

Guana Tolomato Matanzas National Estuarine Research Reserve

SEACAR Discrete Water Quality Analysis

Last compiled on 14 August, 2024

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Indicators

Nutrients

Total Nitrogen - Discrete

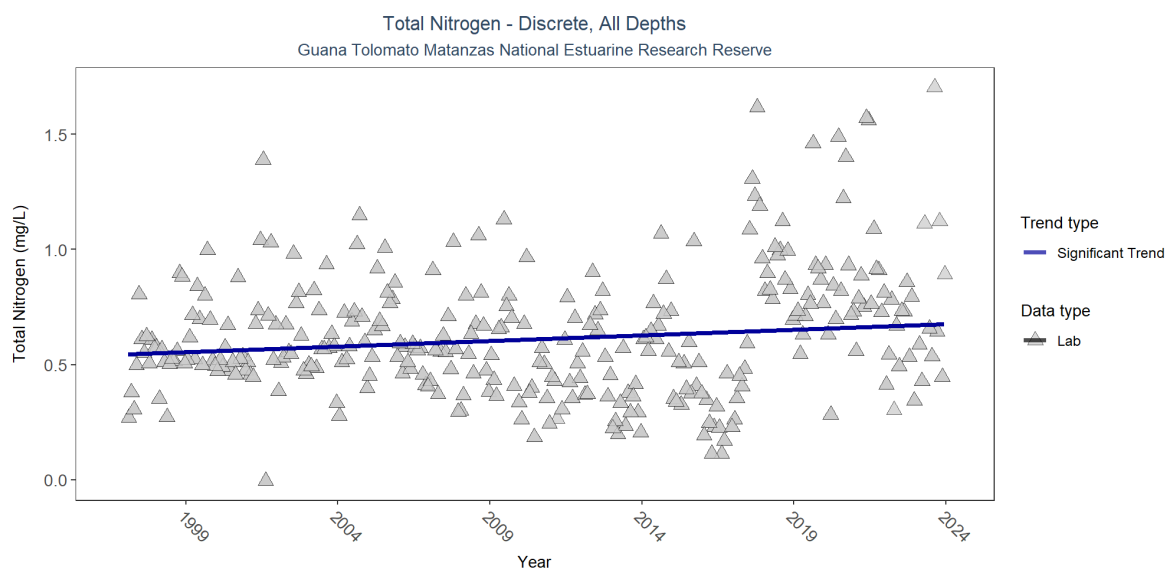


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	5377	27	1997 - 2023	0.545	0.0963	0.54494	0.00489	0.0152

Total Phosphorus - Discrete

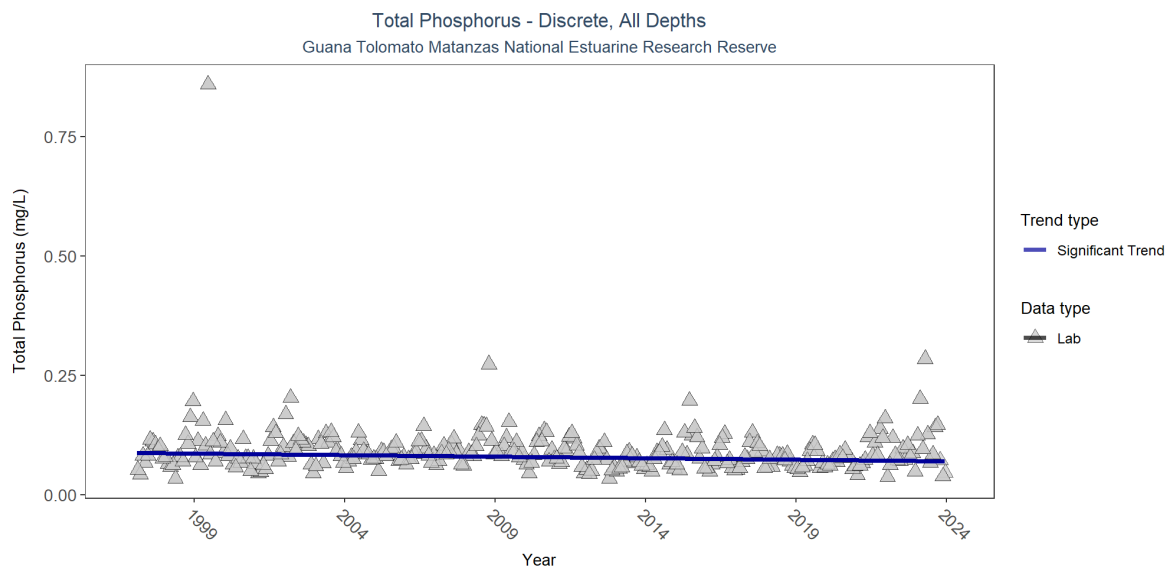


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly decreasing trend	8011	27	1997 - 2023	0.074	-0.1388	0.08704	-0.00061	0.0005

Water Quality

Dissolved Oxygen - Discrete

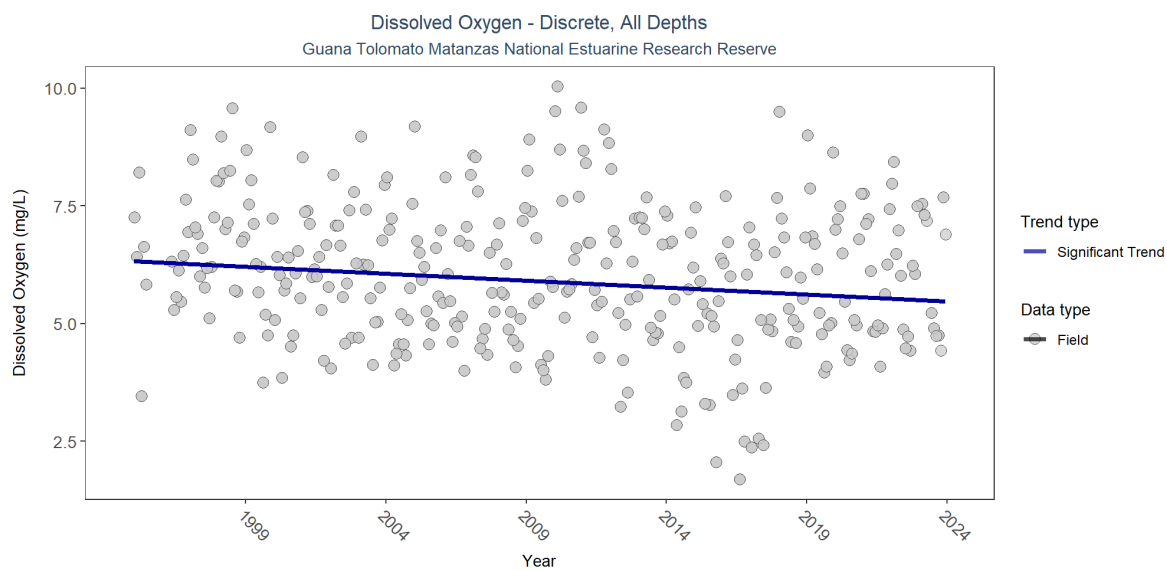


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Significantly decreasing trend	21501	29	1995 - 2023	6	-0.1733	6.32106	-0.02905	0.0000

Dissolved Oxygen - Continuous

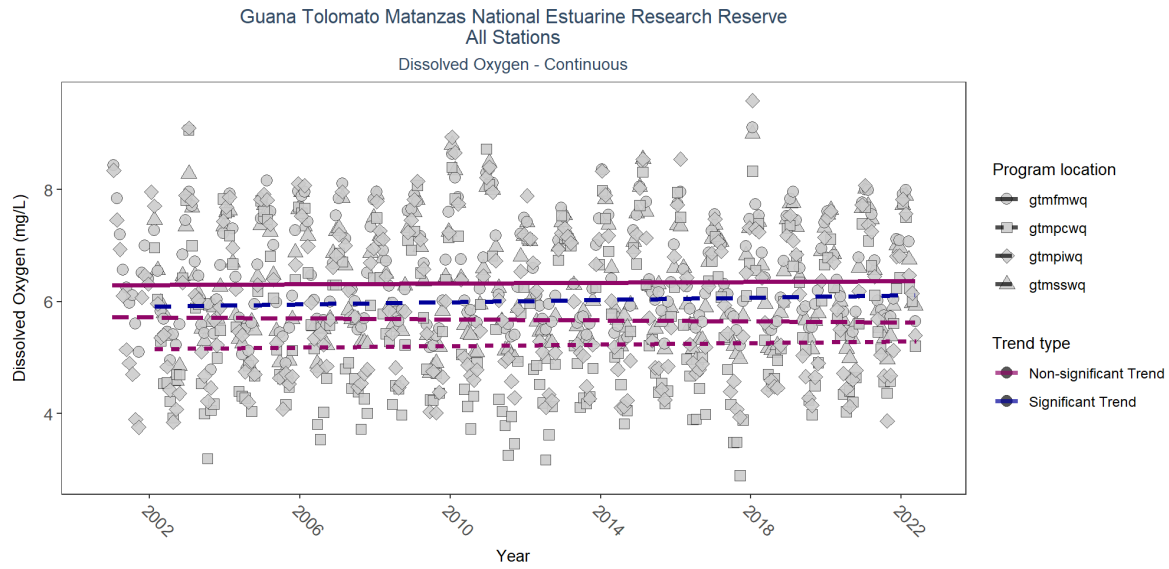


Table 4: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
gtmfsswq	Significantly increasing trend	573658	21	2002 - 2022	6.3	0.14	5.91	0.01	0.0026
gtmfmwq	No significant trend	596140	22	2001 - 2022	6.5	0.06	6.29	0.00	0.2176
gtmfpcwq	No significant trend	600043	21	2002 - 2022	5.5	0.05	5.16	0.01	0.2935
gtmfpiwq	No significant trend	576064	22	2001 - 2022	5.9	-0.05	5.72	0.00	0.2940

Dissolved Oxygen Saturation - Discrete

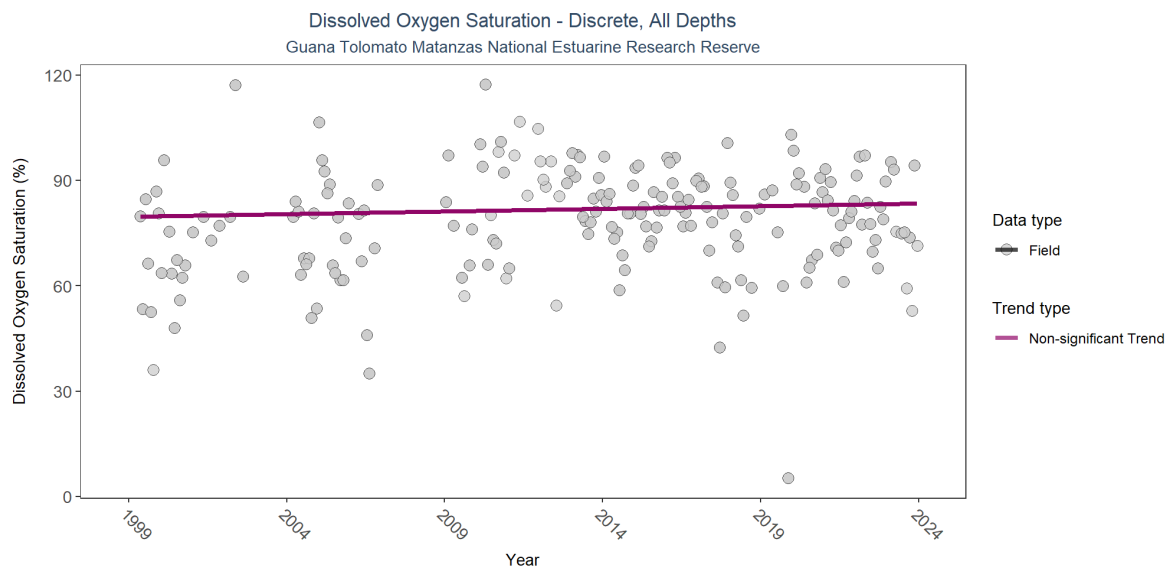


Table 5: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	No significant trend	2194	22	1999 - 2023	81	0.0716	79.61967	0.15133	0.1710

Dissolved Oxygen Saturation - Continuous

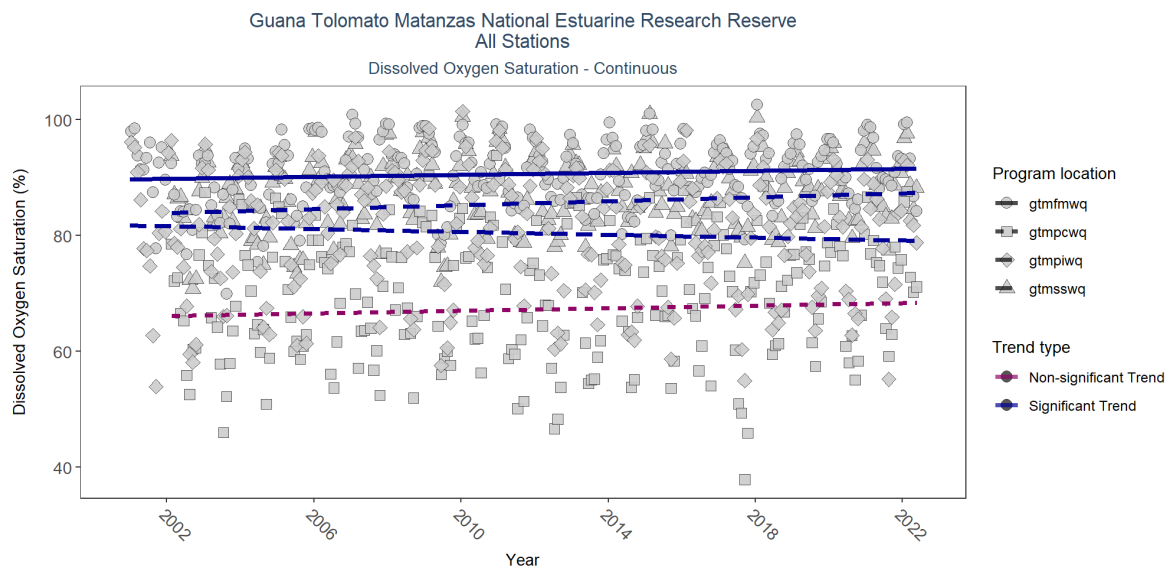


Table 6: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen Saturation

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
gtmfmswq	Significantly increasing trend	579594	21	2002 - 2022	89.6	0.21	83.84	0.17	0.0000
gtmfmswq	Significantly increasing trend	603708	22	2001 - 2022	92.6	0.12	89.65	0.09	0.0062
gtmfmswq	No significant trend	600043	21	2002 - 2022	71.1	0.07	66.10	0.11	0.1183
gtmfmswq	Significantly decreasing trend	580954	22	2001 - 2022	83.1	-0.11	81.79	-0.12	0.0155

Salinity - Discrete

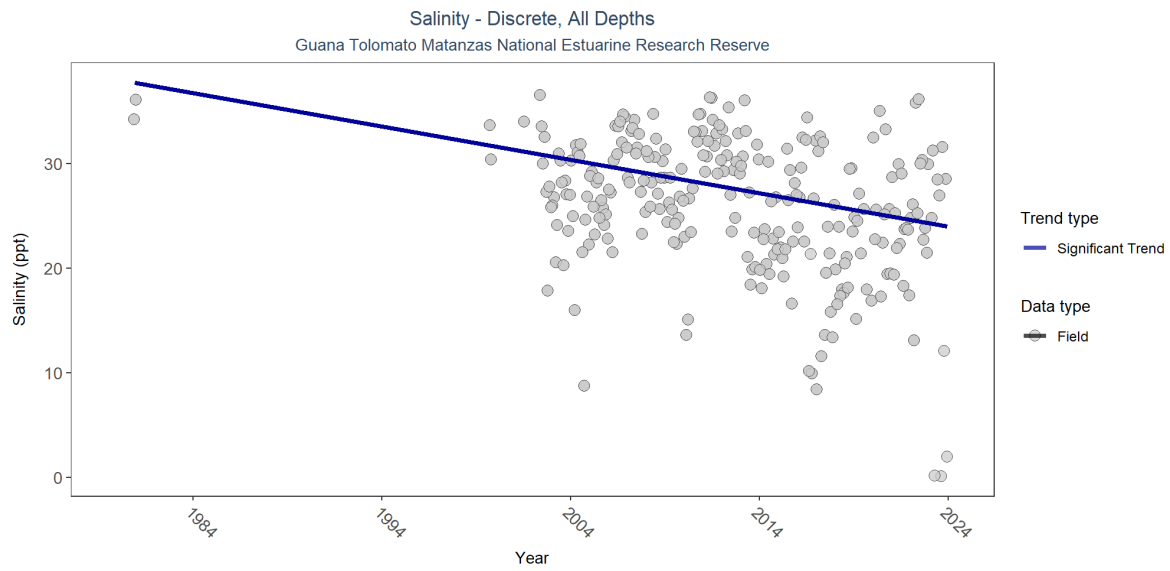


Table 7: Seasonal Kendall-Tau Results for - Salinity

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
All	Significantly decreasing trend	24767	30	1980 - 2023	31.8	-0.3585	38.04552	-0.31909	0.0000

Salinity - Continuous

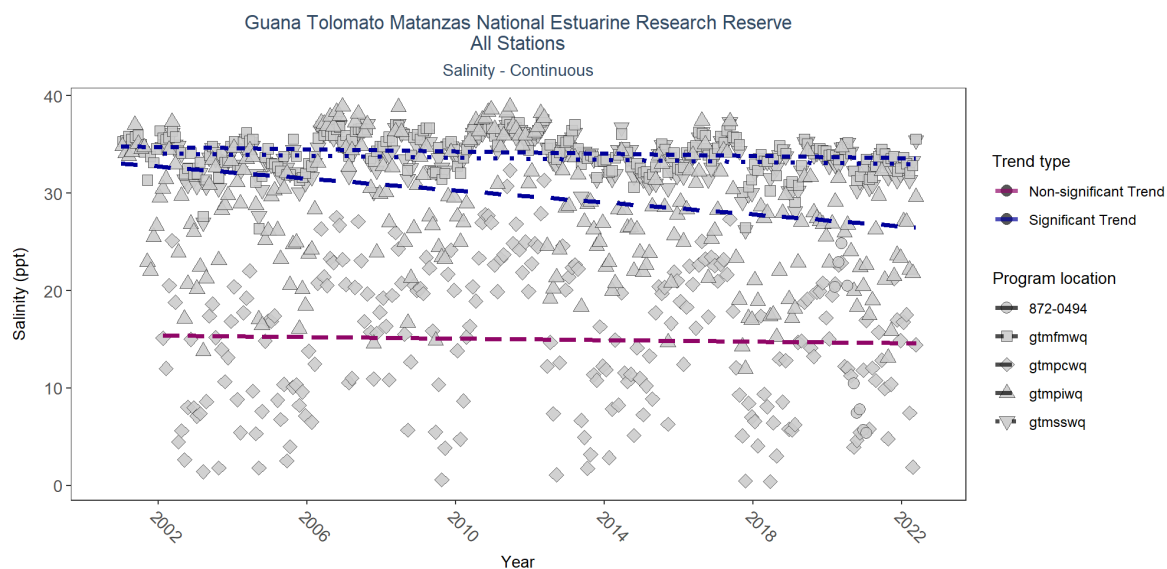


Table 8: Seasonal Kendall-Tau Results for All Stations - Salinity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
gtmsswq	Significantly decreasing trend	559678	21	2002 - 2022	34.00	-0.1	34.08	-0.05	0.0379
gtmfmwq	Significantly decreasing trend	588038	22	2001 - 2022	34.50	-0.13	34.79	-0.06	0.0031
gtmfcwq	No significant trend	606028	21	2002 - 2022	17.00	-0.02	15.4	-0.04	0.6811
gtmfiwq	Significantly decreasing trend	577716	22	2001 - 2022	28.30	-0.23	33.04	-0.31	0.0000
872-0494	Insufficient data to calculate trend	34918	2	2020 - 2021	8.99	-	-	-	-

Water Temperature - Discrete

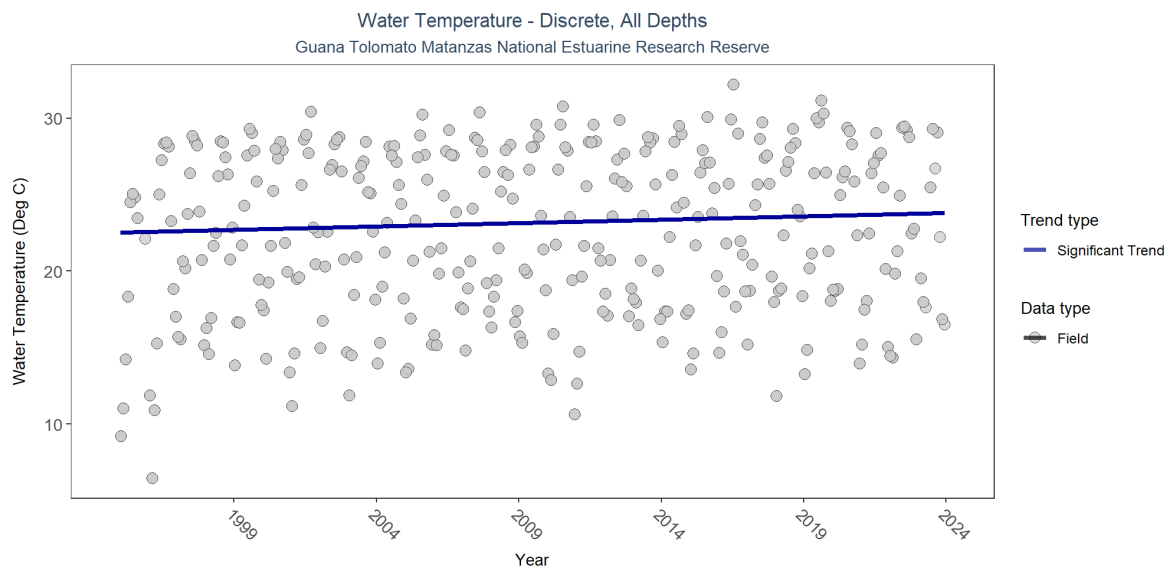


Table 9: Seasonal Kendall-Tau Results for - Water Temperature

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Significantly increasing trend	24240	29	1995 - 2023	23.3	0.1665	22.52867	0.04424	0.0000

Water Temperature - Continuous

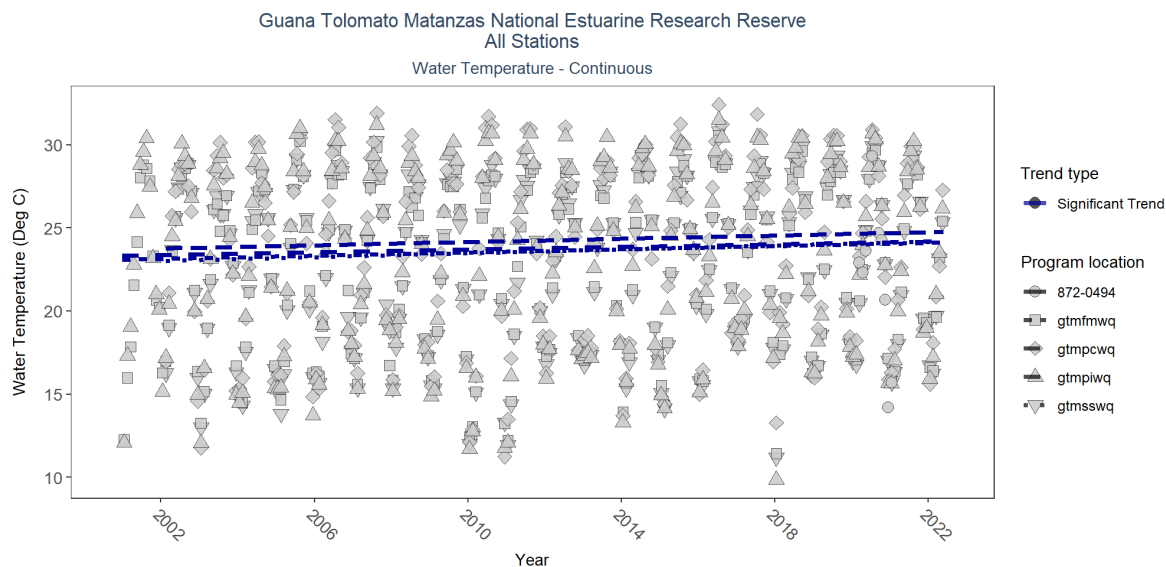


Table 10: Seasonal Kendall-Tau Results for All Stations - Water Temperature

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
gtmfsswq	Significantly increasing trend	591934	21	2002 - 2022	23.70	0.21	23	0.06	0.0000
gtmfpmwq	Significantly increasing trend	623154	22	2001 - 2022	23.50	0.21	23.09	0.05	0.0000
gtmfpcwq	Significantly increasing trend	613439	21	2002 - 2022	24.30	0.14	23.77	0.05	0.0025
gtmfpiwq	Significantly increasing trend	627043	22	2001 - 2022	24.10	0.18	23.34	0.04	0.0001
872-0494	Insufficient data to calculate trend	35473	2	2020 - 2021	22.34	-	-	-	-

pH - Discrete

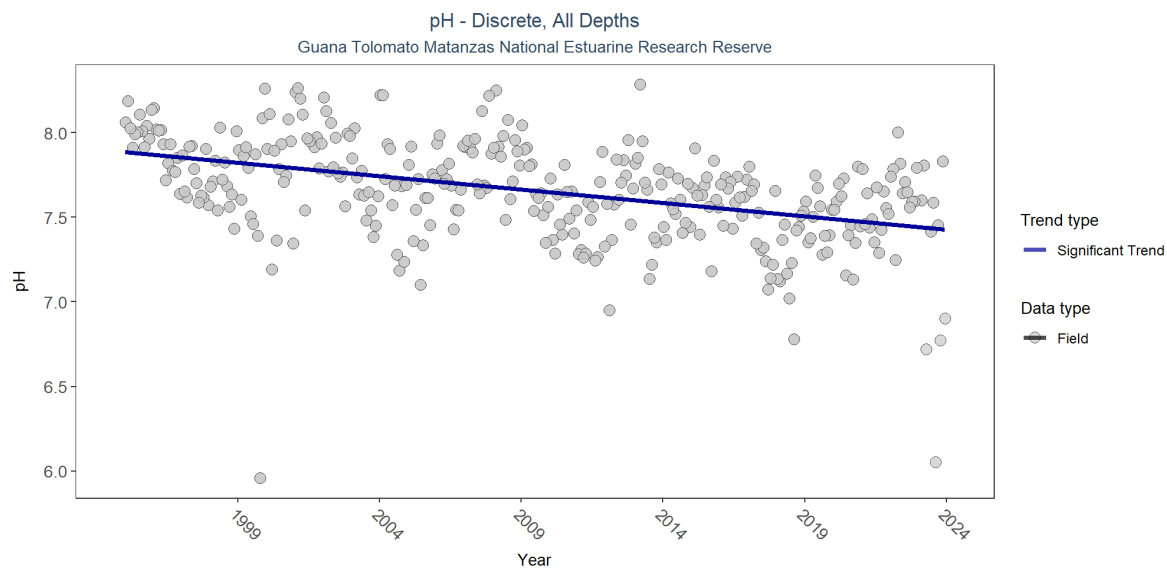


Table 11: Seasonal Kendall-Tau Results for - pH

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Significantly decreasing trend	17684	29	1995 - 2023	7.8	-0.368	7.88756	-0.01582	0.0000

pH - Continuous

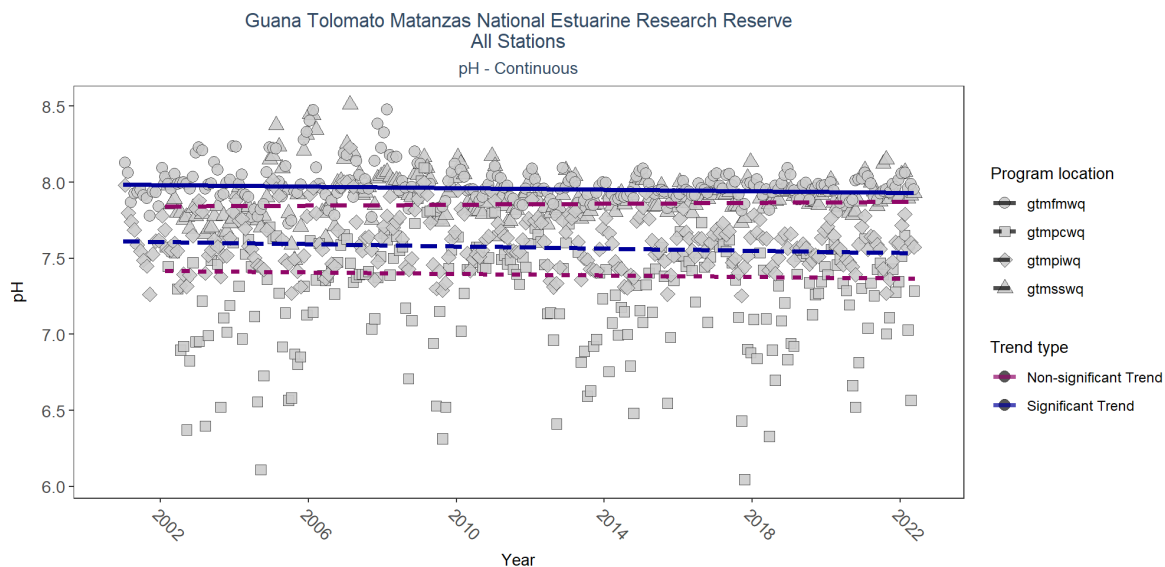


Table 12: Seasonal Kendall-Tau Results for All Stations - pH

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
gtmfsswq	No significant trend	551772	21	2002 - 2022	7.9	0.06	7.84	0	0.1882
gtmfmwq	Significantly decreasing trend	581432	22	2001 - 2022	8.0	-0.14	7.98	0	0.0025
gtmfpcwq	No significant trend	589314	21	2002 - 2022	7.4	-0.05	7.42	0	0.3107
gtmfpiwq	Significantly decreasing trend	572116	22	2001 - 2022	7.6	-0.15	7.61	0	0.0009

Water Clarity

Turbidity - Discrete

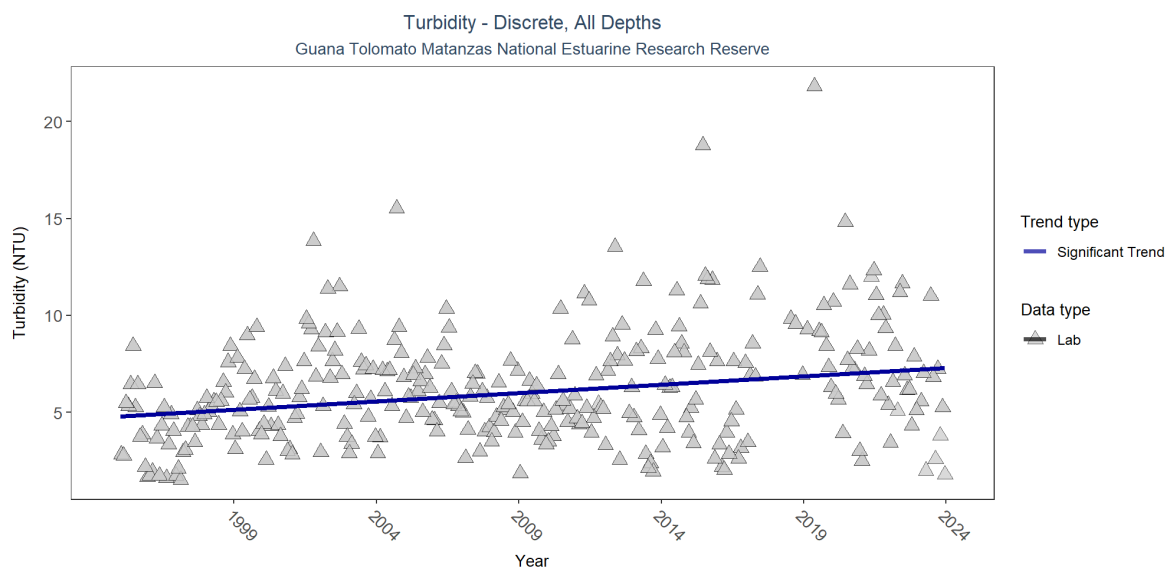


Table 13: Seasonal Kendall-Tau Results for - Turbidity

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	14653	29	1995 - 2023	4.45	0.2168	4.7832	0.08681	0.0000

Turbidity - Continuous

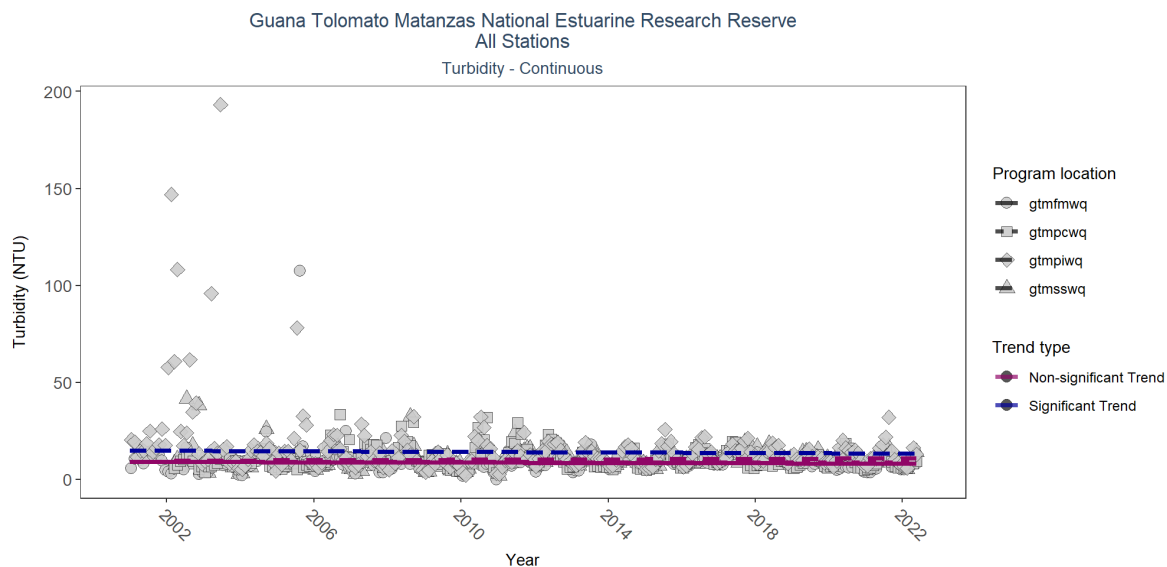


Table 14: Seasonal Kendall-Tau Results for All Stations - Turbidity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
gtmfsswq	No significant trend	548508	21	2002 - 2022	9	0.07	9.83	0.06	0.1350
gtmfmwq	No significant trend	588931	22	2001 - 2022	7	-0.06	9.04	-0.04	0.1966
gtmfpcwq	No significant trend	584674	21	2002 - 2022	9	-0.03	9.27	-0.02	0.6048
gtmfpiwq	Significantly decreasing trend	552290	22	2001 - 2022	10	-0.09	14.97	-0.07	0.0496

Total Suspended Solids - Discrete

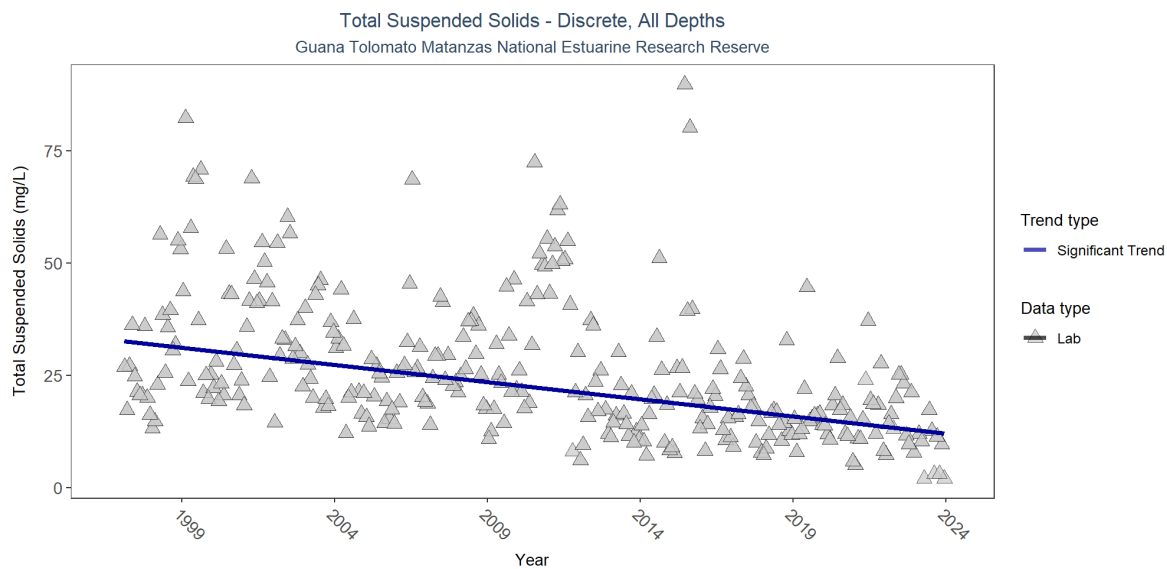


Table 15: Seasonal Kendall-Tau Results for - Total Suspended Solids

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly decreasing trend	4235	27	1997 - 2023	18	-0.4118	32.7174	-0.76545	0.0000

Chlorophyll a, Uncorrected for Pheophytin - Discrete

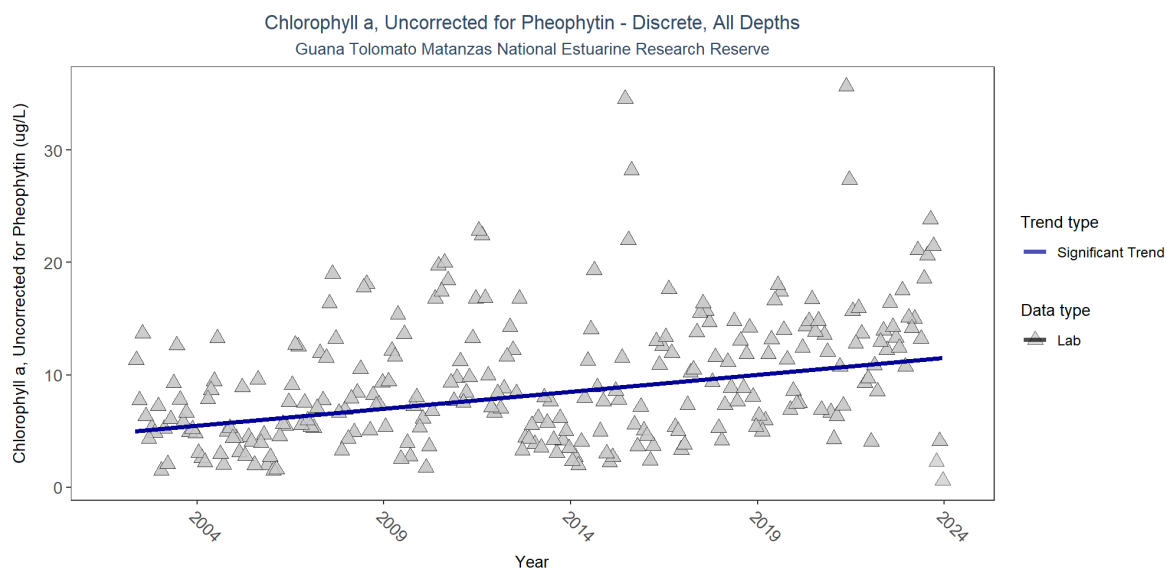


Table 16: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	5502	22	2002 - 2023	6.2	0.3047	4.89195	0.30044	0.0000

Chlorophyll a, Corrected for Pheophytin - Discrete

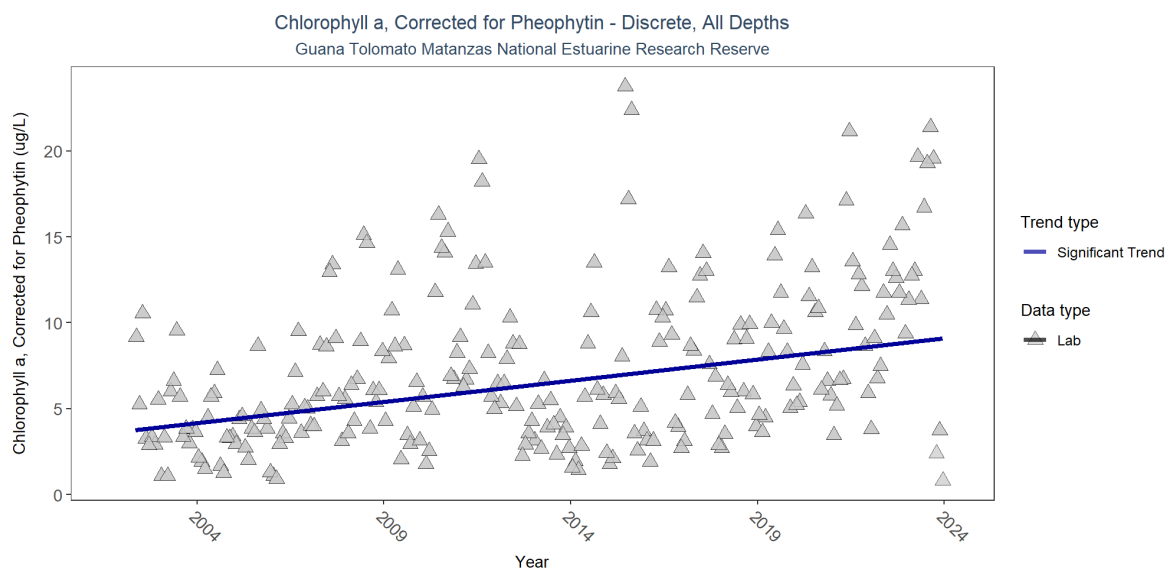


Table 17: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	7125	22	2002 - 2023	4.7	0.3319	3.65381	0.24752	0.0000

Secchi Depth - Discrete

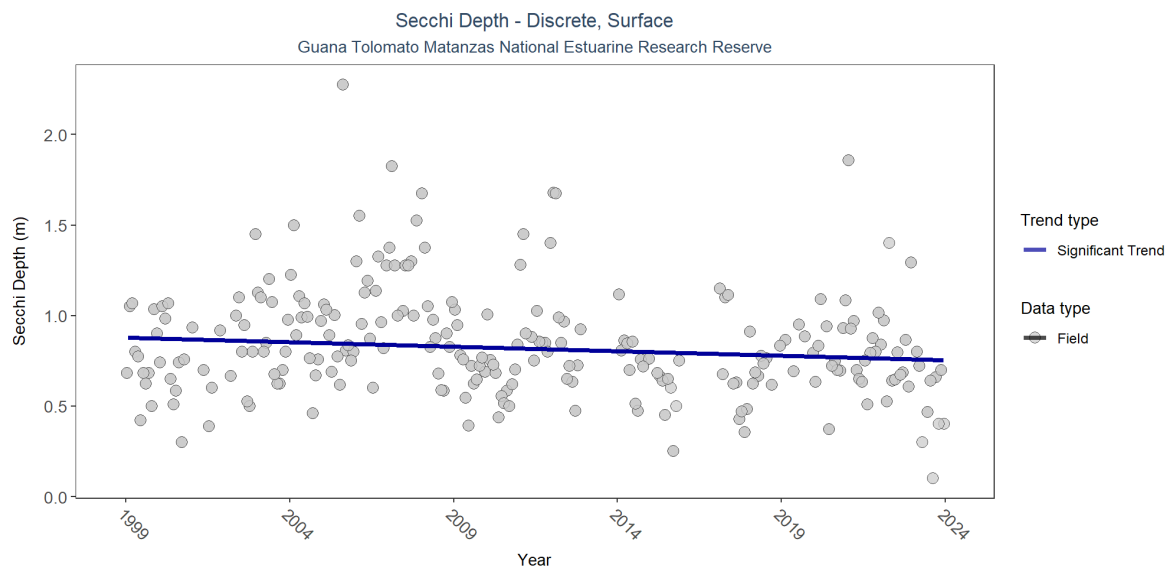


Table 18: Seasonal Kendall-Tau Results for - Secchi Depth

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Significantly decreasing trend	2713	23	1999 - 2023	0.8	-0.1426	0.88015	-0.00506	0.0031

Colored Dissolved Organic Matter - Discrete

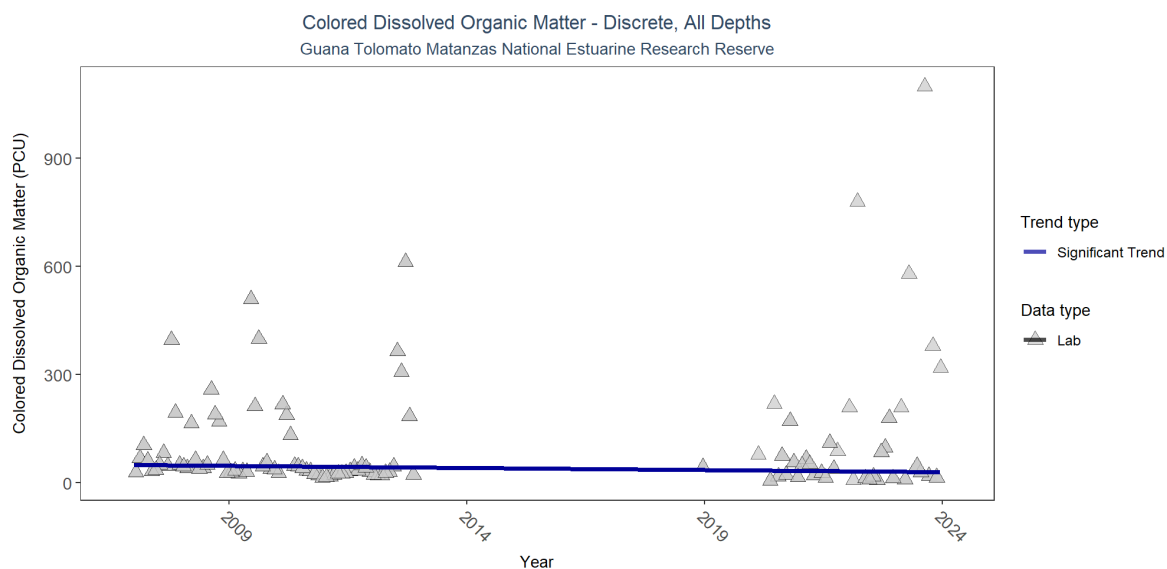


Table 19: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly decreasing trend	1483	11	2007 - 2023	38.2	-0.1617	49.06626	-1.16807	0.0368