

Terra Ceia Aquatic Preserve

SEACAR Water Quality Analysis

Last compiled on 27 January, 2025

Contents

| | |
|--|----------|
| Indicators | 2 |
| Nutrients | 2 |
| Total Nitrogen - Discrete | 2 |
| Total Phosphorus - Discrete | 3 |
| Water Quality | 4 |
| Dissolved Oxygen - Discrete | 4 |
| Dissolved Oxygen - Continuous | 5 |
| Dissolved Oxygen Saturation - Discrete | 6 |
| Dissolved Oxygen Saturation - Continuous | 7 |
| Salinity - Discrete | 8 |
| Salinity - Continuous | 9 |
| Water Temperature - Discrete | 10 |
| Water Temperature - Continuous | 11 |
| pH - Discrete | 12 |
| pH - Continuous | 13 |
| Water Clarity | 14 |
| Turbidity - Discrete | 14 |
| Turbidity - Continuous | 15 |
| Total Suspended Solids - Discrete | 16 |
| Chlorophyll a, Uncorrected for Pheophytin - Discrete | 17 |
| Chlorophyll a, Corrected for Pheophytin - Discrete | 18 |
| Secchi Depth - Discrete | 19 |
| Colored Dissolved Organic Matter - Discrete | 20 |

Indicators

Nutrients

Total Nitrogen - Discrete

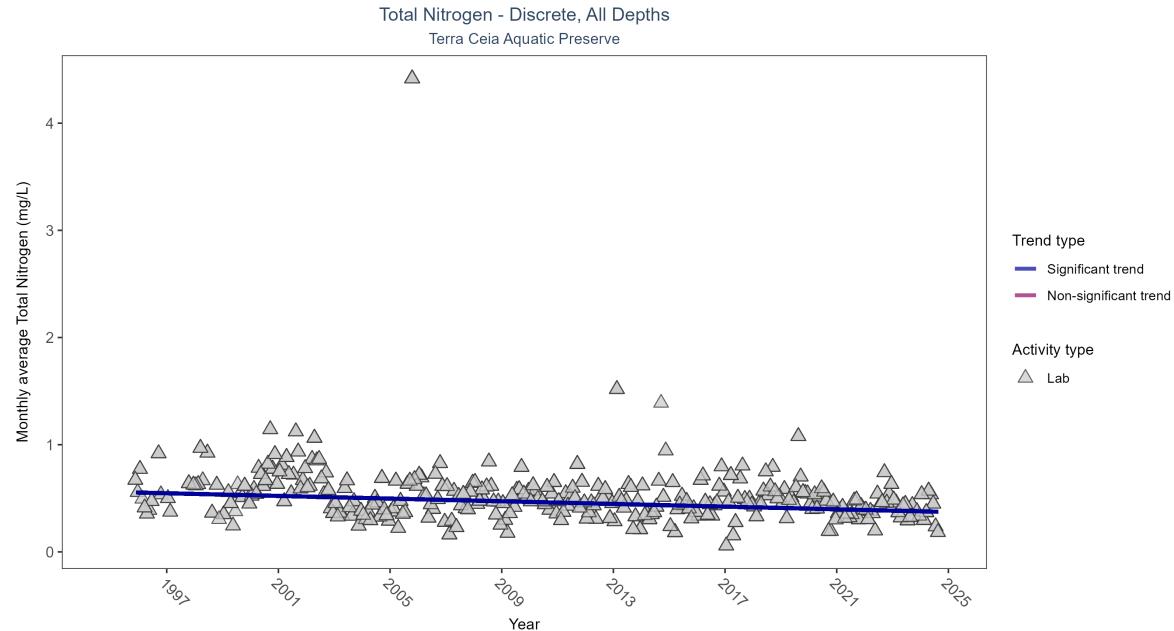


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---------------|--------------------------------|--------------|-----------------|------------------|---------------------|---------|---------------|-----------|--------|
| Lab | Significantly decreasing trend | 2328 | 30 | 1995 - 2024 | 0.382 | -0.2126 | 0.55957 | -0.00624 | 0.0000 |

Total Phosphorus - Discrete

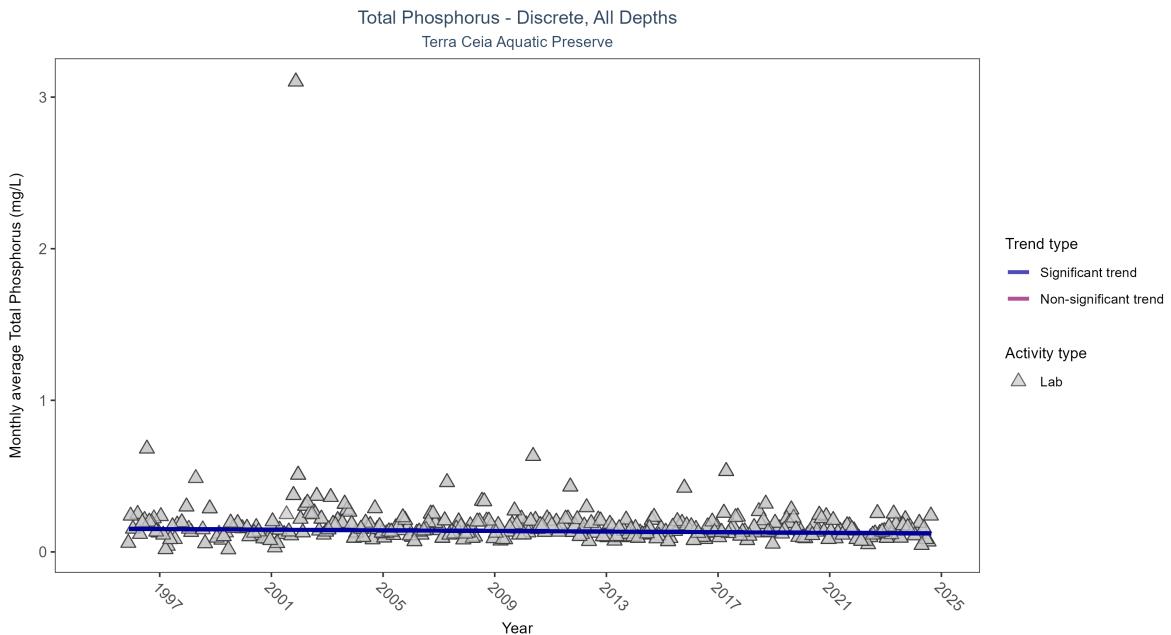


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---------------|--------------------------------|--------------|-----------------|------------------|---------------------|------|---------------|-----------|-----------------|
| Lab | Significantly decreasing trend | 3118 | 30 | 1995 - 2024 | | 0.11 | -0.1012 | 0.15299 | -0.00105 0.0077 |

Water Quality

Dissolved Oxygen - Discrete

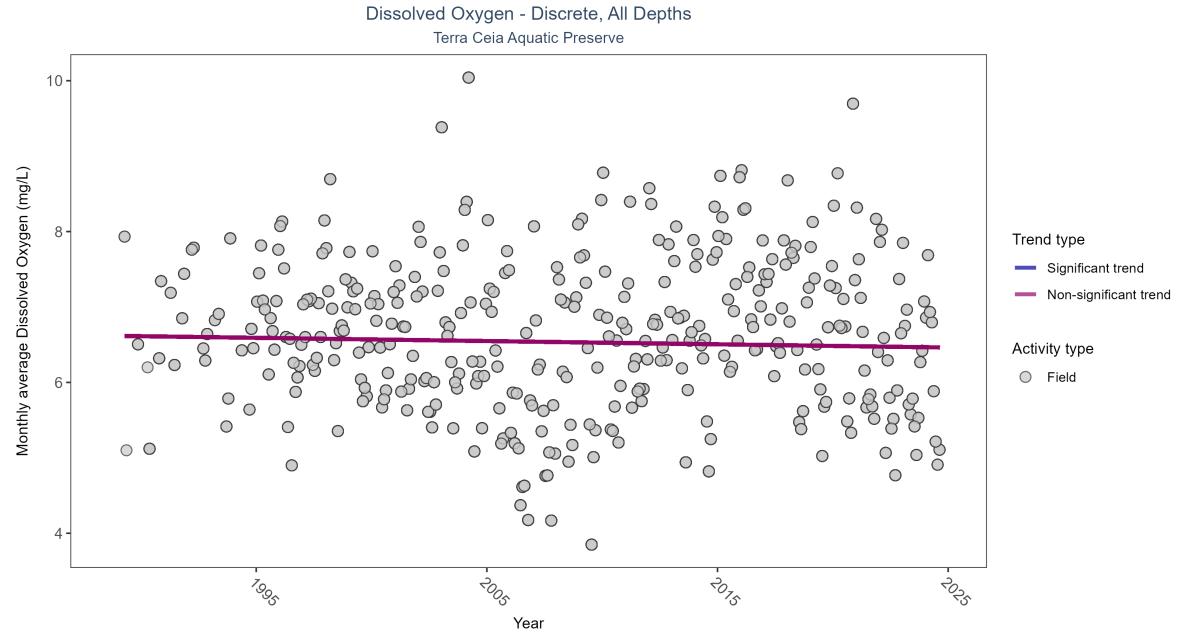


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

| 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 | 24537 | 36 | 1989 - 2024 | 6.53 | -0.0359 | 6.61695 | -0.00429 | 0.3256 |

Dissolved Oxygen - Continuous

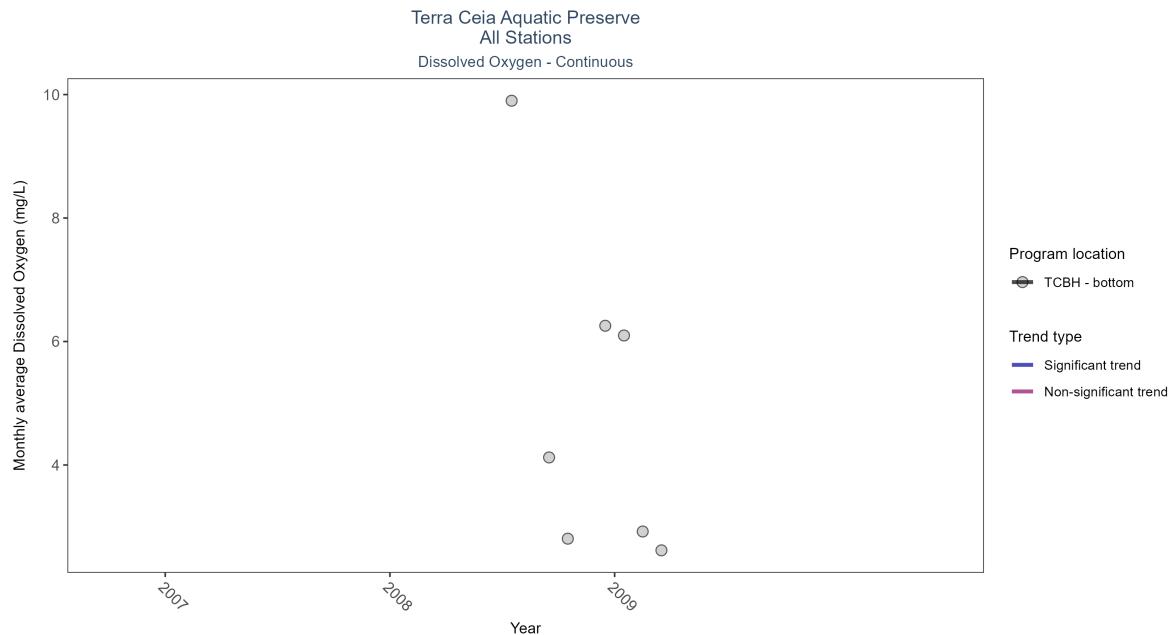


Table 4: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

| Program Location | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|------------------|--------------------------------------|--------------|-----------------|------------------|---------------------|-----|---------------|-----------|----|
| TCBH | Insufficient data to calculate trend | 8153 | 2 | 2008 - 2009 | 4.2 | - | - | - | NA |

Dissolved Oxygen Saturation - Discrete

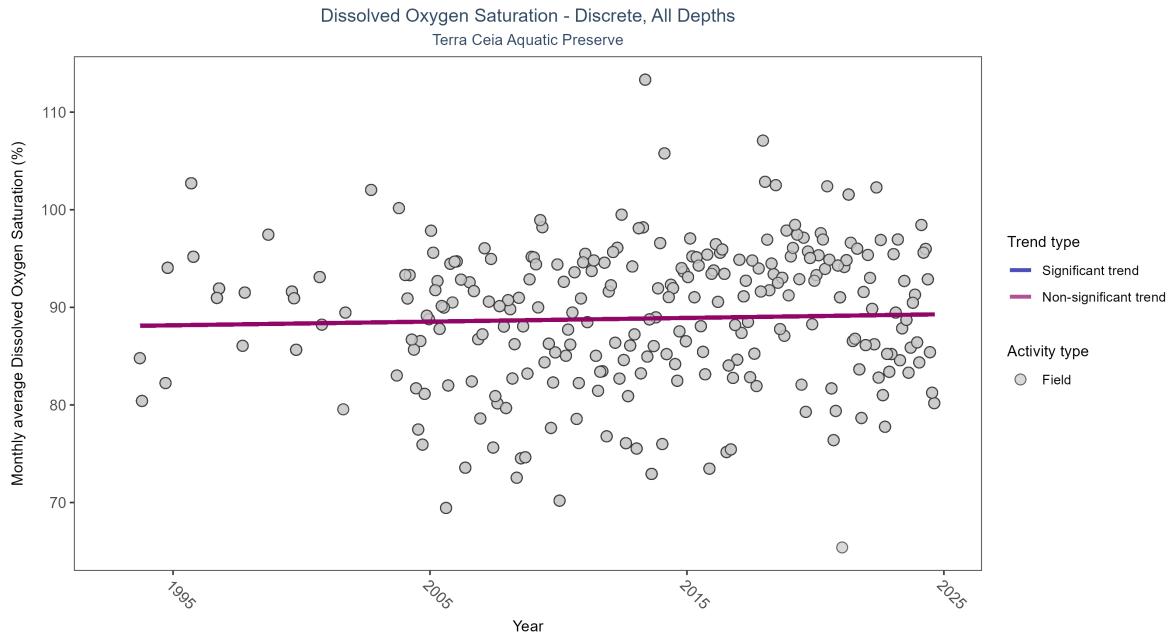


Table 5: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

| 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 | 4982 | 32 | 1993 - 2024 | 90 | 0.0477 | 88.08222 | 0.0378 | 0.5743 |

Dissolved Oxygen Saturation - Continuous

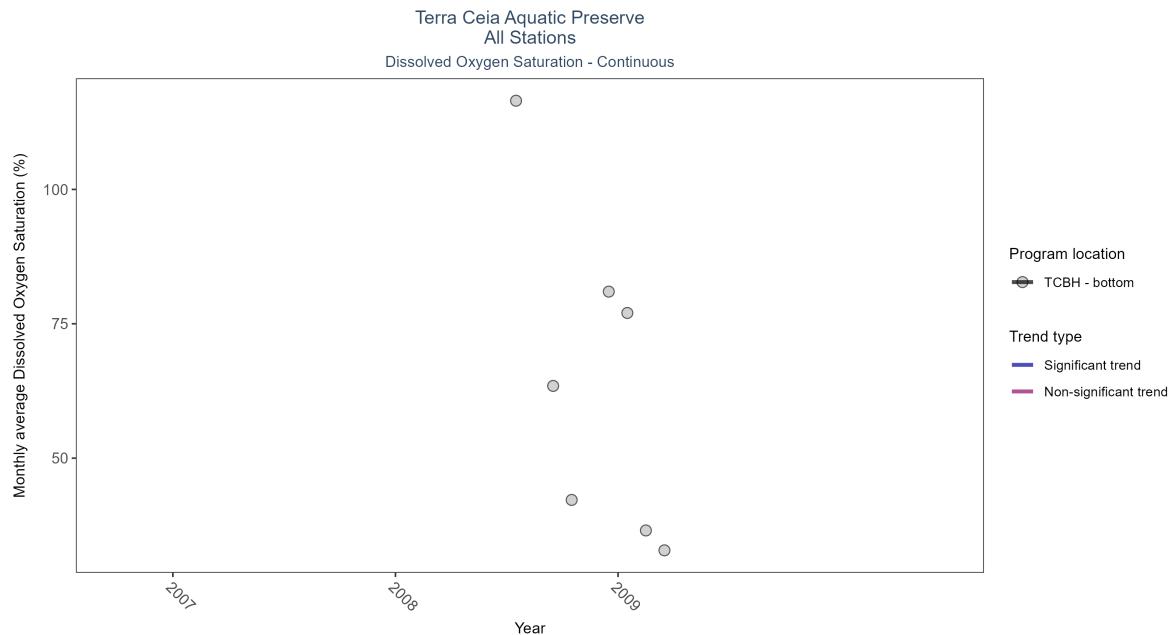


Table 6: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen Saturation

| Program Location | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|------------------|--------------------------------------|--------------|-----------------|------------------|---------------------|-----|---------------|-----------|----|
| TCBH | Insufficient data to calculate trend | 8153 | 2 | 2008 - 2009 | 59.5 | - | - | - | NA |

Salinity - Discrete

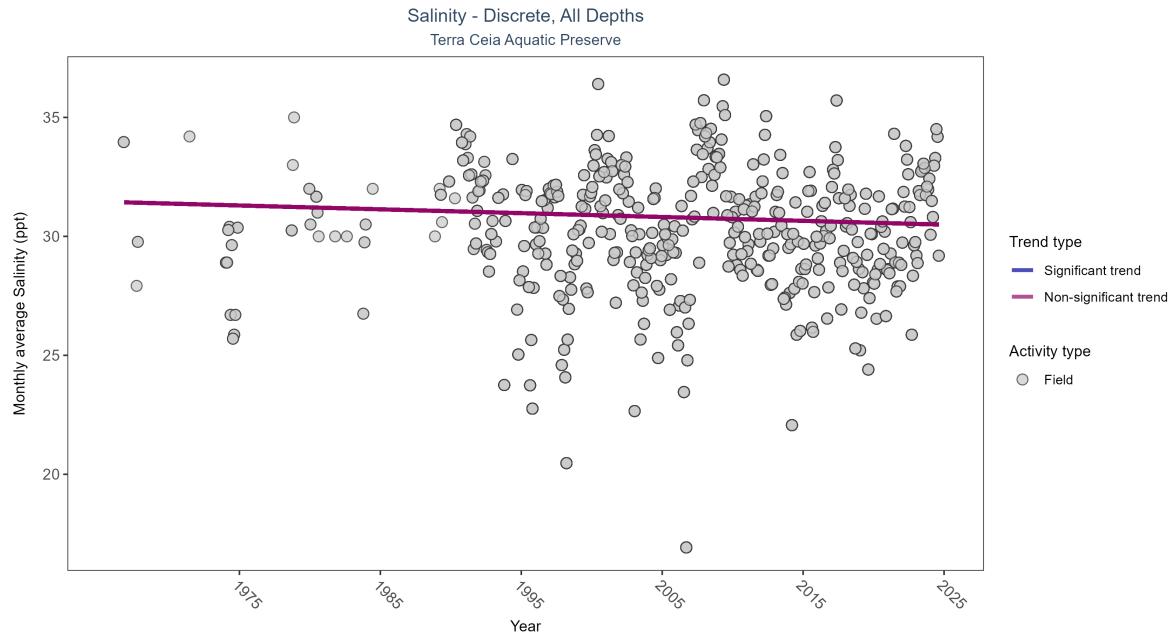


Table 7: Seasonal Kendall-Tau Results for - Salinity

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---------------|----------------------|--------------|-----------------|------------------|---------------------|---------|---------------|-----------|--------|
| All | No significant trend | 24759 | 48 | 1966 - 2024 | 30.6 | -0.0609 | 31.44423 | -0.01614 | 0.0724 |

Salinity - Continuous

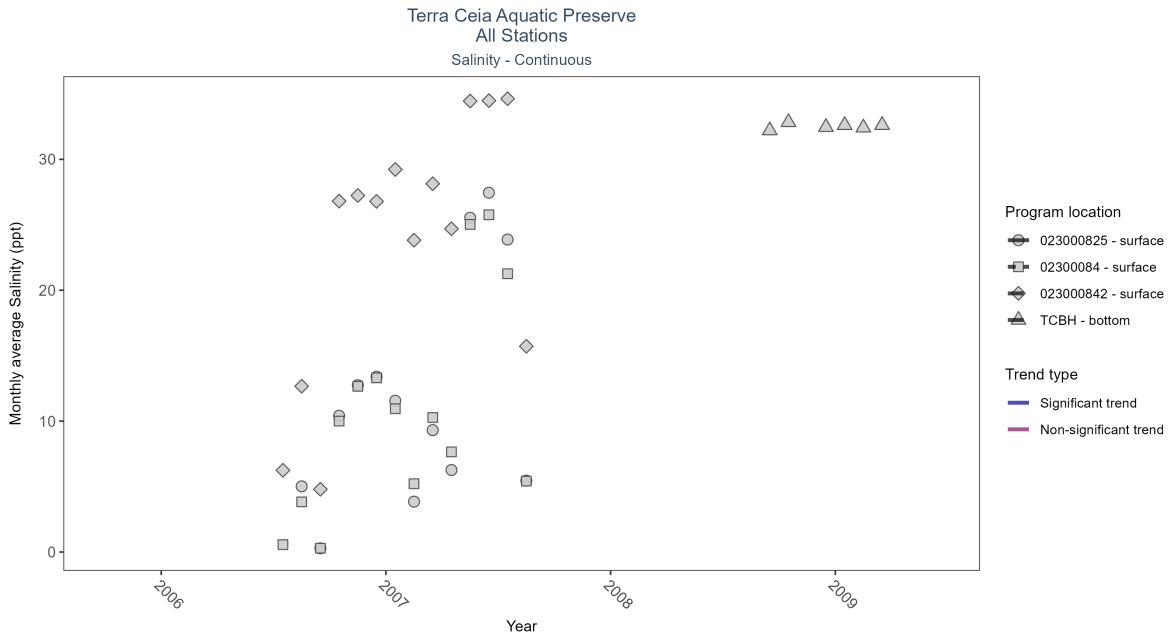


Table 8: Seasonal Kendall-Tau Results for All Stations - Salinity

| Program Location | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|------------------|--------------------------------------|--------------|-----------------|------------------|---------------------|-----|---------------|-----------|----|
| 023000842 | Insufficient data to calculate trend | 578 | 2 | 2006 - 2007 | 28.0 | - | - | - | NA |
| 02300084 | Insufficient data to calculate trend | 696 | 2 | 2006 - 2007 | 11.0 | - | - | - | NA |
| 023000825 | Insufficient data to calculate trend | 645 | 2 | 2006 - 2007 | 12.0 | - | - | - | NA |
| TCBH | Insufficient data to calculate trend | 8304 | 2 | 2008 - 2009 | 32.6 | - | - | - | NA |

Water Temperature - Discrete

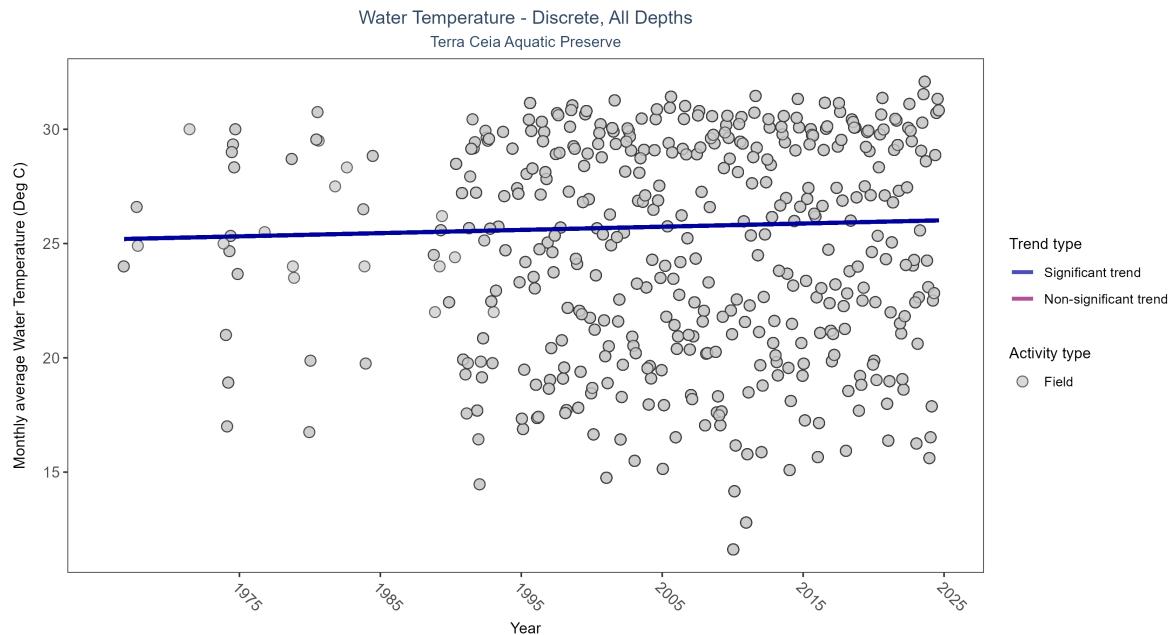


Table 9: Seasonal Kendall-Tau Results for - Water Temperature

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---------------|--------------------------------|--------------|-----------------|------------------|---------------------|--------|---------------|-----------|--------|
| Field | Significantly increasing trend | 25690 | 50 | 1966 - 2024 | 26.7 | 0.0896 | 25.18823 | 0.01406 | 0.0104 |

Water Temperature - Continuous

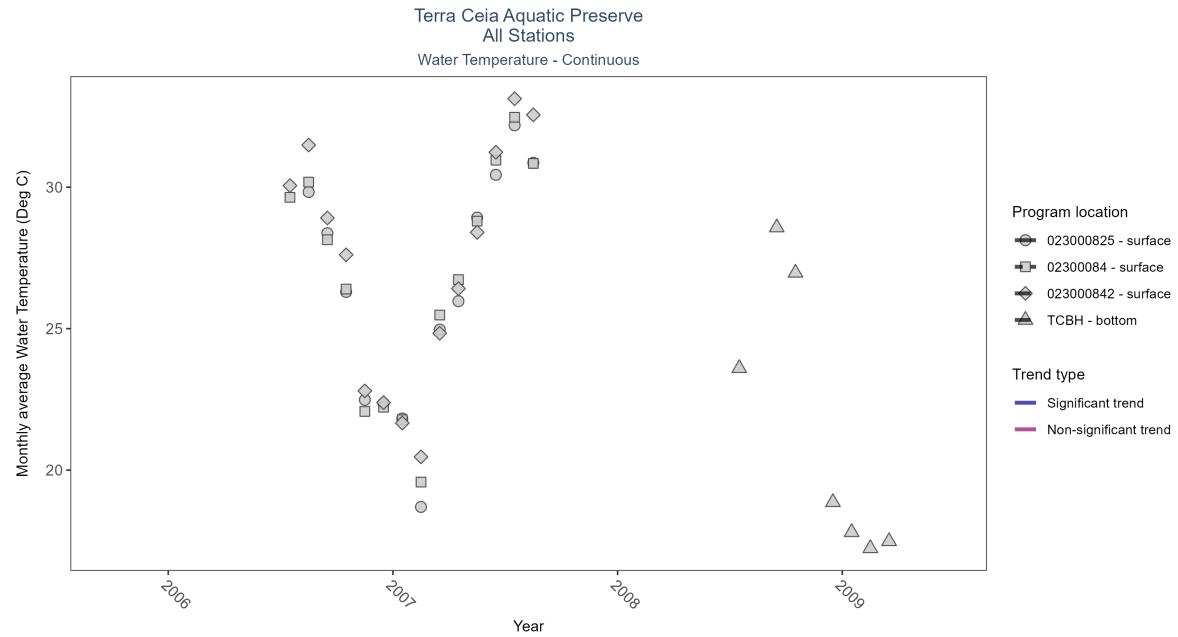


Table 10: Seasonal Kendall-Tau Results for All Stations - Water Temperature

| Program Location | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|------------------|--------------------------------------|--------------|-----------------|------------------|---------------------|-----|---------------|-----------|----|
| 023000842 | Insufficient data to calculate trend | 571 | 2 | 2006 - 2007 | 27.7 | - | - | - | NA |
| 023000825 | Insufficient data to calculate trend | 659 | 2 | 2006 - 2007 | 26.6 | - | - | - | NA |
| 02300084 | Insufficient data to calculate trend | 717 | 2 | 2006 - 2007 | 27.5 | - | - | - | NA |
| TCBH | Insufficient data to calculate trend | 8305 | 2 | 2008 - 2009 | 20.0 | - | - | - | NA |

pH - Discrete

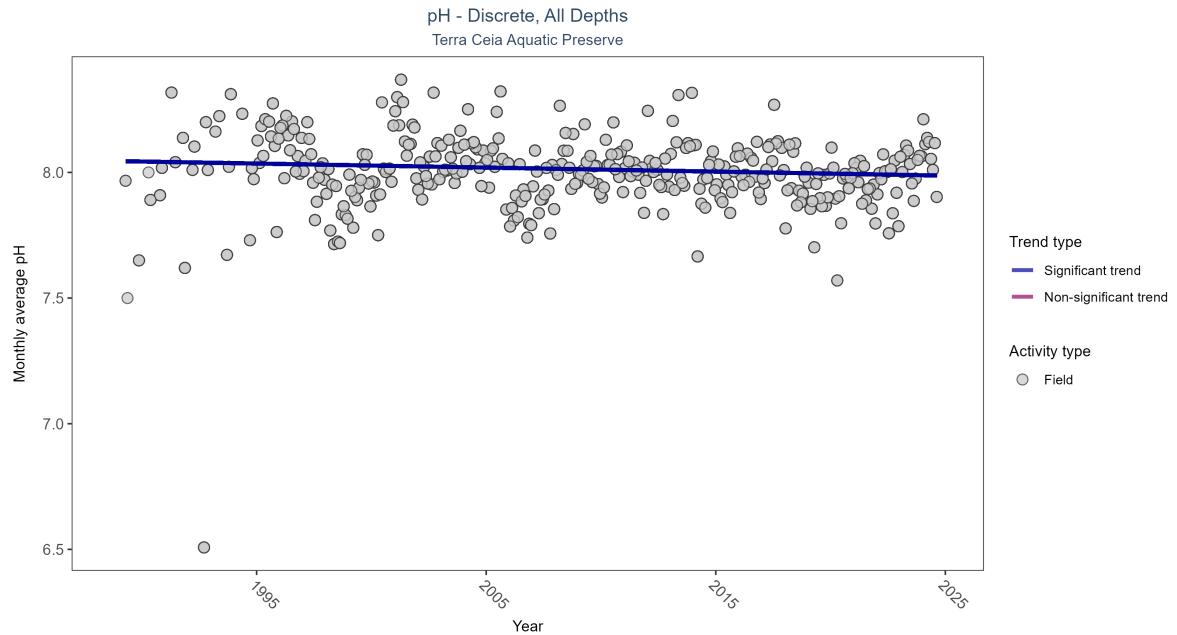


Table 11: Seasonal Kendall-Tau Results for - pH

| 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 | 22760 | 36 | 1989 - 2024 | 8 | -0.0867 | 8.04497 | -0.00161 | 0.0191 |

pH - Continuous

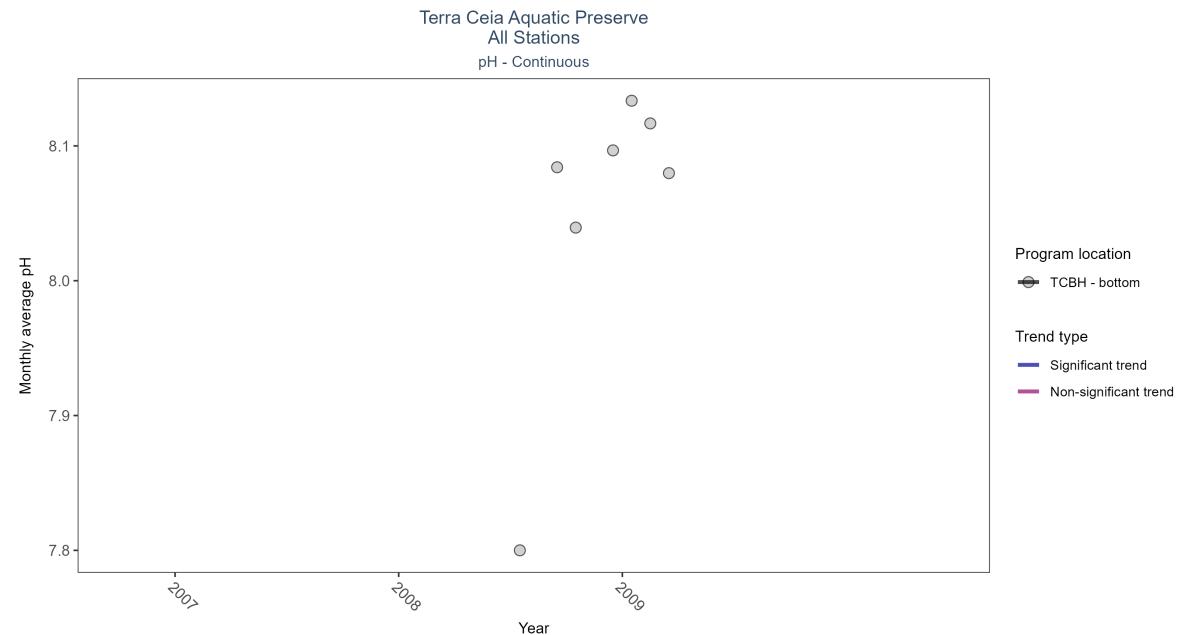


Table 12: Seasonal Kendall-Tau Results for All Stations - pH

| Program Location | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|------------------|--------------------------------------|--------------|-----------------|------------------|---------------------|-----|---------------|-----------|----|
| TCBH | Insufficient data to calculate trend | 8306 | 2 | 2008 - 2009 | 8.1 | - | - | - | NA |

Water Clarity

Turbidity - Discrete

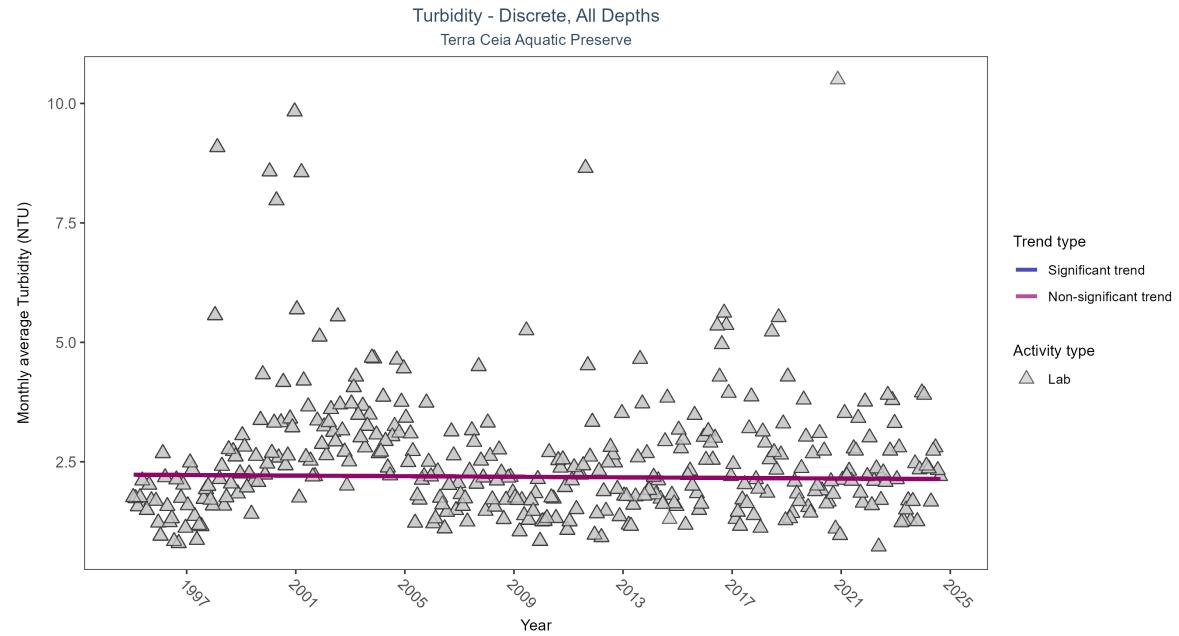


Table 13: Seasonal Kendall-Tau Results for - Turbidity

| 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 | 8004 | 30 | 1995 - 2024 | 1.8 | -0.0246 | 2.22956 | -0.00306 | 0.5301 |

Turbidity - Continuous

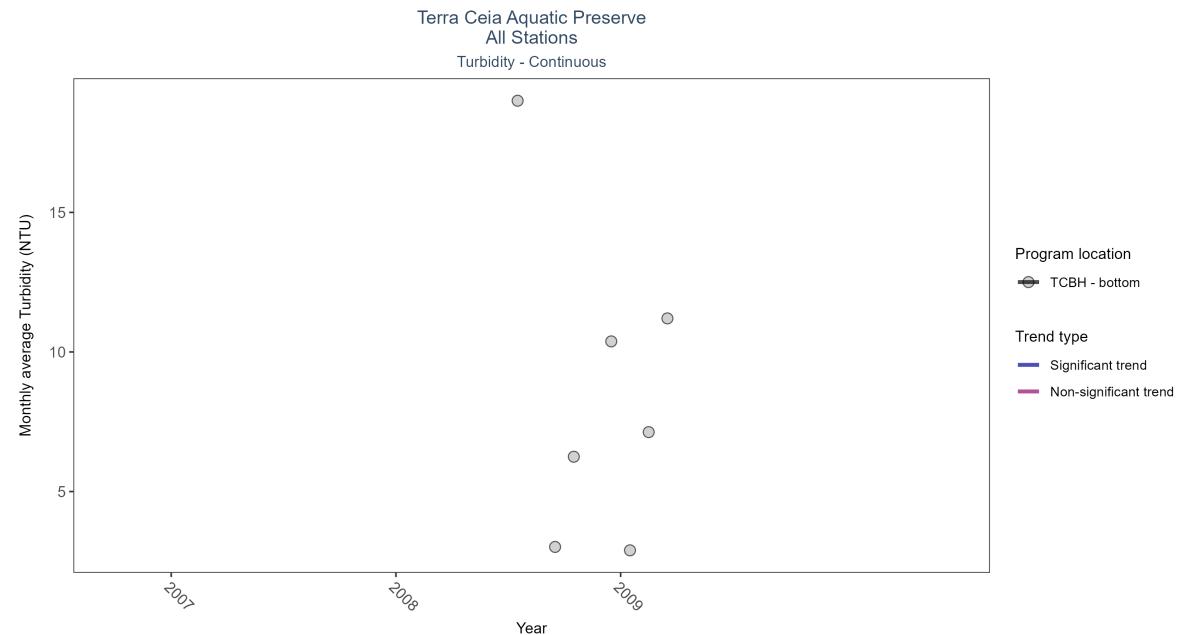


Table 14: Seasonal Kendall-Tau Results for All Stations - Turbidity

| Program Location | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|------------------|--------------------------------------|--------------|-----------------|------------------|---------------------|-----|---------------|-----------|----|
| TCBH | Insufficient data to calculate trend | 8263 | 2 | 2008 - 2009 | | 2 | - | - | NA |

Total Suspended Solids - Discrete

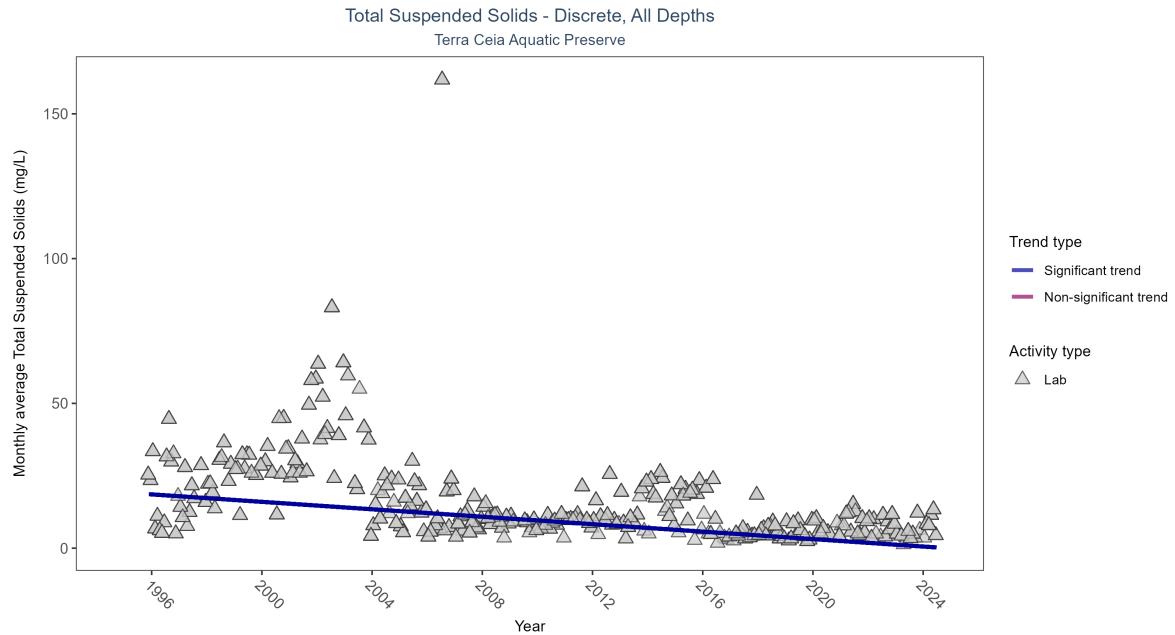


Table 15: Seasonal Kendall-Tau Results for - Total Suspended Solids

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---------------|--------------------------------|--------------|-----------------|------------------|---------------------|------|---------------|-----------|----------------|
| Lab | Significantly decreasing trend | 1646 | 30 | 1995 - 2024 | | 10.6 | -0.4389 | 19.21194 | -0.6433 0.0000 |

Chlorophyll a, Uncorrected for Pheophytin - Discrete

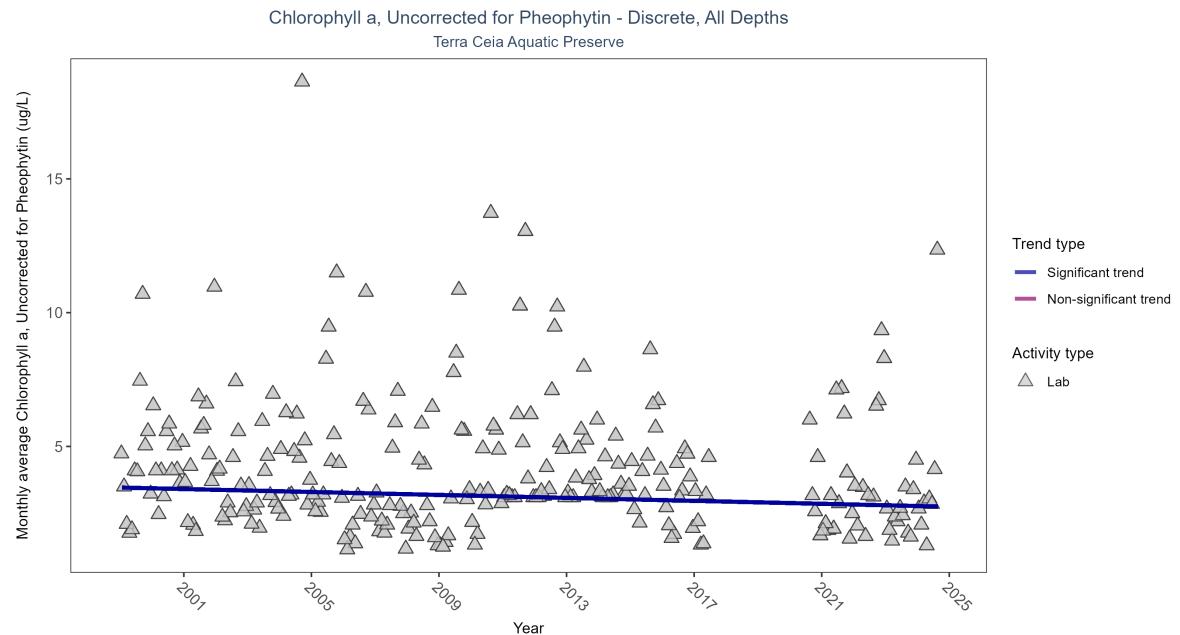


Table 16: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---------------|--------------------------------|--------------|-----------------|------------------|---------------------|---------|---------------|-----------|--------|
| Lab | Significantly decreasing trend | 1080 | 24 | 1999 - 2024 | 3.2 | -0.0998 | 3.46277 | -0.02757 | 0.0239 |

Chlorophyll a, Corrected for Pheophytin - Discrete

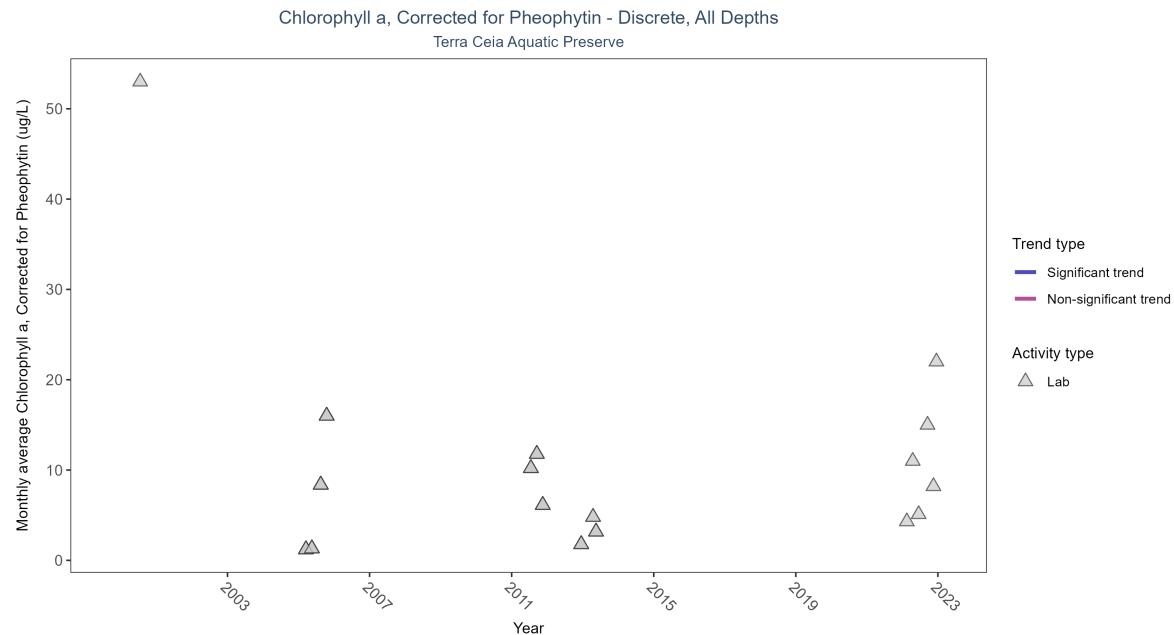


Table 17: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---------------|--------------------------------------|--------------|-----------------|------------------|---------------------|-----|---------------|-----------|----|
| Lab | Insufficient data to calculate trend | 54 | 6 | 2000 - 2022 | 5.1 | - | - | - | NA |

Secchi Depth - Discrete

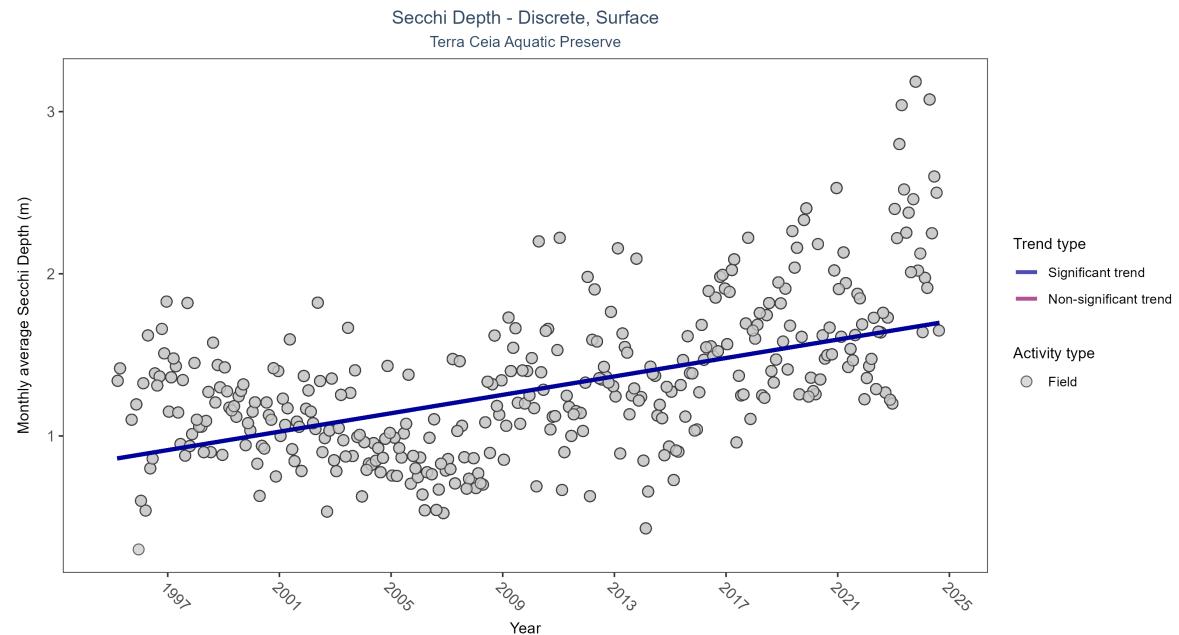


Table 18: Seasonal Kendall-Tau Results for - Secchi Depth

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---------------|--------------------------------|--------------|-----------------|------------------|---------------------|-----|---------------|-----------|---------------|
| Field | Significantly increasing trend | 9833 | 30 | 1995 - 2024 | | 1 | 0.3744 | 0.85592 | 0.0284 0.0000 |

Colored Dissolved Organic Matter - Discrete

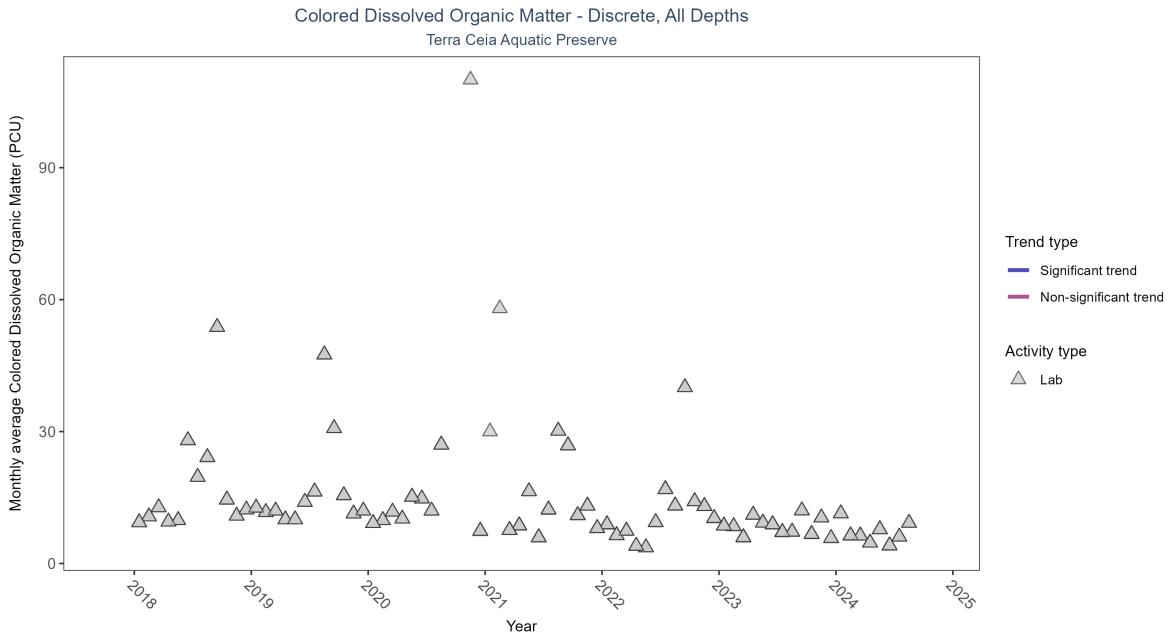


Table 19: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

| 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 | 546 | 7 | 2018 - 2024 | 5.3 | - | - | - | NA |