

Tijuana River Estuary (TJR) NERR Water Quality Metadata
January - December 2000
Last Revised July 1, 2021

I. Data Set and Research Descriptors

1. Principal Investigators and contact persons

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2. Entry Verification:

The data are uploaded directly from the YSI model 6000upg dataloggers to the YSI PC6000 software into a file appended with the suffix ".dat". The data are also downloaded directly from the datalogger into a spreadsheet importable file appended with the suffix ".csv". The data are then reviewed for major problems (i.e. logger out of water, probe malfunction, battery failure, etc.) using the YSI PC6000 plotting software.

The resulting plot is printed out and saved in a folder named "datalogger deployment log". The .csv file is imported into Excel 5.0 for Macintosh, where it is edited and formatted.

The tails of each sampling period are deleted and any suspect data are identified with the aid of Excel CDMO 5.0 macros. Suspect data are evaluated and dealt with according to CDMO Operations Manual (ver.3.0) guidelines. The parameter columns are checked for proper order and formatted to the correct decimal places using the "column reformat" macro supplied by the CDMO. Missing data fields are inserted into the Excel spreadsheet and are denoted by periods (.). Reasons for any missing or anomalous data are entered directly into the data file and the edited file

is saved as a two-week excel file. When an entire month of two-week edited

data files have been collected, the files are edited and combined into a one

month excel file. Dates and times when data were not collected are entered directly into the excel file, along with a reason for the missing data (from the deployment log). All editing and missing data documentation

are also recorded in an excel file named "missing data log". The information in the "missing data log" is transferred to the metadata form.

The edited and raw files are archived on a Sun Sparc 20 workstation and backed up to tape weekly. Data and metadata files are uploaded via ftp to the CDMO. The person responsible for the data management is Michelle Cordrey.

3. Research Objectives:

The Tijuana Estuarine Research Reserve is impacted heavily by both periodic raw sewage outflows and urban development. Only about a quarter of the reserve's 2,531 acres are tidally influenced, with few channels deep enough for datalogger deployment. Two stations were originally set up: a treatment station was set up close to the mouth on the Southern end of the Oneonta Slough, while a control station was set up on the northern end of Oneonta Slough. The treatment station location was chosen because it would be the site most affected by sewage outflow. Deployment at the treatment station, however, was continually halted by both shifting sediment and massive wracks of kelp (*Macrocystis pyrifera*), which would often bury the deployment set-up on incoming tides. After a number of different deployment equipment designs were implemented, with no success, logging at this site was terminated.

We currently have three dataloggers installed at the reserve. The original control station in the northern end of Oneonta Slough is still in place. A second datalogger is installed at the Tidal Linkage site, a channel in the northeast section of the estuary that was dredged in 1997 to increase tidal flushing. A third datalogger station is located at the inlet to the Model Marsh, a recently-constructed 20-acre restoration site in the southern arm of the estuary. The Tidal Linkage was opened to tidal flushing in the spring of 1997, whereas the Model Marsh was opened in February 2000. Installation of dataloggers at these two restoration sites will allow us to make comparisons between constructed and natural site hydrology over time.

4. Research Methods (Dataloggers)

A 4 inch diameter PVC pipe was strapped to a 6 ft length of steel fencing post and driven into the sediment until refusal prior to datalogger deployment in the center of the channel. The bottom of the pipe is raised

one foot off of the channel bottom and is capped. Multiple 1.5" holes have been drilled in the bottom cap and sides to permit unrestricted flow to the sensors. The datalogger units are then placed into and rest on the bottom of the tubes during deployment. The sampling period is two weeks, with measurements taken every 30 minutes. Measurements for specific conductivity, salinity, dissolved oxygen (percent saturation), dissolved oxygen (mg/l), temperature, turbidity and water level are recorded. At the end of each two week period, the YSI data logger unit is replaced by another YSI datalogger unit and brought back to the laboratory for downloading, cleaning and recalibration. These procedures are carried out according to the methods described in the YSI Operations Manual (see sections 3 and 7). Calibration standards for specific conductivity, pH and turbidity are purchased pre-made from VWR scientific. The QA/QC procedures for the collected data are followed as given in the CDMO Operations Manual version 3.0.

In May 1997 sampling at the Tidal Linkage station began. All deployment, calibration and QA/QC procedures were followed exactly as they are at the Oneonta Slough station.

Additionally, starting on May 23, 1997 plastic mesh sleeves were placed on sondes at both stations to inhibit crabs from interfering with the sensors.

On October 25, 2000 logging began at the Model Marsh station.

5. Site location and character

General site Characteristics (TJR)

- a) Tidal exchange (extremes): approx. -2 +7 MLLW,
- b) Salinity: 4 ppt (extreme rain events) to 38 ppt
- d) Latitude and longitude: 32 deg. 34 min. N, 117 deg. 07 min. W
- c) Potential impacts: storm drain runoff from military airfield and adjacent residential areas, occasional sewage spills (10-15 MGD) into the Tijuana River from Mexico. The area surrounding the estuary is heavily developed by residential housing as is the watershed which drains into the estuary. Approximately 2/3 of the watershed is in Mexico. A military helicopter-training base borders the Northeastern section of the reserve. Vegetation in the area is dominated by common pickleweed (*Spartina virginica*) and Pacific cordgrass (*Spartina foliosa*).

Specific Site characteristics: Oneonta Slough (OS)

- a) Orientation of site: The Datalogger station is located on the upper portion

of Oneonta Slough. The channel runs north to south and is located on the northwestern edge of the reserve. Latitude is 32(34' 04.8" N, longitude is 117(07' 52.3" W.

b) The elevation of the channel bottom directly below the datalogger is approx. -0.55m NGVD.

c) Channel width is approx. 20 meters. Datalogger site is located 1km from mouth

d) Bottom type: sand and sediment

e) Area adjacent to west side of channel is developed. There is a 50-meter

buffer of natural vegetation between development and the channel. Area adjacent

to east side of channel is relatively natural.

f) Direct impacts are estimated to be runoff from streets into channel during rain events.

Specific Site Characteristics: The Tidal Linkage (TL)

a) Orientation of site: Datalogger station is located in the middle of the

constructed channel known as the Tidal Linkage. The channel runs northwest to

Southwest and is located adjacent to the visitor's center in the northeastern

section of the reserve. Latitude is 32 deg 34 min 24.9 sec N, longitude is 117

deg 07 min 32.2 sec N. In November of 1999 the datalogger site was moved approximately 180 meters northwest to a deeper section of the same channel. The

latitude of the new site is 32(34' 27.9" N, the longitude is 117(07' 37.8" W.

b) The elevation of the channel bottom at the site prior to November 1999 is approximately -0.9m NGVD.

c) Channel width: Approximately 5 meters at both the old and new sites

d) Bottom type: mostly mud at both old and new sites.

Specific Site Characteristics: Model Marsh (MM)

a) Orientation of site: The datalogger station is located in the middle of a

natural channel, which runs north to south. The channel is approximately 20

meters north of a newly constructed 20-acre mudflat restoration area in the

southern section of the reserve. The latitude of the site is 32(32' 52.05" N,

the longitude is 117(07' 22.9" W.

b) The elevation of the channel bottom -.186m NGVD.

c) Channel width: 5 meters

d) Bottom type: Mostly mud with some sand

6. Data Collection periods:

Unless otherwise noted, YSI model 6000upg dataloggers were used to collect data.

Oneonta Slough

Began		Ended	
12/21/99	16:00:00	01/06/00	15:30:00
01/07/00	15:30:00	01/16/00	20:30:00
01/25/00	17:00:00	02/08/00	14:30:00
02/10/00	17:00:00	02/29/00	13:00:00
03/01/00	16:00:00	03/16/00	14:00:00
03/17/00	15:30:00	04/04/00	13:30:00
04/06/00	15:30:00	04/26/00	12:30:00
04/27/00	15:30:00	05/09/00	11:00:00
05/10/00	14:00:00	05/30/00	12:00:00
06/02/00	15:00:00	06/15/00	13:30:00
06/21/00	11:30:00	07/11/00	15:00:00
07/14/00	14:30:00	08/03/00	09:00:00
08/08/00	12:00:00	09/07/00	12:00:00
11/13/00	15:00:00	11/28/00	15:00:00
model YSI 6600 used			
11/28/00	15:00:00	12/13/00	15:30:00
12/19/00	14:30:00	01/15/01	08:30:00
model YSI 6600 used			

Tidal Linkage

Began		Ended	
12/03/1999	16:30:00	01/02/2000	16:30:00
01/07/2000	15:30:00	01/24/2000	16:30:00
04/27/2000	15:30:00	05/10/2000	14:00:00
05/12/2000	13:30:00	05/30/2000	12:00:00
06/02/2000	15:00:00	06/15/2000	14:00:00
06/21/2000	12:00:00	07/11/2000	14:30:00

Logging at TL station discontinued for rest of 2000 on 7/11/2000

Model Marsh

Began		Ended	
10/25/2000	17:00:00	11/07/2000	16:00:00
12/01/2000	16:00:00	12/13/2000	14:30:00
12/19/2000	13:30:00	01/15/2001	09:30:00

7. Associated researchers and projects

Sharook Madon (PERL) is using temperature data from the dataloggers in a model to evaluate the value of marsh surface access in killi fish growth. Greg Williams and Janelle West (PERL) are looking at shifts in fish and invertebrate assemblages associated with the 1997 - 1998 El Nino event.

The

Tidal Linkage channel is the ongoing site of research being conducted by PERL,

which focuses on methods for increasing the success of saltmarsh re-vegetation

projects.

II. Physical Structure Descriptors

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

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.

9. Coded variable indicator and variable code definitions

Site definitions: OS = Oneonta Slough TL = Tidal Linkage MM = Model Marsh

10. Data anomalies (suspect data):

January 2000

OS

01/01/2000(00:00)-01/06(15:30), depth - converted from feet to meters

01/01/2000(00:00)-01/06(15:30), specific conductivity and salinity -

Average values anomalously low. Calibration error suspected. Data were

Removed.

01/01/2000(00:00)-01/06(15:30), pH - values anomalously low. Probe failure

suspected. Data were removed.

01/07/2000(15:30)-01/05(14:24), pH - values anomalously low. Probe failure

suspected. Data were removed.

Negative Turbidity Values:

Date	Time	Turb
01/01/00	06:30:00	-0001
01/03/00	15:00:00	-0001
01/03/00	16:30:00	-0001
01/03/00	21:30:00	-0001
01/04/00	08:00:00	-0001
01/04/00	21:30:00	-0001
01/05/00	06:00:00	-0001
01/05/00	17:00:00	-0001

TL

01/07/2000(15:30)-01/24(16:30), pH missing - no probe installed.

01/13/2000(18:30)-01/14(00:00), all parameters missing - some sensors out of water. Data were removed.

01/14/2000(20:30)-01/15(00:30), all parameters missing - some sensors out of water. Data were removed.

01/15/2000(22:00)-01/16(01:00), all parameters missing - some sensors were

out of water. Data were removed.

01/16/2000(23:00)-01/17(01:30), all parameters missing - some sensors were

out of water. Data were removed.

The following turbidity spikes were recorded. Data were not removed:

Date	Time	Turb
01/11/2000	20:00:00	0133
01/24/2000	16:30:00	0101

The following small negative depth values were recorded. Data were not removed:

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

01/14/2000	17:30:00	-	20:00:00
01/15/2000	01:00:00		
01/15/2000	09:30:00	-	16:00:00
01/15/2000	19:00:00	-	21:30:00
01/16/2000	01:30:00		
01/16/2000	12:30:00	-	17:30:00
01/16/2000	21:00:00	-	22:30:00
01/17/2000	02:00:00		
01/17/2000	12:30:00	-	18:00:00
01/17/2000	23:00:00	-	23:30:00
01/18/2000	00:00:00	-	02:30:00
01/18/2000	14:30:00	-	18:30:00
01/19/2000	00:00:00	-	03:30:00
01/19/2000	15:30:00	-	19:00:00
01/20/2000	01:00:00	-	04:00:00
01/20/2000	16:30:00	-	20:00:00
01/21/2000	01:30:00	-	05:00:00
01/21/2000	17:00:00	-	20:30:00
01/22/2000	02:00:00	-	06:00:00
01/22/2000	17:00:00	-	21:00:00
01/23/2000	03:00:00	-	07:00:00
01/23/2000	17:00:00	-	22:00:00
01/24/2000	04:00:00	-	08:00:00
01/24/2000	16:00:00		

February 2000

OS

Negative turbidity data due to calibration errors, data were retained:

02/11/2000	01:30:00	-0001
02/12/2000	02:00:00	-0001
02/12/2000	02:30:00	-0002
02/12/2000	03:00:00	-0002
02/12/2000	03:30:00	-0001
02/12/2000	04:00:00	-0001
02/13/2000	03:30:00	-0001
02/13/2000	04:00:00	-0001
02/13/2000	05:00:00	-0001
02/13/2000	23:00:00	-0001
02/13/2000	23:30:00	-0001
02/14/2000	04:00:00	-0001
02/14/2000	04:30:00	-0002
02/14/2000	05:00:00	-0001
02/15/2000	00:00:00	-0001
02/15/2000	01:00:00	-0001
02/15/2000	05:30:00	-0001
02/15/2000	06:00:00	-0001
02/15/2000	06:30:00	-0002
02/15/2000	07:00:00	-0002
02/15/2000	07:30:00	-0001
02/15/2000	13:00:00	-0001
02/15/2000	13:30:00	-0001
02/16/2000	02:30:00	-0001
02/17/2000	16:30:00	-0001

02/17/2000	17:00:00	-0002
02/17/2000	17:30:00	-0001
02/17/2000	20:30:00	-0001
02/17/2000	21:00:00	-0001
02/17/2000	21:30:00	-0001
02/17/2000	22:00:00	-0001
02/17/2000	23:30:00	-0001
02/18/2000	00:00:00	-0001
02/18/2000	01:30:00	-0001
02/18/2000	02:30:00	-0001
02/18/2000	03:00:00	-0001
02/18/2000	03:30:00	-0001
02/18/2000	04:00:00	-0001
02/18/2000	04:30:00	-0001
02/18/2000	17:00:00	-0001
02/18/2000	18:30:00	-0001
02/18/2000	22:00:00	-0001
02/19/2000	19:00:00	-0001
02/19/2000	21:30:00	-0001
02/19/2000	22:00:00	-0001
02/19/2000	22:30:00	-0001

02/01/2000(00:00)-02/08(14:30), pH - values anomalously low. Probe failure suspected. Data were removed.
 02/01/2000(00:00)-02/08(14:30), turbidity missing - Minimum values were too low (many < -5). Calibration error suspected. Data were removed

TL
 No data collected during this month.

March 2000
 OS
 03/24/2000(16:00)-03/31(23:30), turbidity missing - wiper parked on optics.
 Data were removed.
 Turbidity outliers (>1000) most likely caused by rain event. Data were retained.
 03/05/2000 21:30 - 22:30
 03/06/2000 07:00 - 08:00

TL
 No data collected during this month.

April 2000
 OS
 04/17/2000(09:00)-04/26(12:30), DO% and DOmg - slope fell during deployment.
 Data were removed.

The following turbidity spikes were recorded:

Date	Time	Turb
04/18/00	08:30:00	0386

Negative Turbidity Values

Date	Time	Turb
04/27/2000	19:00:00	-0001
04/28/2000	05:00:00	-0001
04/28/2000	17:30:00	-0001
04/28/2000	18:00:00	-0001
04/28/2000	18:30:00	-0001
04/28/2000	19:00:00	-0001
04/28/2000	19:30:00	-0001
04/28/2000	20:00:00	-0001
04/29/2000	06:00:00	-0001
04/29/2000	06:30:00	-0001
04/29/2000	07:00:00	-0001
04/29/2000	13:30:00	-0001
04/29/2000	19:00:00	-0001
04/29/2000	19:30:00	-0001
04/30/2000	06:00:00	-0001
04/30/2000	06:30:00	-0001
04/30/2000	07:00:00	-0001

TL

Date	Time	Turb
04/27/2000	19:00:00	0250
04/28/2000	17:30:00	0231
04/29/2000	16:30:00	0267
04/30/2000	13:00:00	0462
04/30/2000	13:30:00	0152

May 2000

OS

The following negative turbidity values were recorded. Data were not removed:

Date	Time	Turb
05/01/2000	06:30:00	-0001
05/01/2000	07:30:00	-0001
05/01/2000	08:00:00	-0001
05/02/2000	08:00:00	-0001
05/02/2000	08:30:00	-0001
05/03/2000	09:00:00	-0001
05/03/2000	09:30:00	-0001
05/04/2000	09:30:00	-0001
05/14/2000	07:30:00	-0001
05/15/2000	08:00:00	-0001
05/15/2000	08:30:00	-0001
05/15/2000	11:00:00	-0001
05/15/2000	11:30:00	-0001

TL

The following turbidity spikes were recorded. Data were not removed:

Date	Time	Turb
------	------	------

05/01/2000	21:00:00	0146
05/03/2000	21:30:00	0102
05/05/2000	00:00:00	0402
05/06/2000	16:30:00	0137
05/07/2000	16:00:00	0143
05/07/2000	17:00:00	0301
05/08/2000	15:00:00	0406
05/08/2000	16:00:00	0379
05/09/2000	13:00:00	0338
05/13/2000	10:00:00	0129
05/13/2000	16:30:00	0318
05/14/2000	17:00:00	0314

June 2000

OS

No data anomalies.

TL

The following turbidity spikes were recorded. Data were not removed:

Date	Time	Turb
06/03/2000	14:30:00	0433
06/03/2000	16:30:00	0425
06/03/2000	18:30:00	0476
06/04/2000	12:00:00	0457
06/04/2000	13:30:00	0444
06/04/2000	14:00:00	0227
06/04/2000	14:30:00	0227
06/04/2000	16:00:00	0161
06/04/2000	19:30:00	0225
06/05/2000	12:00:00	0341
06/05/2000	14:00:00	0436
06/05/2000	17:00:00	0228
06/05/2000	18:00:00	0366
06/05/2000	18:30:00	0122
06/05/2000	20:30:00	0321
06/06/2000	15:30:00	0437
06/06/2000	16:00:00	0228
06/06/2000	17:00:00	0447
06/06/2000	17:30:00	0341
06/06/2000	18:00:00	0228
06/06/2000	19:00:00	0305
06/06/2000	19:30:00	0226
06/06/2000	20:00:00	0296
06/06/2000	21:00:00	0412
06/06/2000	22:30:00	0372
06/07/2000	13:30:00	0228
06/07/2000	18:30:00	0229
06/08/2000	14:30:00	0187
06/08/2000	15:00:00	0229
06/08/2000	20:30:00	0131
06/09/2000	16:30:00	0228
06/10/2000	15:00:00	0229
06/10/2000	15:30:00	0385
06/10/2000	16:00:00	0231

06/10/2000	18:30:00	0394
06/11/2000	00:30:00	0129
06/11/2000	03:30:00	0196
06/11/2000	08:30:00	0139
06/11/2000	16:00:00	0452
06/11/2000	16:30:00	0149
06/11/2000	21:30:00	0184
06/12/2000	01:30:00	0151
06/12/2000	02:30:00	0101
06/12/2000	18:00:00	0199
06/12/2000	18:30:00	0225
06/13/2000	16:30:00	0393
06/13/2000	17:00:00	0493
06/13/2000	17:30:00	0226
06/14/2000	17:30:00	0109

July 2000

OS

07/01/2000(00:00)-07/11(15:00), Turbidity - minimum values abnormally high

throughout deployment. Data were removed

07/07/2000(22:30)-07/11(15:00), DO% and DO mg - removed at end of deployment

The following slightly negative turbidity values were recorded. Data were not removed:

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

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

07/28/2000 06:00:00 - 13:00:00
07/28/2000 14:00:00
07/29/2000 02:00:00
07/29/2000 07:00:00 - 14:30:00
07/29/2000 21:00:00
07/30/2000 02:00:00 - 03:30:00
07/30/2000 07:00:00 - 07:30:00
07/30/2000 09:00:00 - 15:30:00
07/30/2000 17:30:00
07/30/2000 21:30:00
07/31/2000 03:00:00 - 03:30:00
07/31/2000 04:30:00
07/31/2000 09:00:00
07/31/2000 10:00:00 - 12:30:00
07/31/2000 13:30:00
07/31/2000 15:30:00
07/31/2000 23:00:00

TL

The following Turbidity spikes were recorded. Data were not removed:

Date	Time	Turb
07/09/2000	14:30:00	0228

August 2000

OS

Negative turbidity values. Data were not deleted:

Date	Time	Turb
08/01/2000	04:00:00	-0001
08/01/2000	04:30:00	-0001
08/01/2000	05:00:00	-0001
08/01/2000	11:00:00	-0001
08/01/2000	11:30:00	-0001
08/01/2000	12:00:00	-0001
08/01/2000	12:30:00	-0002
08/01/2000	14:30:00	-0001
08/01/2000	15:30:00	-0001
08/01/2000	16:00:00	-0001
08/01/2000	19:30:00	-0001
08/01/2000	23:30:00	-0001
08/02/2000	03:30:00	-0001
08/02/2000	11:00:00	-0001
08/02/2000	11:30:00	-0001
08/02/2000	12:00:00	-0001
08/02/2000	12:30:00	-0001
08/02/2000	13:00:00	-0001
08/02/2000	13:30:00	-0001
08/02/2000	14:00:00	-0001
08/03/2000	00:00:00	-0001

September 2000

OS

October 2000

OS

No data collected for entire month.

MM

November 2000

OS

11/13/2000(15:00)-11/28(14:30), Depth - converted from feet to meters

The following Turbidity spikes were recorded. Data were not removed:

Date	Time	Turb
11/16/2000	23:00:00	0177
11/19/2000	15:30:00	0116
11/19/2000	16:00:00	0116

MM

December 2000

OS

12/19/2000(14:30)-12/31(23:30), depth - converted from feet to meters

MM

No data anomalies

11. Missing Data:

January 2000

OS

01/01/2000(00:00)-01/06(15:30), specific conductivity and salinity - Average values anomalously low. Calibration error suspected. Data were removed

01/01/2000(00:00)-01/06(15:30), pH - values anomalously low. Probe failure

suspected. Data were removed

01/07/2000(15:30)-01/16(20:30), pH - values anomalously low. Probe failure

suspected. Data were removed

01/06/2000(16:00)-01/07(15:00), all parameters missing - maintenance and calibration

01/16/2000(21:00)-01/25(16:30), all parameters missing - maintenance and calibration

01/25/2000(17:00)-01/31(23:30), pH and turbidity missing - no probes installed.

TL

01/01/2000(00:00)-01/02(16:30), pH - no probe installed

01/02/2000(17:00)-01/07(15:00), all parameters missing - maintenance and calibration

01/07/2000(15:30)-01/24(16:30), pH - no probe installed

01/13/2000(18:30)-01/14(00:00), all parameters missing - some sensors out of

water. Data were removed

01/14/2000(20:30)-01/15(00:30), all parameters missing - some sensors out of water. Data were removed
01/15/2000(22:00)-01/16(01:00), all parameters missing - some sensors were out of water. Data were removed
01/16/2000(23:00)-01/17(01:30), all parameters missing - some sensors were out of water. Data were removed
01/24/2000(17:00)-01/31(23:30), all parameters missing - no logger deployed.

February 2000

OS

02/01/2000(00:00)-02/08(14:30), pH - values anomalously low. Probe failure suspected. Data were removed.
02/01/2000(00:00)-02/08(14:30), Turbidity - Minimum values were too low (many < -5). Calibration error suspected. Data were removed.
02/08/2000(15:00)-02/10(16:30), all parameters missing - maintenance and calibration
02/10/2000(17:00)-02/29(13:00), pH - no probe installed
02/29/2000(02:00)-02/29(13:00), DO% and DO mg missing
02/29/2000(13:30)-02/29(23:30), all parameters missing - maintenance and calibration

TL

02/01/2000(00:00)-02/29(23:30), all parameters missing - no logger deployed due to sedimentation problems with site.

March 2000

OS

03/01/2000(00:00)-03/01(15:30), all parameters missing - maintenance and calibration
03/01/2000(16:00)-03/16(14:00), pH - no probe installed
03/16/2000(14:30)-03/17(15:00), all parameters missing - maintenance and calibration
03/24//2000(16:00)-03/31(23:30), Turbidity - wiper parked on optics. Data were removed

TL

03/01/2000(00:00)-03/31(23:30), all parameters missing - no logger deployed due to sedimentation problems with site.

April 2000

OS

04/04/2000(14:00)-04/06(15:00), all parameters missing - maintenance and calibration.
04/17/2000(09:00)-04/26(12:30), DO% and DO mg - slope fell during deployment. Data were removed.

04/26/2000(13:00)-04/27(15:00), all parameters missing - maintenance and calibration.

TL

04/01/2000 (00:00) - 04/27 (15:00), all parameters missing - no logger deployed
due to sedimentation problems with site.

May 2000

OS

05/09/2000(11:30)-05/10(13:30), all parameters missing - maintenance and calibration.

05/30/2000(12:30)-05/31(23:30), all parameters missing - maintenance and calibration.

TL

05/10/2000 (14:30) - 05/12 (13:00), all parameters missing - no logger deployed
due to sedimentation problems with site.

05/30/2000 (12:30) - 05/31 (23:30), all parameters missing - no logger deployed
due to sedimentation problems with site.

June 2000

OS

06/01/2000(00:00)-06/02(15:00), all parameters missing - maintenance and calibration

06/15/2000(14:00)-06/21(11:30), all parameters missing - maintenance and calibration

TL

06/01/2000 (00:00) - 06/02 (14:30), all parameters missing - no logger deployed
due to sedimentation problems with site.

06/15/2000 (14:30) - 06/21 (11:30), all parameters missing - no logger deployed
due to sedimentation problems with site.

July 2000

OS

07/01/2000(00:00)-07/11(15:00), turbidity - minimum values abnormally high

throughout deployment. Data were removed

07/07/2000(22:30)-07/11(15:00), DO% and DO mg - removed at end of deployment.

07/11/2000(15:30)-07/14(14:00), all parameters missing - maintenance and calibration

TL

07/11/2000 (15:00) - 07/31 (23:30), all parameters missing - no logger deployed

due to sedimentation problems with site. Site was discontinued for remainder of

the year while reserve staff tries to re-site it somewhere else.

August 2000

OS

08/03/2000(09:30)-08/08(11:30), all parameters missing - maintenance and calibration

08/08/2000(12:00)-08/31(23:30), turbidity data deleted - wiper parked on optics

September 2000

OS

09/01/2000(00:00)-09/07(12:00), turbidity - wiper parked on optics. Data were removed.

09/07/2000(12:30)-09/30(23:30), all parameters missing - New deployment holder is installed. No data collected.

October 2000

OS

10/01/2000(00:00)-10/16(18:00), all parameters missing - New deployment holder being installed. No data collected

10/16/2000(18:30)-10/30(16:00), all parameters missing. YSI 6600 used. Water leakage into internal bulkhead. No data was recovered.

MM

Logging at MM station began 10/25/2000 (17:00).

10/25/2000 (17:00)-10/31(23:30), turbidity missing - no probe installed.

November 2000

OS

11/01/2000 (00:00)-11/13(14:30), all parameters missing - No logger deployed

11/13/2000 (15:00)-11/28(14:30), specific conductivity and salinity - average values were abnormally low. Calibration error suspected. Data were removed.

11/28/2000 (15:00), all parameters missing - maintenance and calibration

11/28/2000 (15:30)-11/30(23:30), turbidity - No probe installed.

MM

11/01/2000 (00:00)-11/07(16:00), turbidity missing - no probe installed.

11/07/2000 (16:30)-11/30(23:30), all parameters missing - no logger deployed.

December 2000

OS

12/01/2000(00:00)-12/13(15:30), turbidity - no probe installed.

12/13/2000(16:00)-12/19(14:00), all parameters missing - maintenance and calibration

12/19/2000(14:30)-12/31(23:30), turbidity - no probe installed

MM

12/01/2000(00:00)-12/01(15:30), all parameters missing - no logger deployed.

12/01(16:00)-12/13(14:30), turbidity - no probe installed
12/13(15:00)-12/19(13:00), all parameters missing - maintenance and calibration
12/19(13:30)-12/31(23:30), turbidity - no probe installed.

12. Other Remarks/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.

Channel depth is very shallow at the Tidal Linkage site, so any minor freshwater inputs will result in large variation of salinity, even if depth does not reflect any significant rainfall. Events such as these are noted in metadata. Tidal Linkage also has severe sedimentation problems preventing in the datasonde from being deployed. This occurred throughout the year and was discontinued from August through the rest of the year.

TJRTLWQ:

01/07/2000(15:30)-01/24(16:30), salinity low due to small rain event; data were retained.

TJROSWQ

02/12/2000(06:30)-02/16(06:00), salinity readings were abnormally low. Likely caused by storm event. Data were not removed

02/20/2000(14:30)-02/29(13:00), turbidity readings were abnormally high. Likely caused by storm event. Data were not removed

02/20/2000(14:30)-02/29(13:00), specific conductivity and salinity -

readings abnormally low due to storm event.

02/01/2000(02:00)-02/29(13:00), depth - abnormally high minimum depth values. Most likely caused by sedimentation at mouth of estuary. Data were not removed

Drop in salinity due to rain event. Data were retained.
03/05/2000 (18:30) - 03/15 (02:00)

04/13/2000(00:30)-04/26(12:30), turbidity - average minimum values are anomalously high. Likely caused by rain event. Data were not removed.

Drop in salinity due to rain event. Data were retained.
04/18/2000 (01:00) - 04/19 (19:00)

09/03/2000(16:00)-09/06(15:30), DO% and DOMg variation low - corresponds to changes in tidal cycle. Data were not removed

TJRMMWQ
10/29/2000 (23:30) - 10/31 (23:30); drop in salinity due to rain event. Data were retained.

11/01/2000 (00:00) - 11/4 (20:30); drop in salinity due to rain event. Data were retained.