

Cockroach Bay Aquatic Preserve

SEACAR Water Quality Analysis

Last compiled on 18 March, 2025

Contents

Indicators	2
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
Colored Dissolved Organic Matter - Discrete	26

Indicators

Nutrients

Total Nitrogen - Discrete

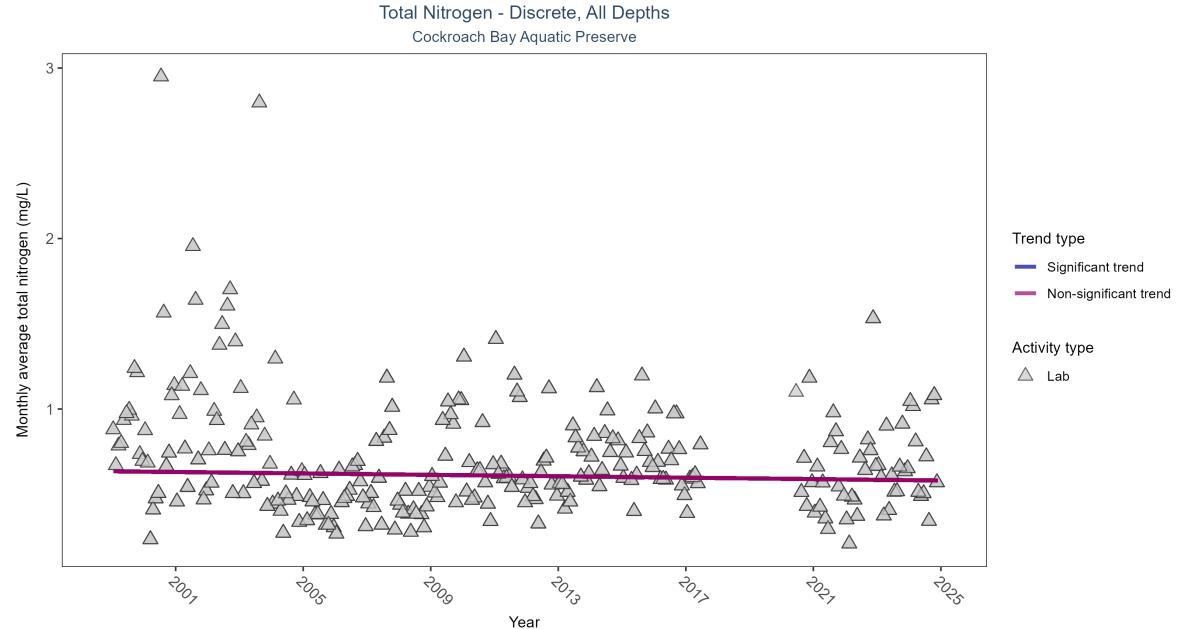
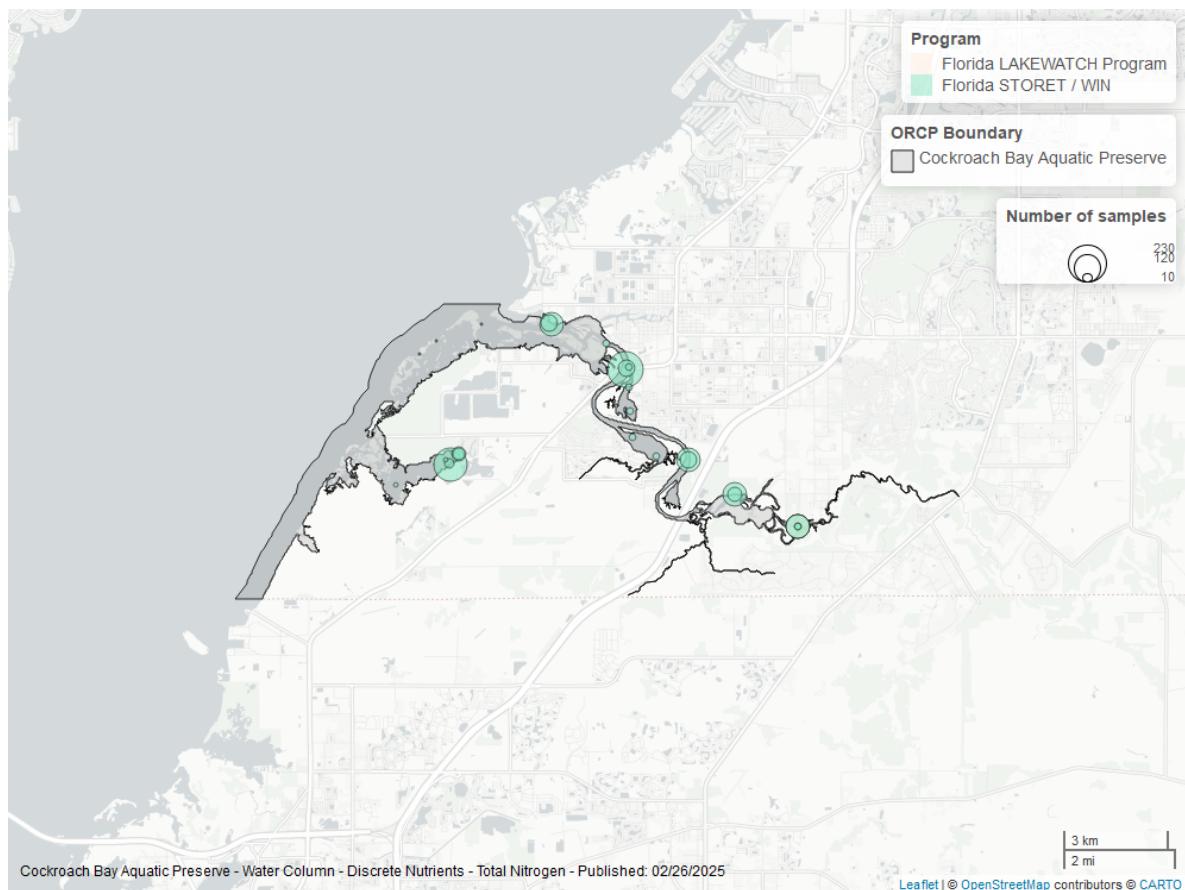


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

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	1473	24	1999 - 2024	0.62	-0.05598	0.63462	-0.00208	0.21332294169297863484224819786



Total Phosphorus - Discrete

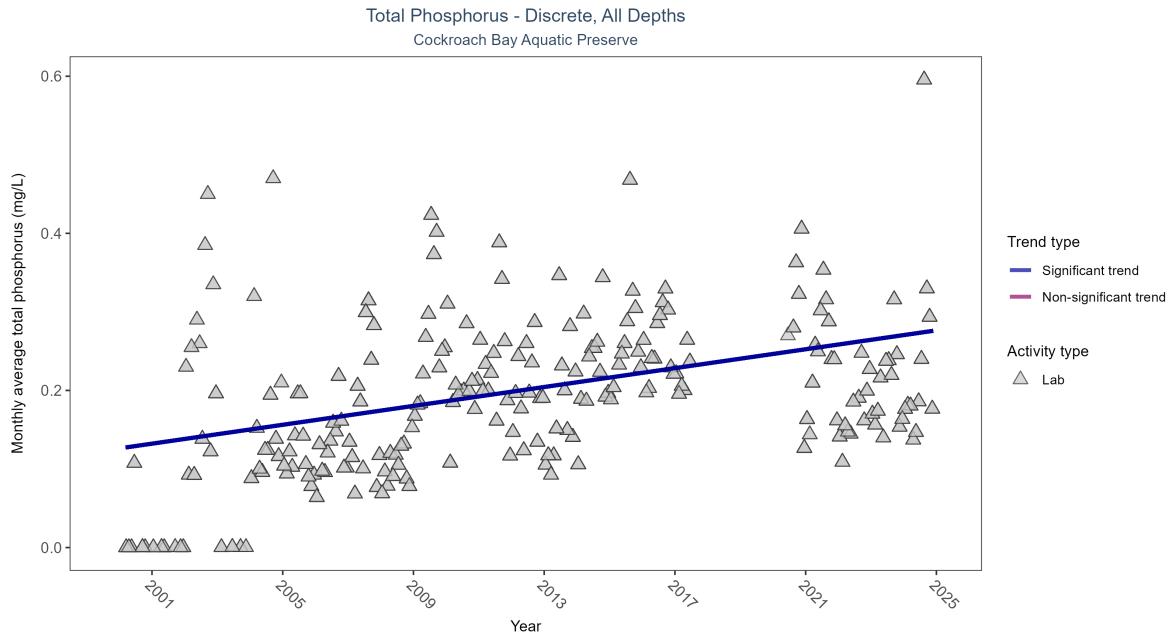
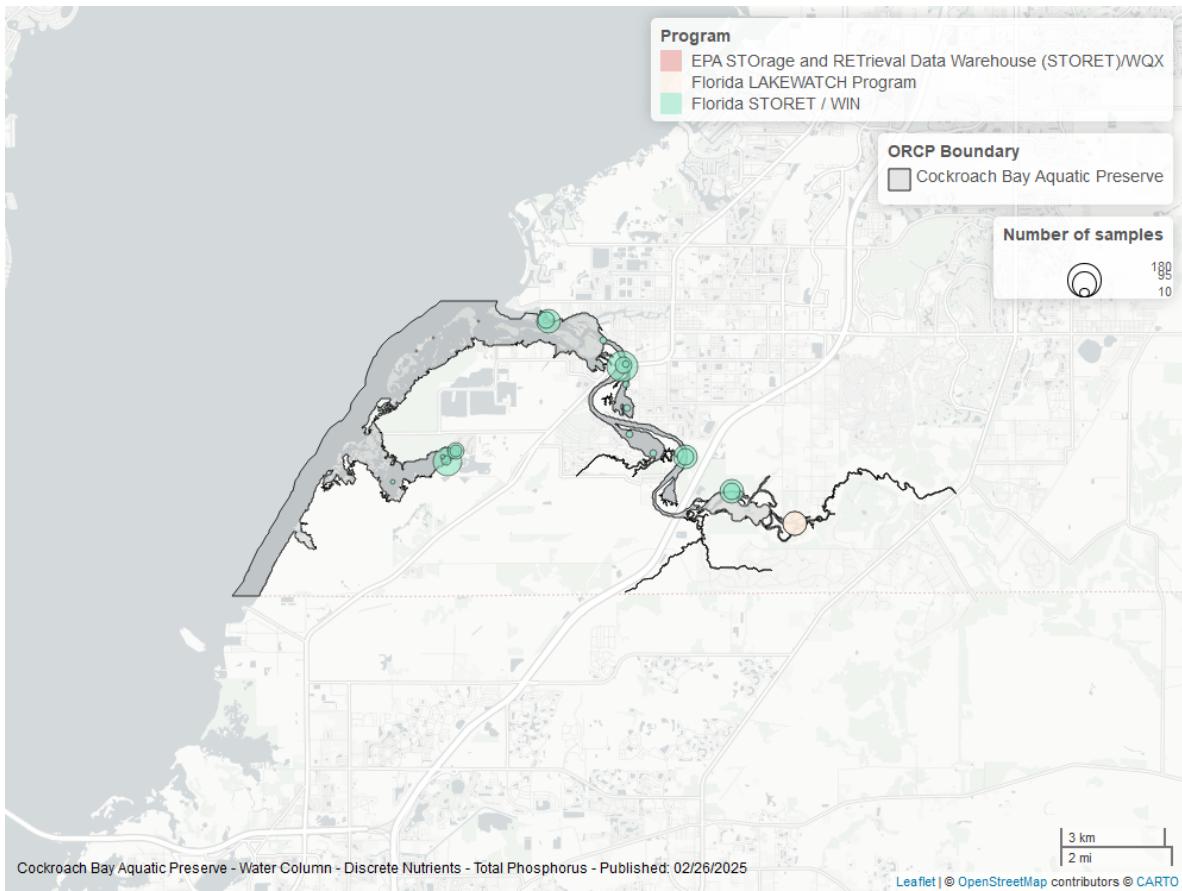


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

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	1300	23	2000 - 2024	0.203	0.33888	0.12623	0.00601	0.0000000000044707313902837655509615866211703405497246421873569489



Water Quality

Dissolved Oxygen - Discrete

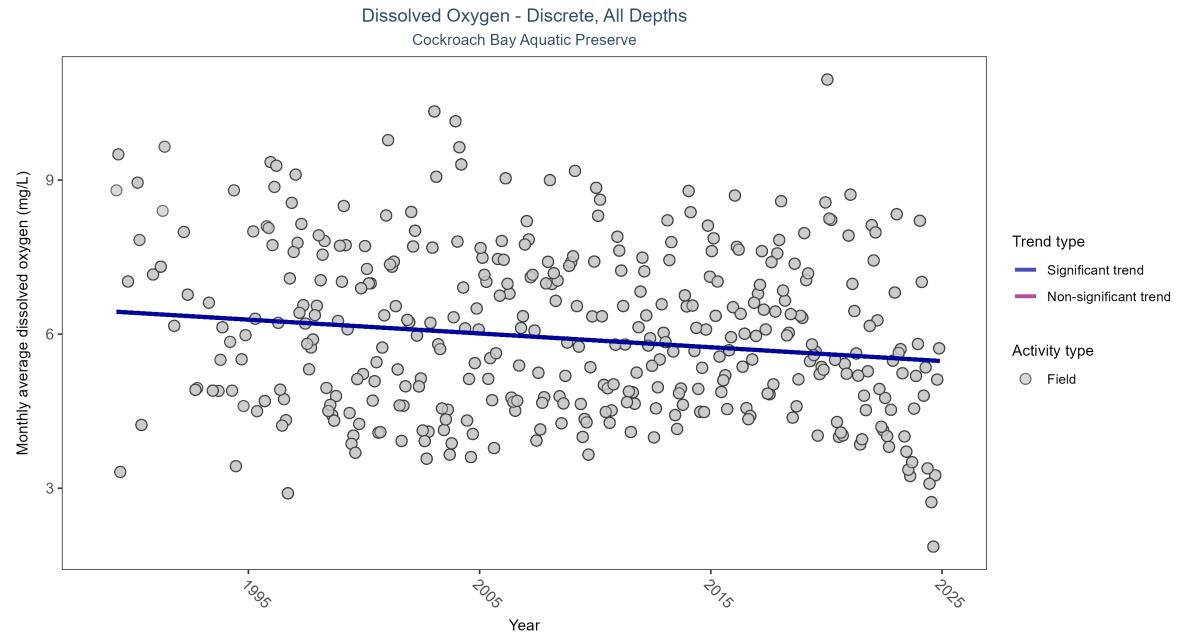
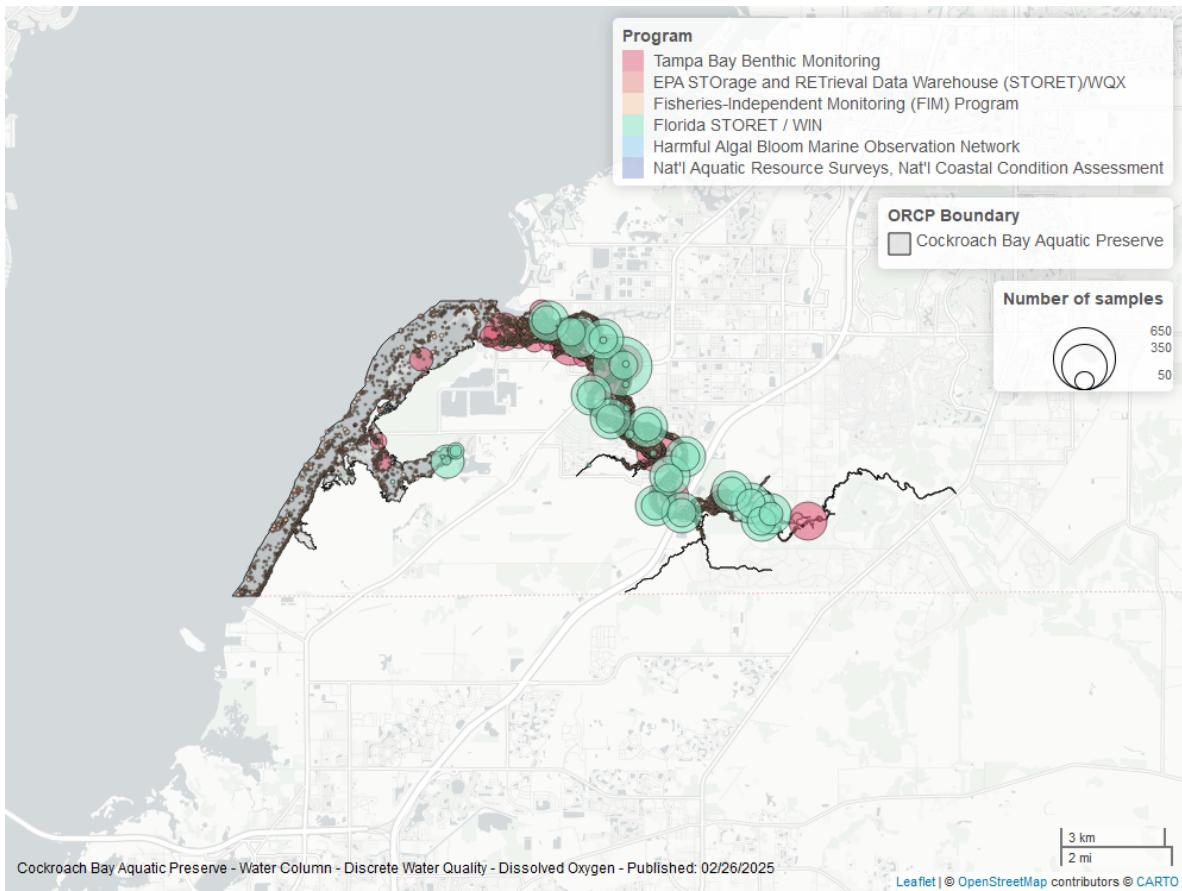


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

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	25172	36	1989 - 2024	5.3	-0.18584	6.4436	-0.02688	0.00000014882790934



Dissolved Oxygen Saturation - Discrete

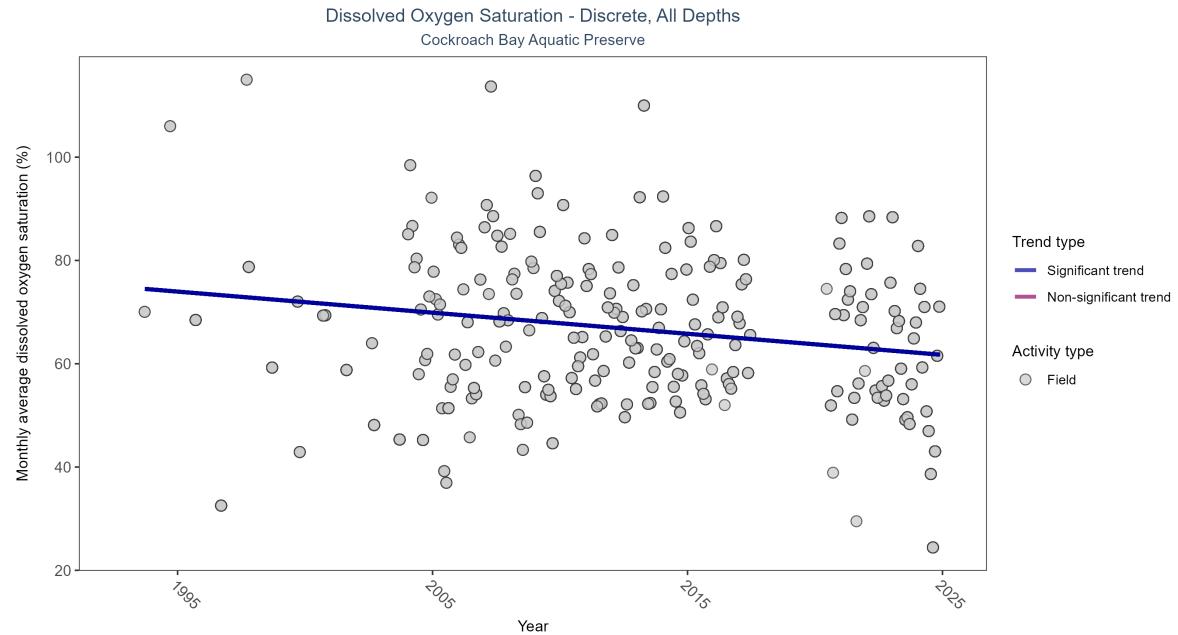
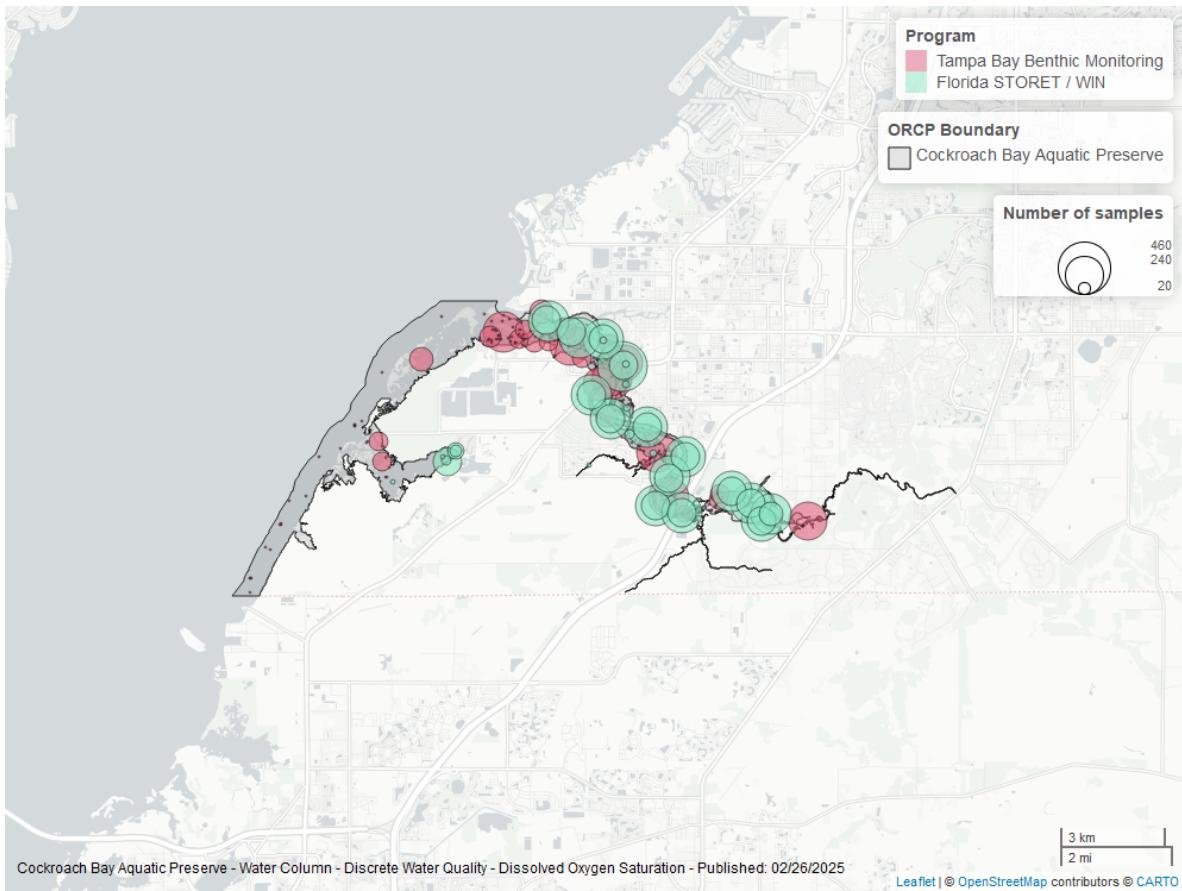


Table 4: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Field	Significantly decreasing trend	10927	30	1993 - 2024	58.9	-0.19205	74.78446	-0.40825	0.000034915117073031370789702038104351800029689911752939224243164062500000



Salinity - Discrete

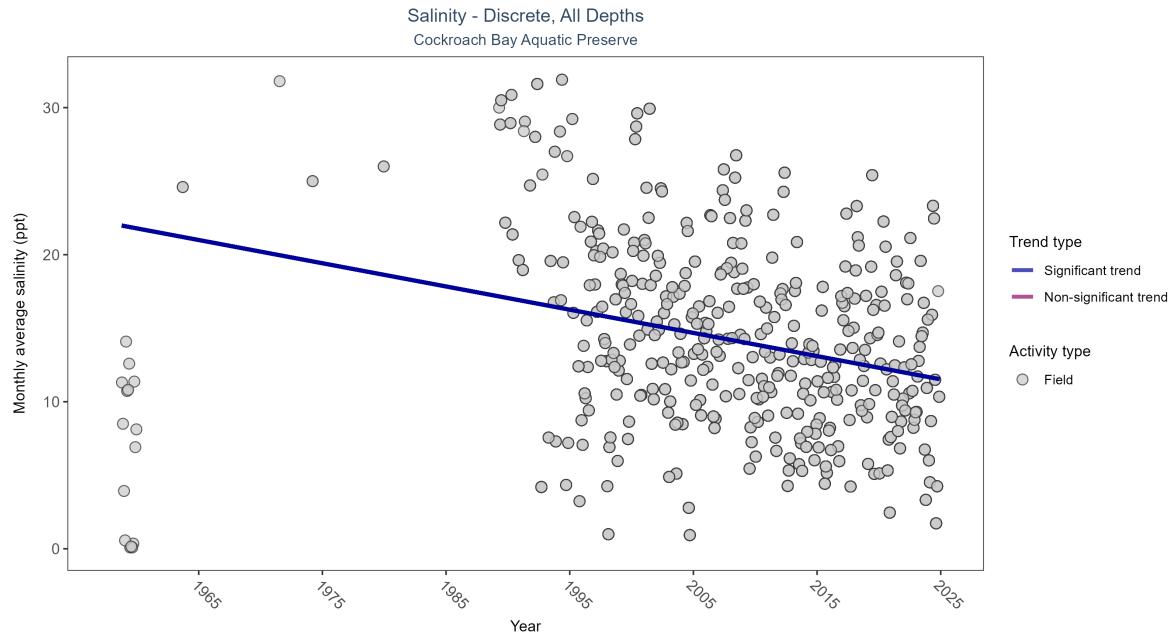
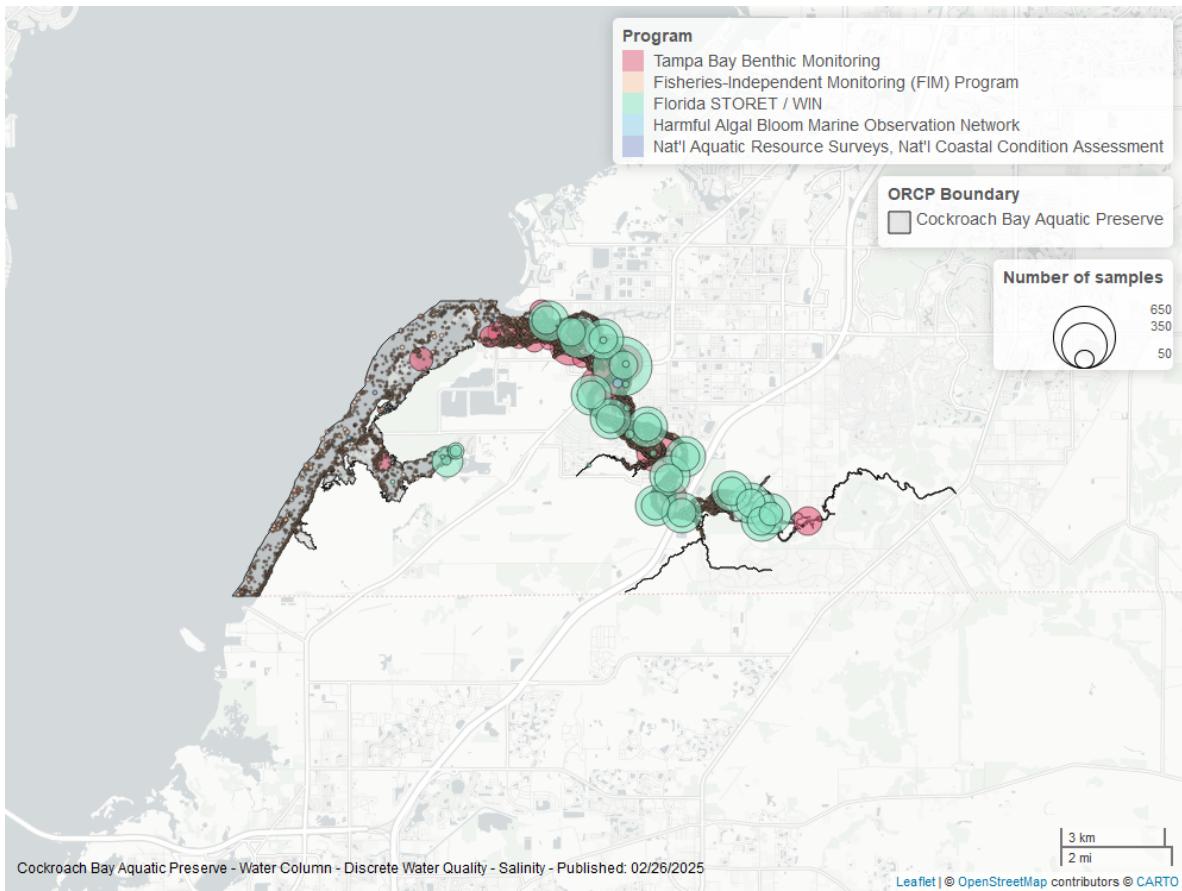


Table 5: Seasonal Kendall-Tau Results for - Salinity

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
All	Significantly decreasing trend	25168	42	1958 - 2024	12.1	-0.17537	22.10304	-0.15793	0.00000039859278885414603853069859251689877055469



Water Temperature - Discrete

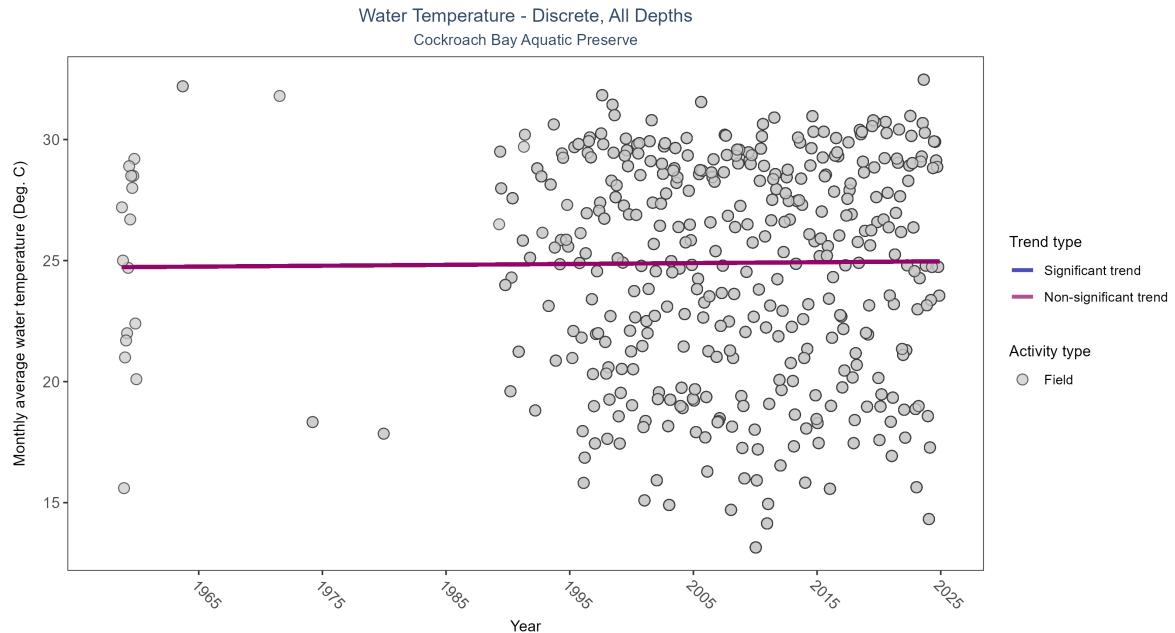
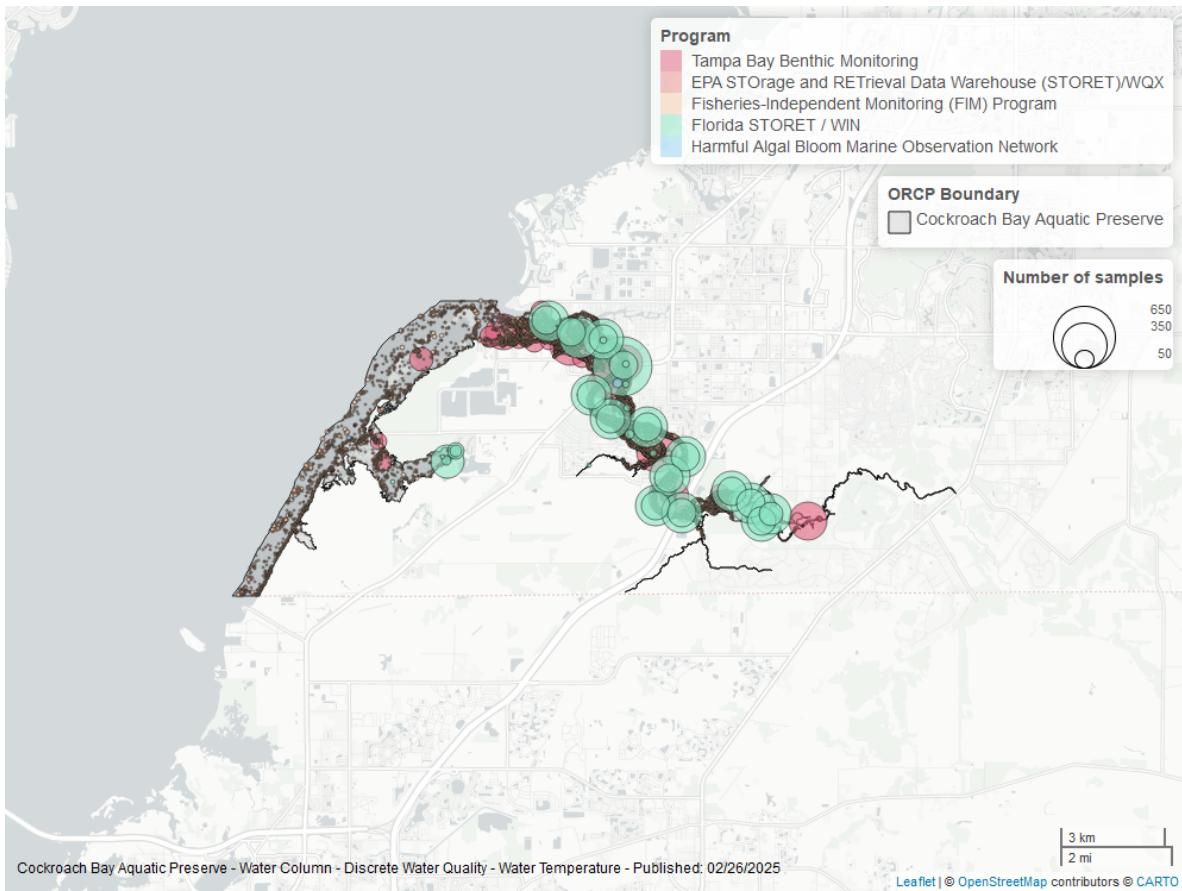


Table 6: Seasonal Kendall-Tau Results for - Water Temperature

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Field	No significant trend	25432	42	1958 - 2024	26.5	0.01877	24.72561	0.00363	0.603008561157738154



pH - Discrete

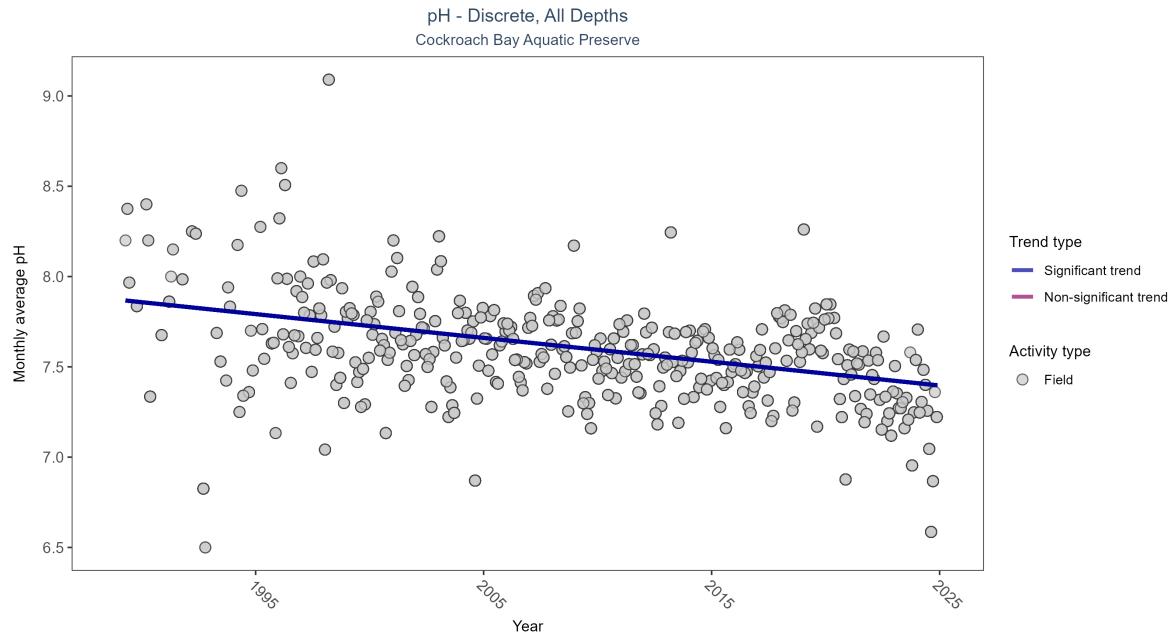
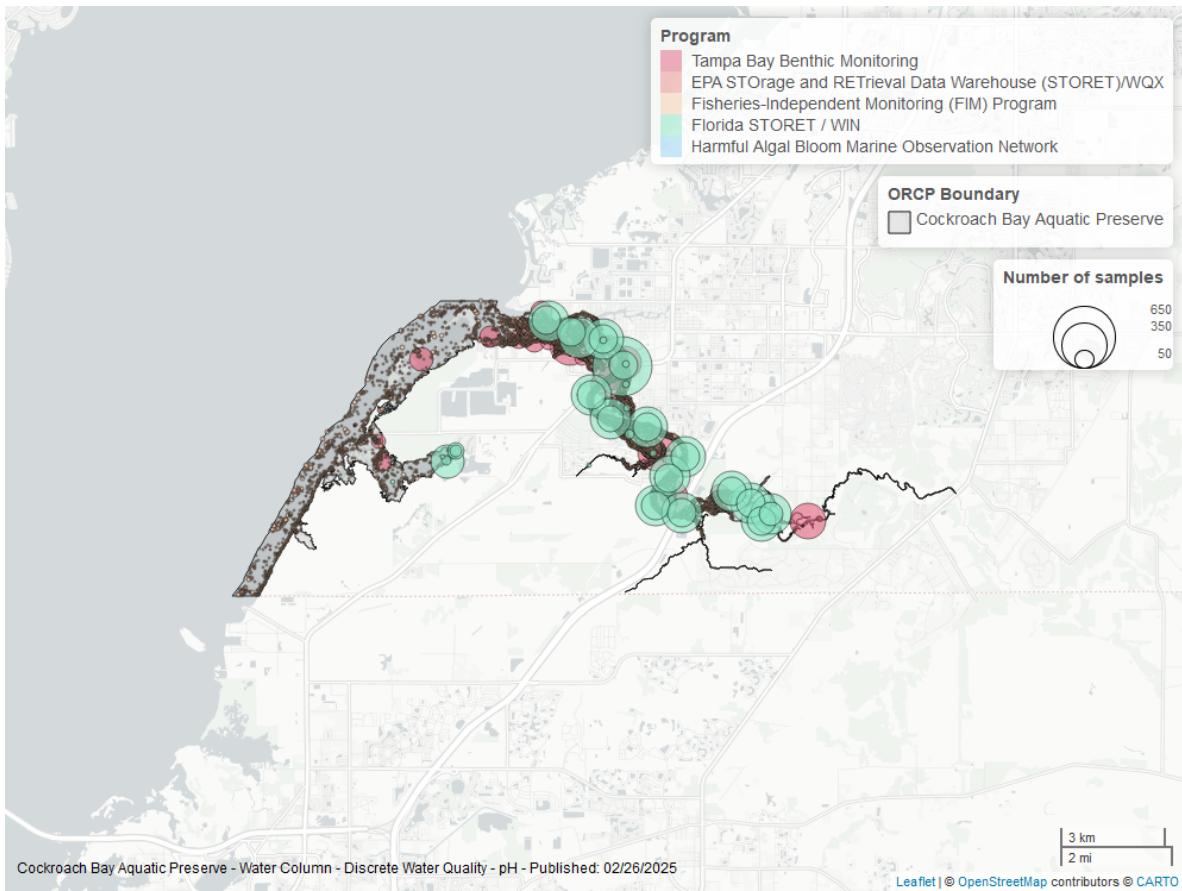


Table 7: Seasonal Kendall-Tau Results for - pH



Water Clarity

Turbidity - Discrete

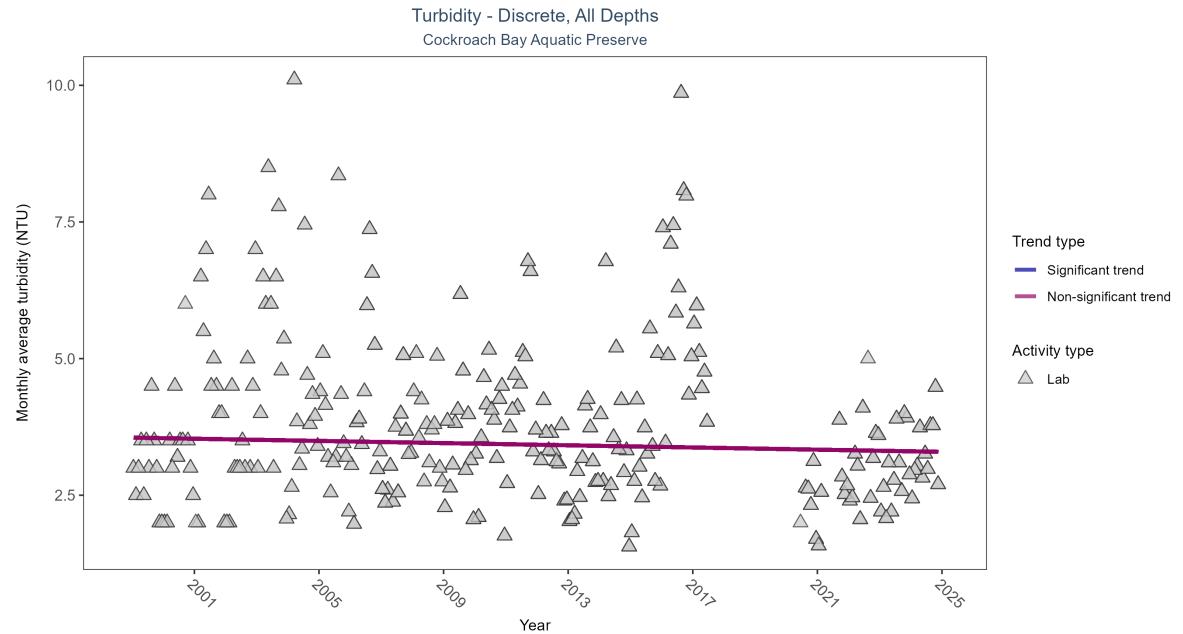


Table 8: Seasonal Kendall-Tau Results for - Turbidity

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	1044	24	1999 - 2024	3.1	-0.0455	3.55375	-0.01	0.29391533891522814148



Total Suspended Solids - Discrete

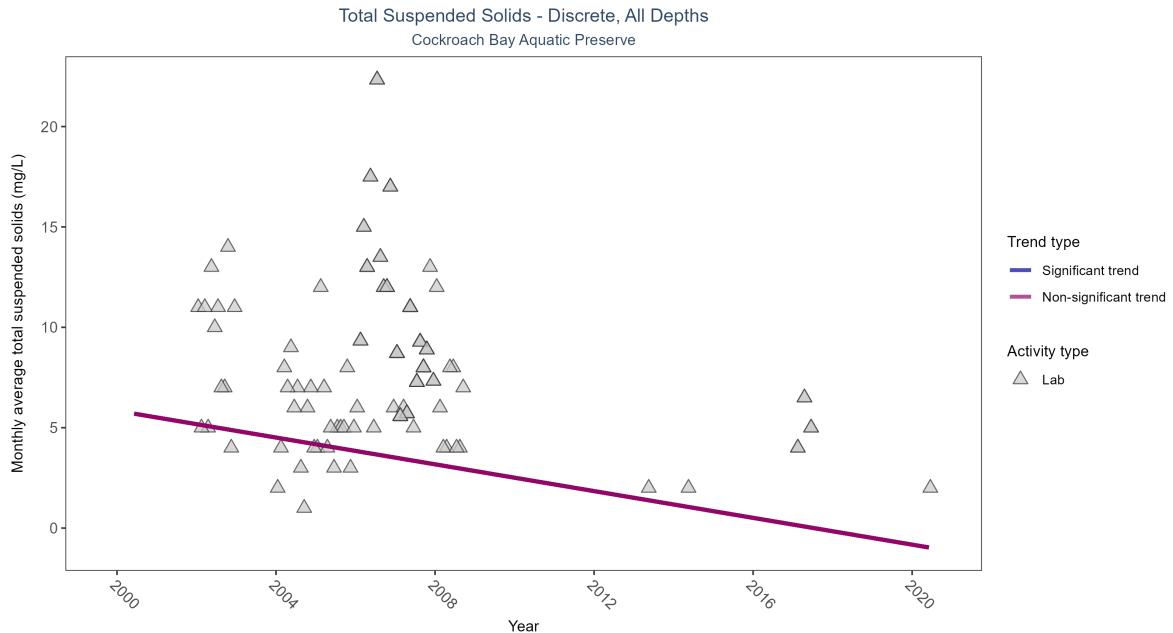


Table 9: Seasonal Kendall-Tau Results for - Total Suspended Solids

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	No significant trend	155	11	2000 - 2020	7	-0.09872	5.84286	-0.33333	0.134926774309096608739366729423637



Chlorophyll a, Uncorrected for Pheophytin - Discrete

Chlorophyll a, Uncorrected for Pheophytin - Discrete, All Depths
Cockroach Bay Aquatic Preserve

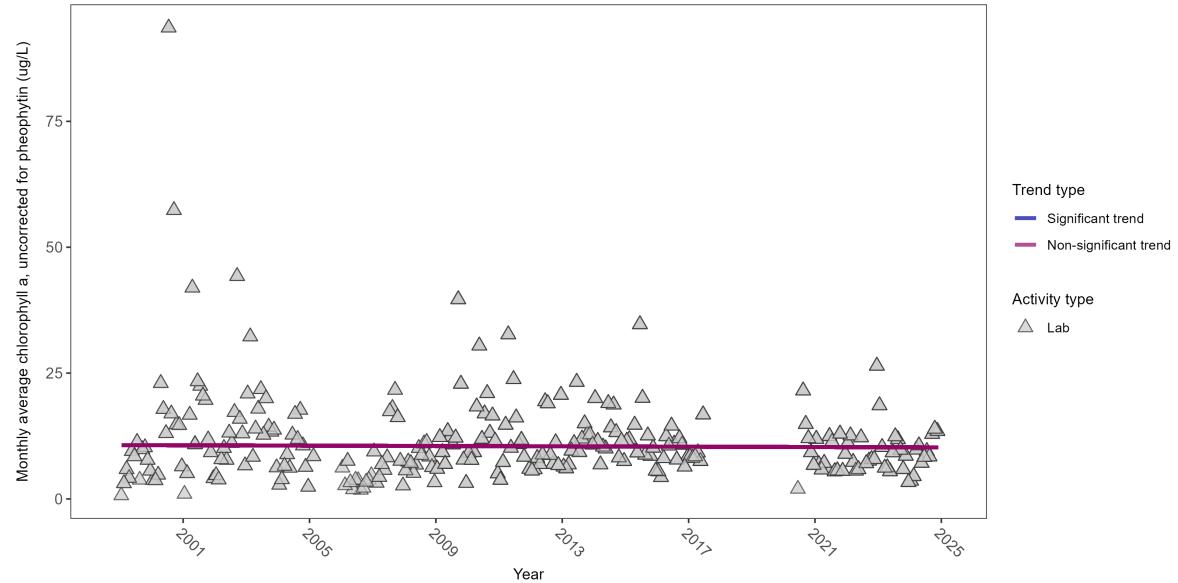
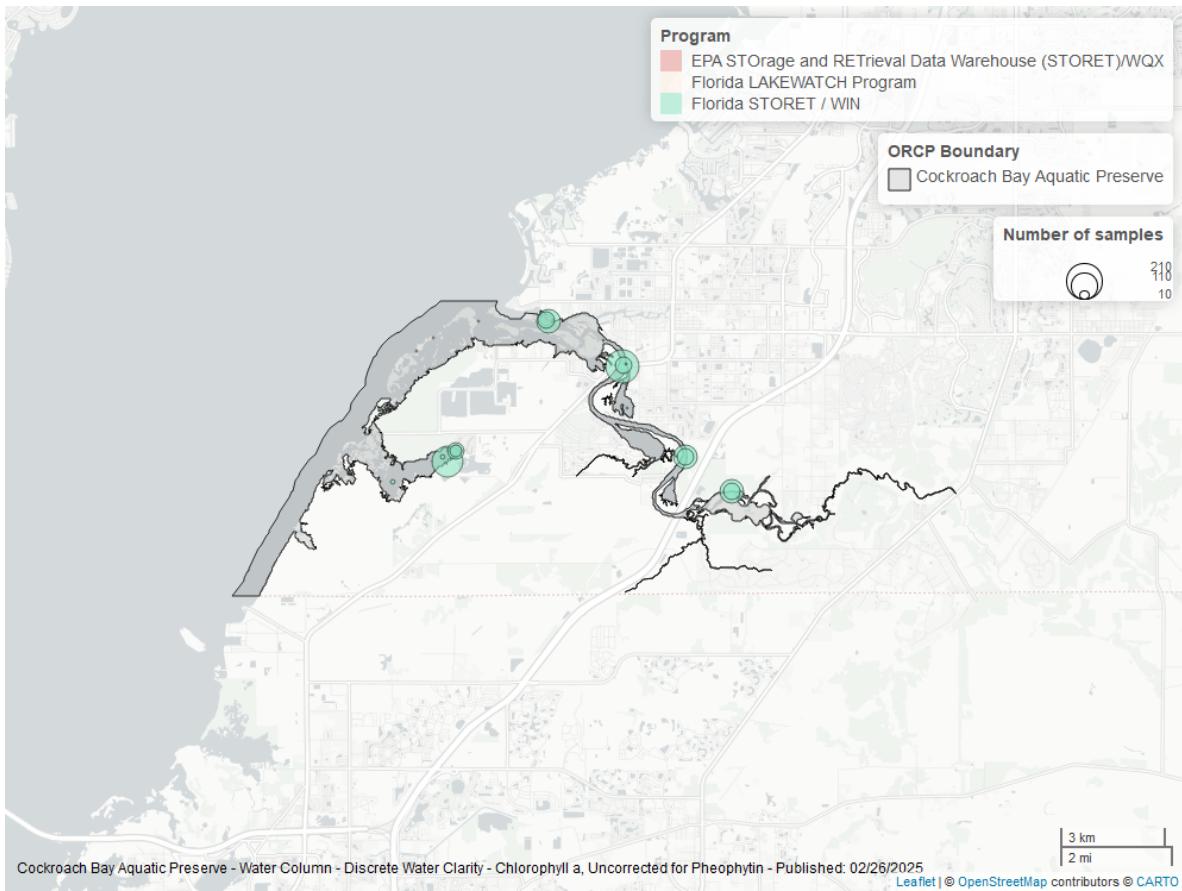


Table 10: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P	
Lab	No significant trend	1014	24	1999 - 2024		7.4	-0.02146	10.69361	-0.01734	0.64360632186164667967176456



Chlorophyll a, Corrected for Pheophytin - Discrete

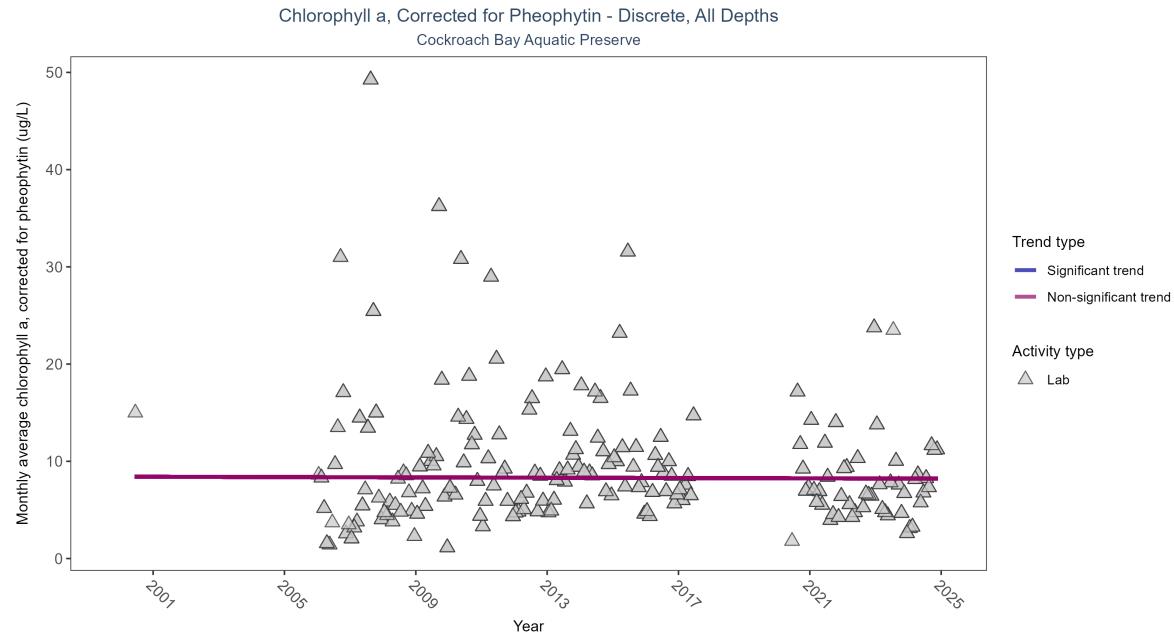
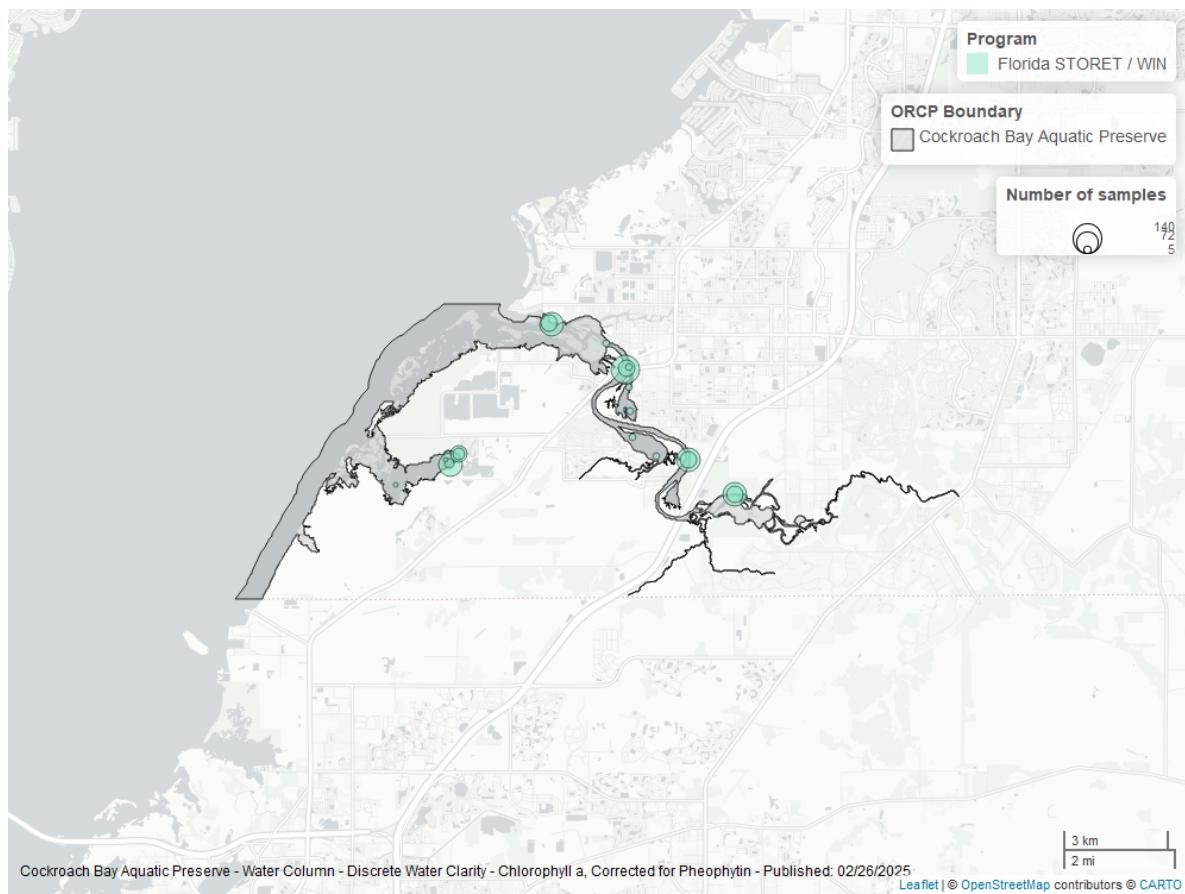


Table 11: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	No significant trend	884	18	2000 - 2024	6.2	-0.00782	8.41592	-0.00804	0.8334981667006103878136968888



Secchi Depth - Discrete

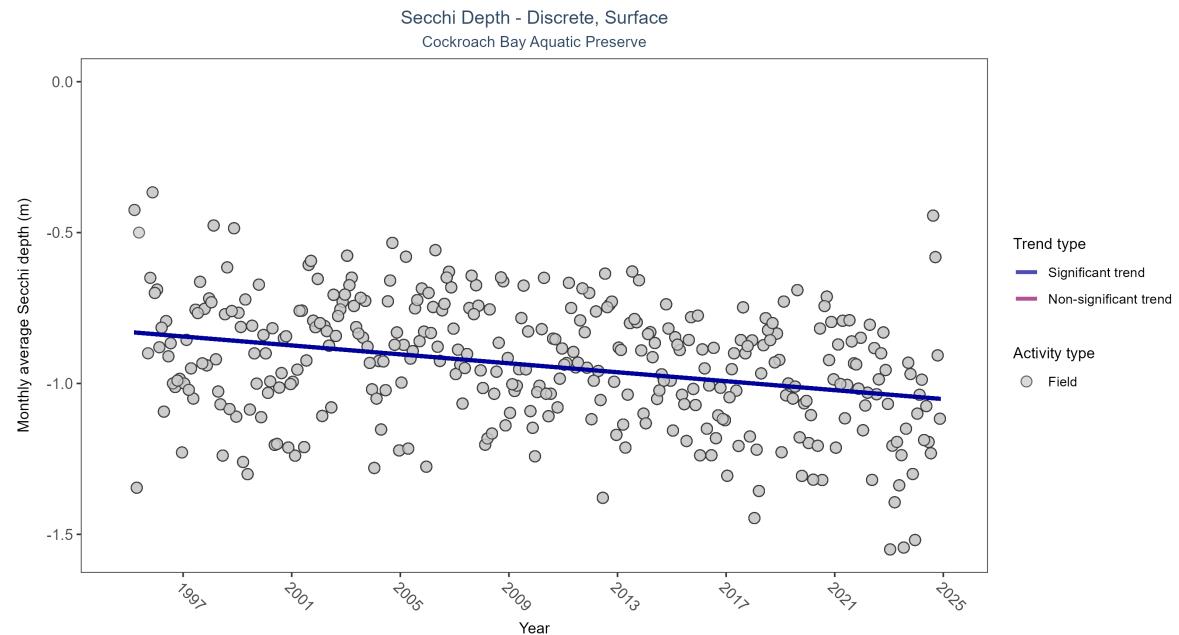
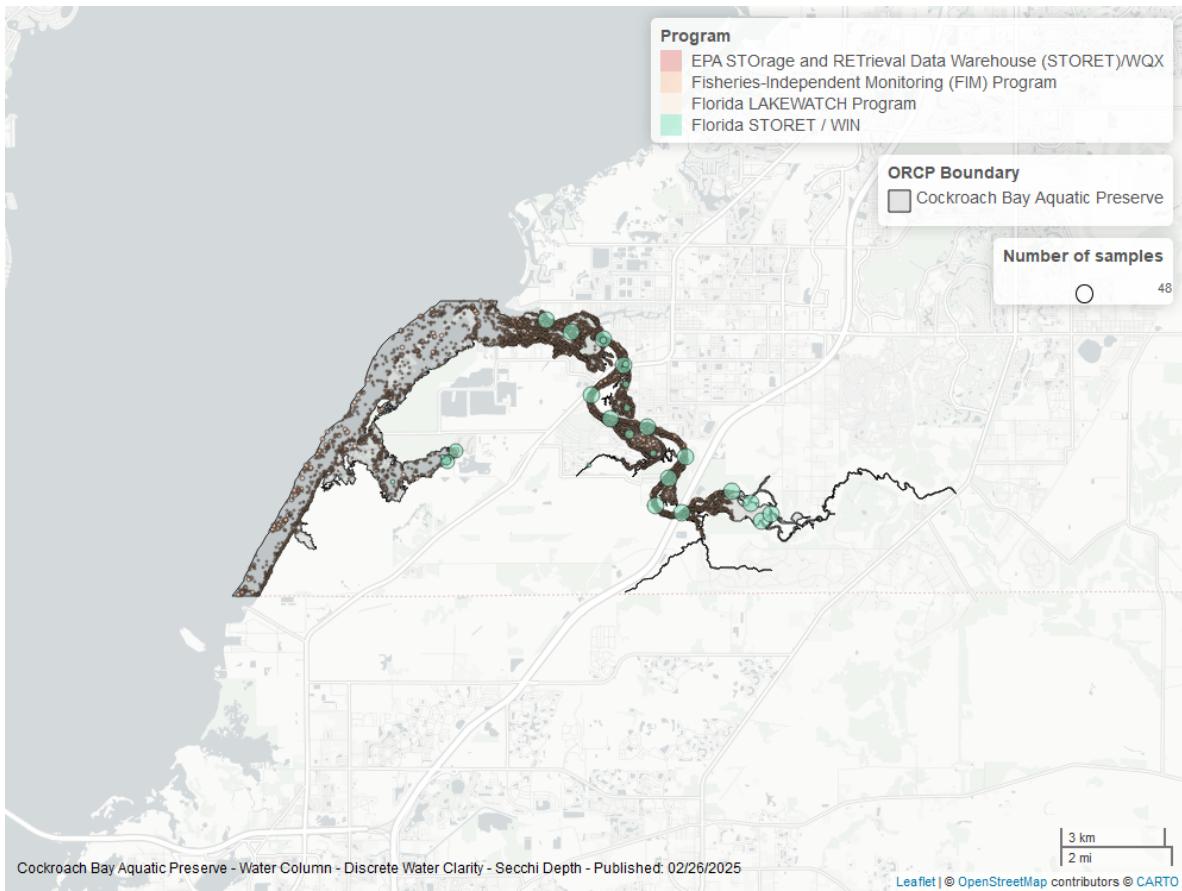


Table 12: Seasonal Kendall-Tau Results for - Secchi Depth

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	14004	30	1995 - 2024	-0.8	-0.2157	-0.82948	-0.00741	0.000000094708833696976545187679



Colored Dissolved Organic Matter - Discrete

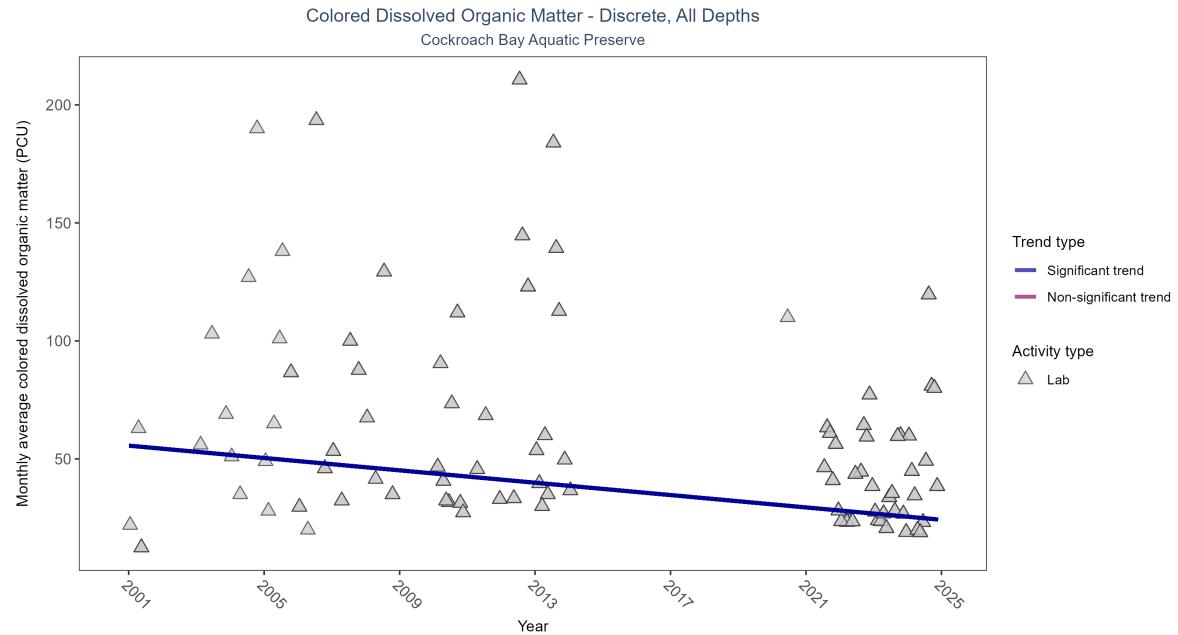


Table 13: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Significantly decreasing trend	330	17	2001 - 2024	38.55	-0.26278	55.63208	-1.30881	0.005205850239234318700687

