30:00	2110
9/20/01	7:00:00	2111
9/20/01	7:30:00	2111
9/20/01	8:00:00	2112
9/20/01	8:30:00	2113
9/20/01	9:00:00	2114
9/20/01	9:30:00	2115
9/20/01	10:00:00	2115
9/20/01	10:30:00	2116
9/20/01	11:00:00	2117
9/20/01	11:30:00	2119
9/20/01	12:00:00	2120
9/20/01	12:30:00	2120
9/20/01	13:00:00	2122
9/20/01	13:30:00	2125
9/20/01	14:00:00	2128
9/20/01	14:30:00	2130
9/21/01	1:30:00	2119
9/21/01	2:00:00	2115
9/21/01	2:30:00	2118
9/21/01	3:00:00	2117
9/21/01	3:30:00	2116
9/21/01	4:00:00	2115
9/21/01	4:30:00	2114
9/21/01	5:00:00	2114
9/21/01	5:30:00	2114
9/21/01	6:00:00	2114
9/21/01	6:30:00	2116
9/21/01	7:00:00	2118
9/21/01	14:30:00	2122
9/21/01	15:00:00	2123

9/21/01	15:30:00	2124
9/21/01	16:00:00	2124
9/22/01	3:00:00	2118
9/22/01	8:30:00	1341
9/22/01	10:30:00	2119
9/22/01	13:00:00	2124
9/22/01	13:30:00	2126
9/22/01	14:00:00	2129
9/22/01	14:30:00	2130
9/22/01	15:30:00	2132
9/22/01	16:00:00	2134
9/22/01	16:30:00	2134
9/22/01	17:00:00	2135
9/22/01	17:30:00	2135
9/22/01	18:00:00	1545
9/22/01	18:30:00	2132
9/22/01	19:30:00	2133
9/22/01	21:30:00	2132
9/22/01	23:00:00	2128
9/23/01	1:30:00	2126
9/23/01	2:00:00	2126
9/23/01	3:30:00	2126
9/23/01	4:00:00	2125
9/23/01	4:30:00	2085
9/23/01	5:00:00	2123
9/23/01	6:00:00	2122
9/23/01	6:30:00	1234
9/23/01	7:00:00	2121
9/23/01	7:30:00	1136
9/23/01	9:00:00	2125
9/23/01	9:30:00	2125
9/23/01	10:30:00	2125
9/23/01	11:00:00	2125
9/23/01	11:30:00	2124
9/23/01	12:30:00	2123
9/23/01	13:00:00	2124
9/23/01	14:30:00	2131
9/23/01	15:00:00	2133
9/23/01	16:00:00	2135
9/23/01	16:30:00	2135
9/23/01	17:00:00	2135
9/23/01	17:30:00	2135
9/23/01	18:00:00	2135
9/23/01	18:30:00	2134
9/23/01	19:00:00	2133
9/23/01	19:30:00	2132
9/23/01	20:00:00	2132
9/23/01	20:30:00	2132
9/23/01	21:00:00	2133
9/23/01	21:30:00	2133
9/23/01	22:00:00	2133
9/23/01	22:30:00	2133
9/23/01	23:00:00	2133
9/23/01	23:30:00	2132

9/24/01	0:00:00	2131
9/24/01	0:30:00	2129
9/24/01	1:00:00	2128
9/24/01	1:30:00	2127
9/24/01	2:00:00	2128
9/24/01	2:30:00	2128
9/24/01	3:00:00	2128
9/24/01	3:30:00	2129
9/24/01	4:00:00	2128
9/24/01	4:30:00	2128
9/24/01	5:00:00	2091
9/24/01	5:30:00	2004
9/24/01	6:00:00	2126
9/24/01	6:30:00	2125
9/24/01	7:00:00	2125
9/24/01	7:30:00	1855
9/24/01	8:00:00	2125
9/24/01	8:30:00	2126
9/24/01	9:00:00	2128
9/24/01	9:30:00	2128
9/24/01	10:00:00	2129
9/24/01	10:30:00	2129
9/24/01	11:00:00	2129
9/24/01	11:30:00	2129
9/24/01	12:00:00	1036
9/24/01	13:00:00	2127
9/24/01	13:30:00	2126
9/24/01	14:00:00	2126
9/24/01	15:00:00	2131
9/24/01	15:30:00	2132
9/24/01	16:00:00	2132
9/24/01	16:30:00	2132
9/24/01	17:00:00	2132
9/24/01	17:30:00	2133
9/24/01	18:00:00	2133
9/24/01	18:30:00	2132
9/24/01	19:00:00	2131
9/24/01	19:30:00	2130
9/24/01	20:00:00	2129
9/24/01	20:30:00	2128
9/24/01	21:00:00	2113
9/24/01	21:30:00	2128
9/24/01	22:00:00	2098
9/24/01	22:30:00	2120
9/24/01	23:00:00	2124
9/24/01	23:30:00	2131
9/25/01	0:00:00	2131
9/25/01	0:30:00	2131
9/25/01	1:00:00	2109
9/25/01	1:30:00	1586
9/25/01	2:00:00	1997
9/25/01	2:30:00	1882
9/25/01	3:00:00	2127
9/25/01	3:30:00	1924

9/25/01	4:00:00	1944
9/25/01	4:30:00	1839
9/25/01	5:00:00	2120
9/25/01	5:30:00	2122
9/25/01	6:00:00	2120
9/25/01	6:30:00	1727
9/25/01	7:00:00	1846
9/25/01	7:30:00	1697
9/25/01	8:00:00	2109
9/25/01	8:30:00	2057
9/25/01	9:00:00	2118
9/25/01	9:30:00	2120
9/25/01	10:00:00	2119
9/25/01	10:30:00	2122
9/25/01	11:00:00	2124
9/25/01	11:30:00	2125
9/25/01	12:00:00	2125
9/25/01	12:30:00	2125
9/25/01	13:30:00	2103
9/25/01	14:00:00	1790
9/25/01	14:30:00	1782
9/25/01	15:00:00	2121
9/25/01	15:30:00	2122
9/25/01	16:00:00	2123
9/25/01	16:30:00	2026
9/25/01	17:00:00	2125
9/25/01	17:30:00	2125
9/25/01	18:00:00	2124
9/25/01	18:30:00	2101
9/25/01	19:00:00	2122
9/25/01	20:30:00	2119
9/25/01	21:00:00	2116
9/26/01	5:00:00	1089
9/26/01	5:30:00	2105
9/26/01	13:30:00	2109
9/26/01	14:00:00	2111
9/26/01	14:30:00	2030
9/26/01	15:00:00	1015
9/26/01	15:30:00	2113
9/26/01	16:00:00	1345
9/26/01	16:30:00	2114
9/26/01	17:30:00	2112
9/26/01	18:00:00	2111
9/26/01	19:30:00	1702
9/26/01	22:30:00	1513
9/28/01	11:00:00	2106
9/28/01	12:00:00	1920
9/28/01	15:00:00	2107
9/28/01	18:00:00	1616

Research Creek, October

Data from all the parameters were not recorded due to sonde exchange.
10/16/01 12:00

During the following dates the DO data were deleted due to a membrane puncture.
10/04/01 03:00 - 10/16/01 11:30

During the datalogger deployment dated 10/16/01 - 11/01/01, conductivity data
drifted downward, possibly caused by sediment covering the sensor or fouling.
Consider data suspect during the following dates.
10/18/01 01:00 - 10/31/01 23:30

During the following dates there was a drop in pH readings, most likely due to
sediment accumulating on the sensor. Data were retained.
10/19/01 15:30 - 10/21/01 12:30

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if a fish gets caught in the probe guard cup.

10/12/01	14:00:00	2103
10/19/01	13:30:00	1402
10/19/01	14:00:00	1531
10/19/01	14:30:00	1531
10/19/01	15:00:00	1532
10/19/01	15:30:00	1533
10/19/01	16:00:00	1534
10/19/01	16:30:00	1535
10/19/01	17:00:00	1535
10/19/01	17:30:00	1535
10/19/01	18:00:00	1533
10/19/01	18:30:00	1532
10/19/01	19:00:00	1532
10/19/01	19:30:00	1532
10/19/01	20:00:00	1532
10/19/01	20:30:00	1532
10/19/01	21:00:00	1532
10/19/01	21:30:00	1532
10/19/01	22:00:00	1532
10/19/01	22:30:00	1532
10/19/01	23:00:00	1532
10/19/01	23:30:00	1531
10/20/01	0:00:00	1531
10/20/01	0:30:00	1531
10/20/01	1:00:00	1531
10/20/01	1:30:00	1530
10/20/01	2:00:00	1530
10/20/01	2:30:00	1530

10/20/01	3:00:00	1529
10/20/01	3:30:00	1529
10/20/01	4:00:00	1529
10/20/01	4:30:00	1529
10/20/01	5:00:00	1529
10/20/01	5:30:00	1529
10/20/01	6:00:00	1529
10/20/01	6:30:00	1529
10/20/01	7:00:00	1529
10/20/01	7:30:00	1529
10/20/01	8:00:00	1530
10/20/01	8:30:00	1530
10/20/01	9:00:00	1531
10/20/01	9:30:00	1532
10/20/01	10:00:00	1532
10/20/01	10:30:00	1533
10/20/01	11:00:00	1533
10/20/01	11:30:00	1329
10/20/01	12:00:00	1534
10/20/01	12:30:00	1533
10/20/01	13:00:00	1534
10/20/01	13:30:00	1534
10/20/01	14:00:00	1534
10/20/01	14:30:00	1534
10/20/01	15:00:00	1534
10/20/01	15:30:00	1535
10/20/01	16:00:00	1535
10/20/01	16:30:00	1535
10/20/01	17:00:00	1535
10/20/01	17:30:00	1535
10/20/01	18:00:00	1535
10/20/01	18:30:00	1535
10/20/01	19:00:00	1534
10/20/01	19:30:00	1534
10/20/01	20:00:00	1534
10/20/01	20:30:00	1534
10/20/01	21:00:00	1534
10/20/01	21:30:00	1534
10/20/01	22:00:00	1534
10/20/01	22:30:00	1534
10/20/01	23:00:00	1534
10/20/01	23:30:00	1534
10/21/01	0:00:00	1534
10/21/01	0:30:00	1534
10/21/01	1:00:00	1533
10/21/01	1:30:00	1533
10/21/01	2:00:00	1533
10/21/01	2:30:00	1533
10/21/01	3:00:00	1533
10/21/01	3:30:00	1533
10/21/01	4:00:00	1532
10/28/01	22:30:00	1004
10/31/01	17:30:00	1518
10/31/01	23:00:00	1448

10/31/01 23:30:00 1017

Research Creek, November

During the following dates the conductivity data may have drifted downward,
possibly caused by sediment covering the sensor or fouling. Consider data
suspect during the following dates, including DO (mg/l) data.
11/01/01 00:00-10:30
11/06/01 16:00 - 11/07/01 06:30
11/12/01 09:30 - 11/13/01 21:30
11/16/01 12:00 - 11/24/01 12:00

During the following period pH readings decreased suddenly and stayed lower than
normal for the duration of the deployment. May be responding to the same event
that affected the conductivity readings (see above). Data retained.
11/17/01 13:00 - 11/20/01 15:30

An anomalous drop of a single pH data point occurred during the following time,
cause unknown. Data retained.
11/24/01 21:30

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if a fish gets caught in the probe guard cup.
11/1/01 1:30:00 1518
11/1/01 6:00:00 1519
11/1/01 6:30:00 1038
11/1/01 7:30:00 1521

Research Creek, December

Sonde was pulled out of water during the following dates for
hardwiring/telemetry cable repair. All parameter data were deleted.
12/05/01 13:00-14:30
12/06/01 12:30
12/18/01 11:00-12:00

During the following dates the conductivity data may have drifted downward,

possibly caused by sediment covering the sensor or fouling. Consider data,
including DO (mg/l), suspect during the following dates.
12/11/01 03:30 - 12/12/01 19:00
12/31/01 06:30 - 23:30

East Cribbing, January

All parameters missing data due to sonde exchange.
1/31/01 14:00

For the duration of the deployment dated 01/09/01 to 01/31/01, depth appeared to
be off. The sonde was probably shifted soon after deployment due to the strong
currents in the area. Data were retained.

For the following dates and times depth readings were negative. However, based
on the other parameters measured, the sonde was not out of the water. All data
were retained.

1/12/01	5:00:00	-0.01
1/12/01	5:30:00	-0.06
1/12/01	6:00:00	-0.05
1/12/01	6:30:00	-0.06
1/12/01	18:30:00	-0.02
1/12/01	19:00:00	-0.04
1/13/01	6:30:00	-0.04
1/13/01	7:00:00	-0.04
1/15/01	21:00:00	-0.01
1/15/01	21:30:00	-0.02
1/16/01	22:00:00	-0.02
1/17/01	23:00:00	-0.01
1/17/01	23:30:00	-0.01
1/18/01	23:30:00	-0.01
1/19/01	0:00:00	-0.03
1/20/01	13:30:00	-0.03
1/20/01	14:00:00	-0.03
1/21/01	1:00:00	-0.01
1/21/01	1:30:00	-0.05
1/21/01	2:00:00	-0.06
1/21/01	2:30:00	-0.06
1/21/01	3:00:00	-0.06
1/23/01	2:30:00	-0.01
1/23/01	3:00:00	-0.02
1/30/01	7:30:00	-0.01
1/30/01	19:30:00	-0.02
1/30/01	20:00:00	-0.04
1/30/01	20:30:00	-0.02
1/31/01	8:00:00	-0.02
1/31/01	8:30:00	-0.02

East Cribbing, February
No data anomalies/deletions to report.

East Cribbing, March

All parameters missing data due to sonde exchange.
3/23/01 10:30:00

For the following date and time, depth was deleted. During retrieval, sonde had
been shifted and was at the wrong depth at time of sampling.
03/02/01 13:00

East Cribbing, April

DO data deleted due to compromised DO membrane integrity.
4/30/01 08:00 - 23:30

Depth shifts mid-deployment. Sonde may have been relocated by strong currents
during the rising tide, or by a curious citizen. Data retained.
4/15/01 13:00 - 4/16/01 15:30

East Cribbing, May

All parameters missing data due to sonde exchange.
5/11/01 13:00
5/25/01 10:00

DO data deleted due to compromised DO membrane integrity
5/01/01 00:00 - 5/11/01 12:30

On the following dates and times turbidity readings were large negative values,
indicating that the sensor was blocked pushed beyond its capabilities by a
large, unknown object. The anomalous data were deleted.
5/05/01 17:00 -440
5/07/01 08:30 -456
5/07/01 23:30 -627

East Cribbing, June

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if a fish gets caught in the probe guard cup.
6/4/01 2:30:00 1554

6/8/01 20:00:00 1053
6/8/01 22:00:00 2035
6/10/01 1:30:00 1177

East Cribbing, July

All parameters missing data due to sonde exchange.
7/06/01 10:00
7/20/01 09:00

Towards the end of deployment dating 06/20/01 - 07/06/01, the DO data appear to
drift downward. Data retained. Data may be suspect during the following dates.
07/02/01 06:30 - 07/06/01 09:30

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if a fish gets caught in the probe guard cup.
7/6/01 14:00:00 1626
7/6/01 15:30:00 1625
7/6/01 17:00:00 1624
7/7/01 2:30:00 1618
7/7/01 3:00:00 1617
7/7/01 7:00:00 1614
7/8/01 14:00:00 1624
7/8/01 18:30:00 1626
7/9/01 2:30:00 1623
7/9/01 3:00:00 1623
7/9/01 4:00:00 1622
7/9/01 4:30:00 1622
7/9/01 6:30:00 1621
7/10/01 18:00:00 1650
7/11/01 20:00:00 1647
7/12/01 3:30:00 1640
7/13/01 3:00:00 1637
7/13/01 14:30:00 1632
7/13/01 19:30:00 1625
7/13/01 21:00:00 1622
7/13/01 23:00:00 1616
7/14/01 0:00:00 1617
7/14/01 4:30:00 1616
7/17/01 2:00:00 1628
7/17/01 8:30:00 1628
7/19/01 19:30:00 1637
7/19/01 20:00:00 1226
7/20/01 8:00:00 1629

East Cribbing, August

All parameters missing data due to sonde exchange.
8/09/01 11:30

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if a fish gets caught in the probe guard cup.
8/12/01 12:00 1660

East Cribbing, September

DO data bad due to puncture in DO membrane. All data were deleted.
9/05/01 21:30 - 9/17/01 10:00

East Cribbing, October

DO data, on the following date and times, appears to be abnormally high, however
the DO pattern and data look good before and after. DO probe passed the post
deployment calibration check. Data retained.
10/11/01 11:00 - 10/15/01 15:00

During the following periods, the specific conductivity and salinity readings
may have drifted downward as a result of fouling. Data at end of deployment
considered suspect, including DO mg/l data. Data were retained.
10/15/01 - 10/18/01 11:00

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if a fish gets caught in the probe guard cup.

10/4/01	12:00:00	1011
10/16/01	7:00:00	1066
10/16/01	20:30:00	1565
10/29/01	12:00:00	1159
10/29/01	14:30:00	1331

East Cribbing, November

All parameters missing data due to sonde exchange.

11/19/01 11:00

East Cribbing, December

All parameters missing data due to sonde exchange.
12/13/01 11:00

During the following dates the turbidity data were outside of the sensors range.
The data were retained. The high value reflects the turbid conditions that
occur during heavy rainfall and high wind events, when the probe is covered by
sediment, or if a fish gets caught in the probe guard cup.
12/04/01 20:30 1569
12/12/01 10:00 1568

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.

13) 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 instruments top range (1000 NTU), caused by blockage
of light transmittance by an obstruction are left in the file.

Whenever specific conductivity or salinity data (referred to as conductivity
data) were suspect, consider DO data in mg/l suspect as well, since specific
conductivity is used to calculate DO data in mg/l.

Start times of each sample were off by 52 seconds and were corrected to the hour
and half hour for all of the deployments in 2001, except for data gathered
during 04/16/01 - 05/11/01 at East Cribbing.

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