

Old Woman Creek (OWC) NERR Site Water Quality Metadata
May through October, 1995
Latest Update: August 12, 1998

1. Principal Investigator & contact persons:

Dr. David Klarer, Research Coordinator
Mr. Gene Wright, Manager

Old Woman Creek SNP and NERR
2514 Cleveland Road East
Huron, Ohio 44839
phone: (419) 433-4601

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. CDMO Excel macros were used to format data, to check for outliers and to determine missing dates and times, which were then added to the data file. 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. Klarer is responsible for the deployment of the data loggers and for 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 24 May 1995 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 .18 meters above the bottom, while the YSI at site WM is 0.09 meters above the bottom. Dissolved oxygen, pH, temperature, 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 both sites began on May 24, 1995 at 12:00:00. Sampling for 1995 ceased at WM site on October 20, 1995 at 15:15:00. Sampling for 1995 ceased at SU site on October 12, 1995 at 09:15:00.

7. Associated projects:

There were no research projects directly associated with the two data loggers.

II Physical structure descriptors:

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

Variable Name	Range of Measurements (units)	Resolution	Accuracy
DATE	1-12, 1-31, 00-99 (month,day,year)	1	
month, 1			
day, 1year	NA		
HOUR	0-24, 0-60, 0-60 (hours,minutes,seconds)	1hr, 1	
min, 1			
sec	NA		
WATERTEMP	-5 to 45 (degrees C)		0
.01 0C			
+/-			
0.150C			
SPCOND	0-100 (mS/cm)		
0.01 mS/cm	+/- .5%		
reading +			
0.001mS/cm			
SALINITY	0-70 (parts per thousand-ppt)		0.01
ppt			
+/-1.0% of			
reading or 0.1ppt			
(whichever is greater)			
DO%SAT	0-200 (% saturation)		
0.1%			
@air saturation	+/-2%		
@air sat.			
	200-500(%saturation)		0.1%
@air			
saturation	+/-6%		
@air sat.			
DO (mg/l)	0-20 (mg/l)		
0.01 mg/l	+/-0.2		
mg/l			
	20-50 (mg/l)		
0.01 mg/l	+/-0.6		

mg/l		
DEPTH (shallow)	0-9.1 (meters above data logger)	0.001 m
+/-		
0.018 m		
pH	2 to 14 units	
0.01 units	+/-0.2	
units		

Data columns are separated by tabs

9. Coded variable indicator and variable code definitions:

SU- State Route 2 WM-State Route 6

10. Data anomalies:

May 1995: None

June 1995:

WM: very low oxygen levels from June 15 through June 21 at 07:00:00 (when data logger was changed) may be due to colonization of oxygen probe by periphyton

WM: conductivity and salinity data June 21 from 09:30:00 to 11:00:00 deleted

because of anomalies in data

July 1995:

WM: conductivity and salinity data July 27 from 13:00:00 to 15:15:00 deleted

because of anomalies in data

SU: conductivity and salinity data July 3 at 10:30:00 deleted because of anomalies in data

August 1995:

WM: conductivity and salinity data August 01 from 11:30:00 to 14:15:00 deleted

because of anomalies in data

WM: conductivity and salinity data August 17 from 11:45:00 to August 18 00:15:00

deleted because of anomalies in data

September 1995:None

October 1995:

WM: conductivity and salinity data from October 7 07:45:00 through October 20 at

15:15:00 is suspect because conductivity probe was irregularly out of the water

during this period.

WM: Depth data at following times deleted because depth probe was out of water:

6 October 07:00:00 to 10:00:00
6 October 17:45:00 to 7 October 18:45:00
7 October 19:45:00 to 8 October 01:00:00
10 October 07:15:00 to 07:30:00
13 October 05:30:00 to 08:15:00
13 October 10:00:00
13 October 18:15:00 to 16 October 07:15:00
16 October 09:15:00
16 October 13:00:00 to 13:15:00
16 October 14:30:00
17 October 19:15:00 to 18 October 08:45:00
18 October 12:30:00 to 12:45:00
18 October 14:00:00
19 October 14:15:00
19 October 21:45:00 to 20 October 15:15:00

11. Missing data:

May 1995:

WM: began collecting data on 24 May 1995 at 12:00:00

SU: began collecting data on 24 May 1995 at 12:00:00

June 1995:

WM: 7 June 09:45:00 to 12:45:00 pulled datalogger to clean and recalibrate

WM: 21 June 07:15:00 to 09:15:00 pulled datalogger to clean and recalibrate

WM: conductivity and salinity data June 21 from 09:30:00 to 11:00:00 deleted because of

anomalies in data

SU: 8 June 09:00:00 to 11:45:00 pulled datalogger to clean and recalibrate

SU: 20 June 08:30:00 to 09:45:00 pulled datalogger to clean and recalibrate

July 1995:

WM: 4 July 07:45:00 to 09:15:00 pulled datalogger to clean and recalibrate

WM: 27 July 08:15:00 to 12:45:00 pulled datalogger to clean and recalibrate

WM: conductivity and salinity data July 27 from 13:00:00 to 15:15:00 deleted because of

anomalies in data

SU: 3 July 08:45:00 to 10:15:00 pulled datalogger to clean and recalibrate

SU: conductivity and salinity data July 3 at 10:30:00 deleted because of anomalies in data

SU: 26 July 09:15:00 to 11:15:00 pulled datalogger to clean and recalibrate

SU: 31 July 08:00:00 to 11:30:00 pulled datalogger to clean and
recalibrate
August 1995:
WM:1 August 07:45:00 to 11:15:00 pulled datalogger to clean and
recalibrate
WM: conductivity and salinity data August 01 from 11:30:00 to 14:15:00
deleted
because
 of anomalies in data
WM: 17 August 08:15:00 to 11:30:00 pulled datalogger to clean and
recalibrate
WM: conductivity and salinity data August 17 from 11:45:00 to August 18
00:15:00

 deleted because of anomalies in data
WM: 28 August 08:15:00 to 10:45:00 pulled datalogger to clean and
recalibrate
SU: 16 August 08:45:00 to 10:15:00 pulled datalogger to clean and
recalibrate
SU: 29 August 08:30:00 to 09:45:00 pulled datalogger to clean and
recalibrate
September 1995:
WM: 13 September 08:30:00 to 10:15:00 pulled datalogger to clean and
recalibrate
WM: 25 September 09:00:00 to 10:45:00 pulled datalogger to clean and
recalibrate
SU:12 September 08:45:00 to 10:30:00 pulled datalogger to clean and
recalibrate
SU:26 September 08:30:00 to 09:45:00 pulled datalogger to clean and
recalibrate
October 1995:
WM: Depth data at following times deleted because depth probe was out of
water:
 6October 07:00:00 to 10:00:00
 6October 17:45:00 to 7 October 18:45:00
 7October 19:45:00 to 8 October 01:00:00
WM: 9 October 09:30:00 to 11:45:00 pulled datalogger to clean and
recalibrate
WM: Depth data at following times deleted because depth probe was out of
water:
 10 October 07:15:00 to 07:30:00
 13 October 05:30:00 to 08:15:00
 13 October 10:00:00
 13 October 18:15:00 to 16 October 07:15:00
 16 October 09:15:00
 16 October 13:00:00 to 13:15:00
 16 October 14:30:00
 17 October 19:15:00 to 18 October 08:45:00
 18 October 12:30:00 to 12:45:00
 18 October 14:00:00
 19 October 14:15:00
 19 October 21:45:00 to 20 October 15:15:00
WM: Pulled datalogger on 20 October at 15:30:00 to end 1995 data
collection

SU: Pulled datalogger 12 October at 09:30:00 to end 1995 data collection
November 1995:
WM: no data collected
SU: no data collected
December 1995:
WM: no data collected
SU: no data collected