

Biscayne Bay Aquatic Preserve

SEACAR Water Quality Analysis

Last compiled on 27 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

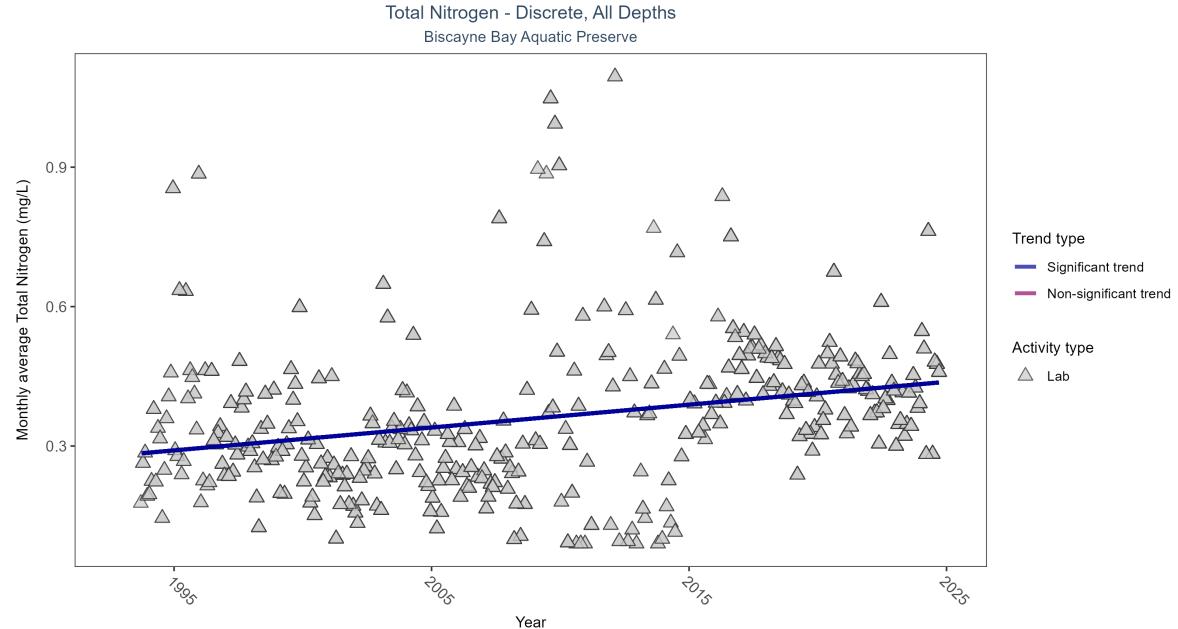


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

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	7878	32	1993 - 2024	0.334	0.2323	0.28075	0.00492	0.0000

Total Phosphorus - Discrete

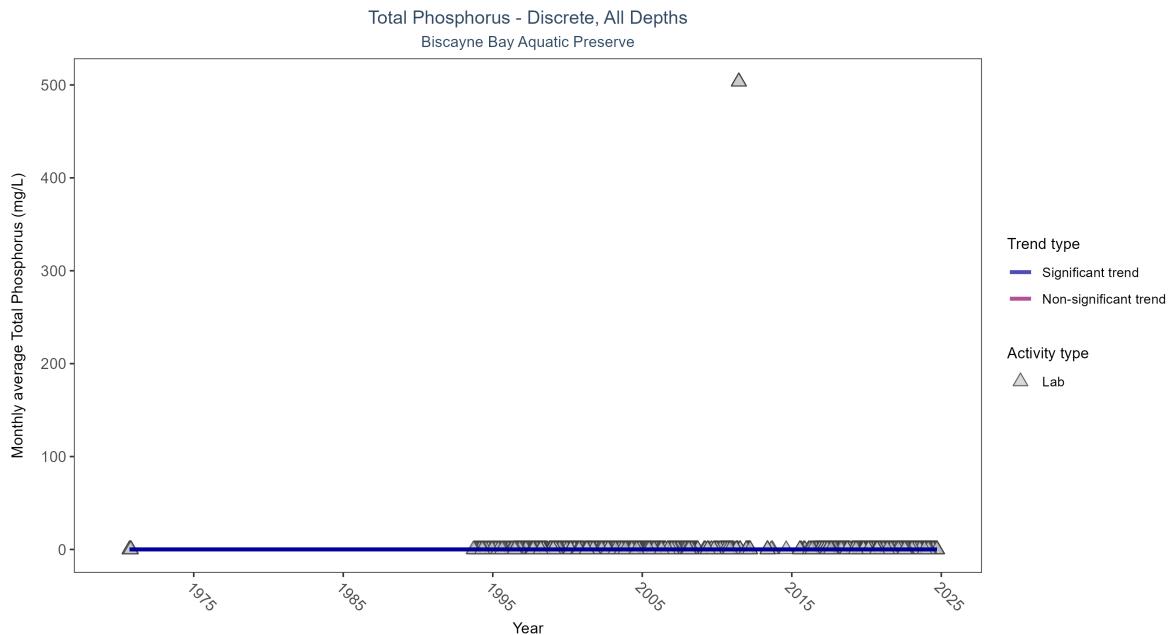


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Significantly increasing trend	7984	33	1970 - 2024	0.0091	0.3644	-0.00188	0.00027	0.0000

Water Quality

Dissolved Oxygen - Discrete

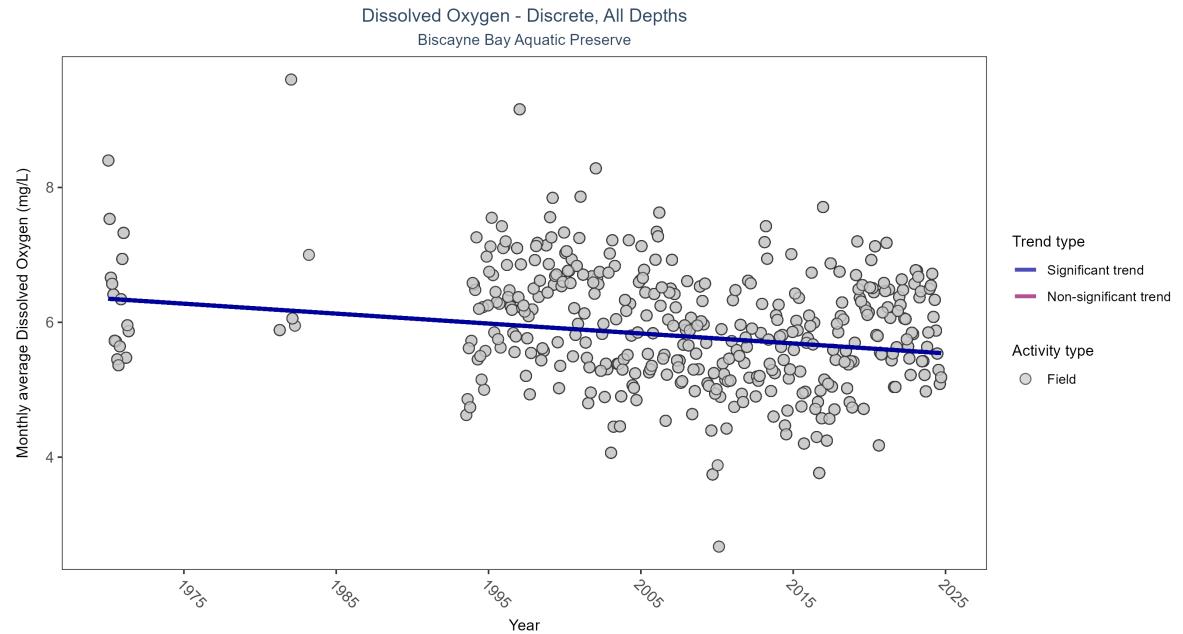


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

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	21842	37	1970 - 2024	6.01	-0.2043	6.34998	-0.01474	0.0000

Dissolved Oxygen - Continuous

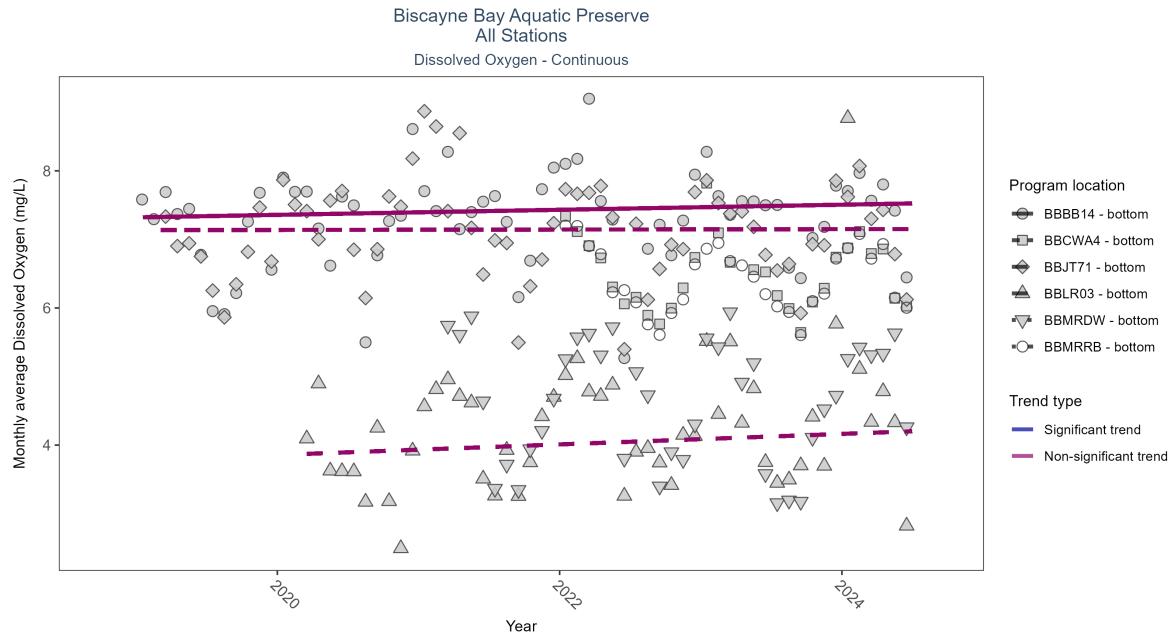


Table 4: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
BBBB14	No significant trend	165484	6	2019 - 2024	7.3	0.11	7.32	0.04	0.3541
BBCWA4	Insufficient data to calculate trend	80195	3	2022 - 2024	6.5	-	-	-	-
BBJT71	No significant trend	183864	6	2019 - 2024	7.0	0.02	7.14	0	0.9492
BBLR03	No significant trend	139179	5	2020 - 2024	4.2	0.16	3.86	0.08	0.3456
BBMRDW	Insufficient data to calculate trend	107490	4	2021 - 2024	4.7	-	-	-	-
BBMRRB	Insufficient data to calculate trend	84769	3	2022 - 2024	6.4	-	-	-	-

Dissolved Oxygen Saturation - Discrete

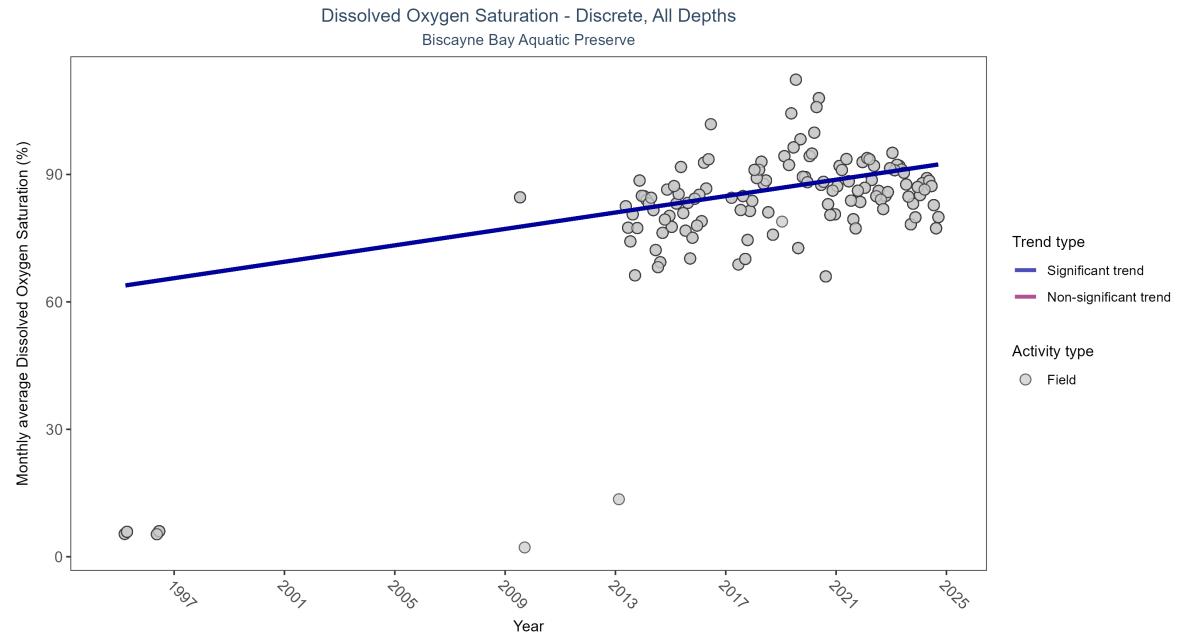


Table 5: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Field	Significantly increasing trend	9941	15	1995 - 2024	90.3	0.3164	63.65064	0.9663	0.0000

Dissolved Oxygen Saturation - Continuous

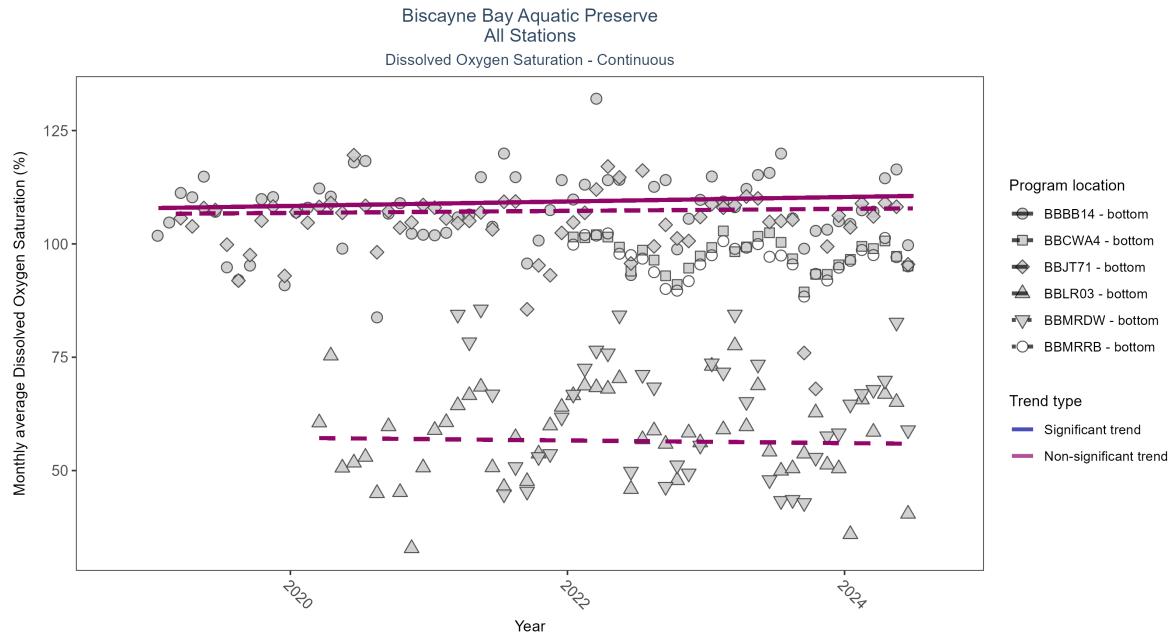


Table 6: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen Saturation

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
BBBB14	No significant trend	165224	6	2019 - 2024	105.1	0.15	107.88	0.49	0.1945
BBCWA4	Insufficient data to calculate trend	83918	3	2022 - 2024	97.5	-	-	-	-
BBJT71	No significant trend	185015	6	2019 - 2024	102.0	0.07	106.61	0.22	0.5666
BBLR03	No significant trend	139178	5	2020 - 2024	57.3	-0.01	57.22	-0.29	0.9317
BBMRDW	Insufficient data to calculate trend	107491	4	2021 - 2024	61.5	-	-	-	-
BBMRRB	Insufficient data to calculate trend	84777	3	2022 - 2024	96.1	-	-	-	-

Salinity - Discrete

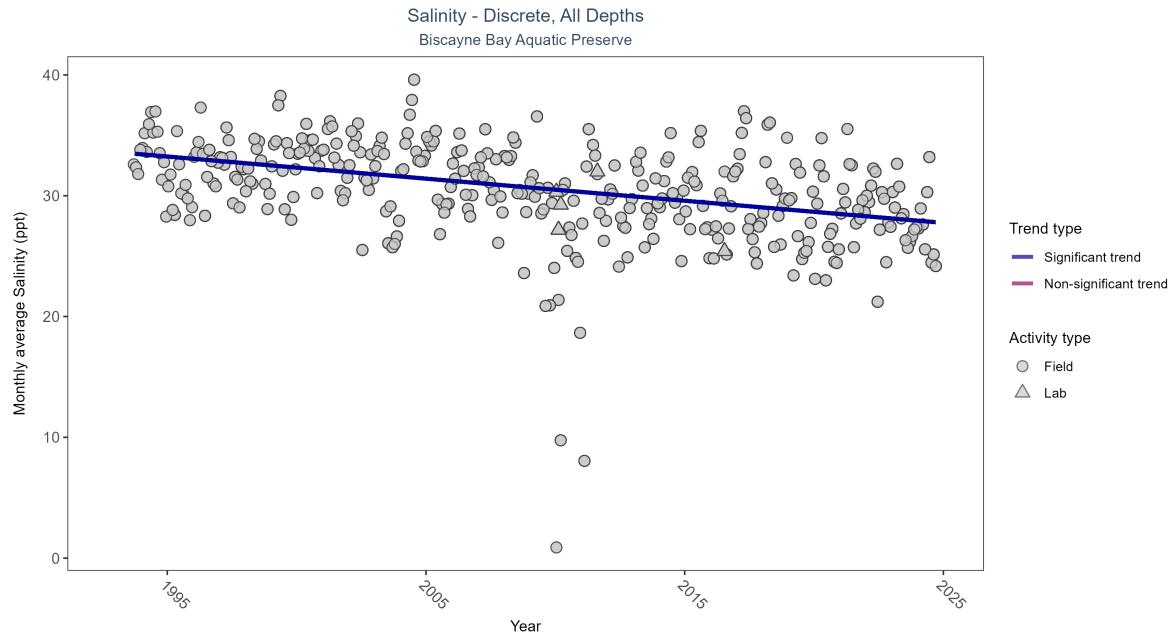


Table 7: Seasonal Kendall-Tau Results for - Salinity

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	23942	32	1993 - 2024		32	-0.4146	33.61132	-0.18304	0.0000

Salinity - Continuous

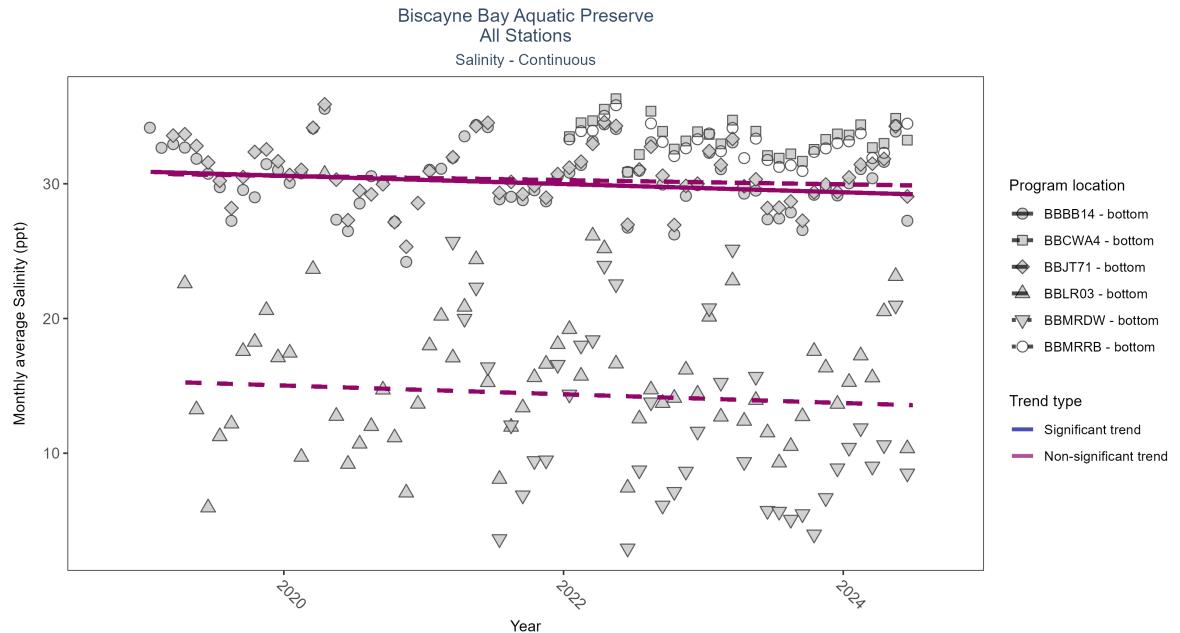


Table 8: Seasonal Kendall-Tau Results for All Stations - Salinity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
BBBB14	No significant trend	155098	6	2019 - 2024	30.3	-0.22	30.9	-0.31	0.0902
BBCWA4	Insufficient data to calculate trend	78310	3	2022 - 2024	33.6	-	-	-	-
BBJT71	No significant trend	170100	6	2019 - 2024	31.0	-0.11	30.75	-0.16	0.3528
BBLR03	No significant trend	159176	6	2019 - 2024	16.9	-0.14	15.35	-0.32	0.2966
BBMRDW	Insufficient data to calculate trend	105619	4	2021 - 2024	10.2	-	-	-	-
BBMRRB	Insufficient data to calculate trend	84777	3	2022 - 2024	33.1	-	-	-	-

Water Temperature - Discrete

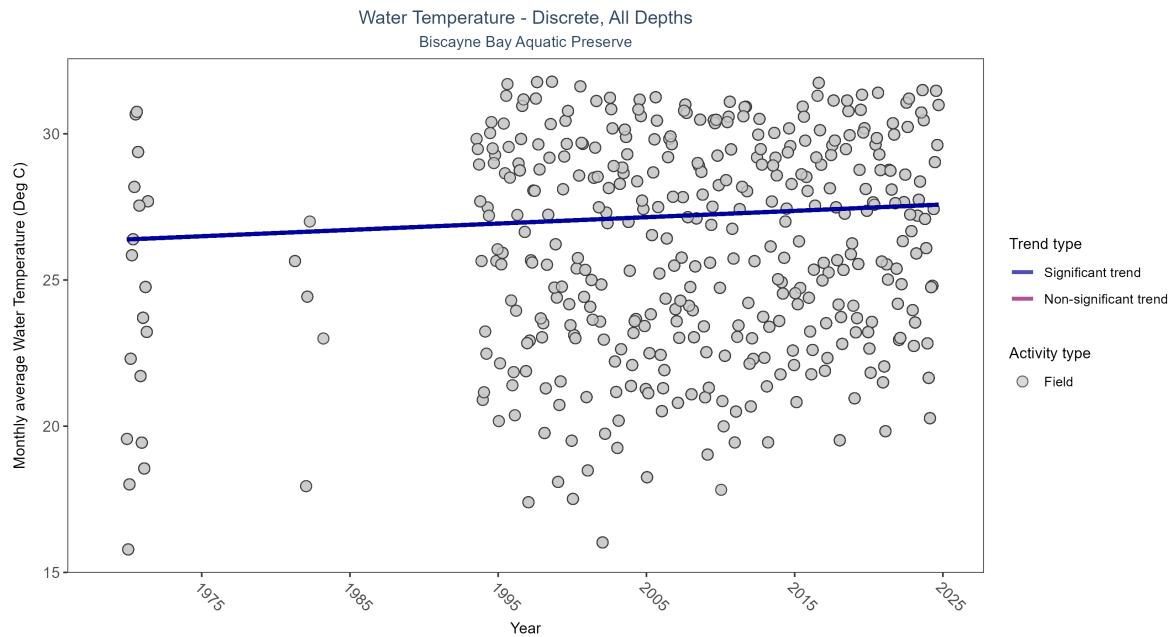


Table 9: Seasonal Kendall-Tau Results for - Water Temperature

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	25790	38	1969 - 2024	27	0.1371	26.36647	0.0217	0.0001

Water Temperature - Continuous

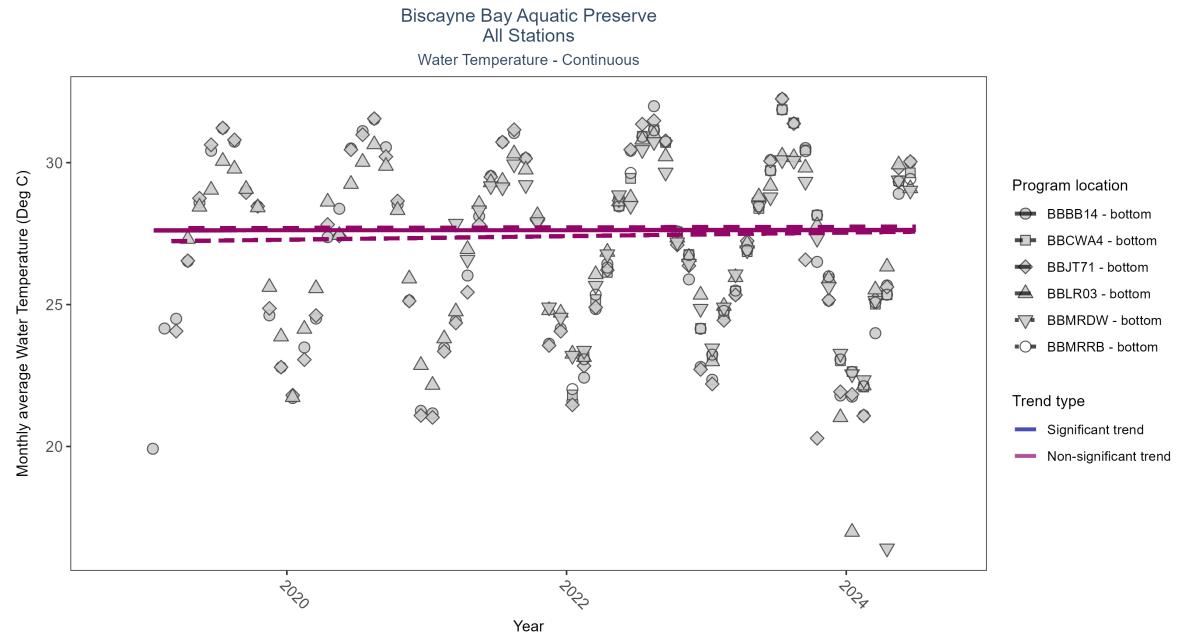


Table 10: Seasonal Kendall-Tau Results for All Stations - Water Temperature

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
BBBB14	No significant trend	165596	6	2019 - 2024	27.0	0.02	27.62	0	0.9507
BBCWA4	Insufficient data to calculate trend	84863	3	2022 - 2024	26.9	-	-	-	-
BBJT71	No significant trend	185367	6	2019 - 2024	27.2	0.05	27.22	0.06	0.6558
BBLR03	No significant trend	165445	6	2019 - 2024	27.7	0	27.69	0.01	1.0000
BBMRDW	Insufficient data to calculate trend	107502	4	2021 - 2024	27.5	-	-	-	-
BBMRRB	Insufficient data to calculate trend	85585	3	2022 - 2024	27.0	-	-	-	-

pH - Discrete

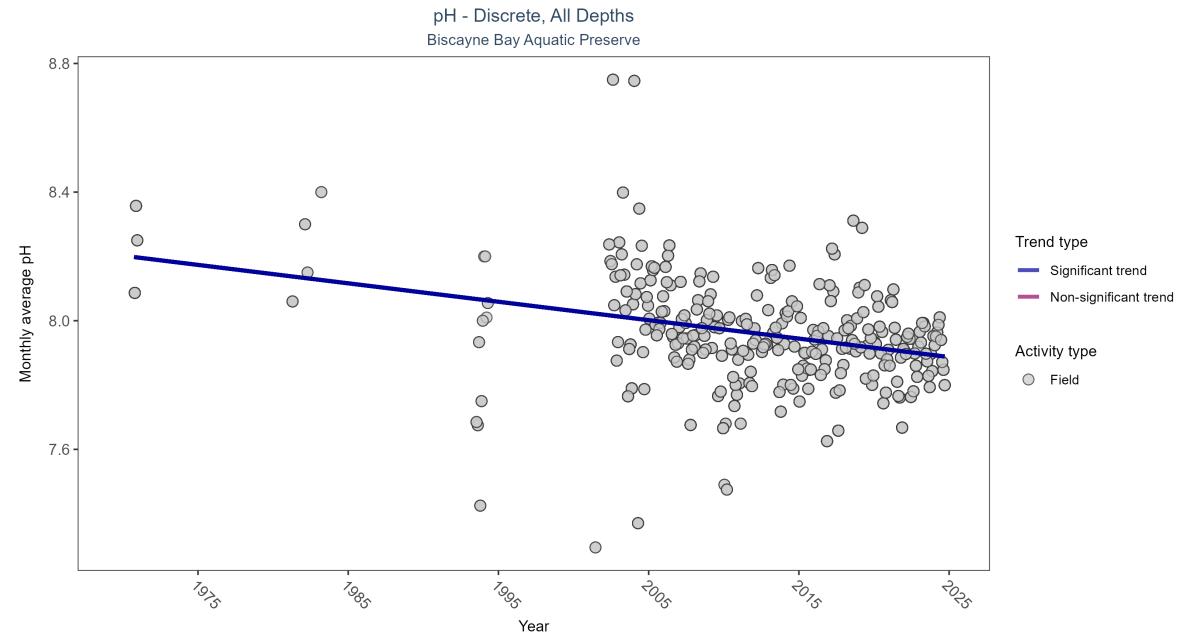


Table 11: Seasonal Kendall-Tau Results for - pH

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	18131	30	1970 - 2024	7.96	-0.2897	8.20226	-0.00573	0.0000

pH - Continuous

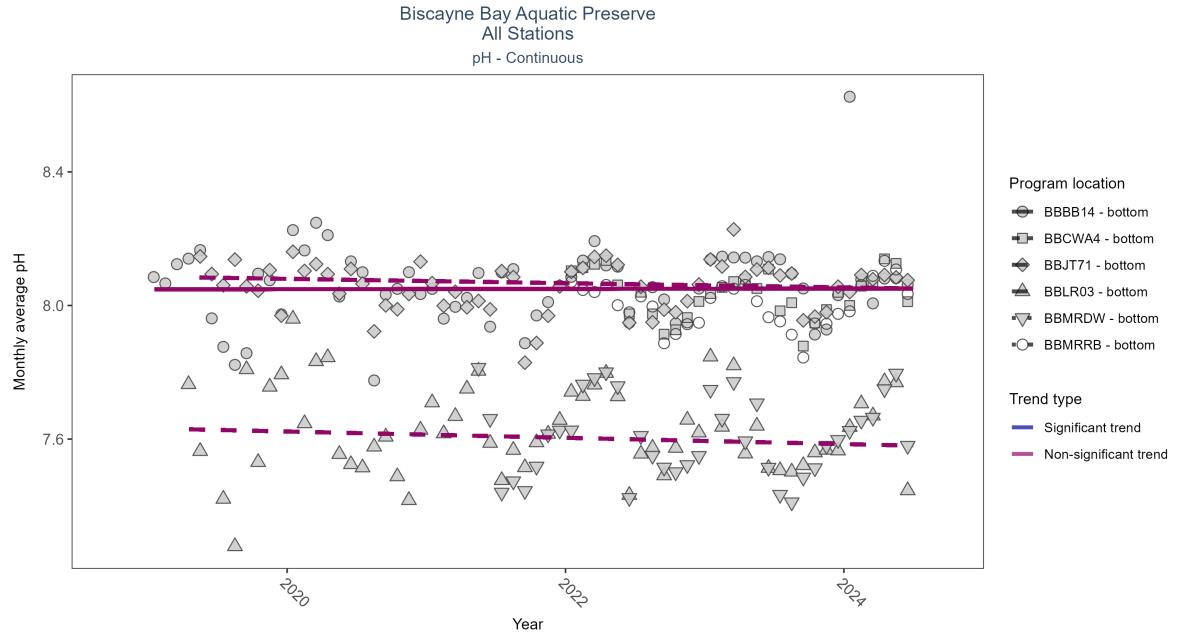


Table 12: Seasonal Kendall-Tau Results for All Stations - pH

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
BBBB14	No significant trend	161411	6	2019 - 2024	8.1	0.02	8.05	0	0.9507
BBCWA4	Insufficient data to calculate trend	84100	3	2022 - 2024	8.0	-	-	-	-
BBJT71	No significant trend	172274	6	2019 - 2024	8.1	-0.15	8.09	-0.01	0.2036
BBLR03	No significant trend	154689	6	2019 - 2024	7.6	-0.13	7.63	-0.01	0.3155
BBMRDW	Insufficient data to calculate trend	102543	4	2021 - 2024	7.6	-	-	-	-
BBMRRB	Insufficient data to calculate trend	84821	3	2022 - 2024	8.0	-	-	-	-

Water Clarity

Turbidity - Discrete

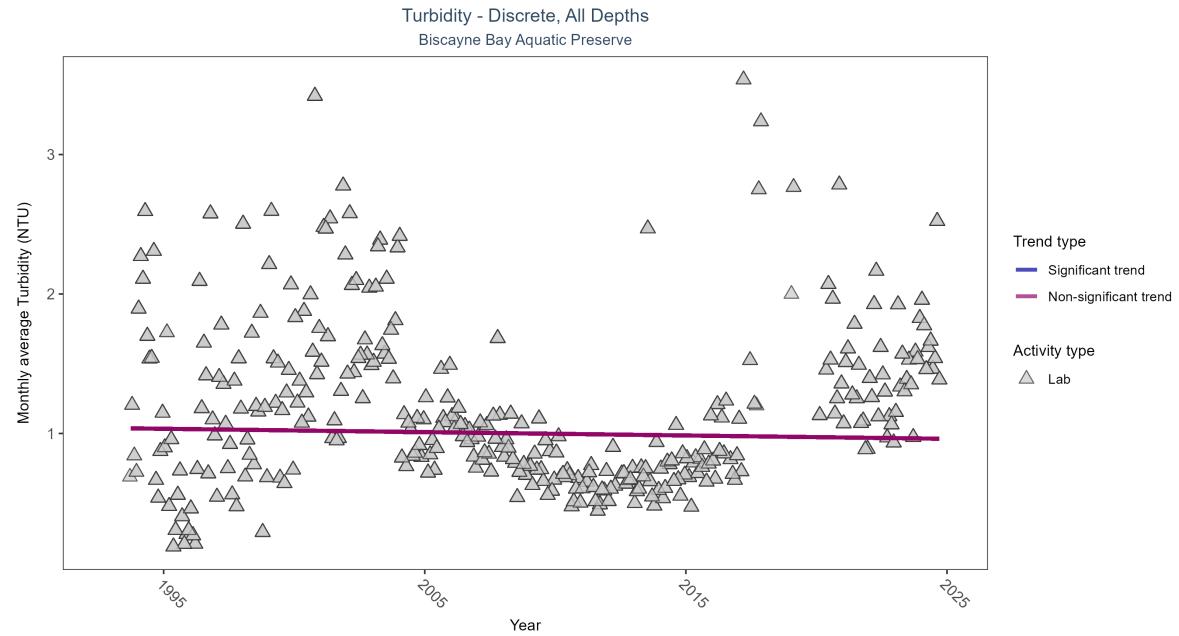


Table 13: Seasonal Kendall-Tau Results for - Turbidity

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	No significant trend	11884	31	1993 - 2024	0.8	-0.027	1.03829	-0.0024	0.4931

Turbidity - Continuous

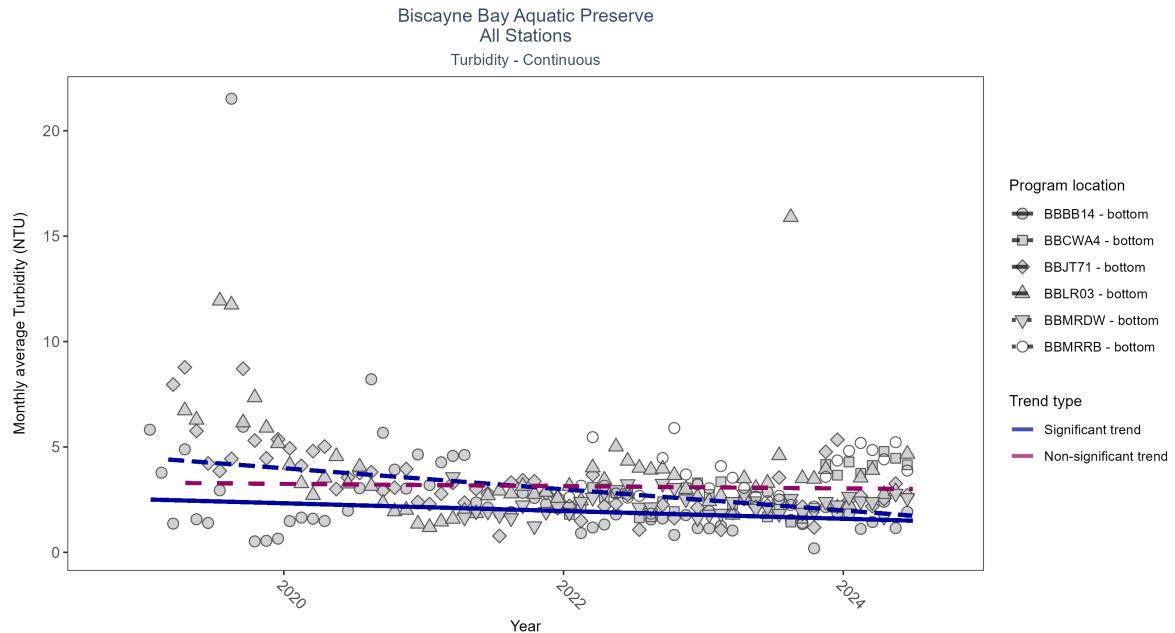


Table 14: Seasonal Kendall-Tau Results for All Stations - Turbidity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
BBBB14	Significantly decreasing trend	154588	6	2019 - 2024	2	-0.32	2.51	-0.18	0.0079
BBCWA4	Insufficient data to calculate trend	81485	3	2022 - 2024	3	-	-	-	-
BBJT71	Significantly decreasing trend	177969	6	2019 - 2024	3	-0.54	4.49	-0.5	0.0000
BBLR03	No significant trend	161636	6	2019 - 2024	3	-0.03	3.3	-0.05	0.7379
BBMRDW	Insufficient data to calculate trend	107209	4	2021 - 2024	2	-	-	-	-
BBMRRB	Insufficient data to calculate trend	83637	3	2022 - 2024	3	-	-	-	-

Total Suspended Solids - Discrete

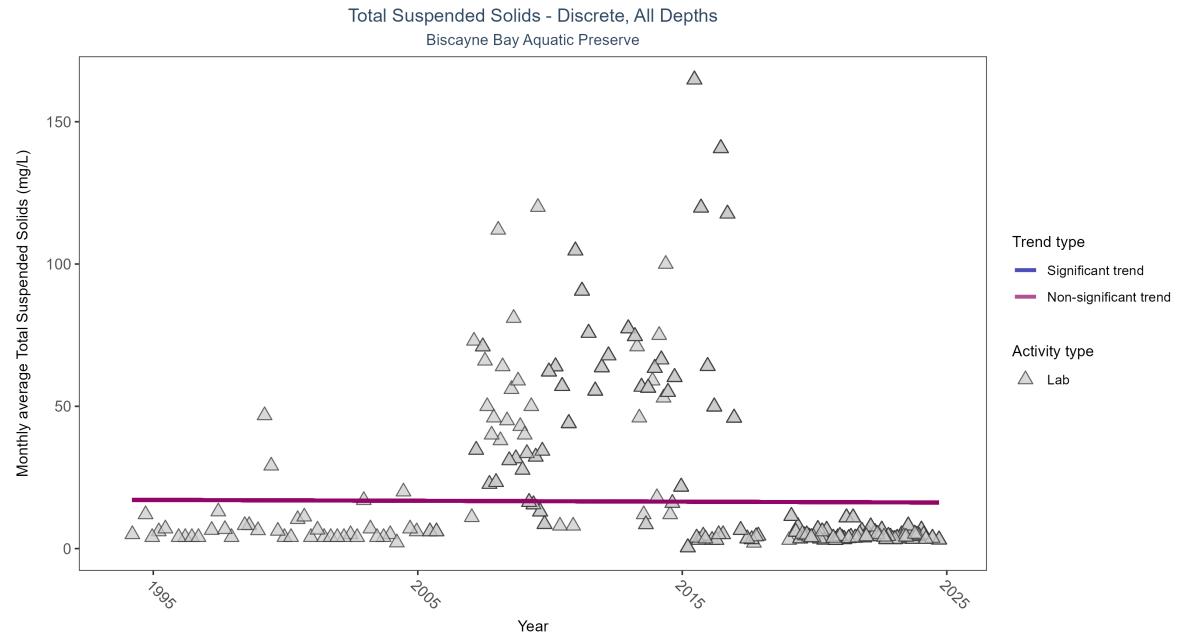


Table 15: Seasonal Kendall-Tau Results for - Total Suspended Solids

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	No significant trend	2221	29	1994 - 2024	4.9	-0.1596	17.13541	-0.03081	0.2724

Chlorophyll a, Uncorrected for Pheophytin - Discrete

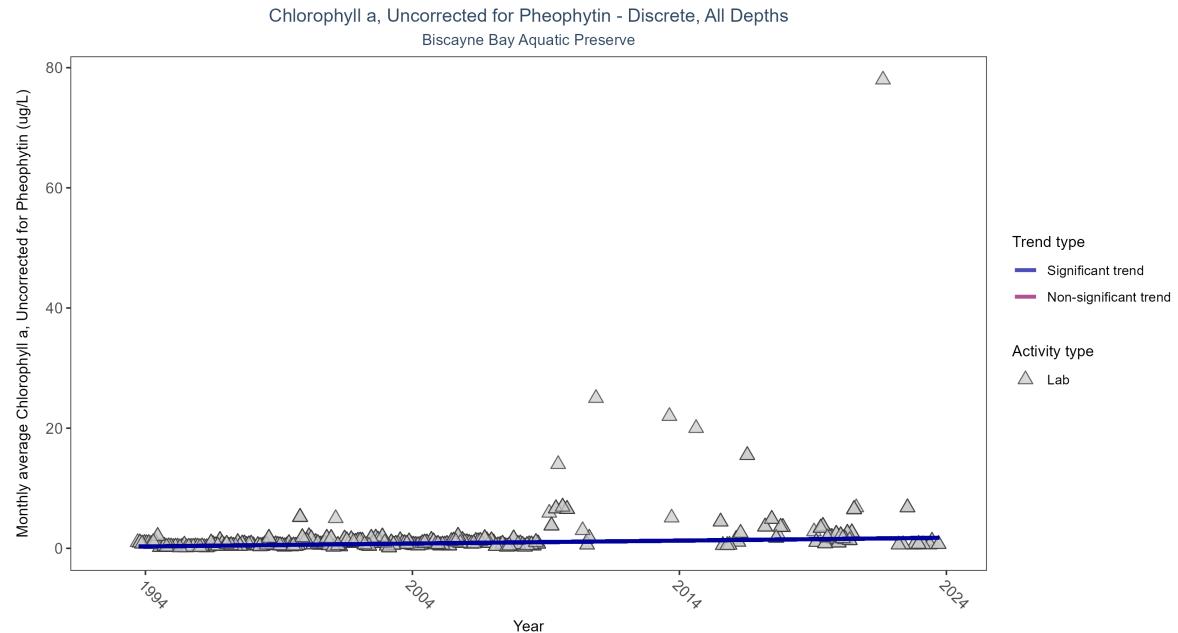


Table 16: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

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	2254	28	1993 - 2023	0.66655	0.3904	0.26493	0.04843	0.0000

Chlorophyll a, Corrected for Pheophytin - Discrete

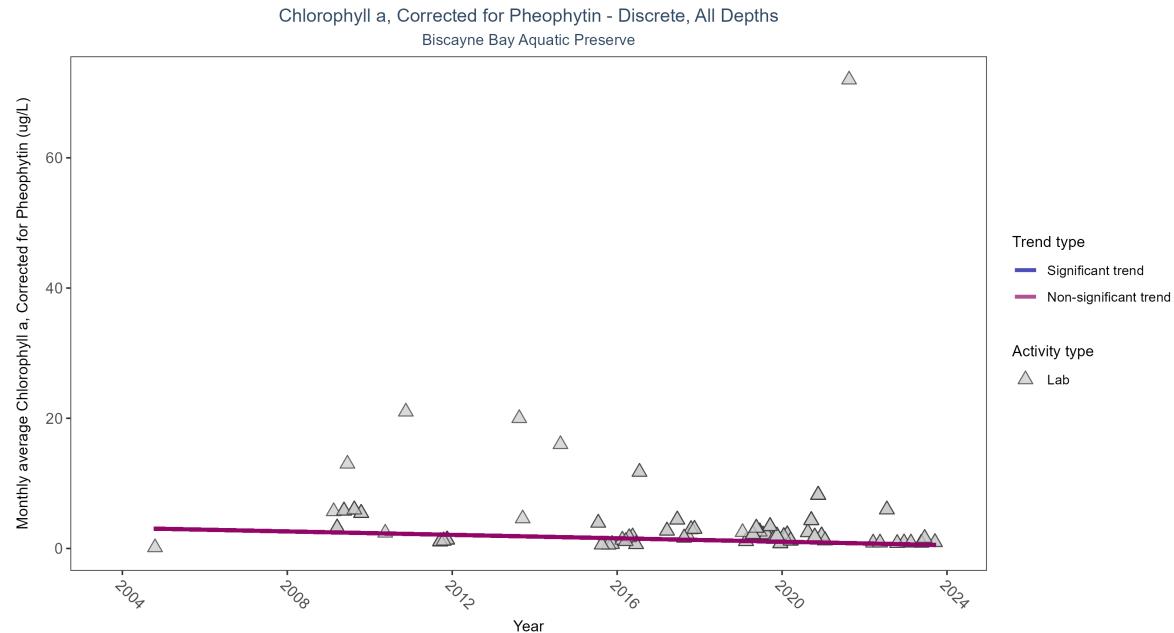


Table 17: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	No significant trend	470	14	2004 - 2023	1.4	-0.1845	3.14798	-0.13185	0.1713

Secchi Depth - Discrete

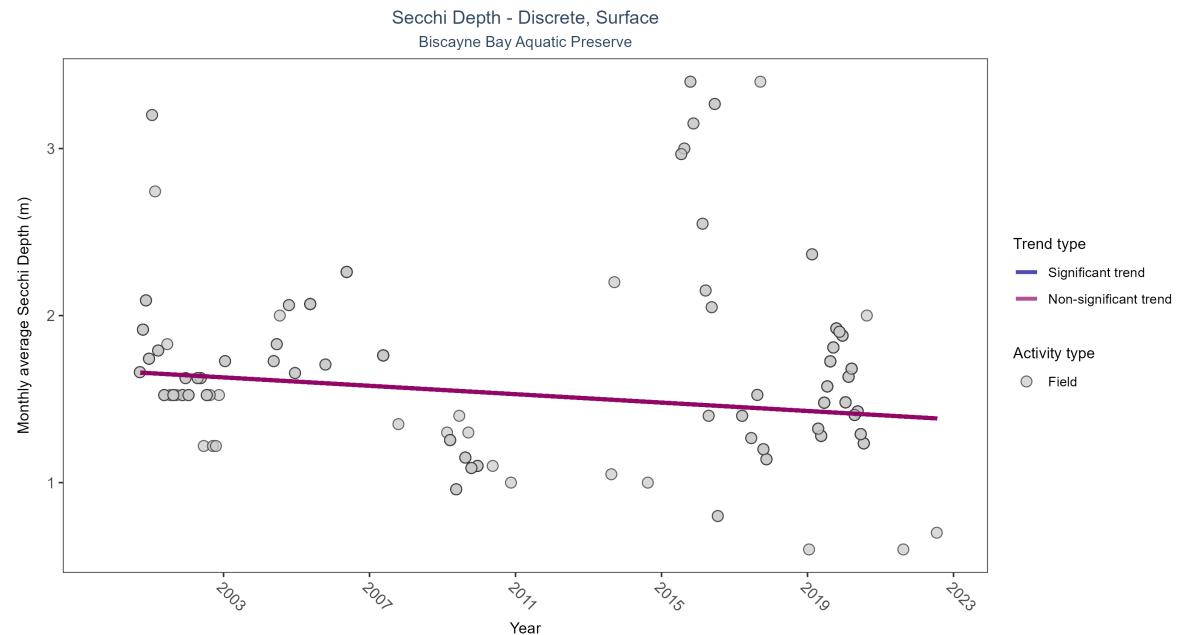


Table 18: Seasonal Kendall-Tau Results for - Secchi Depth

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	686	19	2000 - 2022	1.52402	-0.1156	1.66756	-0.01256	0.3365

Colored Dissolved Organic Matter - Discrete

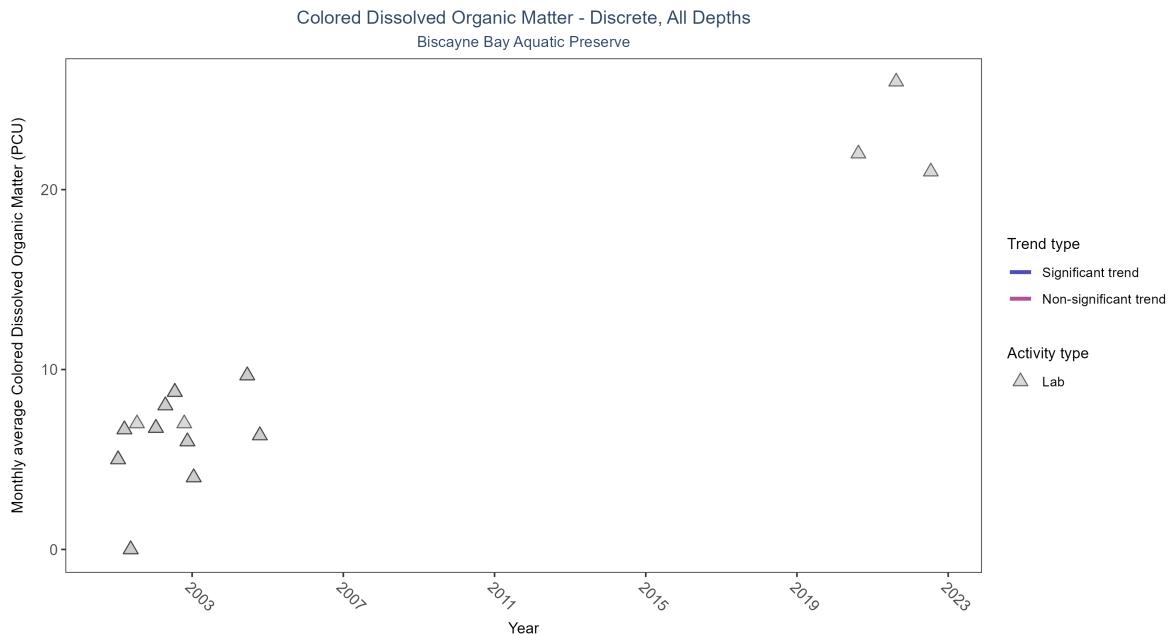


Table 19: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Insufficient data to calculate trend	38	7	2001 - 2022	7	-	-	-	NA