

Guana Tolomato Matanzas National Estuarine Research Reserve

SEACAR Water Quality Analysis

Last compiled on 27 January, 2025

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Indicators

Nutrients

Total Nitrogen - Discrete

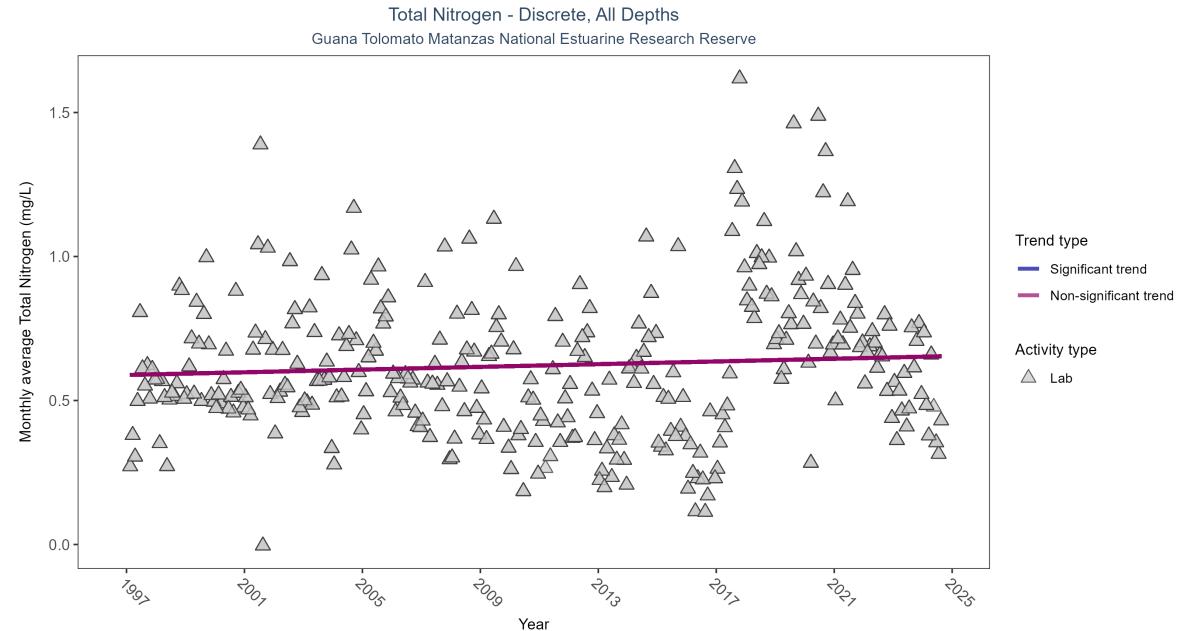


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

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	5911	28	1997 - 2024	0.552	0.061	0.58854	0.00235	0.1276

Total Phosphorus - Discrete

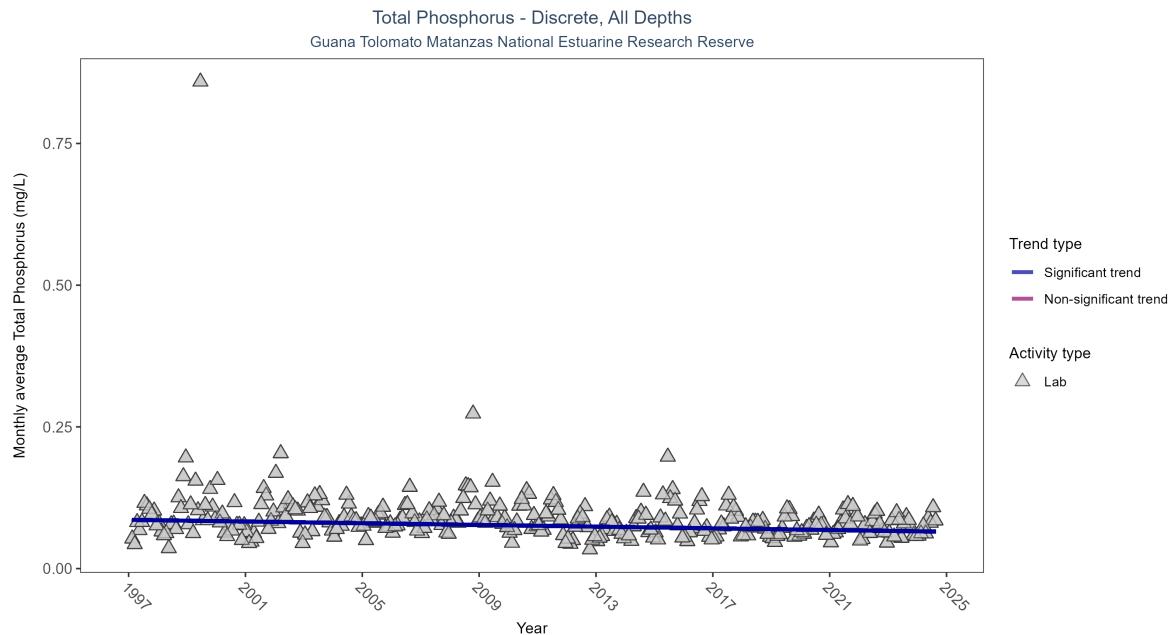


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

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	9296	28	1997 - 2024	0.07195	-0.209	0.08606	-0.00075	0.0000

Water Quality

Dissolved Oxygen - Discrete

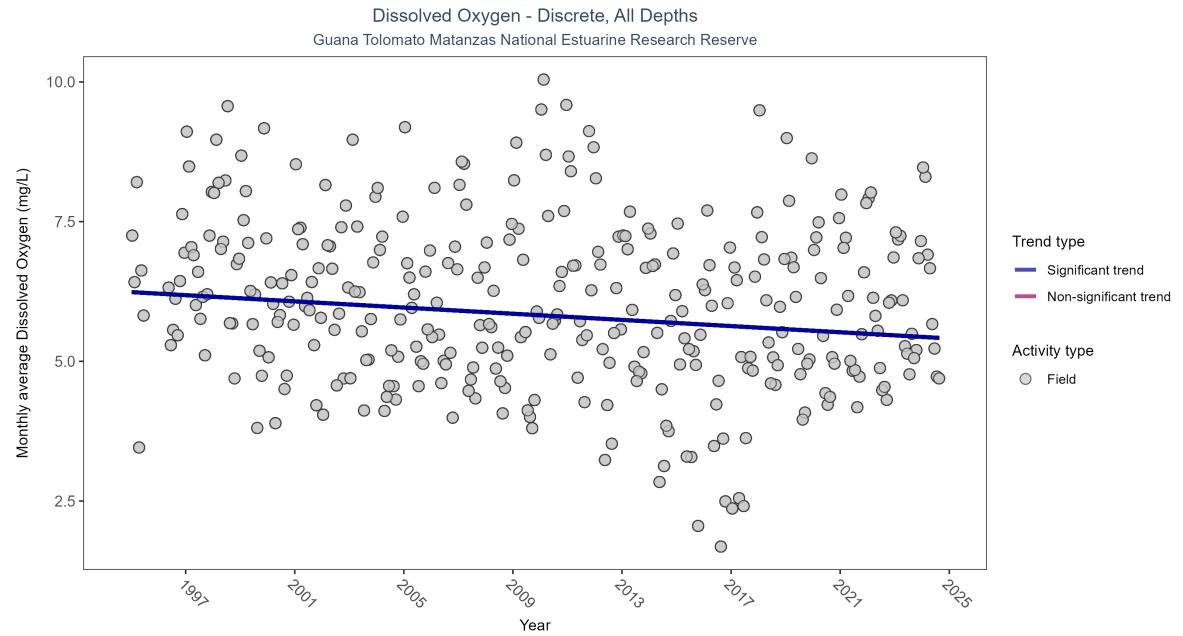


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

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	22353	30	1995 - 2024	6	-0.1735	6.2392	-0.02765	0.0000

Dissolved Oxygen - Continuous

Guana Tolomato Matanzas National Estuarine Research Reserve
All Stations
Dissolved Oxygen - Continuous

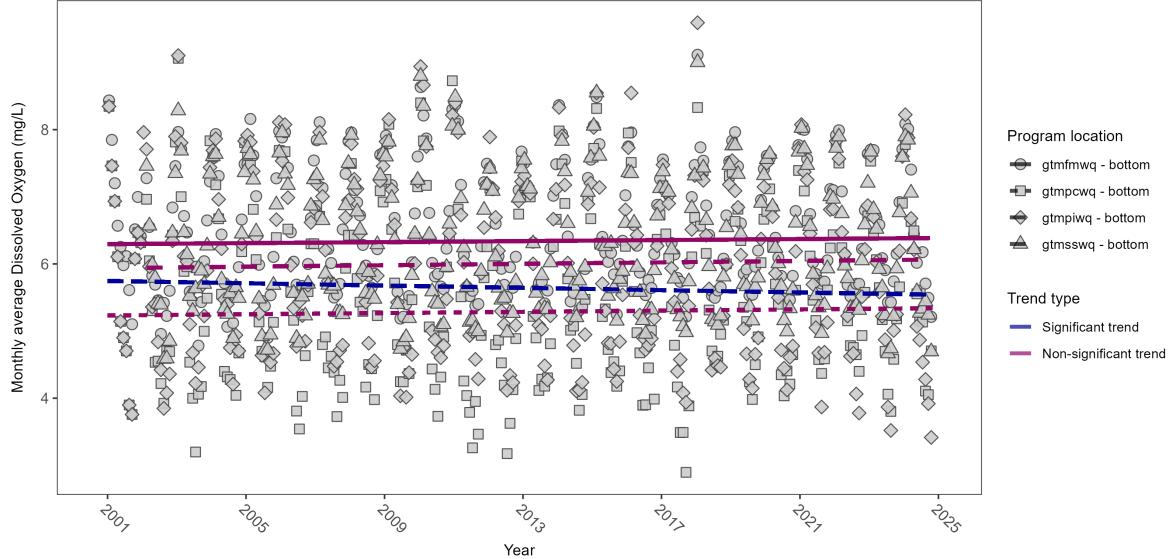


Table 4: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
gtmfmwq	No significant trend	673507	24	2001 - 2024	6.4	0.07	6.29	0.00	0.0860
gtmsswq	No significant trend	651882	23	2002 - 2024	6.3	0.08	5.94	0.01	0.0701
gtmpewq	No significant trend	694170	24	2001 - 2024	5.5	0.04	5.23	0.00	0.3089
gtmpiwq	Significantly decreasing trend	657932	24	2001 - 2024	5.9	-0.11	5.75	-0.01	0.0126

Dissolved Oxygen Saturation - Discrete

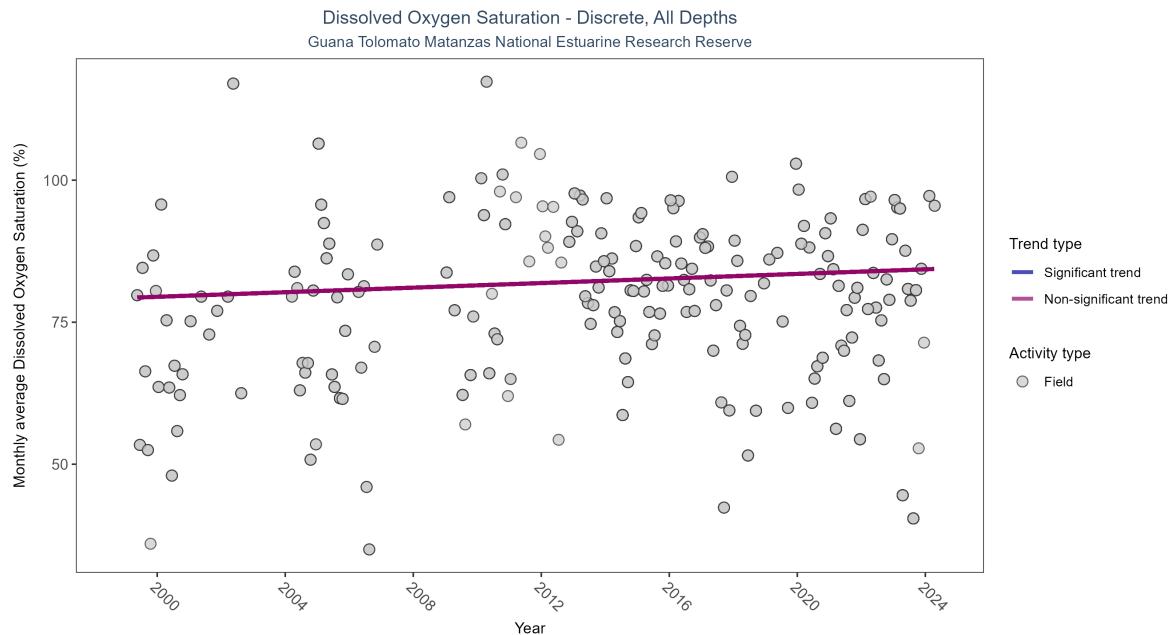


Table 5: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Field	No significant trend	2346	23	1999 - 2024	81.2	0.0876	79.26809	0.2015	0.0959

Dissolved Oxygen Saturation - Continuous

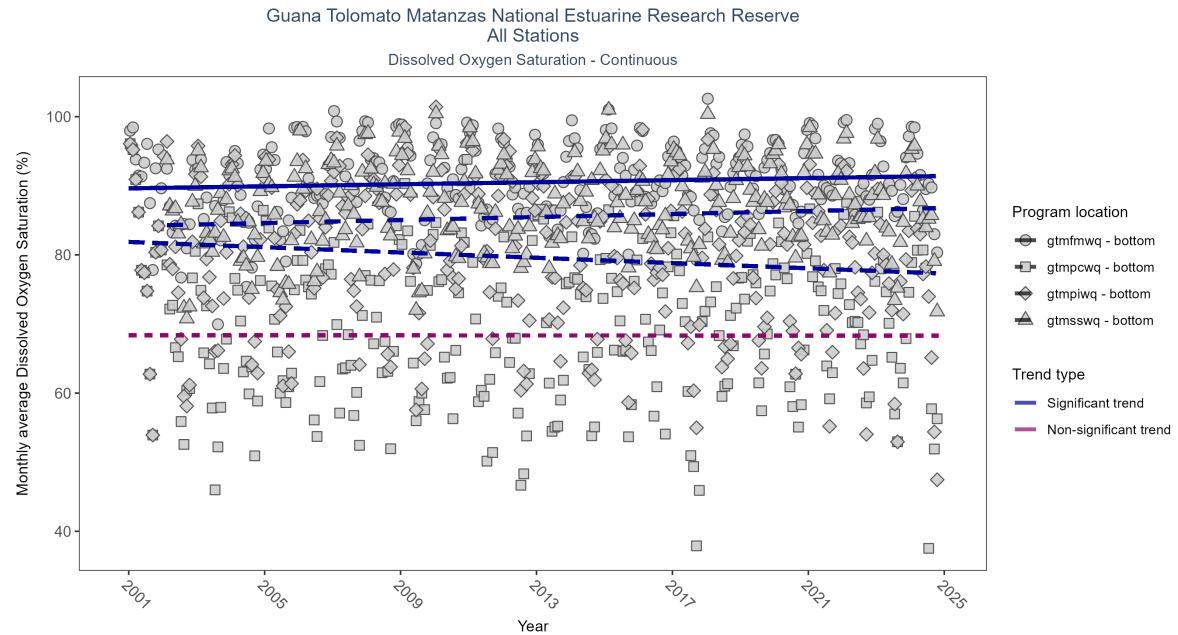


Table 6: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen Saturation

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
gtmsswq	Significantly increasing trend	657818	23	2002 - 2024	89.4	0.14	84.28	0.11	0.0019
gtmfmwq	Significantly increasing trend	685174	24	2001 - 2024	92.6	0.13	89.62	0.07	0.0029
gtmpewq	No significant trend	695663	24	2001 - 2024	71.2	-0.01	68.37	0.00	0.9536
gtpiwq	Significantly decreasing trend	663744	24	2001 - 2024	82.2	-0.19	81.87	-0.19	0.0000

Salinity - Discrete

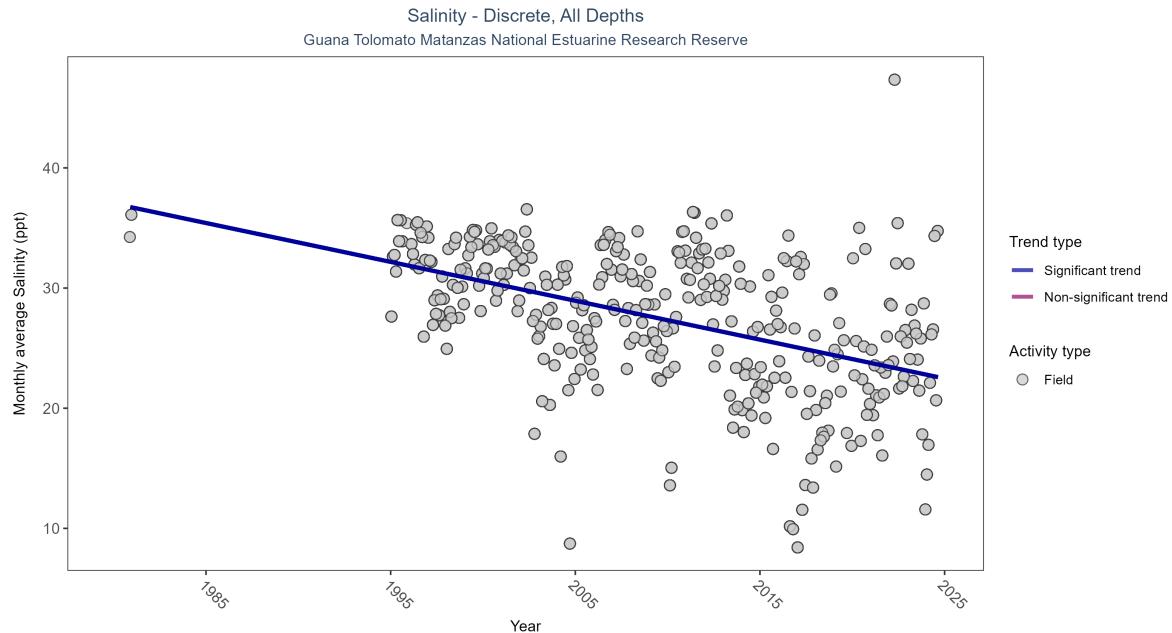


Table 7: Seasonal Kendall-Tau Results for - Salinity

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
All	Significantly decreasing trend	25596	31	1980 - 2024	31.725	-0.3614	37.03061	-0.32348	0.0000

Salinity - Continuous

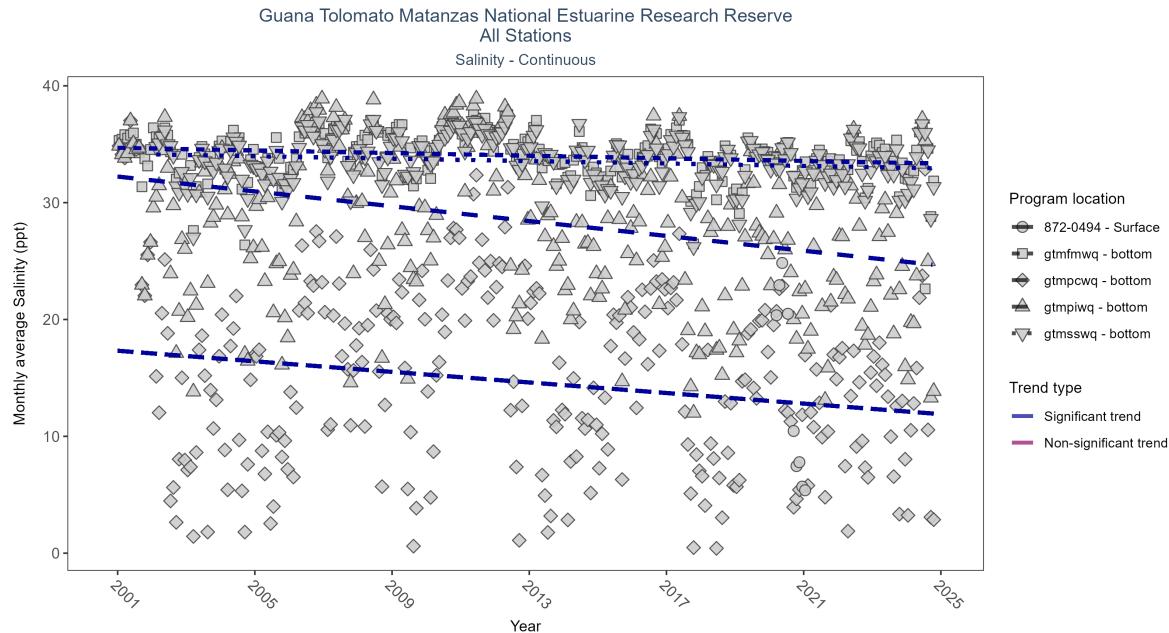


Table 8: Seasonal Kendall-Tau Results for All Stations - Salinity

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
gtmsswq	Significantly decreasing trend	636557	23	2002 - 2024	34.00	-0.11	34.13	-0.05	0.0131
gtmfmwq	Significantly decreasing trend	660962	24	2001 - 2024	34.40	-0.15	34.69	-0.06	0.0003
gtmpiwq	Significantly decreasing trend	659986	24	2001 - 2024	28.00	-0.26	32.23	-0.32	0.0000
gtmcwq	Significantly decreasing trend	703730	24	2001 - 2024	16.70	-0.14	17.32	-0.23	0.0015
872-0494	Insufficient data to calculate trend	34918	2	2020 - 2021	8.99	-	-	-	NA

Water Temperature - Discrete

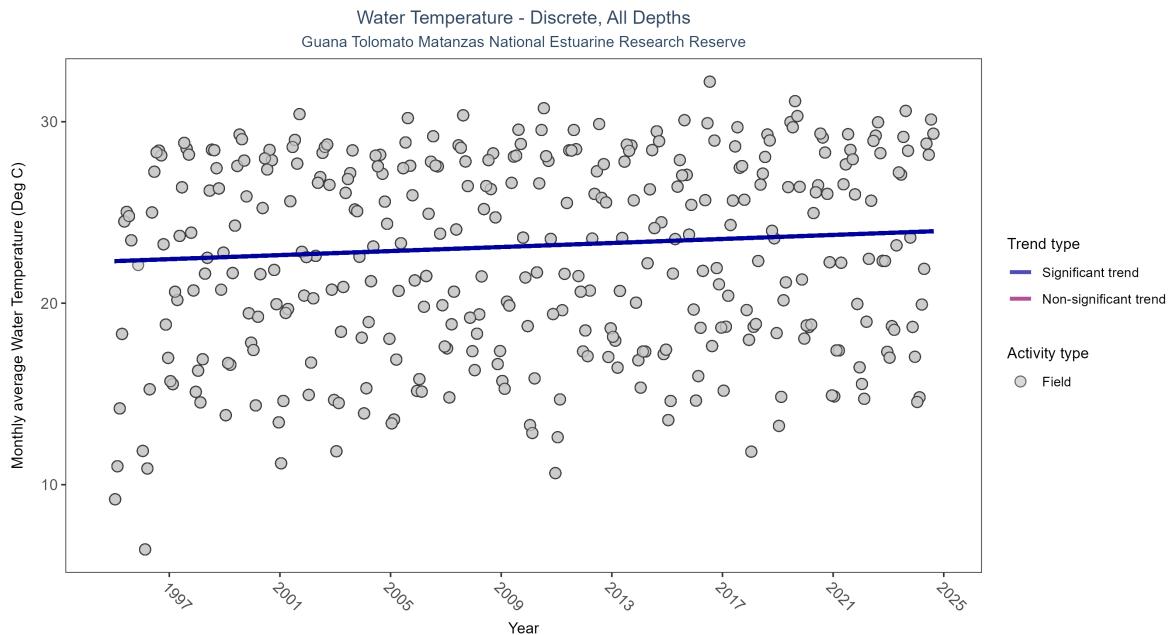


Table 9: Seasonal Kendall-Tau Results for - Water Temperature

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	25244	30	1995 - 2024	23.3	0.2236	22.31618	0.05562	0.0000

Water Temperature - Continuous

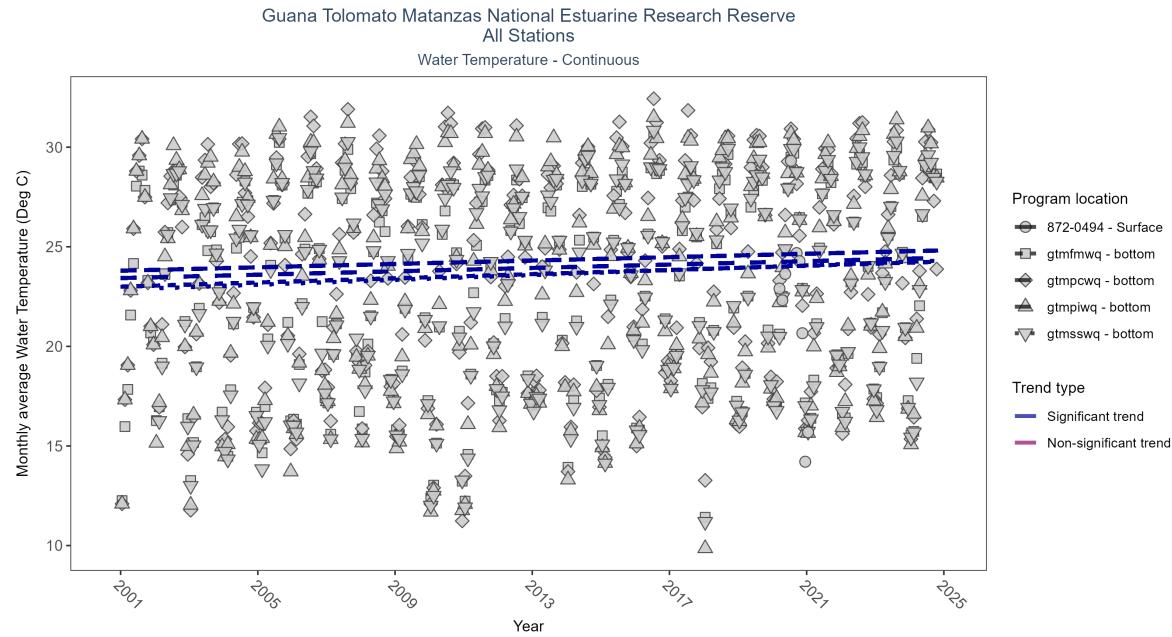


Table 10: Seasonal Kendall-Tau Results for All Stations - Water Temperature

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
gtmpcwq	Significantly increasing trend	712296	24	2001 - 2024	24.40	0.15	23.8	0.04	0.0004
gtmsswq	Significantly increasing trend	670158	23	2002 - 2024	23.90	0.25	22.91	0.06	0.0000
gtmfmwq	Significantly increasing trend	704620	24	2001 - 2024	23.80	0.25	23	0.05	0.0000
gtmpiwq	Significantly increasing trend	710270	24	2001 - 2024	24.30	0.2	23.43	0.04	0.0000
872-0494	Insufficient data to calculate trend	35473	2	2020 - 2021	22.34	-	-	-	NA

pH - Discrete

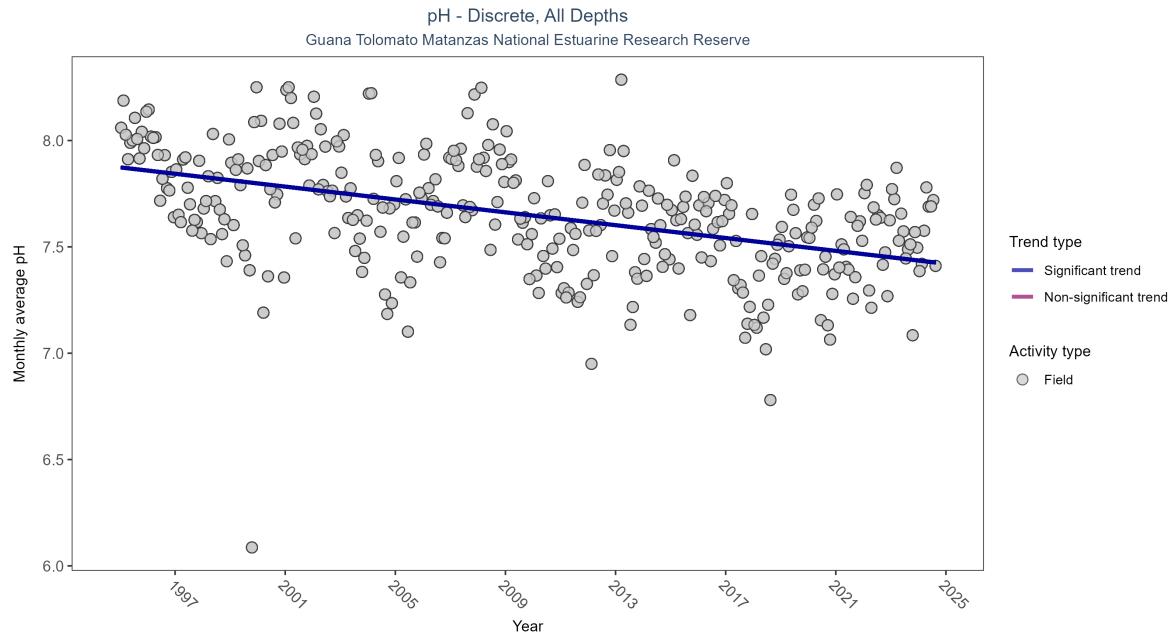


Table 11: Seasonal Kendall-Tau Results for - pH

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	18639	30	1995 - 2024	7.8	-0.3862	7.87393	-0.01511	0.0000

pH - Continuous

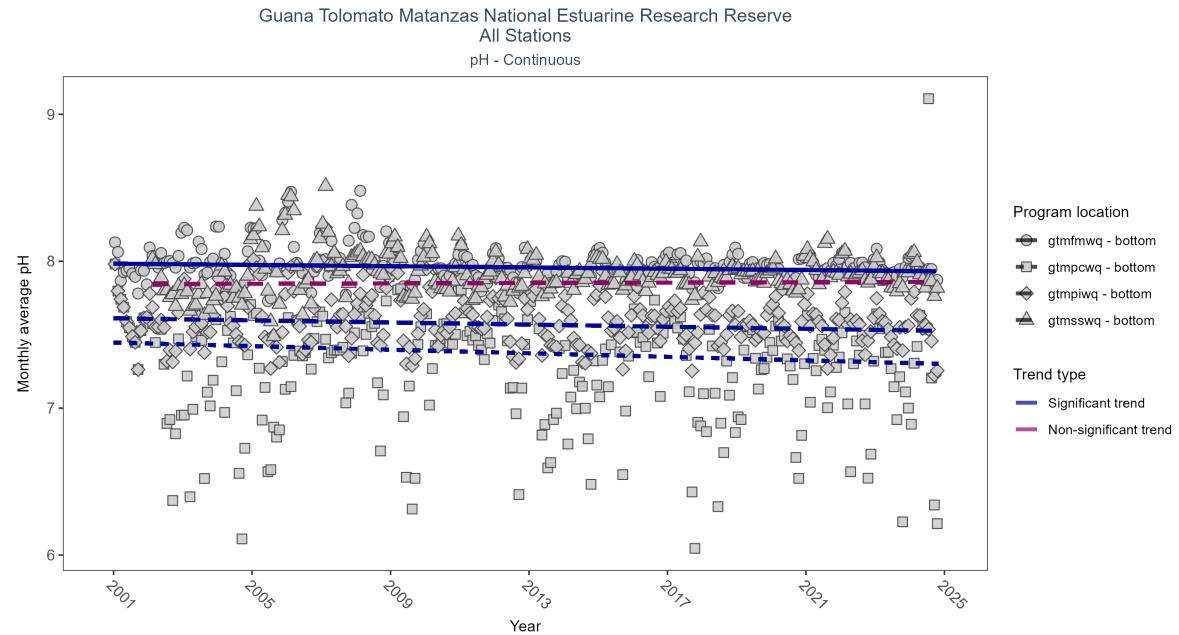


Table 12: Seasonal Kendall-Tau Results for All Stations - pH

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
gtmfmwq	Significantly decreasing trend	659640	24	2001 - 2024	8.0	-0.15	7.98	0.00	0.0007
gtmsswq	No significant trend	627587	23	2002 - 2024	7.9	0.03	7.84	0.00	0.4181
gtmpiwq	Significantly decreasing trend	654000	24	2001 - 2024	7.6	-0.17	7.61	0.00	0.0001
gtmcwq	Significantly decreasing trend	687239	24	2001 - 2024	7.4	-0.12	7.45	-0.01	0.0048

Water Clarity

Turbidity - Discrete

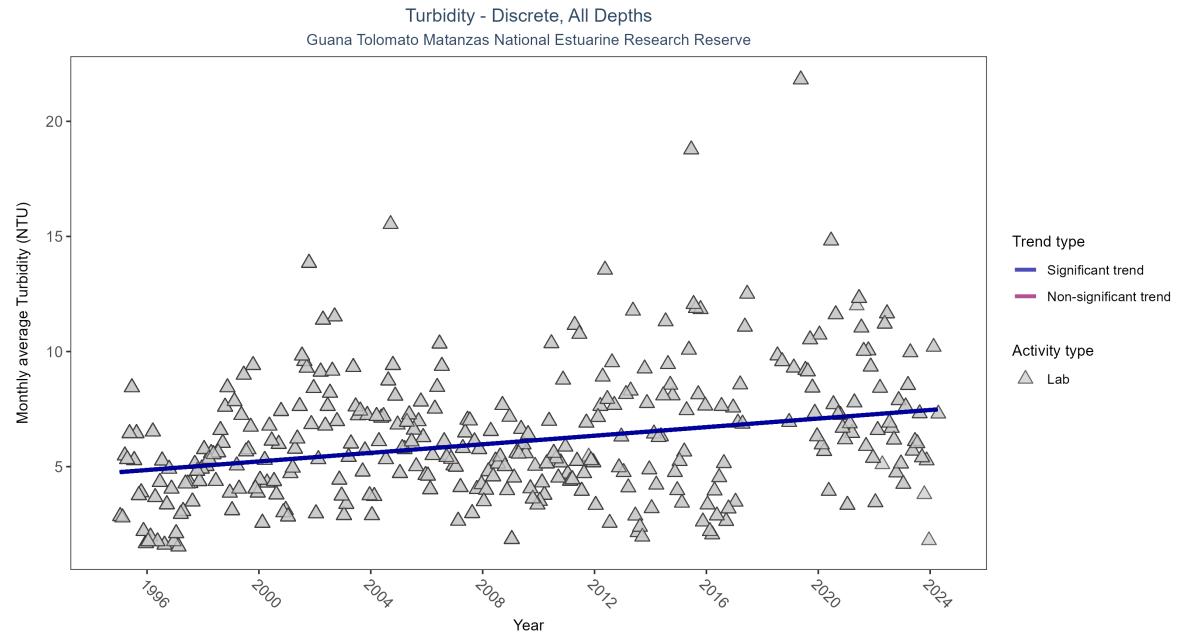


Table 13: Seasonal Kendall-Tau Results for - Turbidity

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	14790	30	1995 - 2024	4.5	0.238	4.76064	0.09314	0.0000

Turbidity - Continuous

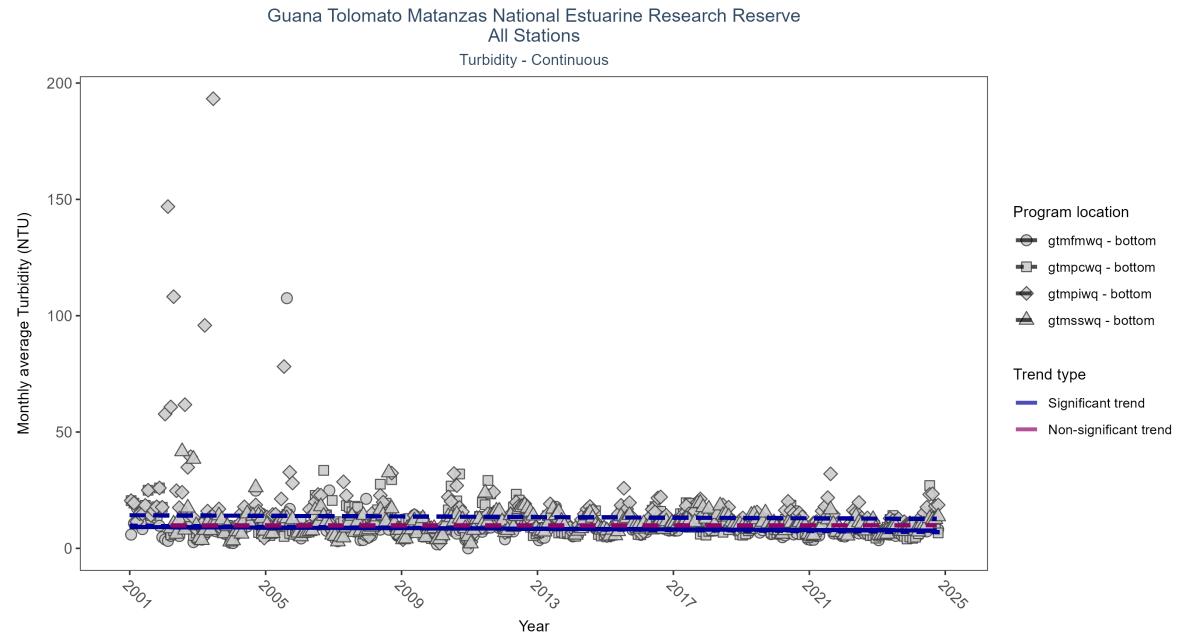


Table 14: Seasonal Kendall-Tau Results for All Stations - Turbidity

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
gtmsswq	No significant trend	623179	23	2002 - 2024	9	0.01	9.87	0.00	0.9808
gtmfmwq	Significantly decreasing trend	670954	24	2001 - 2024	7	-0.11	9.18	-0.06	0.0082
gtmpiwq	Significantly decreasing trend	633953	24	2001 - 2024	11	-0.09	14.24	-0.07	0.0407
gtmcwq	Significantly decreasing trend	678303	24	2001 - 2024	9	-0.17	9.72	-0.11	0.0001

Total Suspended Solids - Discrete

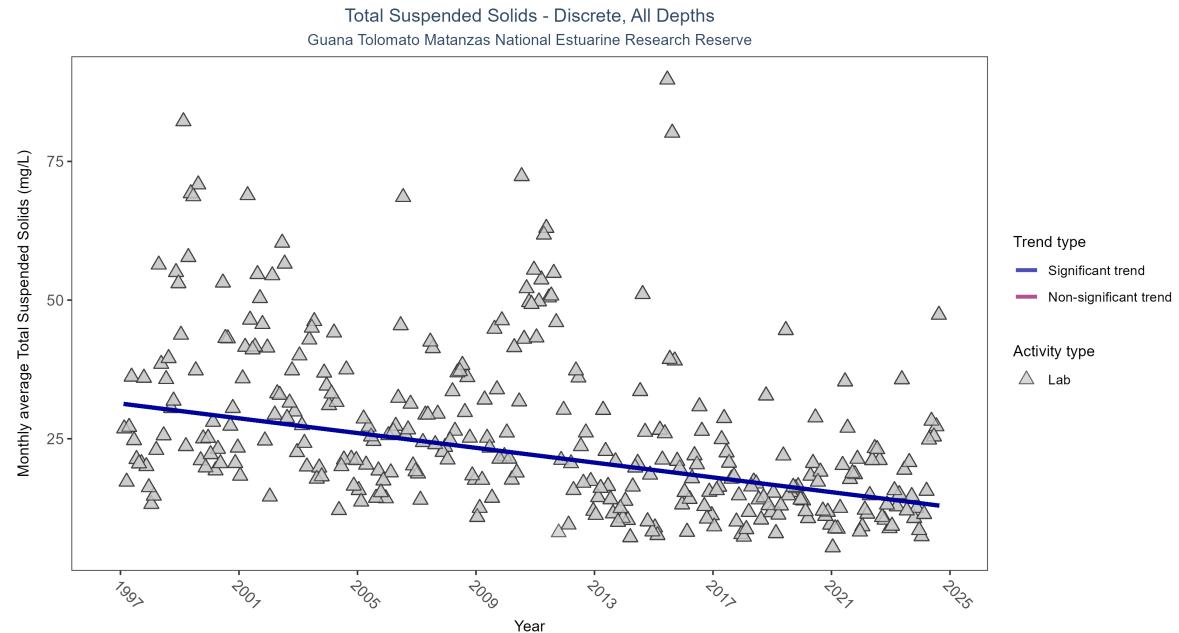


Table 15: Seasonal Kendall-Tau Results for - Total Suspended Solids

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P	
Lab	Significantly decreasing trend	4961	28	1997 - 2024		17	-0.3896	31.34714	-0.66578	0.0000

Chlorophyll a, Uncorrected for Pheophytin - Discrete

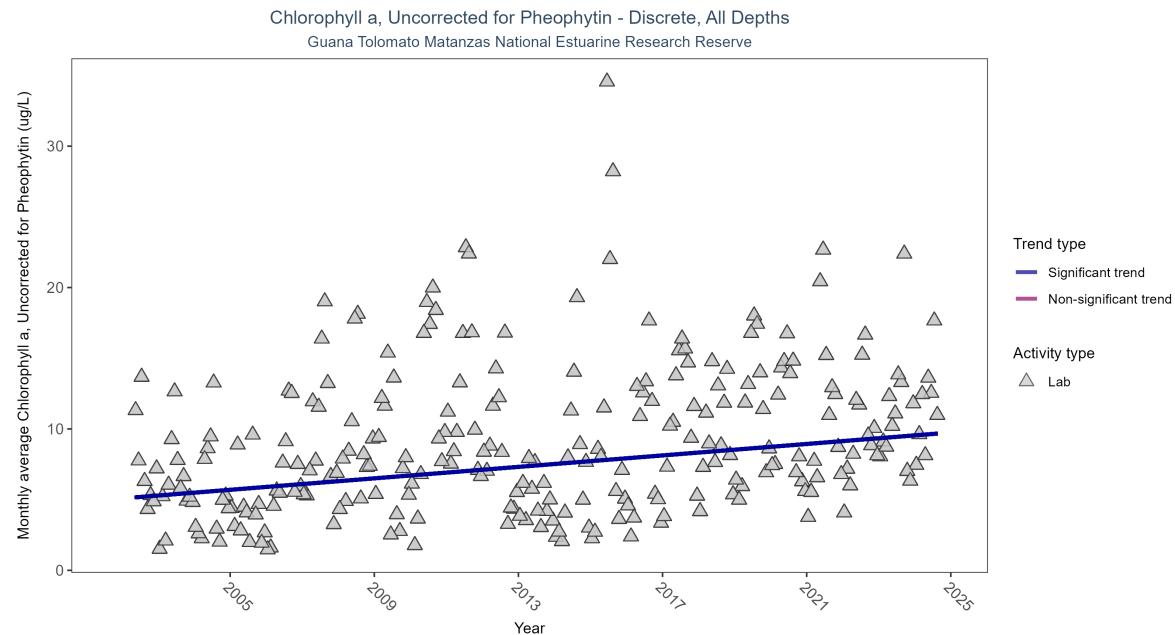


Table 16: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

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	6299	23	2002 - 2024	6.2	0.265	5.08873	0.20258	0.0000

Chlorophyll a, Corrected for Pheophytin - Discrete

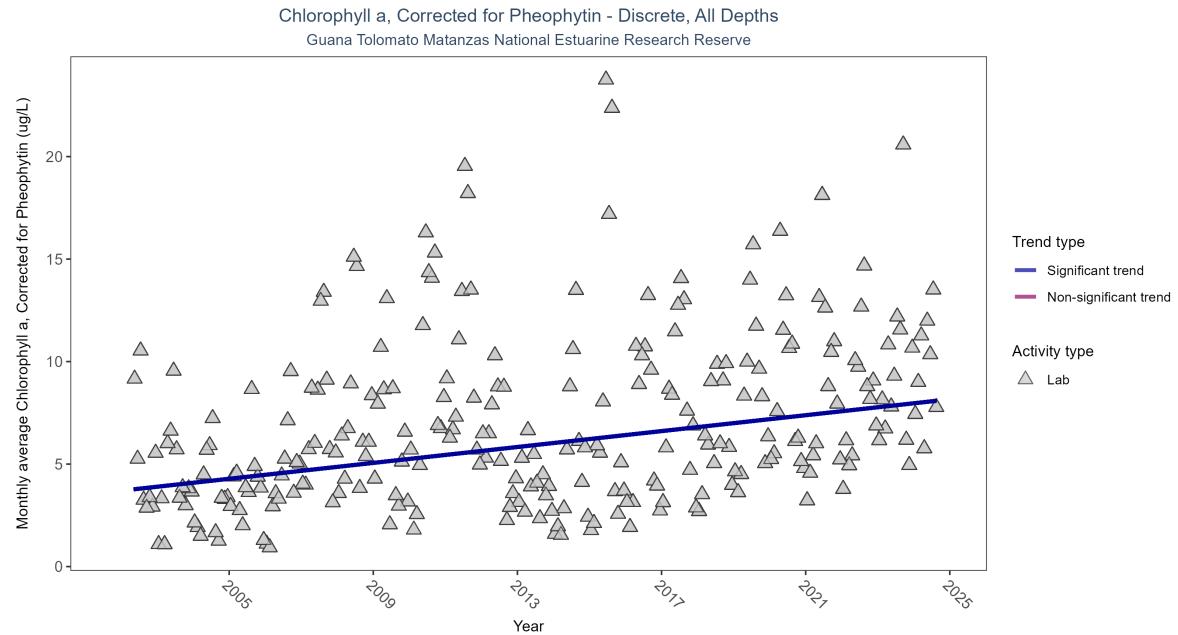


Table 17: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Significantly increasing trend	7975	23	2002 - 2024	4.7	0.3067	3.70111	0.19385	0.0000

Secchi Depth - Discrete

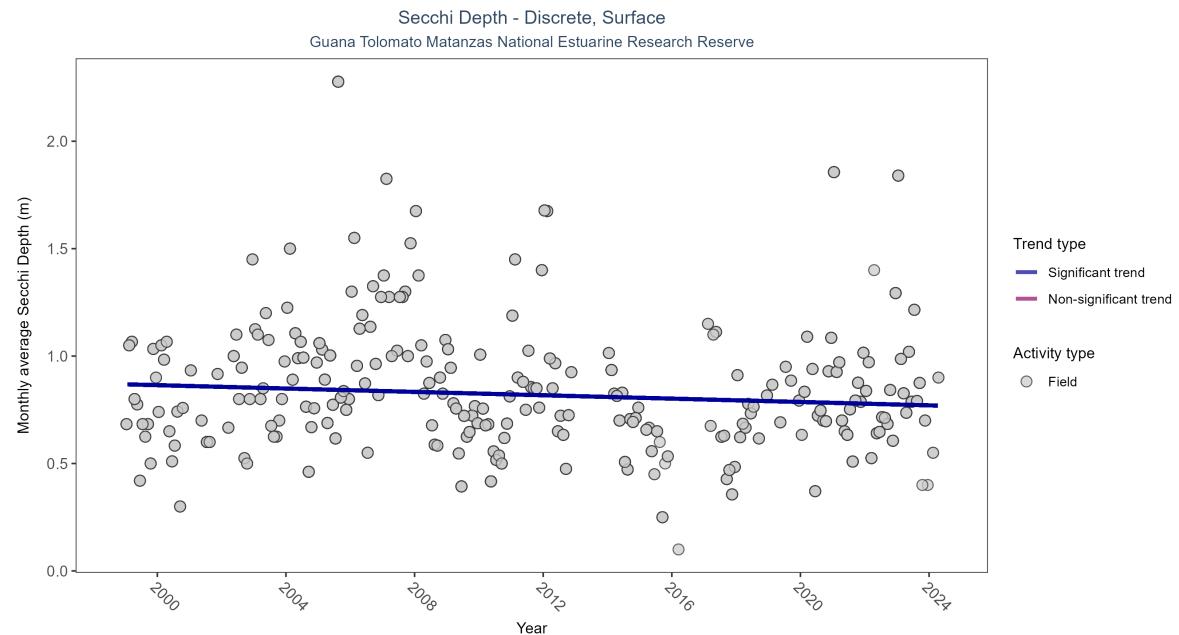


Table 18: Seasonal Kendall-Tau Results for - Secchi Depth

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P	
Field	Significantly decreasing trend	2867	25	1999 - 2024		0.8	-0.0978	0.86855	-0.00392	0.0420

Colored Dissolved Organic Matter - Discrete

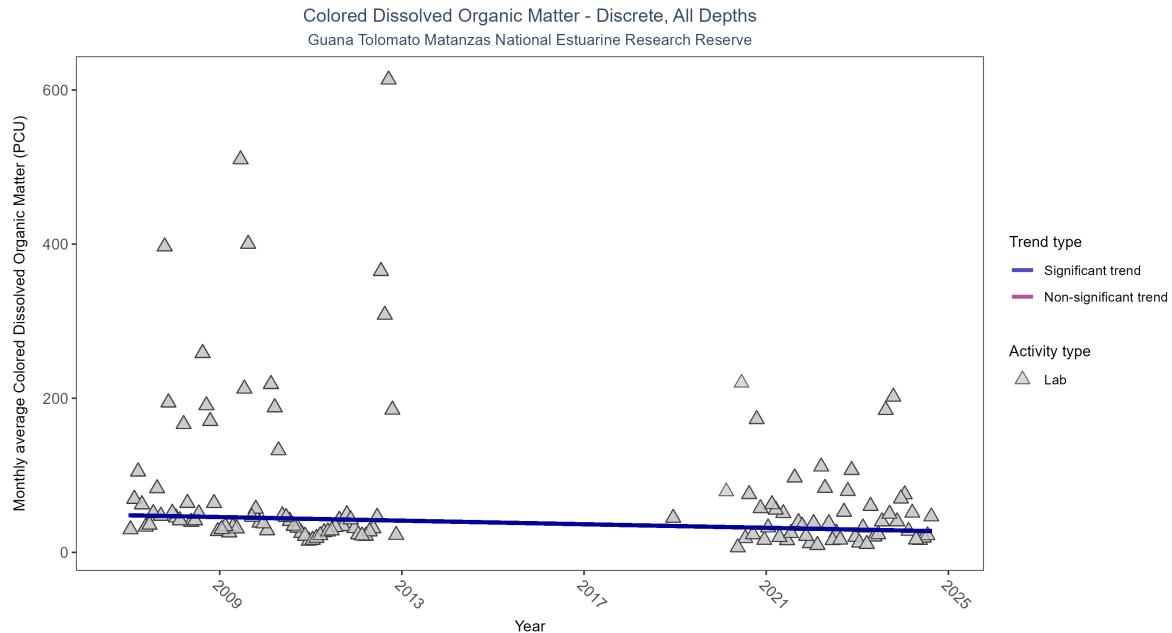


Table 19: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

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	1811	12	2007 - 2024	33.4	-0.2092	48.11927	-1.16293	0.0024