

Old Woman Creek (OWC) NERR Site Water Quality Metadata
April through October, 1998
Latest Update: September 27, 2001

1. Principal Investigator & contact persons:

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2. Entry verification:

The data were directly downloaded from the YSI data loggers into the YSI PC6000 program in the PC. The data were graphed and visually checked for any obvious outliers. The data were then transferred to an Excel spreadsheet. The data files were edited to remove headers, footers, and spaces. All three CDMO macros were used to QA/QC the data. Missing data were inserted into the spreadsheet and denoted by periods. The data files were then checked for readings that were outside the instrument range. These data were removed and replaced with a period. An explanation for the missing and the deleted data is included in this meta data sheet. The files were then transferred along with the associated metadata sheet by disk to the CDMO. The files are archived at OWC. Dr. David Klarer is responsible for both data logger deployment and data management.

3. Research Objectives:

Measurements are taken every 15 minutes over approximately two week periods at two sites within the Old Woman Creek estuary- one in the upper reaches at State Route 2 and the other near the mouth, just south of State Route 6. The purpose of this monitoring program is to document the role of Great Lakes estuaries in mitigating storm flow that passes through them.

4. Research methods:

The YSI monitoring program began on 1 April, 1997 at both sites. Prior to deployment of the data loggers, a 4 inch diameter PVC pipe was bolted to a metal sign post that had been driven into the sediment. Each pipe had 4 rows of holes drilled into it spanning the area of the probe guard on the data logger so that the probes would have direct contact with the surrounding waters. The data logger at site SU is .47 meters above the bottom, while the YSI at site WM is 0.32 meters above the bottom. Dissolved oxygen, pH, temperature, turbidity, and specific conductance readings are taken when the instrument is pulled at each site. On alternate weeks, the data loggers are pulled. The data is retrieved from each data logger and each data logger is recalibrated (according to the directions in the YSI Operations Manual) before being returned to the field. Conductivity, pH (2 point calibration), and turbidity (2 point calibration) was calibrated using commercial standards.

5. Site location and character:

Old Woman Creek National Estuarine Research Reserve is located on the southern shore of Lake Erie, slightly east of the city of Huron, Ohio (Latitude 41 22' N; longitude 82 31' W).

The data logger at the State Route 2 (SU) 41 22' 57" N, 82 30' 52" W site is very near the southern boundary of the reserve. The data logger is sited near a concrete piling of the eastbound Ohio State Route 2 bridge. At this site the creek is relatively deep and narrow. Although water direction and flow is influenced at this site by changes in Lake Erie water levels, this site doesn't have direct contact with Lake Erie waters.

The data logger at State Route 6 (WM) 41 22' 56" N, 82 30' 26" W is very close to the mouth of Old Woman Creek. In this portion of the Reserve, the creek is very shallow but extends over a large surface area. This site frequently experiences influx of Lake Erie waters.

6. Data collection periods:

Sampling at WM began on April 1, 1998 at 00:00:00. Sampling for 1998 ceased at WM site on October 31, 1998 at 23:45:00. Sampling at SU began on April 1, 1998 at 00:00:00. Sampling ceased at SU site on October 31, 1998 at 23:45:00.

7. Associated projects: Samples for chemical analysis of the water and phytoplankton analysis are collected at each site every time the data loggers are changed.

II. Physical Structure and Descriptors:

8. Variable sequence, column format, range of measurements, units, Resolution, Accuracy:

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	0-1500 NTU	0.1 NTU*	+/- 5%
of			
Reading or 2 NTU (whichever is greater)*			

* for turbidity values of 0-1000 NTU

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.

9. Coded variable indicator and variable code definitions:

SU- State Route 2 WM-State Route 6

10. Data anomalies (suspect data):

April 1998:

WM: Oxygen data from 04/15/98 (10:45:00) to 04/28/98 (10:15:00) deleted
due to probe failure

SU: Turbidity values over 1500 NTU:

04/16/98

10:15:00

1568

04/16/98

10:30:00

1568

04/16/98

10:45:00

1568

04/17/98

01:45:00

1582

04/17/98

02:00:00

1571

04/17/98

02:15:00

1581

04/17/98

02:30:00

1581

04/17/98

02:45:00

1581

04/17/98

03:00:00

1580

04/17/98

03:15:00

1580

04/17/98

03:30:00

1579

04/17/98
03:45:00
1578

04/17/98
04:00:00
1579

04/17/98
04:15:00
1578

04/17/98
04:30:00
1578

04/17/98
04:45:00
1578

04/17/98
05:00:00
1578

04/17/98
05:15:00
1578

04/17/98
05:30:00
1577

04/17/98
05:45:00
1577

04/17/98
06:00:00
1576

04/17/98
06:15:00
1576

04/17/98
06:30:00
1575

04/17/98
06:45:00
1575

04/17/98

07:00:00
1575

04/17/98
07:15:00
1574

04/17/98
07:30:00
1573

04/17/98
07:45:00
1572

04/17/98
08:00:00
1573

04/17/98
08:15:00
1572

04/17/98
08:30:00
1572

04/17/98
08:45:00
1561

04/17/98
09:00:00
1548

04/17/98
09:15:00
1571

04/17/98
09:30:00
1572

04/17/98
09:45:00
1547

04/17/98
10:00:00
1515

04/17/98
10:15:00
1571

04/17/98
10:30:00
1571

04/17/98
10:45:00
1570

04/17/98
11:00:00
1572

04/17/98
11:15:00
1572

04/17/98
11:30:00
1571

04/17/98
11:45:00
1572

04/17/98
12:00:00
1572

04/17/98
12:15:00
1573

May 1998:

WM: Oxygen data from 05/17/98 (about 12:45:00) through 05/21/98 (about 02:45:00) suspect- probe.

DO data 5/12/98 (10:30:00) through 5/26/98 (10:15:00) deleted due to probe problems.

SU:Oxygen data 5/12/98 (11:30:00) through 5/26/98 (10:45:00) deleted due to probe failure.

Turbidity data 5/26/98 (12:15:00) through 5/31/98 (23:45:00) deleted due to wiper failure

June 1998:

WM: Turbidity values above 1500 NTU:

06/16/98
08:45:00
1579

06/21/98
14:15:00

1583

06/21/98
14:45:00
1575

06/21/98
15:00:00
1589

06/21/98
17:15:00
1568

06/21/98
20:45:00
1528

SU:Turbidity data 06/01/98 (00:00:00) through 06/09/98 (09:45:00) deleted
due to wiper failure.

Turbidity data 06/22/98 (10:15:00) through 06/29/98 (09:45:00) deleted
due to wiper failure.

Turbidity values above 1500 NTU:

06/12/98
11:15:00
1741

06/12/98
11:30:00
1742

06/12/98
11:45:00
1742

06/12/98
12:00:00
1743

06/12/98
12:15:00
1743

06/12/98
12:30:00
1744

06/12/98
12:45:00
1744

06/12/98
13:00:00
1744

06/12/98
13:15:00
1745

06/12/98
13:30:00
1745

06/12/98
13:45:00
1746

06/12/98
14:00:00
1679

06/12/98
14:15:00
1671

06/12/98
14:30:00
1747

06/12/98
14:45:00
1707

06/12/98
15:00:00
1728

06/12/98
15:15:00
1747

06/12/98
15:30:00
1748

06/12/98
15:45:00
1748

06/12/98
16:00:00
1748

06/12/98
16:15:00

1749

06/12/98
16:30:00
1749

06/12/98
16:45:00
1608

06/12/98
17:00:00
1603

06/12/98
18:45:00
1749

06/12/98
19:00:00
1721

06/12/98
19:30:00
1748

06/12/98
19:45:00
1748

06/12/98
20:15:00
1514

06/12/98
20:30:00
1748

06/12/98
21:00:00
1748

06/12/98
21:15:00
1520

06/12/98
21:30:00
1748

06/12/98
21:45:00
1748

06/12/98
22:15:00
1748

06/12/98
22:30:00
1688

06/12/98
23:00:00
1749

06/12/98
23:15:00
1749

06/12/98
23:45:00
1708

06/13/98
00:00:00
1553

06/13/98
00:45:00
1751

06/13/98
01:00:00
1669

06/13/98
01:15:00
1531

06/13/98
01:30:00
1750

06/13/98
02:45:00
1745

06/13/98
03:00:00
1745

06/13/98
03:15:00
1737

06/13/98
03:30:00

1703

06/13/98
03:45:00
1744

06/13/98
04:00:00
1743

06/13/98
04:15:00
1742

06/13/98
04:30:00
1742

06/13/98
04:45:00
1742

06/13/98
05:00:00
1741

06/13/98
05:15:00
1741

06/13/98
05:30:00
1741

06/13/98
05:45:00
1740

06/13/98
06:00:00
1740

06/13/98
06:15:00
1740

06/13/98
06:30:00
1740

06/13/98
06:45:00
1739

06/13/98
07:00:00
1739

06/13/98
07:15:00
1739

06/13/98
07:30:00
1739

06/13/98
07:45:00
1739

06/13/98
08:00:00
1739

06/13/98
08:15:00
1739

06/13/98
08:30:00
1739

06/13/98
08:45:00
1739

06/13/98
09:00:00
1738

06/13/98
09:15:00
1739

06/13/98
09:30:00
1725

06/13/98
09:45:00
1737

06/13/98
10:00:00
1739

06/13/98
10:15:00

1738

06/13/98
10:30:00
1739

06/13/98
10:45:00
1619

06/13/98
11:00:00
1678

06/13/98
11:30:00
1740

July 1998:
WM:
SU:

August 1998:
WM: Oxygen levels at or below 0.0:
08/17/98
10:00:00
00.0

08/17/98
10:15:00
00.0

08/22/98
06:30:00
-00.1

08/22/98
22:30:00
00.0

08/22/98
23:30:00
-00.2

08/23/98
00:15:00
00.0

08/23/98
00:45:00
-00.3

08/23/98

01:00:00
-00.5

08/23/98
01:15:00
-00.6

08/23/98
01:30:00
-00.3

08/23/98
01:45:00
-00.6

08/23/98
02:00:00
-00.4

08/23/98
02:15:00
-00.3

08/23/98
02:30:00
00.0

08/23/98
02:45:00
00.0

08/23/98
03:00:00
-00.4

08/23/98
03:15:00
-00.1

08/23/98
03:30:00
-00.4

08/23/98
03:45:00
-01.0

08/23/98
04:00:00
-00.1

08/23/98
04:15:00
-00.2

08/23/98
04:30:00
-00.2

08/23/98
04:45:00
-00.6

08/23/98
05:00:00
-00.7

08/23/98
05:15:00
-01.1

08/23/98
05:30:00
-00.9

08/23/98
05:45:00
-00.9

08/23/98
06:00:00
-01.1

08/23/98
06:15:00
-02.0

08/23/98
06:30:00
-01.9

08/23/98
06:45:00
-01.8

08/23/98
07:00:00
-01.8

08/23/98
07:15:00
-01.9

08/23/98
07:30:00
-01.7

08/23/98

07:45:00
-01.7

08/23/98
08:00:00
-01.4

08/23/98
08:15:00
-01.5

08/23/98
08:30:00
-01.4

08/23/98
08:45:00
-01.4

08/23/98
09:00:00
-01.5

08/23/98
09:15:00
-01.1

08/23/98
09:30:00
-00.6

08/23/98
09:45:00
-00.8

08/23/98
10:00:00
-00.6

08/24/98
07:00:00
00.0

08/24/98
08:15:00
00.0

SU:

September 1998:

WM:

SU: Turbidity data removed from 09/16/98 (09:45:00) through 09/21/98
(09:15:00)

turbidity wiper failure

October 1998:

WM:

SU:

11. Missing data:

April 1998:

WM: Oxygen data from 04/15/98 (10:45:00) to 04/28/98 (10:15:00) deleted due to probe failure

SU: No data 04/15/98 (11:00:00) servicing data logger

May 1998:

WM: No data from 05/07/98 (02:00:00) through 05/12/98 (10:15:00) sonde power failure.

All parameters 5/12/98 (10:30:00 - 10:45:00) due to change of data logger.

DO data 5/12/98 (10:30:00) through 5/26/98 (10:15:00) deleted due to probe problems.

SU: Oxygen data 5/12/98 (11:30:00) through 5/26/98 (10:45:00) deleted due to probe failure

Turbidity data 5/26/98 (12:15:00) through 5/31/98 (23:45:00) deleted due to wiper failure

June 1998:

WM:

SU: Turbidity data 06/01/98 (00:00:00) through 06/09/98 (09:45:00) deleted

due to wiper failure

Turbidity data 06/22/98 (10:15:00) through 06/29/98 (09:45:00) deleted due to wiper failure

July 1998:

WM:

SU:

August 1998:

WM: No data 08/24/98 (08:45:00-11:45:00) servicing datalogger

SU: No data 08/24/98 (09:15:00-11:45:00) servicing datalogger

September 1998:

WM:

SU: No data 09/08/98 (07:00:00) servicing data logger

Turbidity data removed from 09/16/98 (09:45:00) through 09/21/98 (09:15:00)

turbidity wiper failure

October 1998:

WM: No data 10/05/98 (07:45:00) servicing datalogger

SU: