

# Apalachicola Bay Aquatic Preserve

## SEACAR Water Quality Analysis

Last compiled on 27 January, 2025

### Contents

<b>Indicators</b>	<b>2</b>
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

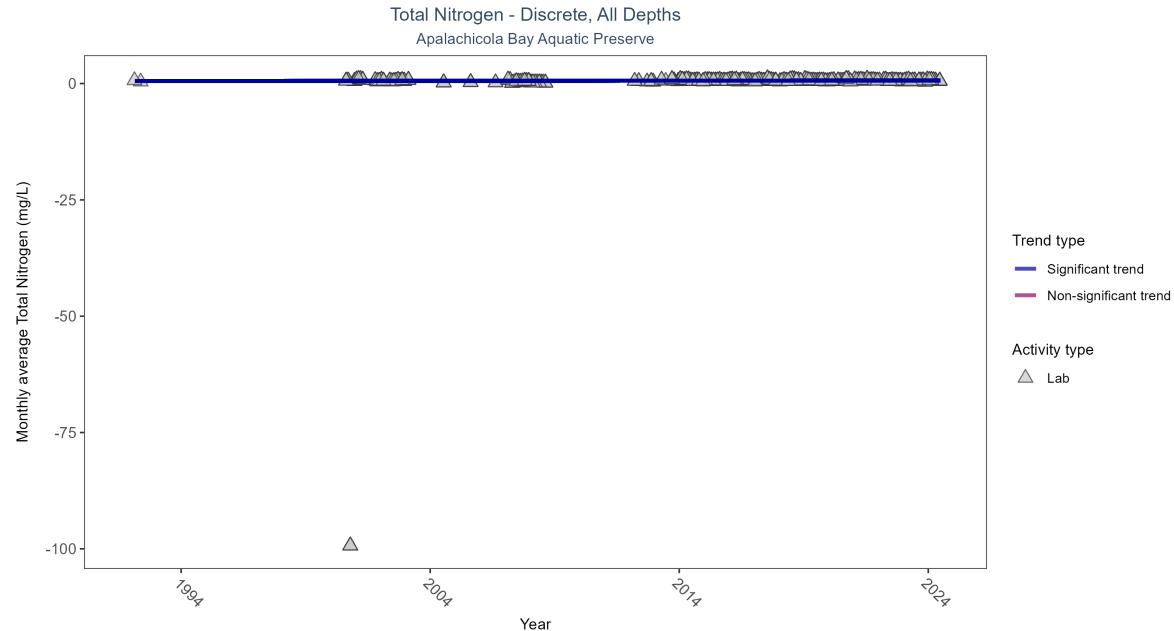


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

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	3187	23	1992 - 2024		0.62	0.1409	0.5272	0.00392 0.0113

## Total Phosphorus - Discrete

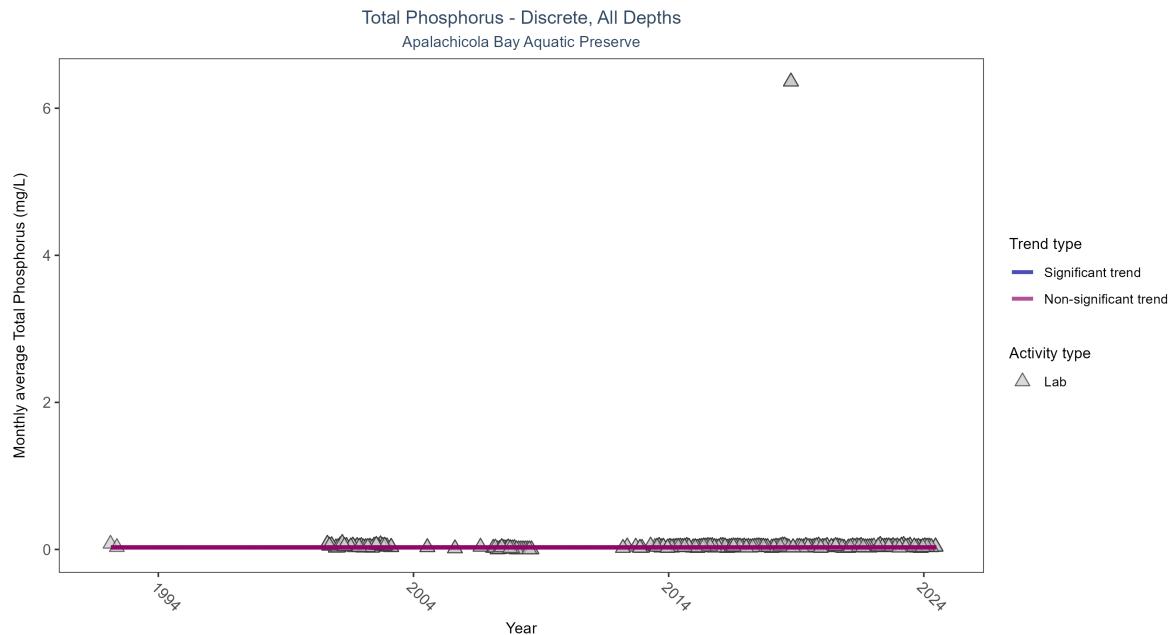


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	No significant trend	3477	23	1992 - 2024	0.031	0.0408	0.02696	0.00008	0.5316

## Water Quality

### Dissolved Oxygen - Discrete

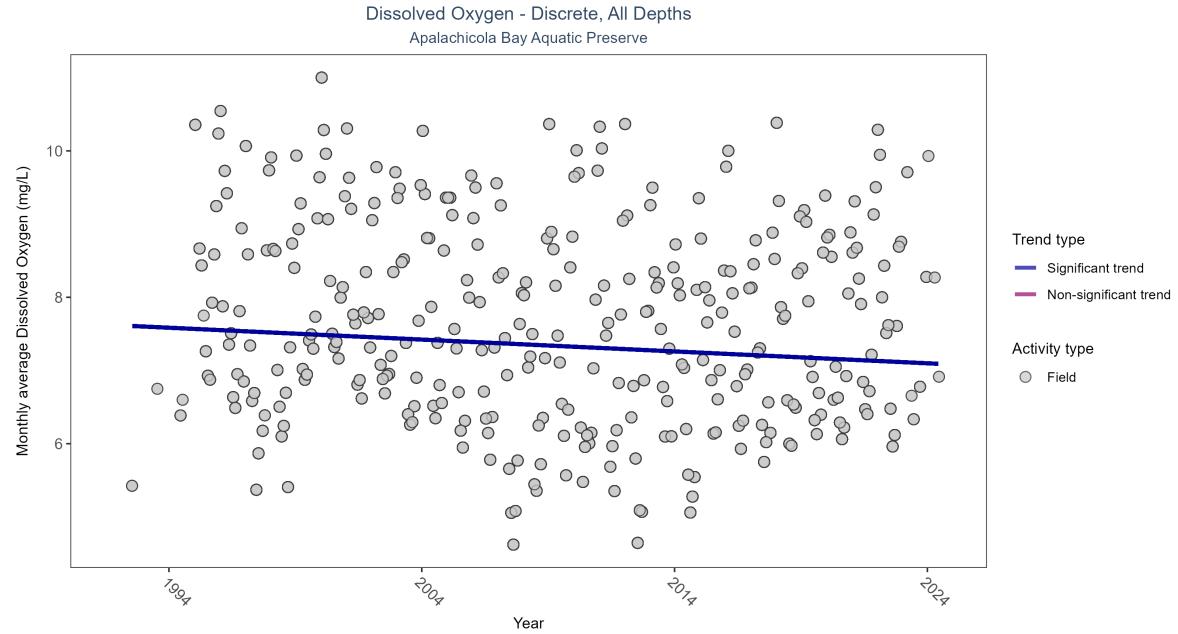


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

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	52352	33	1992 - 2024	7.5	-0.1327	7.61663	-0.0162	0.0006

## Dissolved Oxygen - Continuous

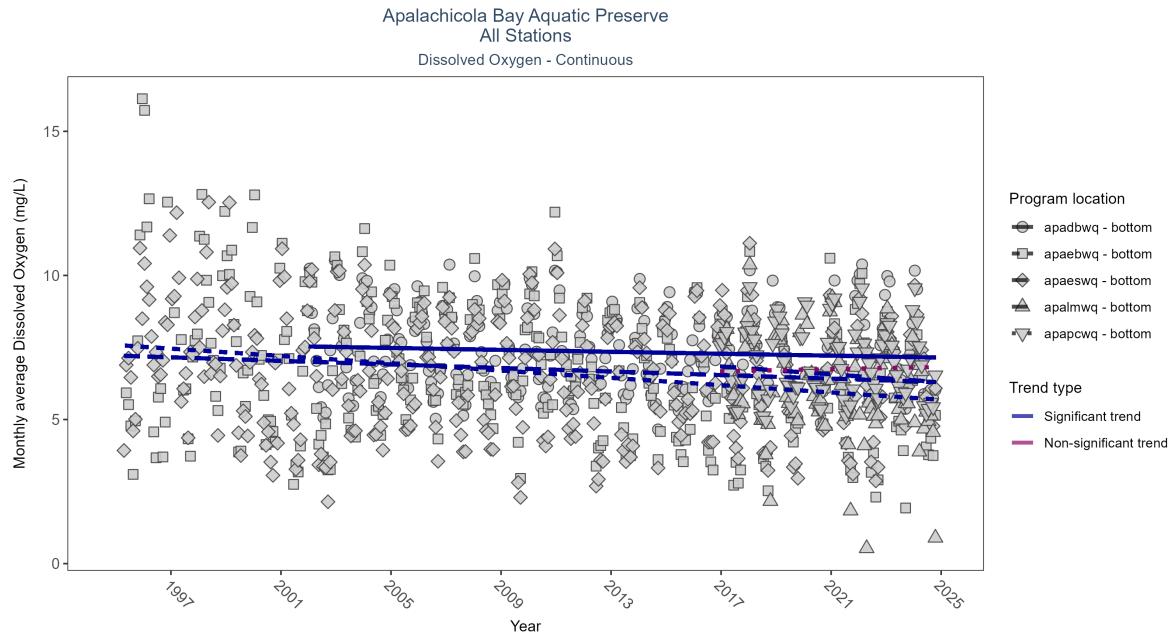


Table 4: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
apaeswq	Significantly decreasing trend	705897	30	1995 - 2024	6.8	-0.16	7.22	-0.03	0.0000
apapcqw	No significant trend	258495	9	2016 - 2024	6.9	0.06	6.66	0.02	0.4258
apaebwq	Significantly decreasing trend	655851	30	1995 - 2024	6.8	-0.30	7.59	-0.06	0.0000
apadbwq	Significantly decreasing trend	611956	23	2002 - 2024	7.2	-0.16	7.53	-0.02	0.0004
apalmwq	Significantly decreasing trend	247064	9	2016 - 2024	6.3	-0.24	6.91	-0.07	0.0038

## Dissolved Oxygen Saturation - Discrete

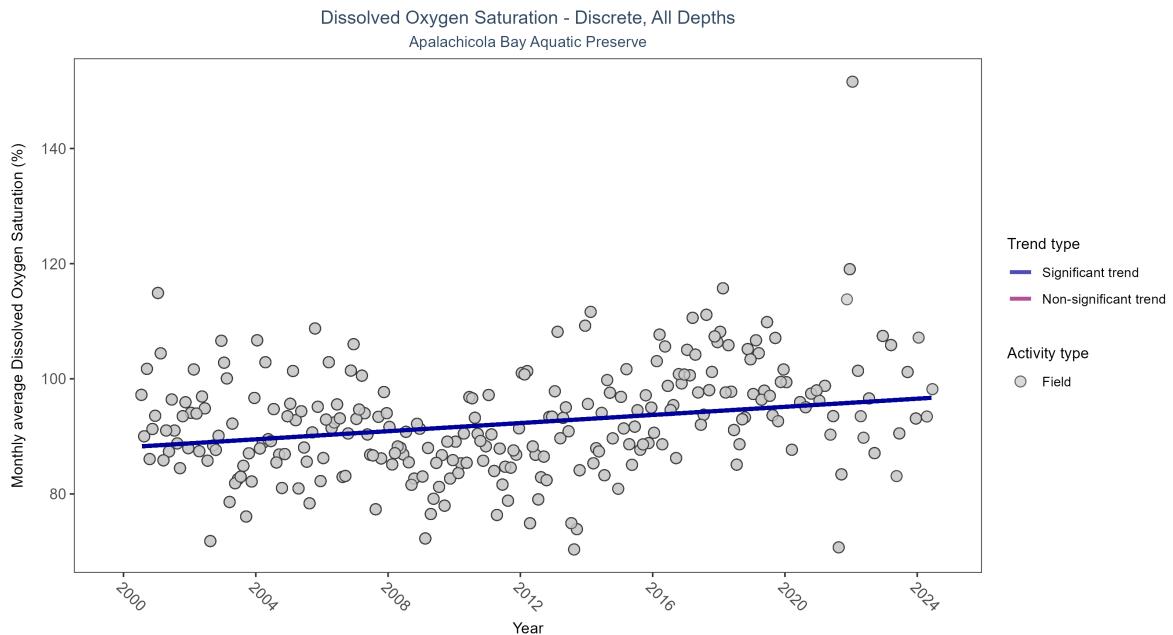


Table 5: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

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	5468	25	2000 - 2024	92.7	0.2116	88.07792	0.35279	0.0000

## Dissolved Oxygen Saturation - Continuous

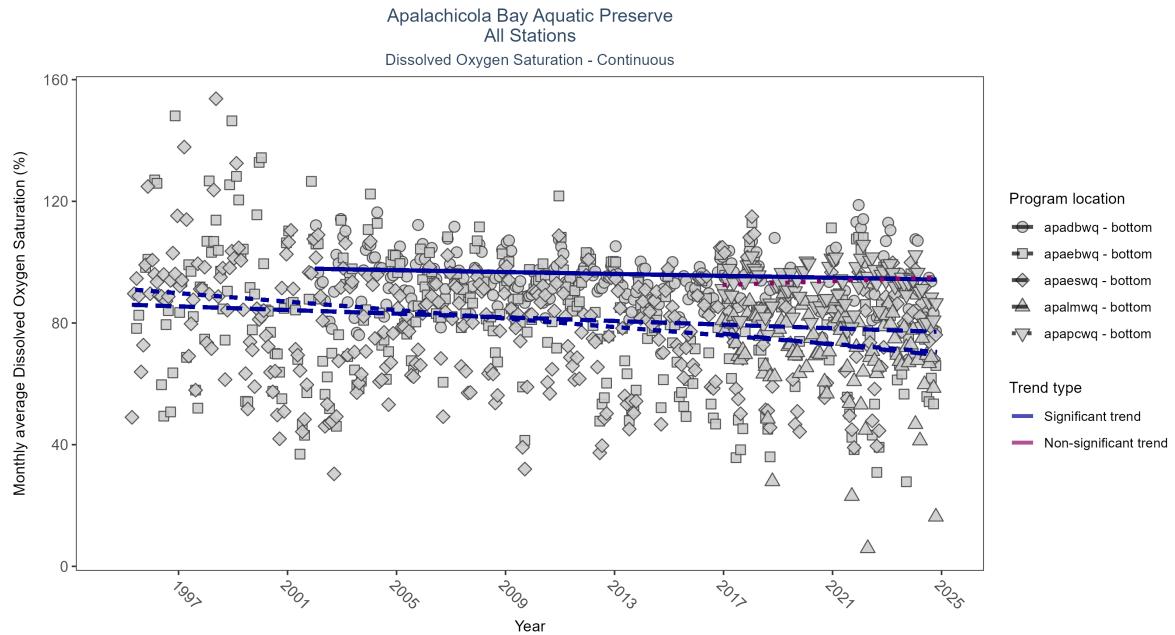


Table 6: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen Saturation

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
apadbwq	Significantly decreasing trend	615405	23	2002 - 2024	94.6	-0.11	97.83	-0.16	0.0180
apaeswq	Significantly decreasing trend	707062	30	1995 - 2024	83.9	-0.12	86.07	-0.30	0.0010
apapcwq	No significant trend	261951	9	2016 - 2024	94.0	0.10	92.20	0.32	0.2467
apaebwq	Significantly decreasing trend	651675	30	1995 - 2024	84.5	-0.27	91.20	-0.70	0.0000
apalmwq	Significantly decreasing trend	247600	9	2016 - 2024	74.4	-0.25	77.37	-0.89	0.0030

## Salinity - Discrete

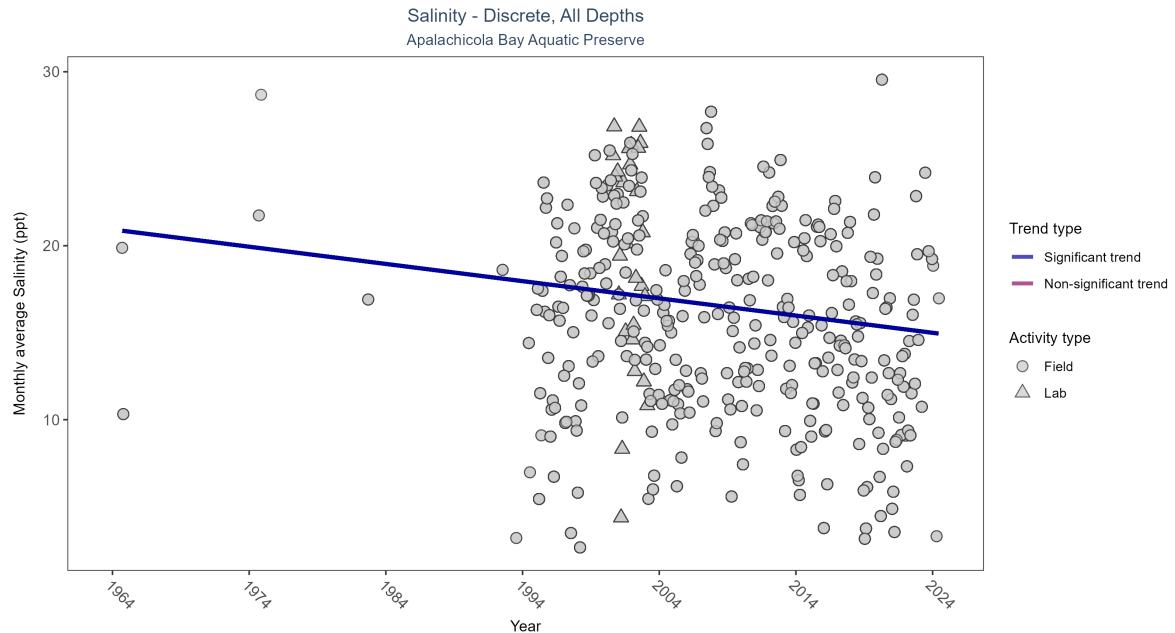


Table 7: Seasonal Kendall-Tau Results for - Salinity

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	61377	36	1964 - 2024	15.8	-0.1255	20.93299	-0.09897	0.0010

## Salinity - Continuous

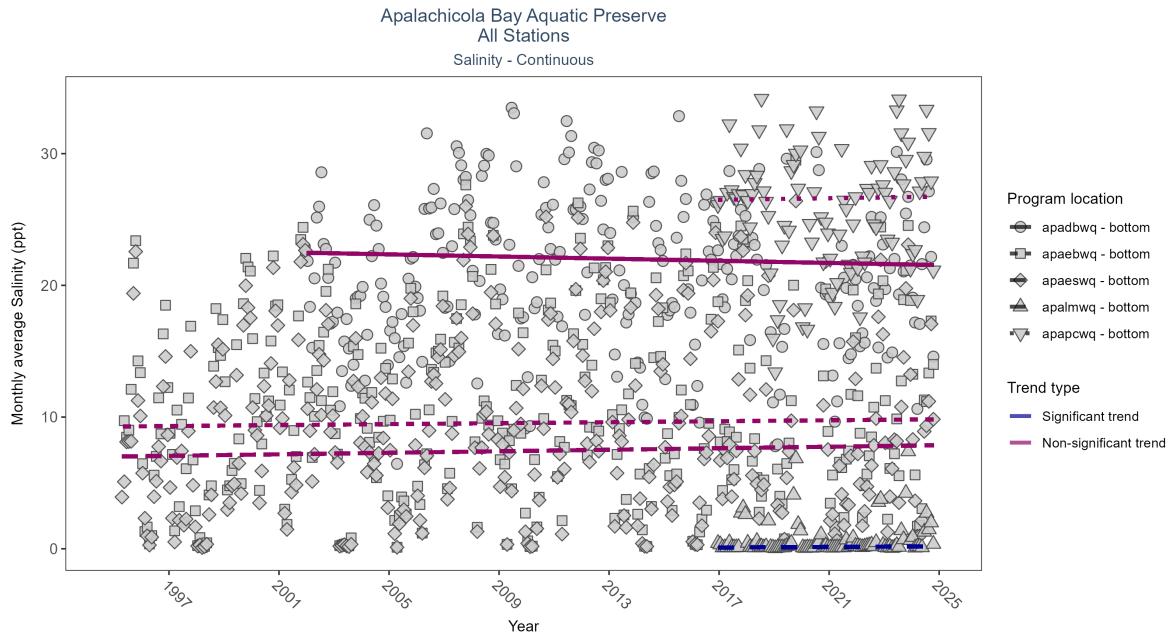


Table 8: Seasonal Kendall-Tau Results for All Stations - Salinity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
apaeswq	No significant trend	750073	30	1995 - 2024	7.4	0.05	7.00	0.03	0.2183
apapcqw	No significant trend	260825	9	2016 - 2024	26.7	0.02	26.46	0.03	0.8849
apadbwq	No significant trend	610043	23	2002 - 2024	22.1	-0.05	22.47	-0.04	0.2984
apaebwq	No significant trend	737644	30	1995 - 2024	9.8	0.03	9.28	0.02	0.4301
apalmwq	Significantly increasing trend	262776	9	2016 - 2024	0.1	0.22	0.08	0.01	0.0091

## Water Temperature - Discrete

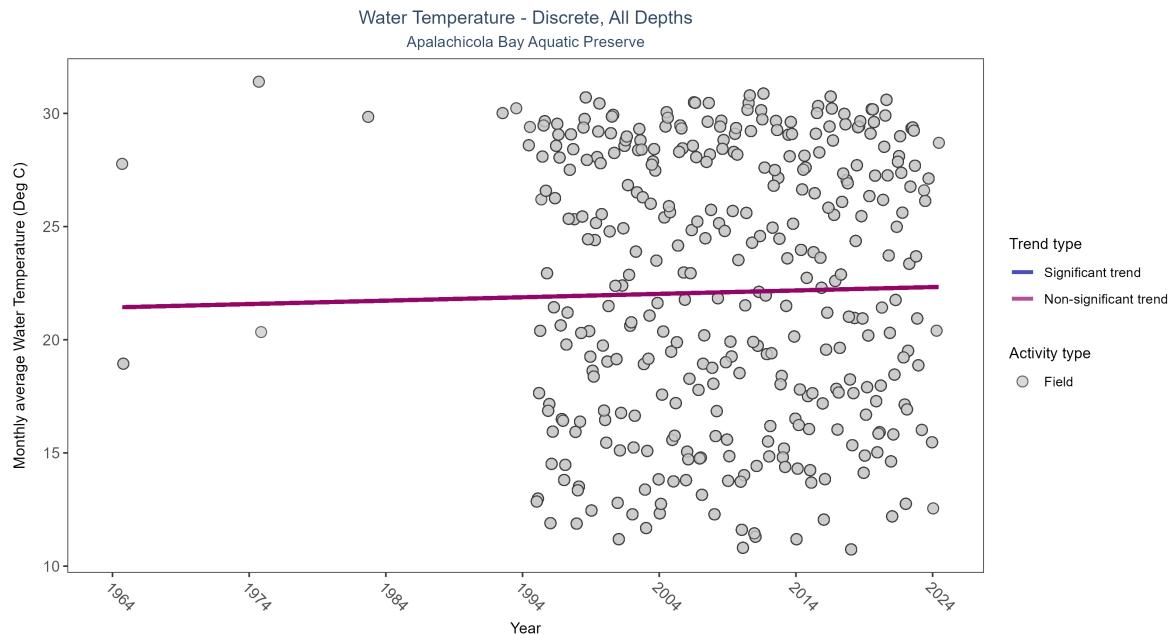


Table 9: Seasonal Kendall-Tau Results for - Water Temperature

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Field	No significant trend	61222	36	1964 - 2024	24	0.073	21.4264	0.01501	0.0617

## Water Temperature - Continuous

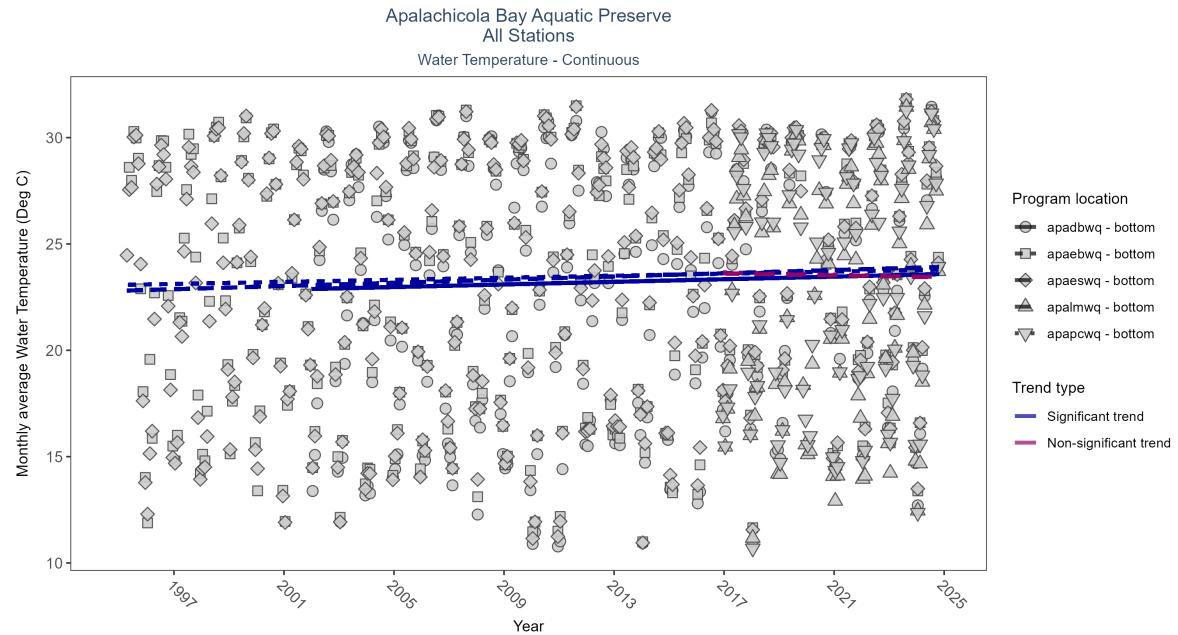


Table 10: Seasonal Kendall-Tau Results for All Stations - Water Temperature

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
apaeswq	Significantly increasing trend	759330	30	1995 - 2024	24.2	0.19	22.80	0.04	0.0000
apapcwq	No significant trend	264293	9	2016 - 2024	23.3	-0.05	23.68	-0.03	0.5624
apaebwq	Significantly increasing trend	752687	30	1995 - 2024	24.3	0.14	23.07	0.02	0.0002
apalmwq	No significant trend	265036	9	2016 - 2024	22.8	-0.03	23.64	-0.02	0.7721
apadbwq	Significantly increasing trend	635215	23	2002 - 2024	23.4	0.15	22.88	0.03	0.0010

## pH - Discrete

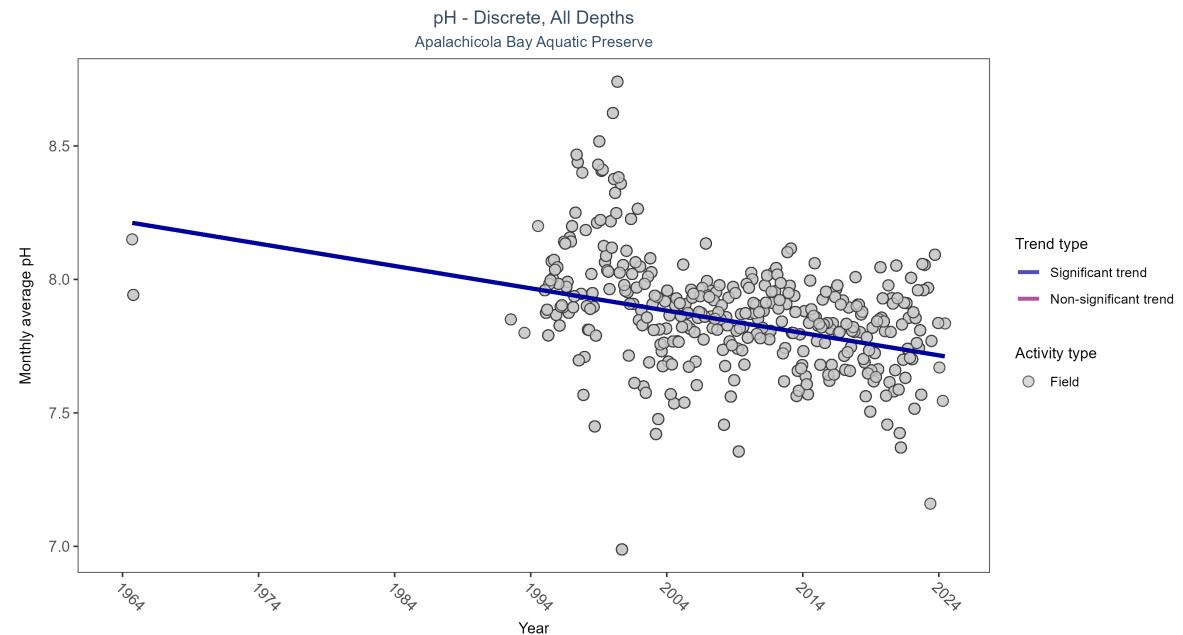


Table 11: Seasonal Kendall-Tau Results for - pH

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	40866	34	1964 - 2024	8	-0.2806	8.21775	-0.00837	0.0000

## pH - Continuous

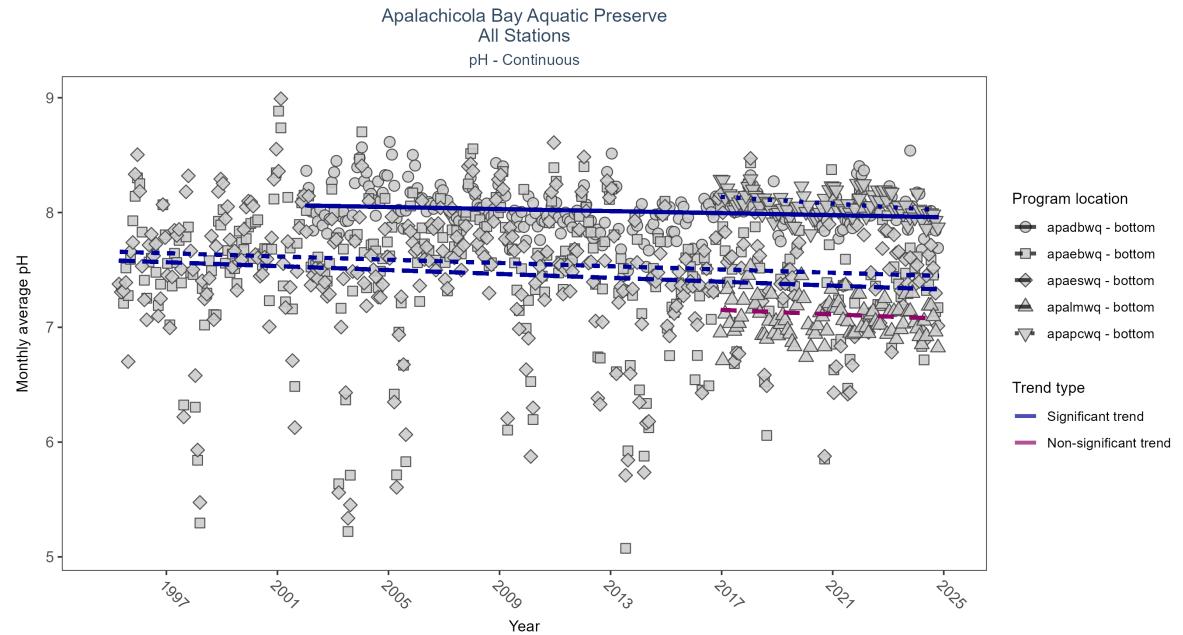


Table 12: Seasonal Kendall-Tau Results for All Stations - pH

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
apaeswq	Significantly decreasing trend	710126	30	1995 - 2024	7.5	-0.13	7.58	-0.01	0.0005
apadbwq	Significantly decreasing trend	593014	23	2002 - 2024	8.0	-0.14	8.06	0.00	0.0015
apaebwq	Significantly decreasing trend	708449	30	1995 - 2024	7.6	-0.12	7.66	-0.01	0.0010
apalmwq	No significant trend	255201	9	2016 - 2024	7.1	-0.07	7.16	-0.01	0.4258
apapcwq	Significantly decreasing trend	258424	9	2016 - 2024	8.1	-0.29	8.15	-0.01	0.0007

## Water Clarity

### Turbidity - Discrete

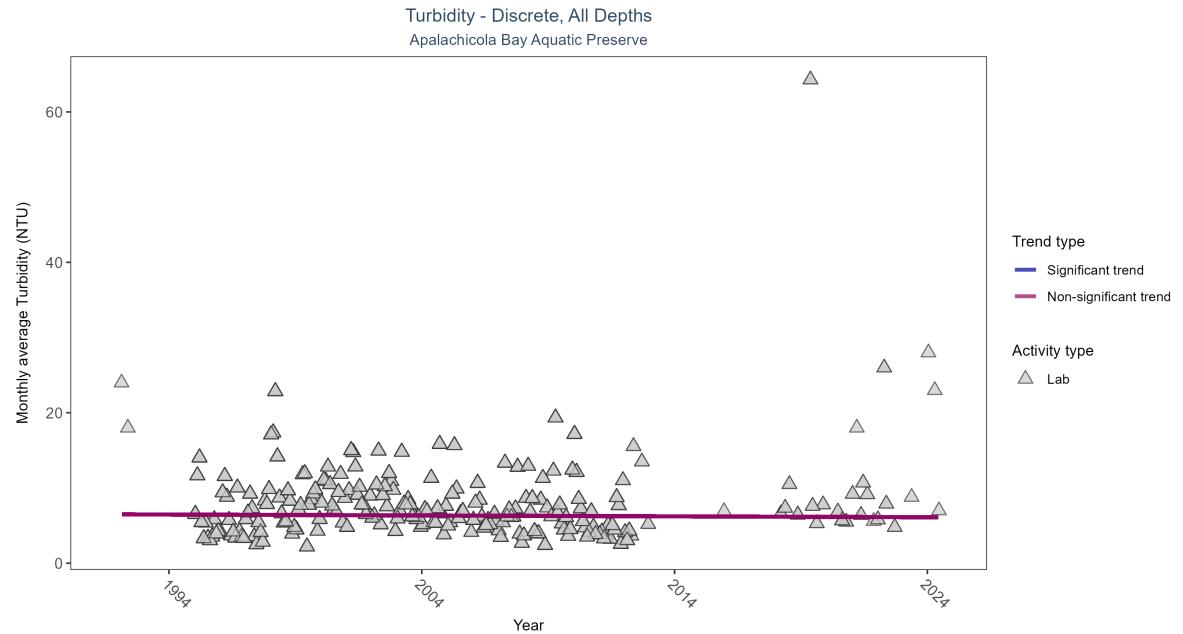


Table 13: Seasonal Kendall-Tau Results for - Turbidity

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	15518	27	1992 - 2024	5.6	-0.0259	6.48776	-0.01191	0.6339

## Turbidity - Continuous

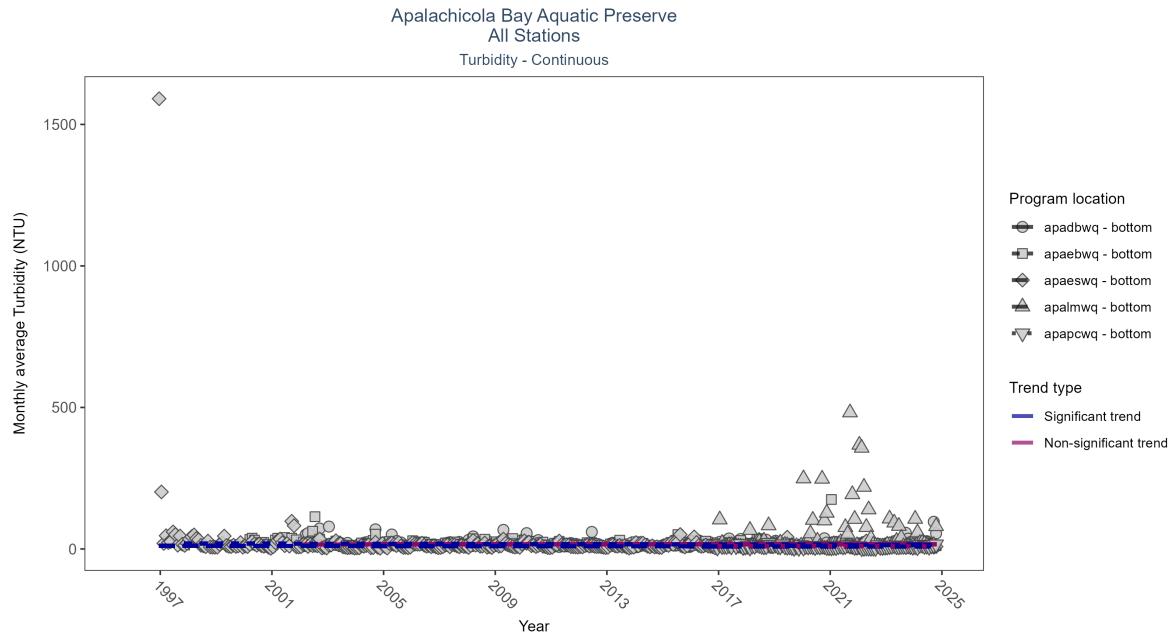


Table 14: Seasonal Kendall-Tau Results for All Stations - Turbidity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
apaeswq	Significantly decreasing trend	693946	29	1996 - 2024	9	-0.15	11.37	-0.11	0.0003
apapcwq	No significant trend	249363	9	2016 - 2024	7	-0.06	10.47	-0.11	0.4855
apaebwq	Significantly decreasing trend	626187	26	1997 - 2024	13	-0.19	19.68	-0.20	0.0000
apadbwq	No significant trend	597217	23	2002 - 2024	10	0.02	16.11	0.03	0.6196
apalmwq	Significantly increasing trend	235869	9	2016 - 2024	12	0.24	7.63	0.93	0.0047

## Total Suspended Solids - Discrete

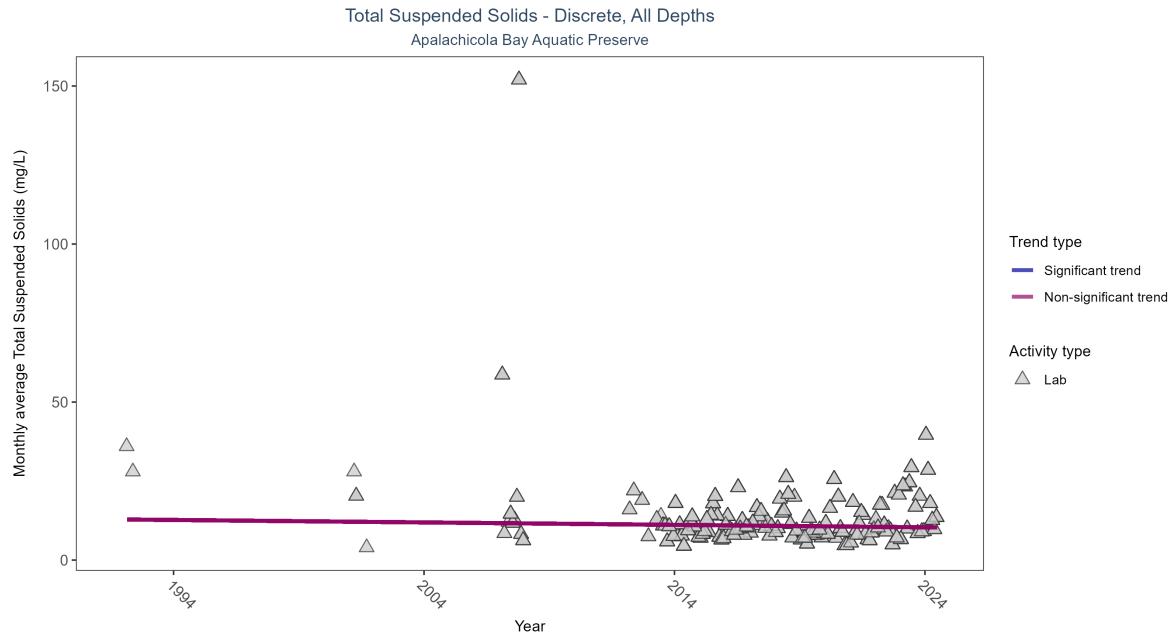


Table 15: Seasonal Kendall-Tau Results for - Total Suspended Solids

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	3048	16	1992 - 2024	9	-0.0326	12.84613	-0.07738	0.5296

## Chlorophyll a, Uncorrected for Pheophytin - Discrete

Chlorophyll a, Uncorrected for Pheophytin - Discrete, All Depths  
Apalachicola Bay Aquatic Preserve

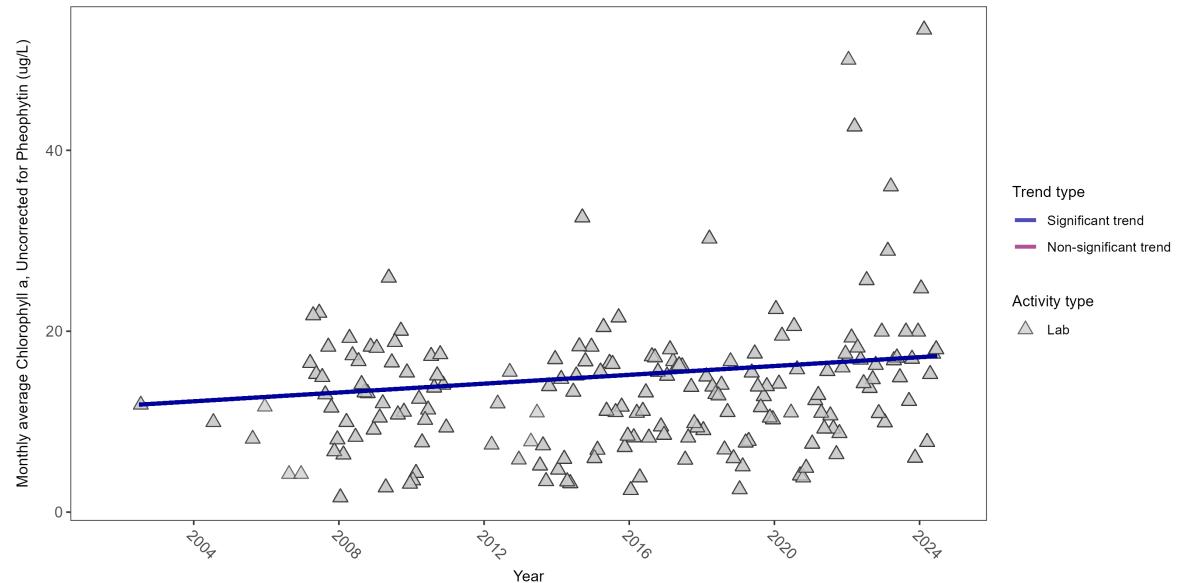


Table 16: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

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	3913	21	2002 - 2024	11.6	0.164	11.76209	0.24393	0.0035

## Chlorophyll a, Corrected for Pheophytin - Discrete

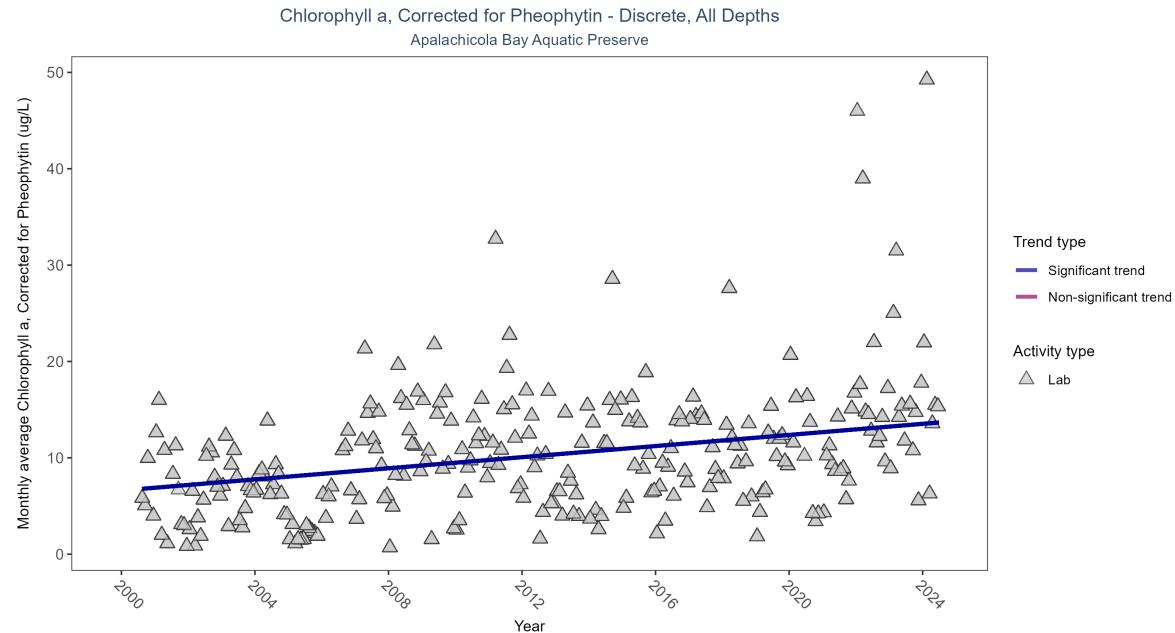


Table 17: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

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	7438	25	2000 - 2024	8.6	0.2842	6.60535	0.28849	0.0000

## Secchi Depth - Discrete

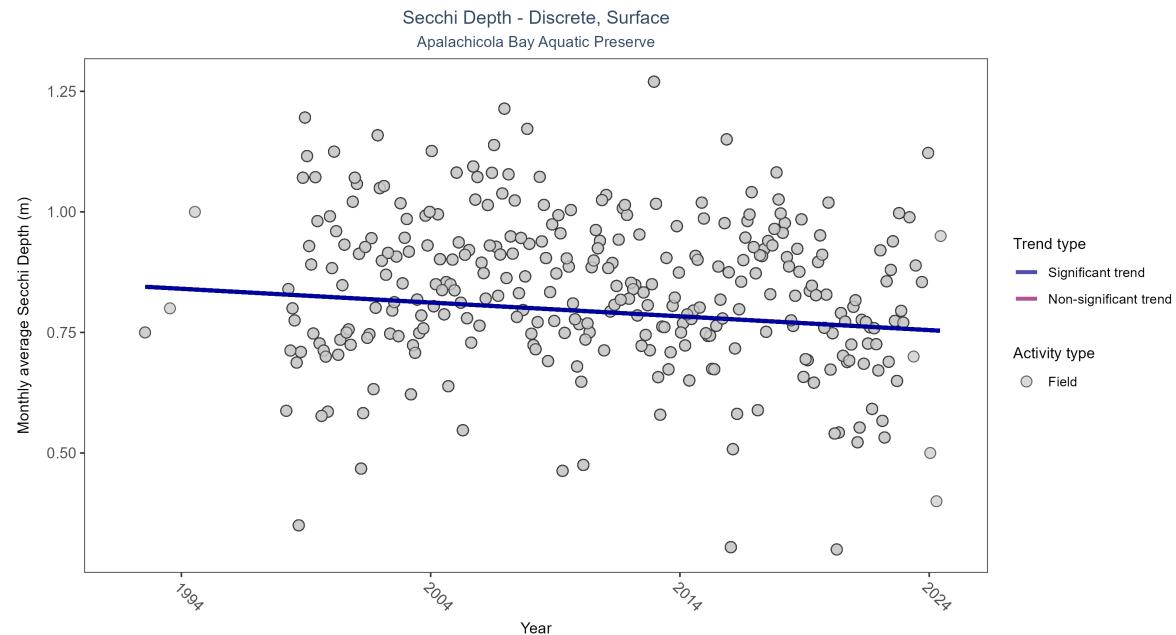


Table 18: Seasonal Kendall-Tau Results for - Secchi Depth

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	27081	30	1992 - 2024		0.8	-0.1073	0.84627	-0.00286 0.0110

## Colored Dissolved Organic Matter - Discrete

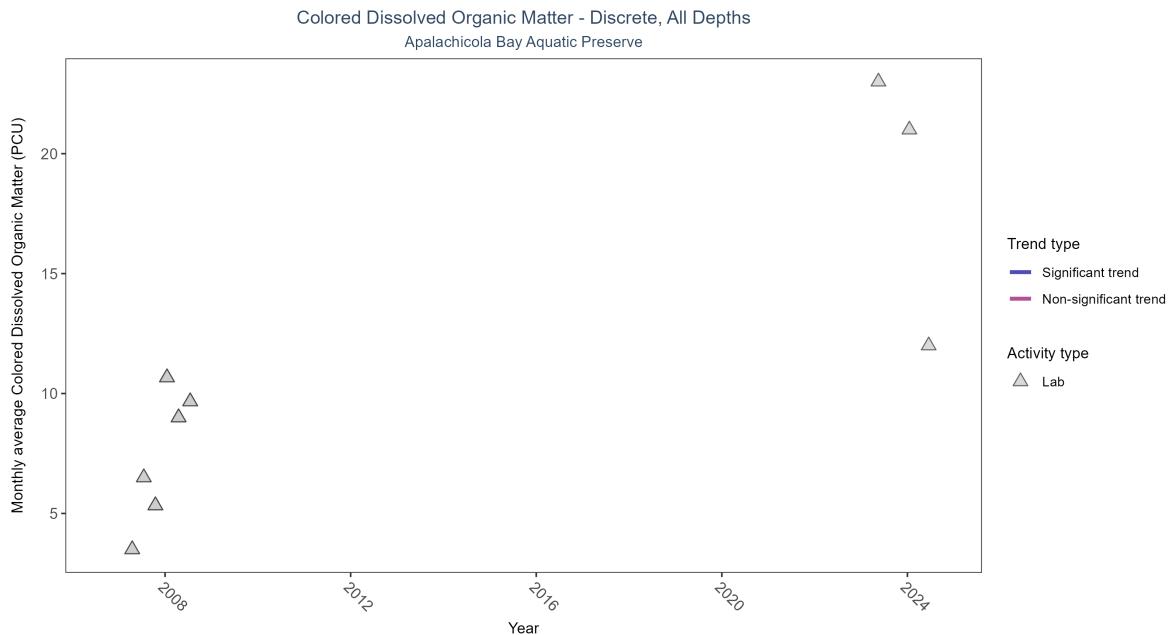


Table 19: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

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	19	4	2007 - 2024	7	-	-	-	NA