

Hypoxia-Water Column Monitoring Update



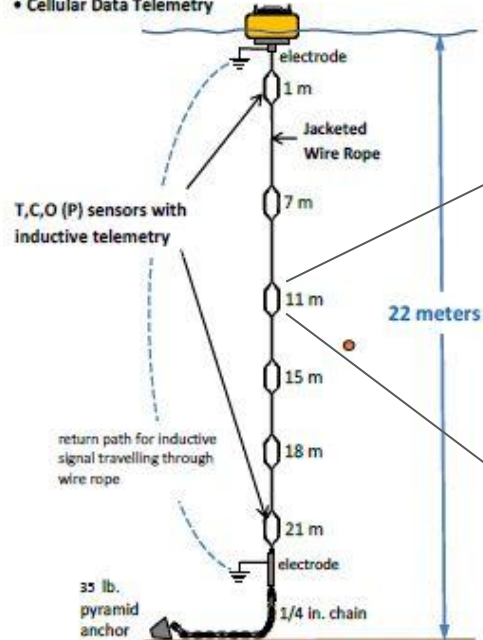
Presented to the CBP Hypoxia Collaborative

10/16/2024

Water Column Monitoring System

Soundline Ultibuoy with:

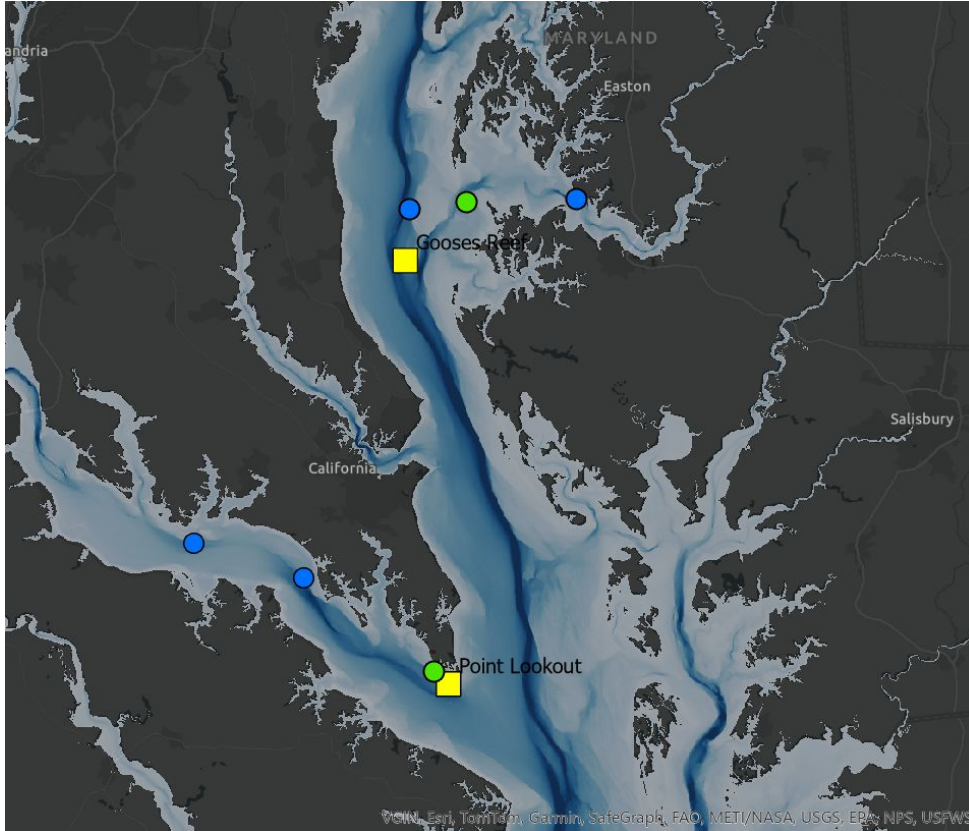
- Inductive Underwater Telemetry
- GPS
- Cellular Data Telemetry



System Components

- Buoy with Controller
 - Solar panels
 - Cellular Modem
 - GPS
- Inductive wire & ground tackle
 - Sensor flexibility
- CTP-DO Sensors
 - Low power solution
 - ~3m vertical resolution

2024 Stations



System Locations

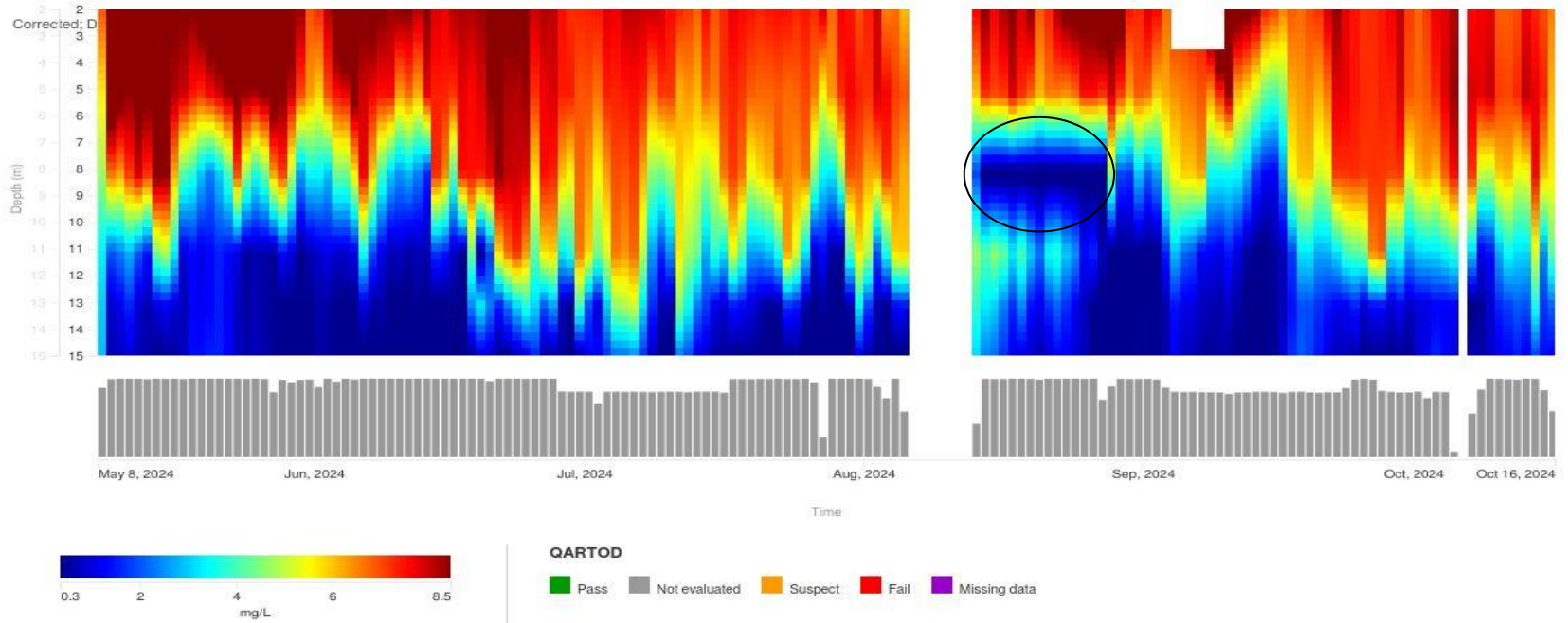
- Choptank
 - 3 distinct segments
 - 3-6 sensors per station
 - 2nd year at Lower Choptank (green dot)
- Potomac
 - 1 segment
 - 4-5 sensors per station
 - 2nd year at Lower Potomac (green dot)
 - Herring Creek (middle station) is down as of last Friday
- CBIBS (yellow)

Sharps Island Station- 2024

NOAA Chesapeake Bay Interpretive Buoy System

Sharps Island

Oxygen: Dissolved Oxygen Concentration

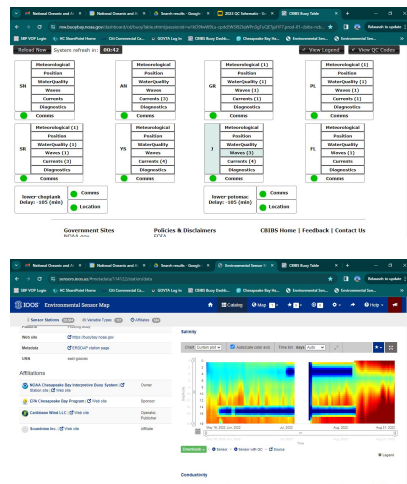


2024-2025 Fall/Winter Plan

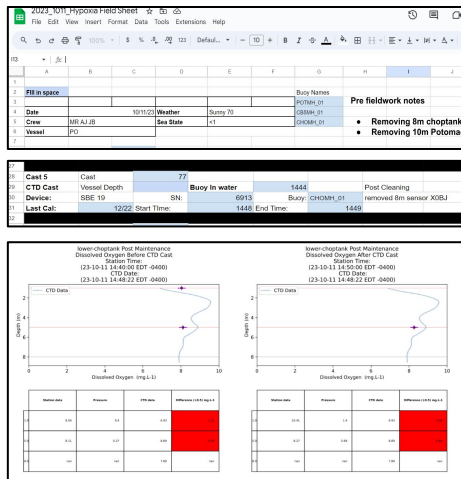


- Removing Potomac buoys in mid-November (post hypoxic conditions)
- Removing 2 of the Choptank buoys in mid-November; keep one in
- Evaluating the actual sensor requirements for a 6 station-26 sensor configuration (by December)
- Create the 2024 EOY Quality Control Report (CY reporting period)
- Prepare for 2025 (existing stations)

Daily Dashboard Inspection



Bi-Weekly Maintenance Visit



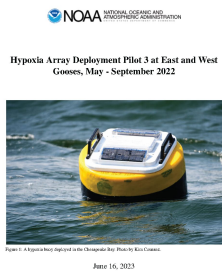
Monthly Overview of Visits

09/20/2023	Mid-Bay	Lower Choptank	Potomac
Depth	5 9 13 17	1 5 8	3 7 10
Temperature	0 X 0 0	Y Y Y	0 X 0
Dissolved O2	0 X 0 0	0 0 0	0 X 0
Conductivity	X X X X	Y X Y	X X X
Salinity	X X X X	Y Y 0	X X X

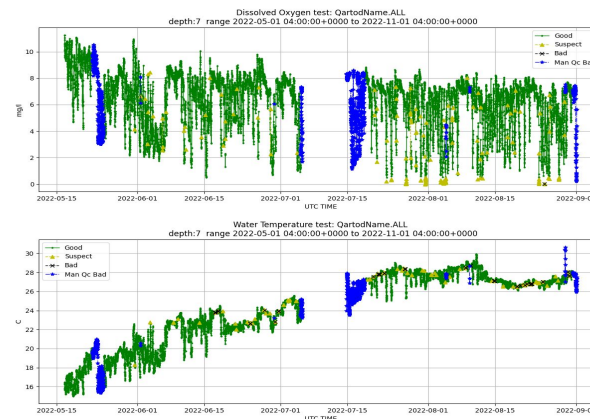
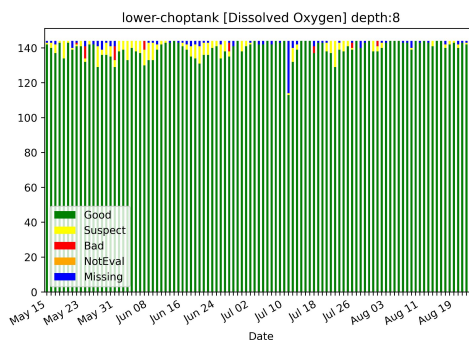
10/11/2023	Mid-Bay	Lower Choptank	Potomac
Depth	5 9 13 17	1 5 8	3 7 10
Temperature	0 X 0 0	0 0 X	0 X X
Dissolved O2	0 X Y 0	Y Y X	0 X X
Conductivity	X X X X	X X X	0 X X
Salinity	X X X X	X X X	Y X X

Seasonal Measurements (QC Flagging plots)

Annual Report



Seasonal Performance Review



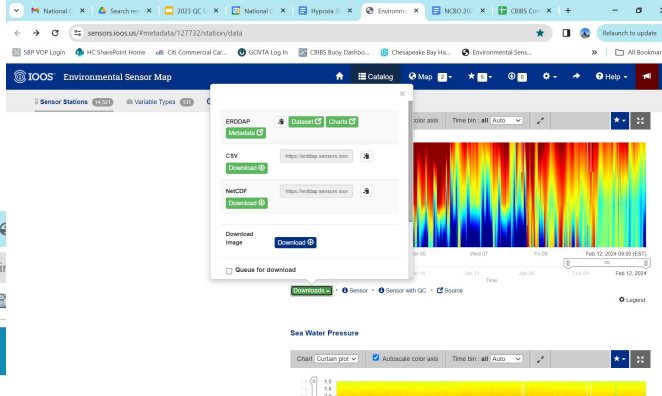
Data Access/Data Quality

IOOS Page

- ERDDAP
- CSV
- NetCDF

Current (2024) Data Status

- No significant changes from 2023 QC routines
- Basic QARTOD tests applied
- Final QC routines not applied
- Mid Feb timeline for final 2024 data
- March timeline for IOOS site final data availability



ERDDAP
Easier access to scientific data

ERDDAP > tabledap > Data Access Form

Dataset Title: **Lower Choptank (2023)** [BBS](#)
Institution: NOAA Chesapeake Bay Interpretive Buoy System (Dataset ID: 2zq_sd2023-2023)
Information: [Summary](#) | [License](#) | [FGDC](#) | [ISO 19115](#) | [Metadata](#) | [Background](#) | [Make a graph](#)

Variable	Check All	Uncheck All	Optional Constraint #1	Optional Constraint #2	Minimum	Maximum
<input checked="" type="checkbox"/> time (UTC)			<input type="text" value="2024-02-02T14:50:00Z"/>	<input type="text" value="2024-02-12T14:50:00Z"/>	2023-04-28T15:00:00Z	2024-02-12T15:20:00Z
<input type="checkbox"/> latitude (degrees_north)			<input type="text" value="36.629"/>	<input type="text" value="36.629"/>	36.629	36.629
<input type="checkbox"/> longitude (degrees_east)			<input type="text" value="-76.319"/>	<input type="text" value="-76.319"/>	-76.319	-76.319
<input checked="" type="checkbox"/> z (Altitude, m)			<input type="text" value="-8"/>	<input type="text" value="-1"/>	-8.0	-1.0
<input type="checkbox"/> sea_water_electrical_conductivity (mS.cm-1)			<input type="text" value="0.0"/>	<input type="text" value="100.0"/>	0.0	100.0
<input type="checkbox"/> sea_water_electrical_conductivity_qc_agg			<input type="text" value="1"/>	<input type="text" value="9"/>	1	9
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Data Access URL

https://sensors.ioos.us/?new_session=true#metadata/156/sensor_source