# Yellow River Marsh Aquatic Preserve

SEACAR Water Quality Analysis

Last compiled on 27 January, 2025

## Contents

# Indicators

## Nutrients

### Total Nitrogen - Discrete

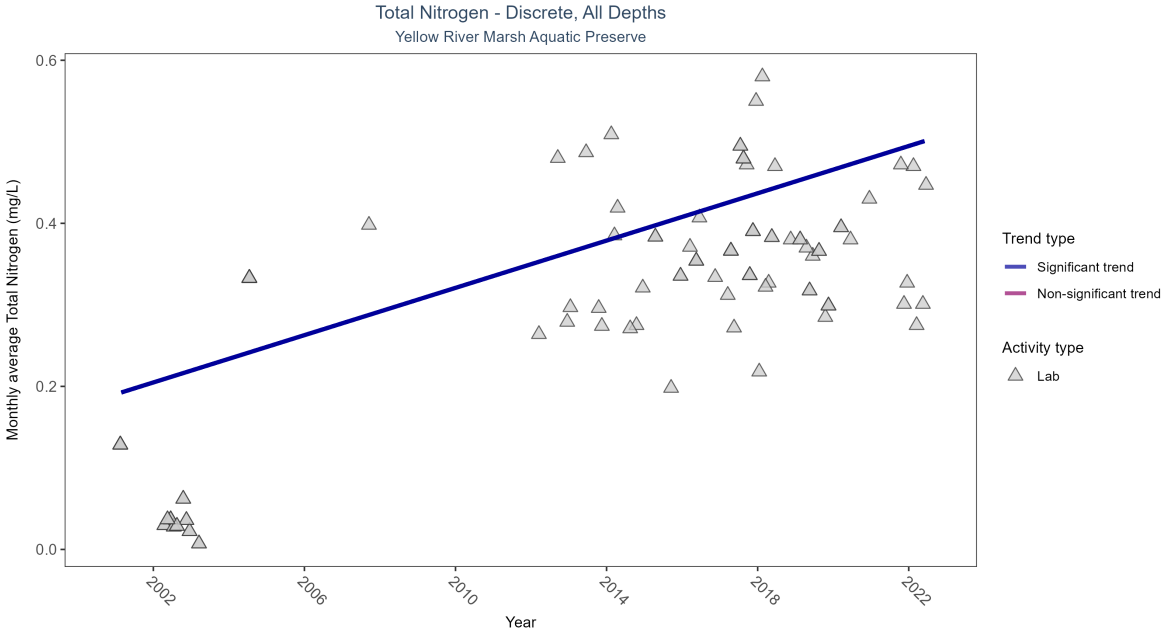


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| Lab | Significantly increasing trend | 109 | 16 | 2001 - 2022 | 0.322 | 0.2823 | 0.19033 | 0.0145 | 0.0088 |

## Total Phosphorus - Discrete

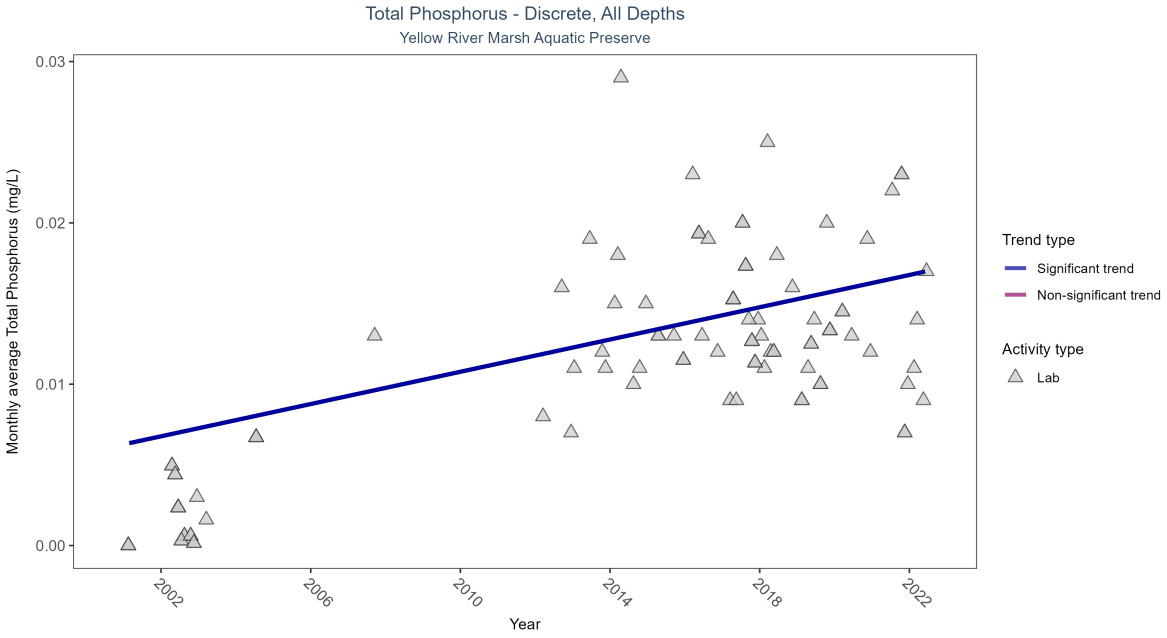


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| Lab | Significantly increasing trend | 105 | 16 | 2001 - 2022 | 0.0117 | 0.3174 | 0.00627 | 0.0005 | 0.0066 |

# Water Quality

## Dissolved Oxygen - Discrete

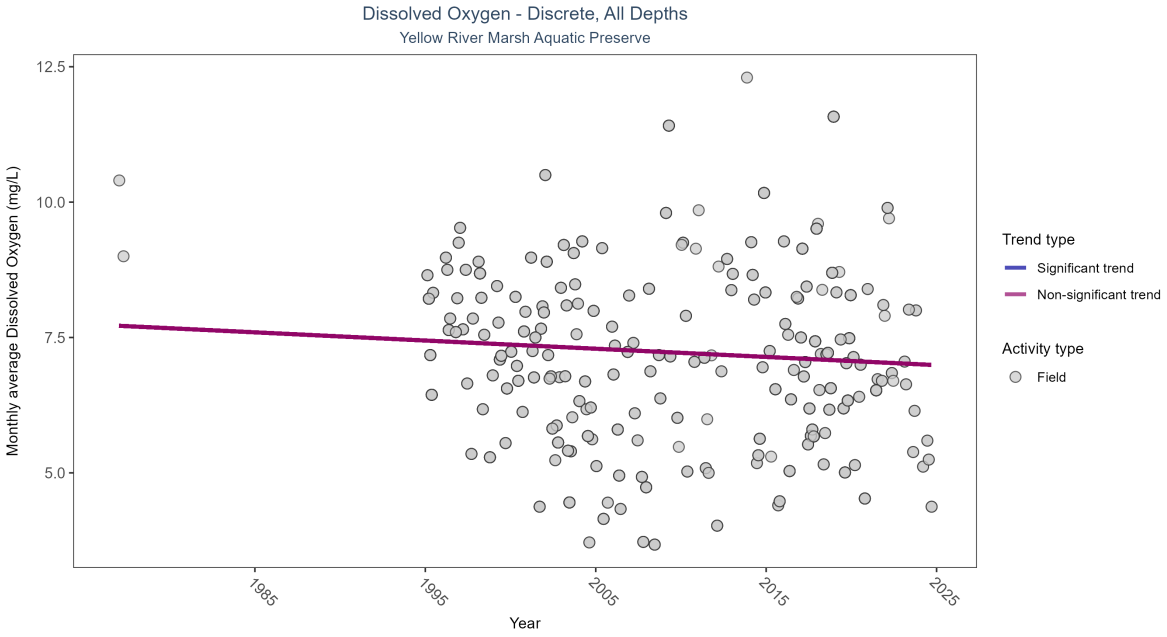


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| Field | No significant trend | 1105 | 31 | 1977 - 2024 | 7.2 | -0.0437 | 7.71638 | -0.01514 | 0.1724 |

## Dissolved Oxygen - Continuous

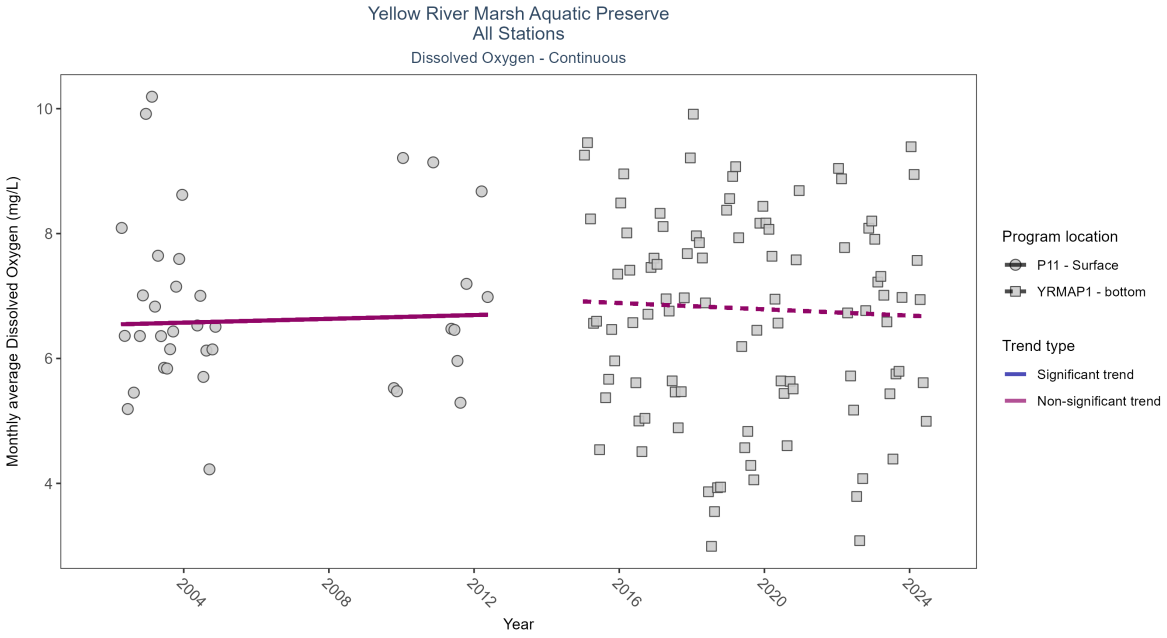


Table 4: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

| Program Location | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| YRMAP1 | No significant trend | 241317 | 9 | 2015 - 2024 | 7.00 | -0.07 | 6.91 | -0.03 | 0.2477 |
| P11 | No significant trend | 131 | 7 | 2002 - 2012 | 6.37 | 0.04 | 6.54 | 0.02 | 0.4884 |

## Dissolved Oxygen Saturation - Discrete

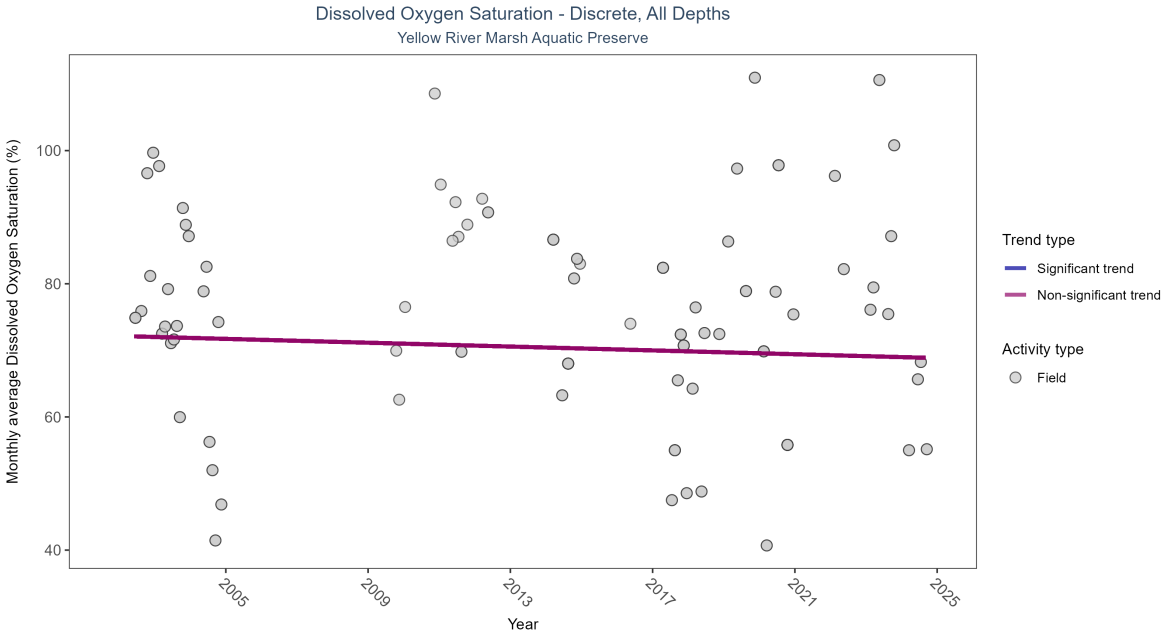


Table 5: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| Field | No significant trend | 171 | 16 | 2002 - 2024 | 76.2 | -0.0063 | 72.1564 | -0.14423 | 0.7968 |

## Dissolved Oxygen Saturation - Continuous

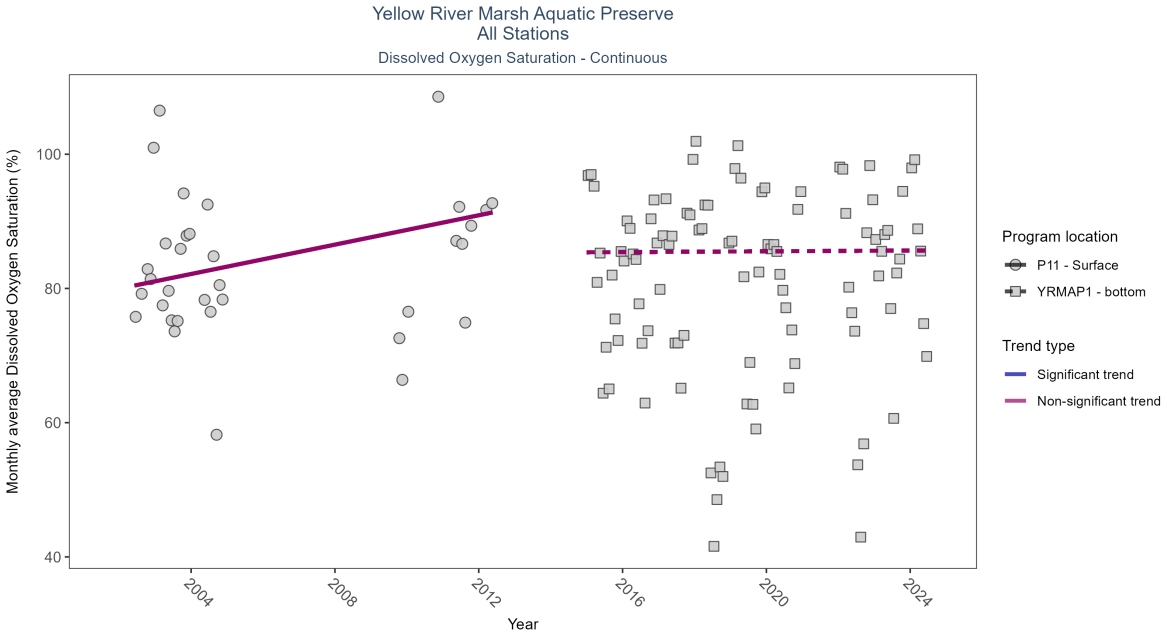


Table 6: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen Saturation

| Program Location | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| YRMAP1 | No significant trend | 247585 | 9 | 2015 - 2024 | 87.20 | 0.03 | 85.39 | 0.03 | 0.8666 |
| P11 | No significant trend | 126 | 7 | 2002 - 2012 | 79.93 | 0.09 | 79.97 | 1.09 | 0.7119 |

## Salinity - Discrete

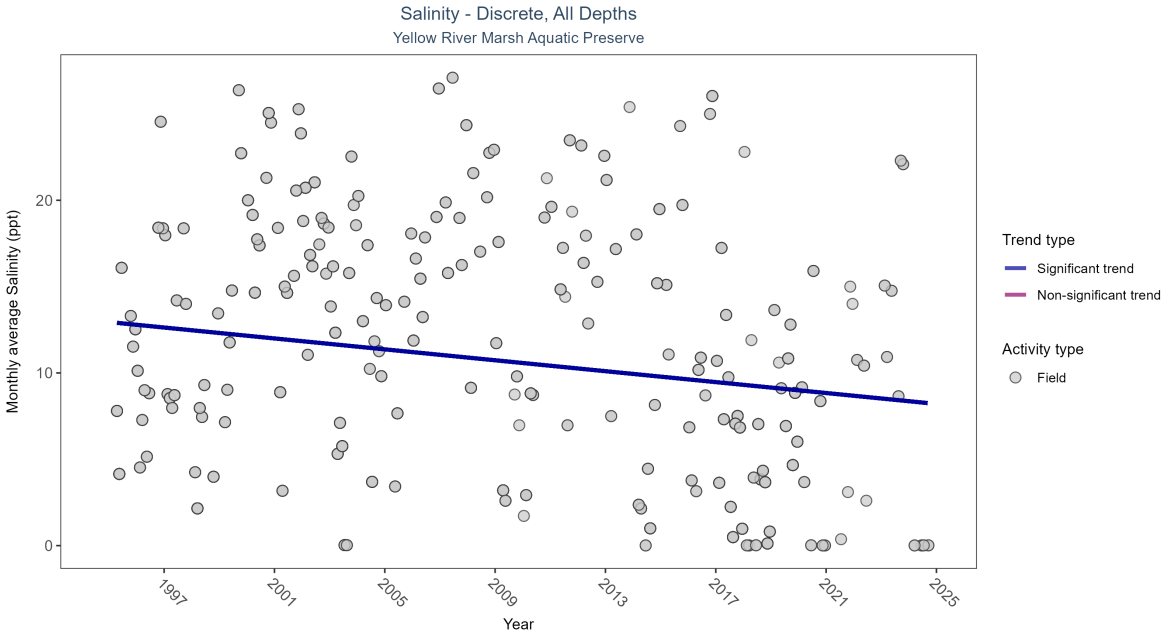


Table 7: Seasonal Kendall-Tau Results for - Salinity

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| All | Significantly decreasing trend | 1242 | 30 | 1995 - 2024 | 11 | -0.1055 | 12.94704 | -0.15805 | 0.0264 |

## Salinity - Continuous

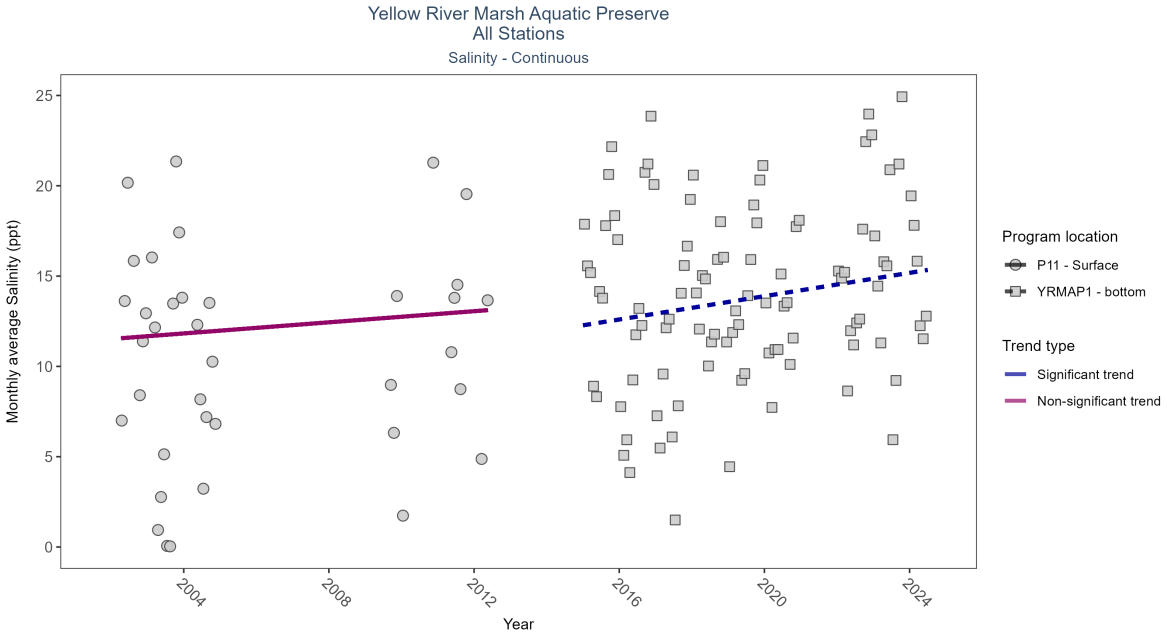


Table 8: Seasonal Kendall-Tau Results for All Stations - Salinity

| Program Location | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| YRMAP1 | Significantly increasing trend | 257995 | 9 | 2015 - 2024 | 14.10 | 0.17 | 12.27 | 0.32 | 0.0304 |
| P11 | No significant trend | 136 | 7 | 2002 - 2012 | 10.05 | 0.06 | 11.52 | 0.15 | 0.6499 |

## Water Temperature - Discrete

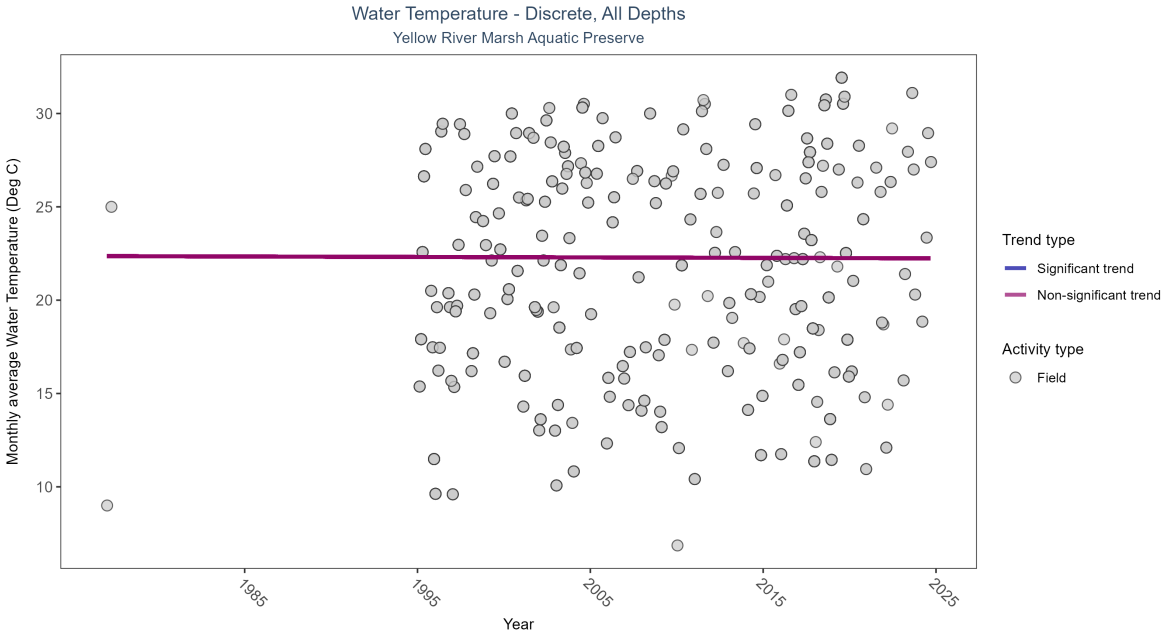


Table 9: Seasonal Kendall-Tau Results for - Water Temperature

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| Field | No significant trend | 1240 | 31 | 1977 - 2024 | 22 | 0.0007 | 22.35856 | -0.00246 | 0.8773 |

## Water Temperature - Continuous

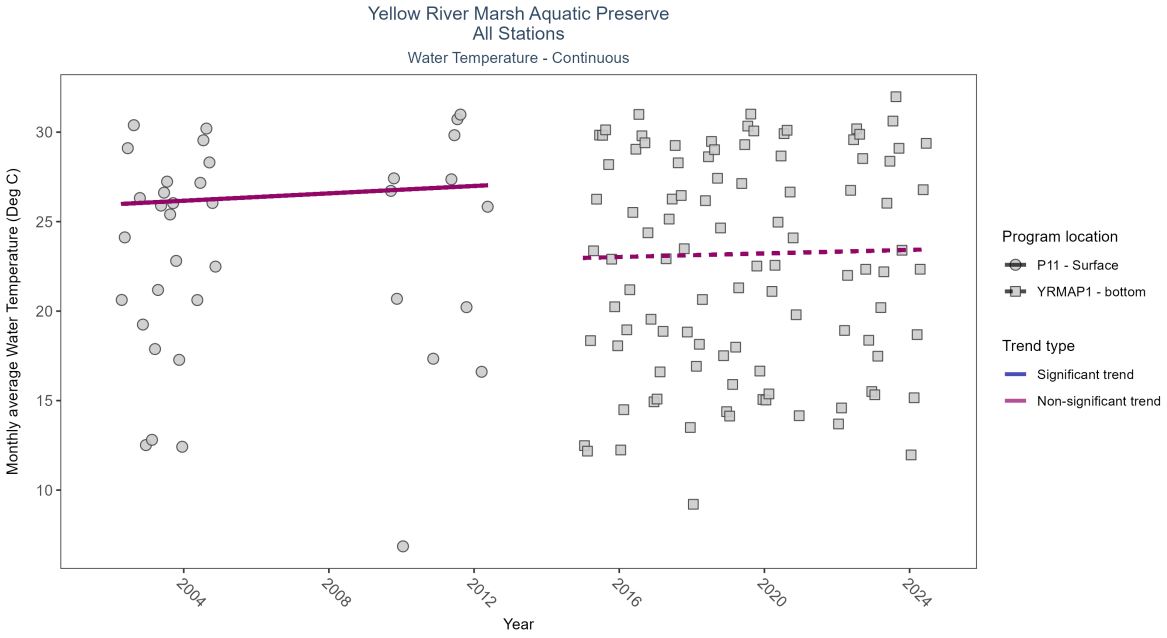


Table 10: Seasonal Kendall-Tau Results for All Stations - Water Temperature

| Program Location | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| YRMAP1 | No significant trend | 282764 | 9 | 2015 - 2024 | 22.90 | 0.06 | 22.97 | 0.05 | 0.4052 |
| P11 | No significant trend | 136 | 7 | 2002 - 2012 | 26.22 | 0.13 | 25.96 | 0.10 | 0.4960 |

## pH - Discrete

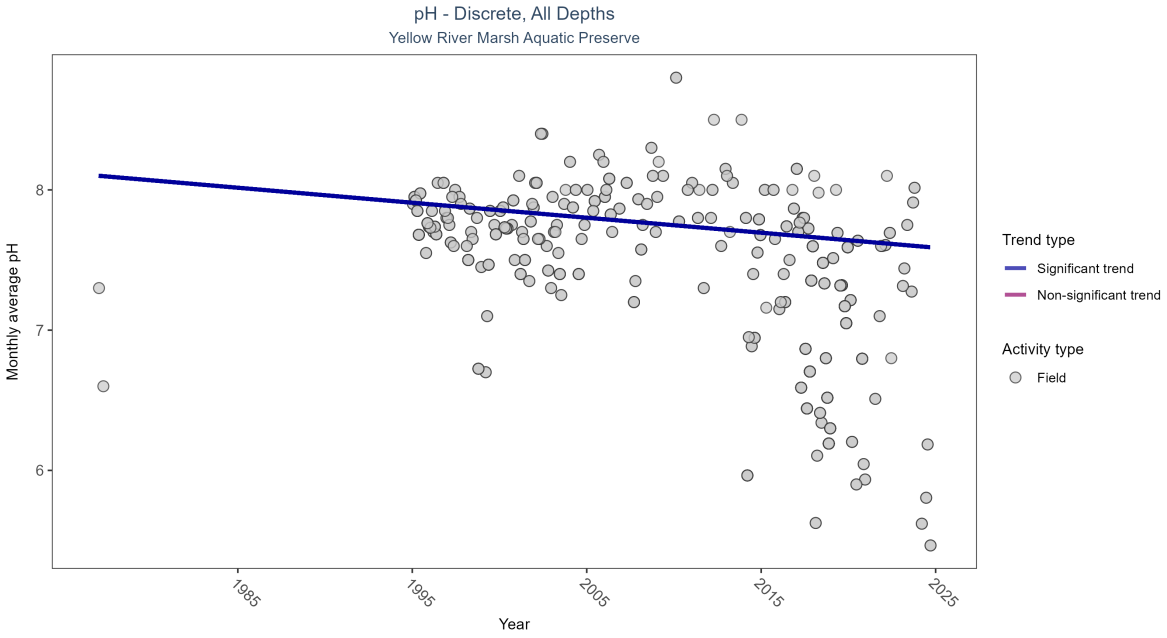


Table 11: Seasonal Kendall-Tau Results for - pH

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| Field | Significantly decreasing trend | 738 | 31 | 1977 - 2024 | 7.66 | -0.1435 | 8.10098 | -0.01069 | 0.0063 |

## pH - Continuous

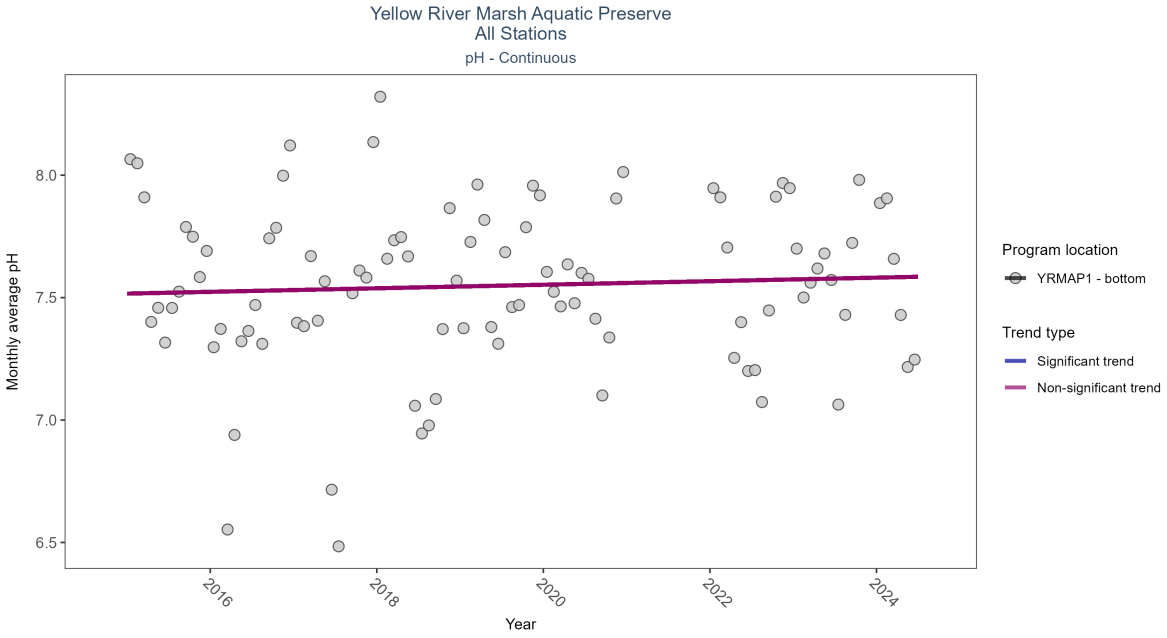


Table 12: Seasonal Kendall-Tau Results for All Stations - pH

| Program Location | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| YRMAP1 | No significant trend | 256341 | 9 | 2015 - 2024 | 7.6 | 0.06 | 7.52 | 0.01 | 0.5004 |

# Water Clarity

## Turbidity - Discrete

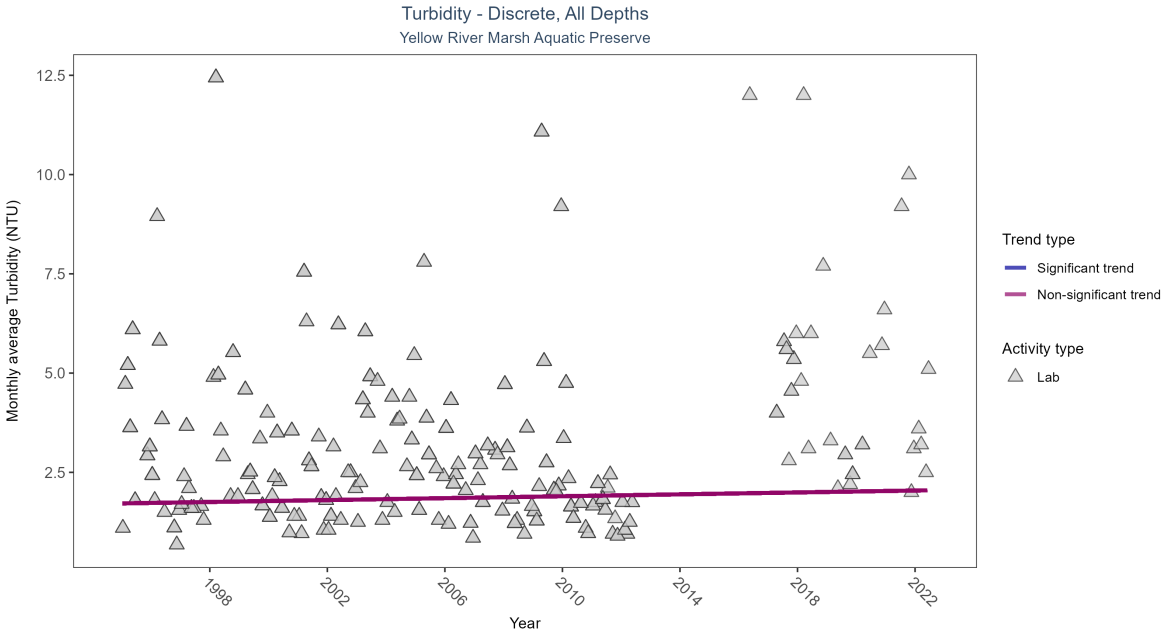


Table 13: Seasonal Kendall-Tau Results for - Turbidity

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| Lab | No significant trend | 589 | 25 | 1995 - 2022 | 2.47 | 0.0753 | 1.71738 | 0.01202 | 0.5284 |

## Turbidity - Continuous

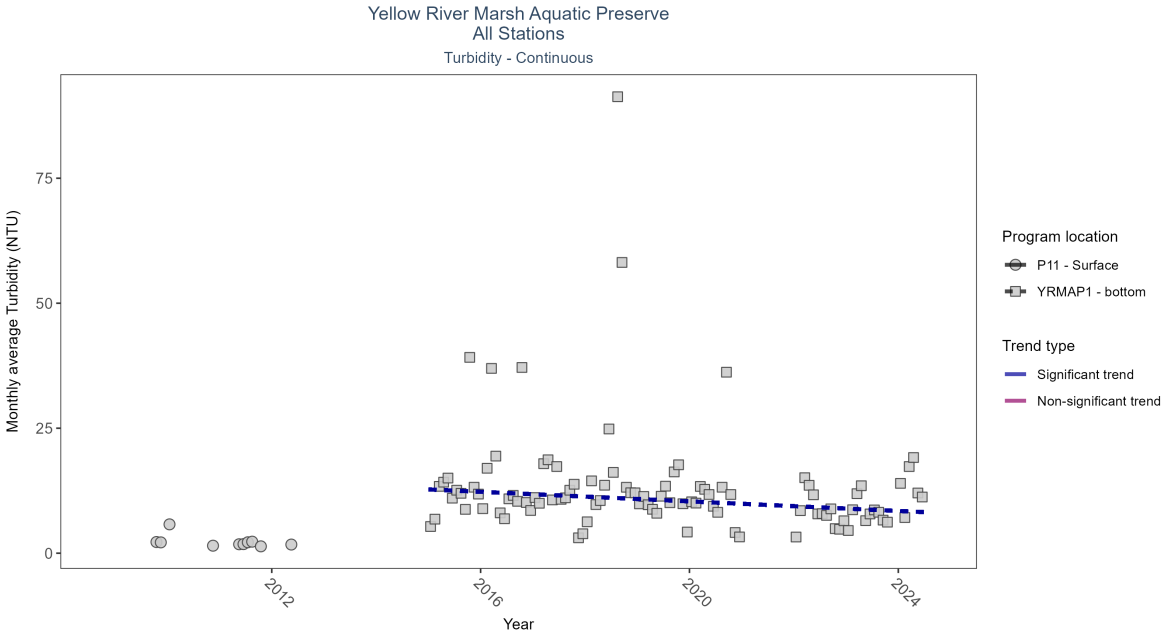


Table 14: Seasonal Kendall-Tau Results for All Stations - Turbidity

| Program Location | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| YRMAP1 | Significantly decreasing trend | 270091 | 9 | 2015 - 2024 | 6 | -0.25 | 12.75 | -0.48 | 0.0038 |
| P11 | Insufficient data to calculate trend | 37 | 4 | 2009 - 2012 | 2 | - | - | - | NA |

## Total Suspended Solids - Discrete

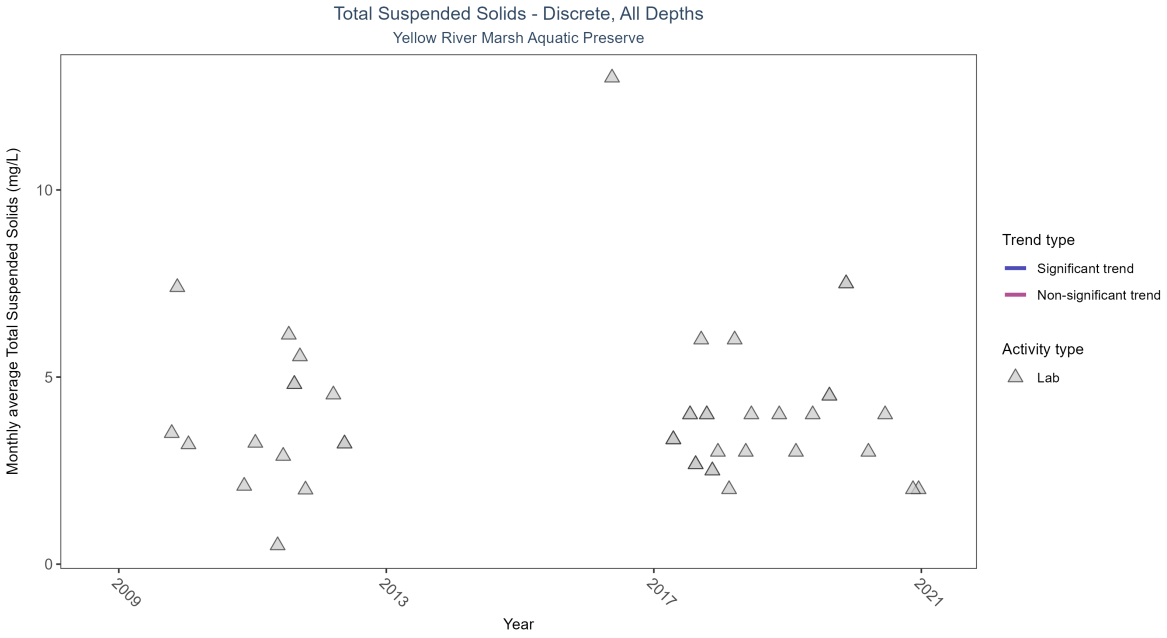


Table 15: Seasonal Kendall-Tau Results for - Total Suspended Solids

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| Lab | Insufficient data to calculate trend | 45 | 9 | 2009 - 2020 | 3.3 | - | - | - | NA |

## Chlorophyll a, Uncorrected for Pheophytin - Discrete

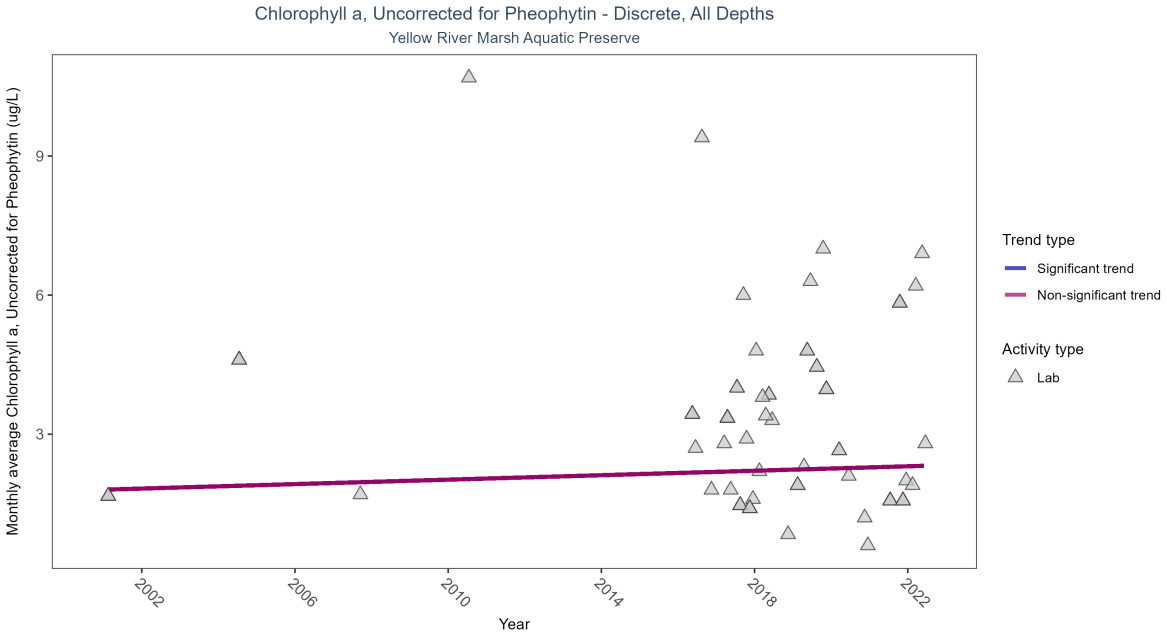


Table 16: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| Lab | No significant trend | 70 | 11 | 2001 - 2022 | 2.75 | 0.1175 | 1.80278 | 0.02402 | 0.5531 |

## Chlorophyll a, Corrected for Pheophytin - Discrete

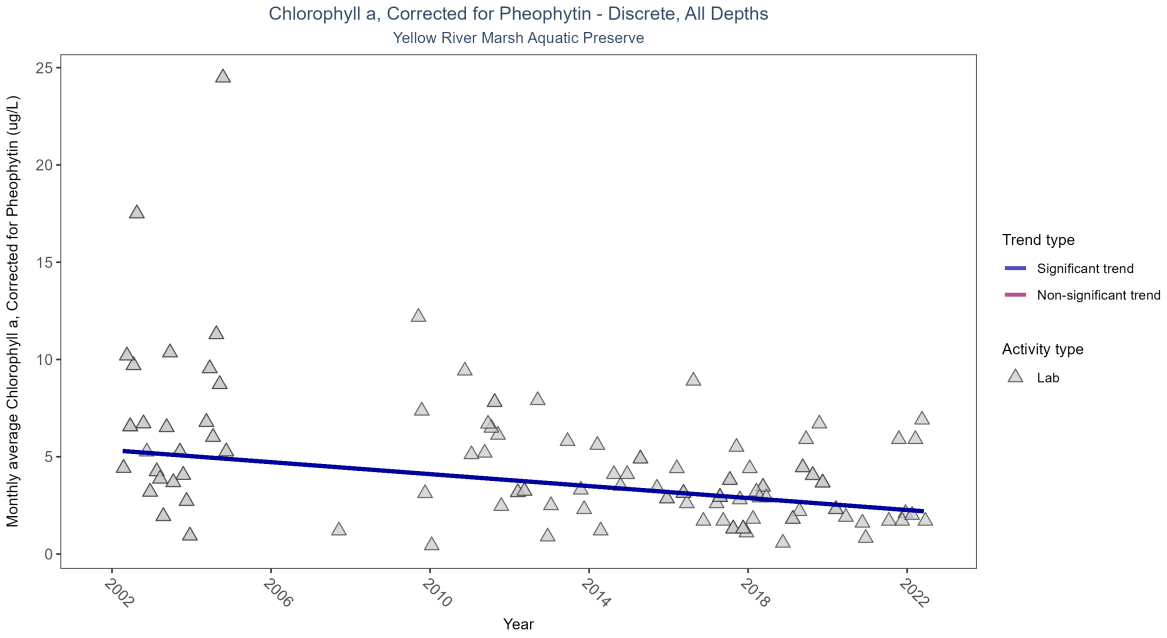


Table 17: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| Lab | Significantly decreasing trend | 142 | 18 | 2002 - 2022 | 3.75 | -0.3054 | 5.33533 | -0.1537 | 0.0001 |

## Secchi Depth - Discrete

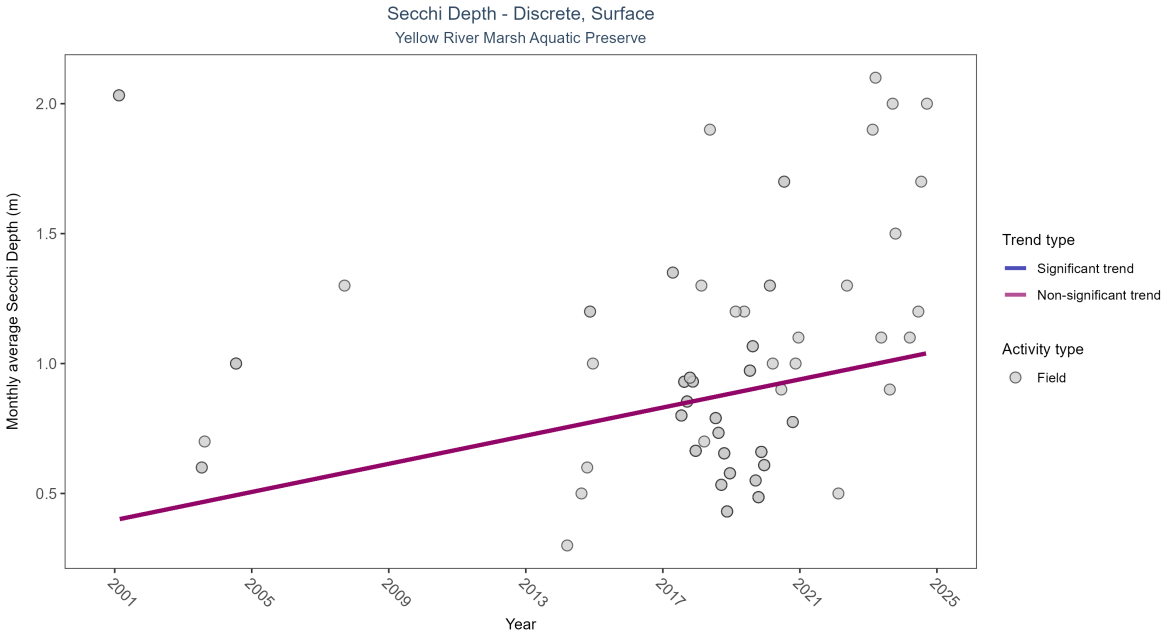


Table 18: Seasonal Kendall-Tau Results for - Secchi Depth

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| Field | No significant trend | 235 | 12 | 2001 - 2024 | 0.8 | 0.2141 | 0.39744 | 0.02708 | 0.0757 |

## Colored Dissolved Organic Matter - Discrete

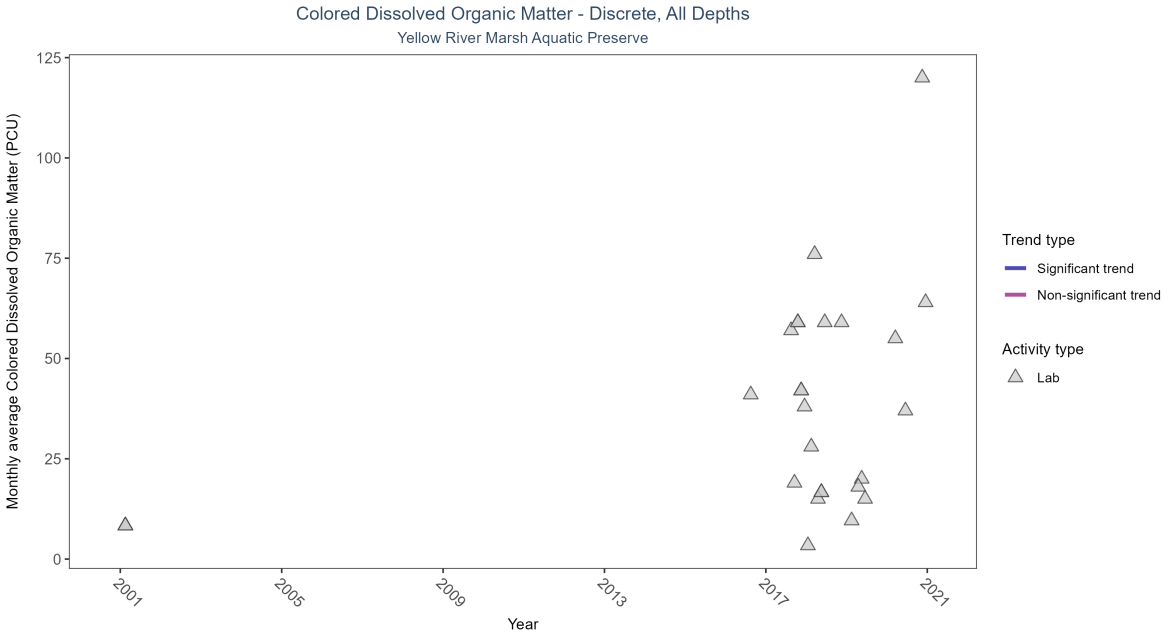


Table 19: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---|---|---|---|---|---|---|---|---|---|
| Lab | Insufficient data to calculate trend | 27 | 6 | 2001 - 2020 | 26 | - | - | - | NA |