Southeast Florida Coral Reef Ecosystem Conservation Area

SEACAR Water Quality Analysis

Last compiled on 27 January, 2025

Contents

Indicators

Nutrients

Total Nitrogen - Discrete

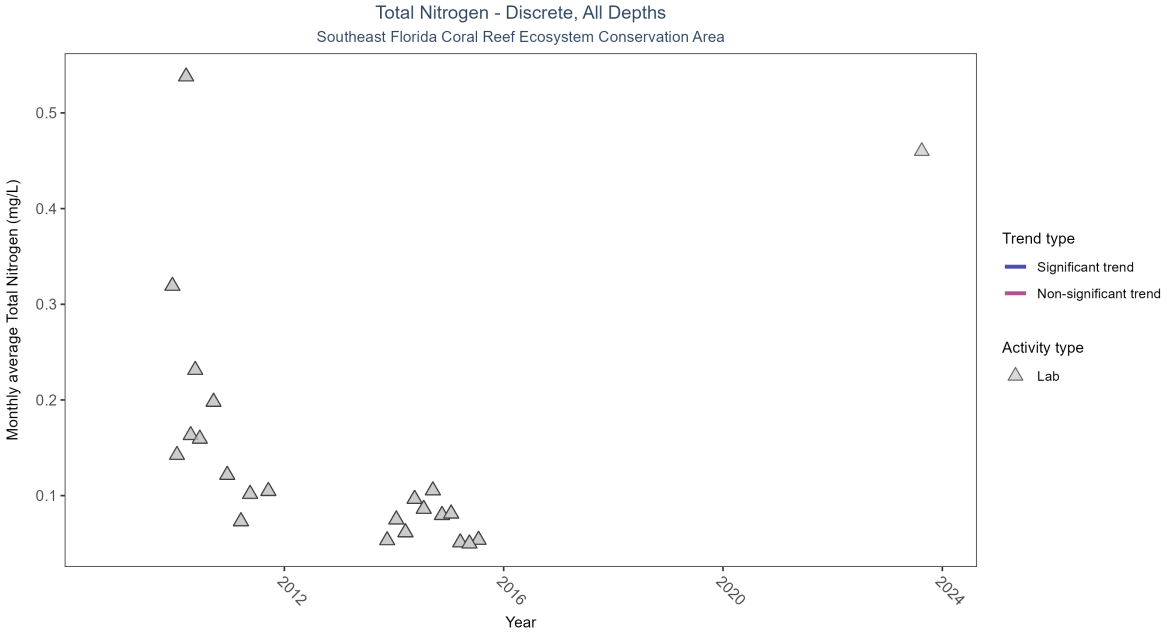

Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Insufficient data to calculate trend	890	7	2009 - 2023	0.071	-	-	-	NA

Total Phosphorus - Discrete

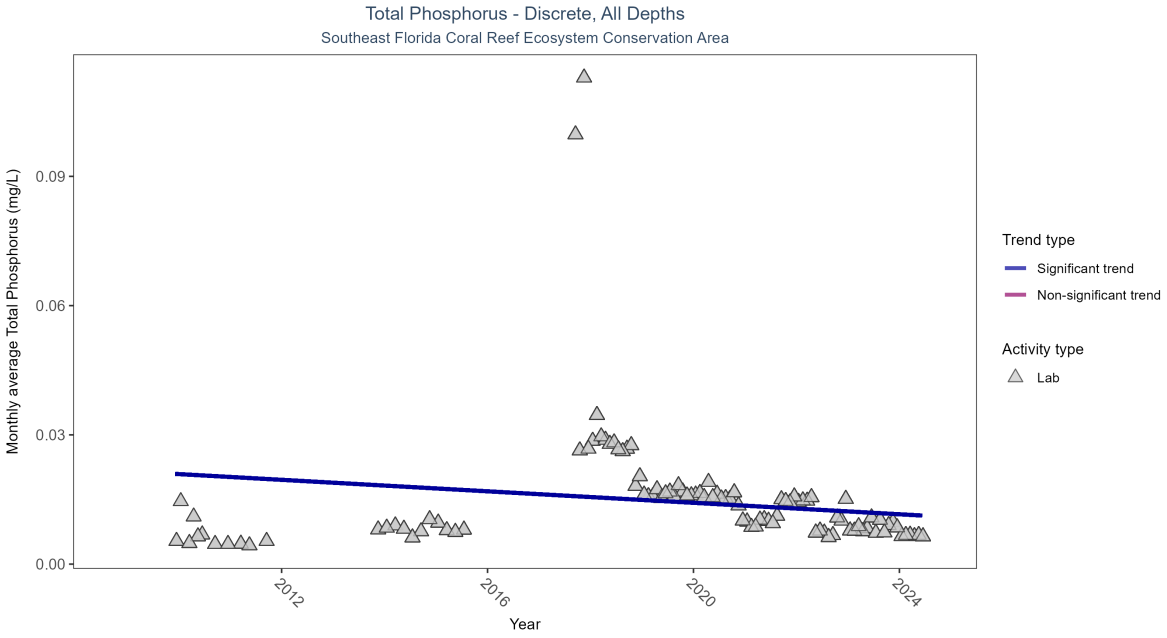

Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Significantly decreasing trend	17322	14	2009 - 2024	0.014	-0.294	0.02156	-0.00067	0.0034

Water Quality

Dissolved Oxygen - Discrete

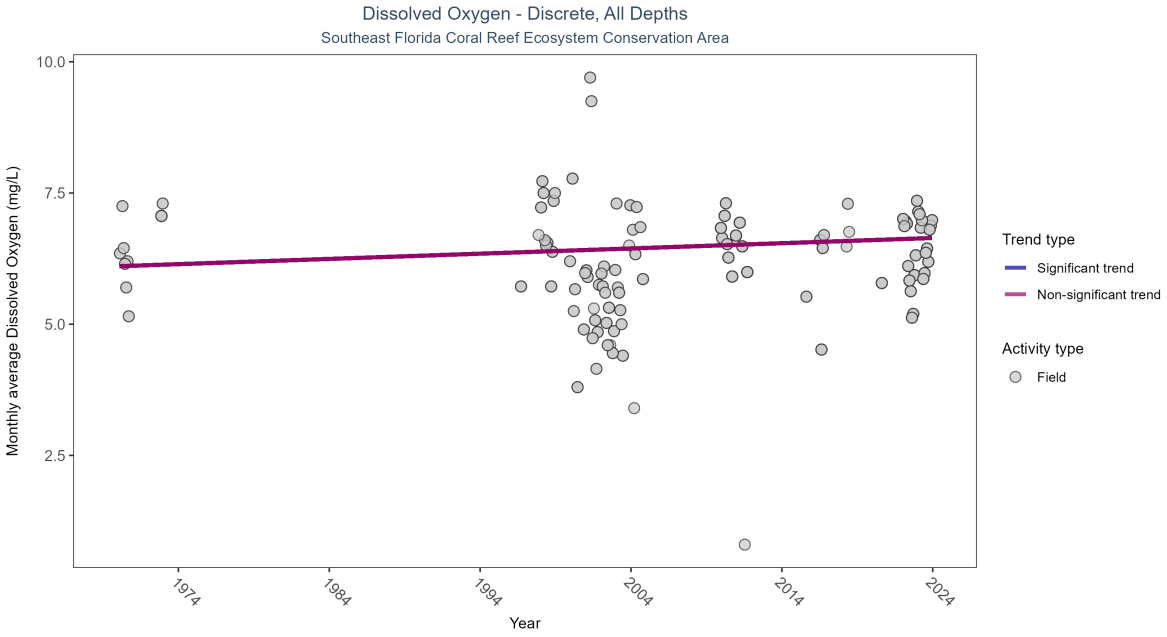

Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

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	742	20	1970 - 2023	6.49	0.0958	6.10456	0.00998	0.3066

Dissolved Oxygen Saturation - Discrete

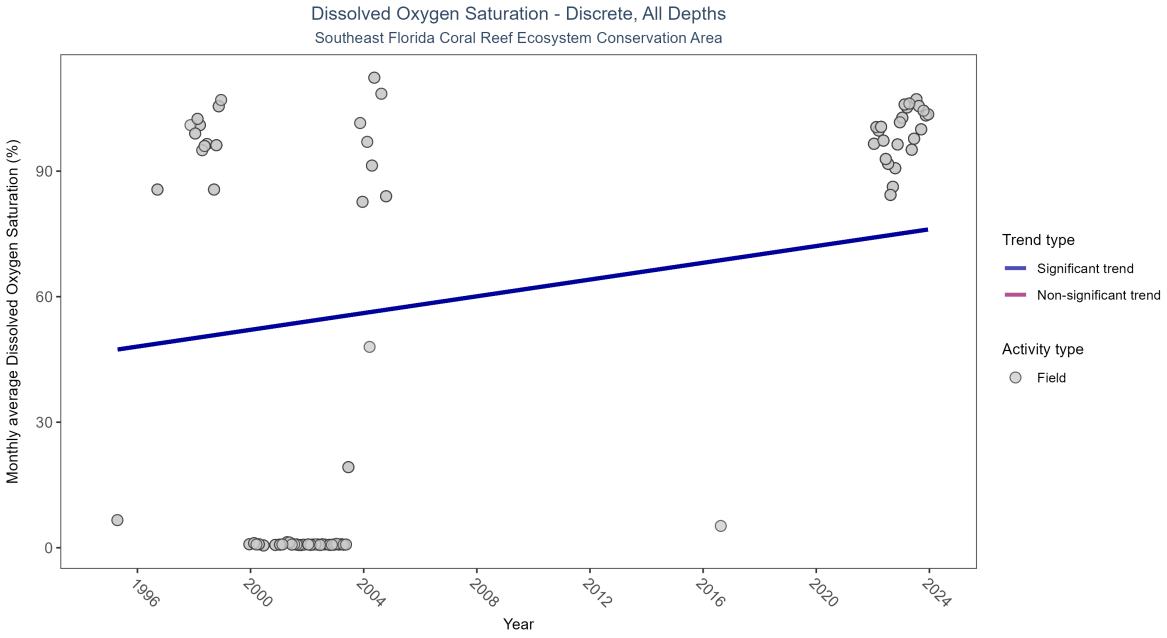

Table 4: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

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	378	13	1995 - 2023	97.85	0.3286	47.07696	1.00088	0.0019

Salinity - Discrete

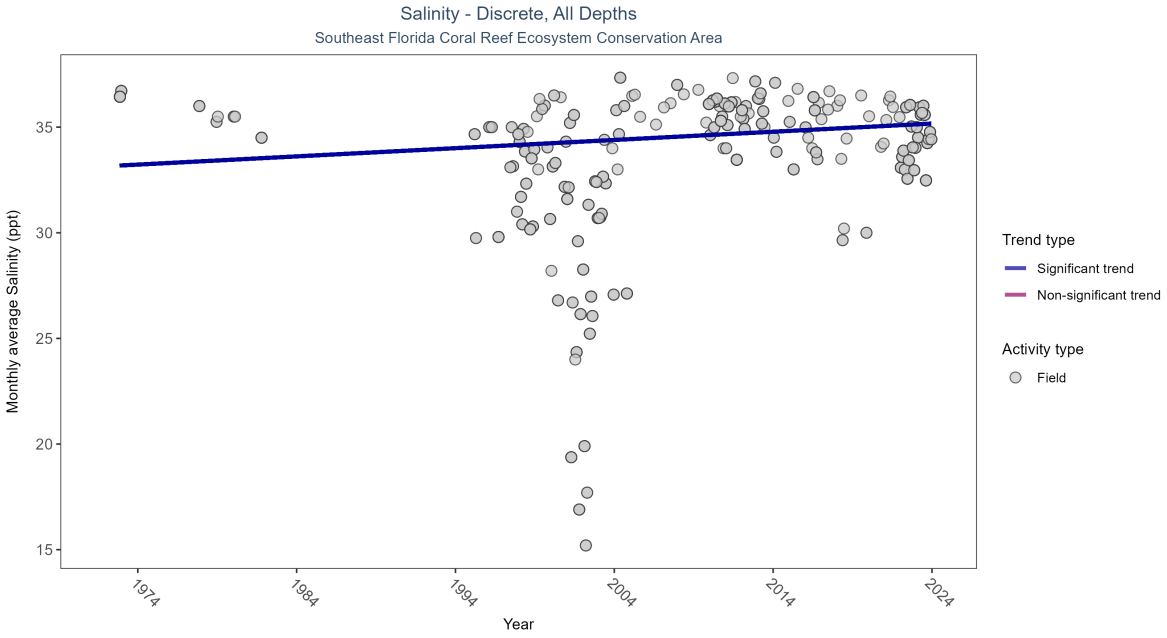

Table 5: Seasonal Kendall-Tau Results for - Salinity

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	987	35	1972 - 2023	35.6	0.1527	33.14963	0.03888	0.0088

Water Temperature - Discrete

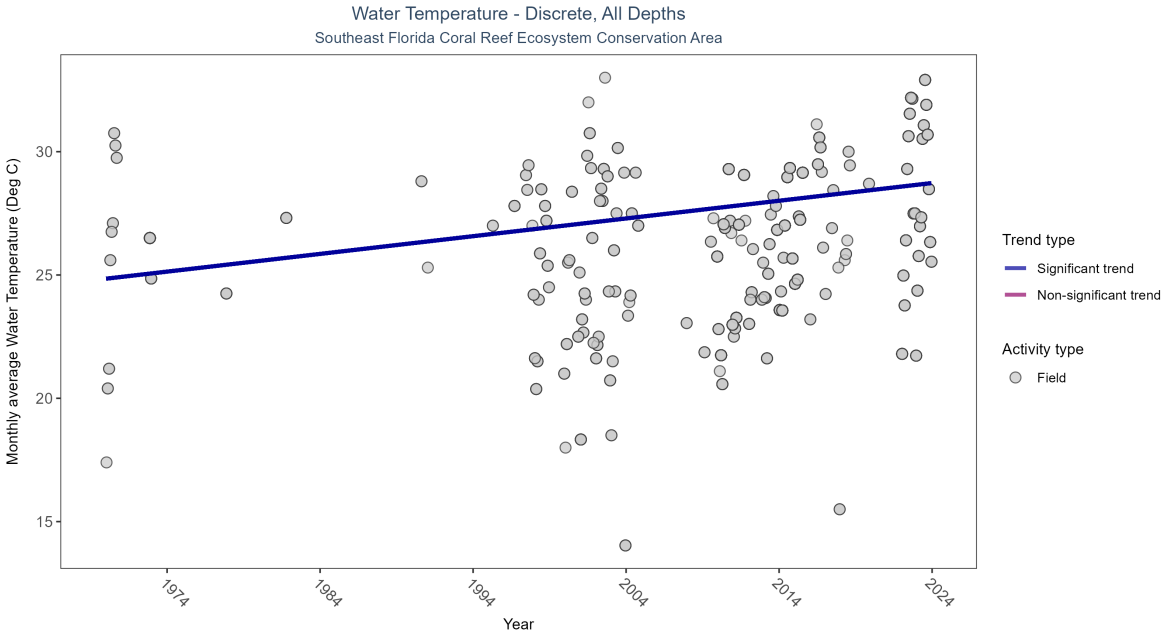

Table 6: Seasonal Kendall-Tau Results for - Water Temperature

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	1580	30	1970 - 2023	26.58235	0.2894	24.84913	0.07184	0.0000

Water Temperature - Continuous

National Data Buoy Center - *5*

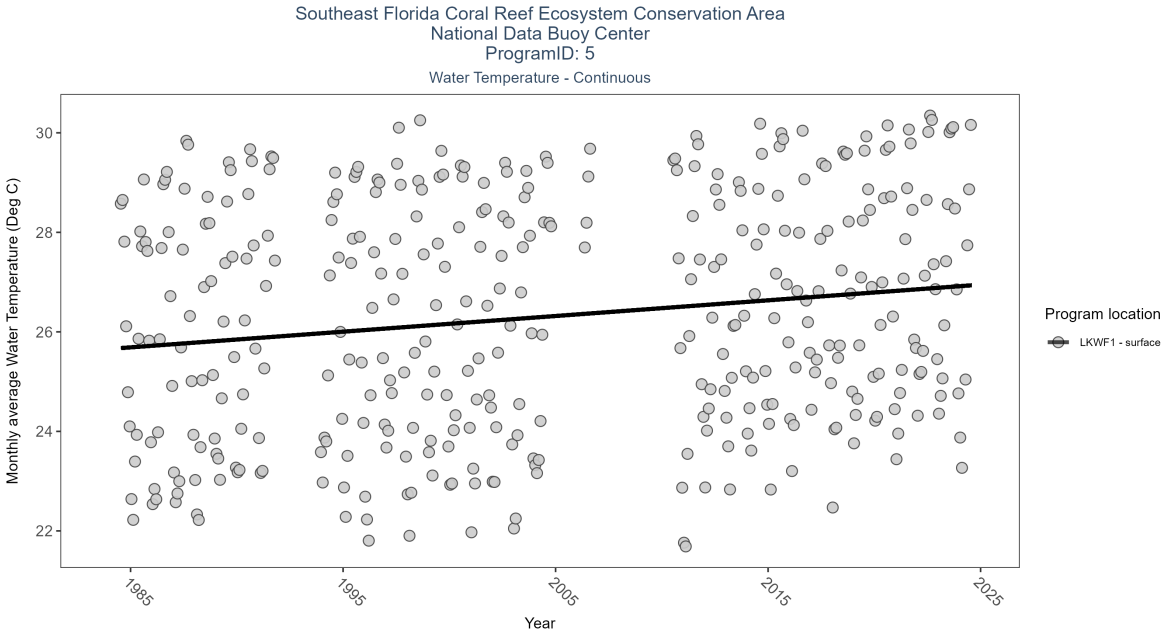

Table 7: Seasonal Kendall-Tau Results for All Stations - Water Temperature

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
LKWF1	Significantly increasing trend	1254716	36	1984 - 2024	26.5	0.41	25.66	0.03	0.0000

Water Temperature on Coral Reefs in the Florida Keys - *986*

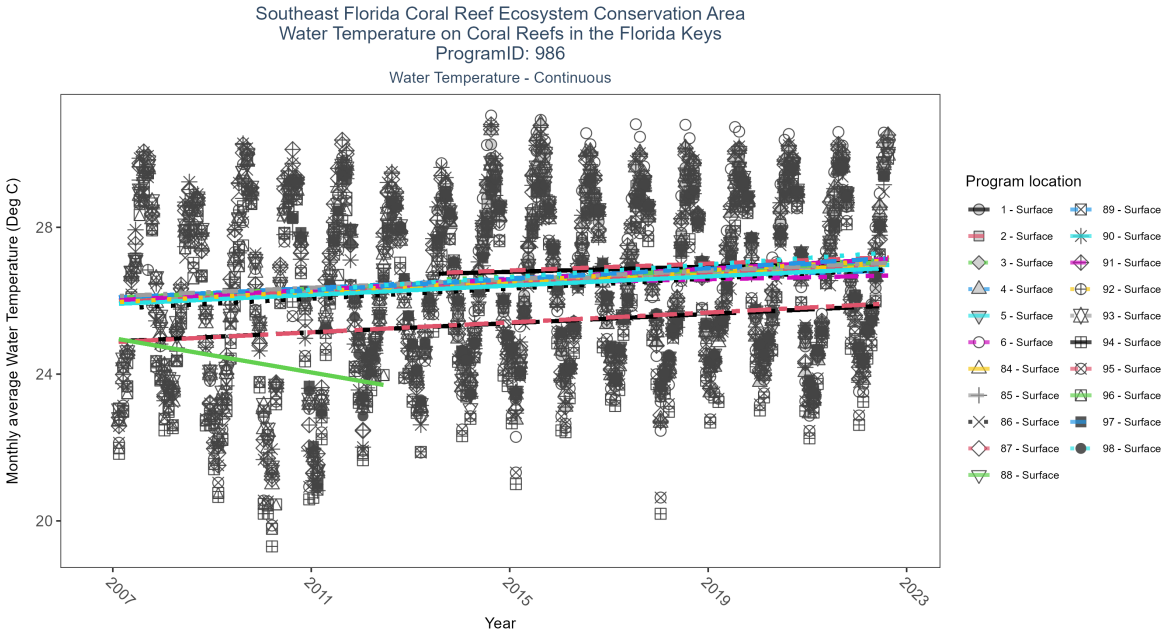

Table 8: Seasonal Kendall-Tau Results for All Stations - Water Temperature

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
4	Significantly increasing trend	68937	10	2013 - 2022	26.59	0.17	26.46	0.04	0.0305
97	Significantly increasing trend	97533	13	2010 - 2022	26.45	0.38	26.21	0.08	0.0000
84	Significantly increasing trend	111153	16	2007 - 2022	26.32	0.36	25.94	0.07	0.0000
85	Significantly increasing trend	114214	16	2007 - 2022	26.26	0.34	25.99	0.07	0.0000
87	Significantly increasing trend	108339	16	2007 - 2022	26.44	0.31	25.99	0.06	0.0000
92	Significantly increasing trend	111826	16	2007 - 2022	26.45	0.37	25.96	0.07	0.0000
90	Significantly increasing trend	97006	16	2007 - 2022	26.43	0.33	25.91	0.06	0.0000
88	Significantly increasing trend	115305	16	2007 - 2022	26.35	0.34	26.08	0.06	0.0000
98	Significantly increasing trend	87973	13	2010 - 2022	26.40	0.39	26.21	0.09	0.0000
95	Significantly increasing trend	102279	16	2007 - 2022	25.58	0.30	24.87	0.07	0.0000
1	No significant trend	65108	10	2013 - 2022	26.40	0.13	26.72	0.04	0.1158
89	Significantly increasing trend	113809	16	2007 - 2022	26.28	0.35	26.08	0.07	0.0000
86	Significantly increasing trend	104767	16	2007 - 2022	26.16	0.36	25.78	0.07	0.0000
2	Significantly increasing trend	64486	10	2013 - 2022	26.72	0.26	26.73	0.05	0.0007
94	Significantly increasing trend	90265	16	2007 - 2022	25.55	0.28	24.89	0.06	0.0000
3	Significantly increasing trend	60887	10	2013 - 2022	26.65	0.25	26.54	0.06	0.0010
91	Significantly increasing trend	102406	16	2007 - 2022	26.54	0.33	26.01	0.07	0.0000
96	No significant trend	25550	6	2007 - 2012	24.87	-0.25	24.98	-0.23	0.0801
5	Significantly increasing trend	51977	10	2013 - 2022	26.62	0.22	26.46	0.05	0.0067
93	Significantly increasing trend	106903	16	2007 - 2022	26.47	0.35	26.12	0.06	0.0000
6	No significant trend	63582	10	2013 - 2022	26.77	0.09	26.42	0.03	0.2598

pH - Discrete

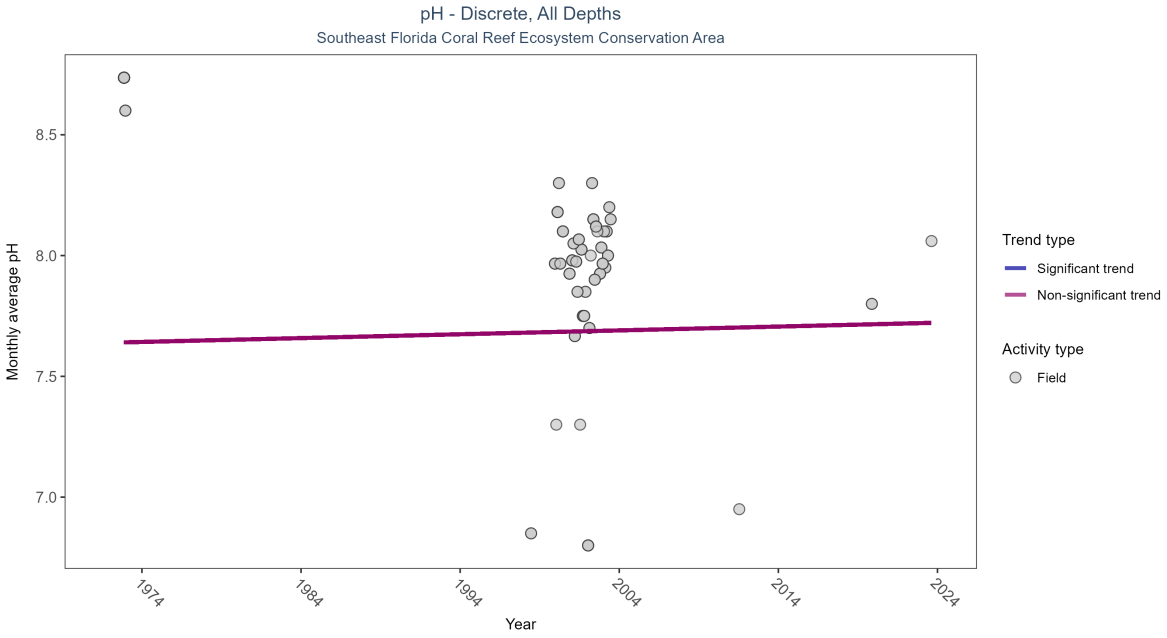

Table 9: Seasonal Kendall-Tau Results for - pH

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Field	No significant trend	172	10	1972 - 2023	8.2	0.0833	7.63924	0.00159	0.9124

Water Clarity

Turbidity - Discrete

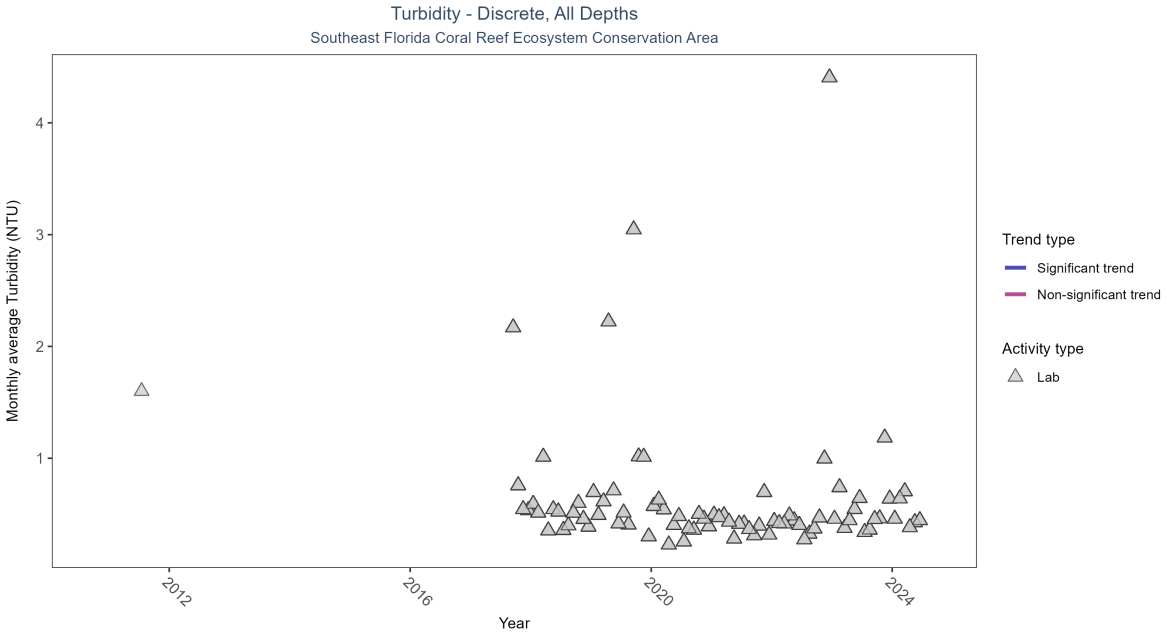

Table 10: Seasonal Kendall-Tau Results for - Turbidity

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Insufficient data to calculate trend	15580	9	2011 - 2024	0.3	-	-	-	NA

Total Suspended Solids - Discrete

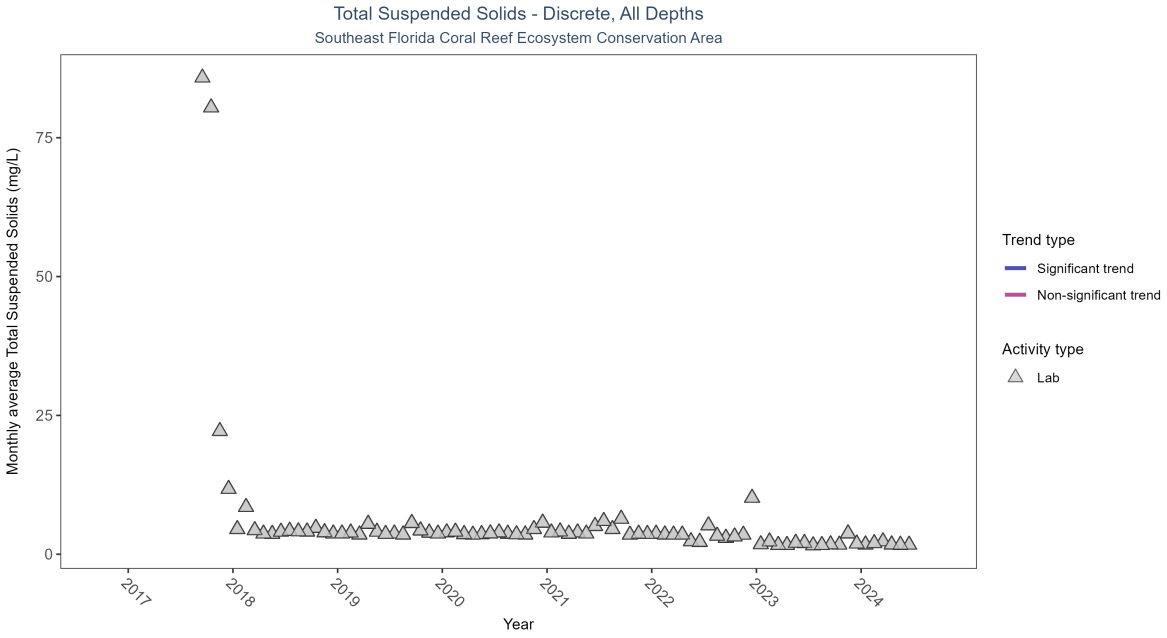

Table 11: Seasonal Kendall-Tau Results for - Total Suspended Solids

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Insufficient data to calculate trend	15025	8	2017 - 2024	3.47	-	-	-	NA

Chlorophyll a, Uncorrected for Pheophytin - Discrete

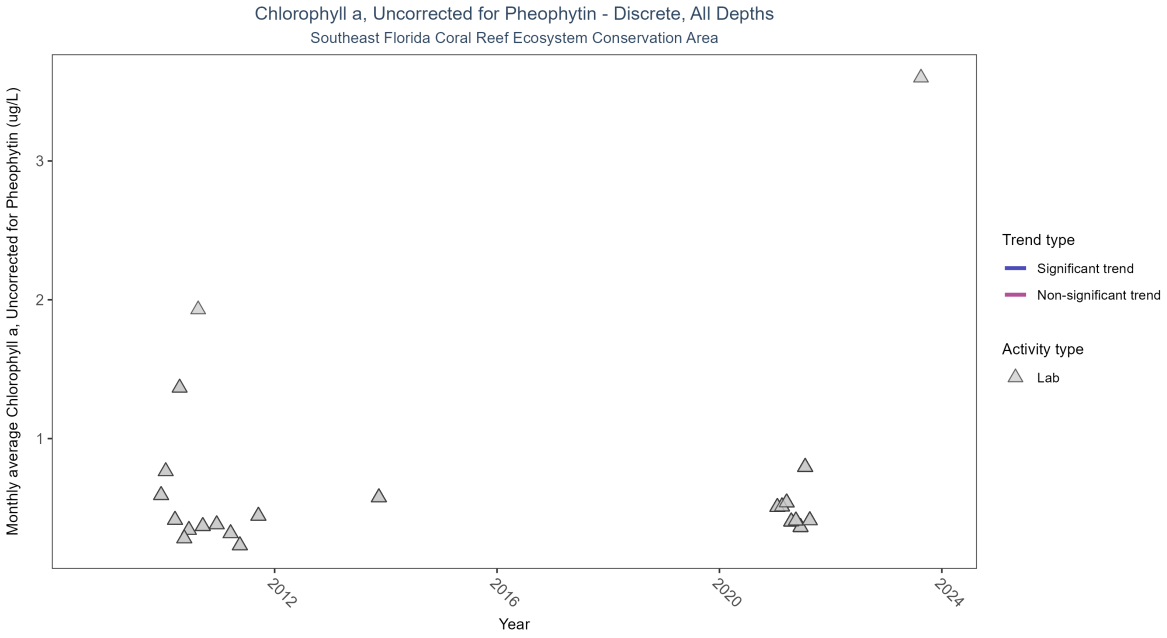

Table 12: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Insufficient data to calculate trend	1930	6	2009 - 2023	0.3844	-	-	-	NA

Chlorophyll a, Corrected for Pheophytin - Discrete

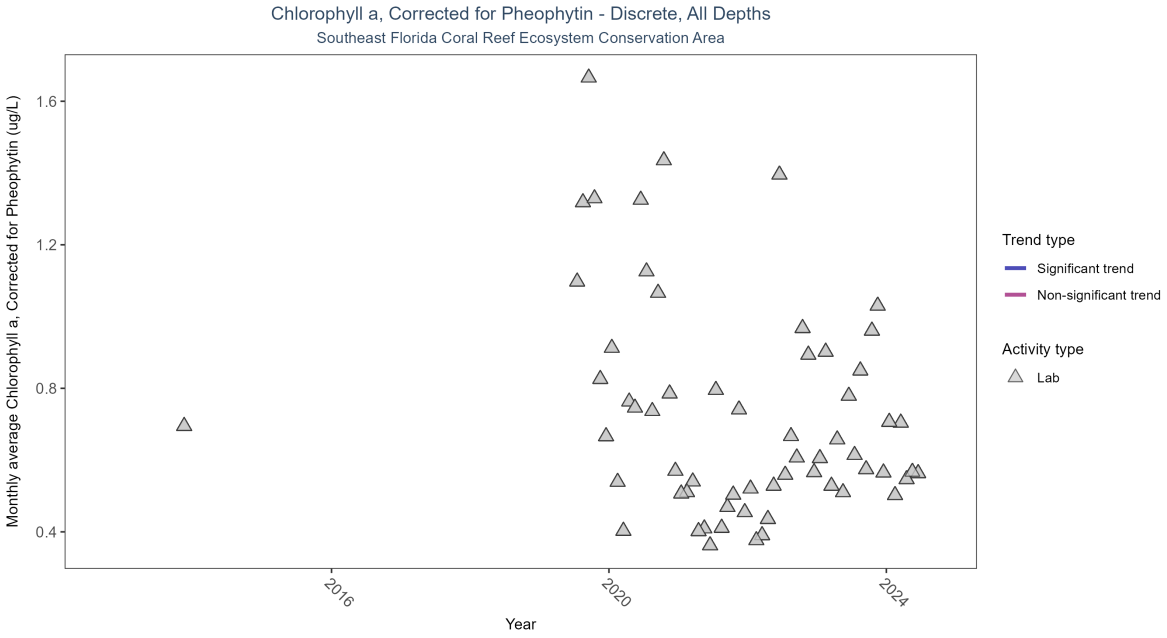

Table 13: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Insufficient data to calculate trend	10009	7	2013 - 2024	0.464	-	-	-	NA

Secchi Depth - Discrete

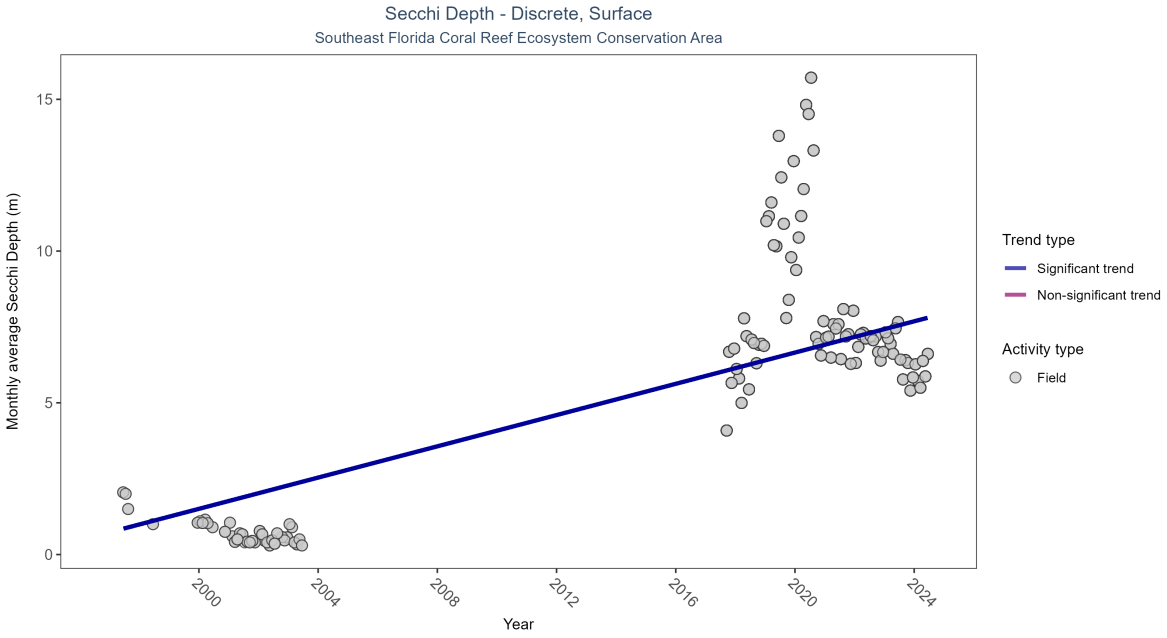

Table 14: Seasonal Kendall-Tau Results for - Secchi Depth

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Field	Significantly increasing trend	8962	15	1997 - 2024	6.1	0.2976	0.73362	0.25747	0.0000

Colored Dissolved Organic Matter - Discrete

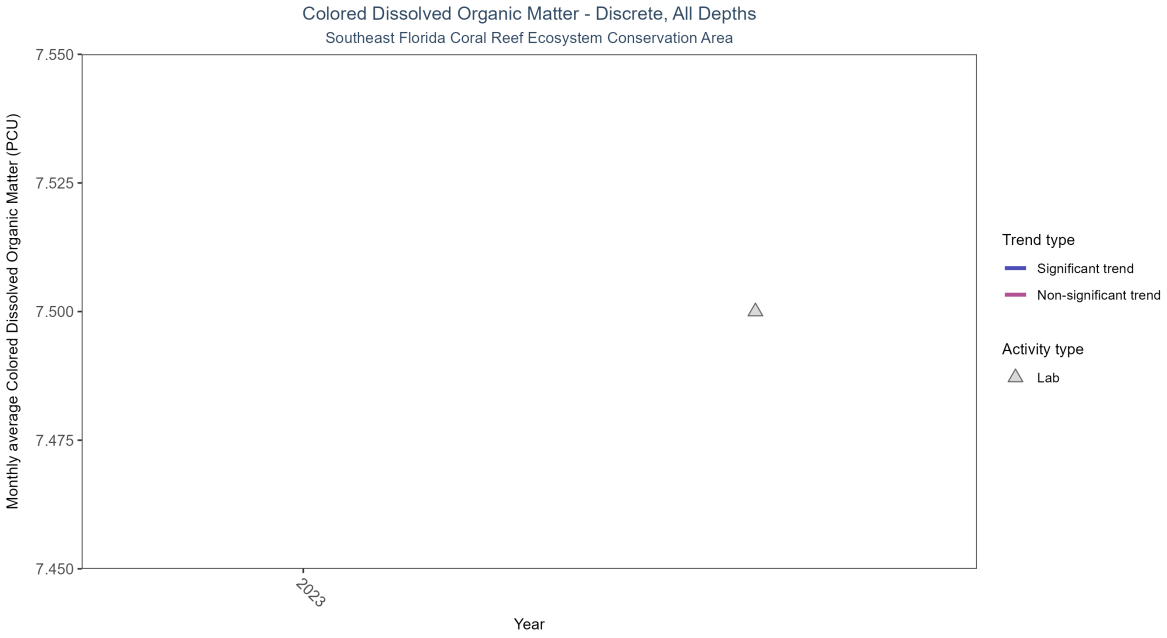

Table 15: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

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	1	1	2023 - 2023	7.5	-	-	-	NA