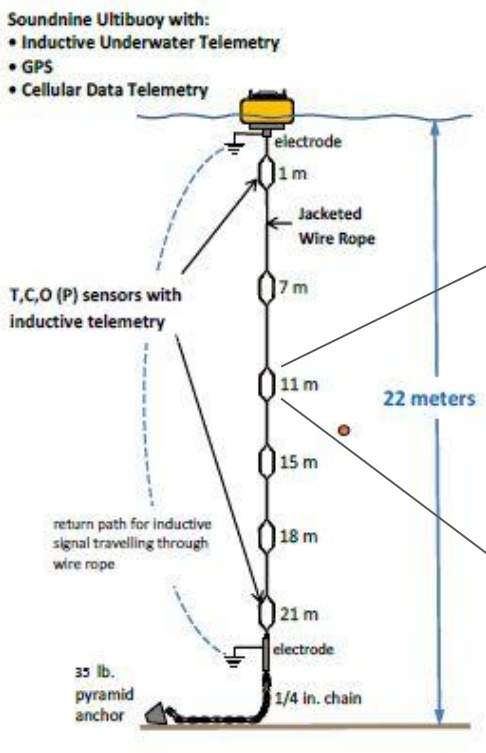
Hypoxia-Water Column Monitoring Update

Presented to the CBP Hypoxia Collaborative

10/16/2024

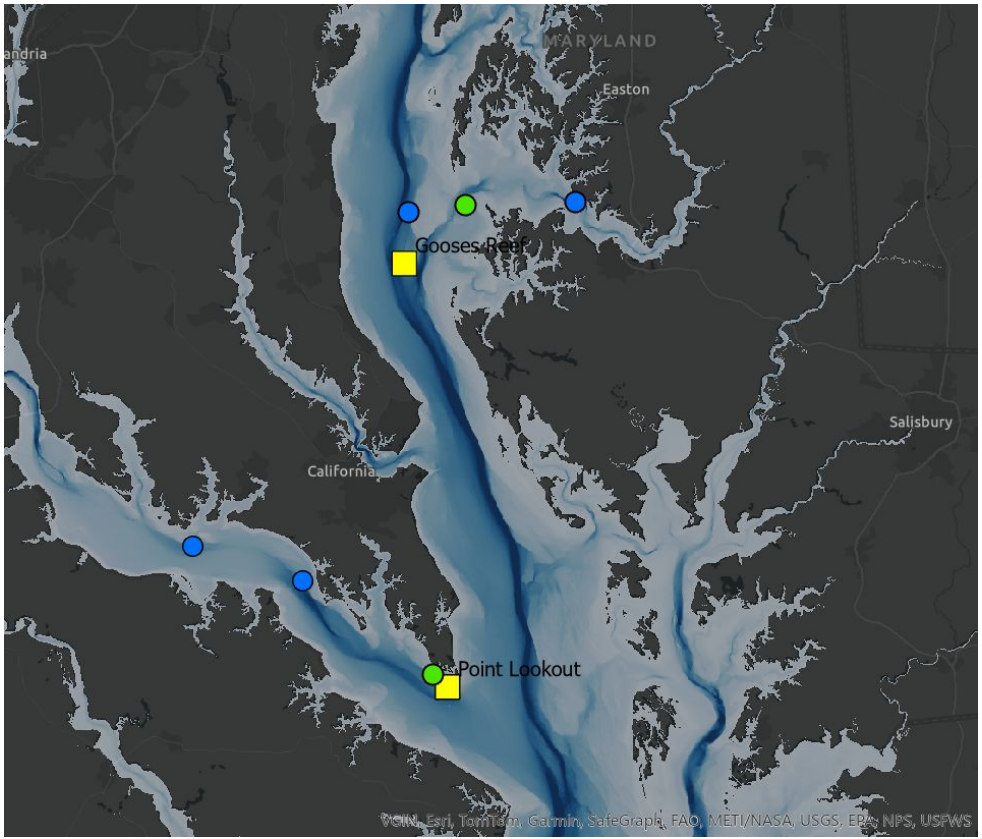
Water Column Monitoring System



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

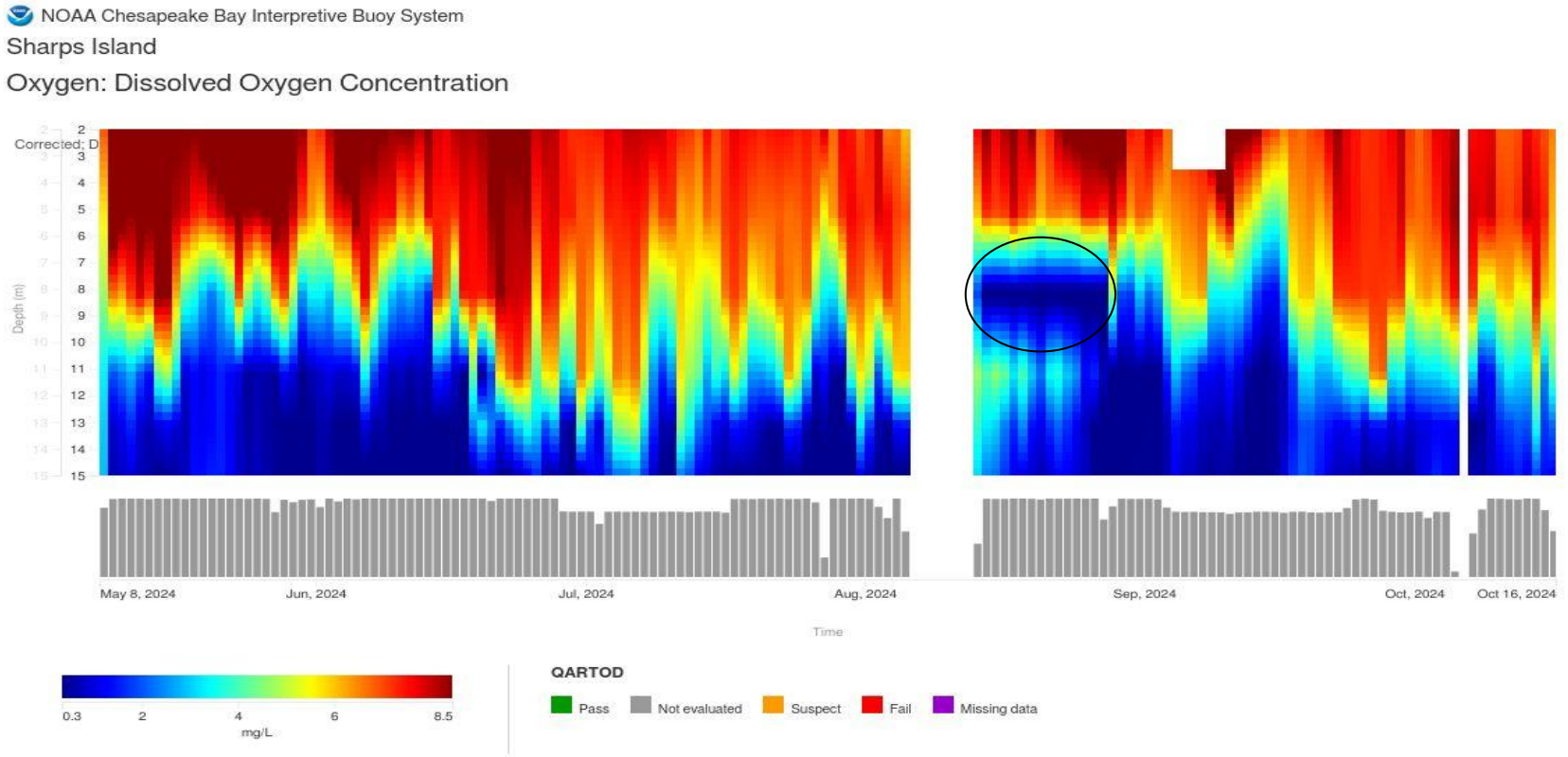
2024 Stations



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

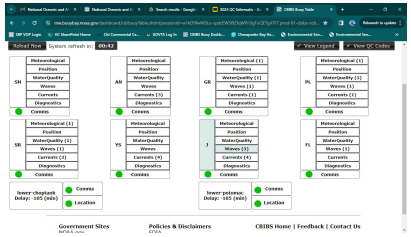


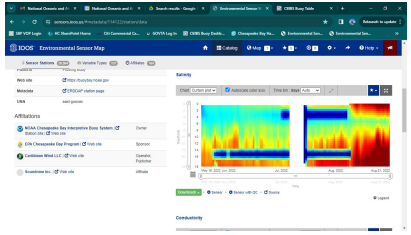
2024-2025 Fall/Winter Plan

- 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)

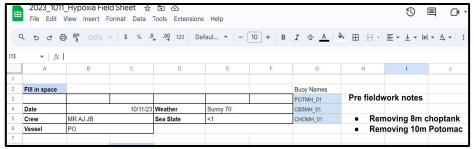
QUALITY CONTROL

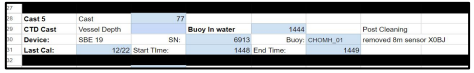
Daily Dashboard Inspection

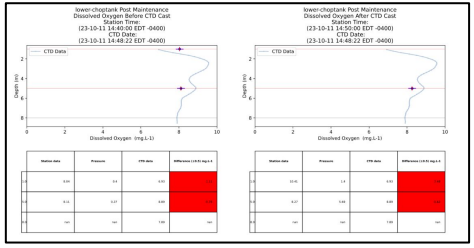




Bi-Weekly Maintenance Visit





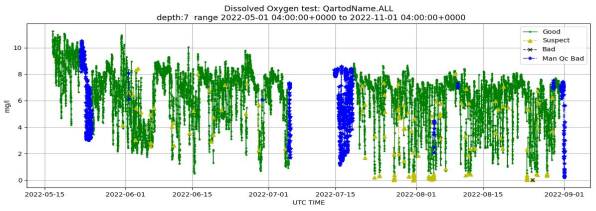


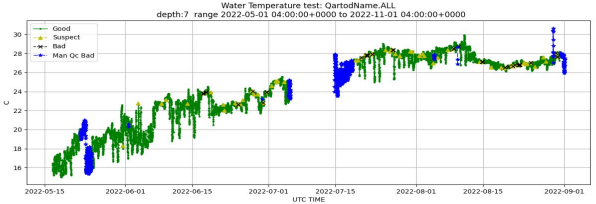
Monthly Overview of Visits

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

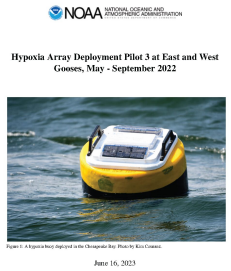
10/11/2023	Mid-Bay				Lower Choptank			Potomac		
Depth	5	9	13	17	1	5	8	3	7	10
Temperature	O	X	O	O	O	O	X	O	X	X
Dissolved O2	O	X	Y	O	Y	Y	X	O	X	X
Conductivty	X	X	X	X	X	X	X	O	X	X
Sailinty	X	X	X	X	X	X	X	Y	X	X

Seasonal Measurements (QC Flagging plots)

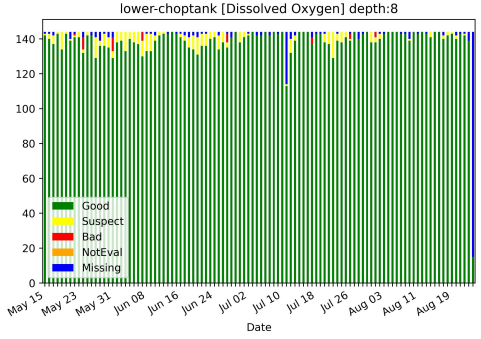




Annual Report



Seasonal Performance Review



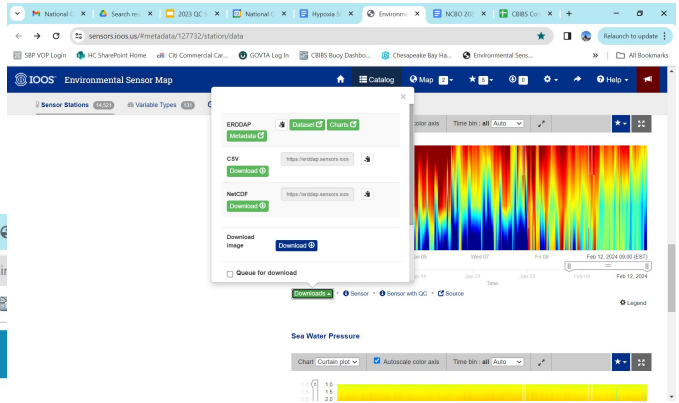
Data Access/Data Quality

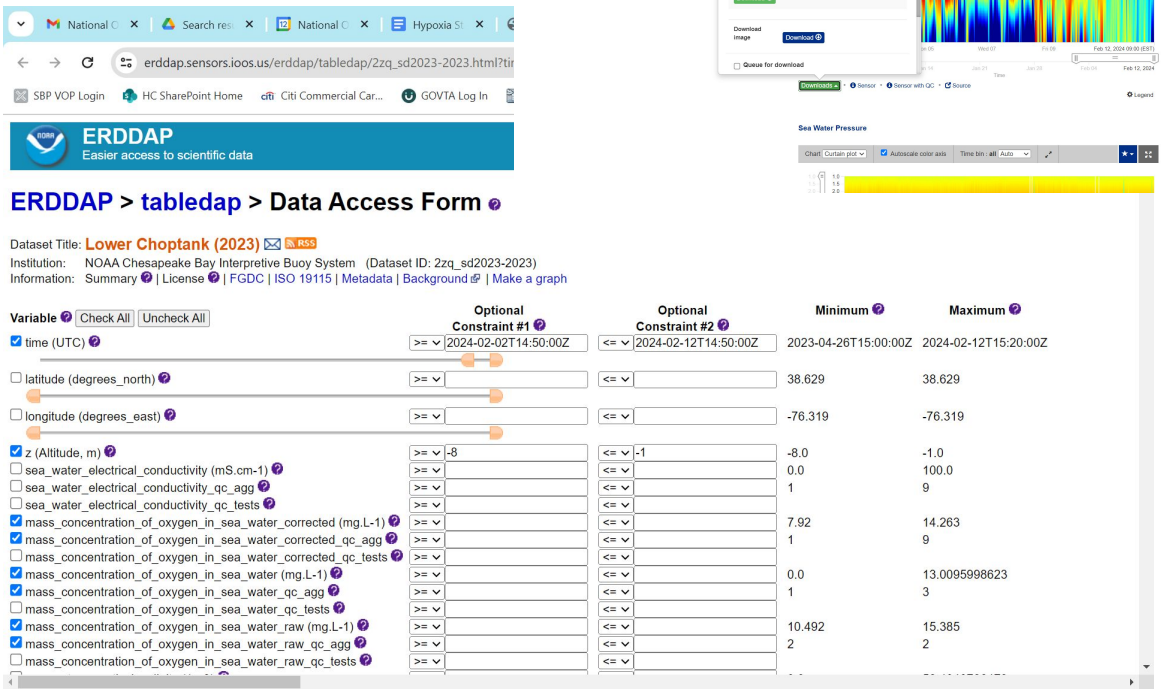
IOOS Page

- 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





Data Access URL

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