

Boca Ciega Bay Aquatic Preserve

SEACAR Water Quality Analysis

Last compiled on 06 March, 2025

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Indicators

Nutrients

Total Nitrogen - Discrete

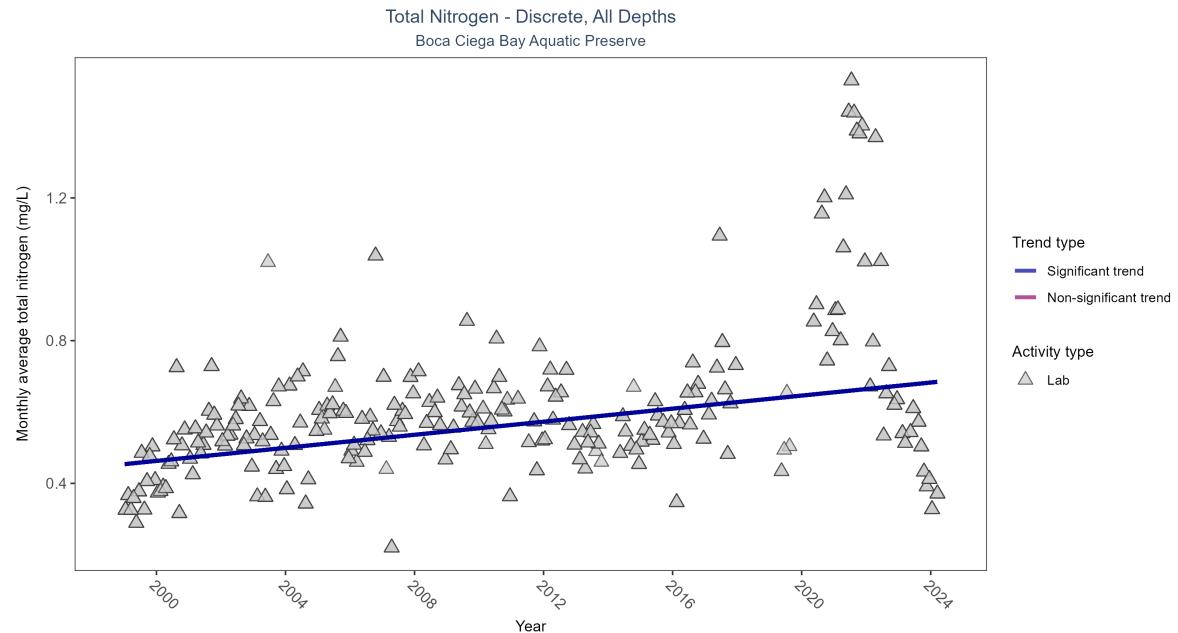
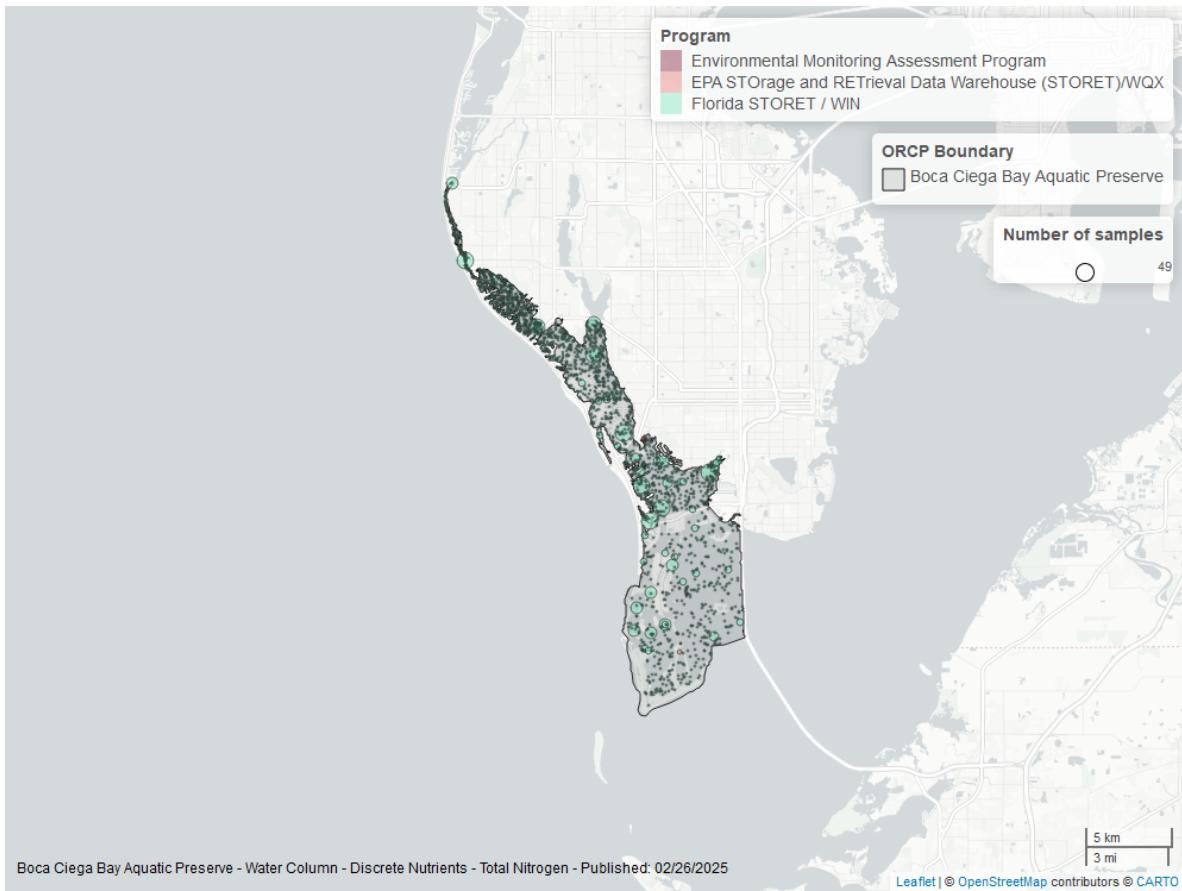


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

| 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 | 2877 | 25 | 1999 - 2024 | 0.55 | 0.2986 | 0.45382 | 0.00915 | 0.0000 |



Total Phosphorus - Discrete

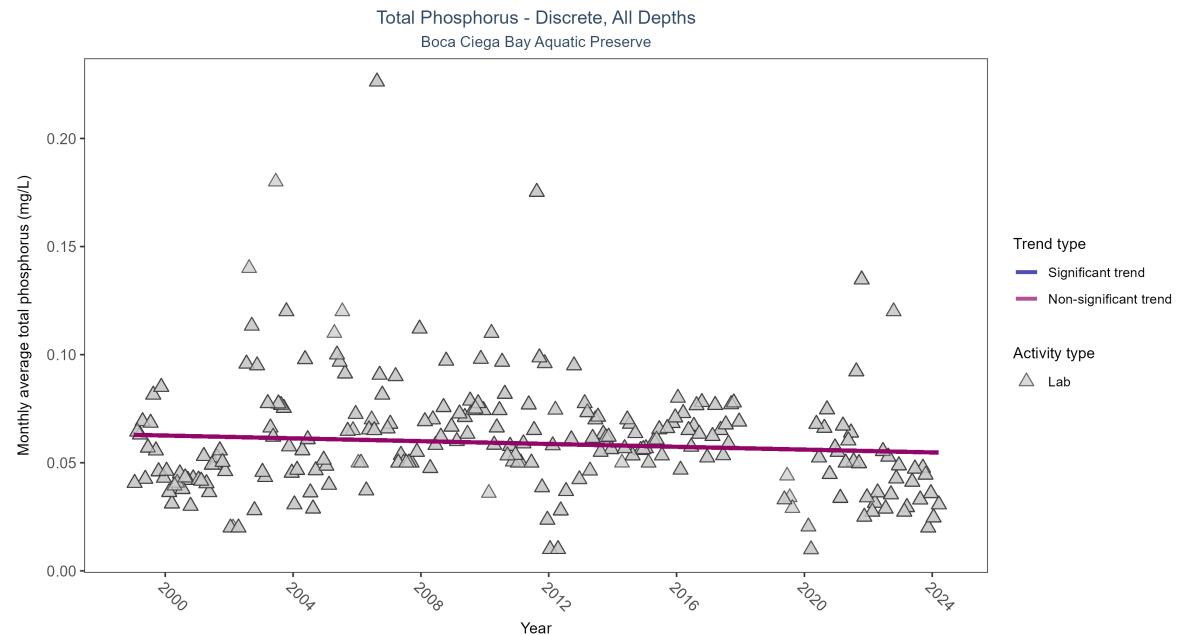
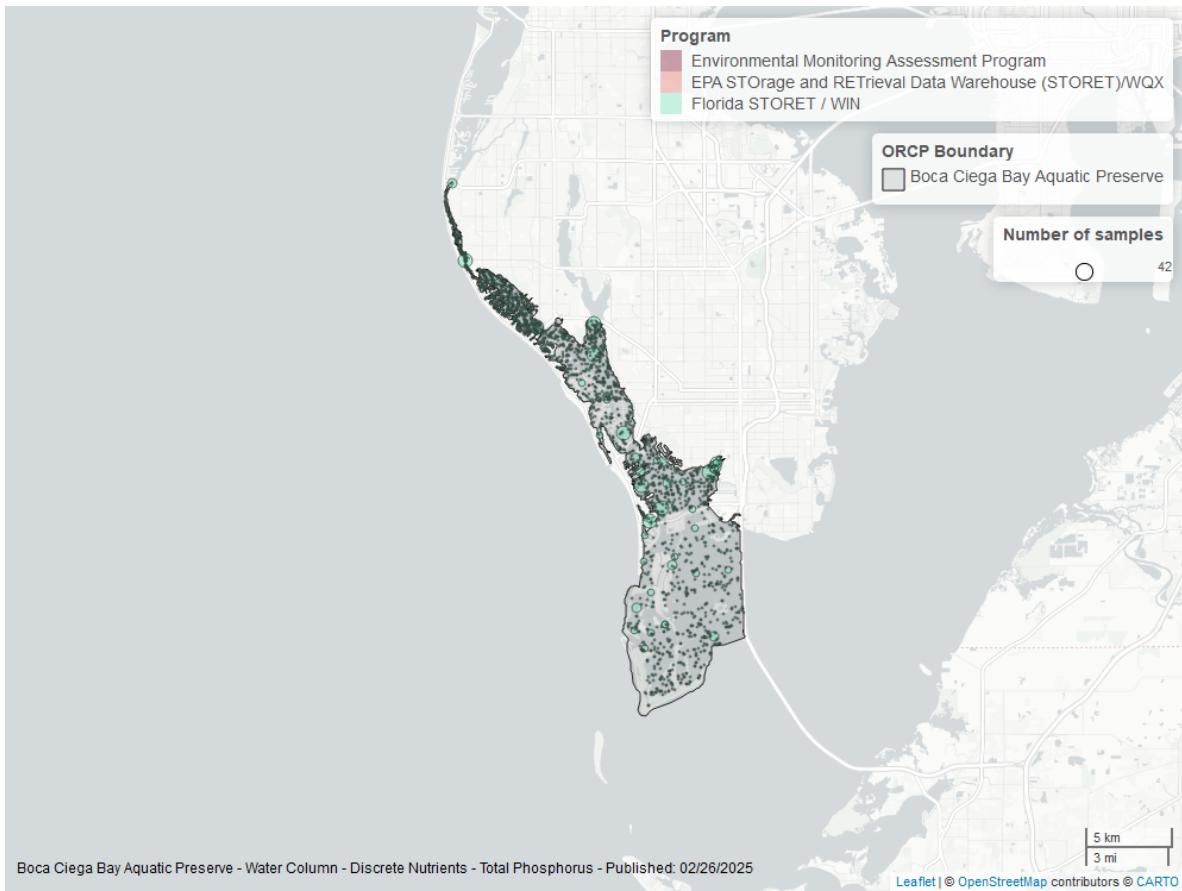


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---------------|----------------------|--------------|-----------------|------------------|---------------------|---------|---------------|-----------|--------|
| Lab | No significant trend | 2762 | 25 | 1999 - 2024 | 0.05 | -0.0775 | 0.06291 | -0.00033 | 0.0826 |



Water Quality

Dissolved Oxygen - Discrete

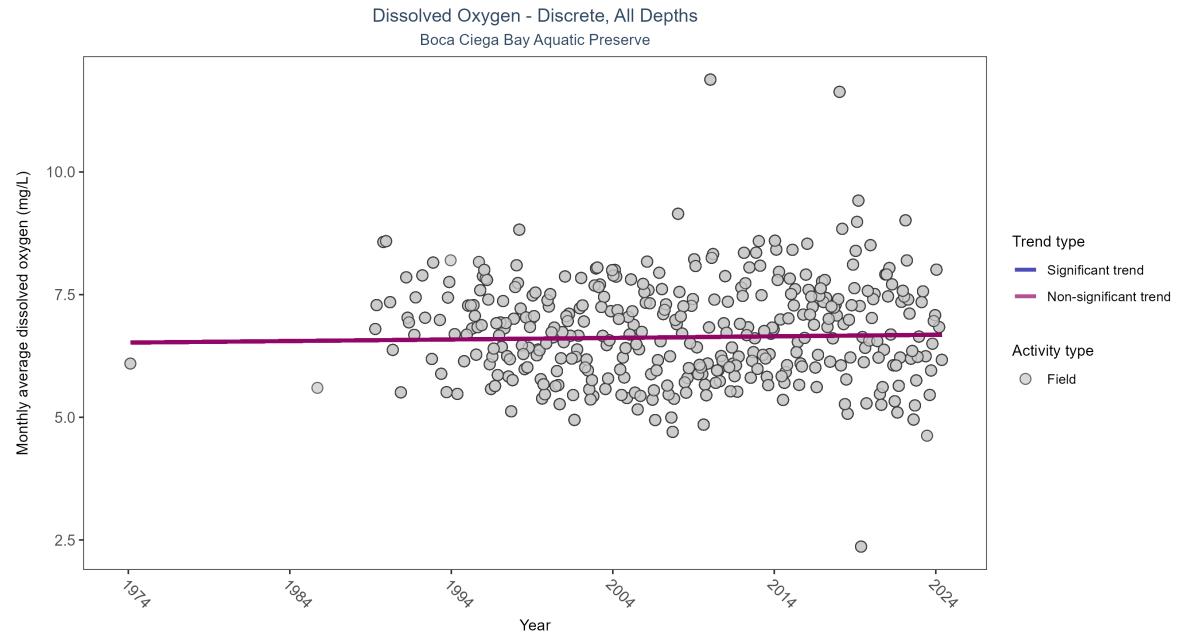
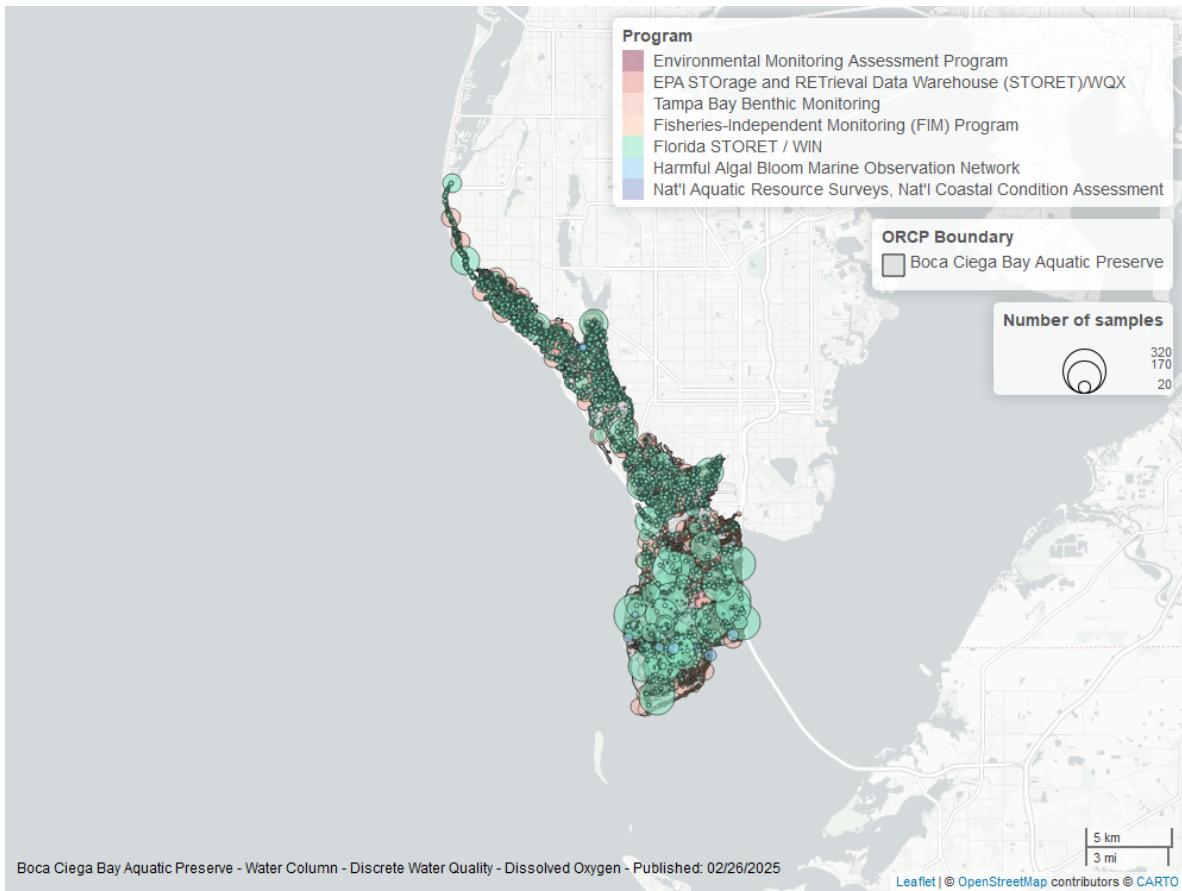


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

| 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 | 30113 | 38 | 1974 - 2024 | 6.44 | 0.0344 | 6.52229 | 0.0032 | 0.4012 |



Dissolved Oxygen Saturation - Discrete

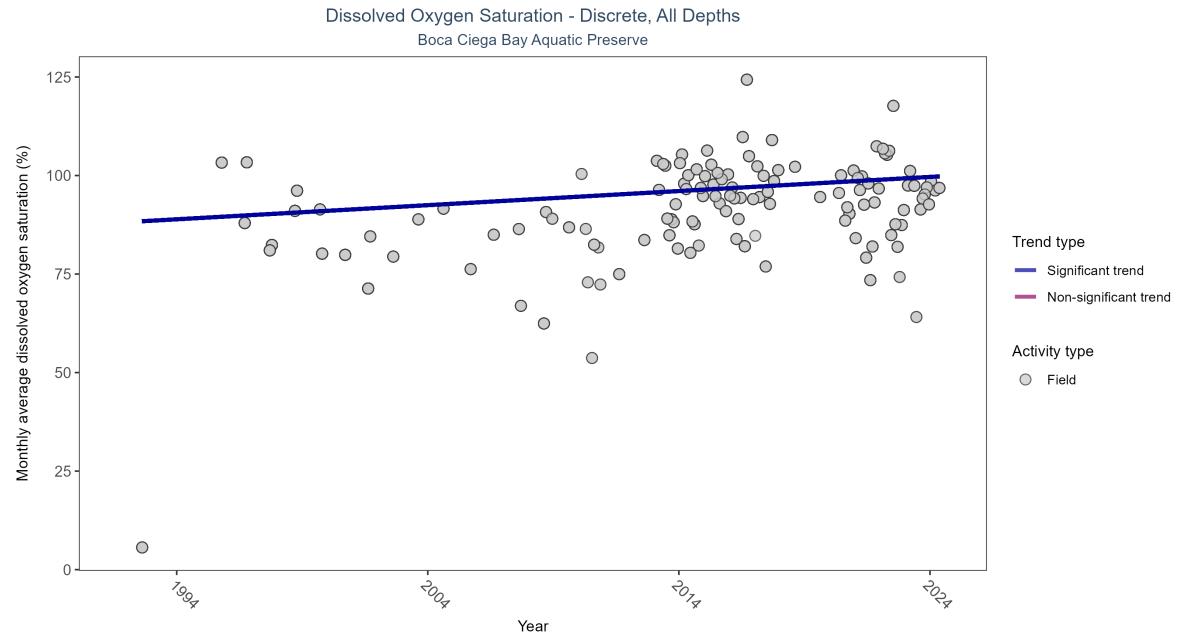
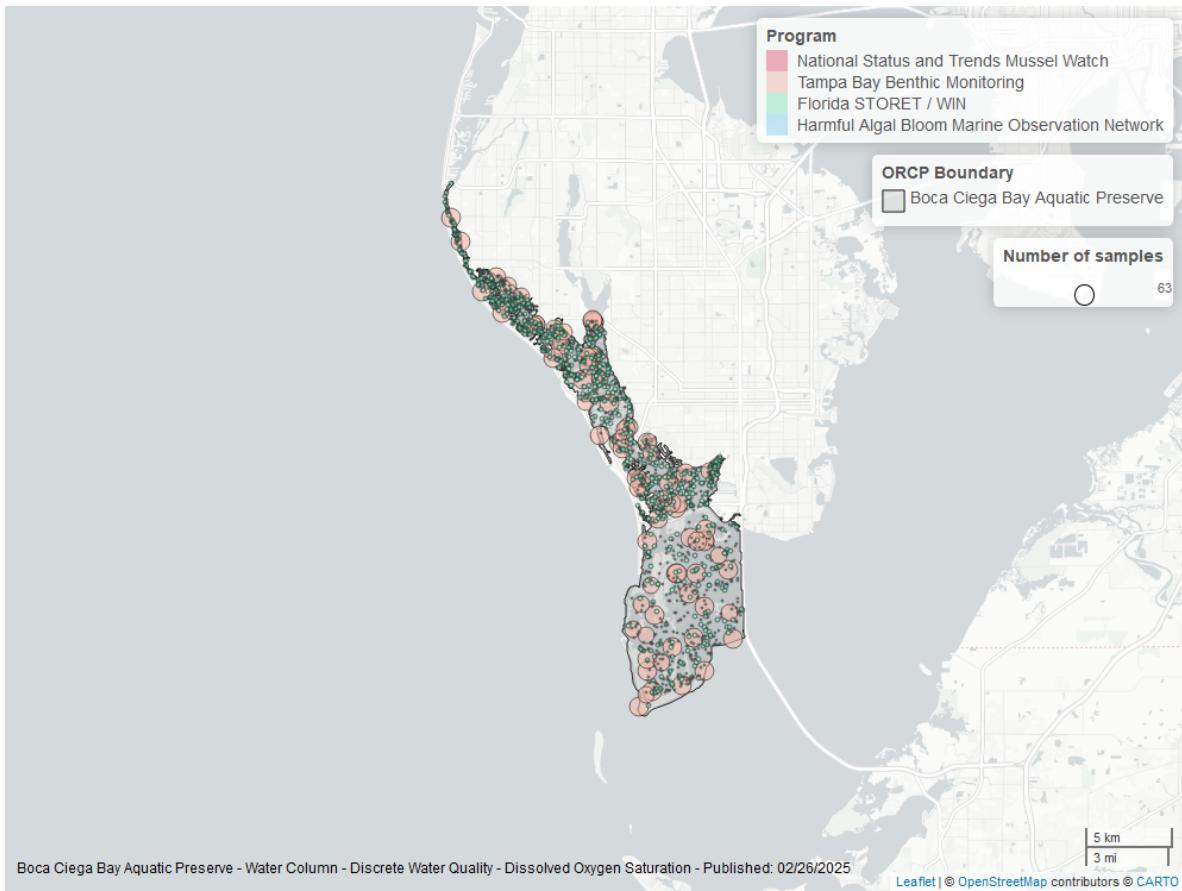


Table 4: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---------------|--------------------------------|--------------|-----------------|------------------|---------------------|--------|---------------|-----------|--------|
| Field | Significantly increasing trend | 7890 | 31 | 1992 - 2024 | 91.1 | 0.1173 | 88.17926 | 0.3583 | 0.0264 |



Salinity - Discrete

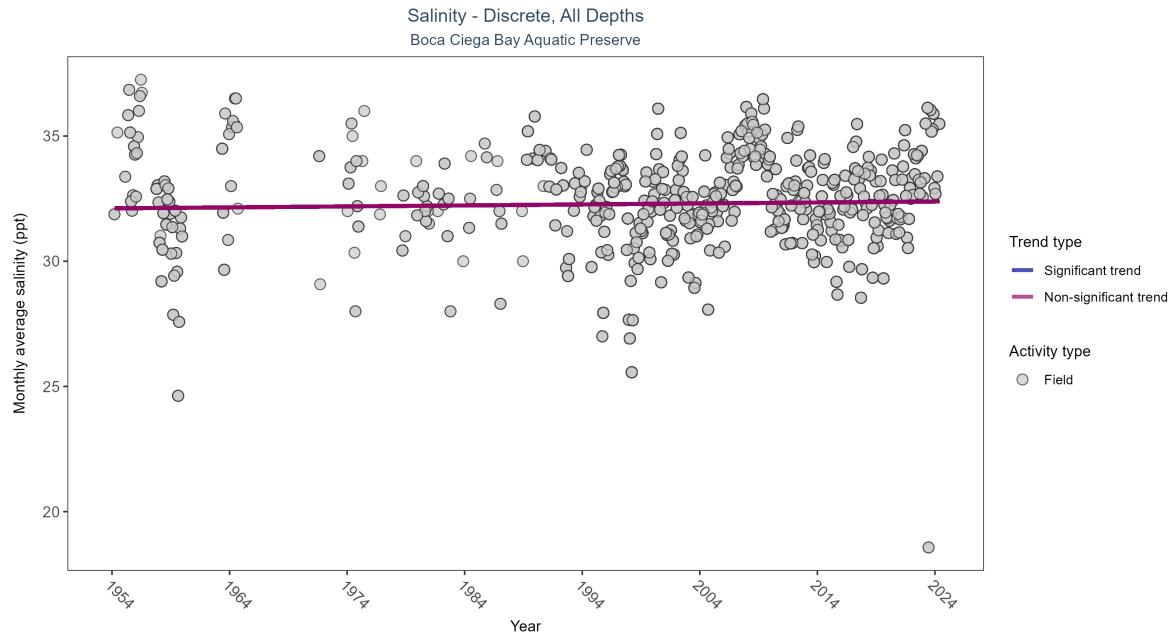
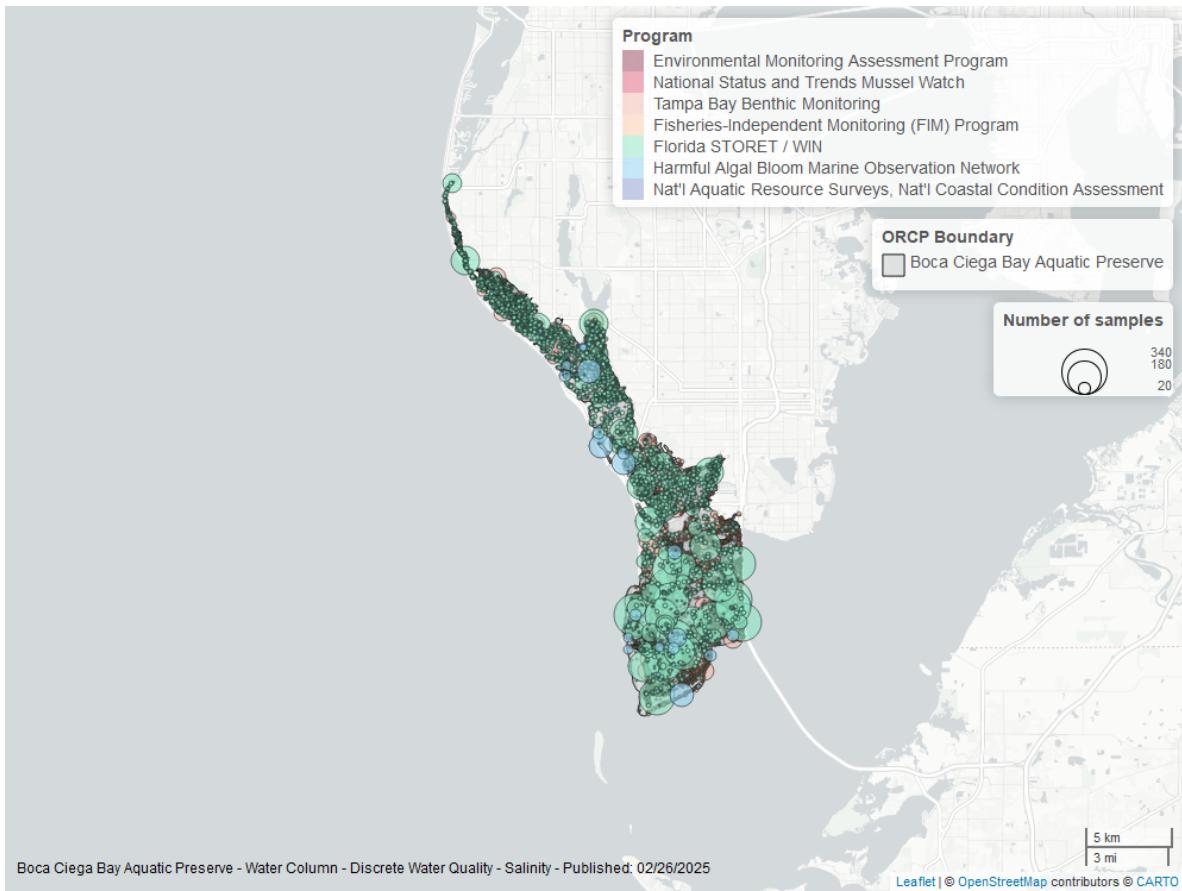


Table 5: Seasonal Kendall-Tau Results for - Salinity

| 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 | 27464 | 59 | 1954 - 2024 | 32.6 | 0.032 | 32.11028 | 0.00394 | 0.3354 |



Water Temperature - Discrete

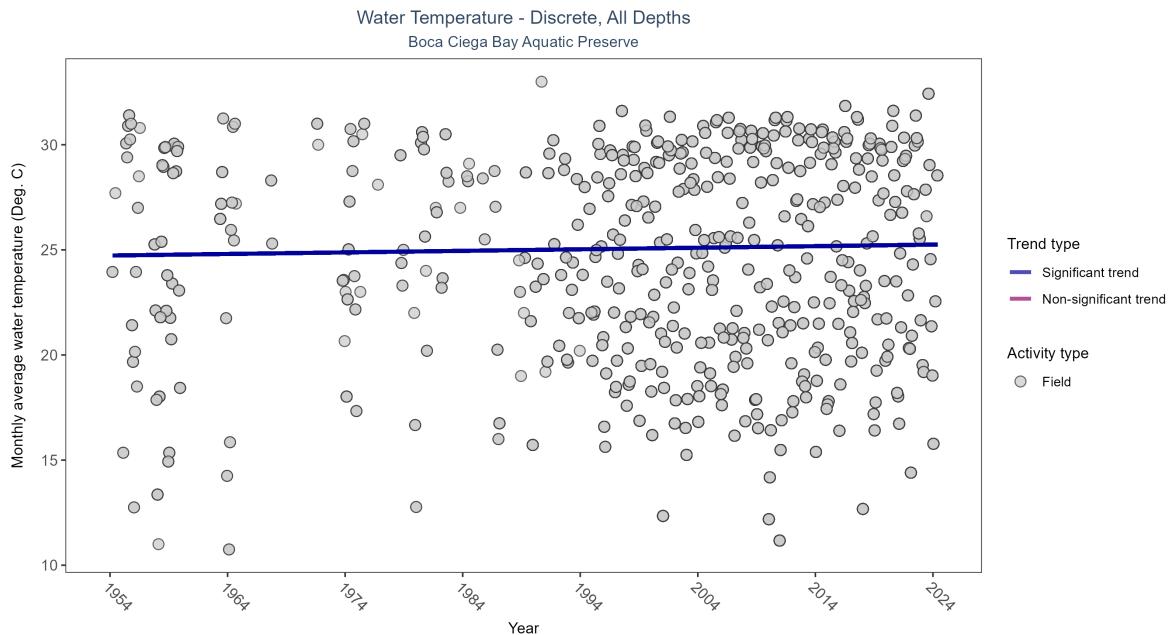
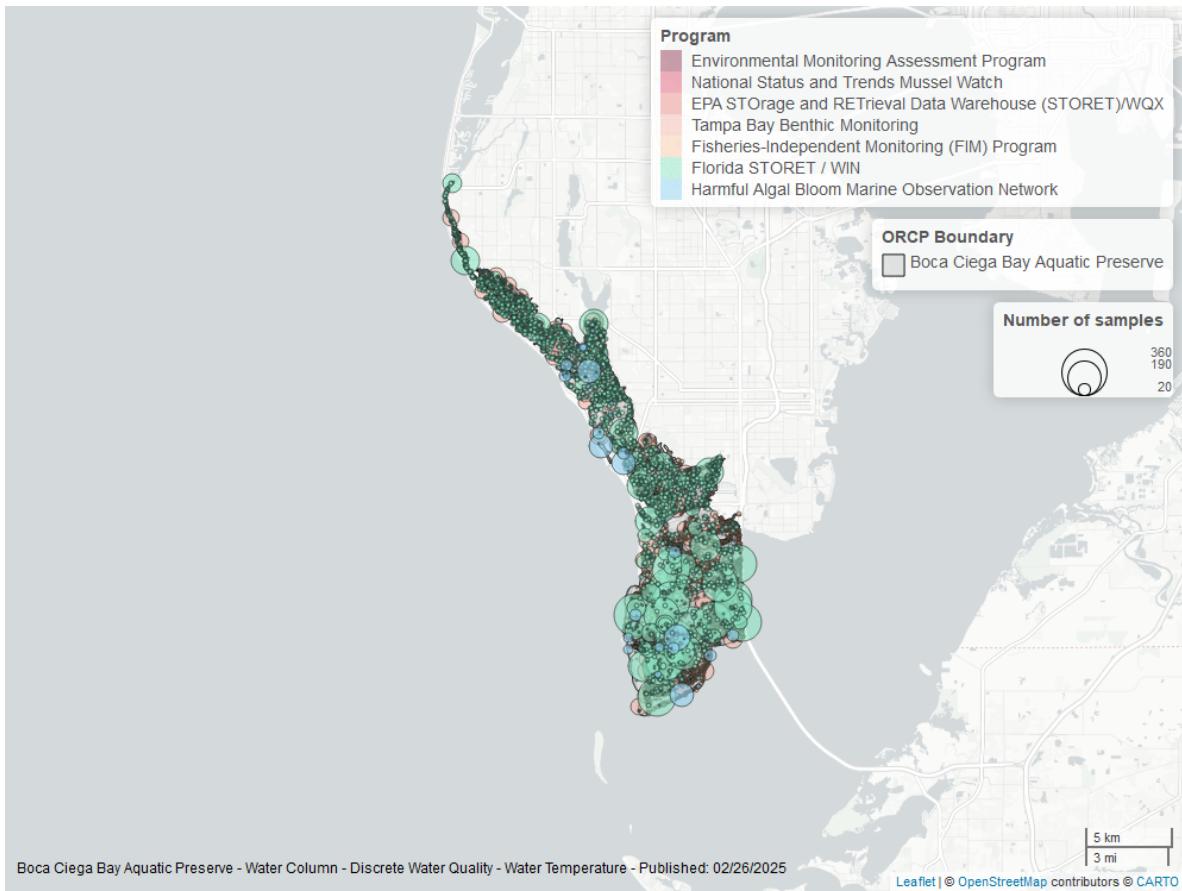


Table 6: Seasonal Kendall-Tau Results for - Water Temperature

| 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 | 30690 | 61 | 1954 - 2024 | 27.1 | 0.0628 | 24.73093 | 0.00742 | 0.0468 |



pH - Discrete

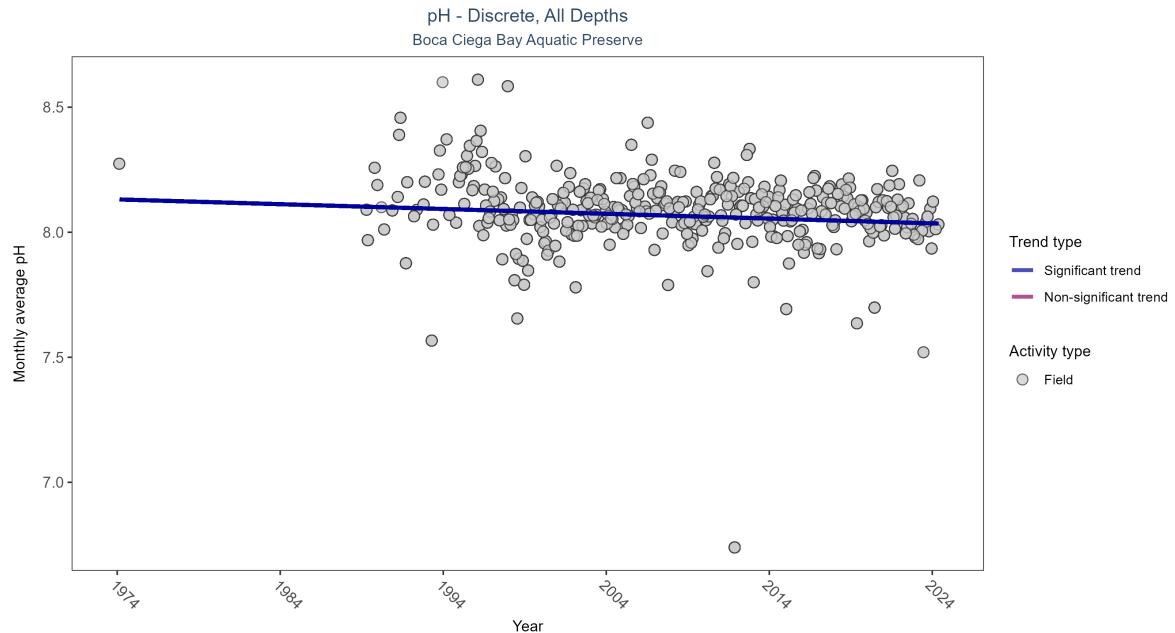
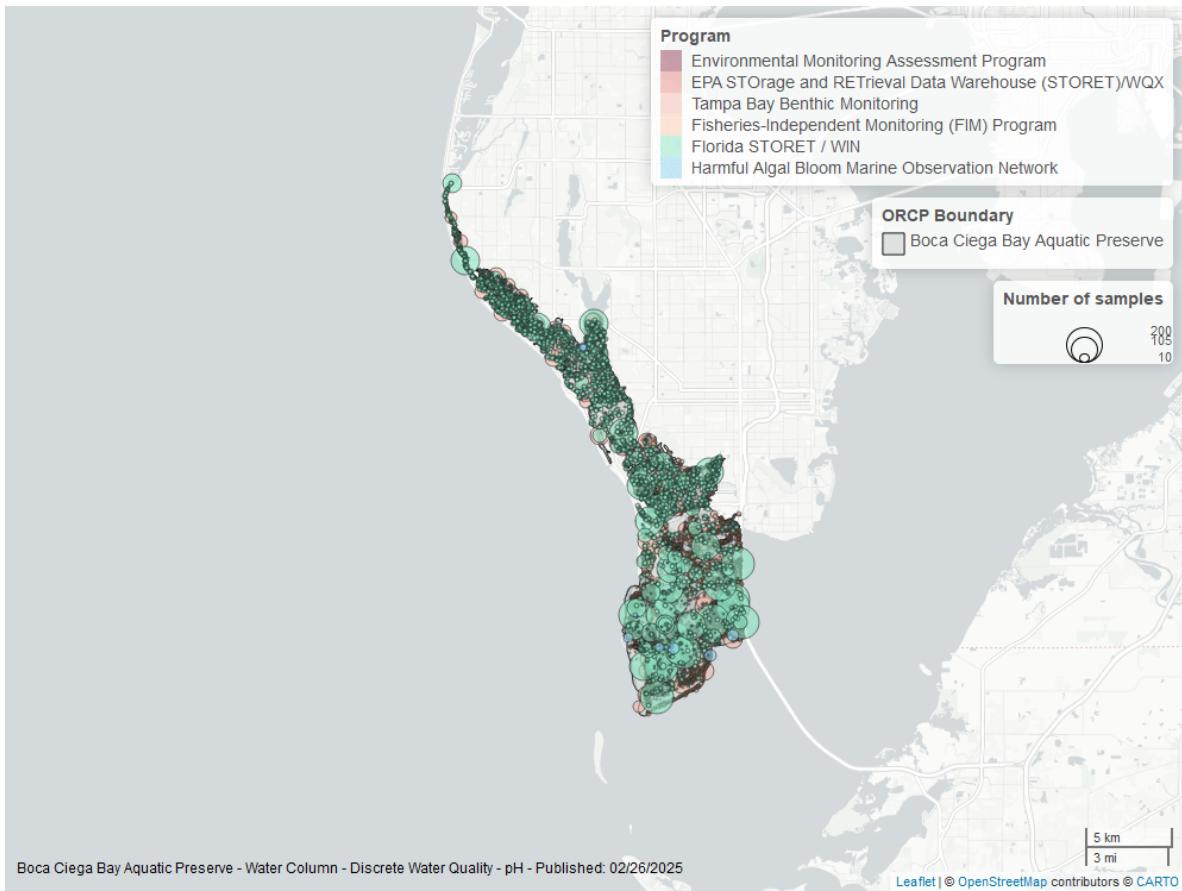


Table 7: Seasonal Kendall-Tau Results for - pH

| 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 | 27397 | 37 | 1974 - 2024 | 8.1 | -0.1172 | 8.13134 | -0.00192 | 0.0012 |



Water Clarity

Turbidity - Discrete

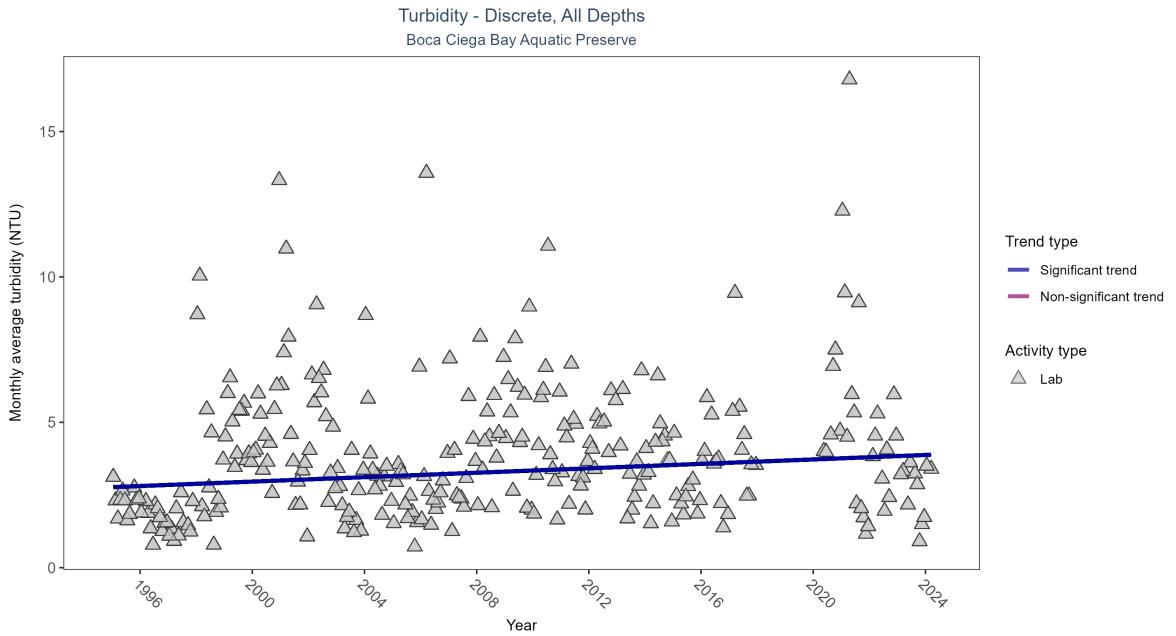
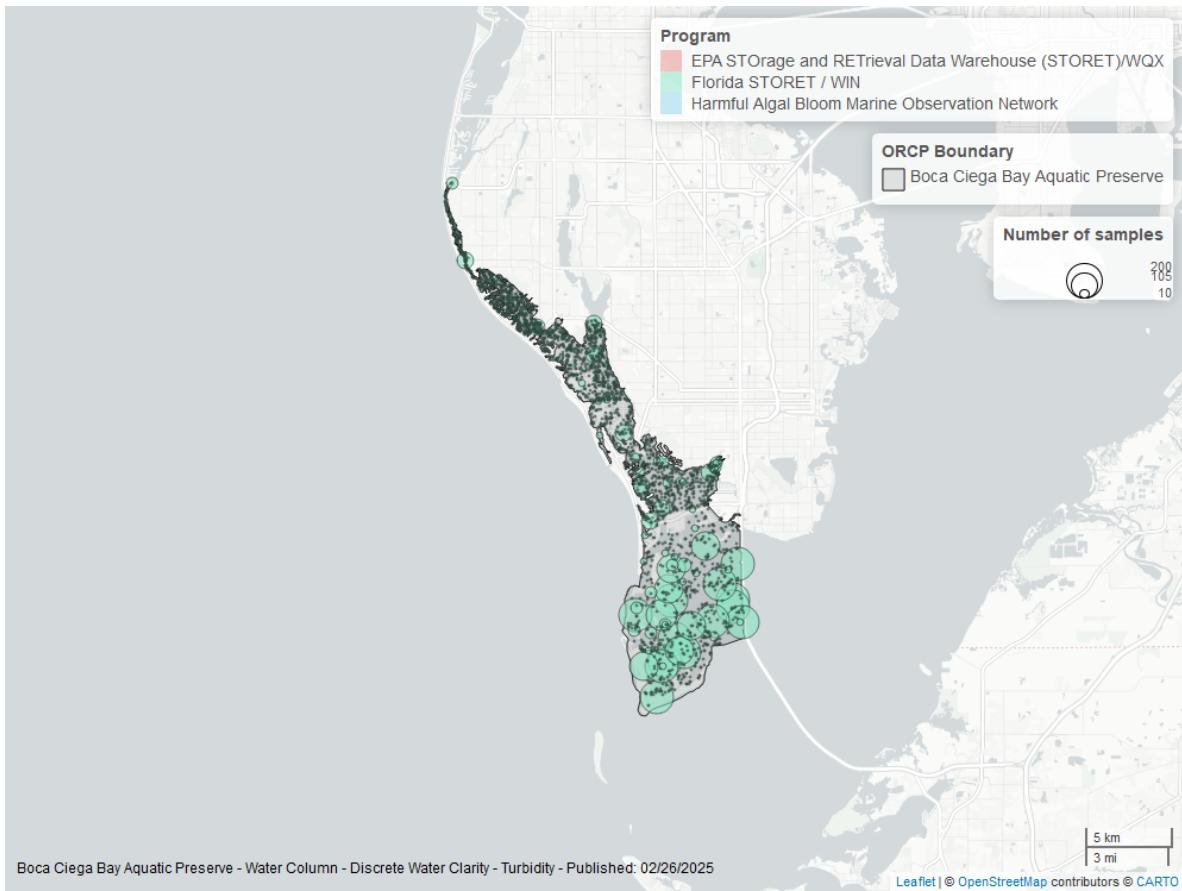


Table 8: Seasonal Kendall-Tau Results for - Turbidity

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---------------|--------------------------------|--------------|-----------------|------------------|---------------------|--------|---------------|-----------|--------|
| Lab | Significantly increasing trend | 6946 | 28 | 1995 - 2024 | 2.6 | 0.1239 | 2.76978 | 0.03813 | 0.0025 |



Total Suspended Solids - Discrete

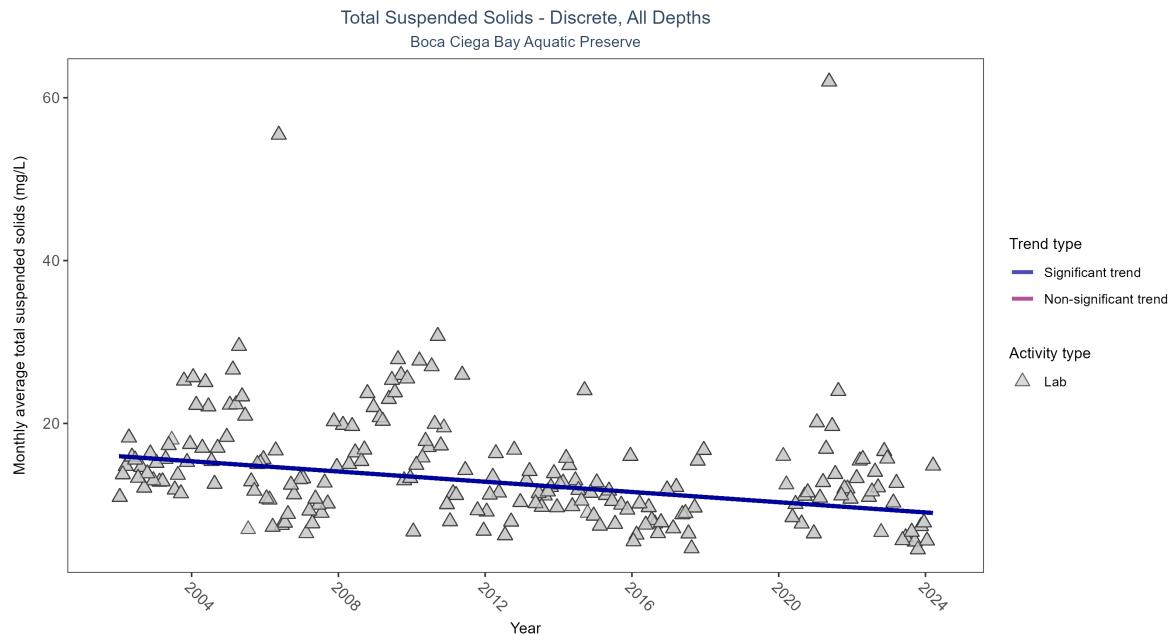
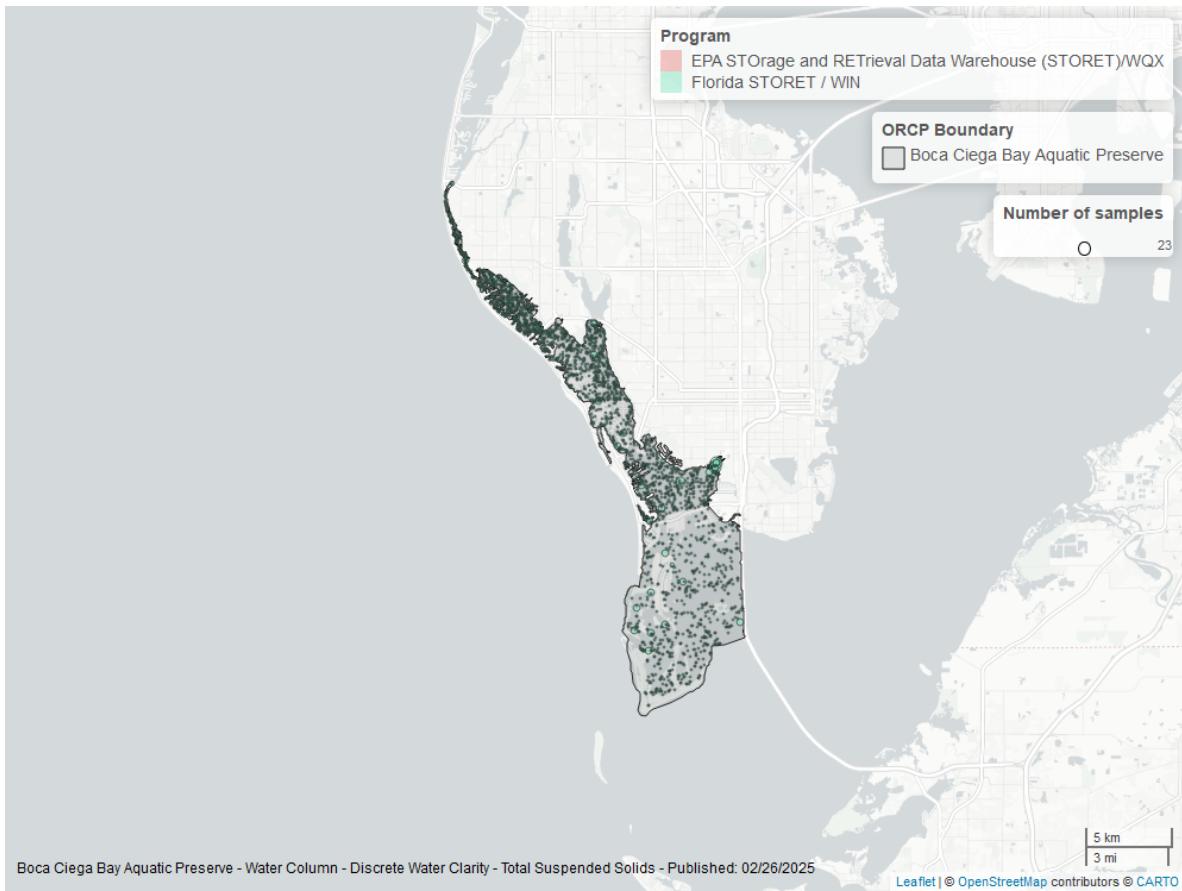


Table 9: Seasonal Kendall-Tau Results for - Total Suspended Solids

| 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 | 2663 | 21 | 2002 - 2024 | | 12 | -0.2916 | 15.98036 | -0.31429 | 0.0000 |



Chlorophyll a, Uncorrected for Pheophytin - Discrete

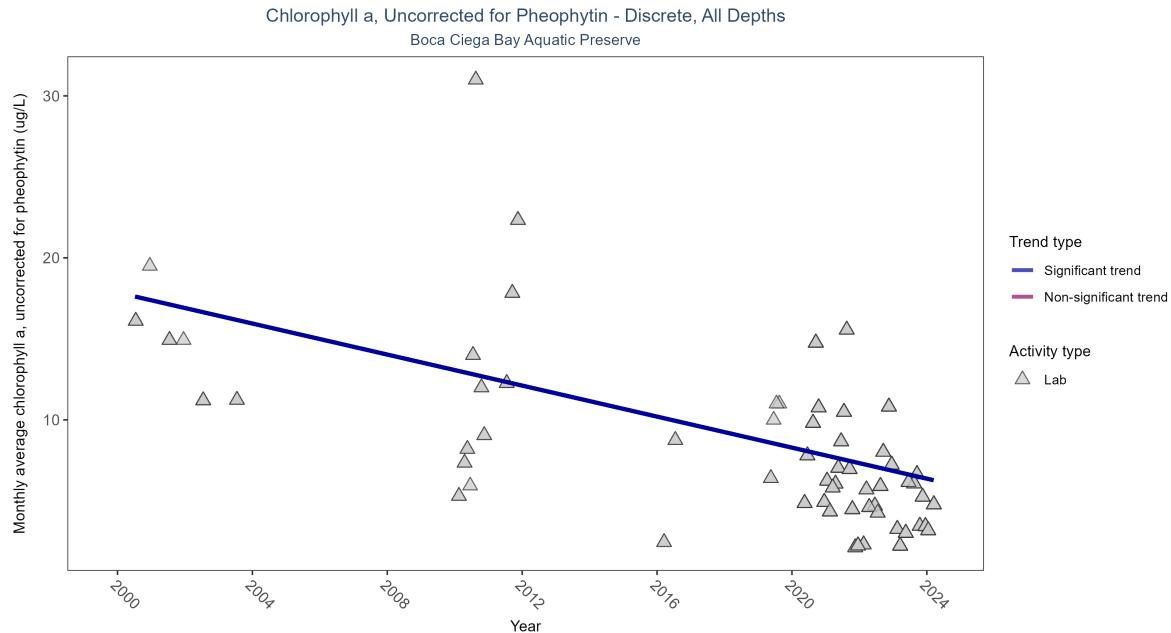
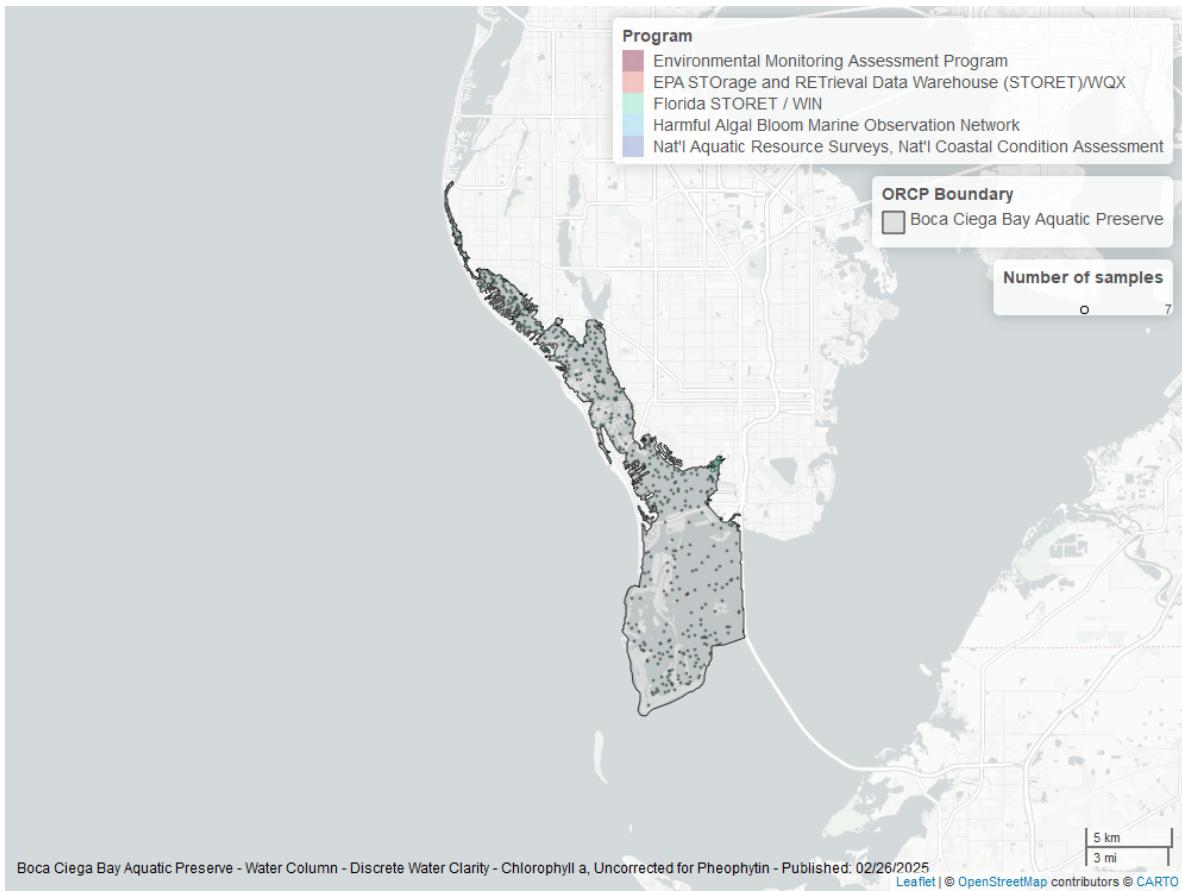


Table 10: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

| 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 | 576 | 13 | 2000 - 2024 | 5.1 | -0.5894 | 17.8627 | -0.47883 | 0.0000 |



Chlorophyll a, Corrected for Pheophytin - Discrete

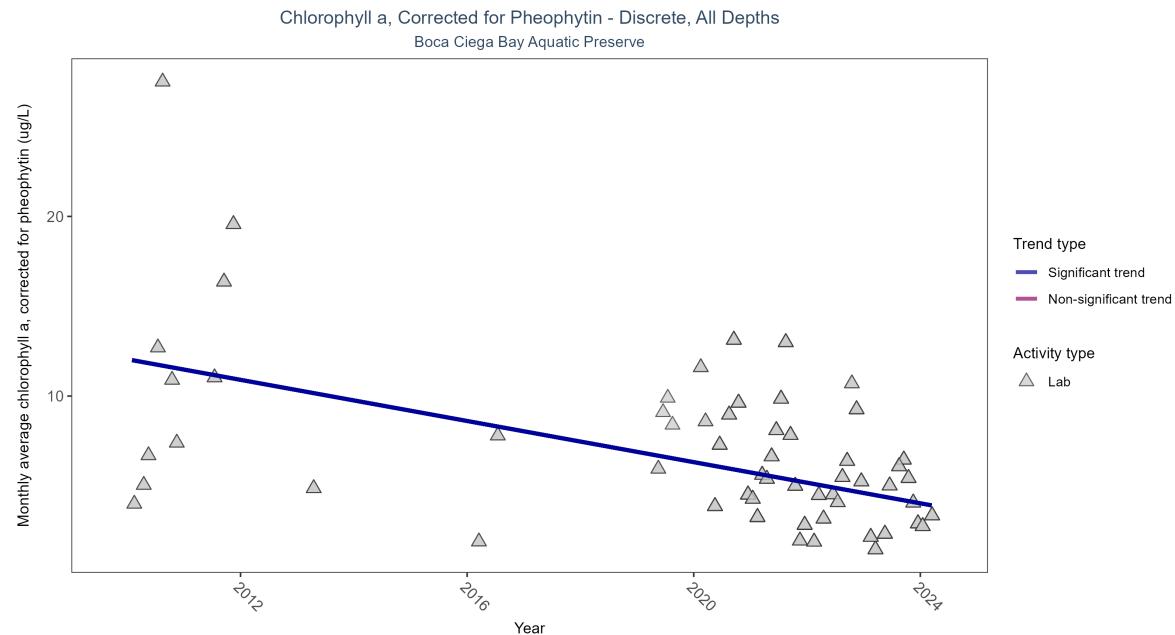
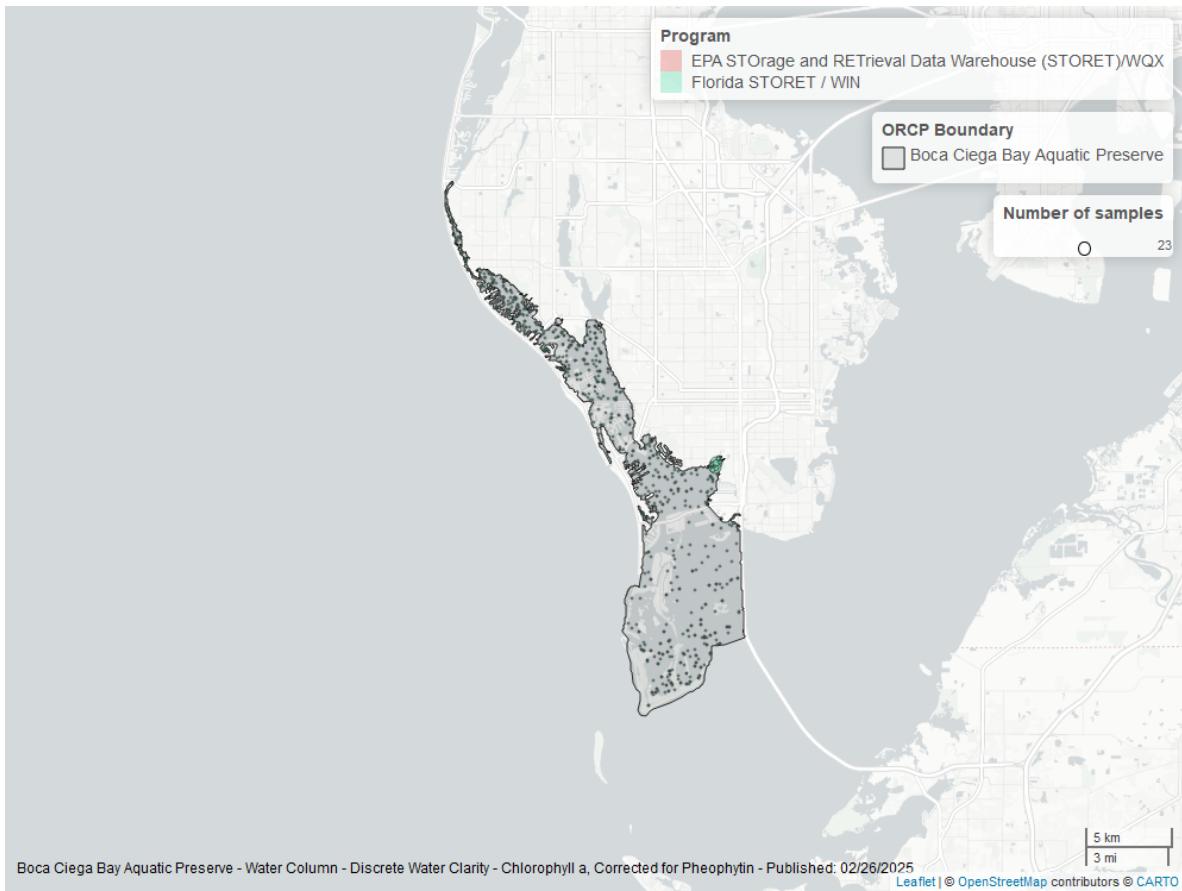


Table 11: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

| 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 | 744 | 10 | 2010 - 2024 | 4.4 | -0.492 | 12.04944 | -0.57273 | 0.0001 |



Secchi Depth - Discrete

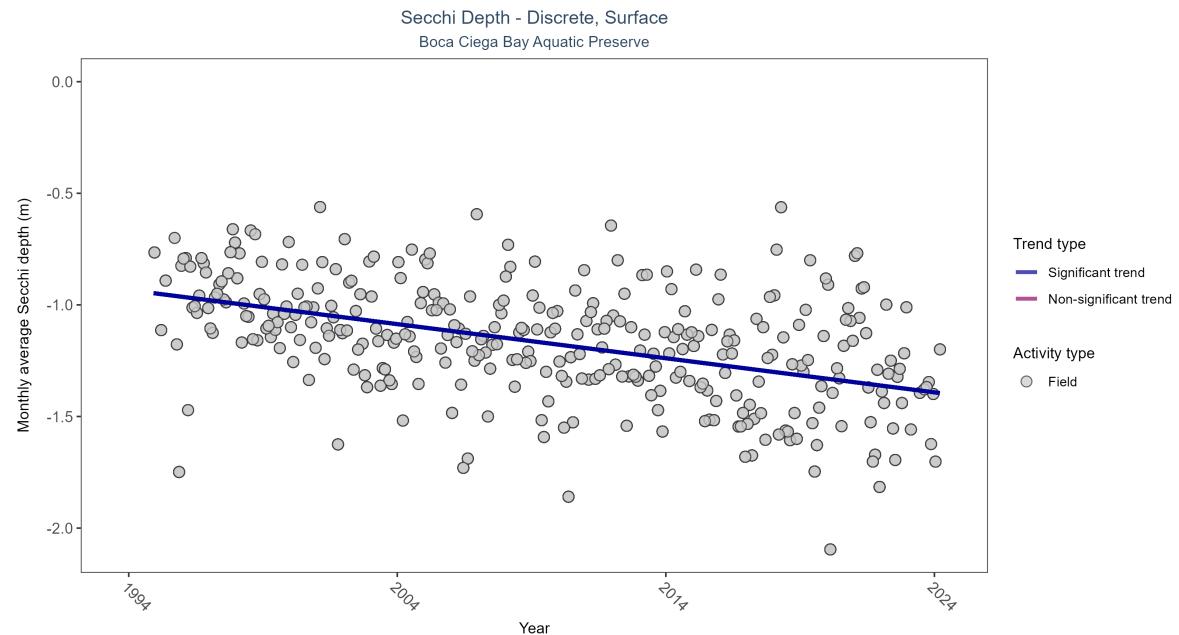


Table 12: Seasonal Kendall-Tau Results for - Secchi Depth

| Activity Type | Statistical Trend | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P |
|---------------|--------------------------------|--------------|-----------------|------------------|---------------------|---------|---------------|-----------|--------|
| Field | Significantly decreasing trend | 9714 | 31 | 1994 - 2024 | -1.1 | -0.3369 | -0.93333 | -0.01529 | 0.0000 |

