

# Fort Clinch State Park Aquatic Preserve

## SEACAR Water Quality Analysis

Last compiled on 06 March, 2025

### Contents

|  |          |
|--|----------|
| <b>Indicators</b>  | <b>2</b> |
| Nutrients . . . . .  | 2        |
| Total Nitrogen - Discrete . . . . .                            | 2        |
| Total Phosphorus - Discrete . . . . .                          | 4        |
| Water Quality . . . . .  | 6        |
| Dissolved Oxygen - Discrete . . . . .                          | 6        |
| Dissolved Oxygen Saturation - Discrete . . . . .               | 8        |
| Salinity - Discrete . . . . .                                  | 10       |
| Water Temperature - Discrete . . . . .                         | 12       |
| pH - Discrete . . . . .  | 14       |
| Water Clarity . . . . .  | 16       |
| Turbidity - Discrete . . . . .                                 | 16       |
| Total Suspended Solids - Discrete . . . . .                    | 18       |
| Chlorophyll a, Uncorrected for Pheophytin - Discrete . . . . . | 20       |
| Chlorophyll a, Corrected for Pheophytin - Discrete . . . . .   | 22       |
| Secchi Depth - Discrete . . . . .                              | 24       |

# Indicators

## Nutrients

### Total Nitrogen - Discrete

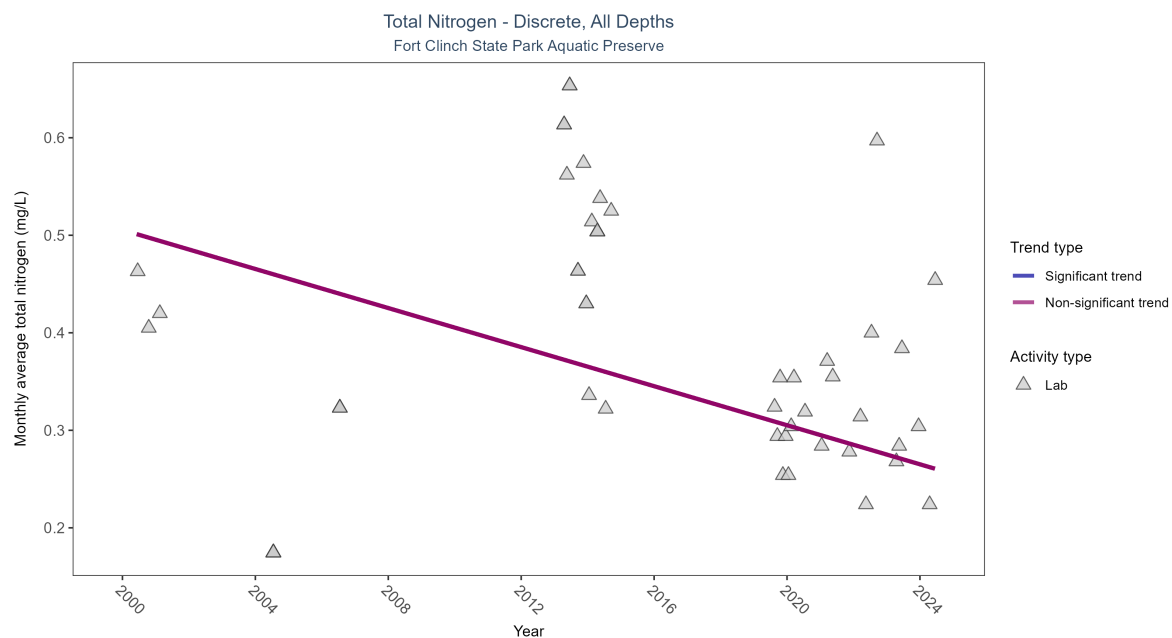
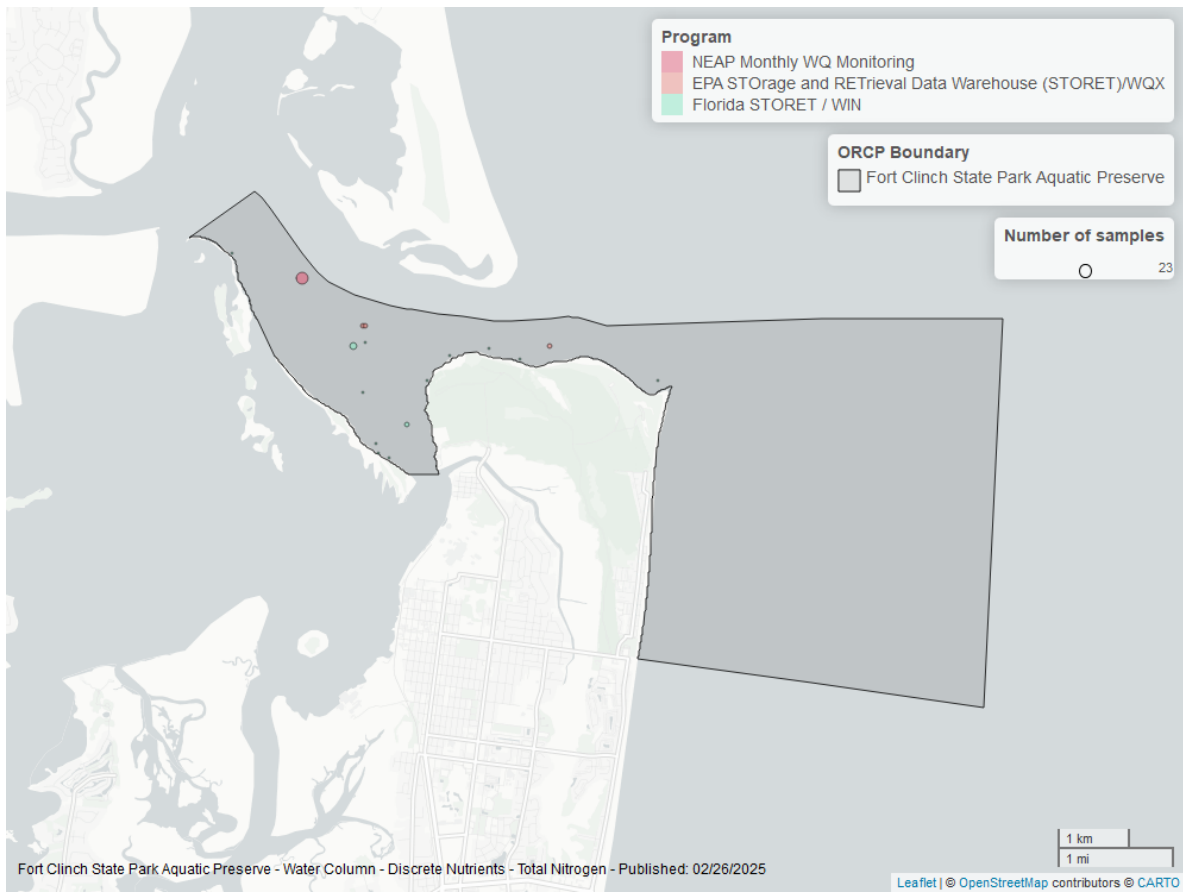


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

| Activity Type | Statistical Trend    | Sample Count | Years with Data | Period of Record | Median Result Value | Tau     | Sen Intercept | Sen Slope | P      |
|---------------|----------------------|--------------|-----------------|------------------|---------------------|---------|---------------|-----------|--------|
| Lab           | No significant trend | 55           | 12              | 2000 - 2024      | 0.354               | -0.3333 | 0.50547       | -0.01001  | 0.0908 |



## Total Phosphorus - Discrete

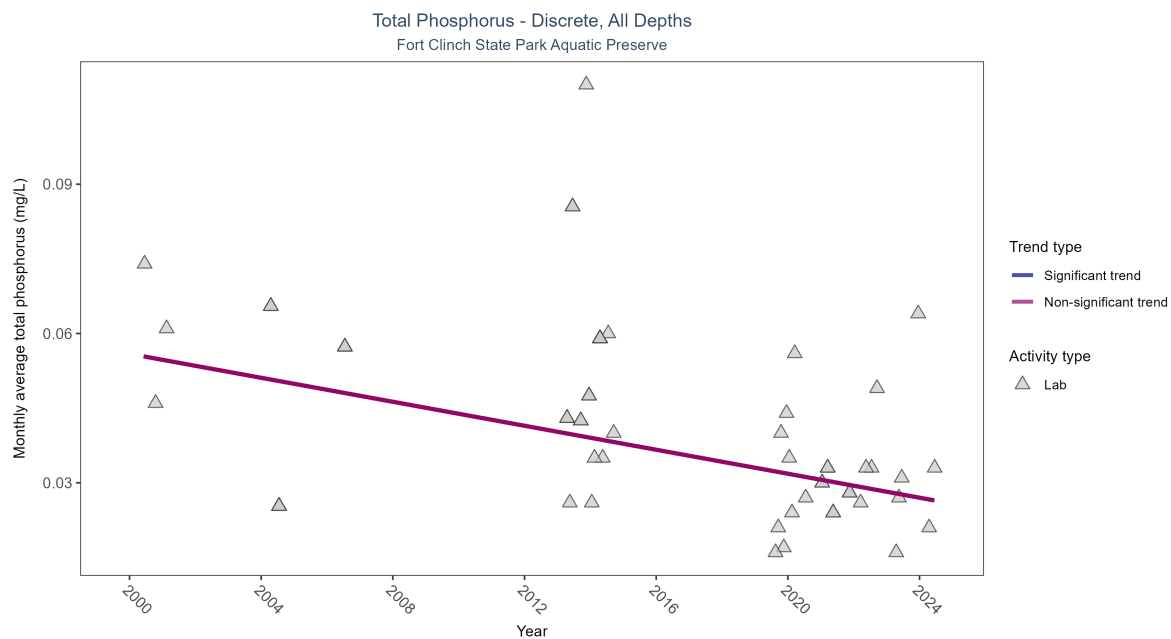
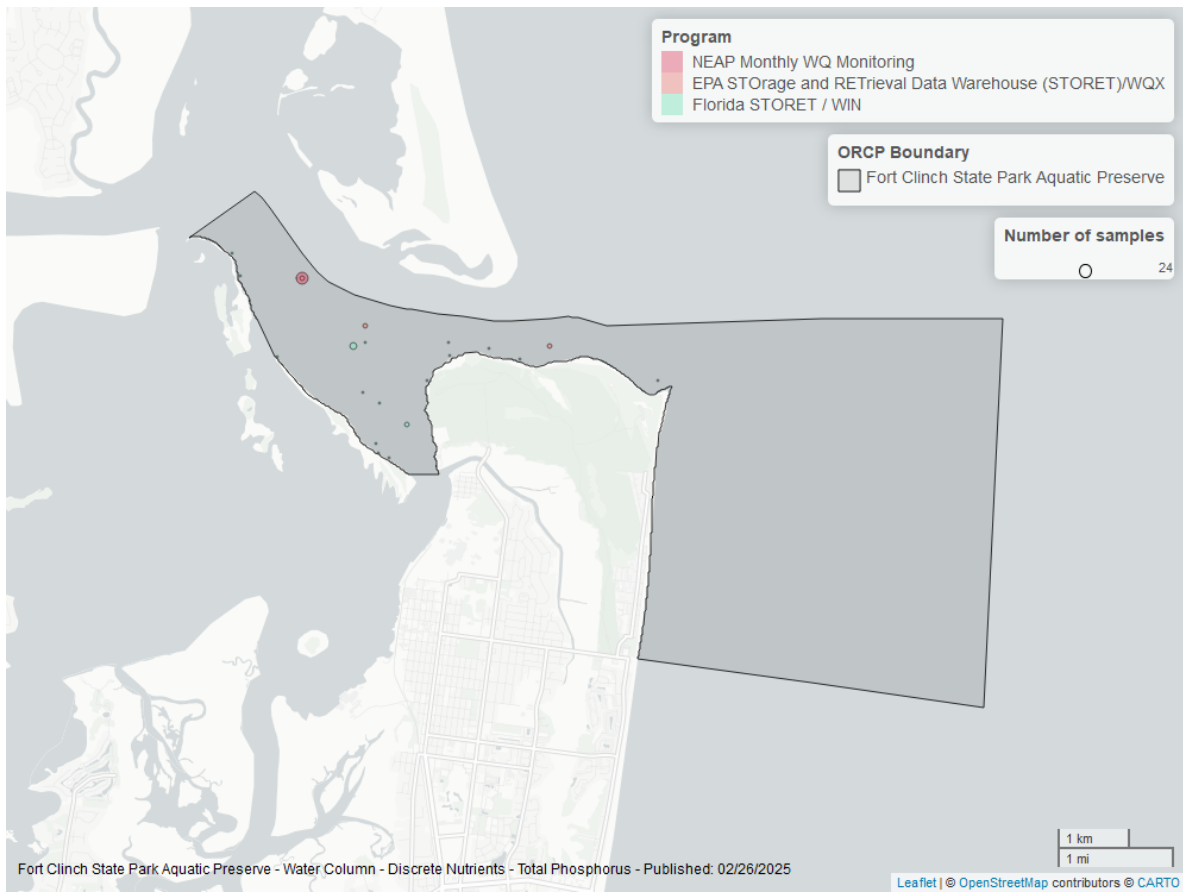


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

| 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 | 58           | 12              | 2000 - 2024      | 0.034               | -0.2583 | 0.05592       | -0.0012   | 0.2374 |



# Water Quality

## Dissolved Oxygen - Discrete

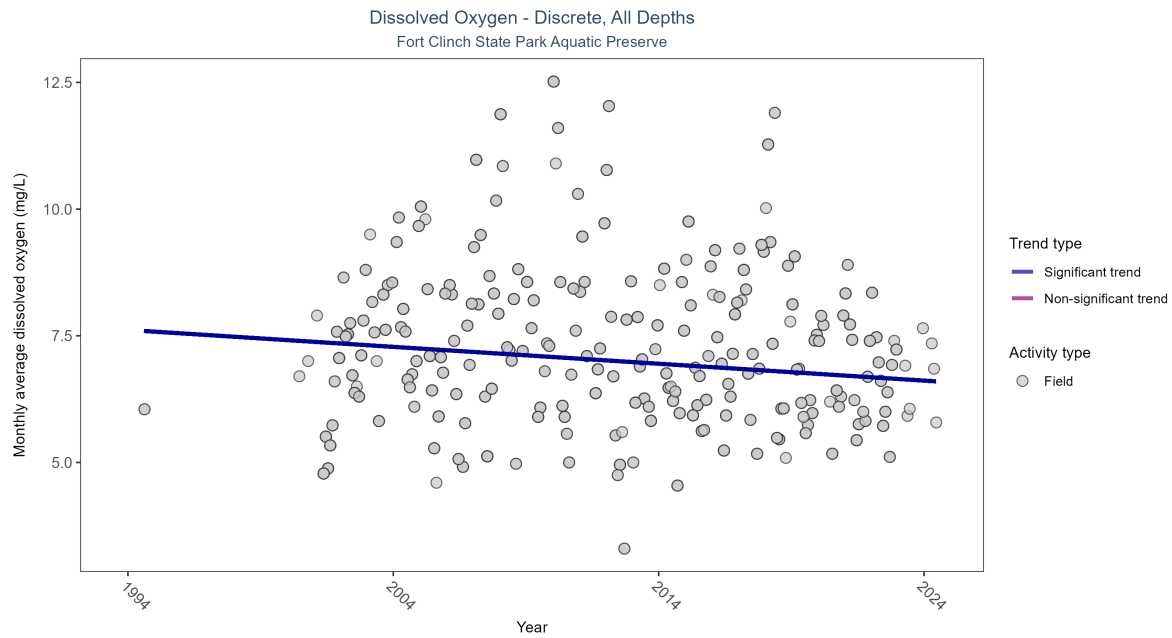
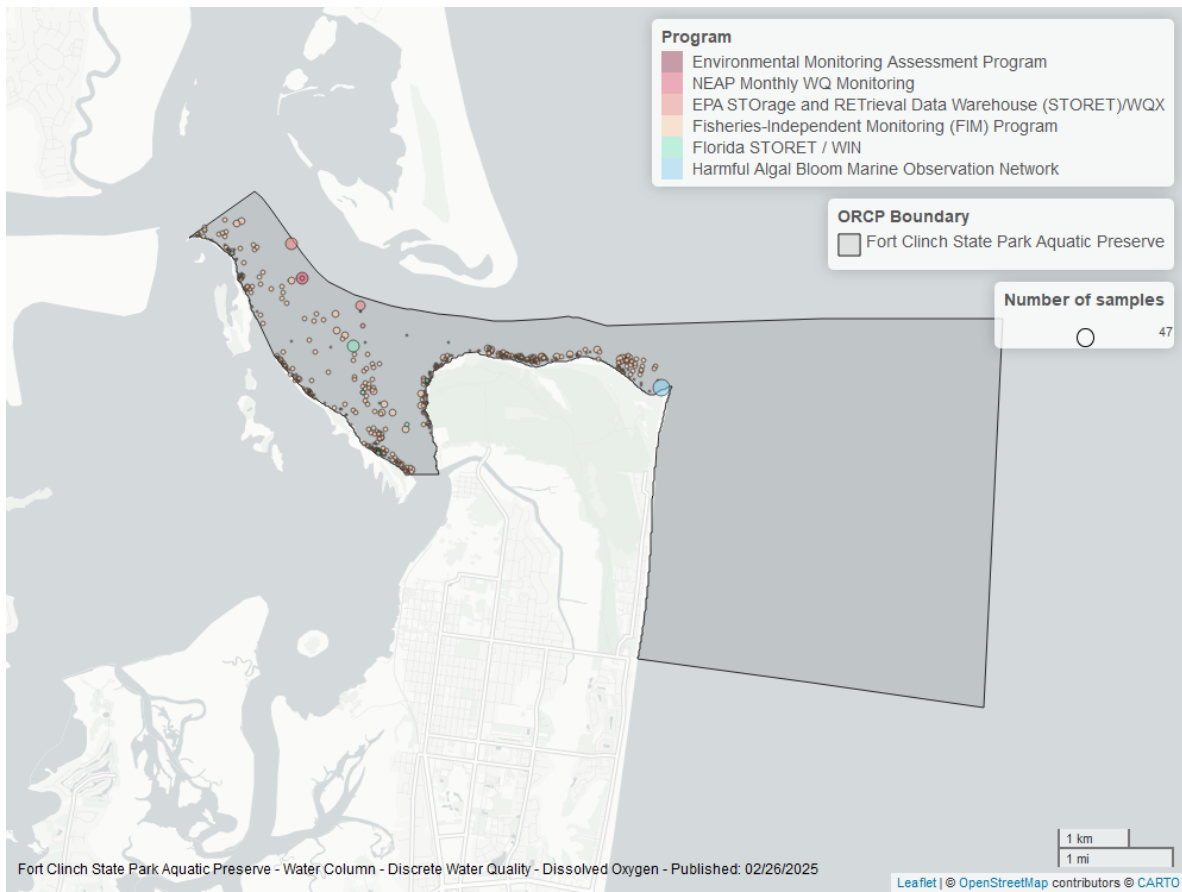


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

| Activity Type | Statistical Trend              | Sample Count | Years with Data | Period of Record | Median Result Value | Tau     | Sen Intercept | Sen Slope | P      |
|---------------|--------------------------------|--------------|-----------------|------------------|---------------------|---------|---------------|-----------|--------|
| Field         | Significantly decreasing trend | 1641         | 26              | 1994 - 2024      | 7.1                 | -0.1847 | 7.61469       | -0.03332  | 0.0000 |



## Dissolved Oxygen Saturation - Discrete

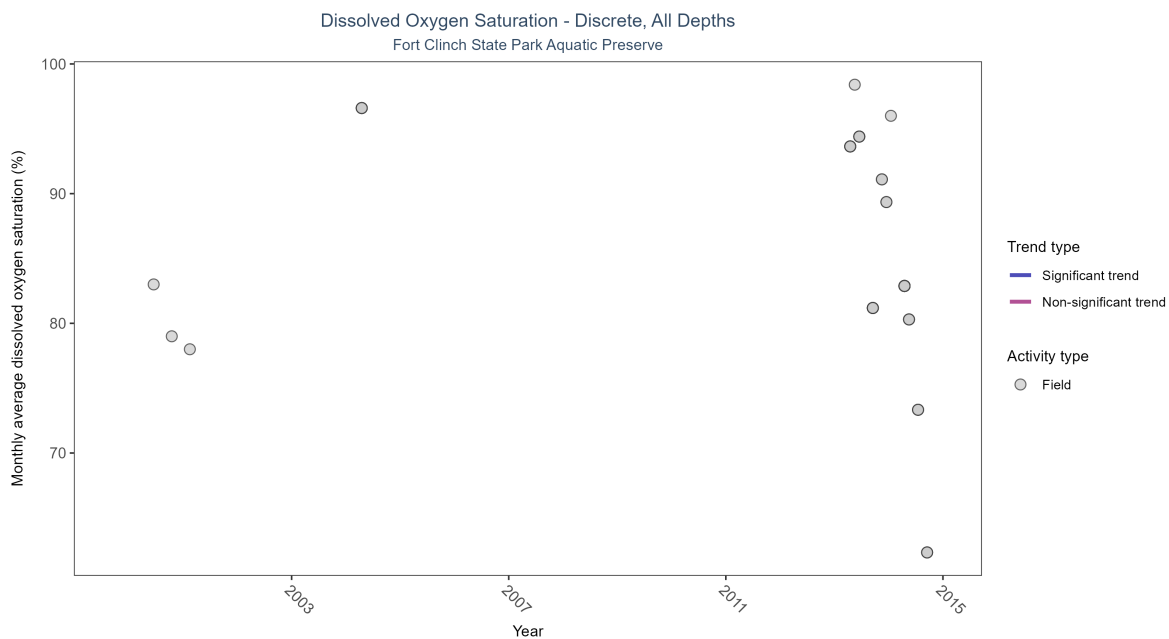
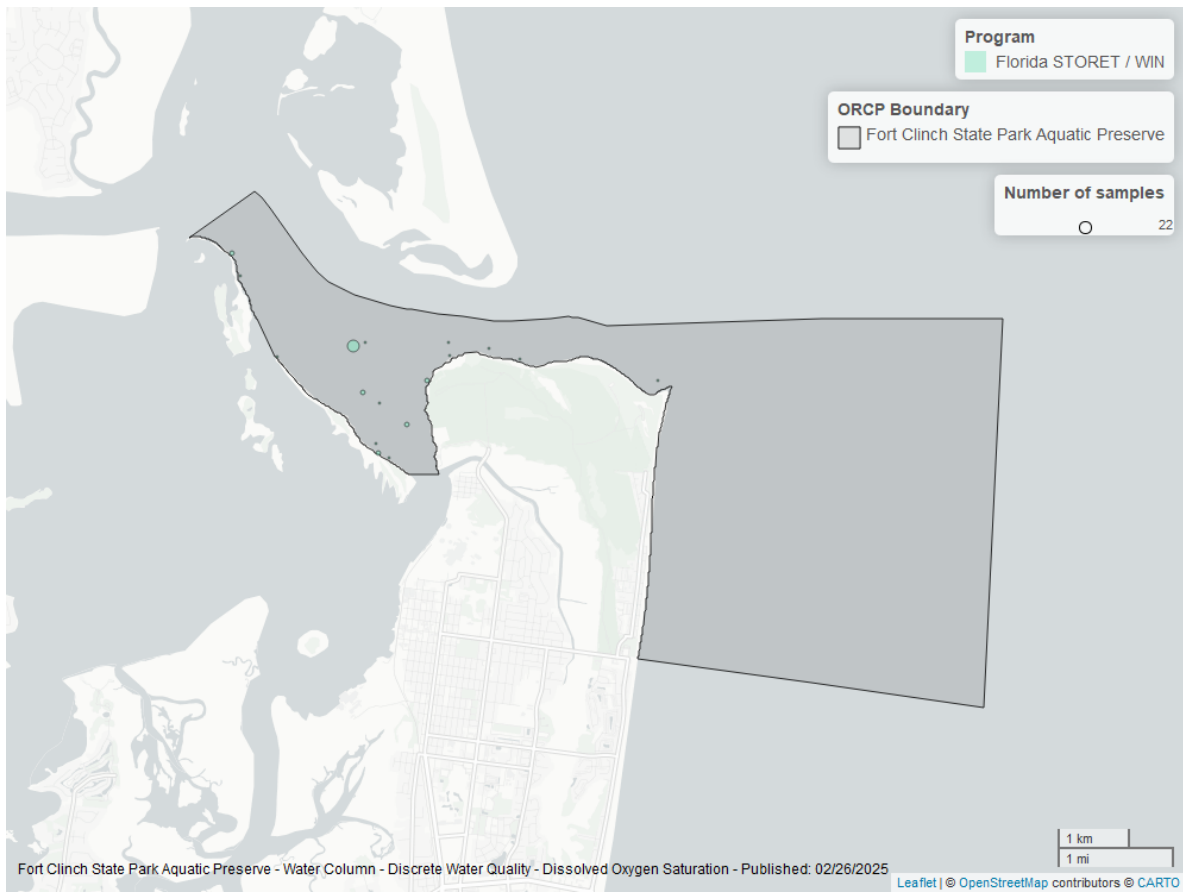


Table 4: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

| Activity Type | Statistical Trend                    | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P  |
|---------------|--------------------------------------|--------------|-----------------|------------------|---------------------|-----|---------------|-----------|----|
| Field         | Insufficient data to calculate trend | 48           | 5               | 2000 - 2014      | 85.45               | -   | -             | -         | NA |





## Salinity - Discrete

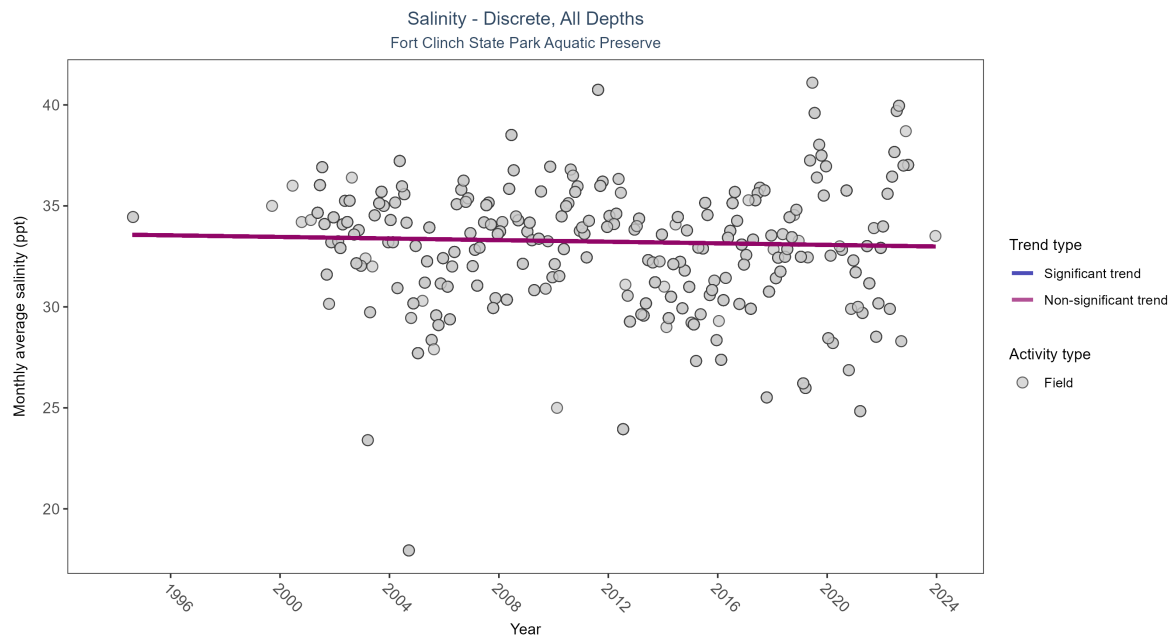
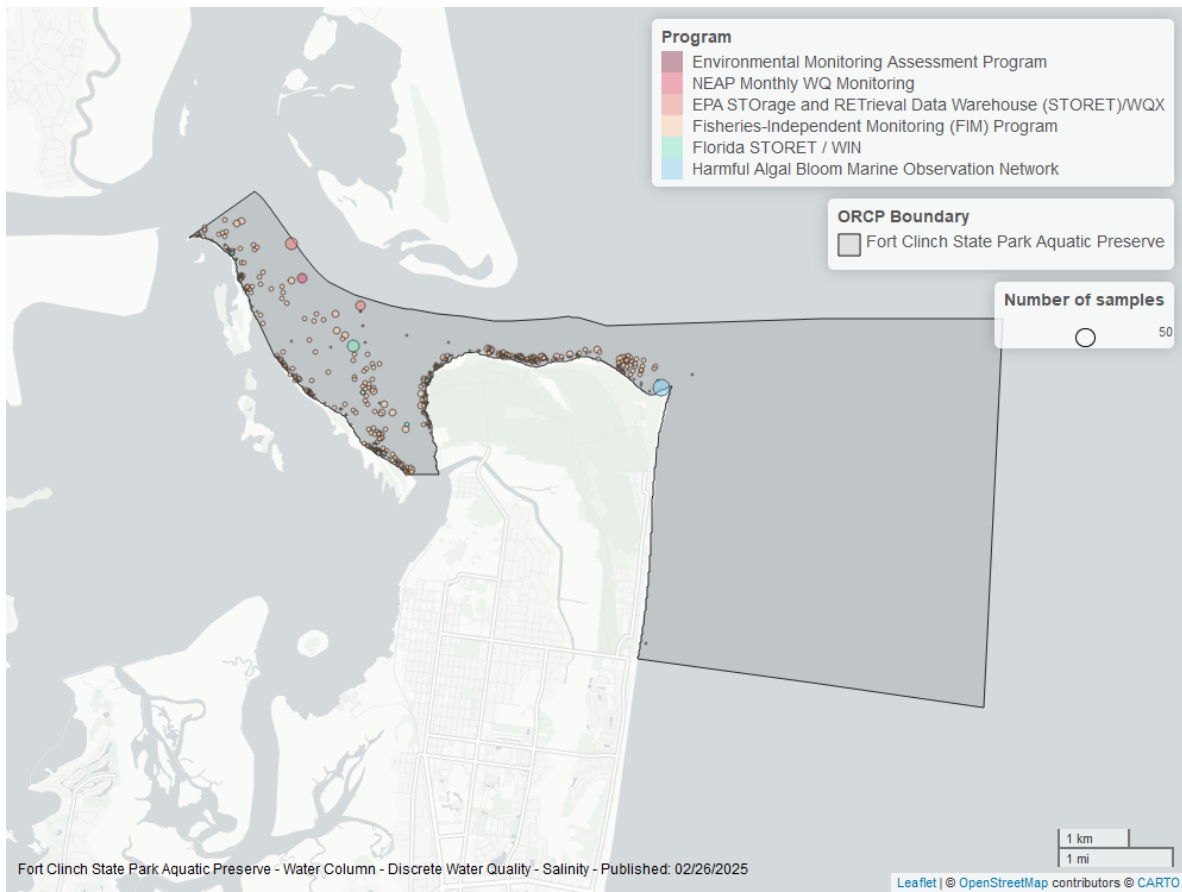


Table 5: Seasonal Kendall-Tau Results for - Salinity

| 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 | 1638         | 26              | 1994 - 2023      | 33.5                | -0.0384 | 33.58155      | -0.01974  | 0.3912 |



## Water Temperature - Discrete

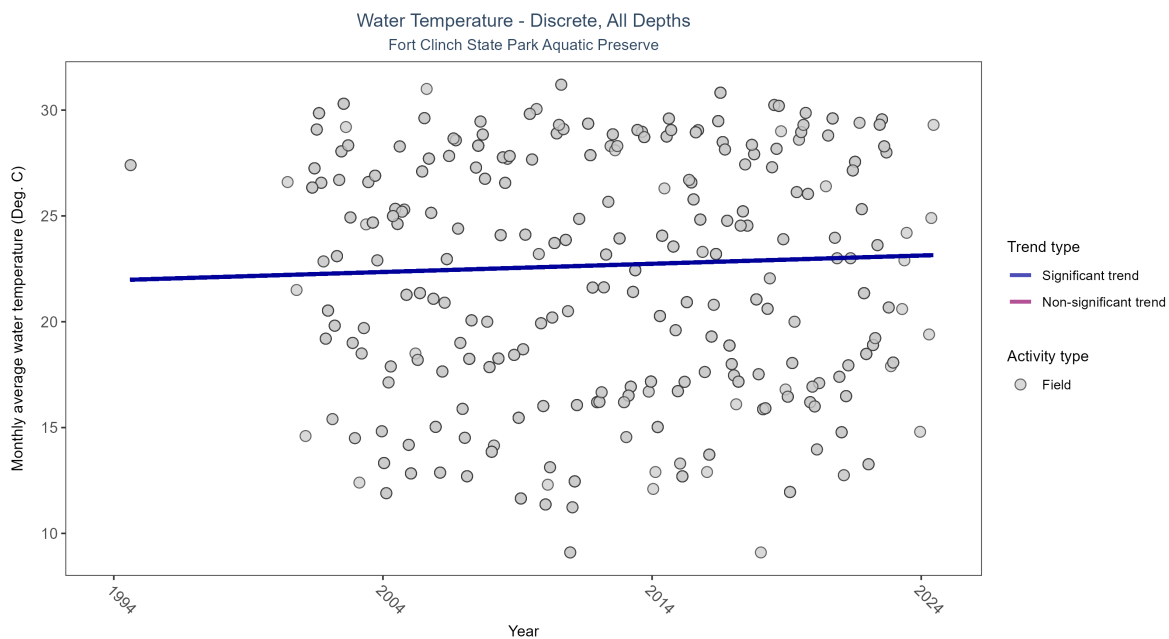
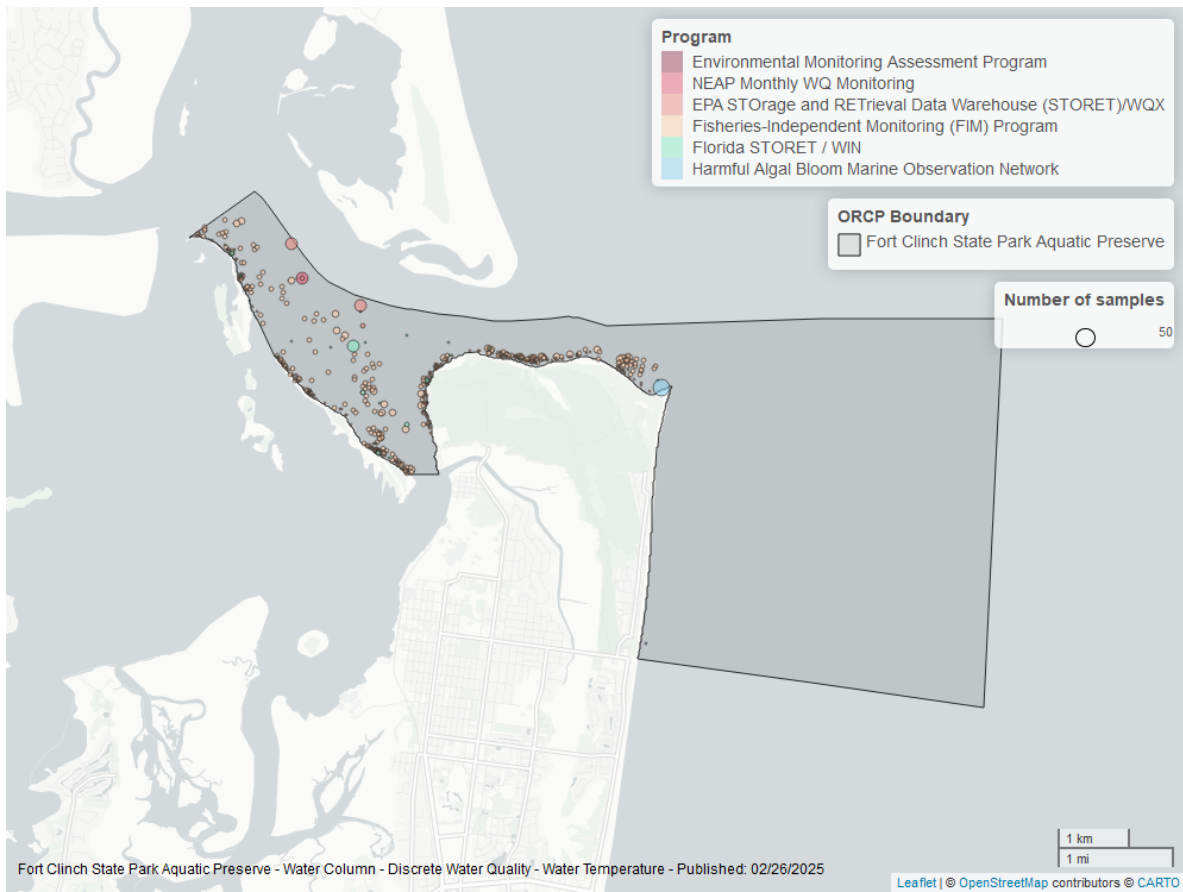


Table 6: Seasonal Kendall-Tau Results for - Water Temperature

| 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 | 1662         | 26              | 1994 - 2024      | 23.2                | 0.089 | 21.96099      | 0.03893   | 0.0395 |



## pH - Discrete

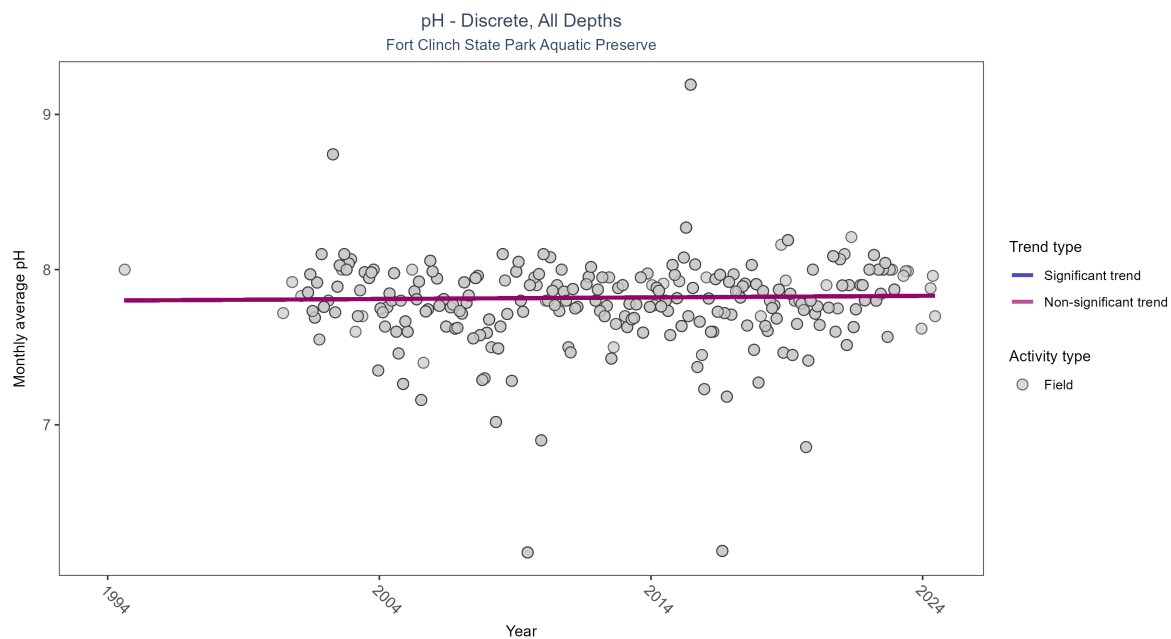
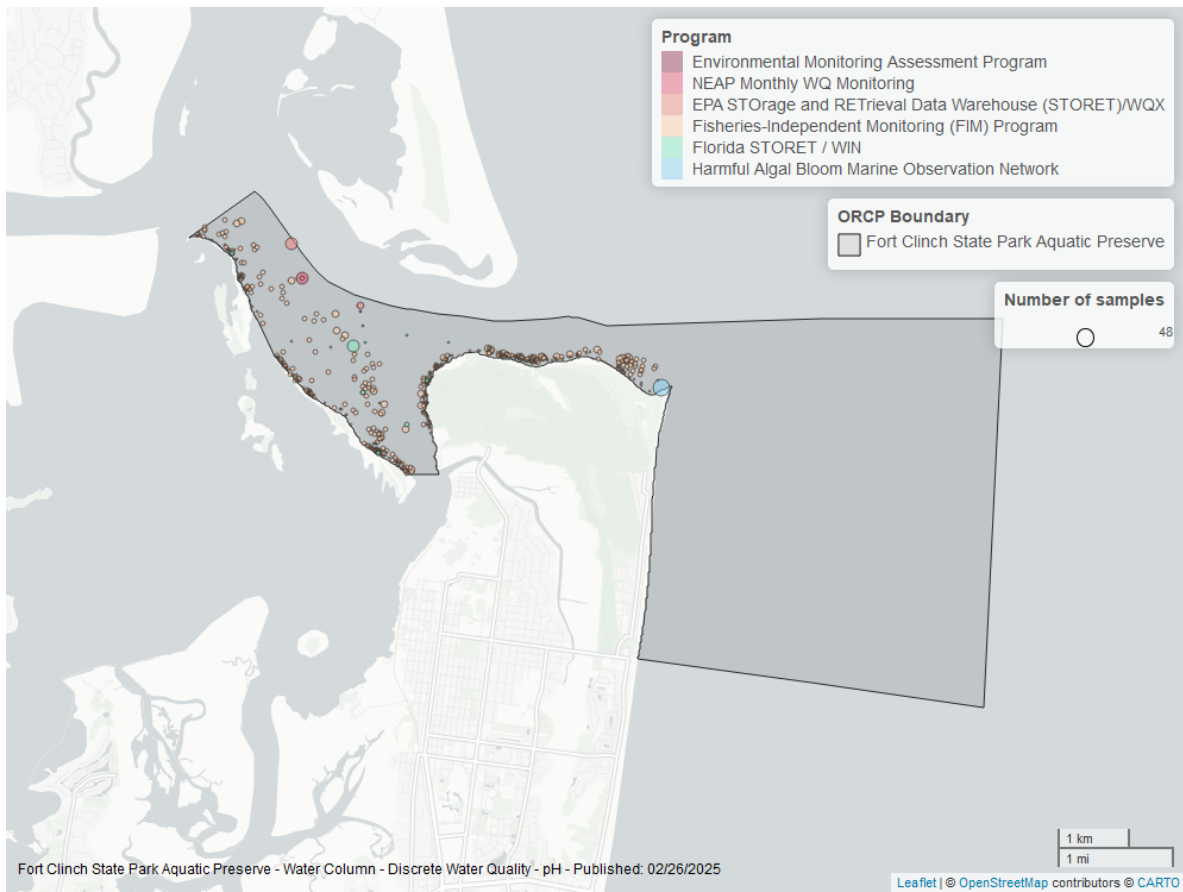


Table 7: Seasonal Kendall-Tau Results for - pH

| Activity Type | Statistical Trend    | Sample Count | Years with Data | Period of Record | Median Result Value | Tau    | Sen Intercept | Sen Slope | P      |
|---------------|----------------------|--------------|-----------------|------------------|---------------------|--------|---------------|-----------|--------|
| Field         | No significant trend | 1631         | 26              | 1994 - 2024      | 7.8                 | 0.0303 | 7.80065       | 0.00102   | 0.5561 |



# Water Clarity

## Turbidity - Discrete

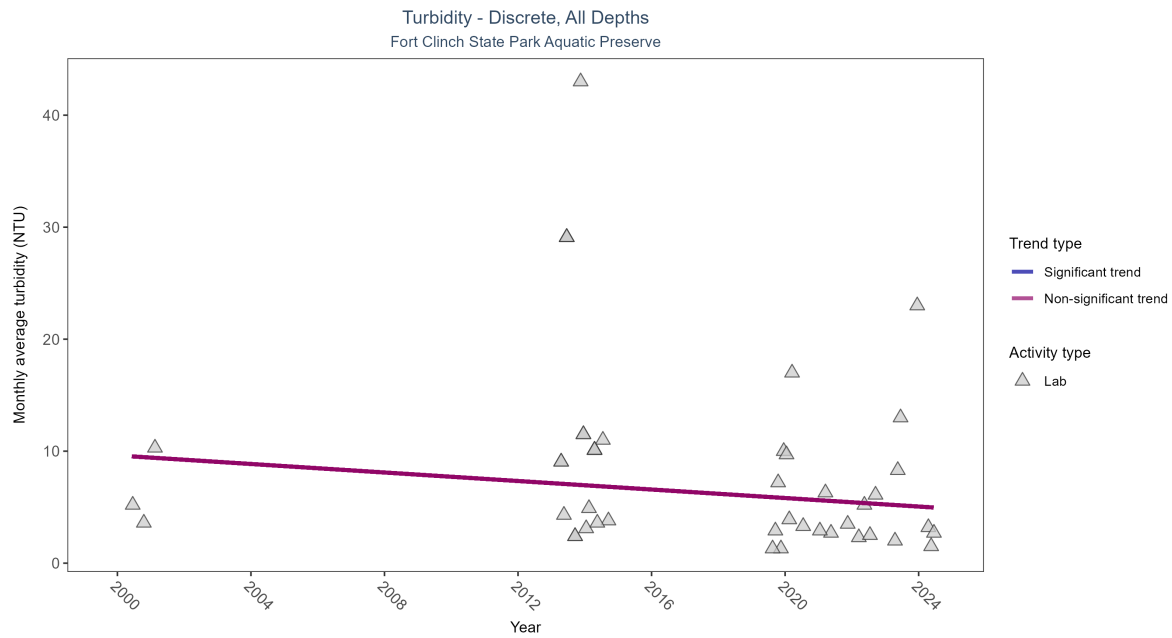
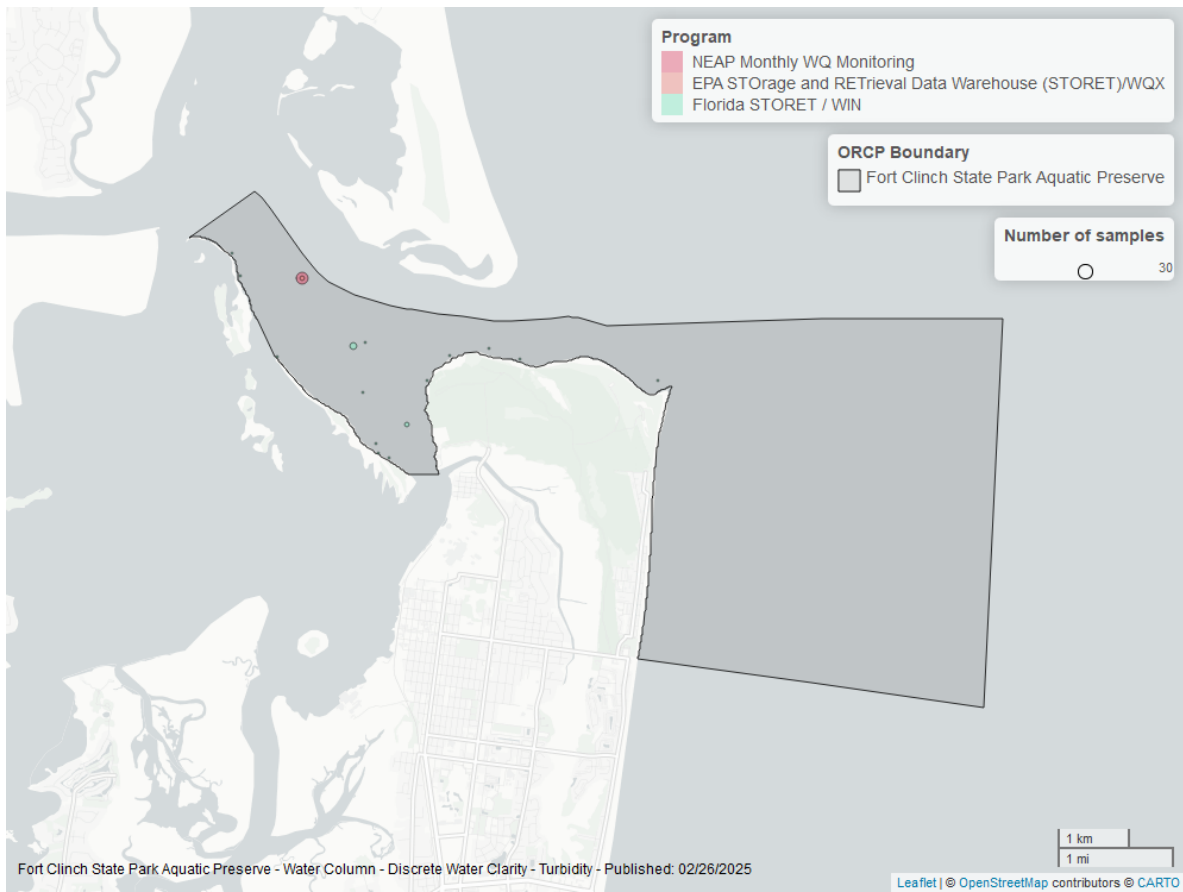


Table 8: Seasonal Kendall-Tau Results for - Turbidity

| Activity Type | Statistical Trend    | Sample Count | Years with Data | Period of Record | Median Result Value | Tau     | Sen Intercept | Sen Slope | P      |
|---------------|----------------------|--------------|-----------------|------------------|---------------------|---------|---------------|-----------|--------|
| Lab           | No significant trend | 49           | 10              | 2000 - 2024      | 5                   | -0.2211 | 9.61579       | -0.19     | 0.3061 |





## Total Suspended Solids - Discrete

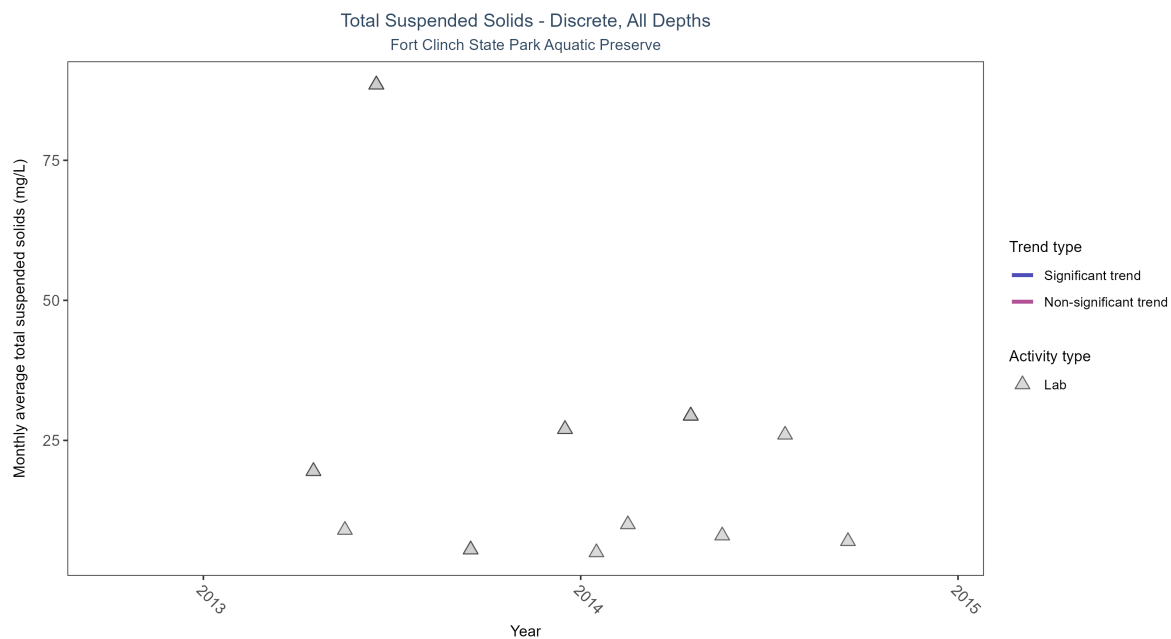
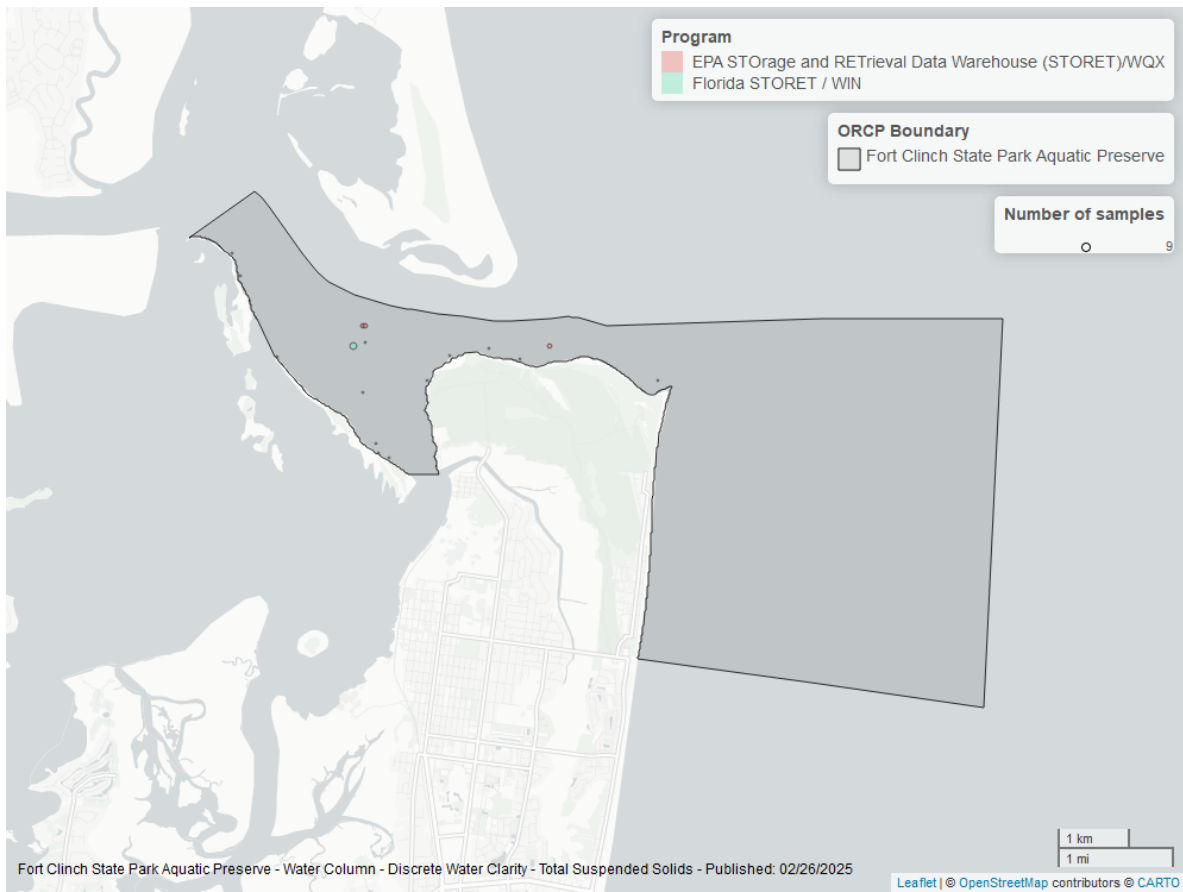


Table 9: Seasonal Kendall-Tau Results for - Total Suspended Solids

| Activity Type | Statistical Trend                    | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P  |
|---------------|--------------------------------------|--------------|-----------------|------------------|---------------------|-----|---------------|-----------|----|
| Lab           | Insufficient data to calculate trend | 22           | 2               | 2013 - 2014      | 17.5                | -   | -             | -         | NA |



## Chlorophyll a, Uncorrected for Pheophytin - Discrete

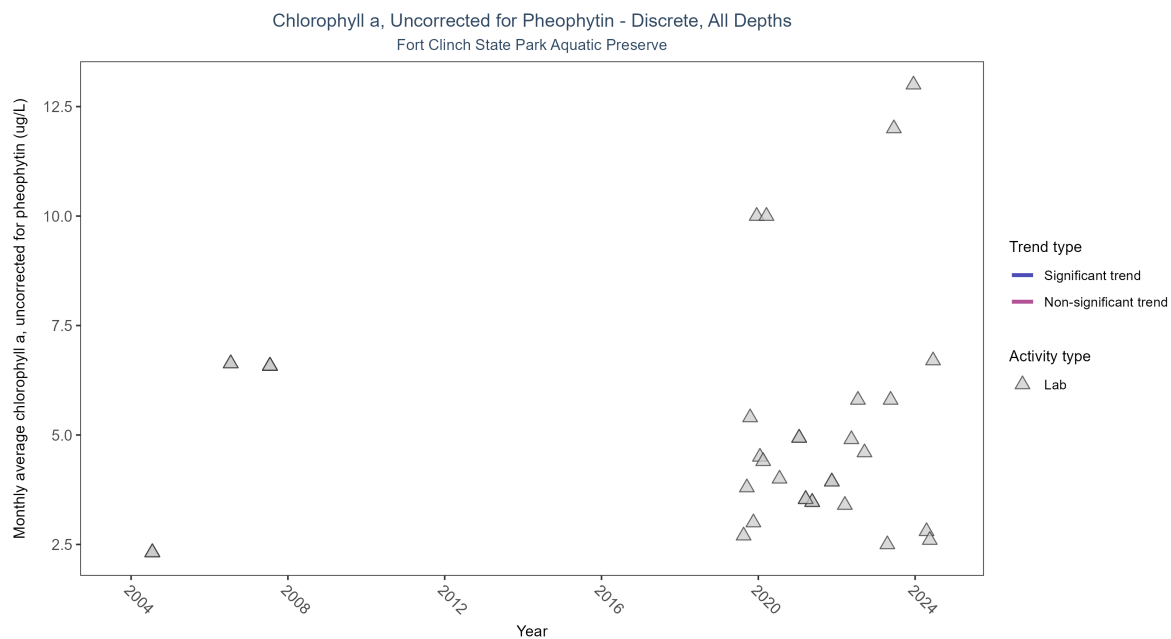
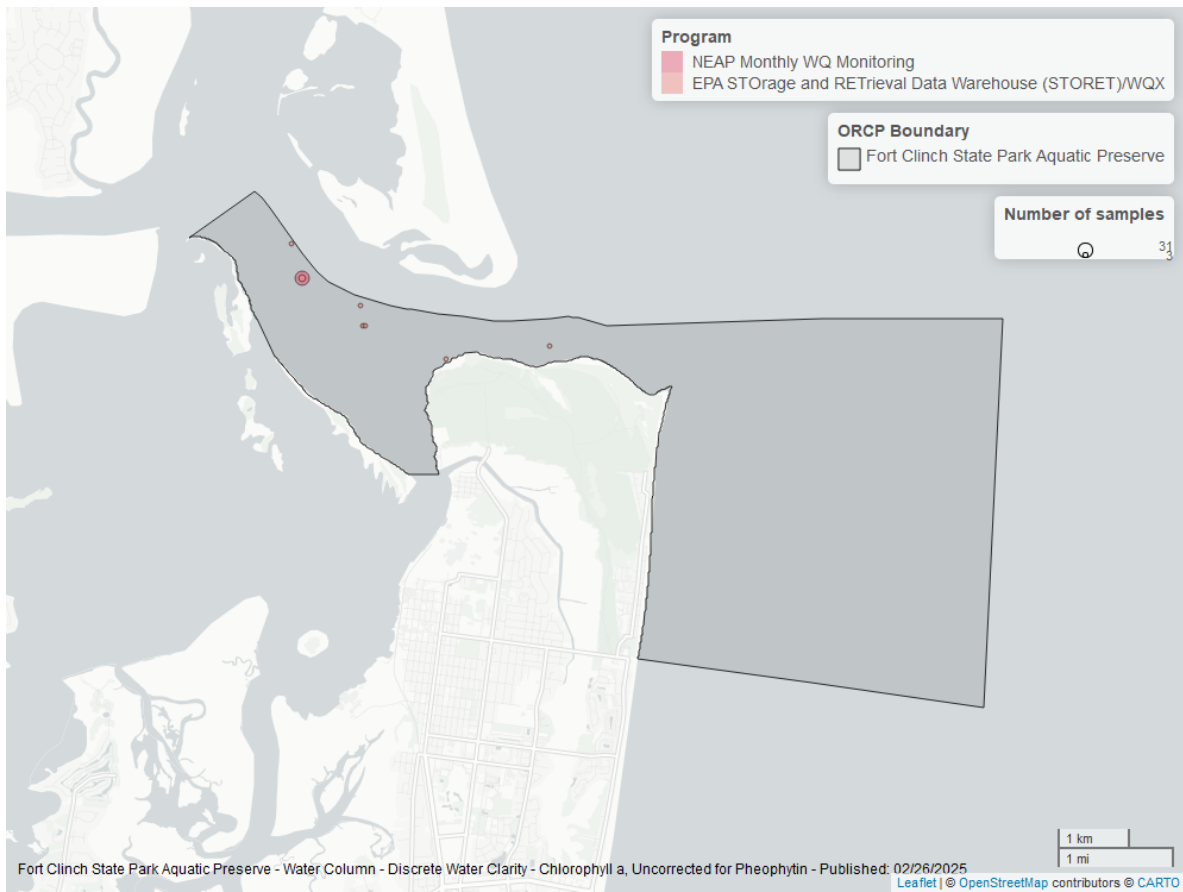


Table 10: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

| Activity Type | Statistical Trend                    | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P  |
|---------------|--------------------------------------|--------------|-----------------|------------------|---------------------|-----|---------------|-----------|----|
| Lab           | Insufficient data to calculate trend | 56           | 9               | 2004 - 2024      | 4.95419             | -   | -             | -         | NA |



## Chlorophyll a, Corrected for Pheophytin - Discrete

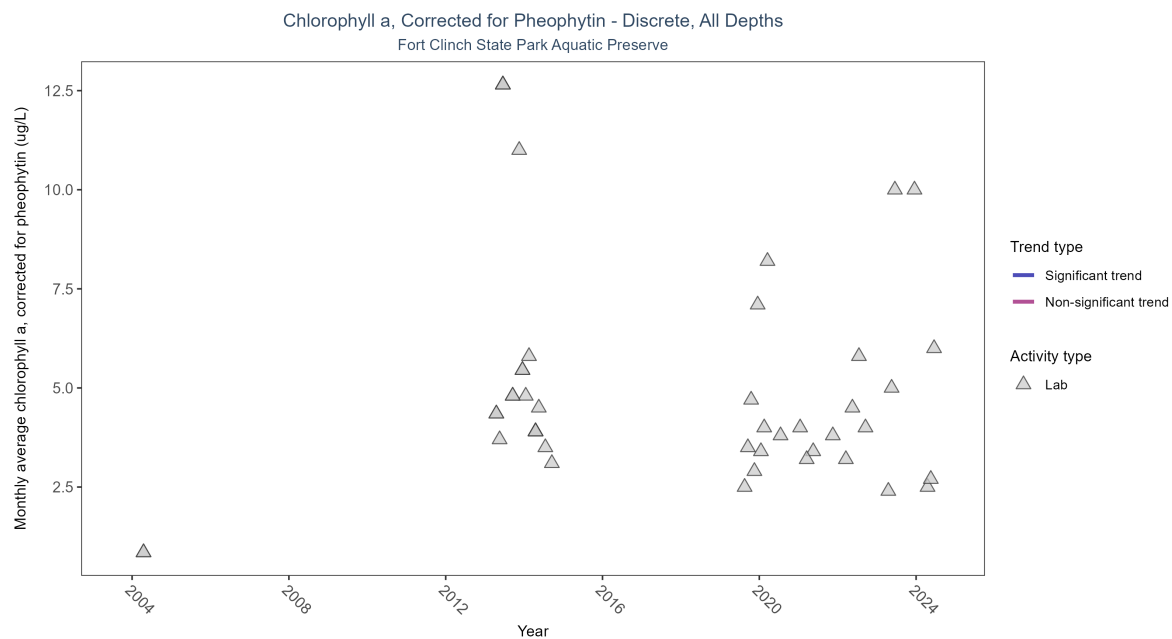
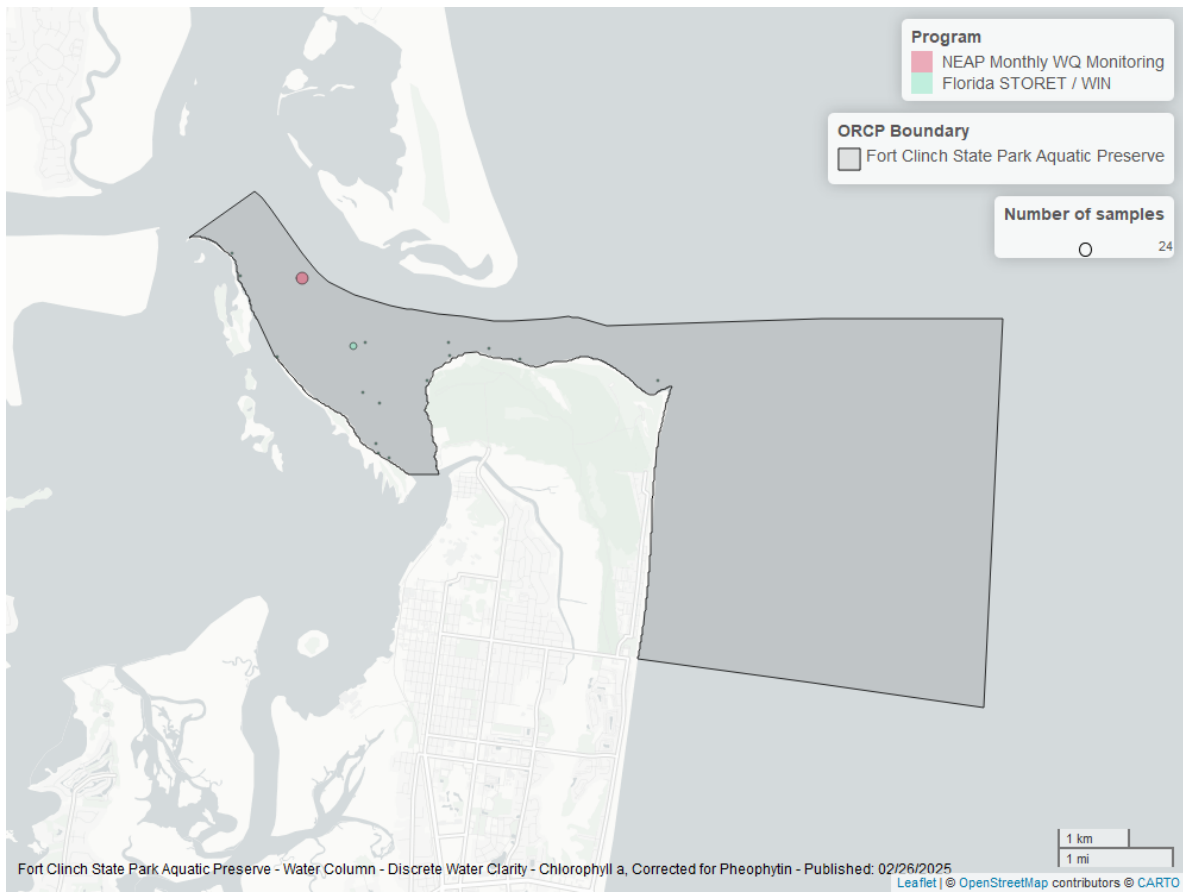


Table 11: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

| Activity Type | Statistical Trend                    | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P  |
|---------------|--------------------------------------|--------------|-----------------|------------------|---------------------|-----|---------------|-----------|----|
| Lab           | Insufficient data to calculate trend | 48           | 9               | 2004 - 2024      | 4.1                 | -   | -             | -         | NA |



## Secchi Depth - Discrete

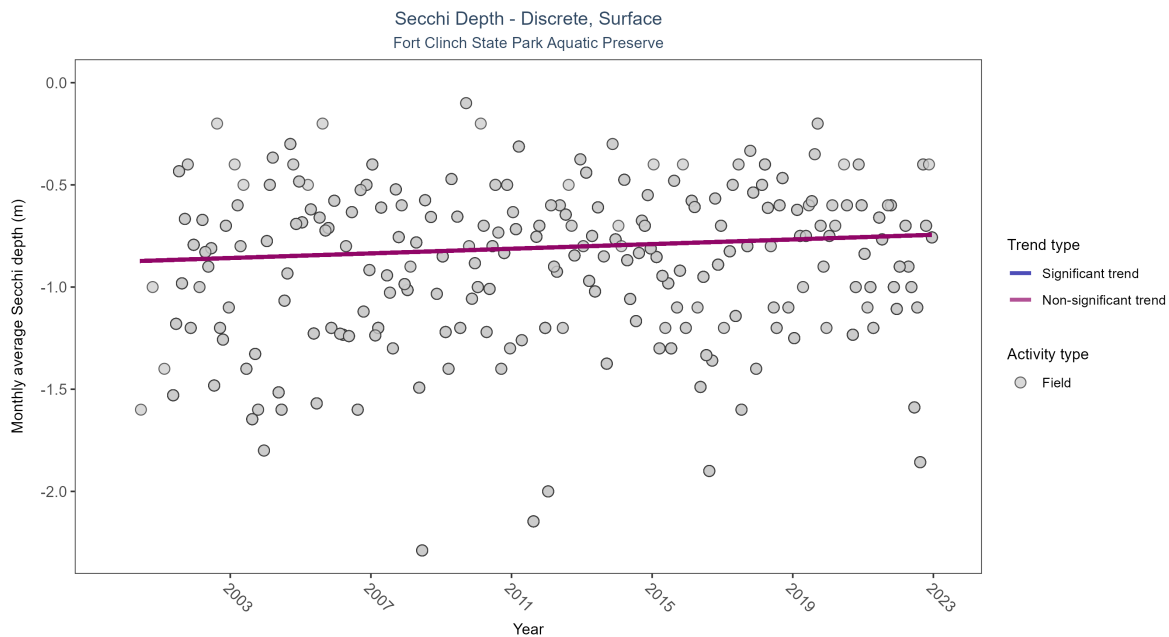


Table 12: Seasonal Kendall-Tau Results for - Secchi Depth

| Activity Type | Statistical Trend    | Sample Count | Years with Data | Period of Record | Median Result Value | Tau    | Sen Intercept | Sen Slope | P      |
|---------------|----------------------|--------------|-----------------|------------------|---------------------|--------|---------------|-----------|--------|
| Field         | No significant trend | 1511         | 23              | 2000 - 2022      | -0.9                | 0.0647 | -0.875        | 0.00568   | 0.1556 |



