

# Jensen Beach to Jupiter Inlet 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       |
| Salinity - Continuous . . . . .                                | 12       |
| Water Temperature - Discrete . . . . .                         | 14       |
| Water Temperature - Continuous . . . . .                       | 16       |
| pH - Discrete . . . . .  | 18       |
| Water Clarity . . . . .  | 20       |
| Turbidity - Discrete . . . . .                                 | 20       |
| Total Suspended Solids - Discrete . . . . .                    | 22       |
| Chlorophyll a, Uncorrected for Pheophytin - Discrete . . . . . | 24       |
| Chlorophyll a, Corrected for Pheophytin - Discrete . . . . .   | 26       |
| Secchi Depth - Discrete . . . . .                              | 28       |
| Colored Dissolved Organic Matter - Discrete . . . . .          | 30       |

# Indicators

## Nutrients

### Total Nitrogen - Discrete

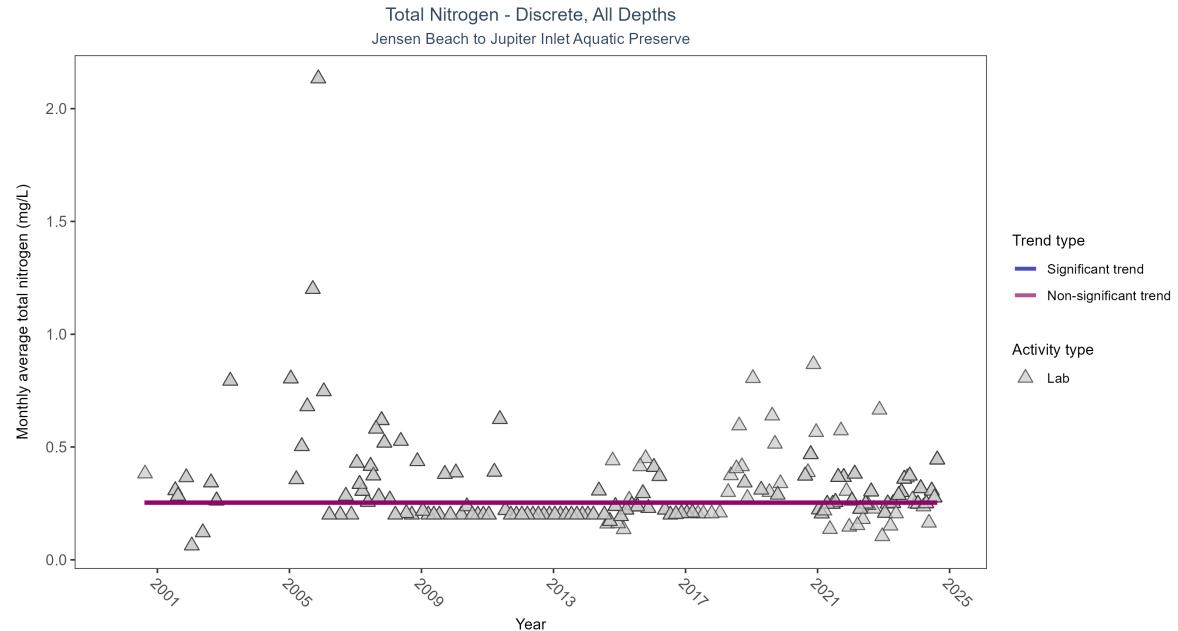
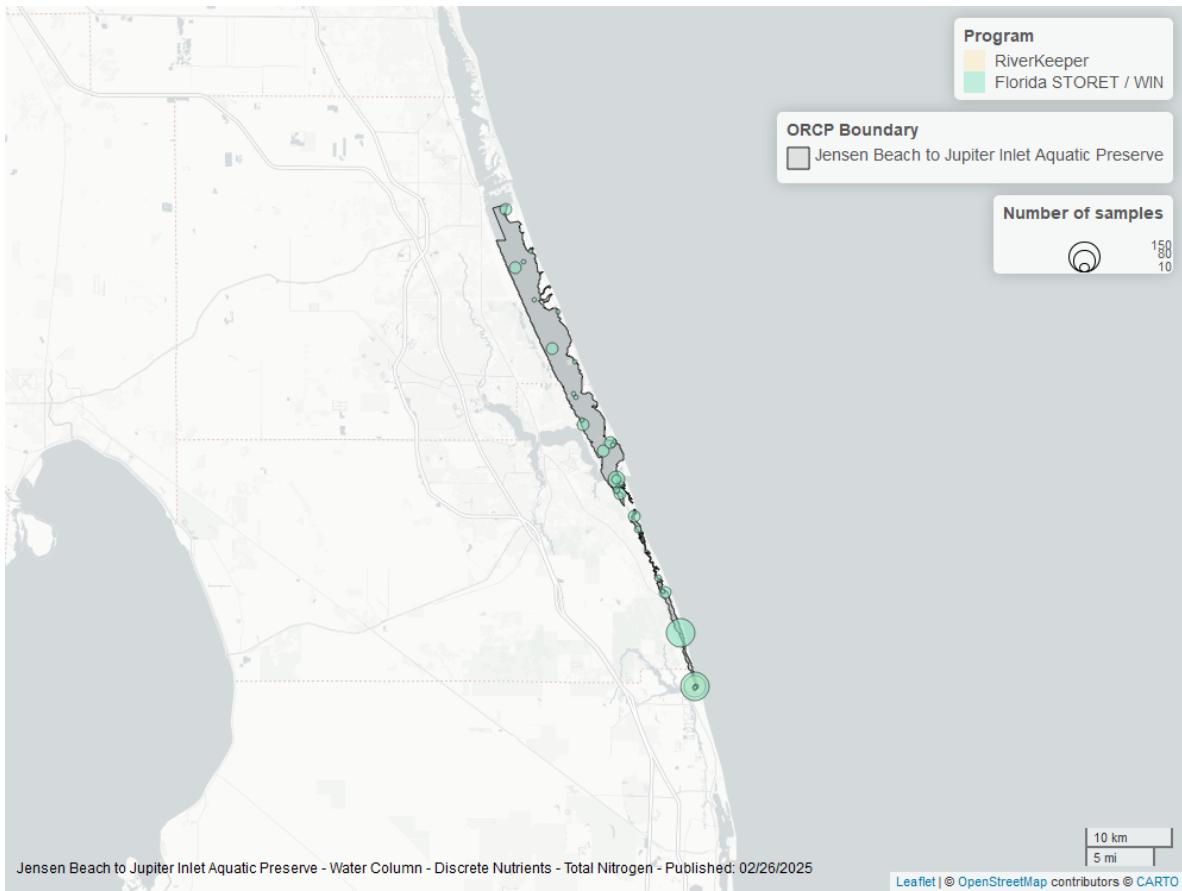


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

| 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 | 629          | 24              | 2000 - 2024      | 0.251               | -0.0016 | 0.25345       | 0         | 0.9778 |



## Total Phosphorus - Discrete

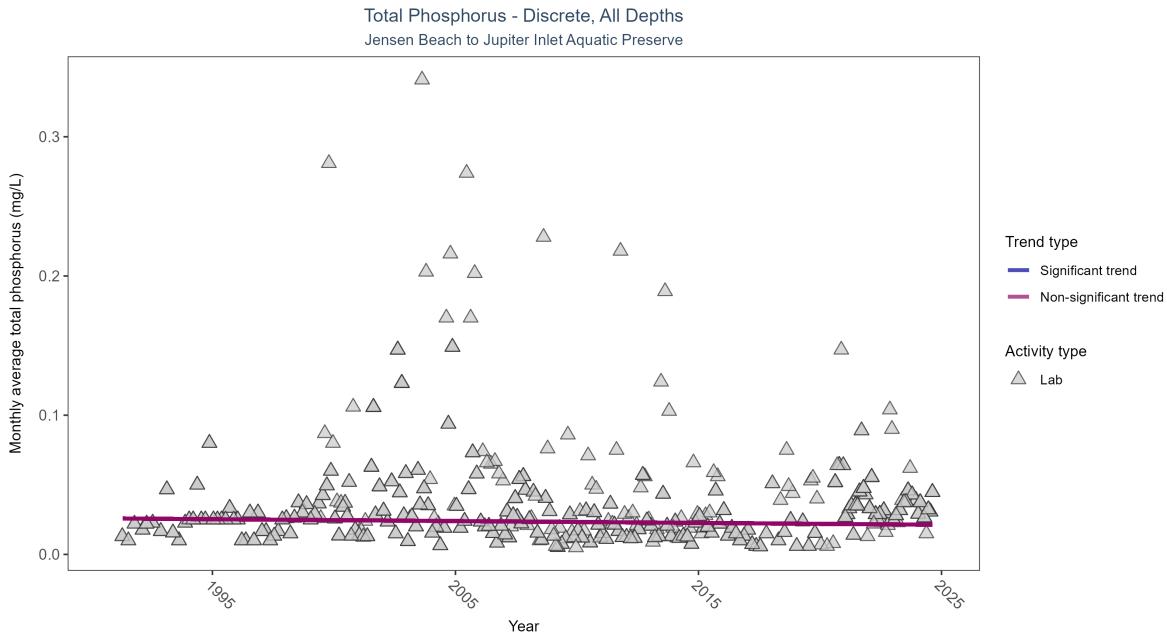
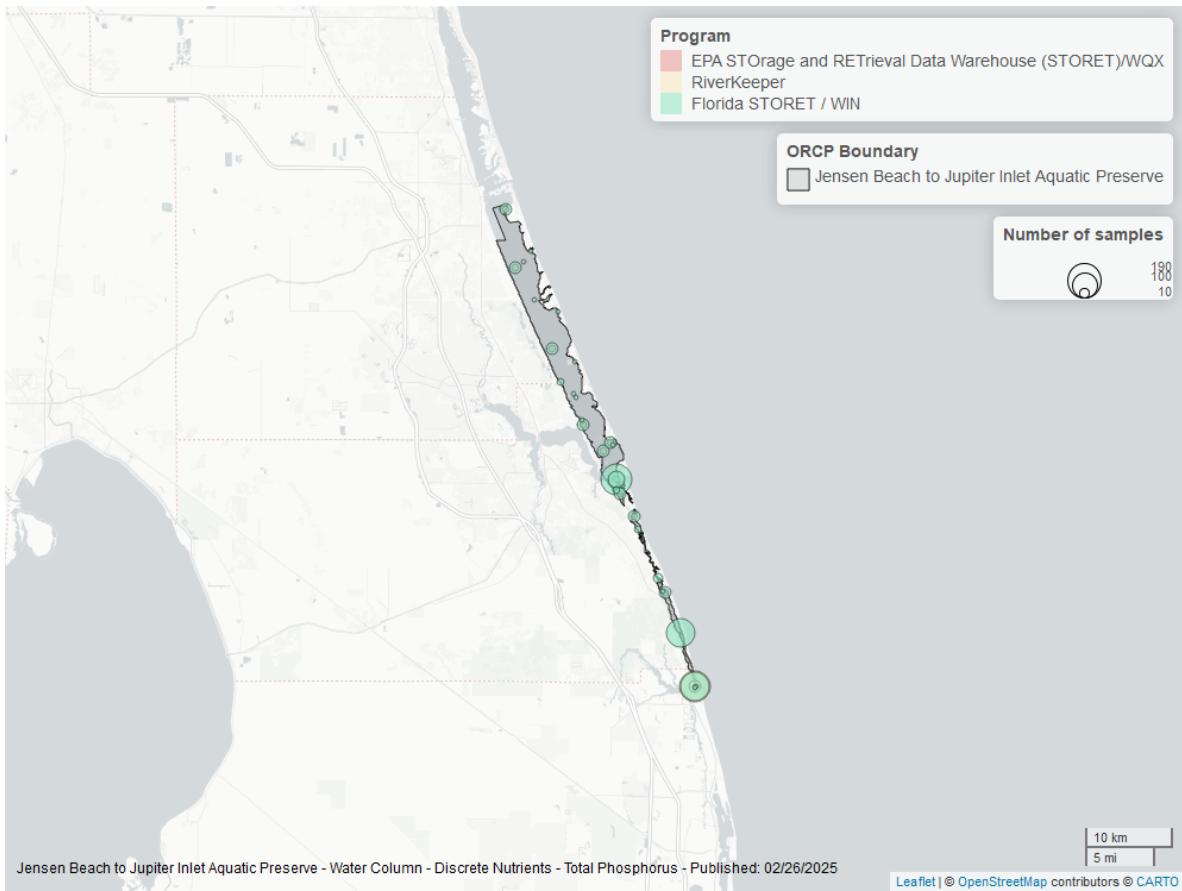


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

| 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 | 1135         | 34              | 1991 - 2024      | 0.026               | -0.0674 | 0.02581       | -0.00013  | 0.1584 |



## Water Quality

### Dissolved Oxygen - Discrete

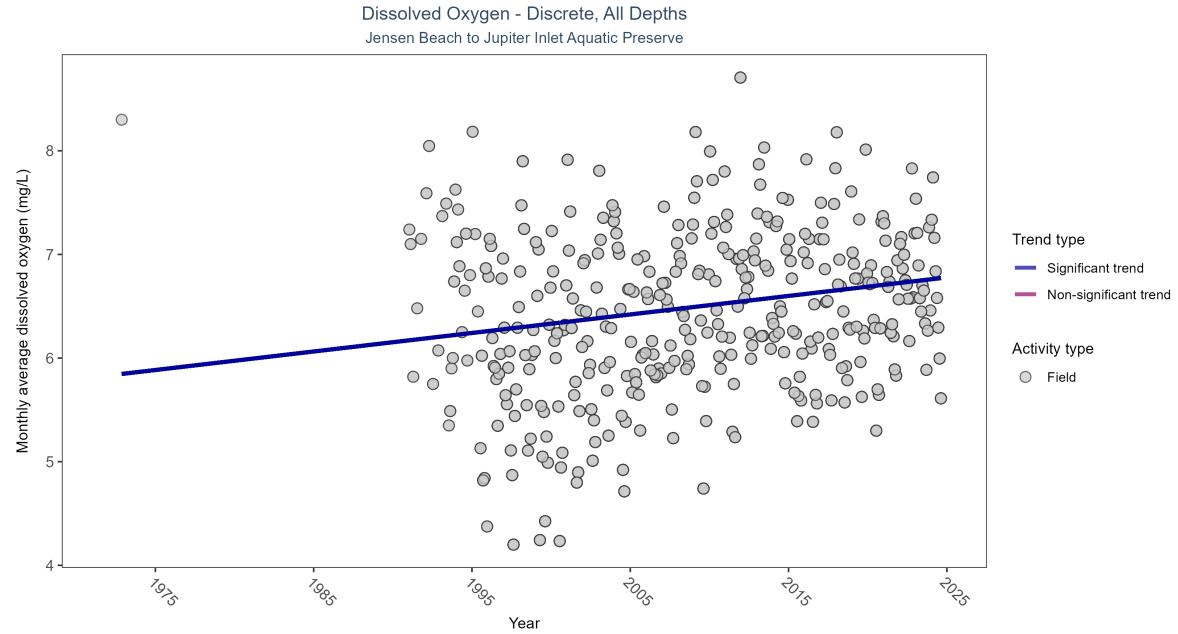
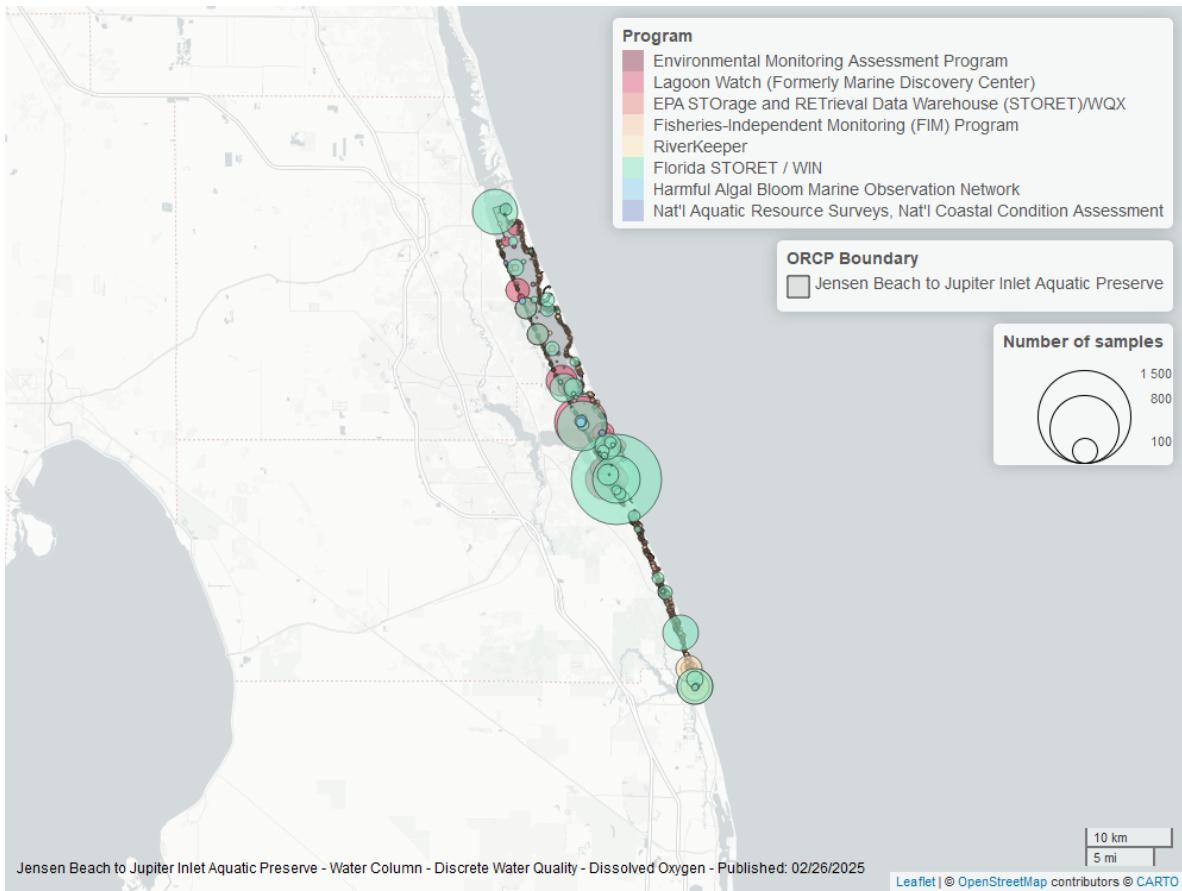


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

| Activity Type | Statistical Trend              | Sample Count | Years with Data | Period of Record | Median Result Value | Tau    | Sen Intercept | Sen Slope | P      |
|---------------|--------------------------------|--------------|-----------------|------------------|---------------------|--------|---------------|-----------|--------|
| Field         | Significantly increasing trend | 10687        | 35              | 1972 - 2024      | 6.4                 | 0.2016 | 5.83105       | 0.01787   | 0.0000 |



## Dissolved Oxygen Saturation - Discrete

Dissolved Oxygen Saturation - Discrete, All Depths  
Jensen Beach to Jupiter Inlet Aquatic Preserve

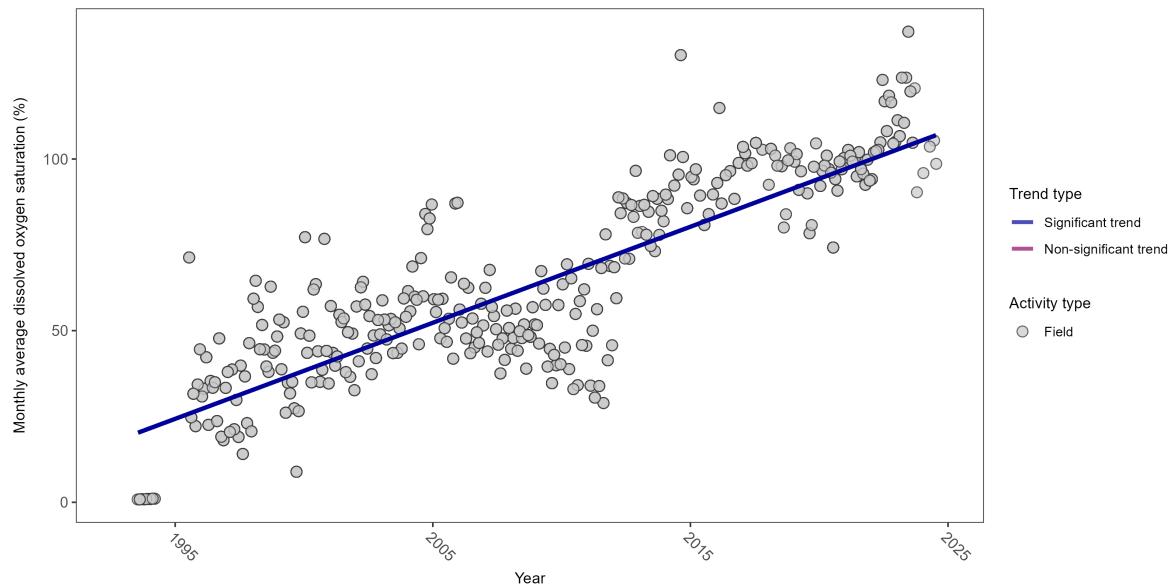
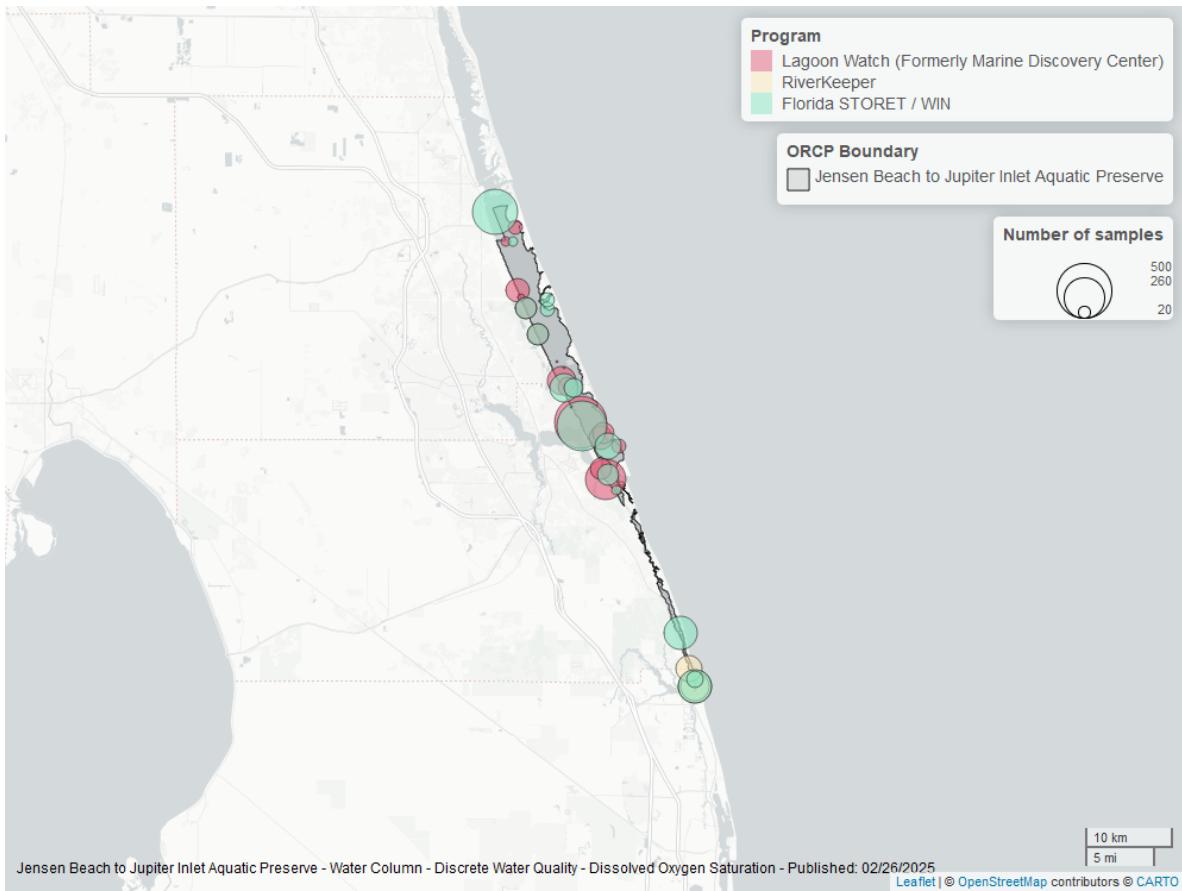


Table 4: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

| 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 | 4222         | 32              | 1993 - 2024      | 79.082              | 0.6763 | 18.71729      | 2.79786   | 0.0000 |



## Salinity - Discrete

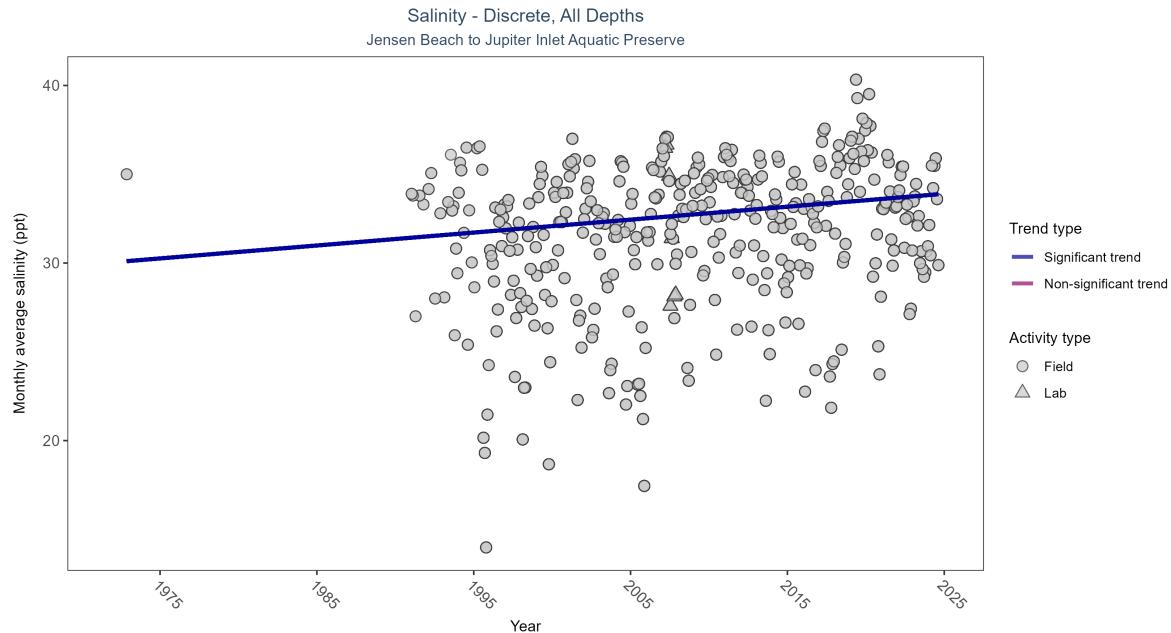
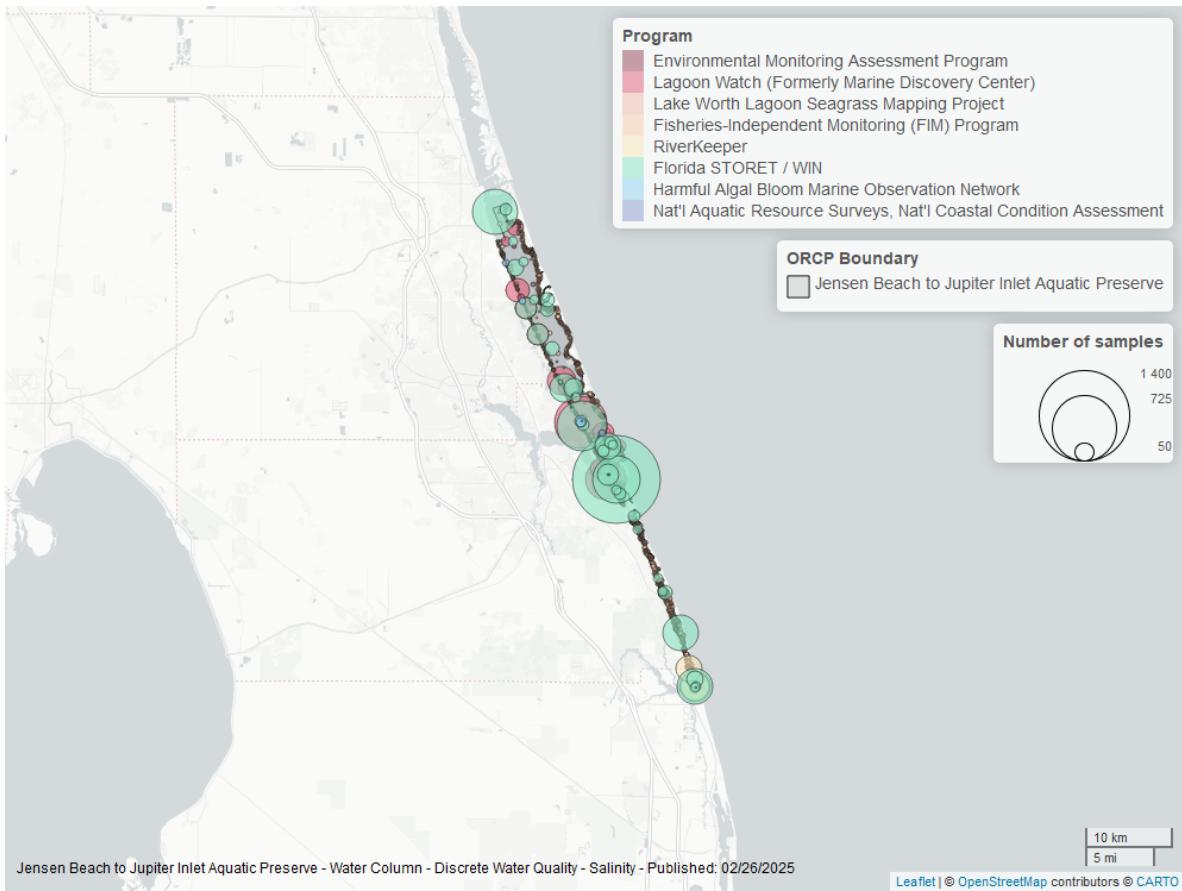


Table 5: Seasonal Kendall-Tau Results for - Salinity

| Activity Type | Statistical Trend              | Sample Count | Years with Data | Period of Record | Median Result Value | Tau    | Sen Intercept | Sen Slope | P      |
|---------------|--------------------------------|--------------|-----------------|------------------|---------------------|--------|---------------|-----------|--------|
| All           | Significantly increasing trend | 10708        | 35              | 1972 - 2024      | 32.8                | 0.1504 | 30.04103      | 0.07281   | 0.0000 |



## Salinity - Continuous

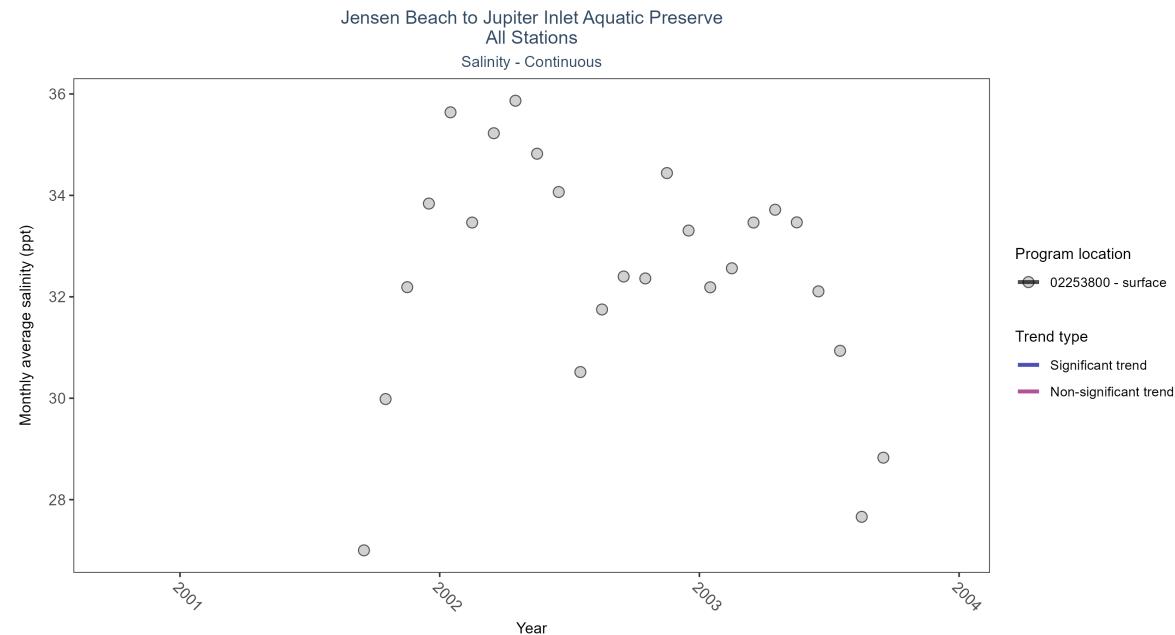
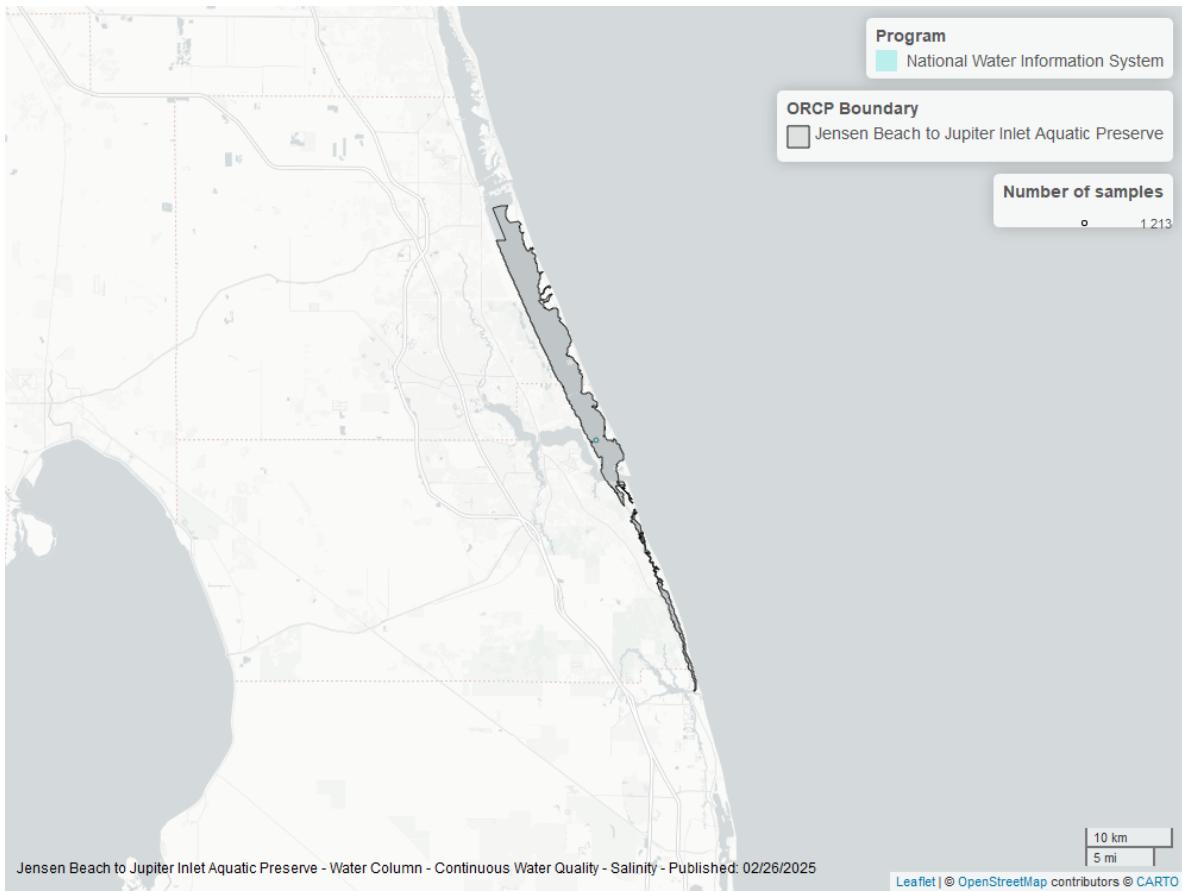


Table 6: Seasonal Kendall-Tau Results for All Stations - Salinity

| Program Location | Statistical Trend                    | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P  |
|------------------|--------------------------------------|--------------|-----------------|------------------|---------------------|-----|---------------|-----------|----|
| 02253800         | Insufficient data to calculate trend | 1213         | 3               | 2001 - 2003      | 33                  | -   | -             | -         | NA |



## Water Temperature - Discrete

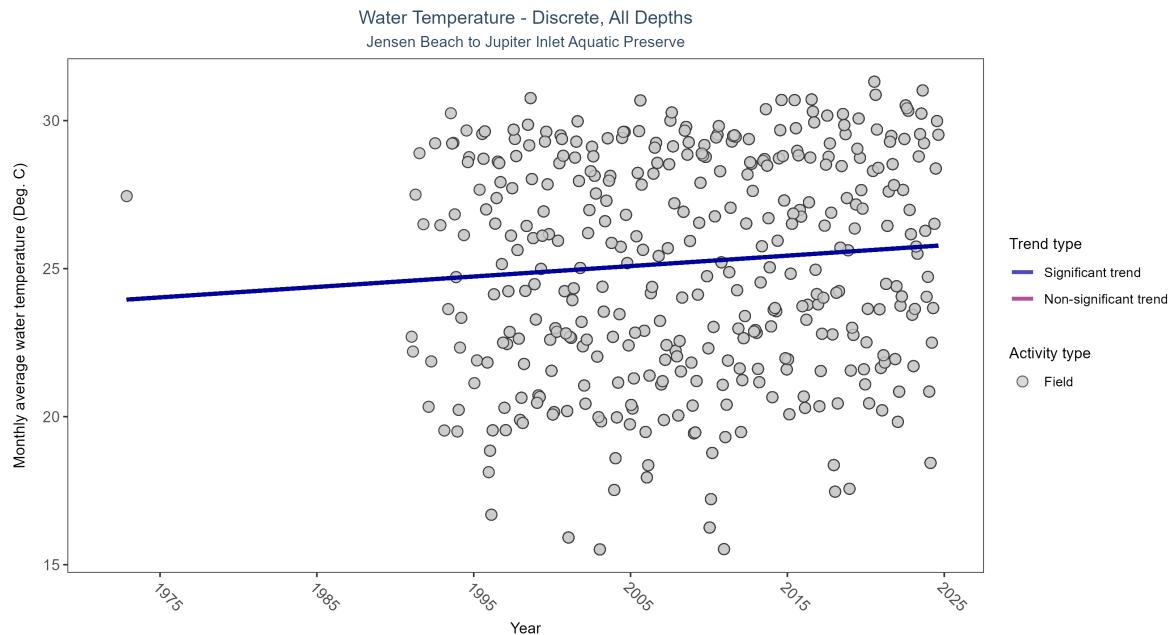
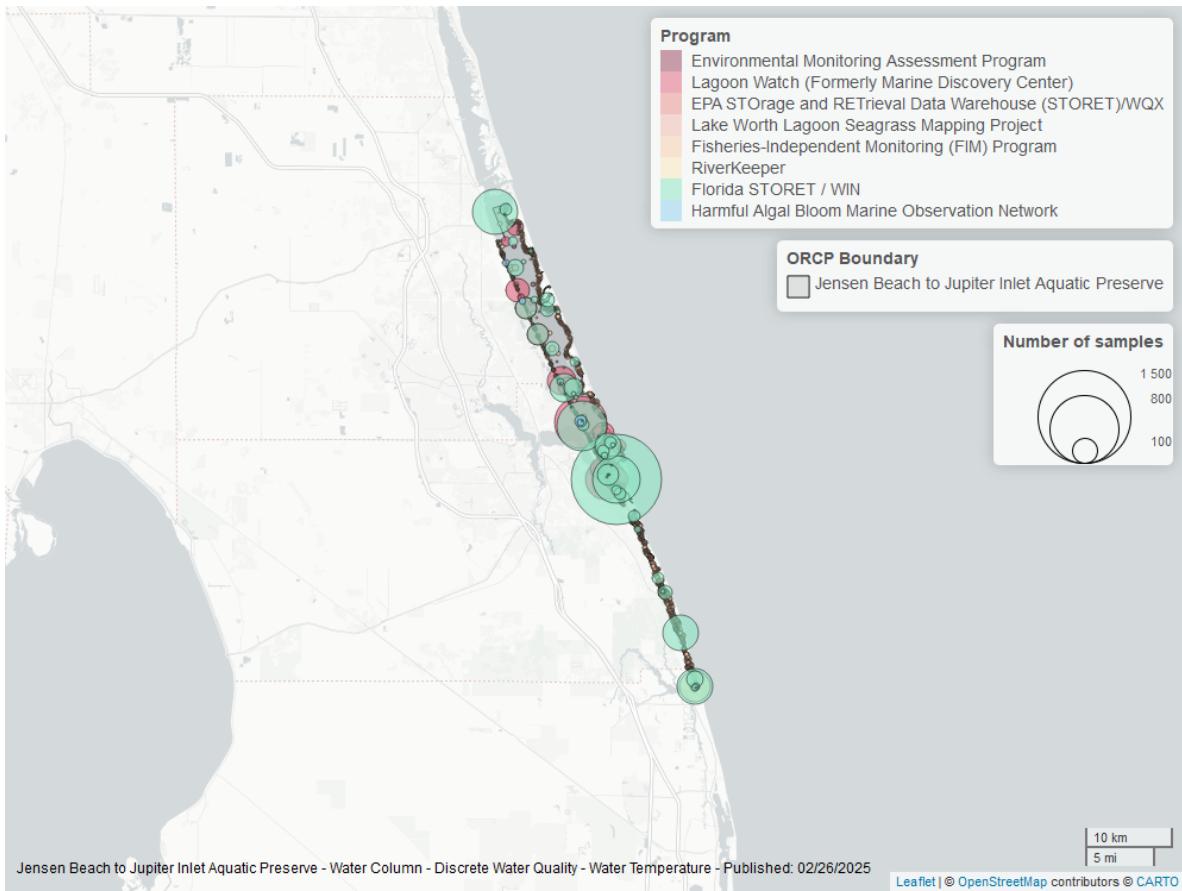


Table 7: Seasonal Kendall-Tau Results for - Water Temperature

| 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 | 10620        | 35              | 1972 - 2024      | 25.5                | 0.2027 | 23.92331      | 0.03525   | 0.0000 |



## Water Temperature - Continuous

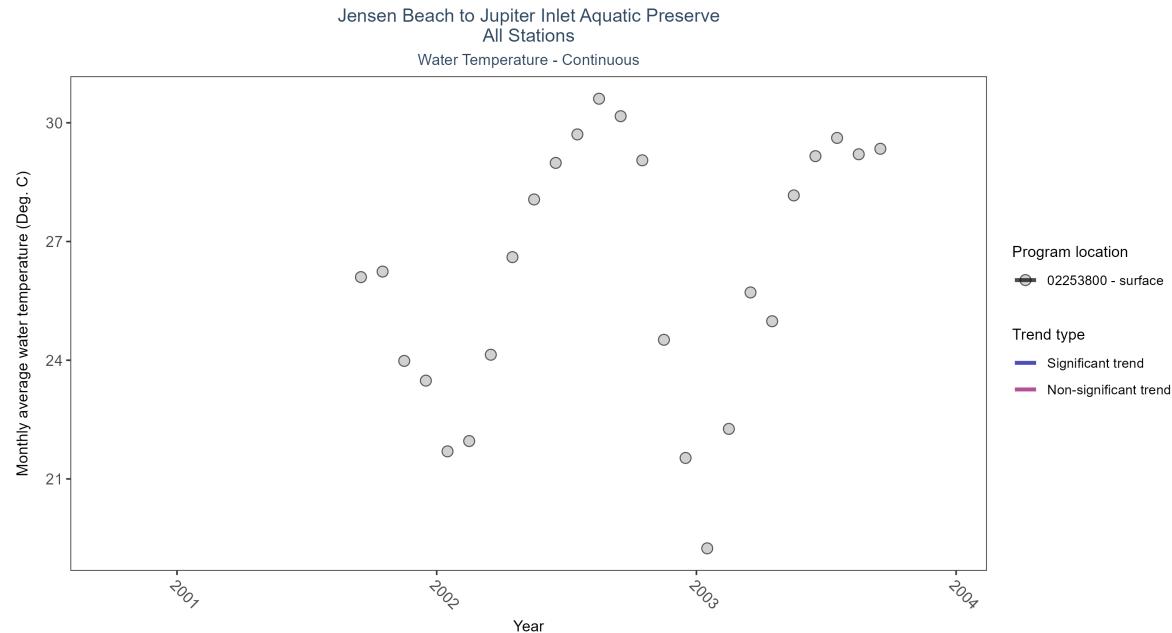
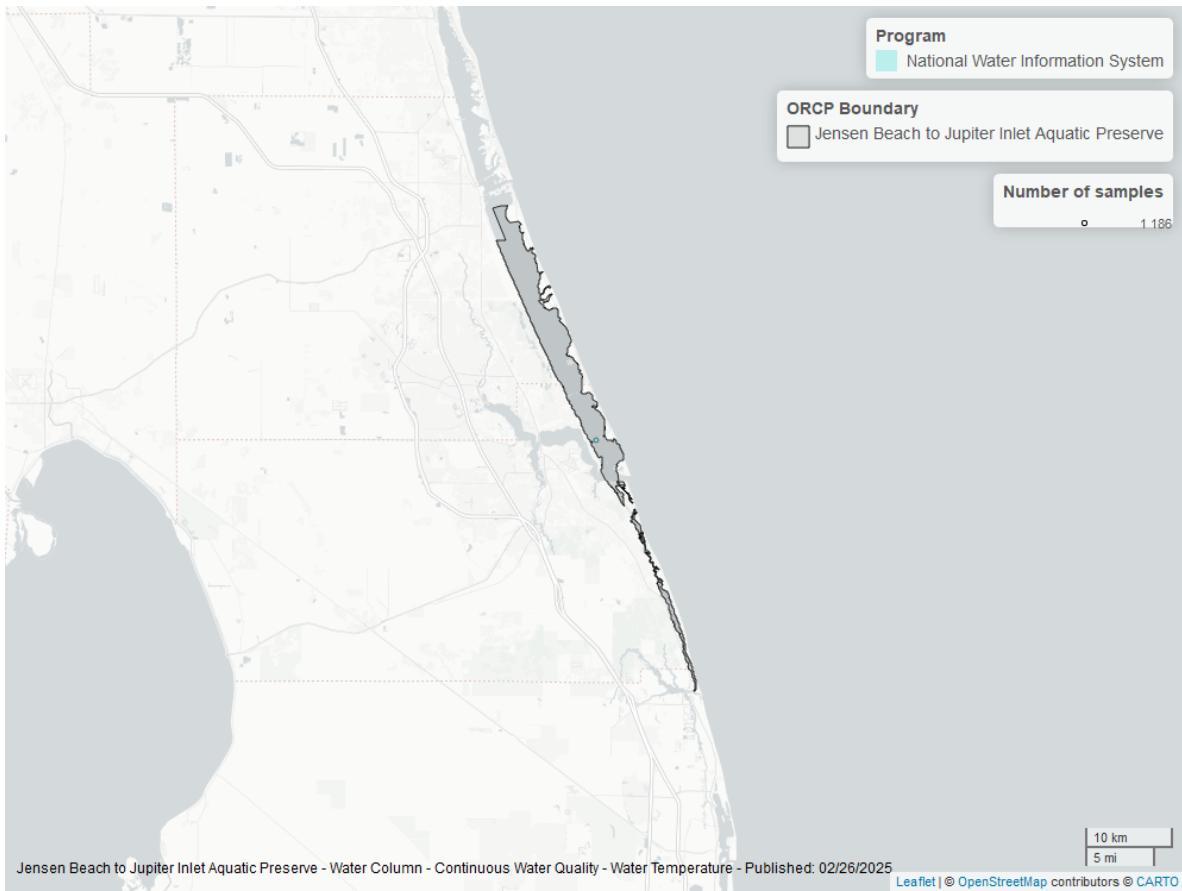


Table 8: Seasonal Kendall-Tau Results for All Stations - Water Temperature

| Program Location | Statistical Trend                    | Sample Count | Years with Data | Period of Record | Median Result Value | Tau | Sen Intercept | Sen Slope | P  |
|------------------|--------------------------------------|--------------|-----------------|------------------|---------------------|-----|---------------|-----------|----|
| 02253800         | Insufficient data to calculate trend | 1186         | 3               | 2001 - 2003      | 27.1                | -   | -             | -         | NA |



## pH - Discrete

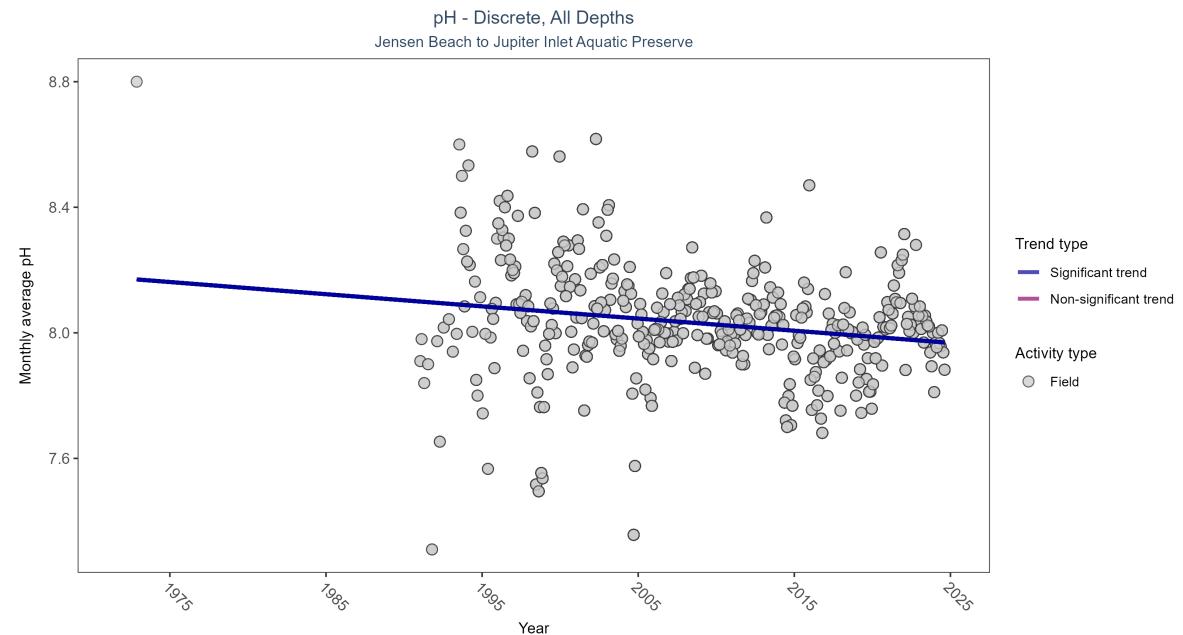
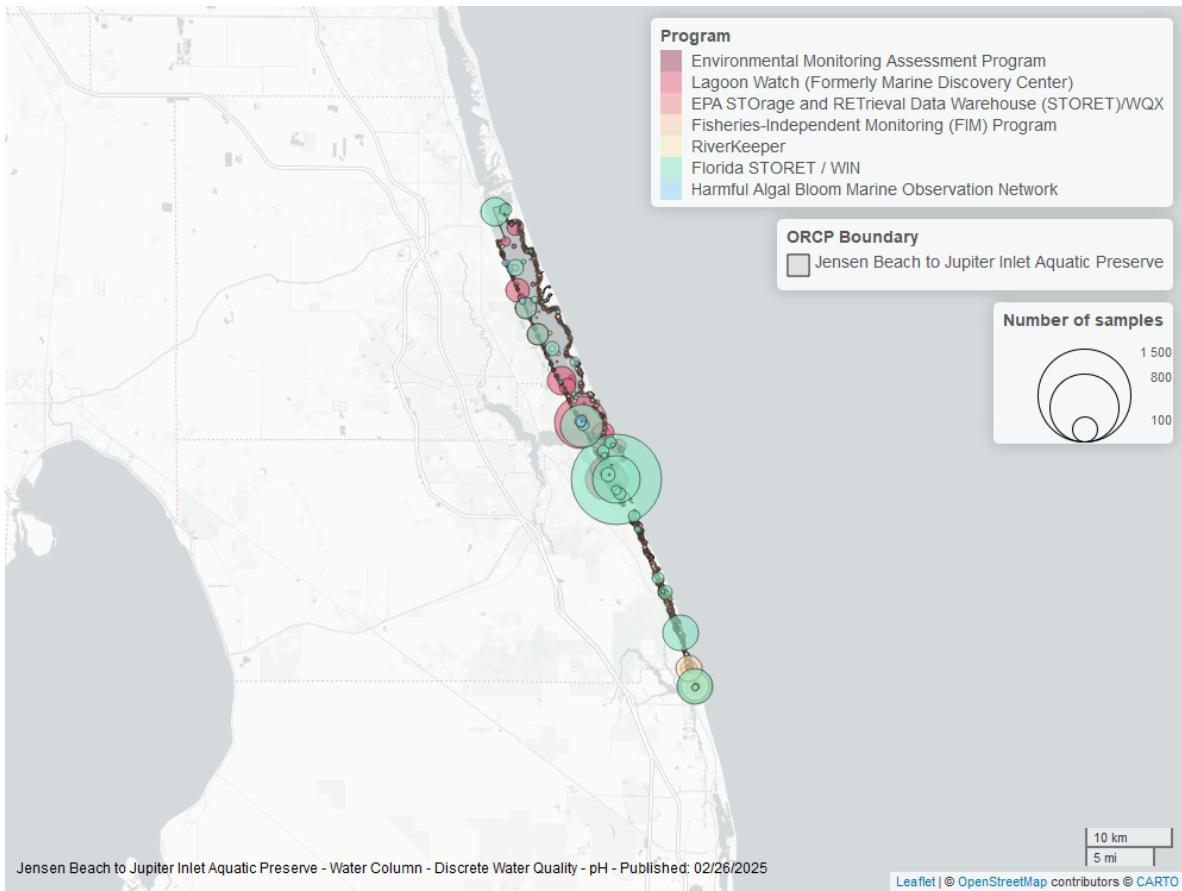


Table 9: Seasonal Kendall-Tau Results for - pH

| 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 | 9671         | 35              | 1972 - 2024      | 8.01                | -0.1683 | 8.1735        | -0.00388  | 0.0000 |



## Water Clarity

### Turbidity - Discrete

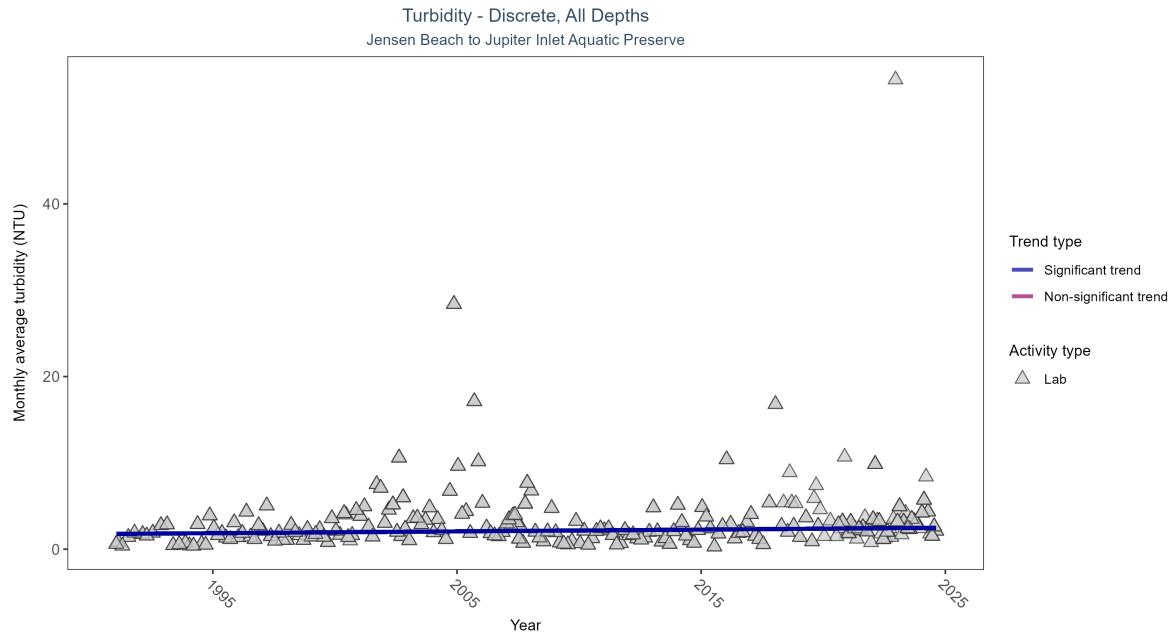
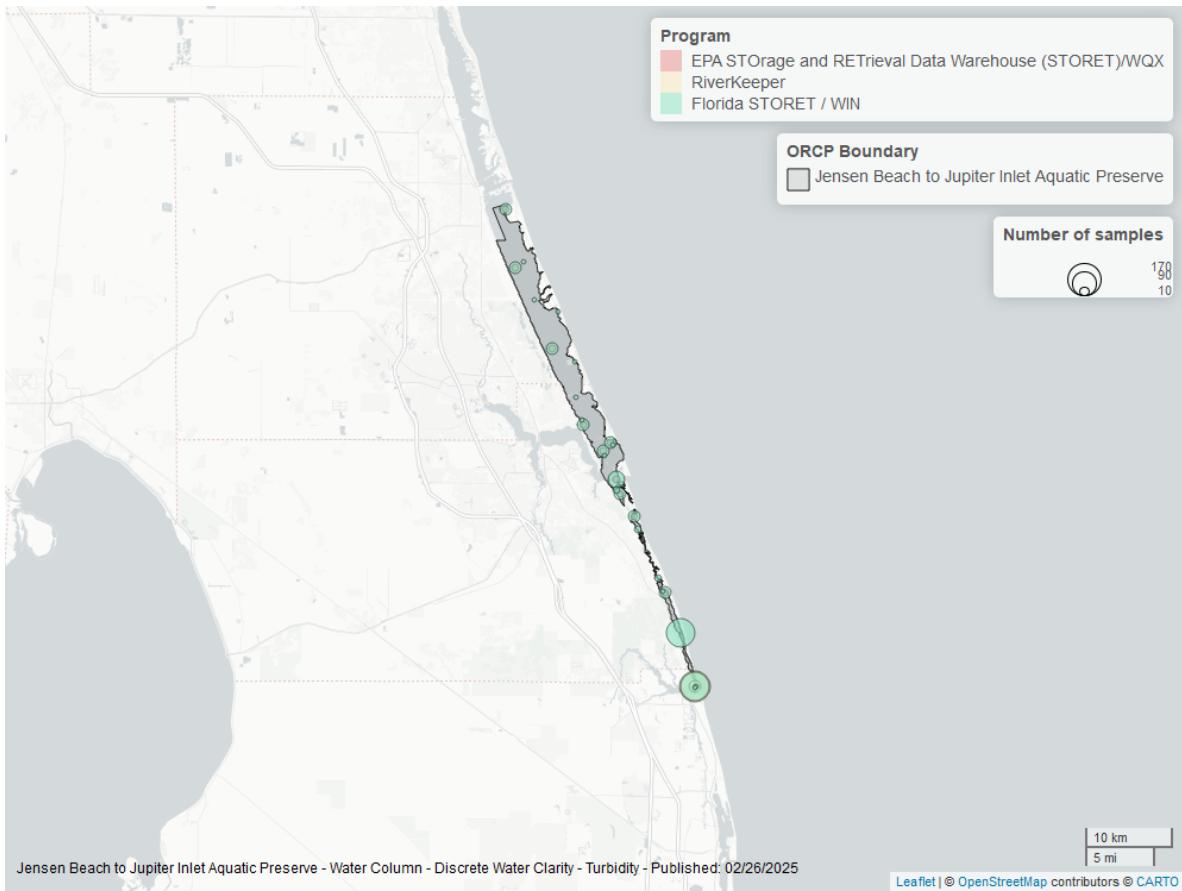


Table 10: Seasonal Kendall-Tau Results for - Turbidity

| 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 | 872          | 34              | 1991 - 2024      | 2.2                 | 0.0971 | 1.77238       | 0.02083   | 0.0472 |



## Total Suspended Solids - Discrete

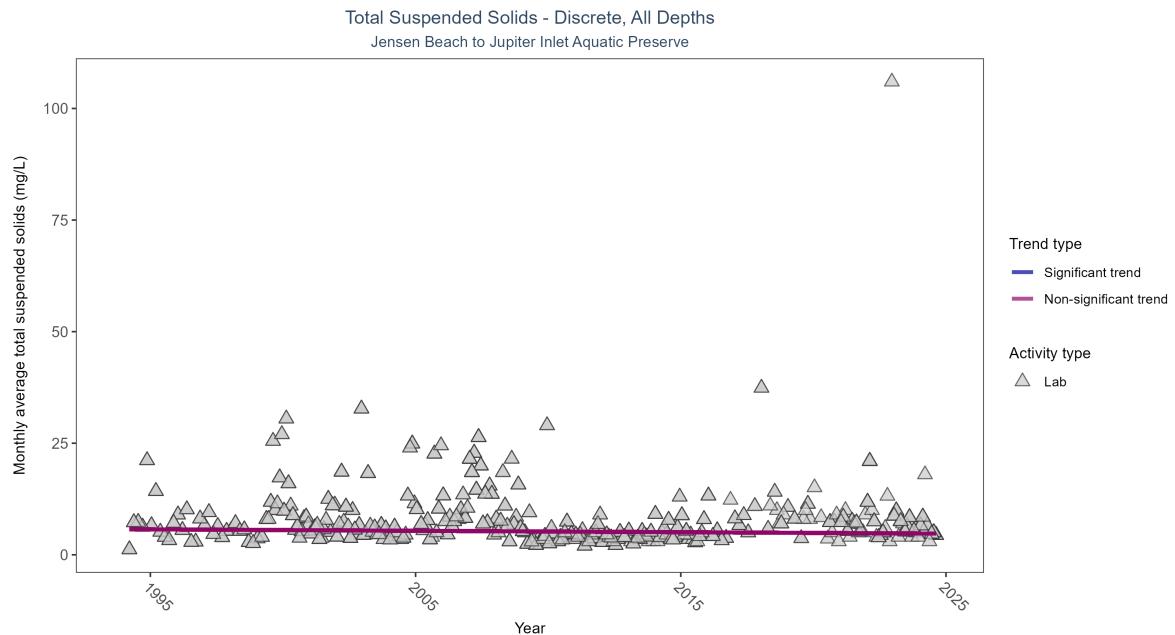
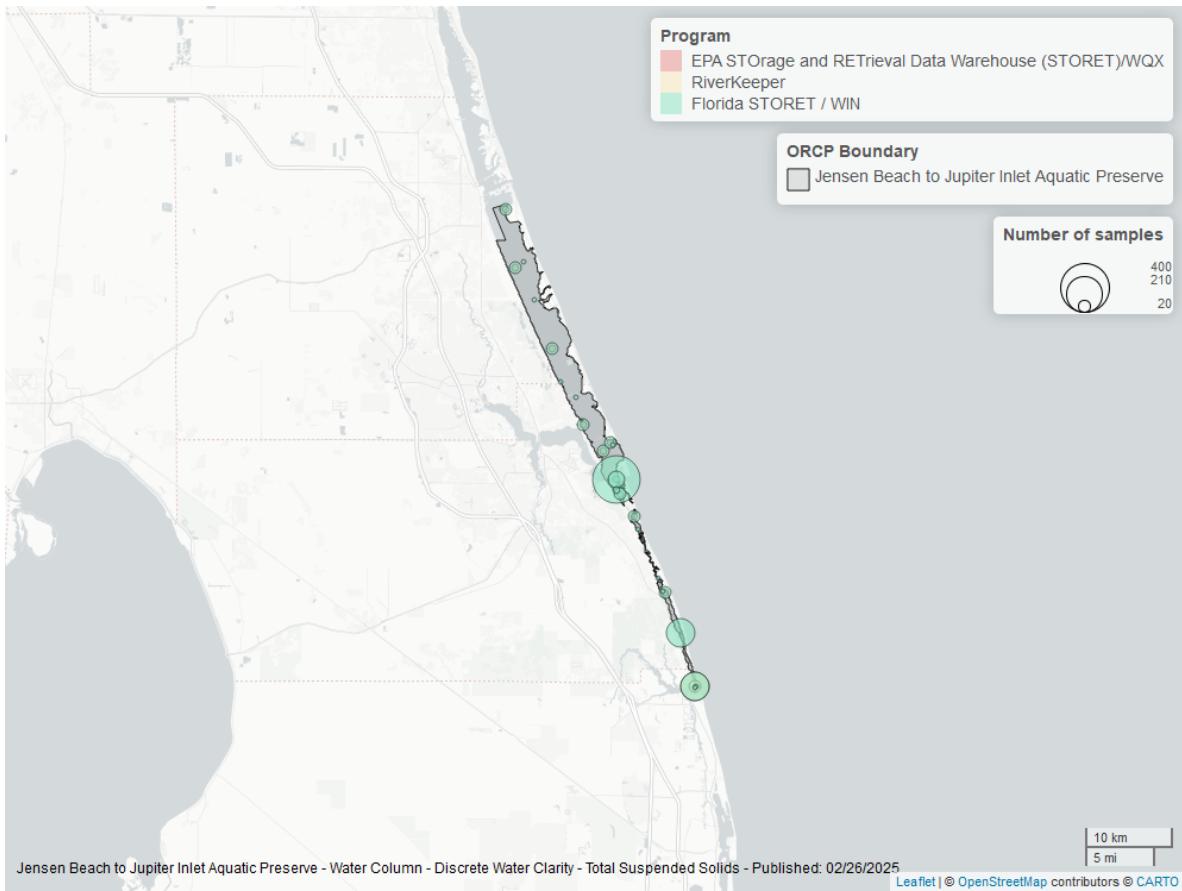


Table 11: Seasonal Kendall-Tau Results for - Total Suspended Solids

| Activity Type | Statistical Trend    | Sample Count | Years with Data | Period of Record | Median Result Value | Tau   | Sen Intercept | Sen Slope | P      |
|---------------|----------------------|--------------|-----------------|------------------|---------------------|-------|---------------|-----------|--------|
| Lab           | No significant trend | 1194         | 31              | 1994 - 2024      | 6                   | -0.07 | 5.72661       | -0.03166  | 0.1212 |



## Chlorophyll a, Uncorrected for Pheophytin - Discrete

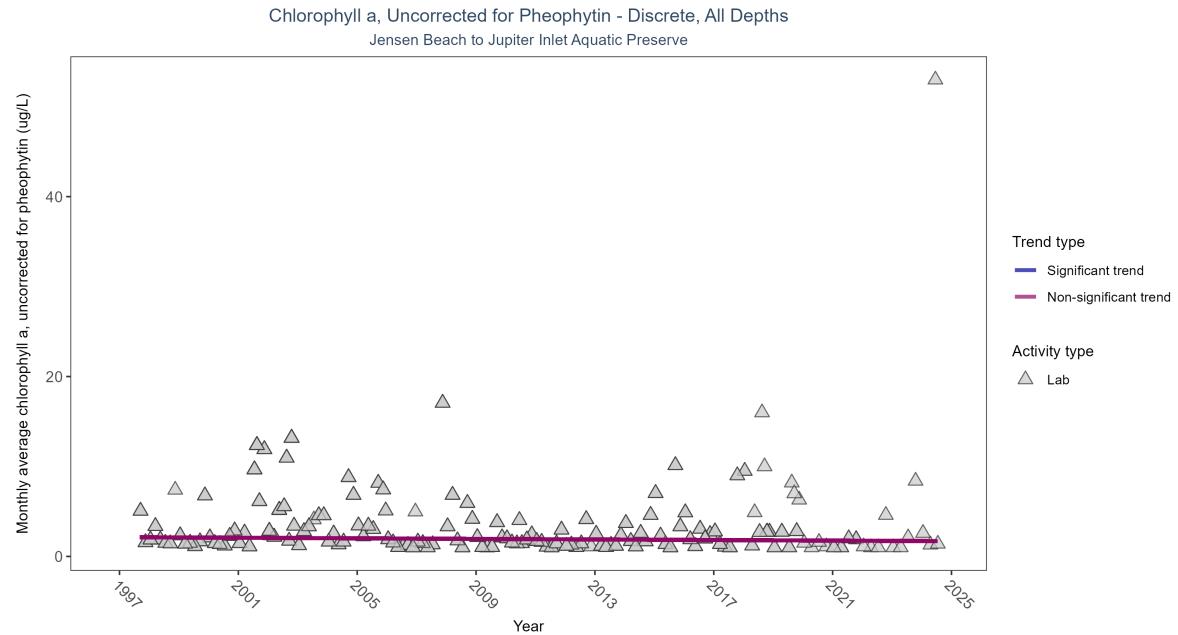
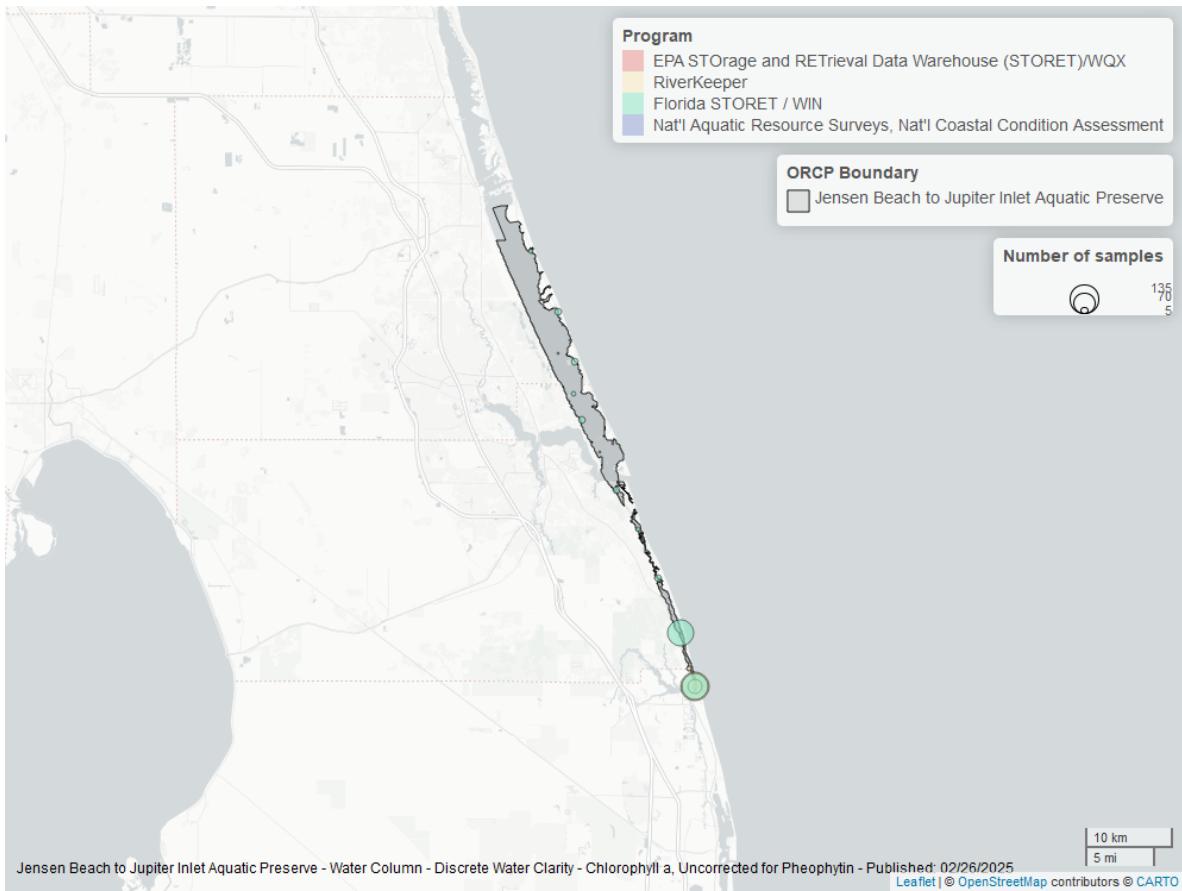


Table 12: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

| 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 | 477          | 28              | 1997 - 2024      |                     | 2   | -0.1134       | 2.14      | -0.01586 0.0795 |



## Chlorophyll a, Corrected for Pheophytin - Discrete

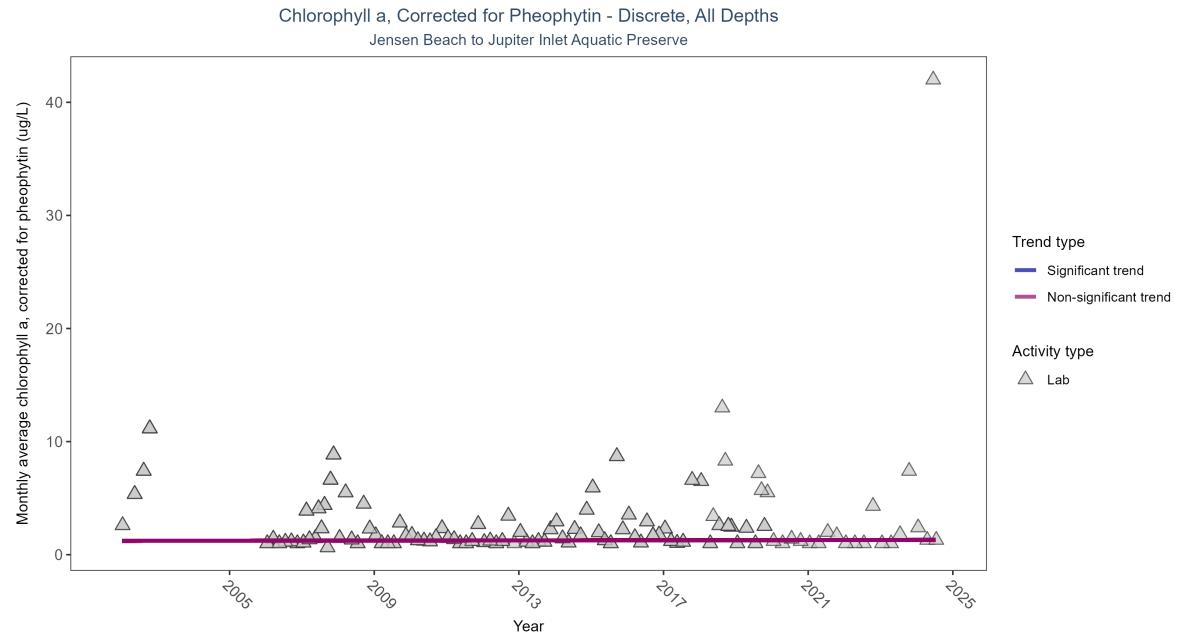
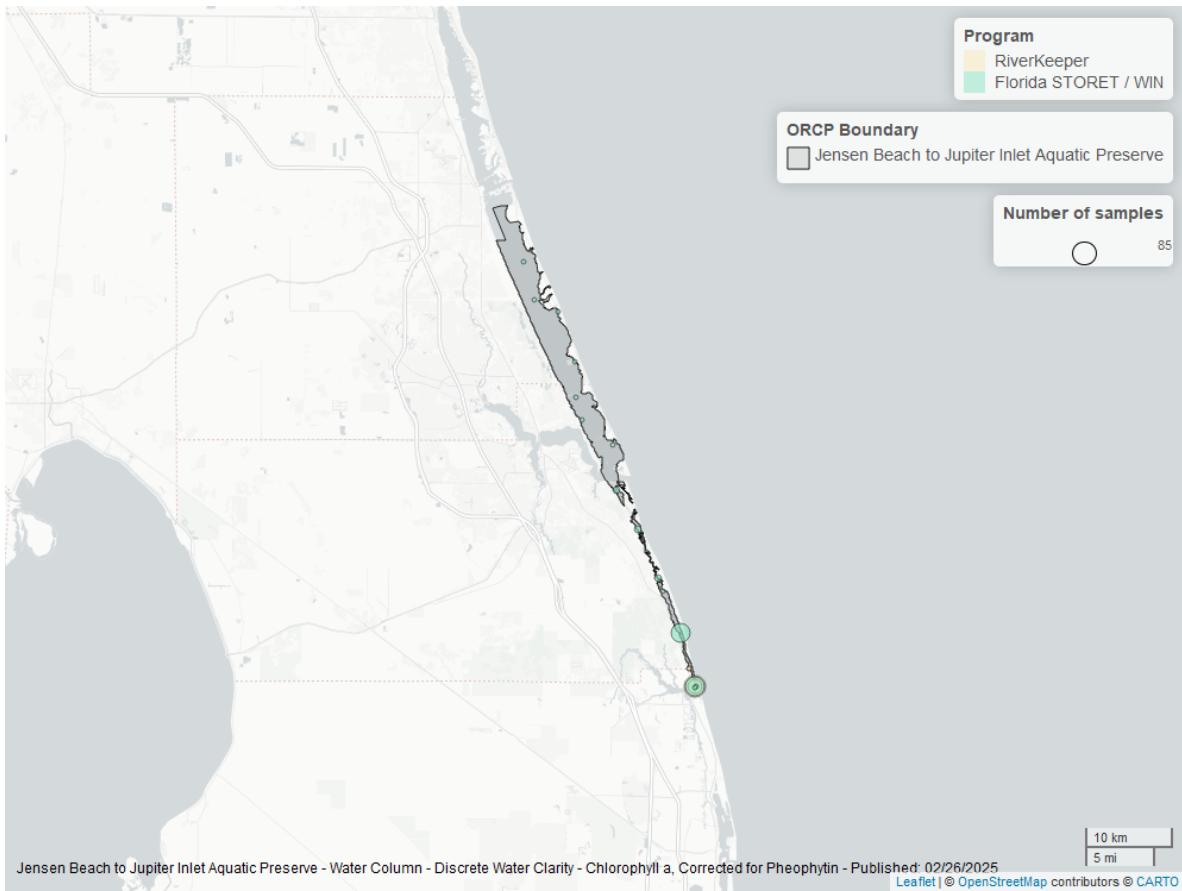


Table 13: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

| Activity Type | Statistical Trend    | Sample Count | Years with Data | Period of Record | Median Result Value | Tau    | Sen Intercept | Sen Slope | P      |
|---------------|----------------------|--------------|-----------------|------------------|---------------------|--------|---------------|-----------|--------|
| Lab           | No significant trend | 344          | 20              | 2002 - 2024      | 1.4                 | 0.0752 | 1.2232        | 0.0036    | 0.3353 |



## Secchi Depth - Discrete

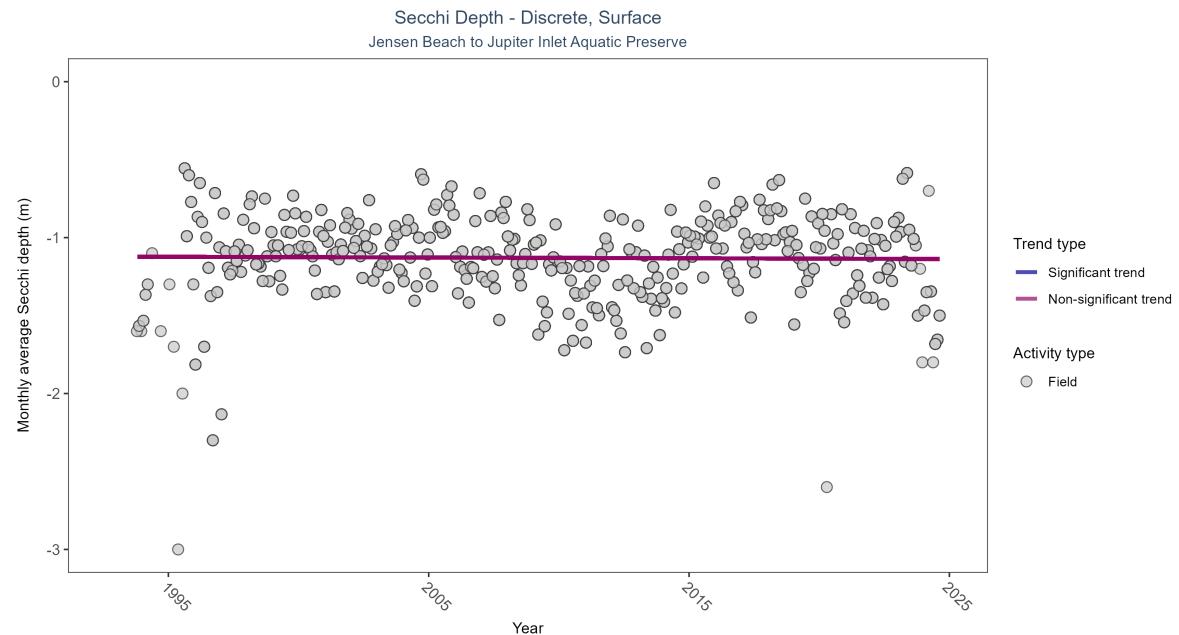
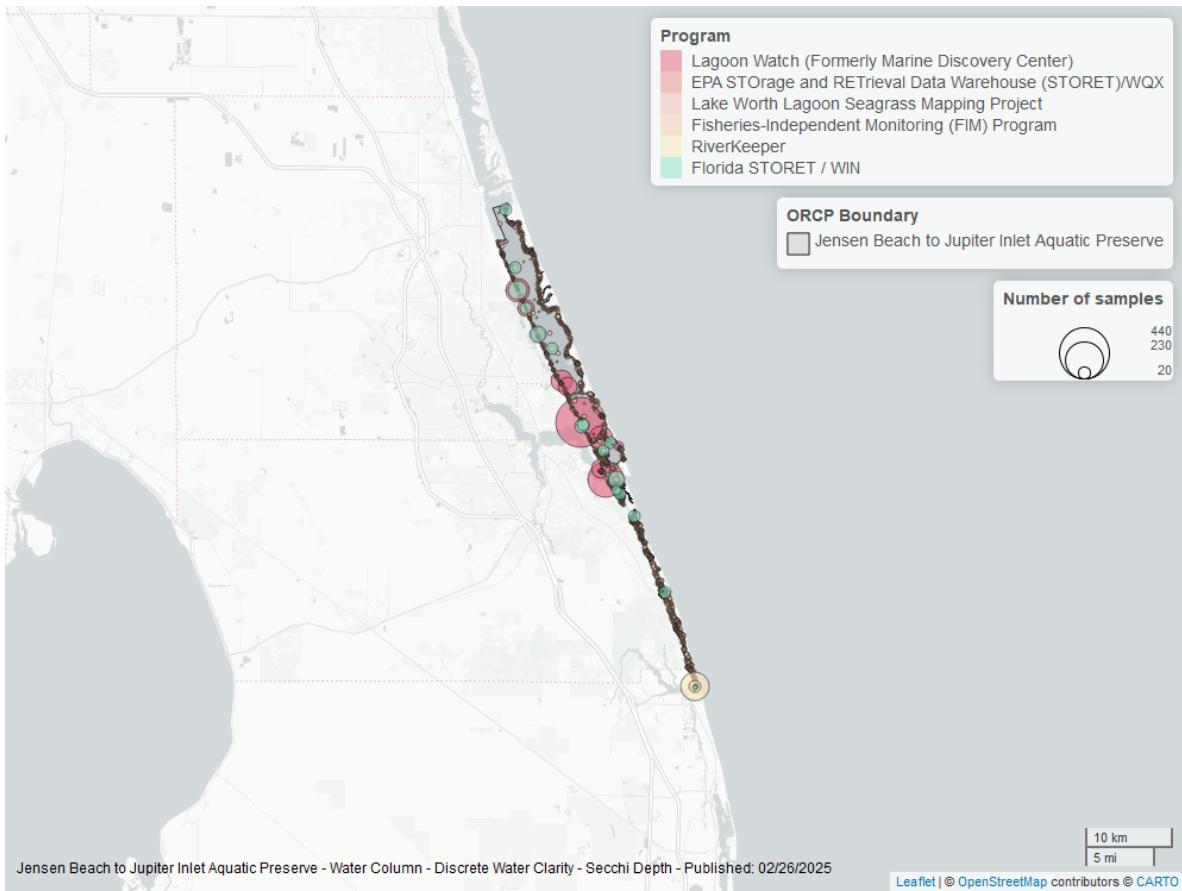


Table 14: Seasonal Kendall-Tau Results for - Secchi Depth

| 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 | 6164         | 32              | 1993 - 2024      |                     | -1  | -0.0103       | -1.12206  | -0.00048 | 0.8248 |



## Colored Dissolved Organic Matter - Discrete

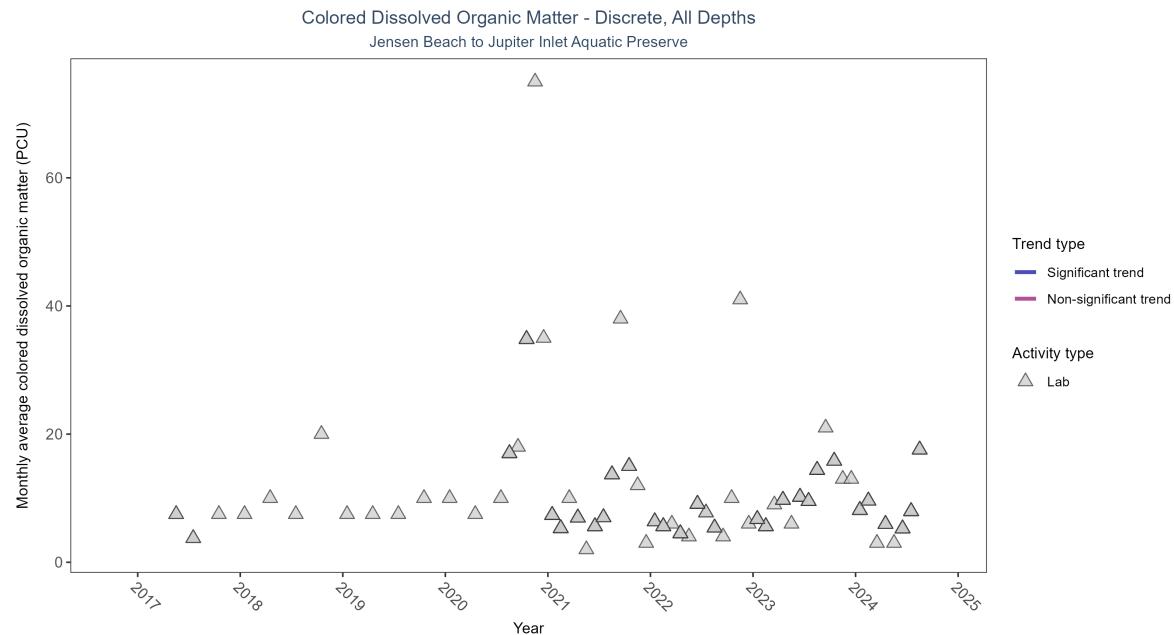


Table 15: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

| 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 | 317          | 8               | 2017 - 2024      | 7.5                 | -   | -             | -         | NA |

