

Rookery 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 - Continuous	8
Dissolved Oxygen Saturation - Discrete	10
Dissolved Oxygen Saturation - Continuous	12
Salinity - Discrete	14
Salinity - Continuous	16
Water Temperature - Discrete	18
Water Temperature - Continuous	20
pH - Discrete	22
pH - Continuous	24
Water Clarity	26
Turbidity - Discrete	26
Turbidity - Continuous	28
Total Suspended Solids - Discrete	30
Chlorophyll a, Uncorrected for Pheophytin - Discrete	32
Chlorophyll a, Corrected for Pheophytin - Discrete	34
Secchi Depth - Discrete	36
Colored Dissolved Organic Matter - Discrete	38

Indicators

Nutrients

Total Nitrogen - Discrete

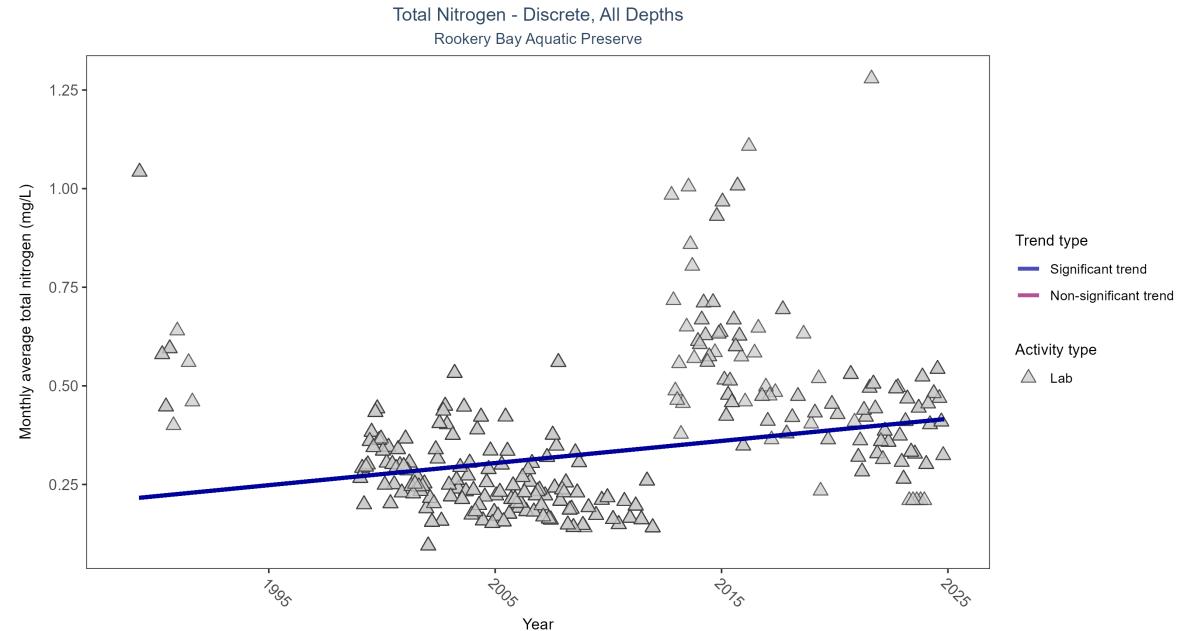


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

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	2770	29	1989 - 2024	0.26	0.16955	0.21458	0.00561	0.00033515312483768265258698982



Total Phosphorus - Discrete

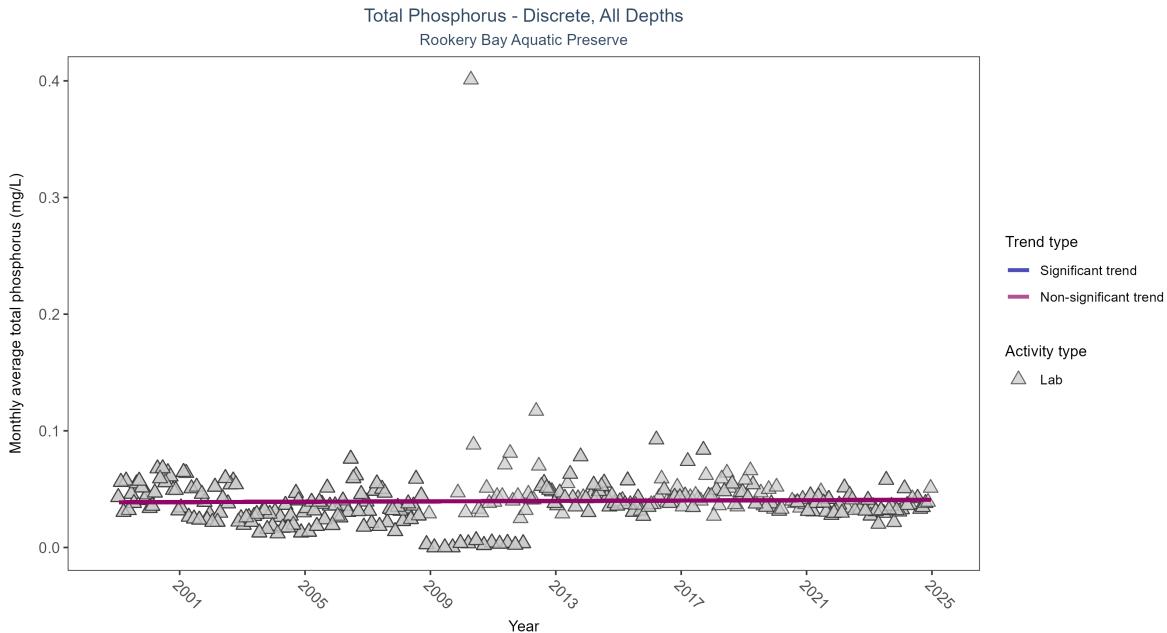
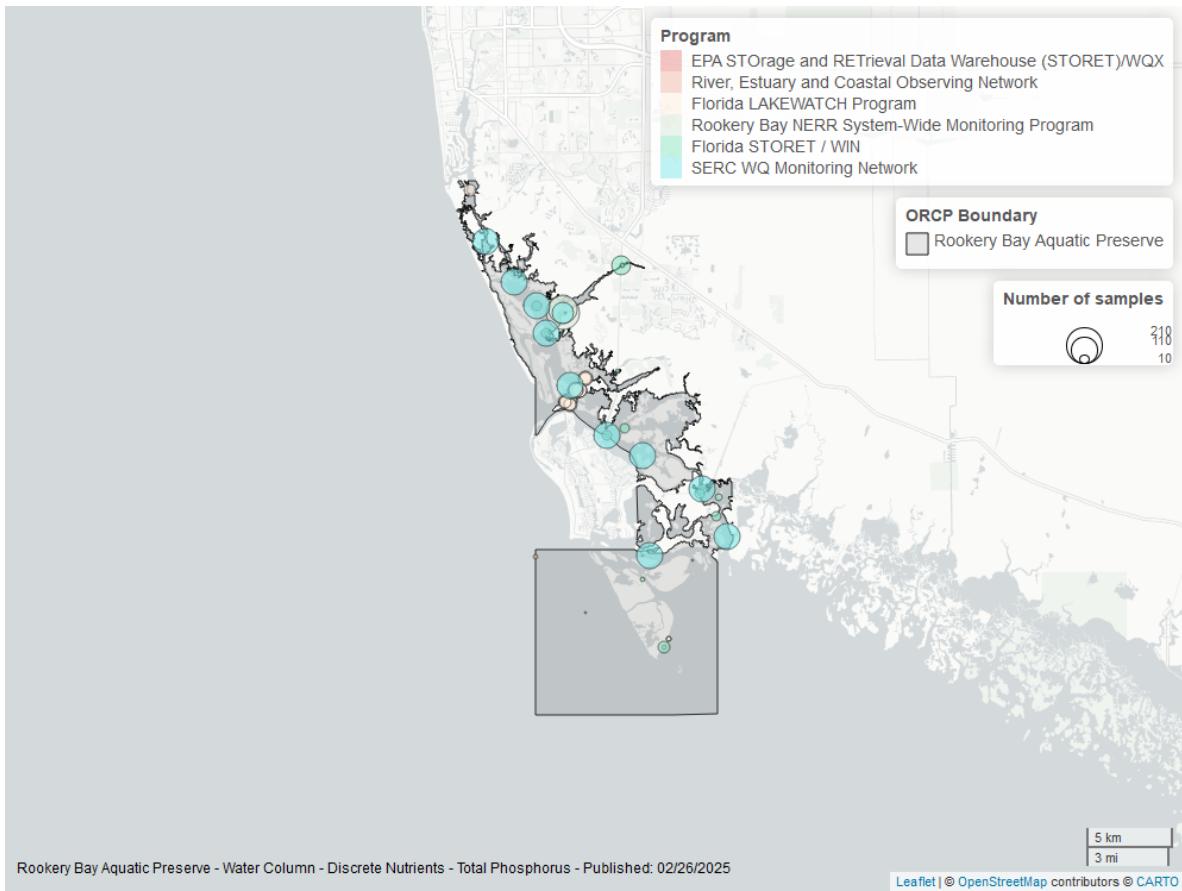


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

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	2395	26	1999 - 2024	0.034	0.03008	0.03871	0.00008	0.45075644383796176217771289884694851934909820556640625000000000000



Water Quality

Dissolved Oxygen - Discrete

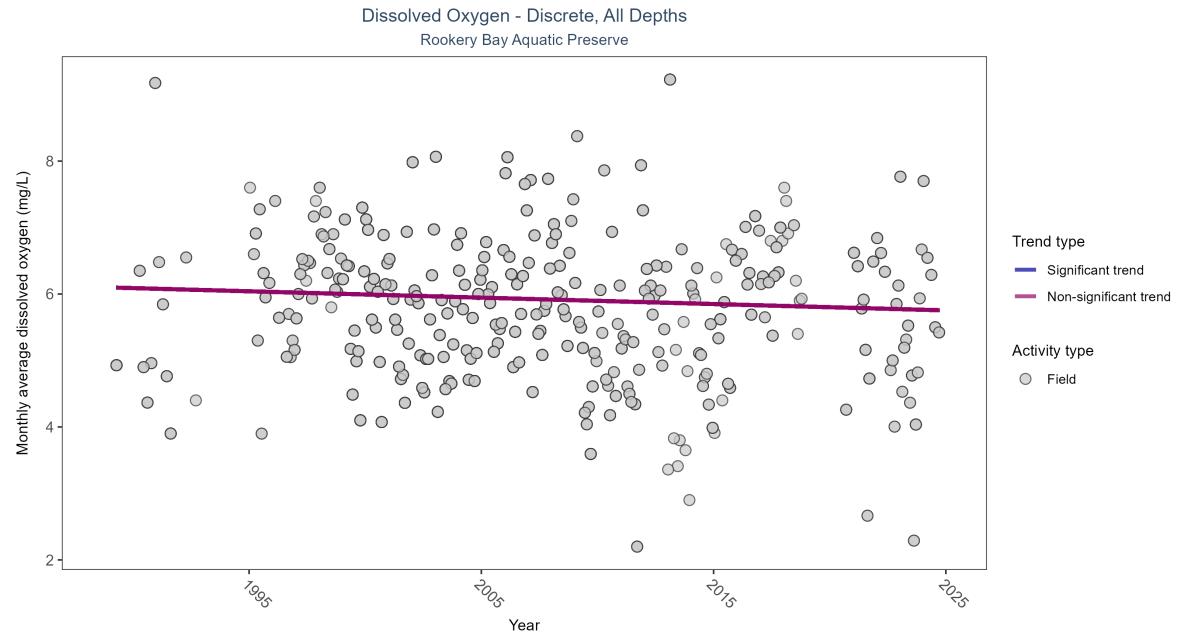
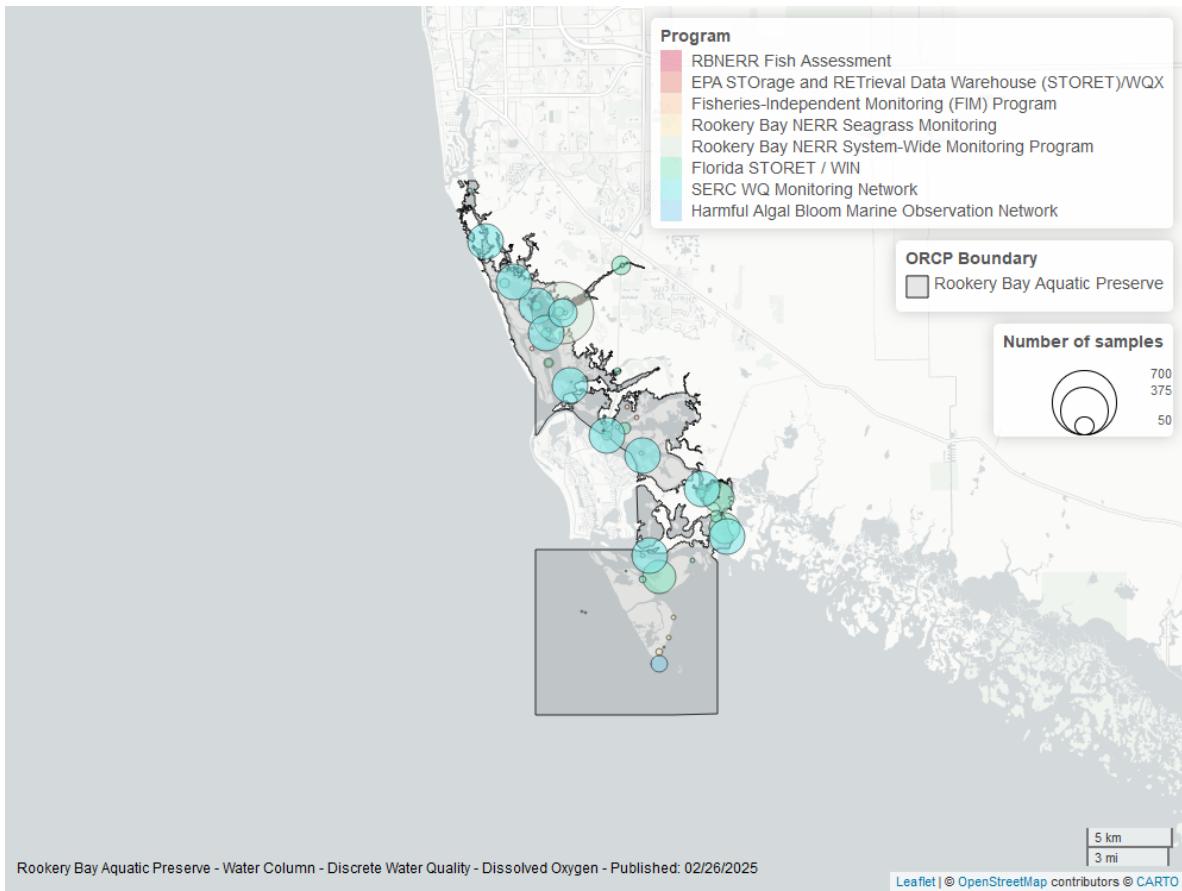


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

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	4542	33	1989 - 2024	5.82	-0.06767	6.0986	-0.00958	0.09261462183964142



Dissolved Oxygen - Continuous

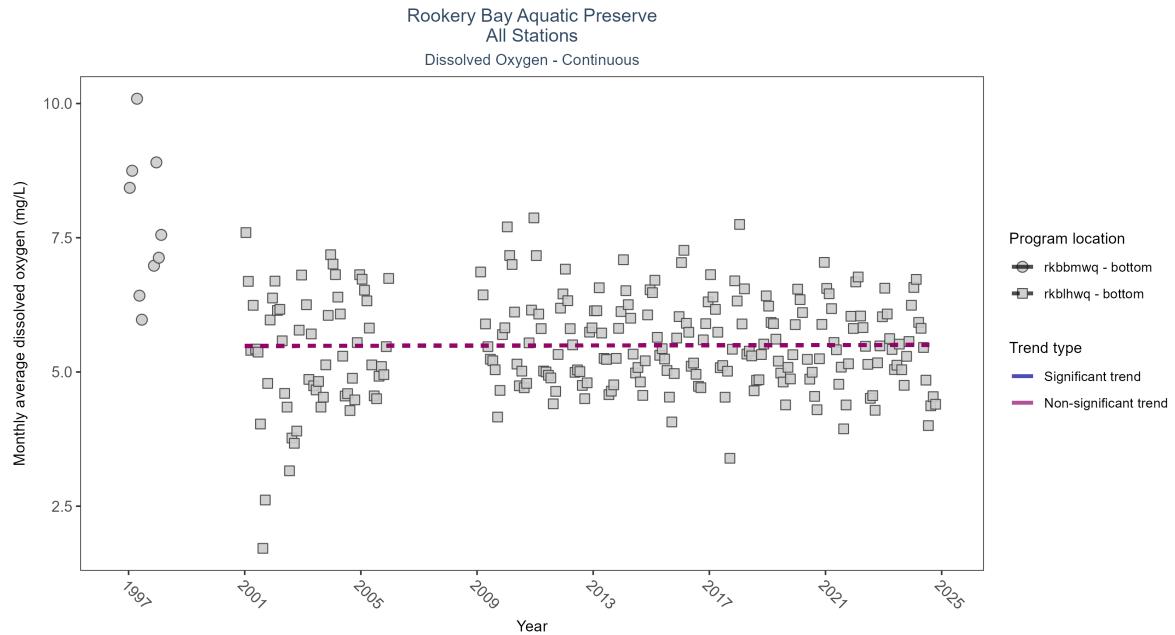
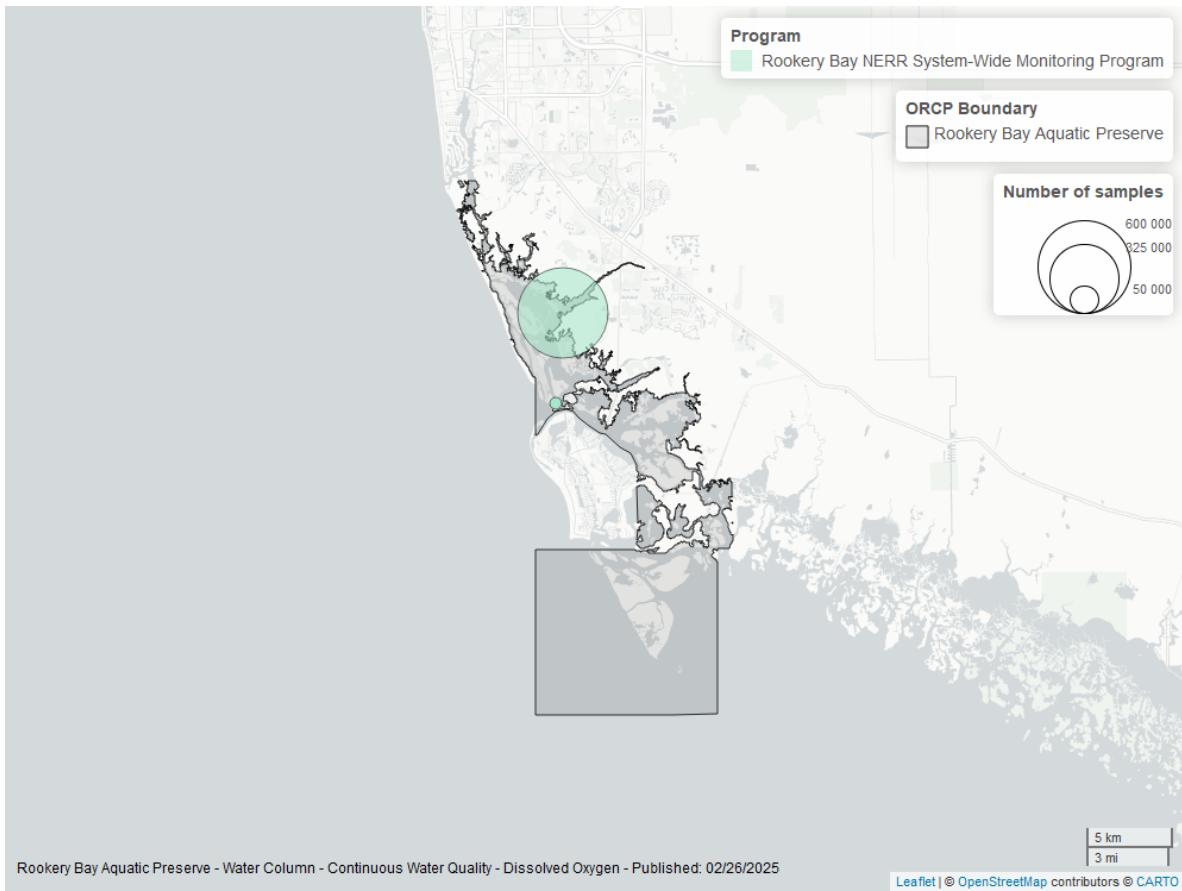


Table 4: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
rkbbmwq	Insufficient data to calculate trend	10441	2	1997 - 1998	7.2	-	-	-	NA
rkblhwq	No significant trend	570691	21	2001 - 2024	5.5	0	5.48	0	0.85769122317617685



Dissolved Oxygen Saturation - Discrete

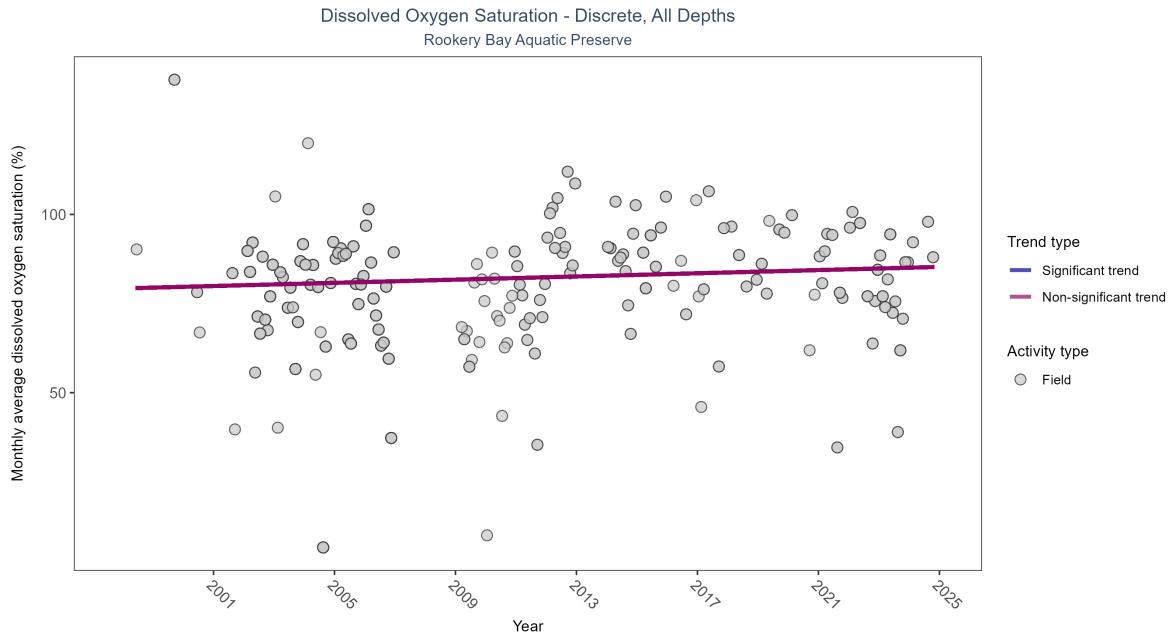
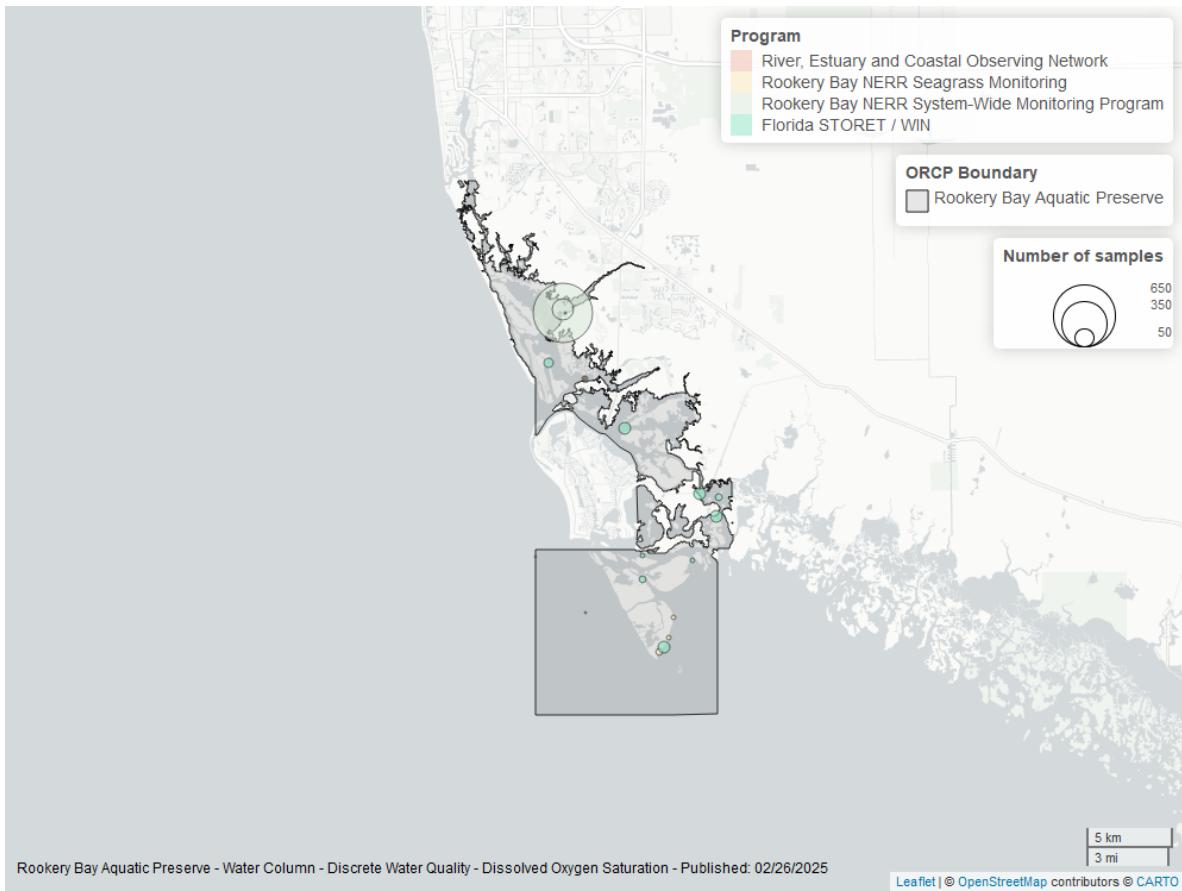


Table 5: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation



Dissolved Oxygen Saturation - Continuous

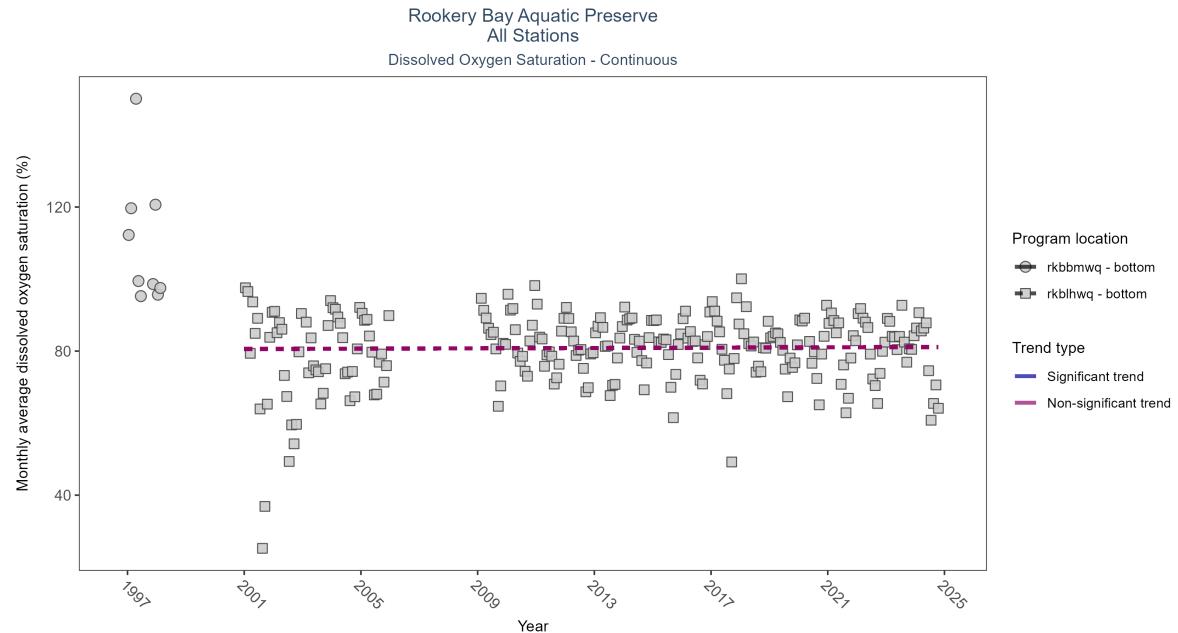
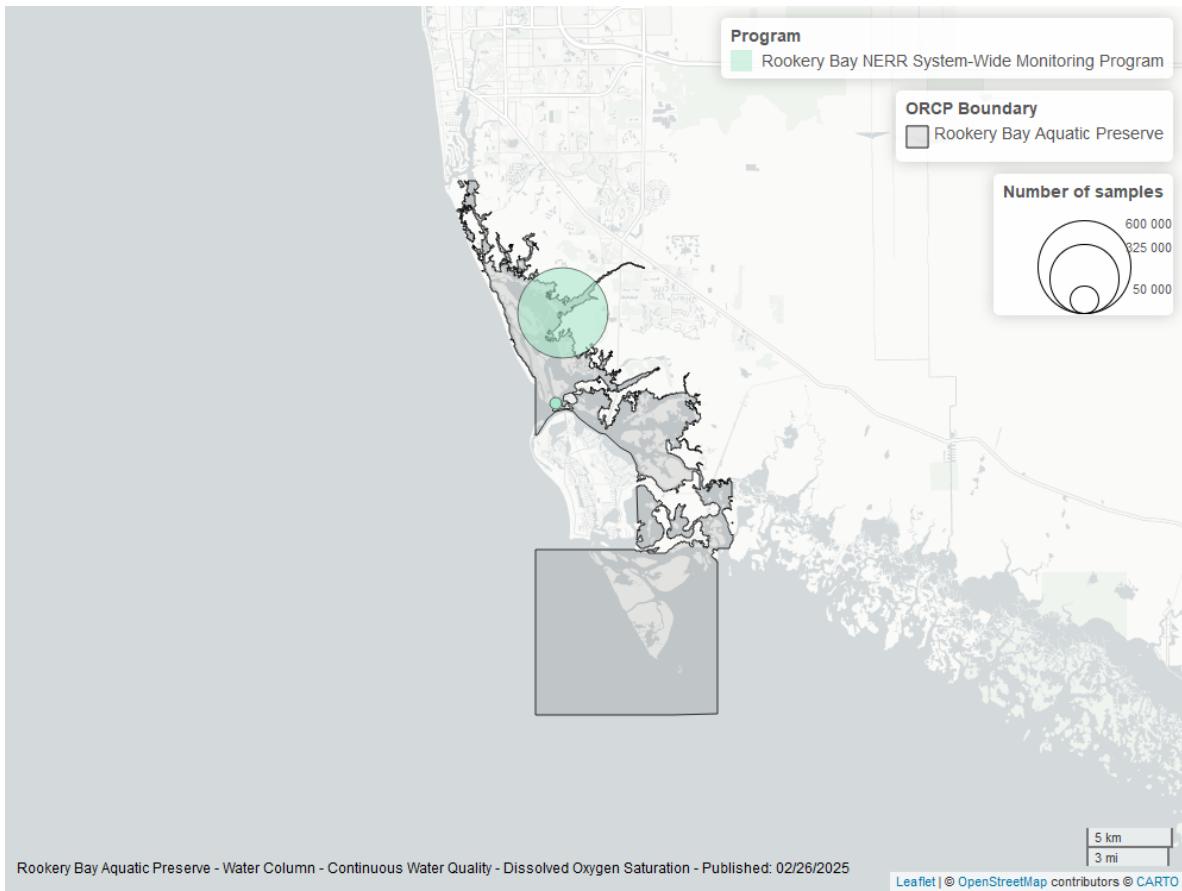


Table 6: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen Saturation

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
rkbbmwq	Insufficient data to calculate trend	10441	2	1997 - 1998	102.4	-	-	-	NA
rkblhwq	No significant trend	583009	21	2001 - 2024	81.7	0.02	80.58	0.02	0.5540274447748798625



Salinity - Discrete

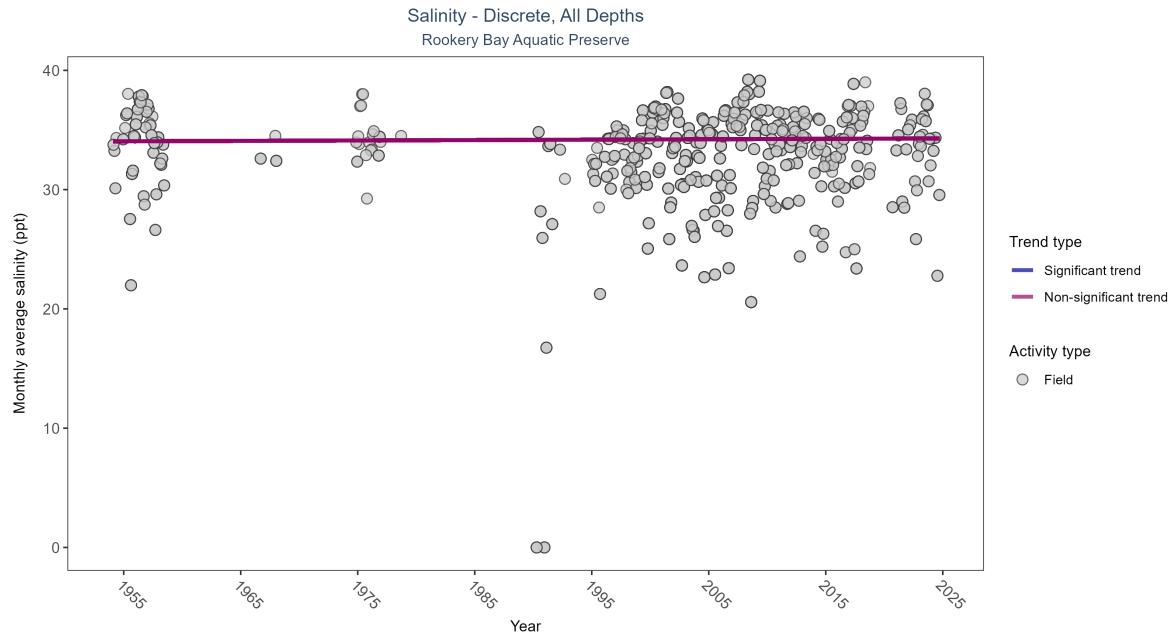
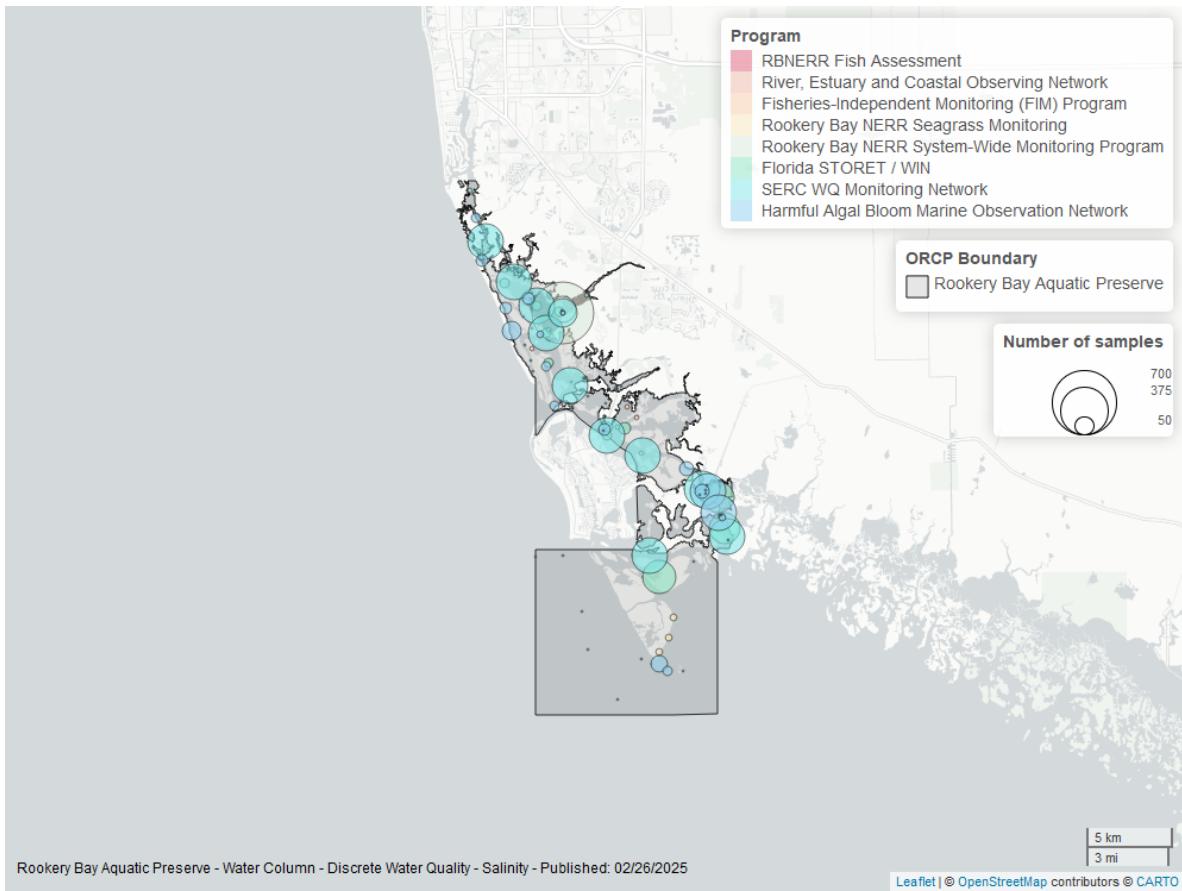


Table 7: Seasonal Kendall-Tau Results for - Salinity

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	5276	45	1954 - 2024	34.1	0.01474	34.04711	0.00348	0.67399707638301853407369890192057937383651733398



Salinity - Continuous

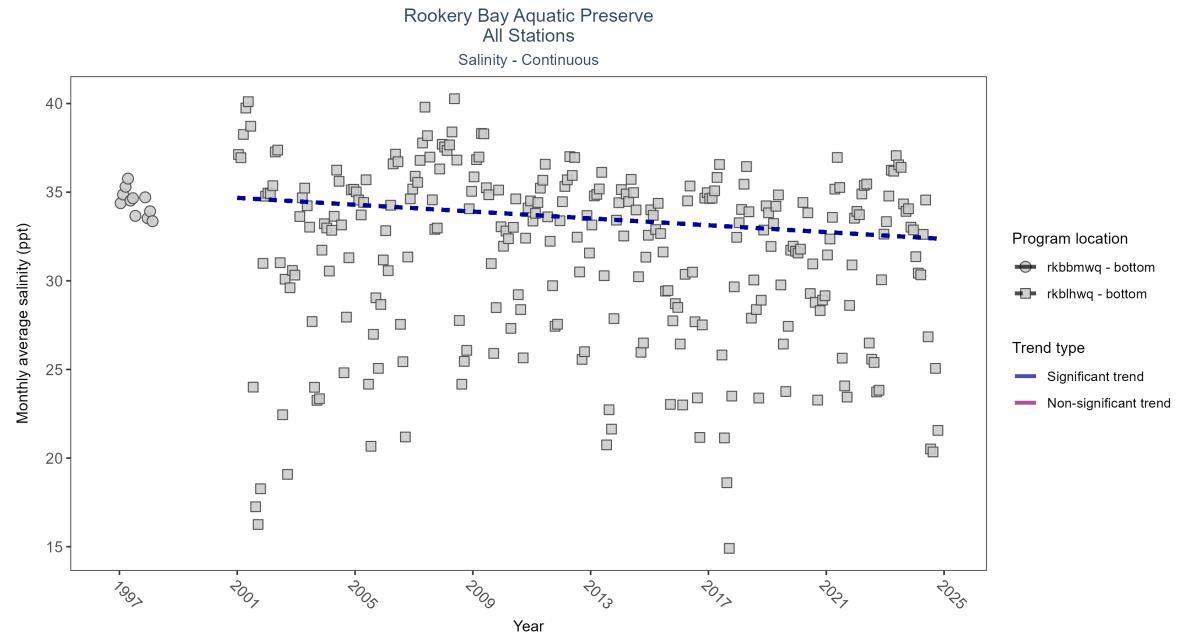
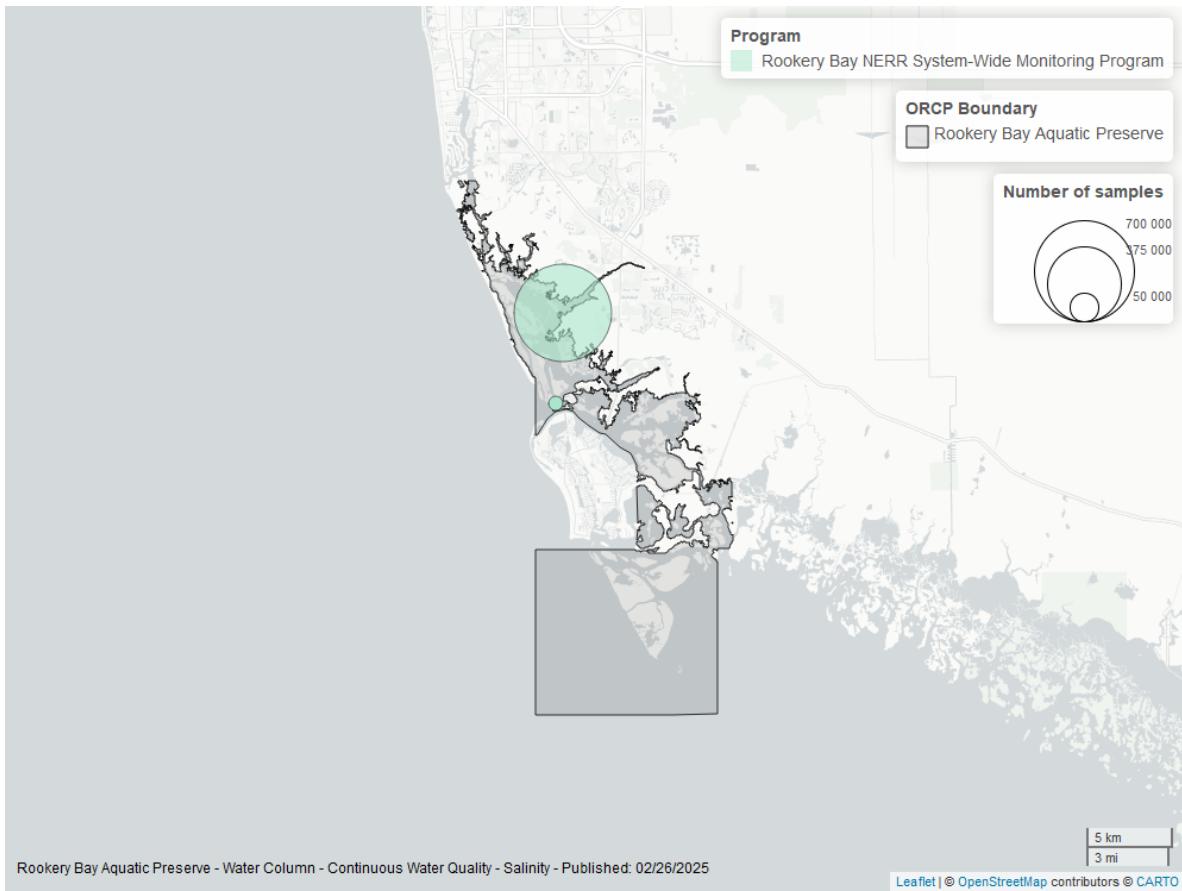


Table 8: Seasonal Kendall-Tau Results for All Stations - Salinity

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
rkbbmwq	Insufficient data to calculate trend	12256	2	1997 - 1998	34.5	-	-	-	NA
rkbllhwq	Significantly decreasing trend	657842	24	2001 - 2024	33.1	-0.16	34.68	-0.1	0.000125383765271022



Water Temperature - Discrete

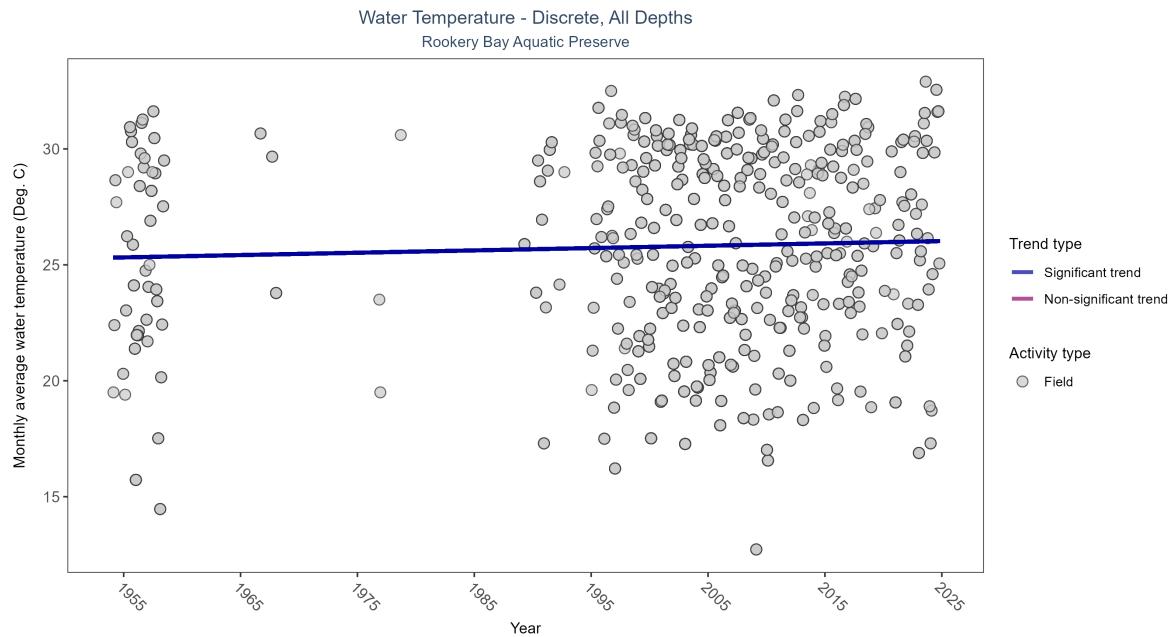
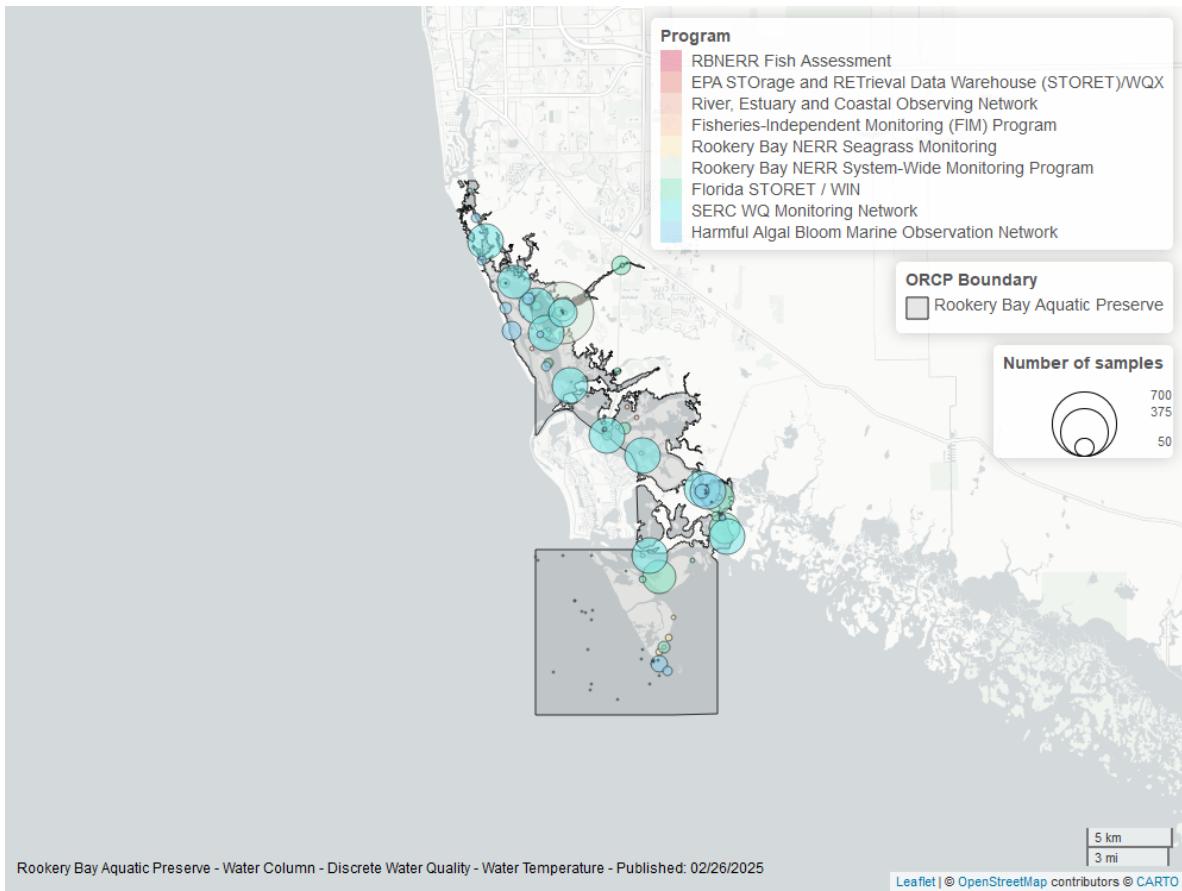


Table 9: Seasonal Kendall-Tau Results for - Water Temperature

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	5231	44	1954 - 2024	26.4	0.07707	25.31078	0.01007	0.025477106411331794



Water Temperature - Continuous

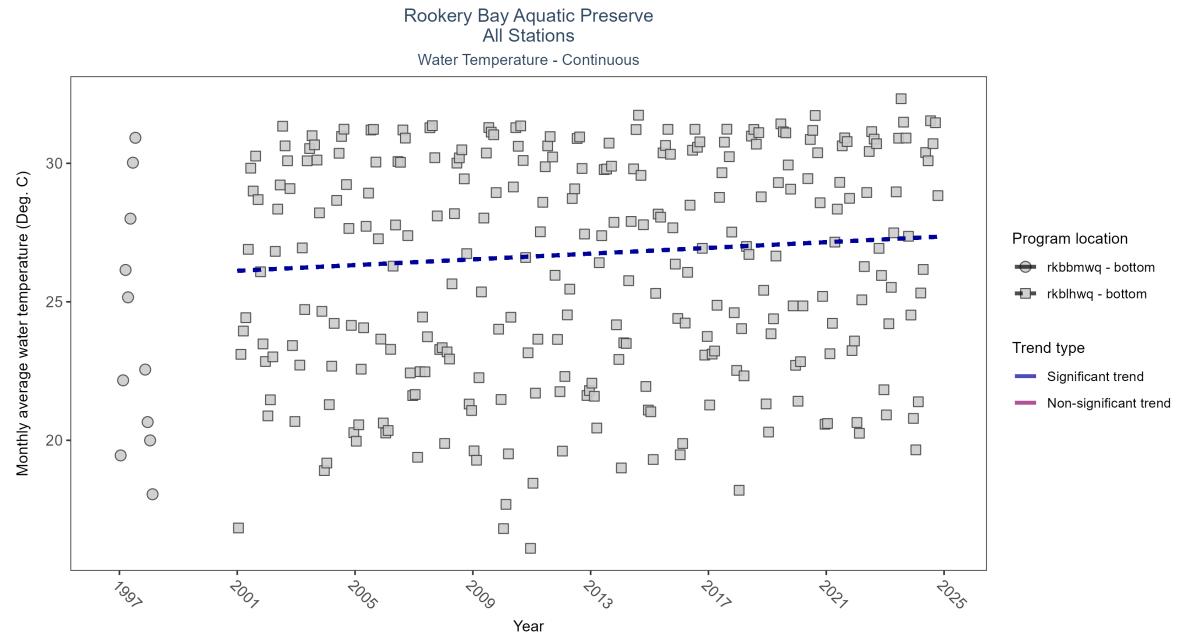
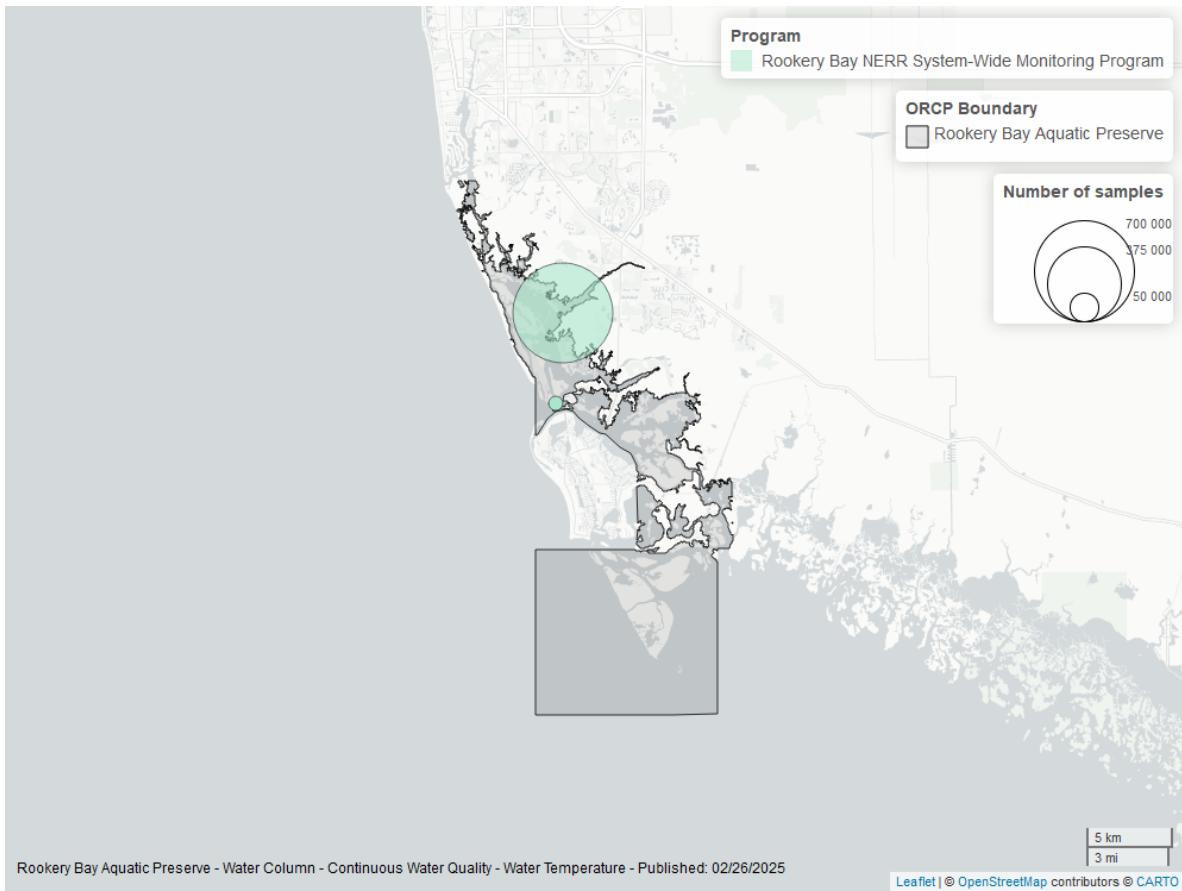


Table 10: Seasonal Kendall-Tau Results for All Stations - Water Temperature

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
rkbbmwq	Insufficient data to calculate trend	12610	2	1997 - 1998	23.8	-	-	-	NA
rkblhwq	Significantly increasing trend	688994	24	2001 - 2024	27.0	0.25	26.12	0.05	0.0000000753250141



pH - Discrete

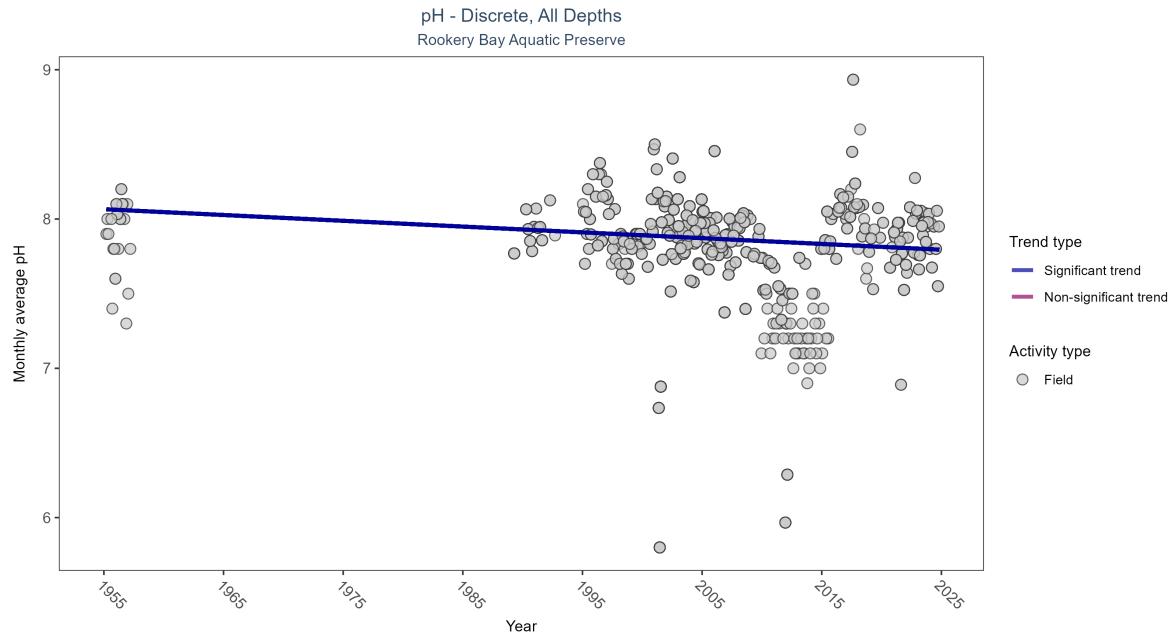
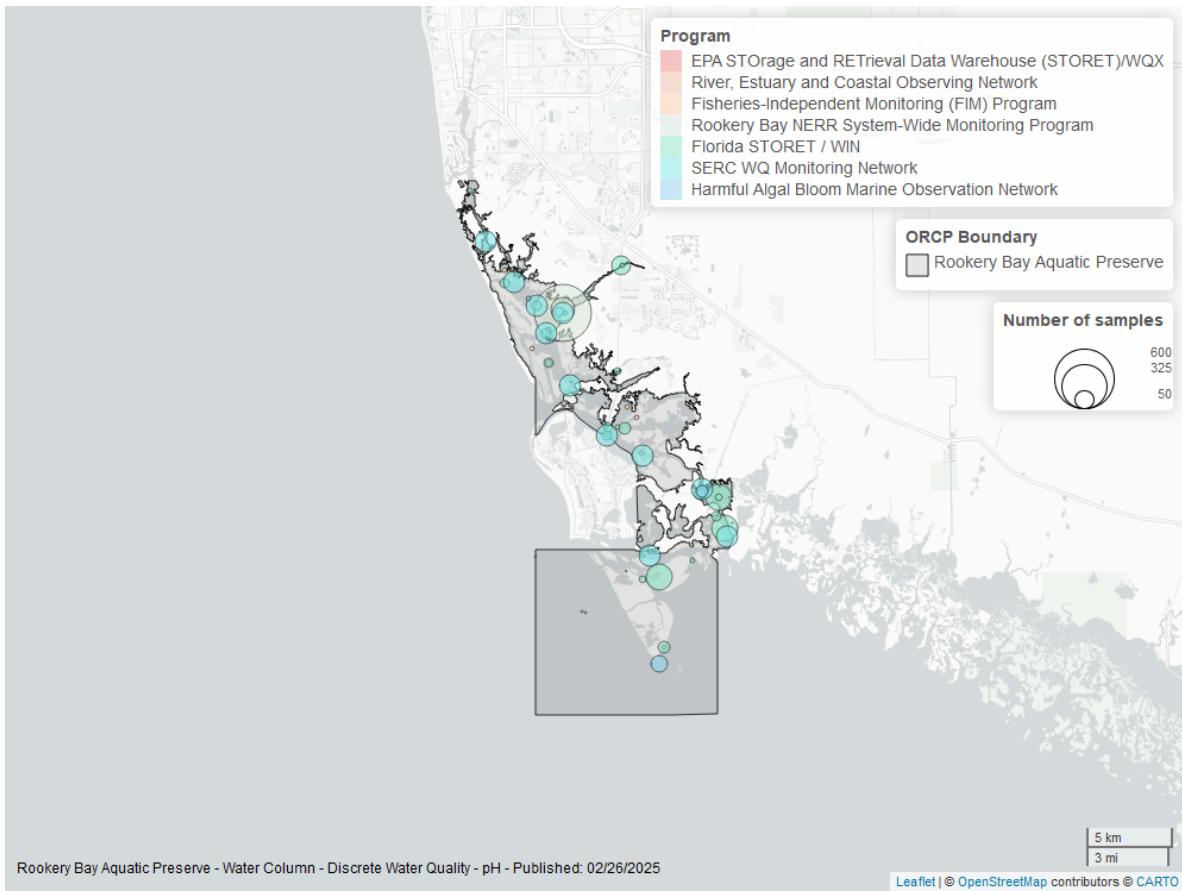


Table 11: Seasonal Kendall-Tau Results for - pH

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	2456	37	1955 - 2024	7.9	-0.13915	8.06567	-0.00388	0.00038533842950794102962322473793221888627



pH - Continuous

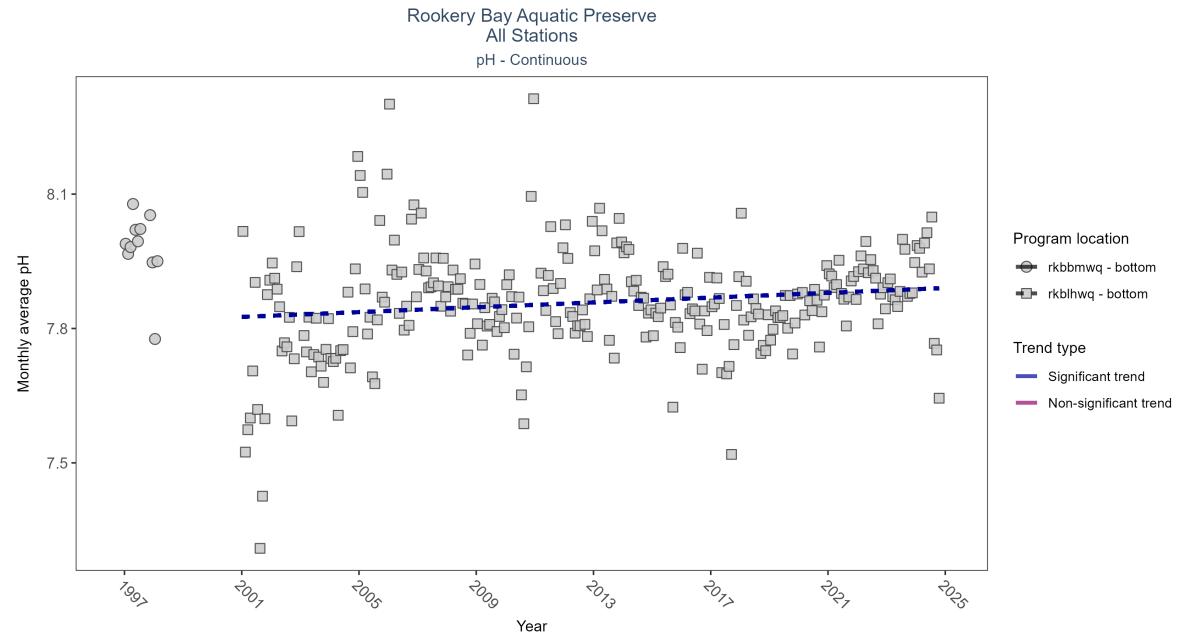
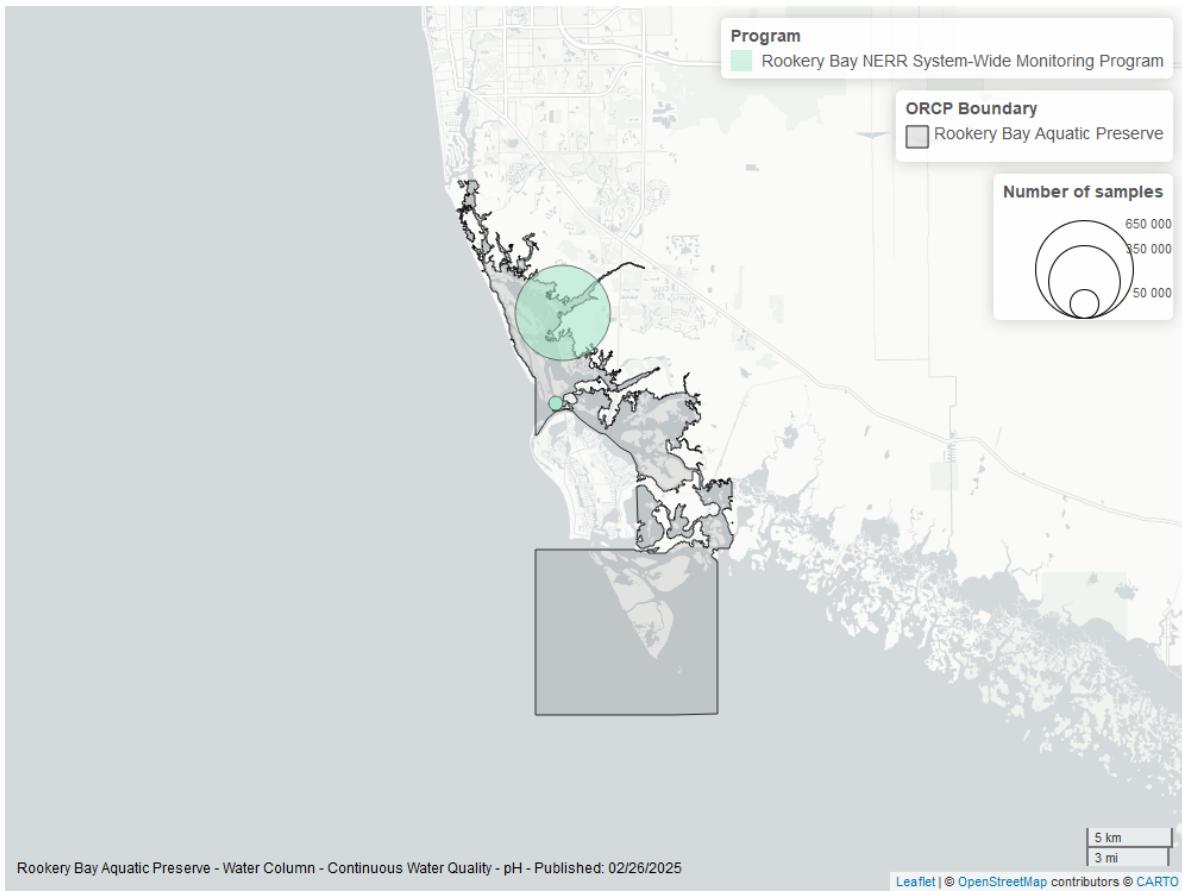


Table 12: Seasonal Kendall-Tau Results for All Stations - pH

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
rkbbmwq	Insufficient data to calculate trend	12610	2	1997 - 1998	8.0	-	-	-	NA
rkbllhwq	Significantly increasing trend	629829	24	2001 - 2024	7.9	0.14	7.83	0	0.00104538441



Water Clarity

Turbidity - Discrete

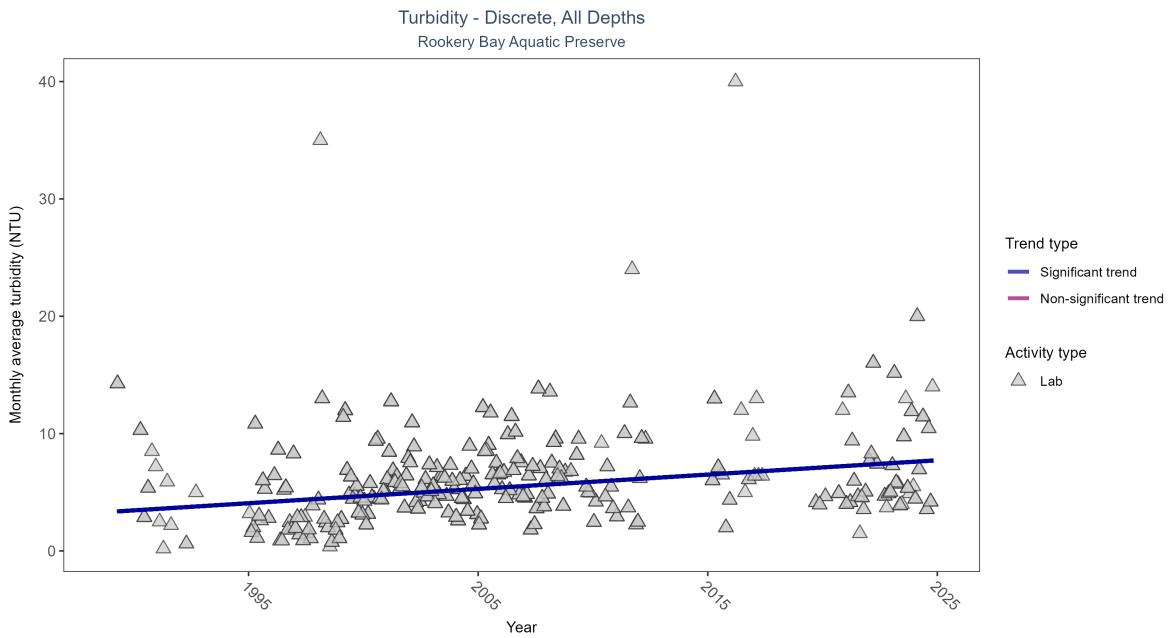
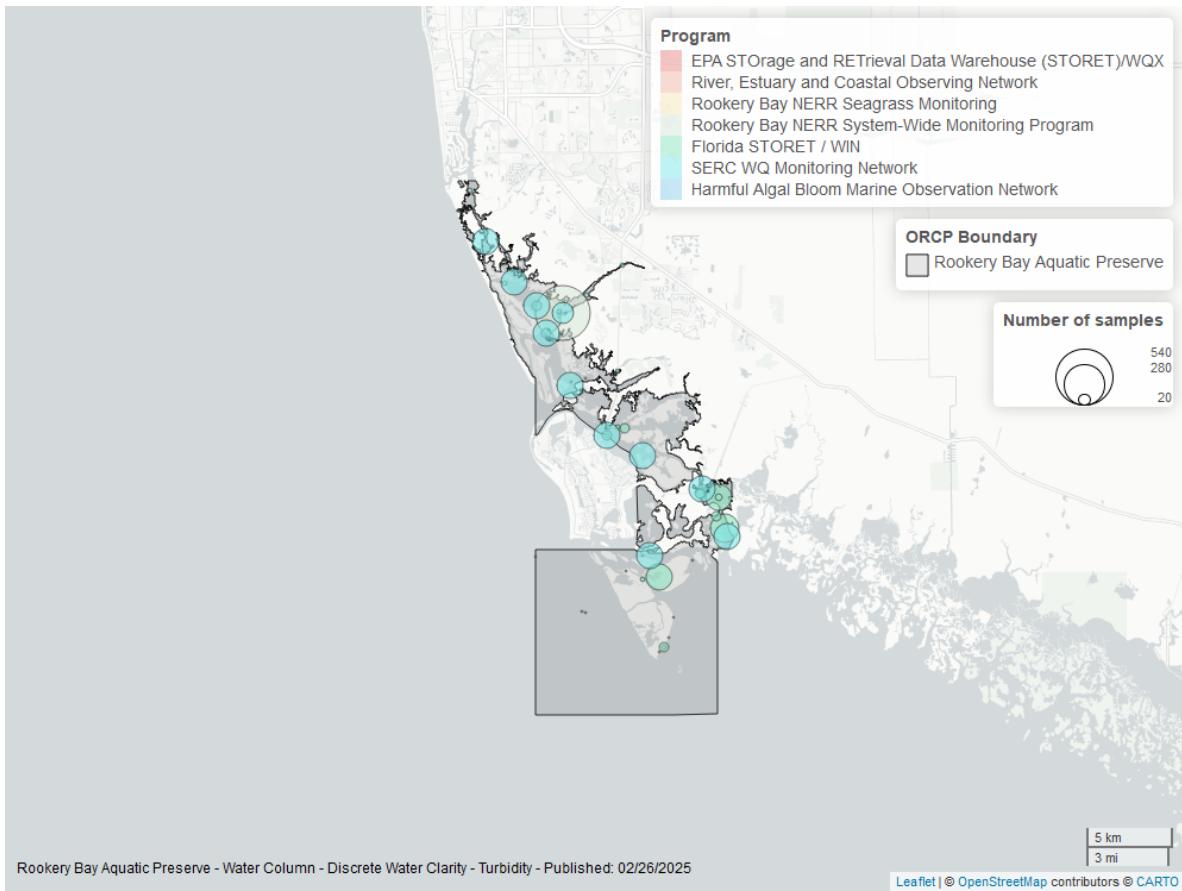


Table 13: Seasonal Kendall-Tau Results for - Turbidity

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Significantly increasing trend	1849	31	1989 - 2024	4.99	0.24641	3.33593	0.122	0.0000004182620327769



Turbidity - Continuous

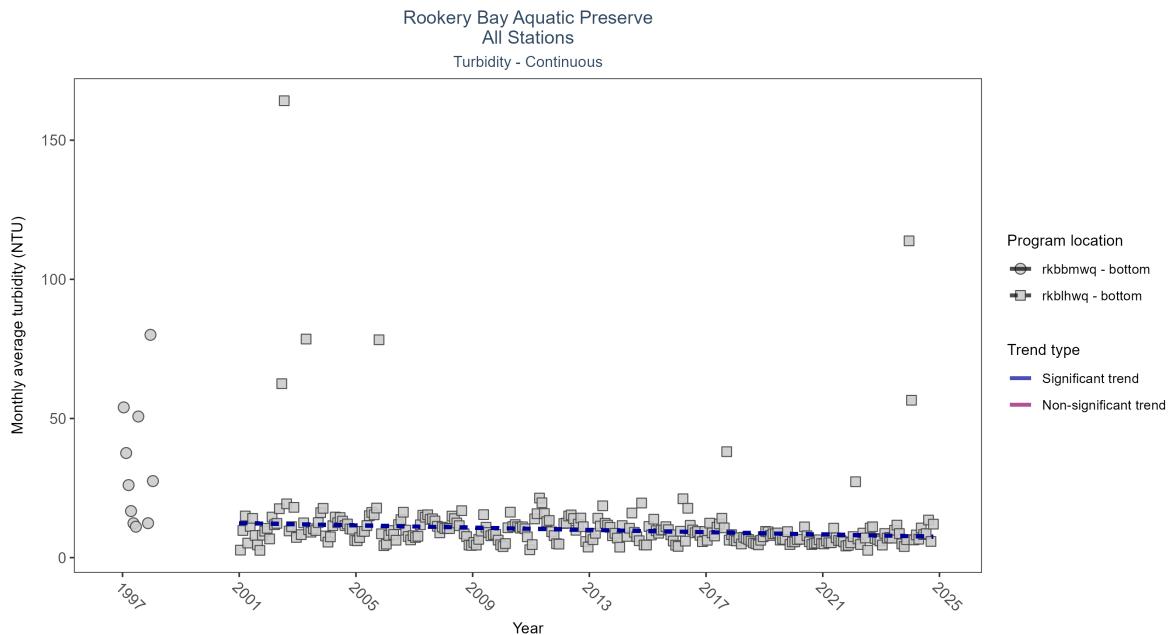
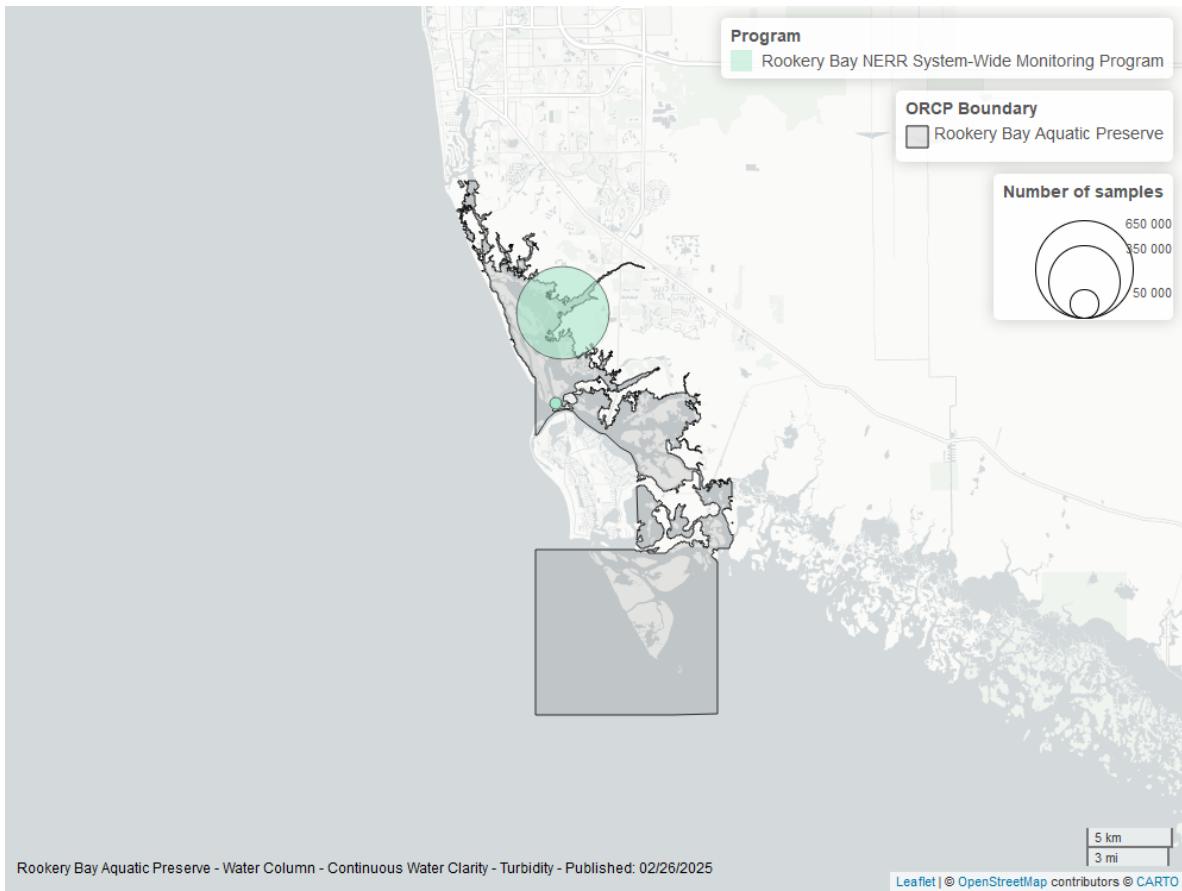


Table 14: Seasonal Kendall-Tau Results for All Stations - Turbidity

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
rkbbmwq	Insufficient data to calculate trend	10654	2	1997 - 1998	-	-	-	-	NA
rkblhwq	Significantly decreasing trend	605017	24	2001 - 2024	8	-0.27	12.4	-0.2	0.000000001832625760206485



Total Suspended Solids - Discrete

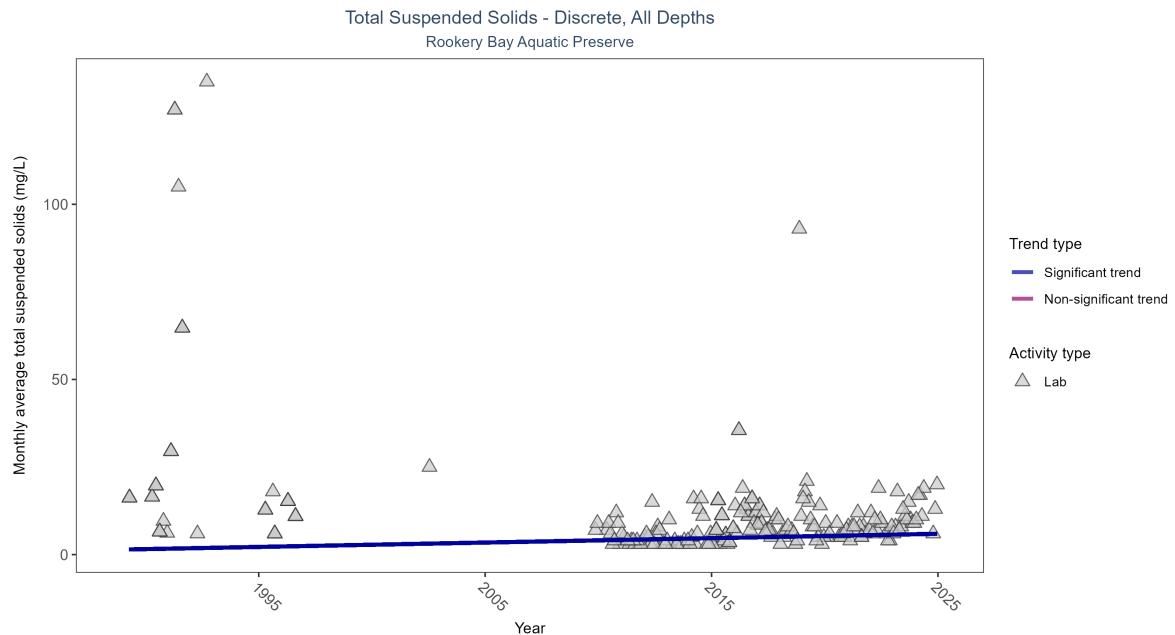


Table 15: Seasonal Kendall-Tau Results for - Total Suspended Solids

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Significantly increasing trend	250	23	1989 - 2024	8	0.13714	1.4375	0.125	0.026885511853408088078776216889310



Chlorophyll a, Uncorrected for Pheophytin - Discrete

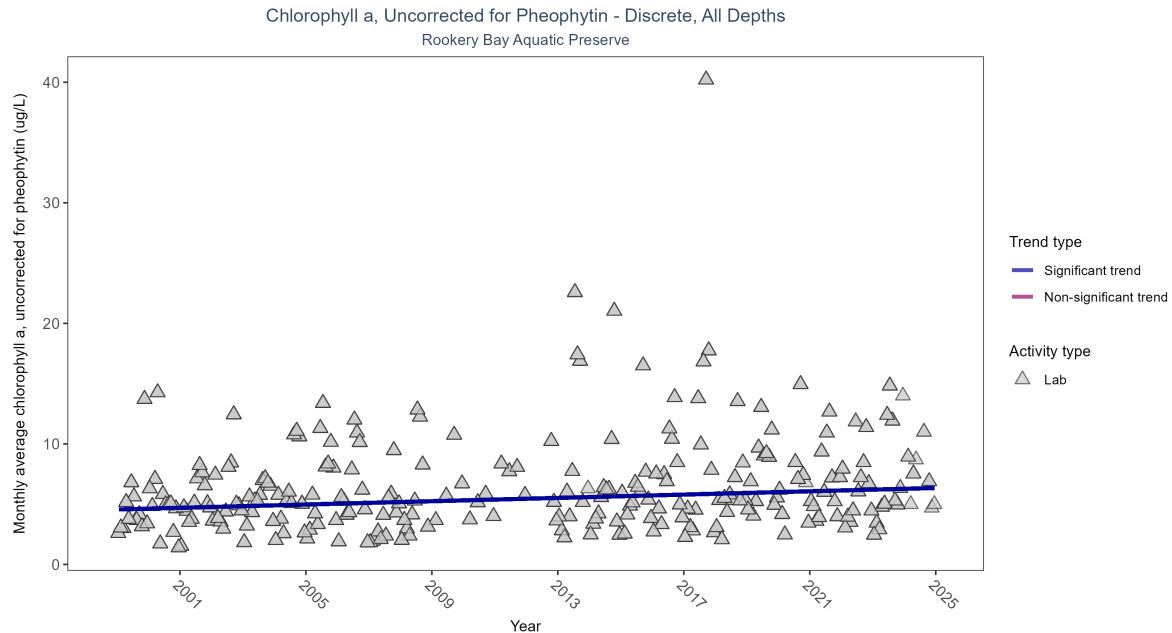
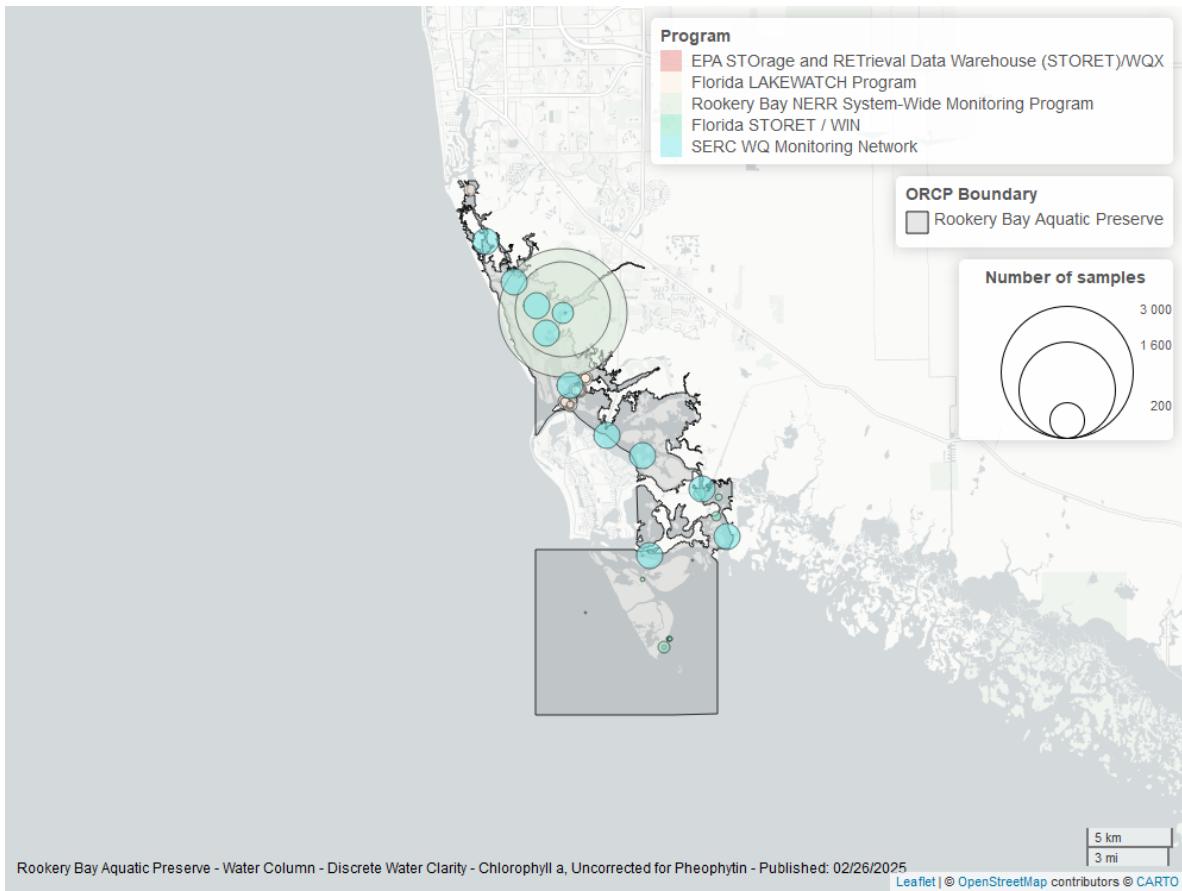


Table 16: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Significantly increasing trend	3159	26	1999 - 2024	5	0.19445	4.55801	0.06863	0.00001273317682055765144296



Chlorophyll a, Corrected for Pheophytin - Discrete

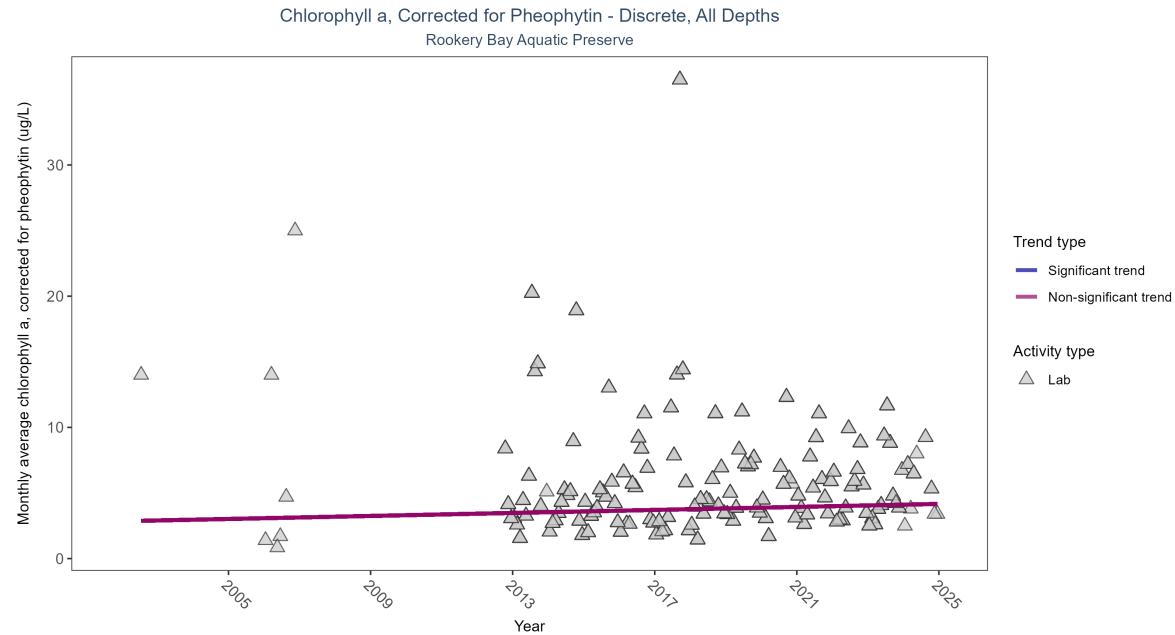
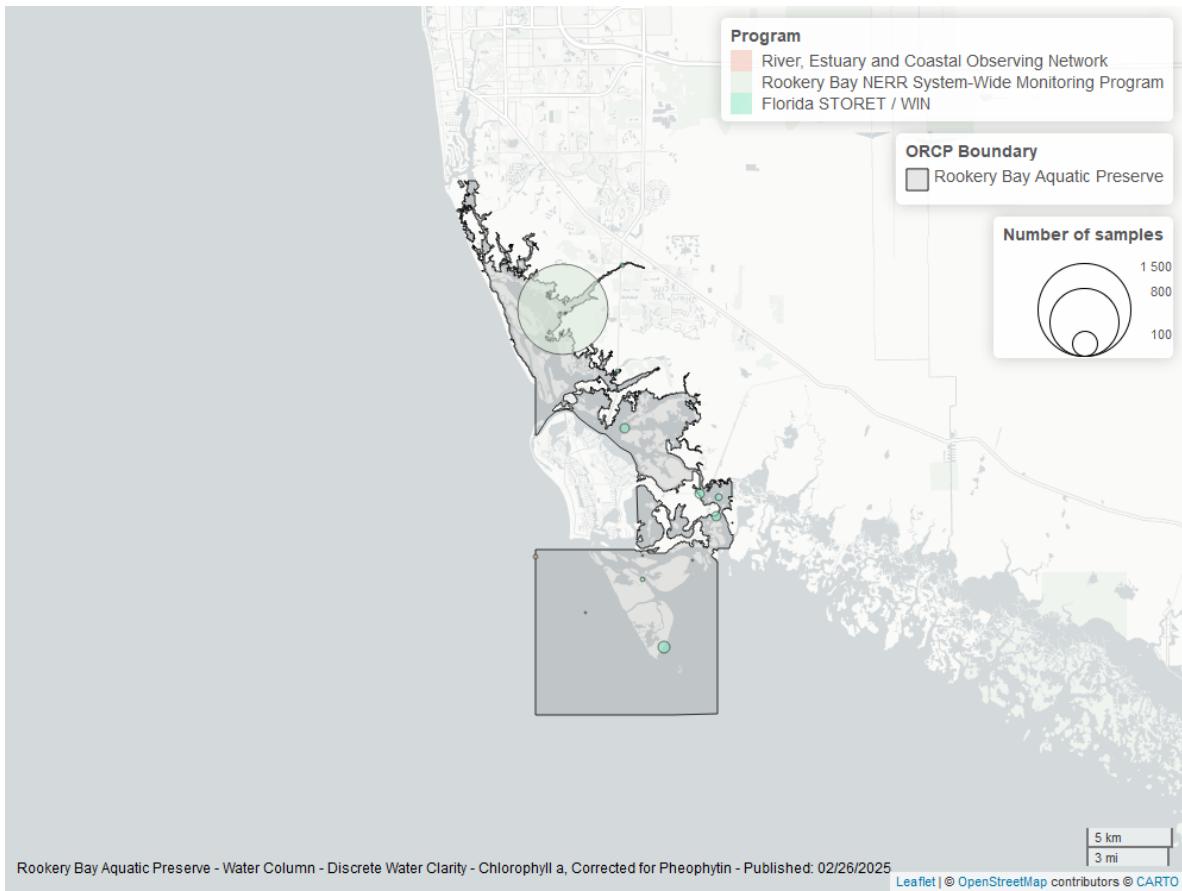


Table 17: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	No significant trend	1565	15	2002 - 2024	4.3	0.10357	2.84836	0.05729	0.0967460437338418105523984991



Secchi Depth - Discrete

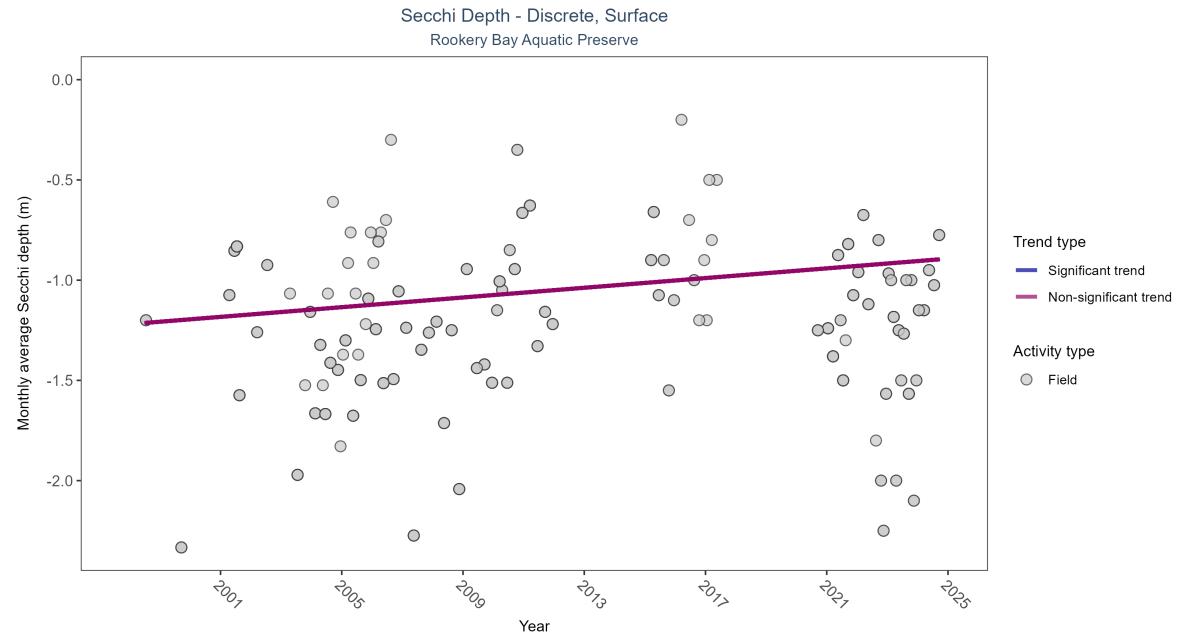
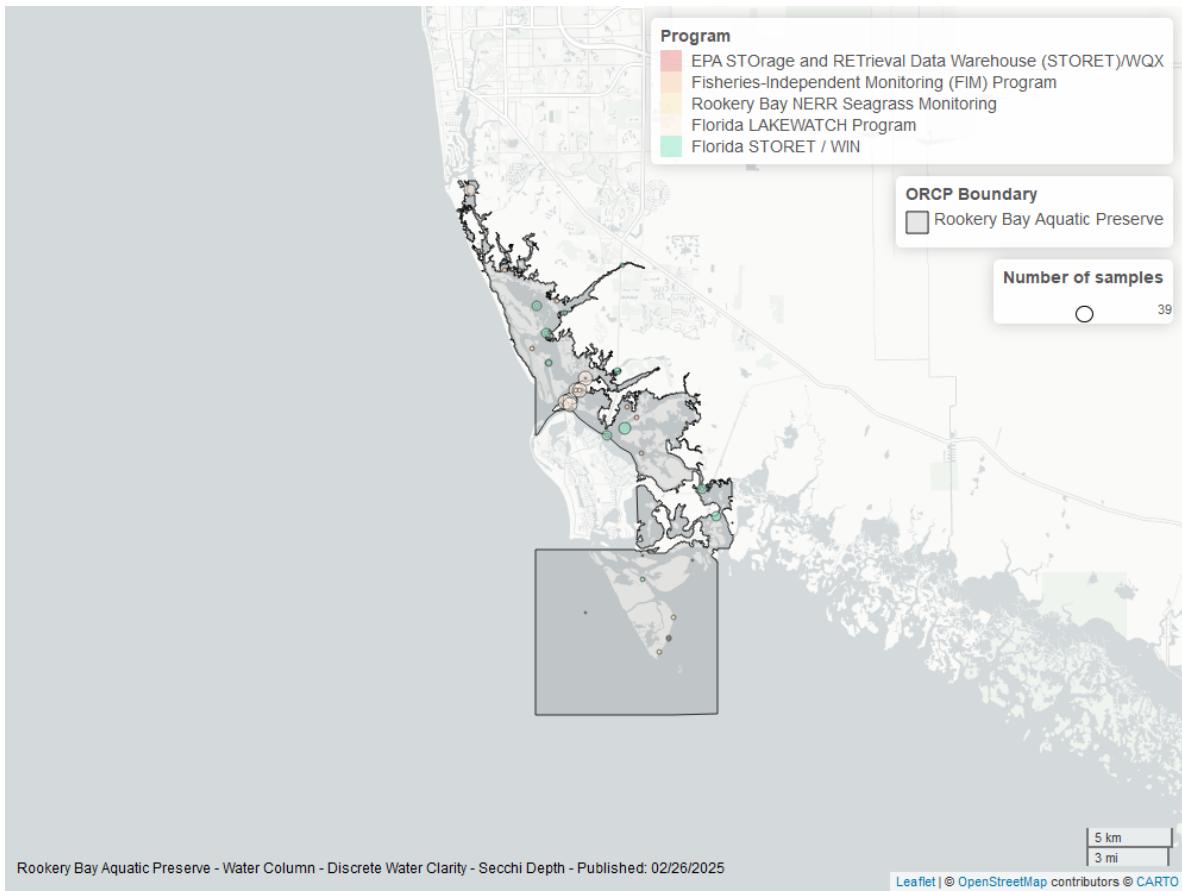


Table 18: Seasonal Kendall-Tau Results for - Secchi Depth

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Field	No significant trend	440	21	1998 - 2024	-1.2	0.13306	-1.21954	0.0121	0.0767902253660091294040768161722



Colored Dissolved Organic Matter - Discrete

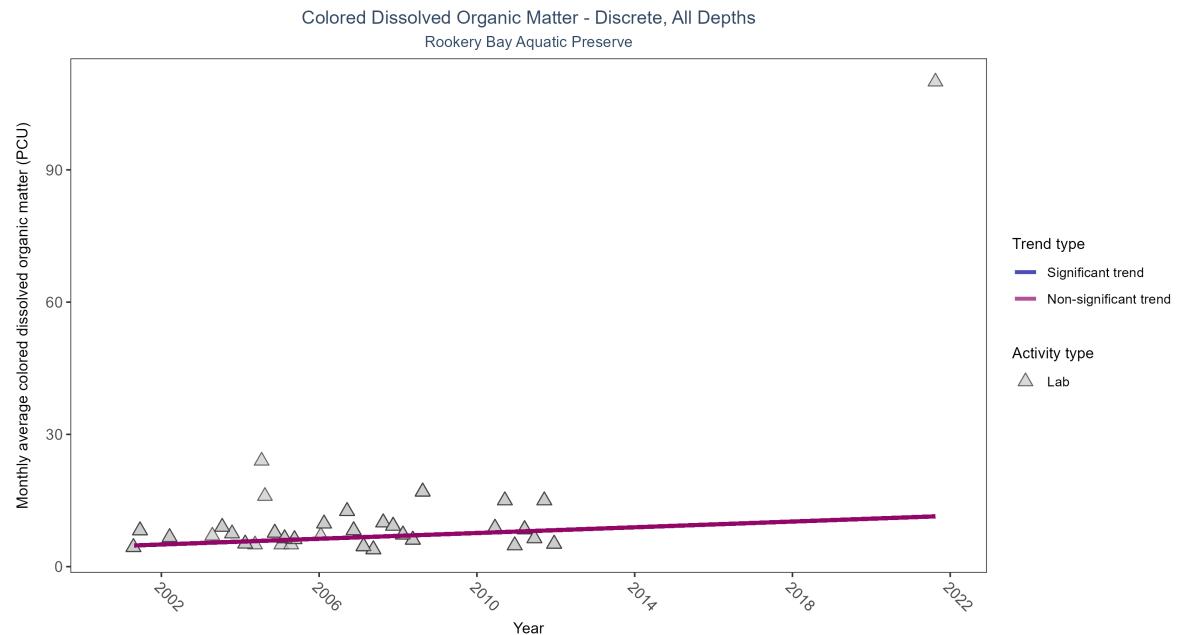


Table 19: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

