

Matlacha Pass Aquatic Preserve

SEACAR Water Quality Analysis

Last compiled on 09 January, 2025

Contents

Indicators	2
Nutrients	2
Total Nitrogen - Discrete	2
Total Phosphorus - Discrete	3
Water Quality	4
Dissolved Oxygen - Discrete	4
Dissolved Oxygen - Continuous	5
Dissolved Oxygen Saturation - Discrete	6
Dissolved Oxygen Saturation - Continuous	7
Salinity - Discrete	8
Salinity - Continuous	9
Water Temperature - Discrete	10
Water Temperature - Continuous	11
pH - Discrete	12
pH - Continuous	13
Water Clarity	14
Turbidity - Discrete	14
Turbidity - Continuous	15
Total Suspended Solids - Discrete	16
Chlorophyll a, Uncorrected for Pheophytin - Discrete	17
Chlorophyll a, Corrected for Pheophytin - Discrete	18
Secchi Depth - Discrete	19
Colored Dissolved Organic Matter - Discrete	20

Indicators

Nutrients

Total Nitrogen - Discrete

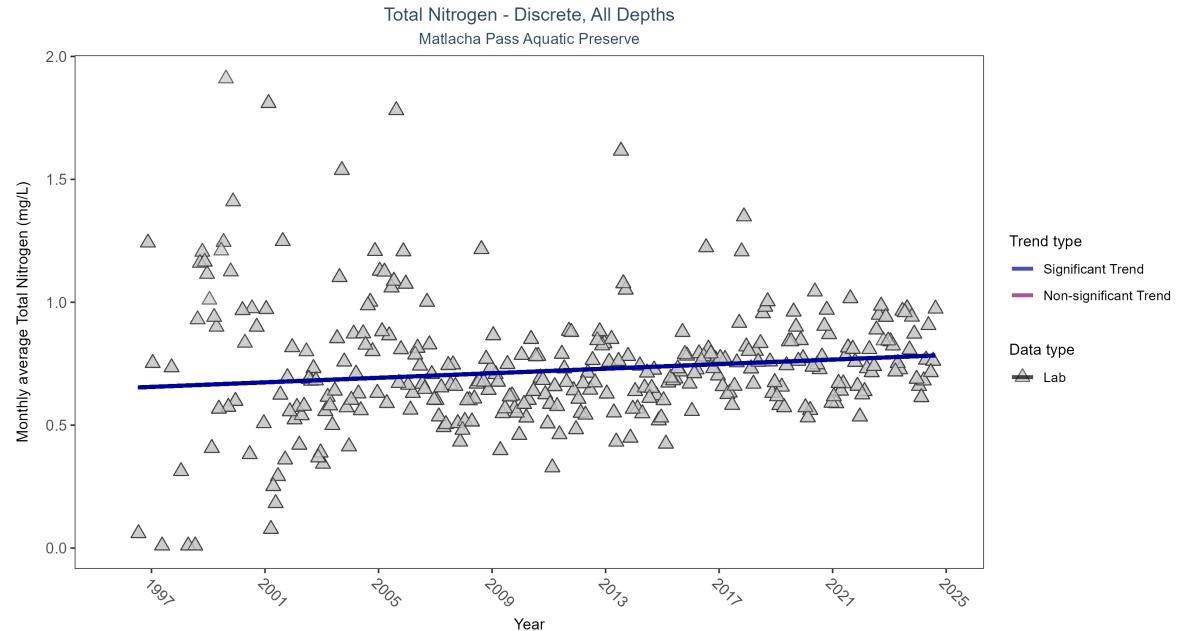


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	2020	29	1996 - 2024	0.7045	0.1357	0.65106	0.00463	0.0007

Total Phosphorus - Discrete

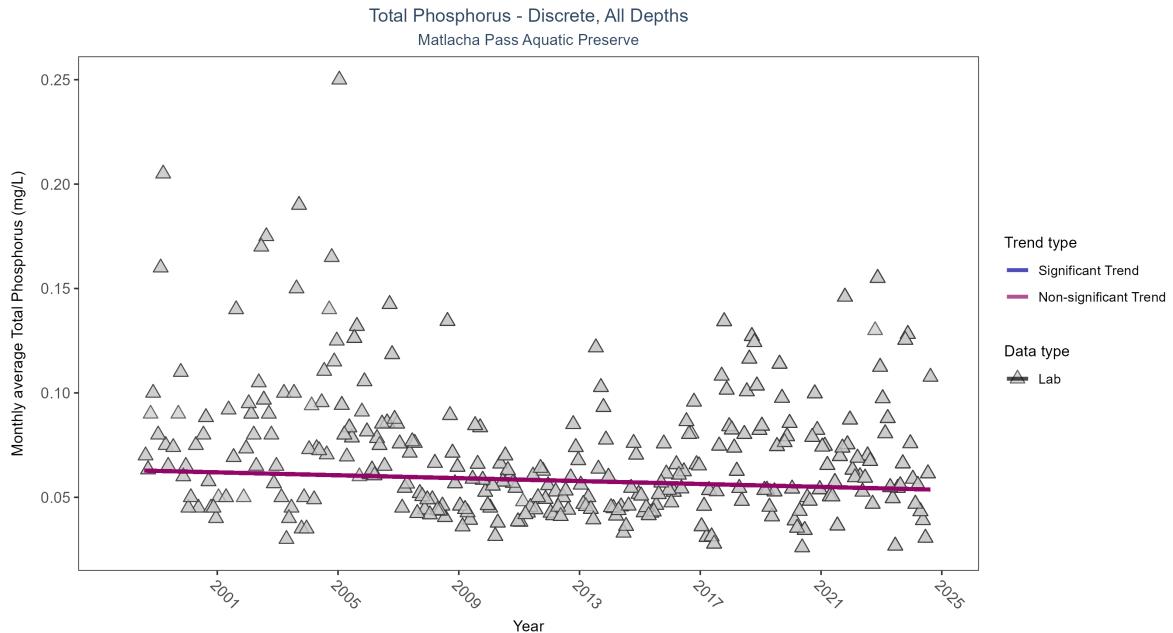


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	No significant trend	1861	27	1998 - 2024	0.059	-0.0703	0.063	-0.00035	0.0956

Water Quality

Dissolved Oxygen - Discrete

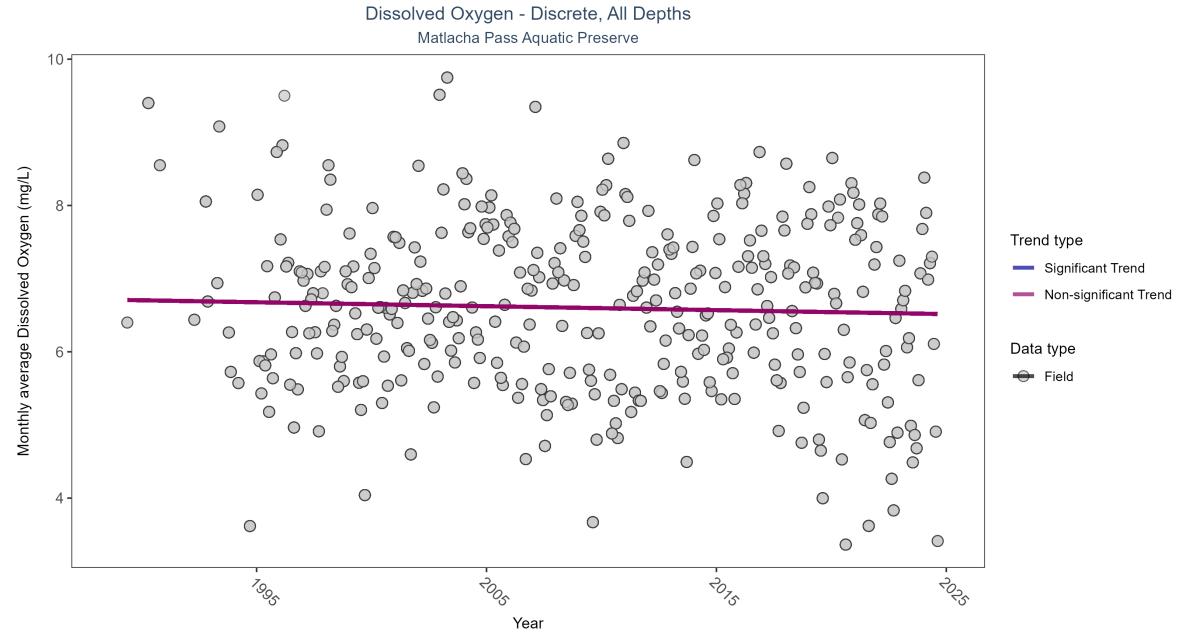


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	No significant trend	11391	35	1989 - 2024	6.6	-0.0357	6.7093	-0.00539	0.3277

Dissolved Oxygen - Continuous

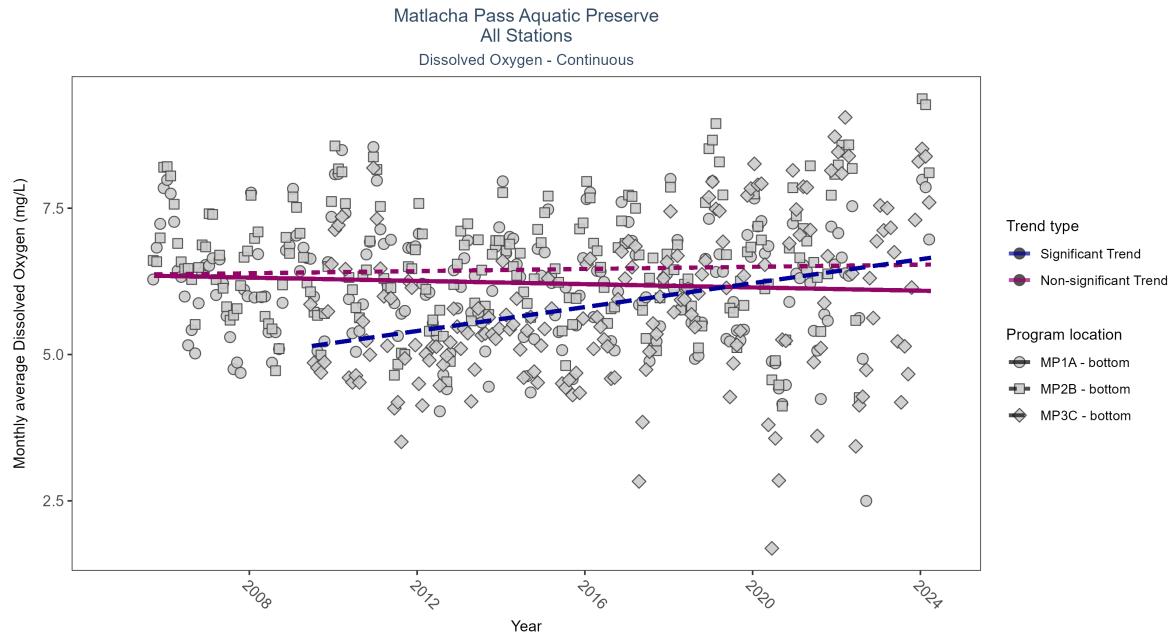


Table 4: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
MP1A	No significant trend	537345	19	2005 - 2024	6.3	-0.08	6.36	-0.01	0.1503
MP2B	No significant trend	551766	19	2005 - 2024	6.7	0.05	6.36	0.01	0.2580
MP3C	Significantly increasing trend	471277	16	2009 - 2024	5.9	0.30	5.10	0.10	0.0000

Dissolved Oxygen Saturation - Discrete

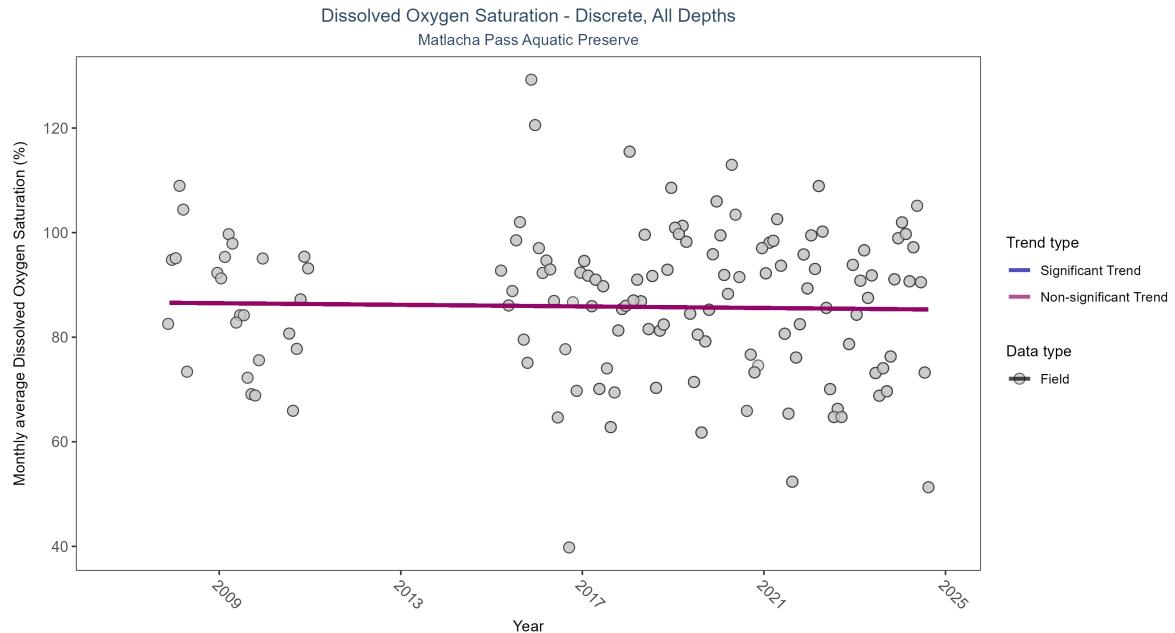


Table 5: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	No significant trend	1161	14	2007 - 2024	89.5	-0.0293	86.65	-0.07616	0.6976

Dissolved Oxygen Saturation - Continuous

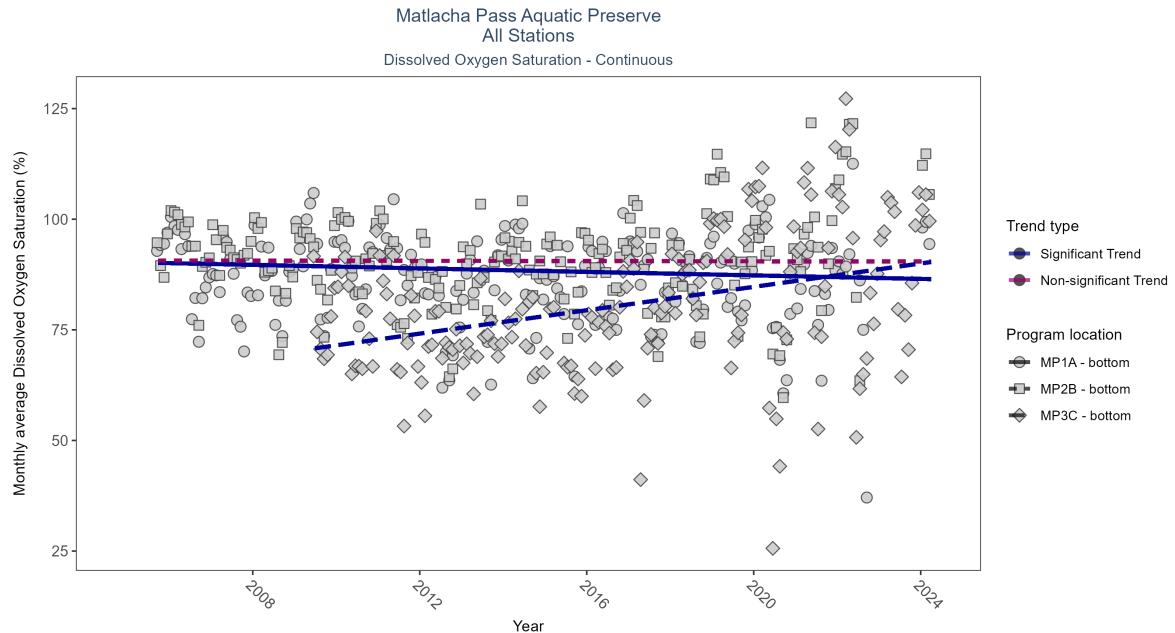


Table 6: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen Saturation

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
MP1A	Significantly decreasing trend	534707	19	2005 - 2024	88.1	-0.13	90.27	-0.20	0.0119
MP2B	No significant trend	552066	19	2005 - 2024	91.4	-0.01	90.69	-0.01	0.8690
MP3C	Significantly increasing trend	472618	16	2009 - 2024	81.4	0.29	70.18	1.32	0.0000

Salinity - Discrete

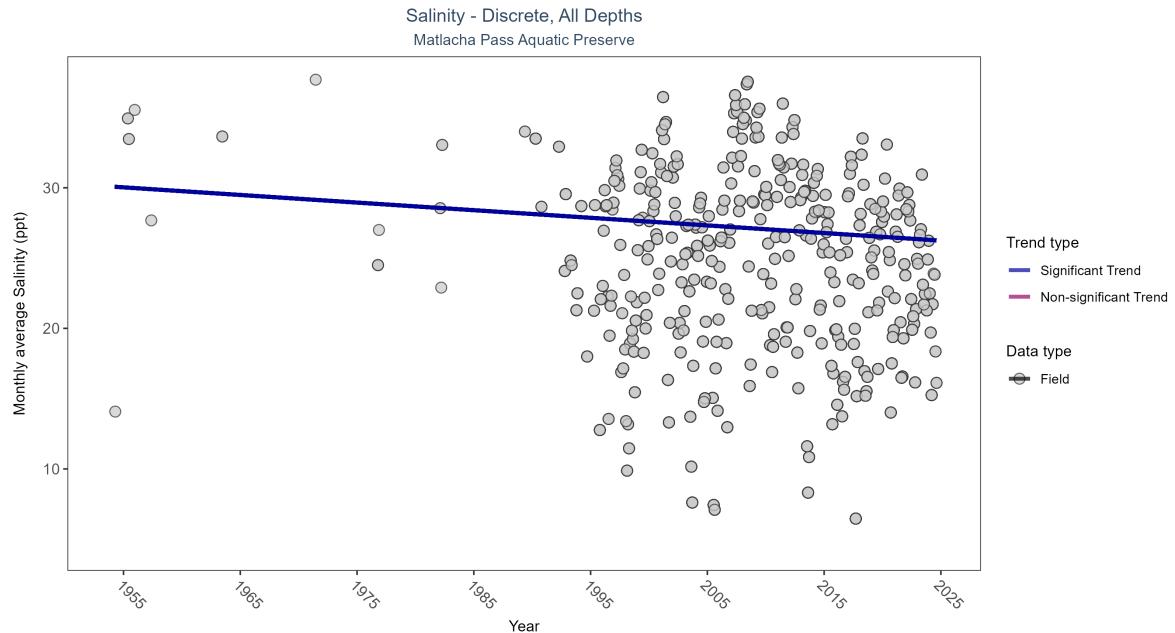


Table 7: Seasonal Kendall-Tau Results for - Salinity

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
All	Significantly decreasing trend	10640	42	1954 - 2024	25.9	-0.0715	30.08551	-0.05414	0.0458

Salinity - Continuous

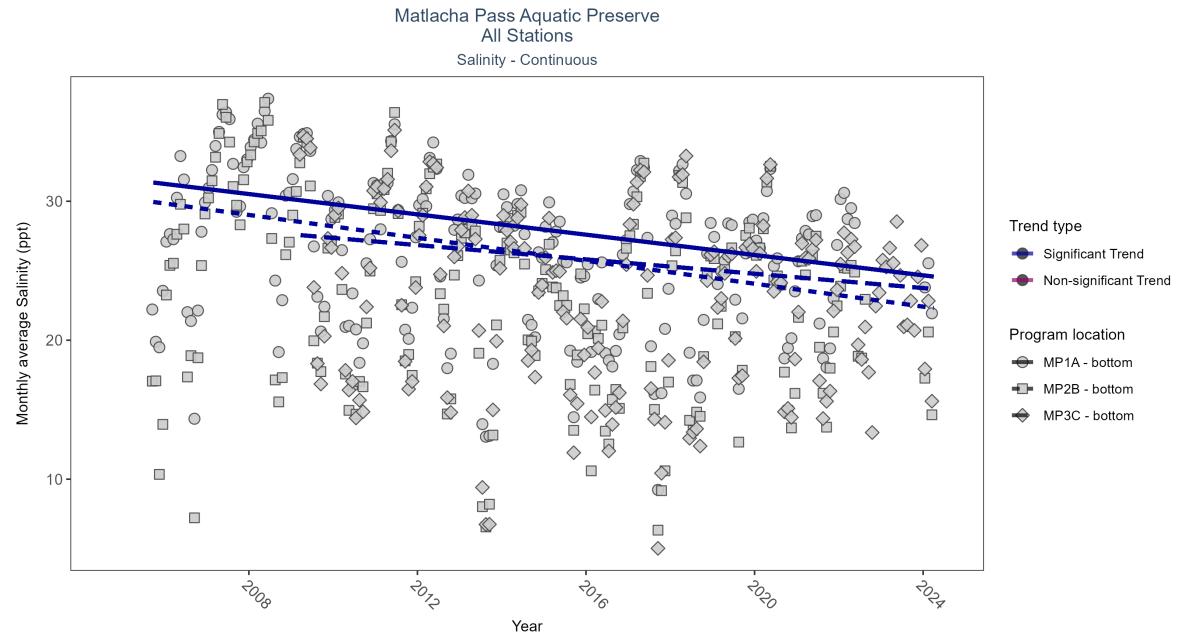


Table 8: Seasonal Kendall-Tau Results for All Stations - Salinity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
MP1A	Significantly decreasing trend	549083	19	2005 - 2024	27.2	-0.34	31.61	-0.37	0.0000
MP2B	Significantly decreasing trend	571733	19	2005 - 2024	24.5	-0.34	30.25	-0.41	0.0000
MP3C	Significantly decreasing trend	496732	16	2009 - 2024	23.8	-0.19	27.62	-0.26	0.0007

Water Temperature - Discrete

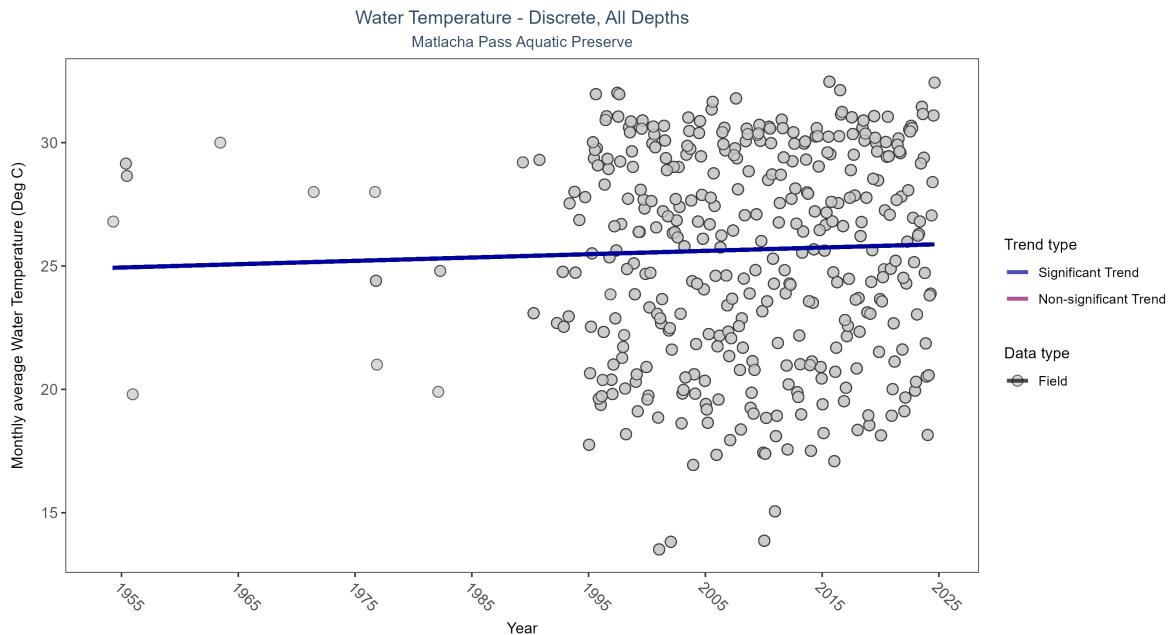


Table 9: Seasonal Kendall-Tau Results for - Water Temperature

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Significantly increasing trend	11632	41	1954 - 2024	26.1	0.0709	24.92423	0.01349	0.0493

Water Temperature - Continuous

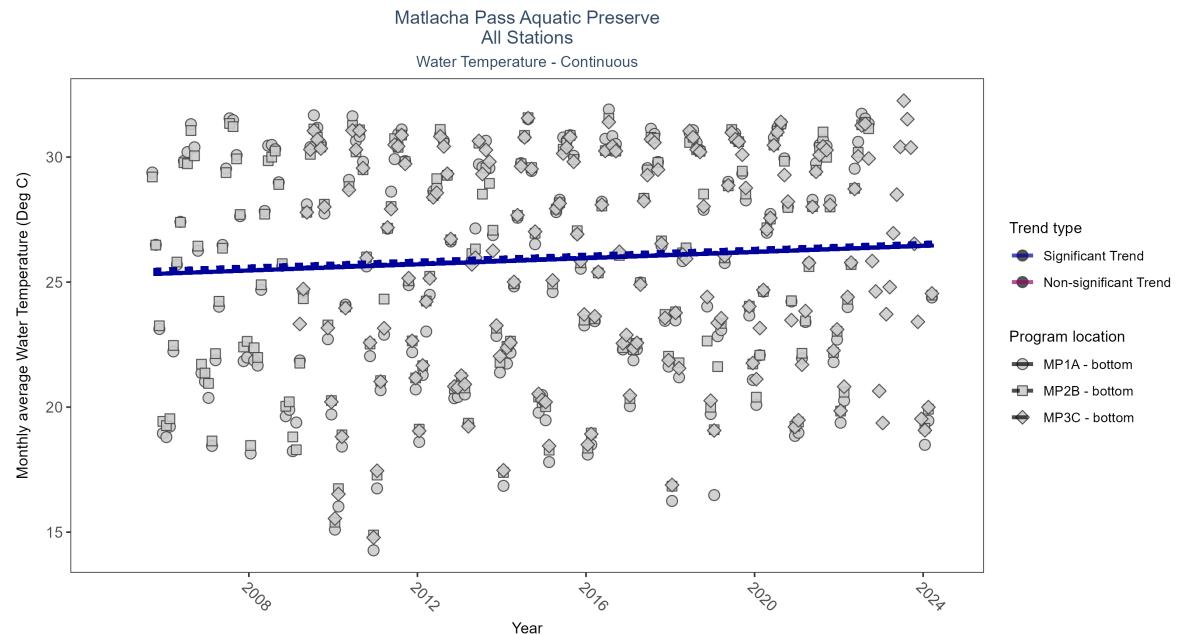


Table 10: Seasonal Kendall-Tau Results for All Stations - Water Temperature

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
MP1A	Significantly increasing trend	582266	19	2005 - 2024	26.2	0.24	25.28	0.06	0.0000
MP2B	Significantly increasing trend	580422	19	2005 - 2024	26.1	0.21	25.44	0.06	0.0001
MP3C	Significantly increasing trend	500679	16	2009 - 2024	26.4	0.19	25.56	0.06	0.0005

pH - Discrete

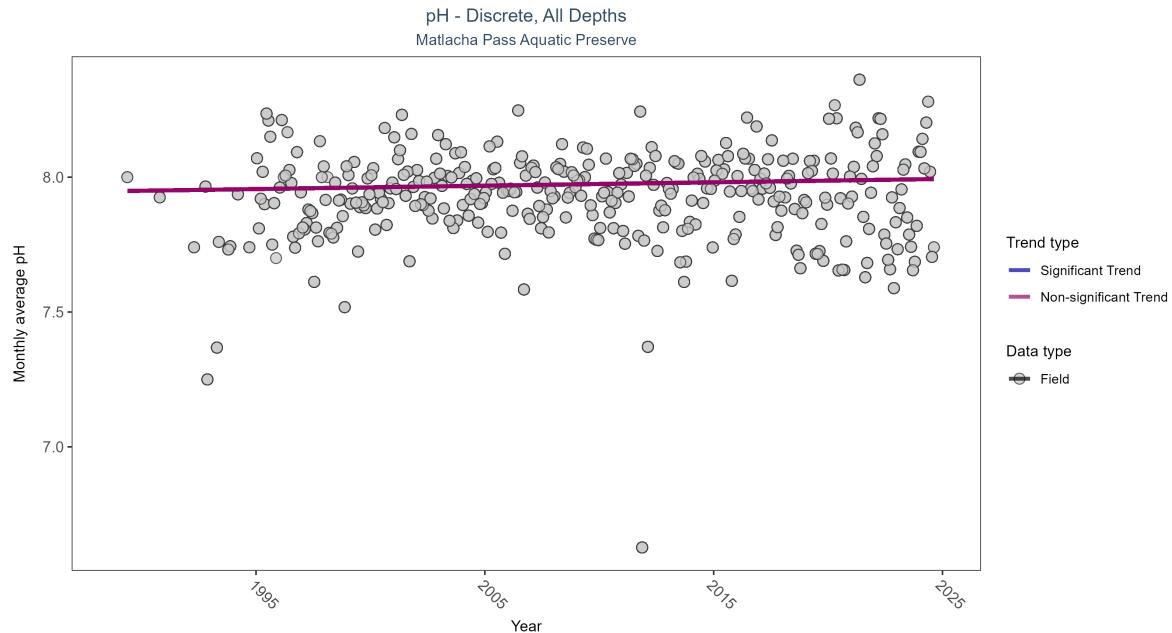


Table 11: Seasonal Kendall-Tau Results for - pH

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	No significant trend	10750	35	1989 - 2024	7.93	0.0371	7.94838	0.00125	0.2548

pH - Continuous

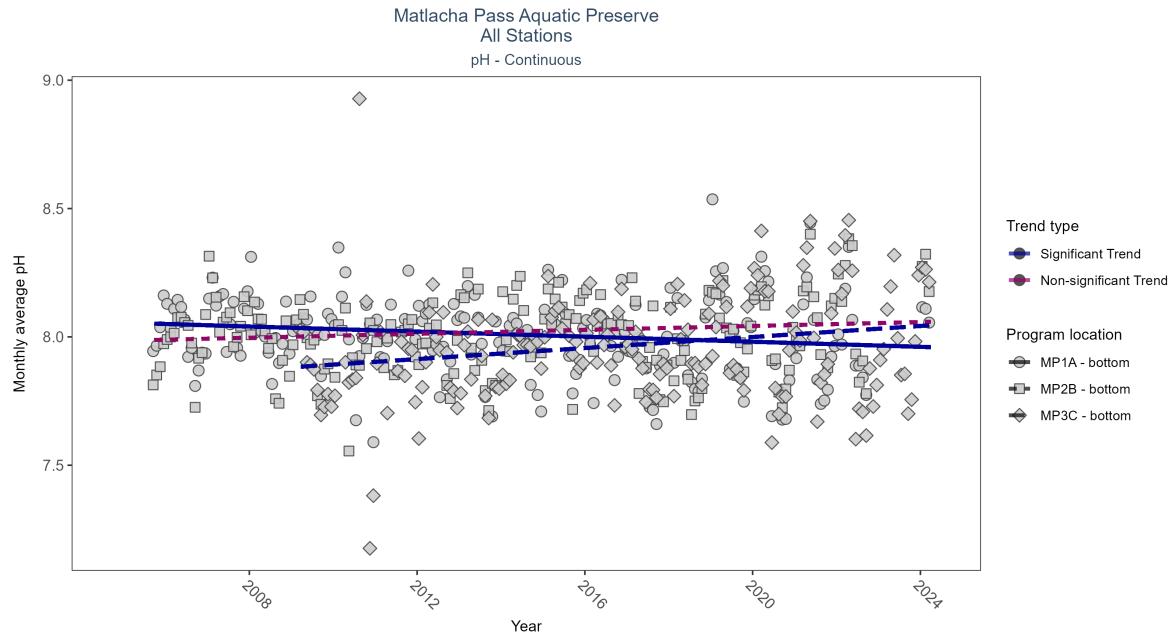


Table 12: Seasonal Kendall-Tau Results for All Stations - pH

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
MP1A	Significantly decreasing trend	500871	19	2005 - 2024	8	-0.14	8.06	0.00	0.0070
MP2B	No significant trend	517803	19	2005 - 2024	8	0.08	7.99	0.00	0.0922
MP3C	Significantly increasing trend	438695	16	2009 - 2024	8	0.18	7.88	0.01	0.0020

Water Clarity

Turbidity - Discrete

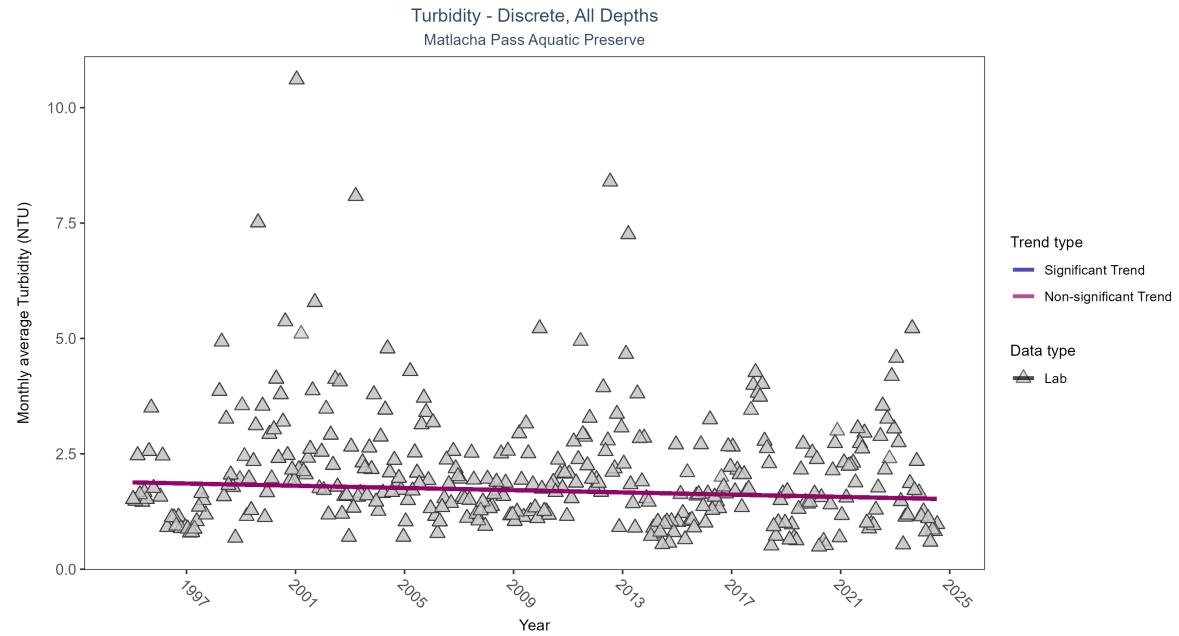


Table 13: Seasonal Kendall-Tau Results for - Turbidity

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	No significant trend	3398	30	1995 - 2024	1.69	-0.0659	1.88133	-0.01207	0.0632

Turbidity - Continuous

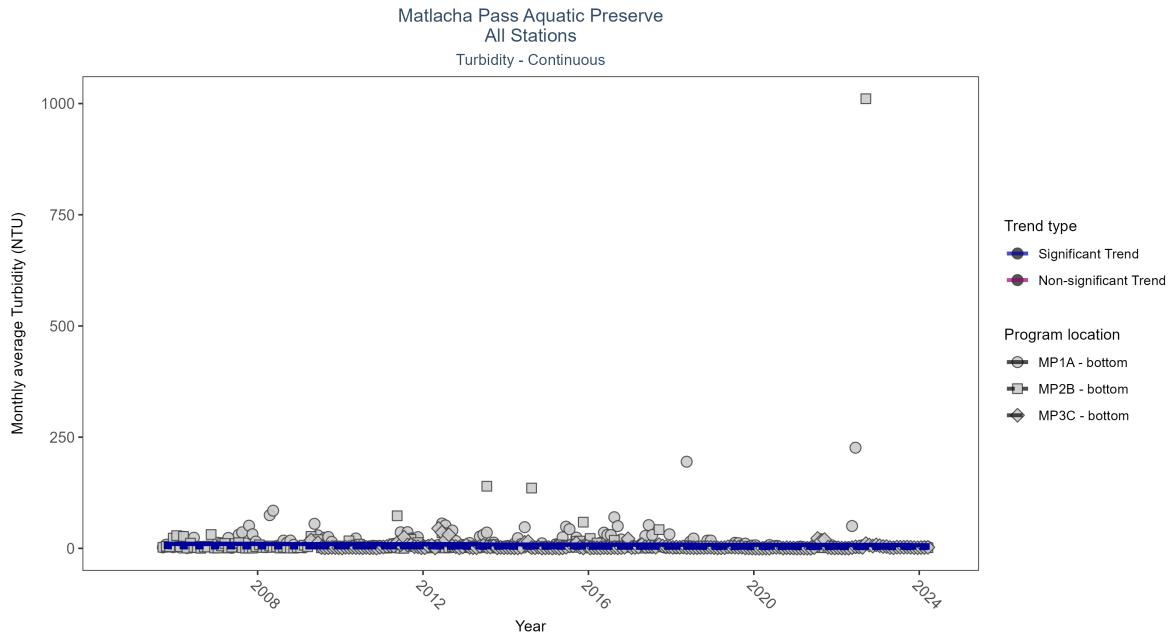


Table 14: Seasonal Kendall-Tau Results for All Stations - Turbidity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
MP1A	Significantly decreasing trend	441988	19	2005 - 2024	2	-0.14	10.27	-0.16	0.0043
MP3C	Significantly decreasing trend	431944	16	2009 - 2024	1	-0.12	2.42	-0.06	0.0369
MP2B	Significantly decreasing trend	498228	19	2005 - 2024	1	-0.23	2.93	-0.13	0.0000

Total Suspended Solids - Discrete

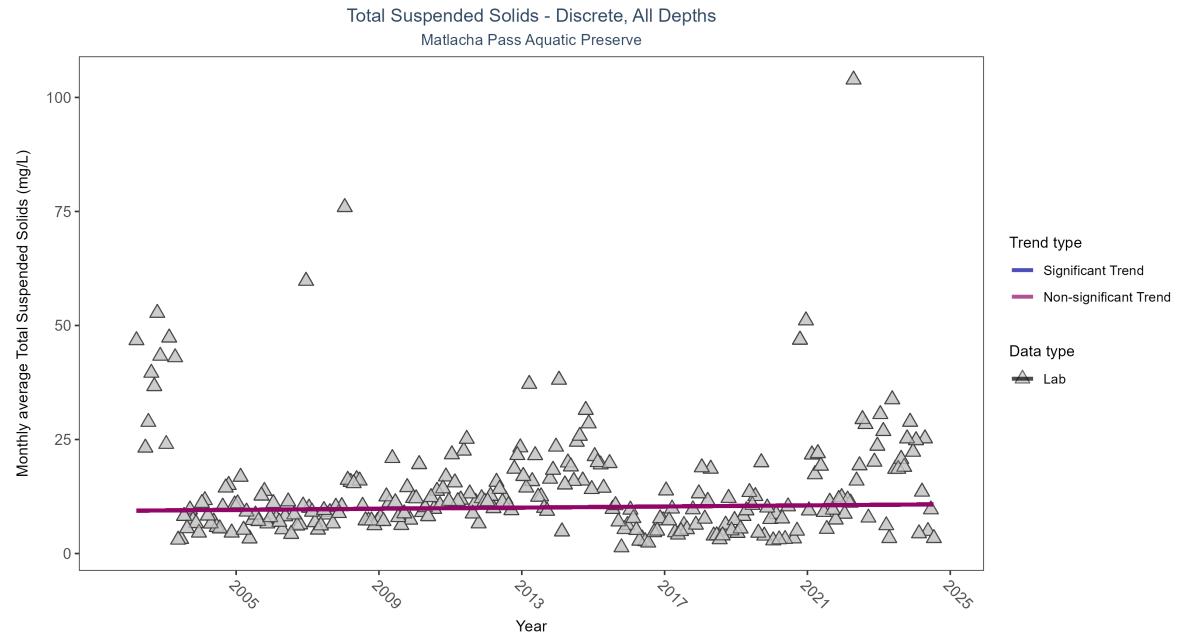


Table 15: Seasonal Kendall-Tau Results for - Total Suspended Solids

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	No significant trend	1753	23	2002 - 2024	9	0.0377	9.3878	0.06157	0.4173

Chlorophyll a, Uncorrected for Pheophytin - Discrete

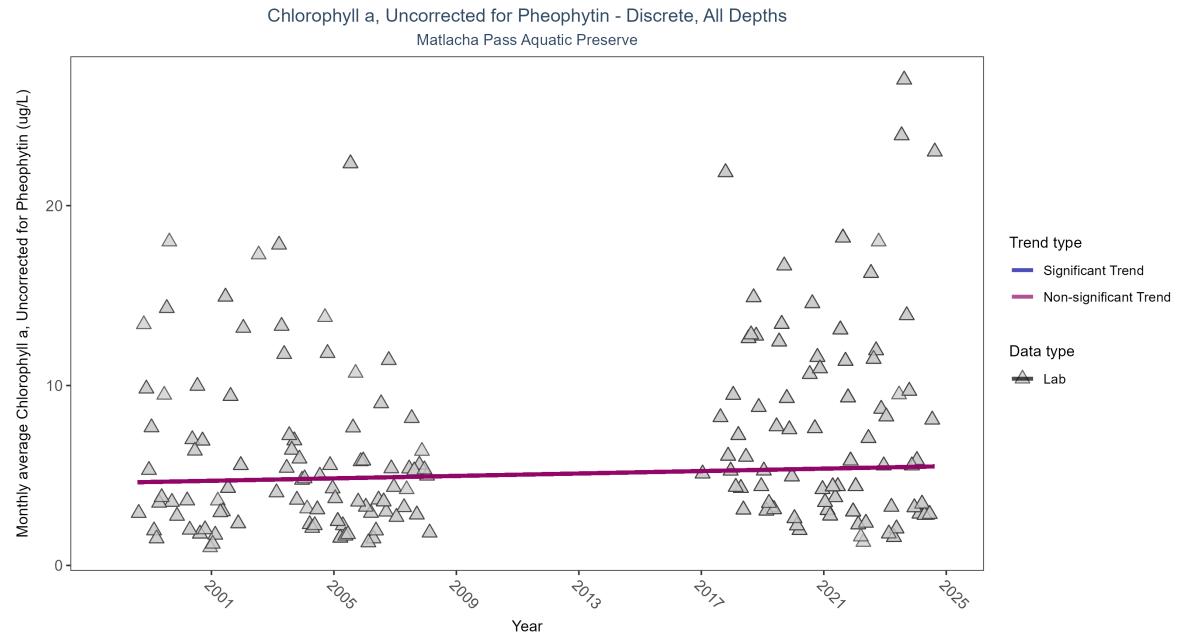


Table 16: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	No significant trend	598	19	1998 - 2024	4.675	0.0968	4.60397	0.03375	0.0734

Chlorophyll a, Corrected for Pheophytin - Discrete

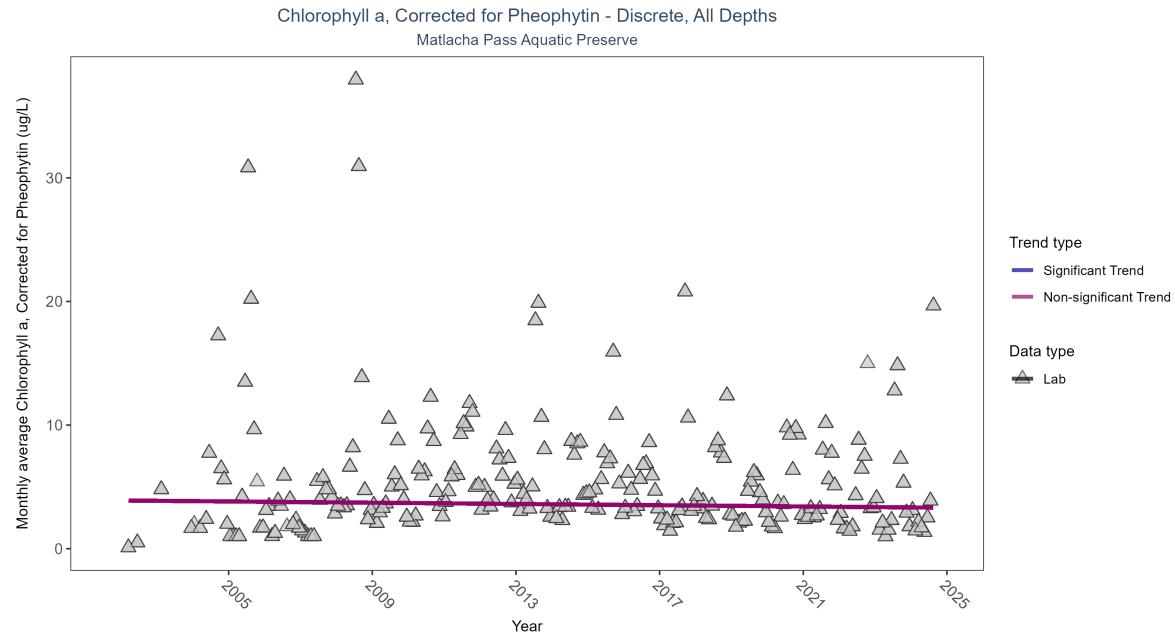


Table 17: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	No significant trend	1939	23	2002 - 2024	3.4	-0.0489	3.89782	-0.02547	0.2732

Secchi Depth - Discrete

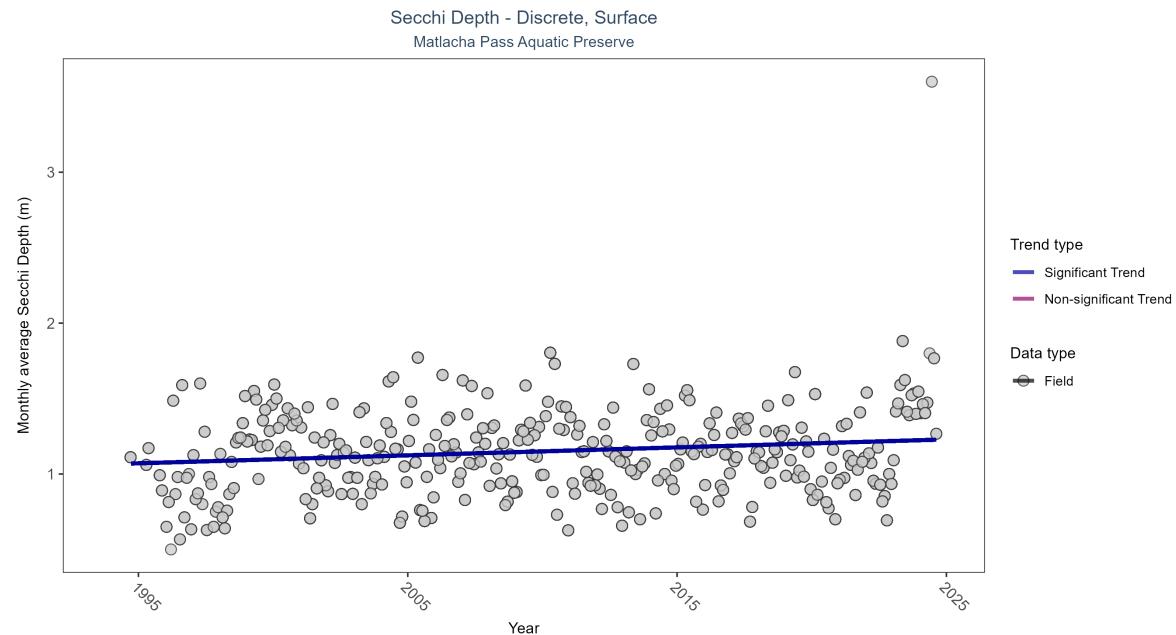


Table 18: Seasonal Kendall-Tau Results for - Secchi Depth

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Significantly increasing trend	6497	31	1994 - 2024	1	0.104	1.06555	0.00528	0.0060

Colored Dissolved Organic Matter - Discrete

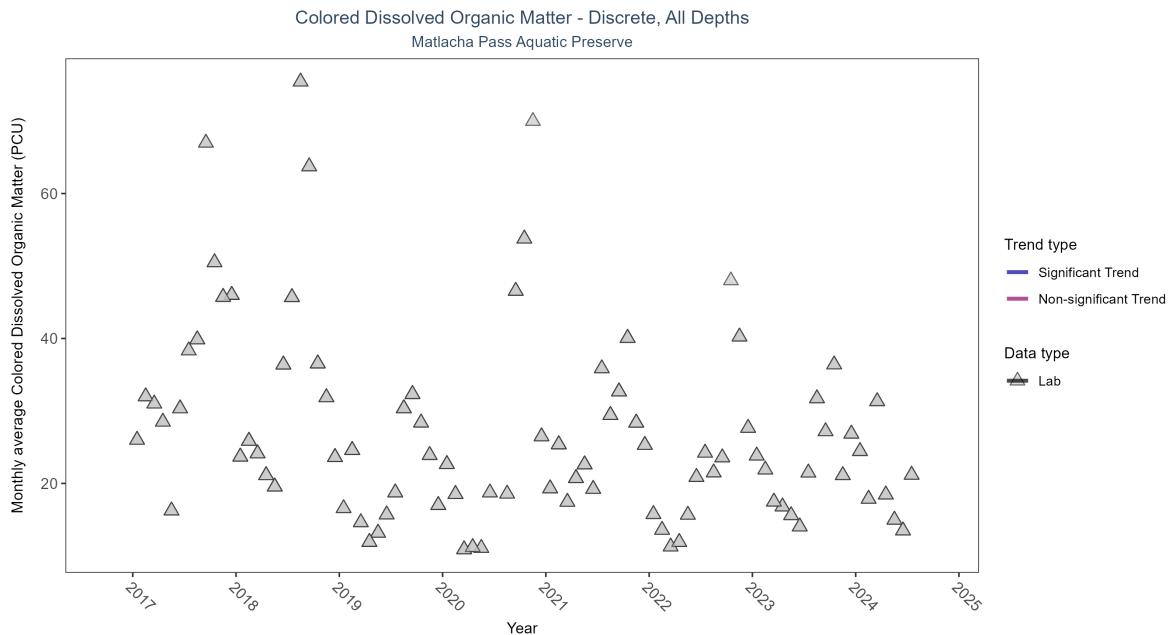


Table 19: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Insufficient data to calculate trend	493	8	2017 - 2024	25	-	-	-	NA