

# Rookery Bay Aquatic Preserve

## SEACAR Water Quality Analysis

Last compiled on 09 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

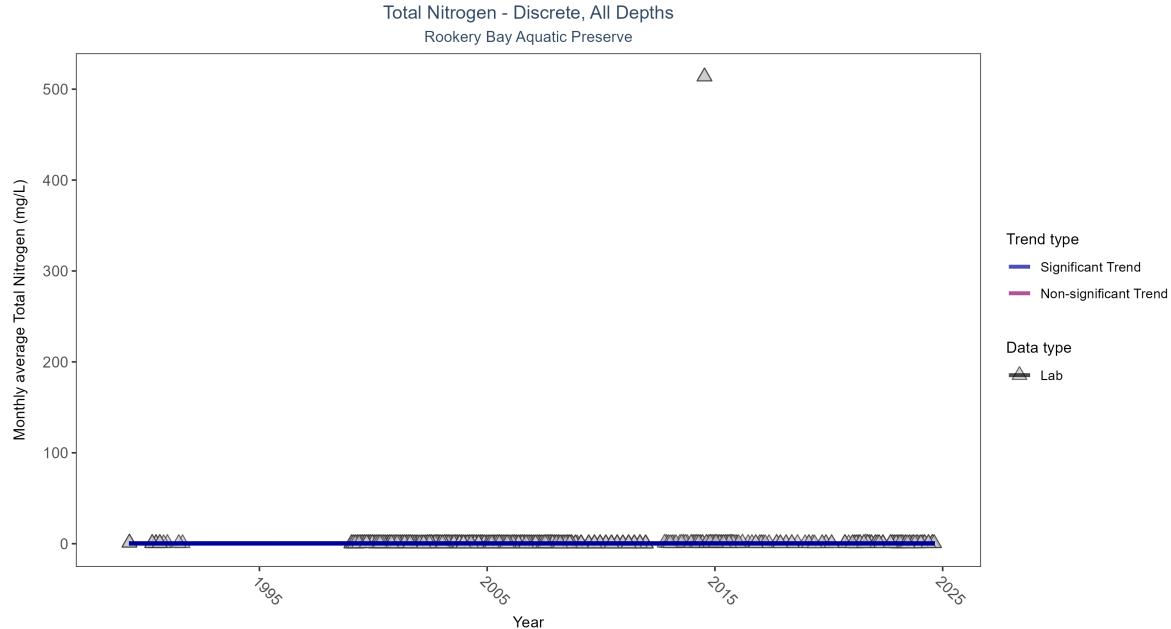


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	2763	29	1989 - 2024	0.26	0.1757	0.21458	0.00577	0.0002

## Total Phosphorus - Discrete

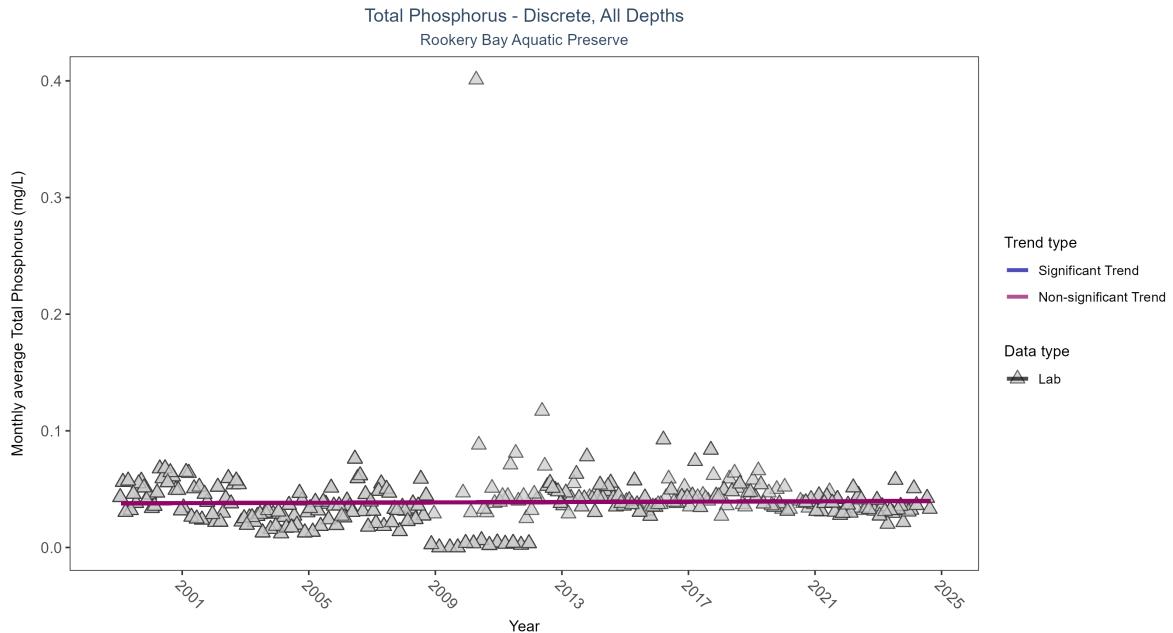


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	No significant trend	2383	26	1999 - 2024	0.034	0.0277	0.03786	0.00008	0.4884

## Water Quality

### Dissolved Oxygen - Discrete

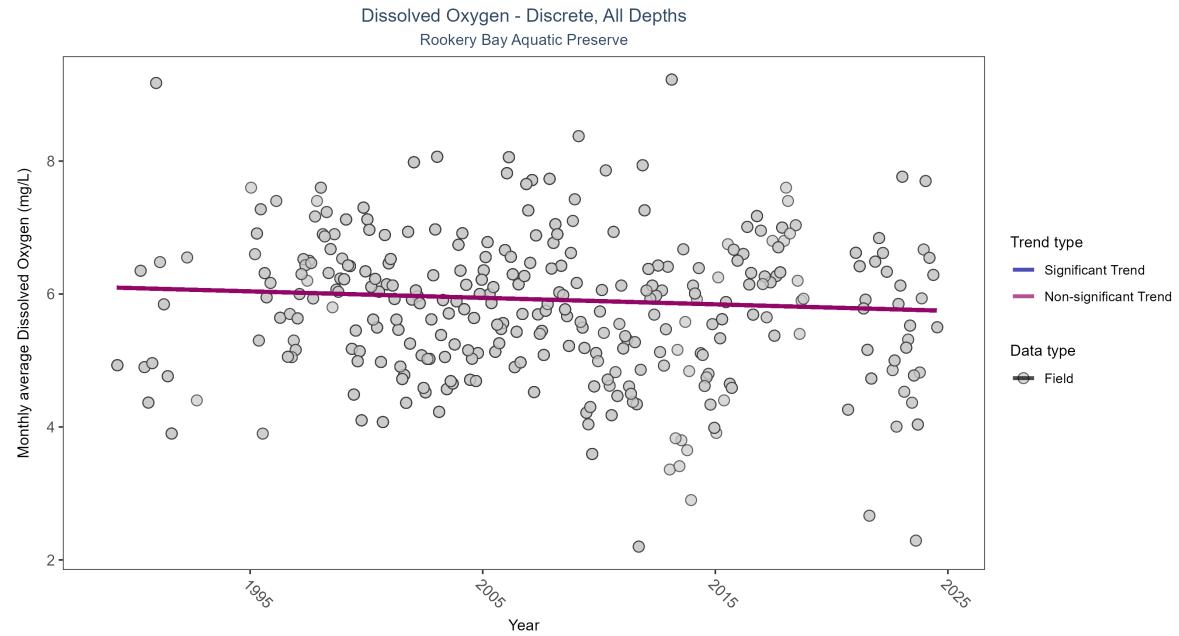


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	No significant trend	4538	33	1989 - 2024	5.83	-0.0701	6.0986	-0.00976	0.0815

## Dissolved Oxygen - Continuous

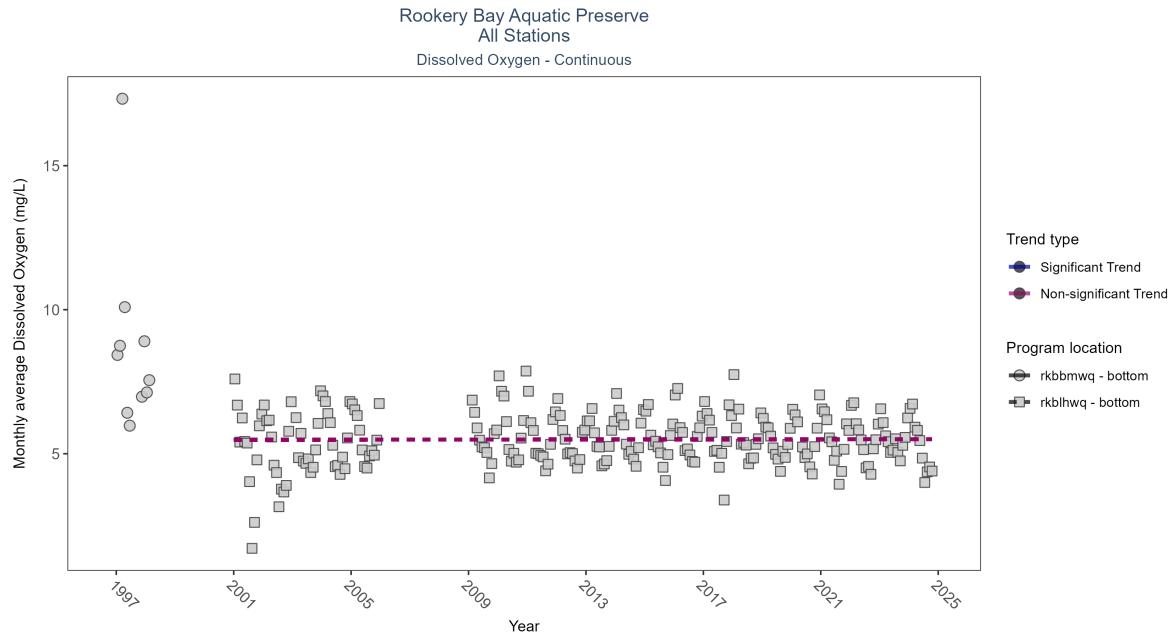


Table 4: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
rkbbmwq	Insufficient data to calculate trend	10441	2	1997 - 1998	7.2	-	-	-	-
rkbhwq	No significant trend	570691	21	2001 - 2024	5.5	0	5.48	0	0.8577

## Dissolved Oxygen Saturation - Discrete

Dissolved Oxygen Saturation - Discrete, All Depths  
Rookery Bay Aquatic Preserve

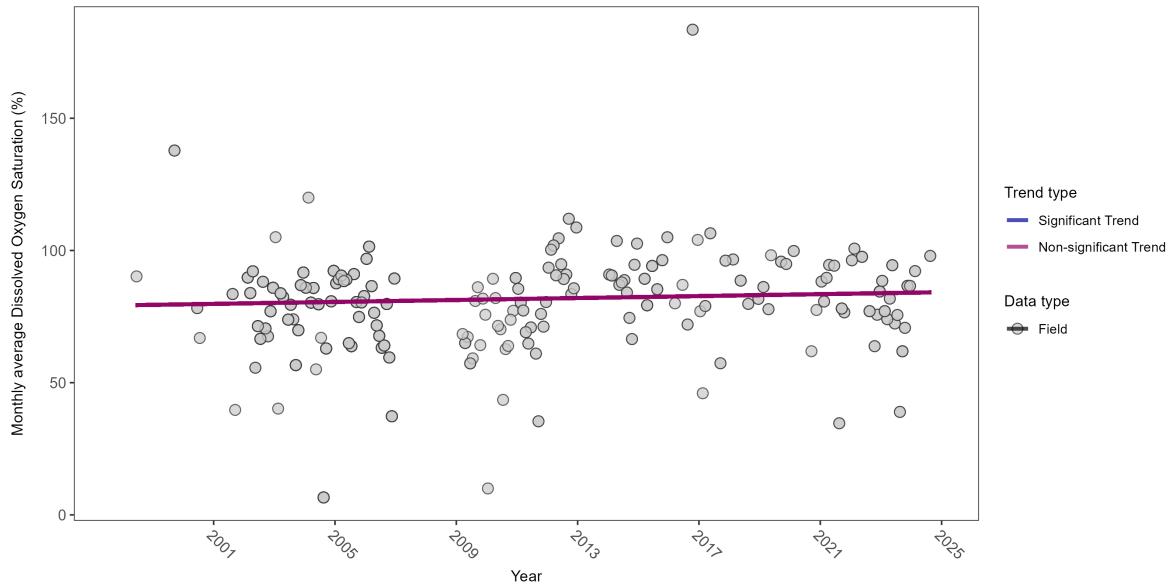


Table 5: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	No significant trend	791	24	1998 - 2024	80.9	0.0693	79.25336	0.18388	0.2483

## Dissolved Oxygen Saturation - Continuous

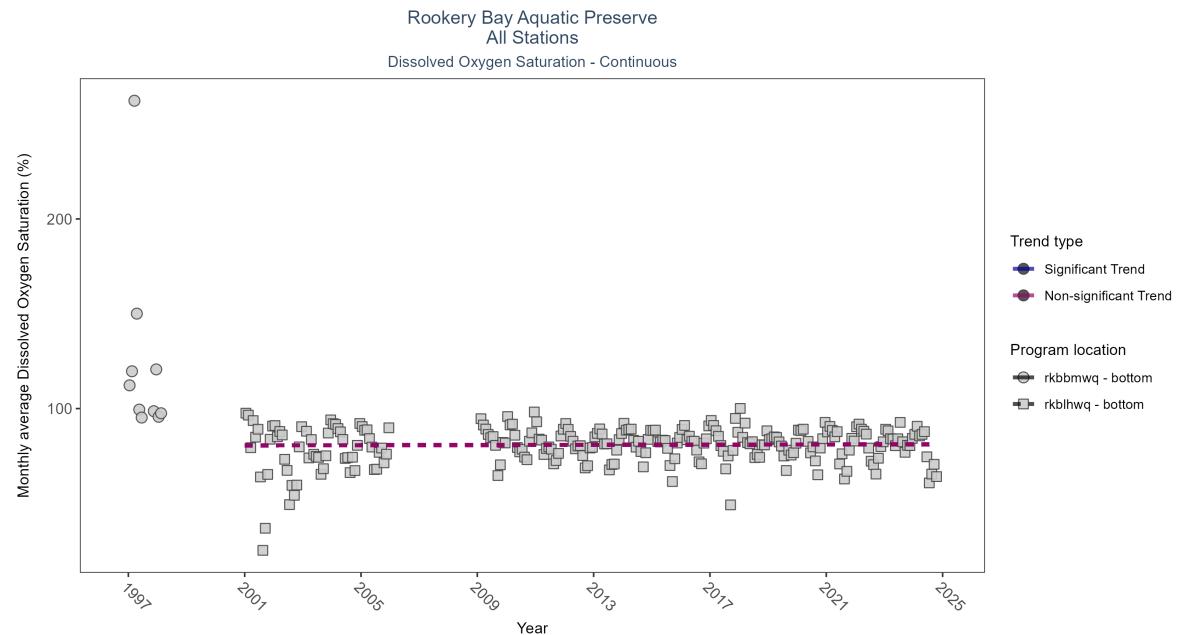


Table 6: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen Saturation

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
rkbbmwq	Insufficient data to calculate trend	10441	2	1997 - 1998	102.4	-	-	-	-
rkbhwq	No significant trend	583009	21	2001 - 2024	81.7	0.02	80.58	0.02	0.5540

## Salinity - Discrete

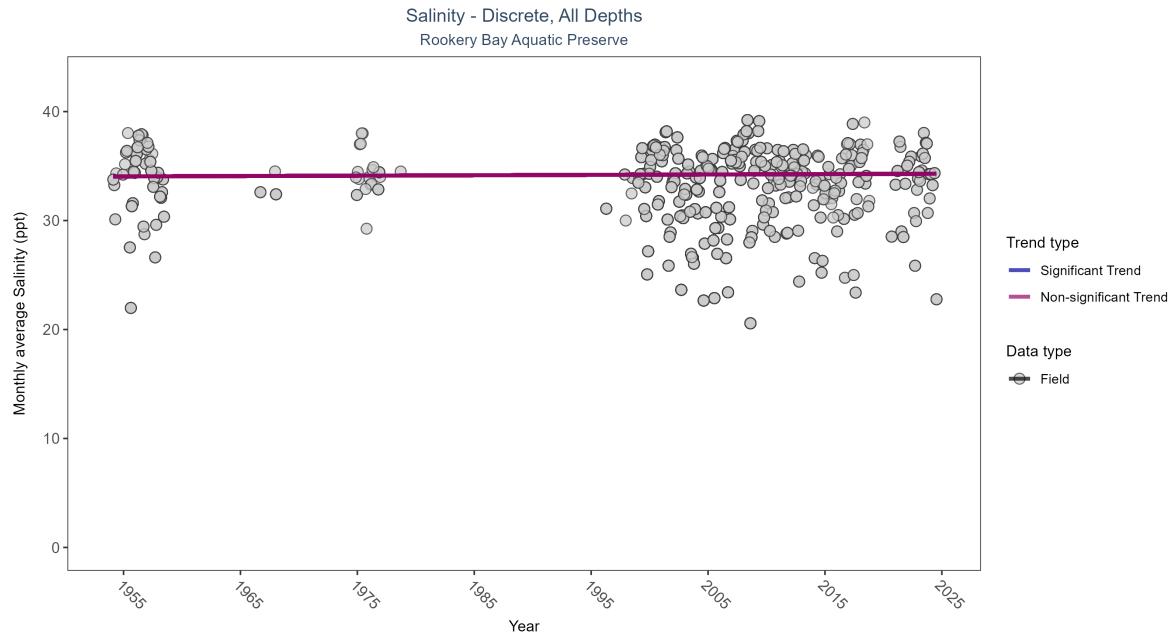


Table 7: Seasonal Kendall-Tau Results for - Salinity

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
All	No significant trend	5272	45	1954 - 2024	34.1	0.0144	34.04711	0.0035	0.6726

## Salinity - Continuous

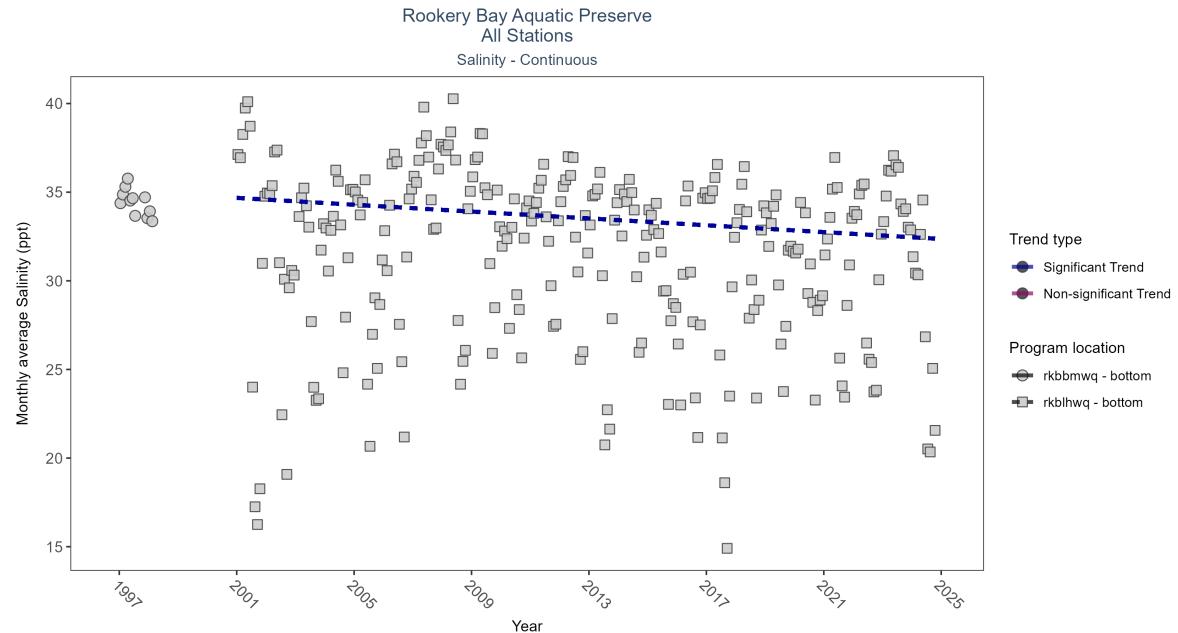


Table 8: Seasonal Kendall-Tau Results for All Stations - Salinity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
rkbbmwq	Insufficient data to calculate trend	12256	2	1997 - 1998	34.5	-	-	-	-
rkbhwq	Significantly decreasing trend	657842	24	2001 - 2024	33.1	-0.16	34.68	-0.1	0.0001

## Water Temperature - Discrete

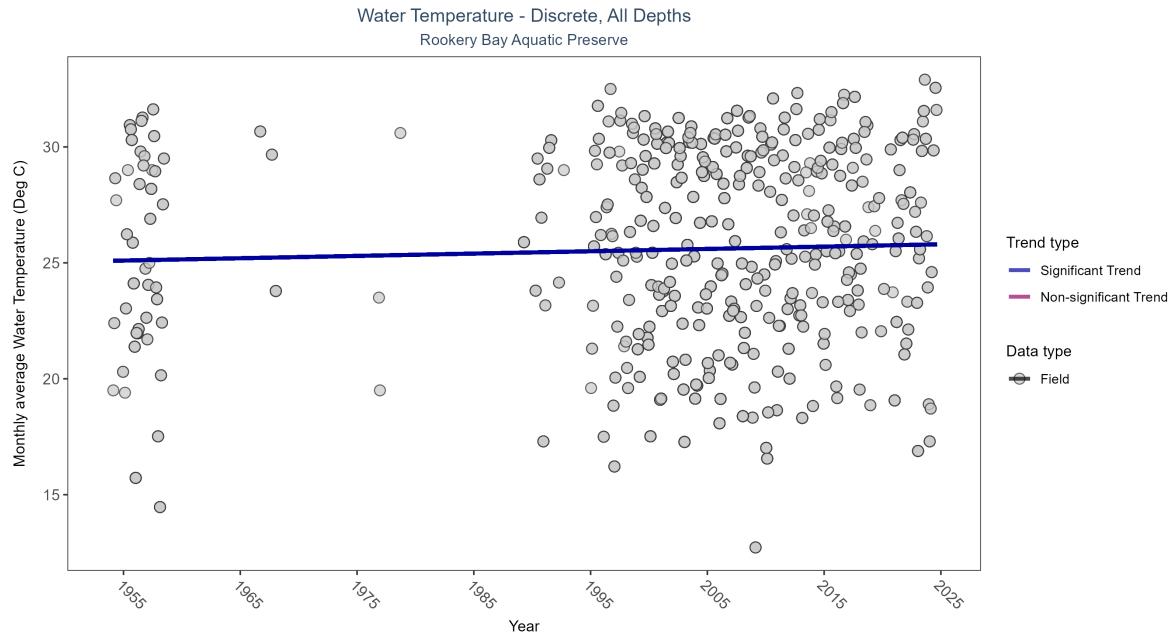


Table 9: Seasonal Kendall-Tau Results for - Water Temperature

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Significantly increasing trend	5225	44	1954 - 2024	26.4	0.0768	25.08853	0.01003	0.0273

## Water Temperature - Continuous

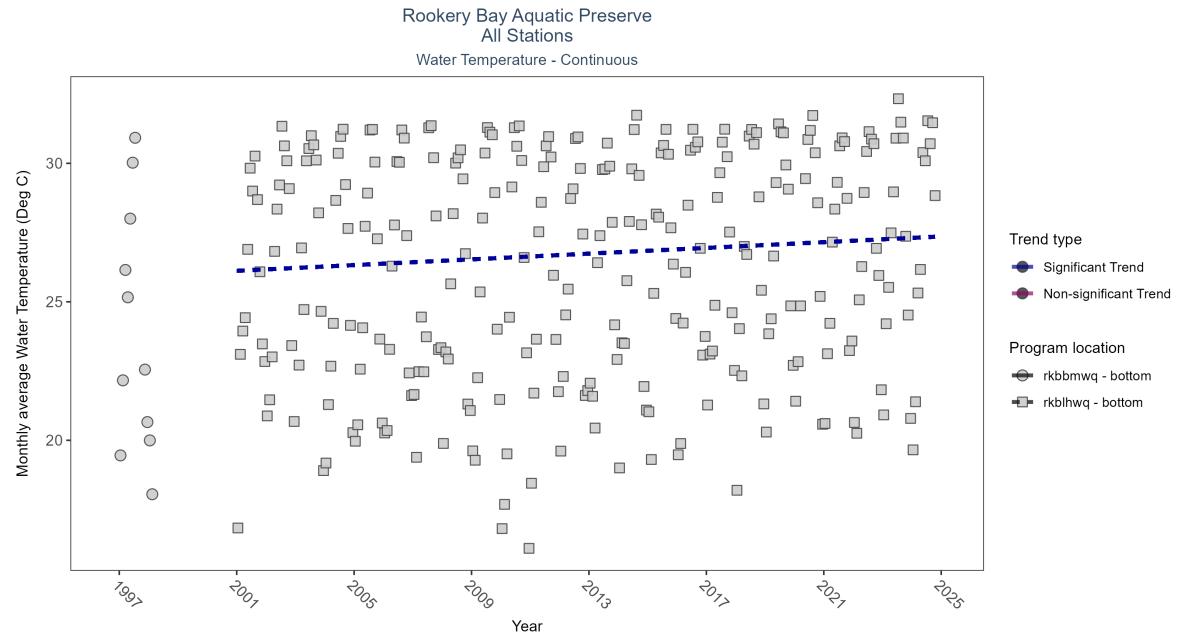


Table 10: Seasonal Kendall-Tau Results for All Stations - Water Temperature

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
rkbbmwq	Insufficient data to calculate trend	12610	2	1997 - 1998	23.8	-	-	-	-
rkblhwq	Significantly increasing trend	688994	24	2001 - 2024	27.0	0.25	26.12	0.05	0.0000

## pH - Discrete

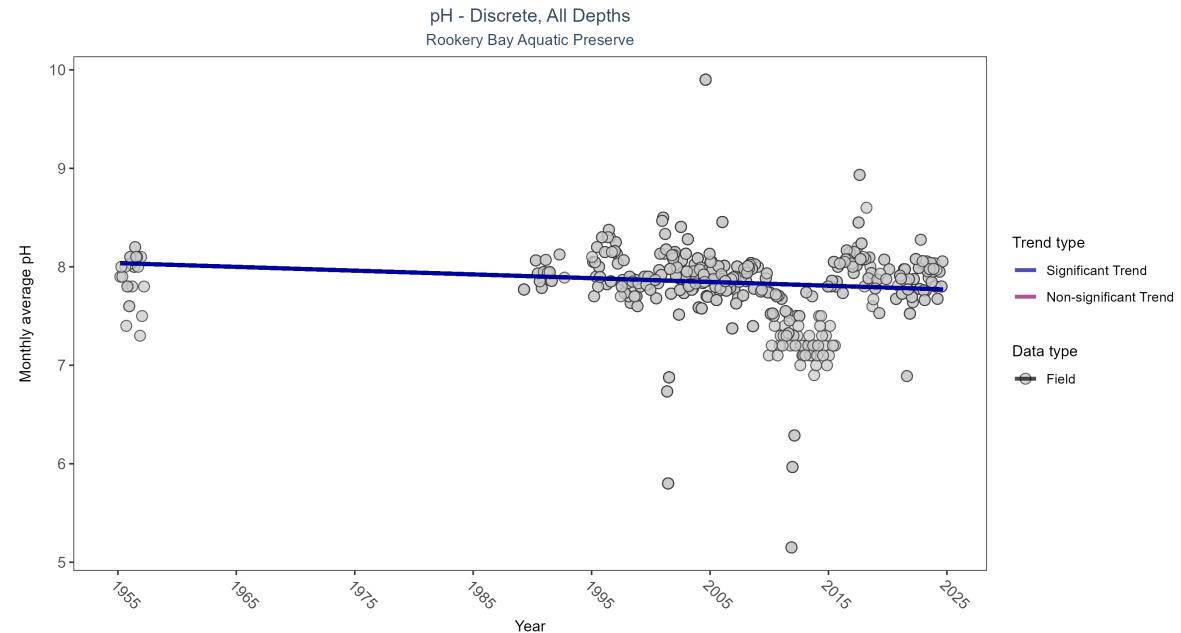


Table 11: Seasonal Kendall-Tau Results for - pH

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Significantly decreasing trend	2450	37	1955 - 2024	7.9	-0.1389	8.03758	-0.00383	0.0004

## pH - Continuous

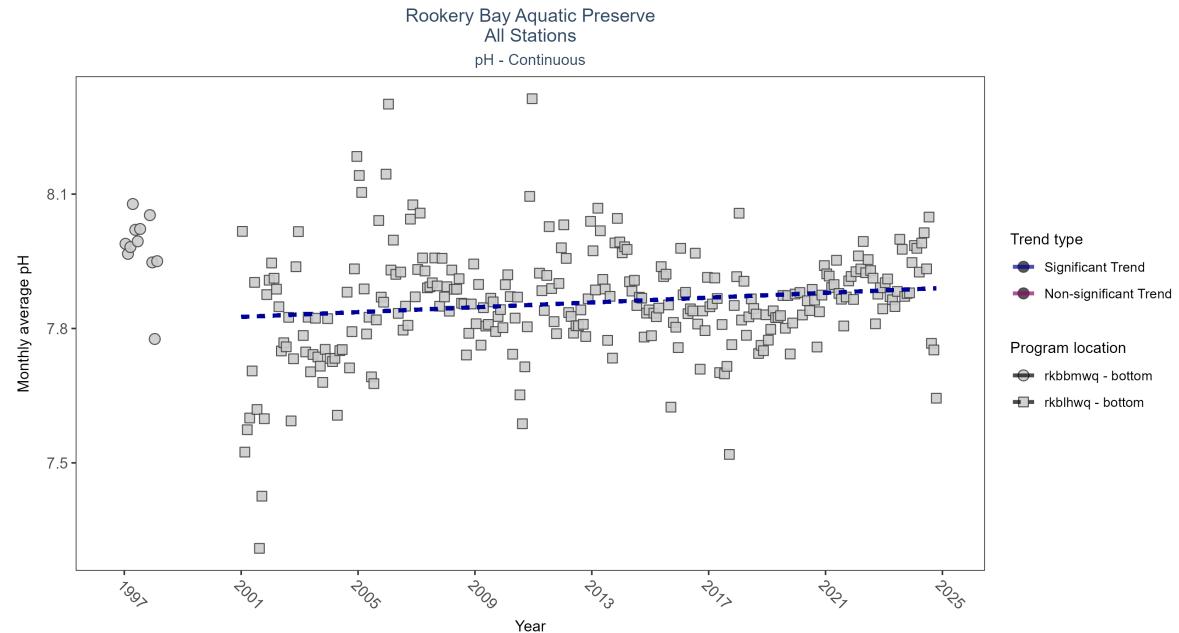


Table 12: Seasonal Kendall-Tau Results for All Stations - pH

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
rkbbmwq	Insufficient data to calculate trend	12610	2	1997 - 1998	8.0	-	-	-	-
rkbhwq	Significantly increasing trend	629829	24	2001 - 2024	7.9	0.14	7.83	0	0.0010

## Water Clarity

### Turbidity - Discrete

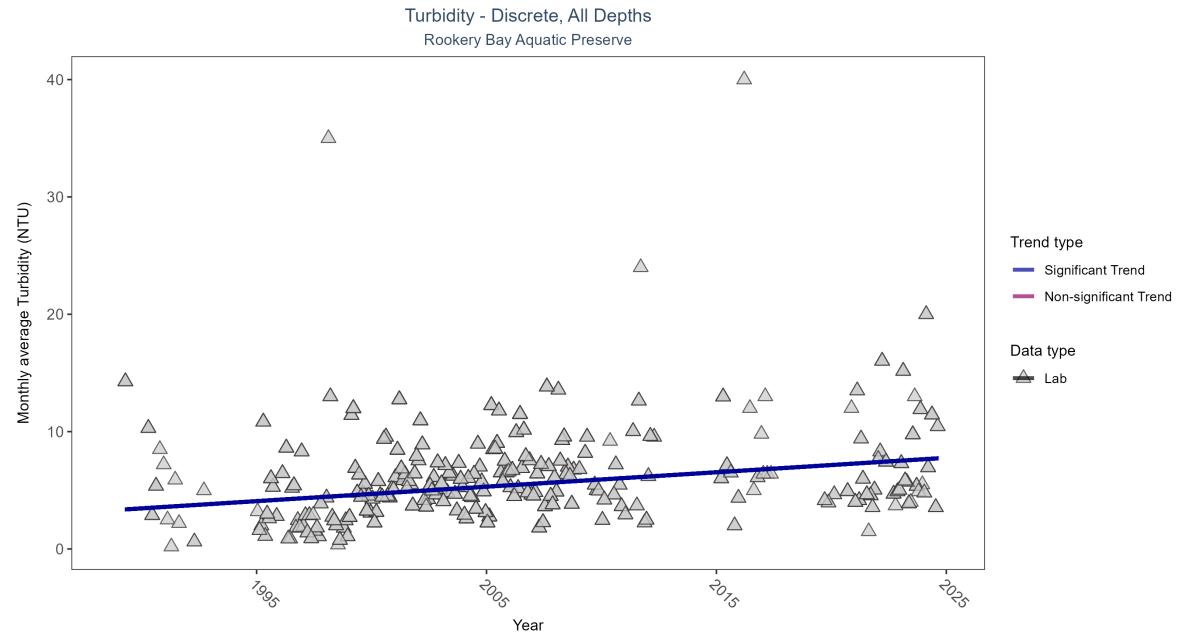


Table 13: Seasonal Kendall-Tau Results for - Turbidity

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	1843	31	1989 - 2024	4.995	0.2463	3.33593	0.12308	0.0000

## Turbidity - Continuous

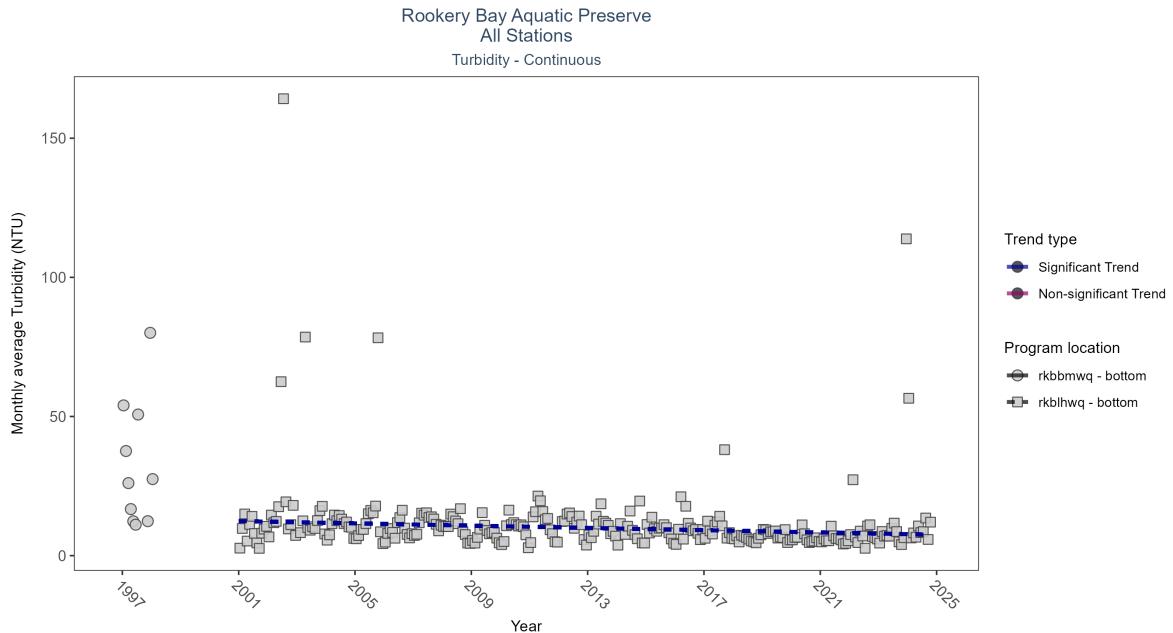


Table 14: Seasonal Kendall-Tau Results for All Stations - Turbidity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
rkbbmwq	Insufficient data to calculate trend	10654	2	1997 - 1998	11	-	-	-	-
rkbhwq	Significantly decreasing trend	605017	24	2001 - 2024	8	-0.27	12.4	-0.2	0.0000

## Total Suspended Solids - Discrete

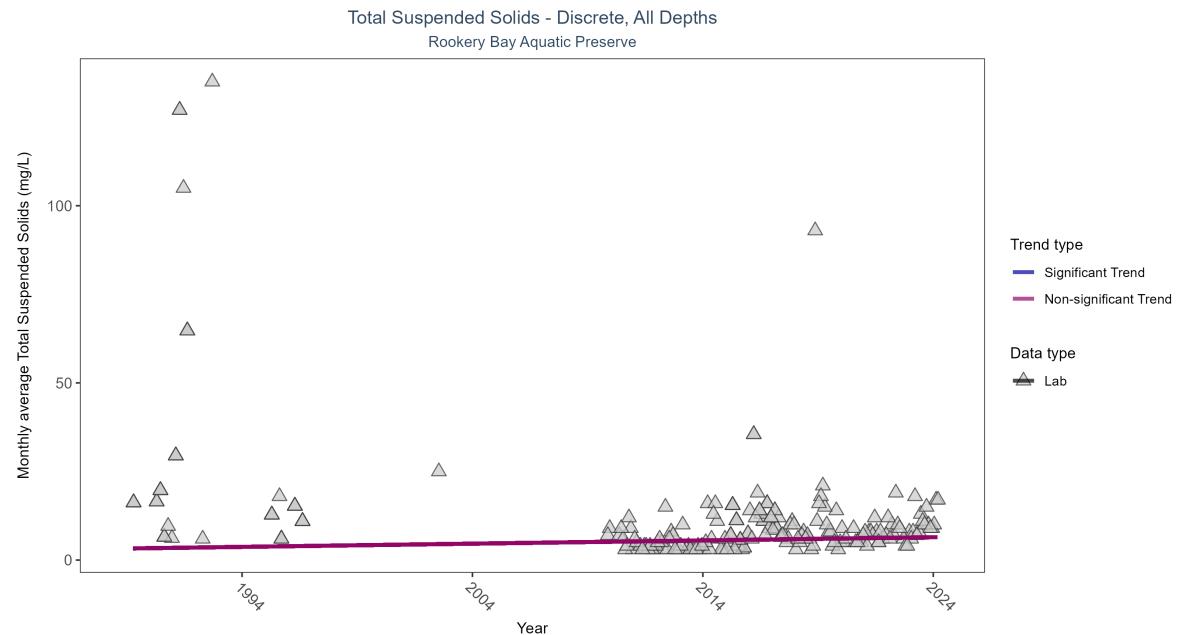


Table 15: Seasonal Kendall-Tau Results for - Total Suspended Solids

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	No significant trend	245	23	1989 - 2024	8	0.1144	3.26636	0.09091	0.0803

## Chlorophyll a, Uncorrected for Pheophytin - Discrete

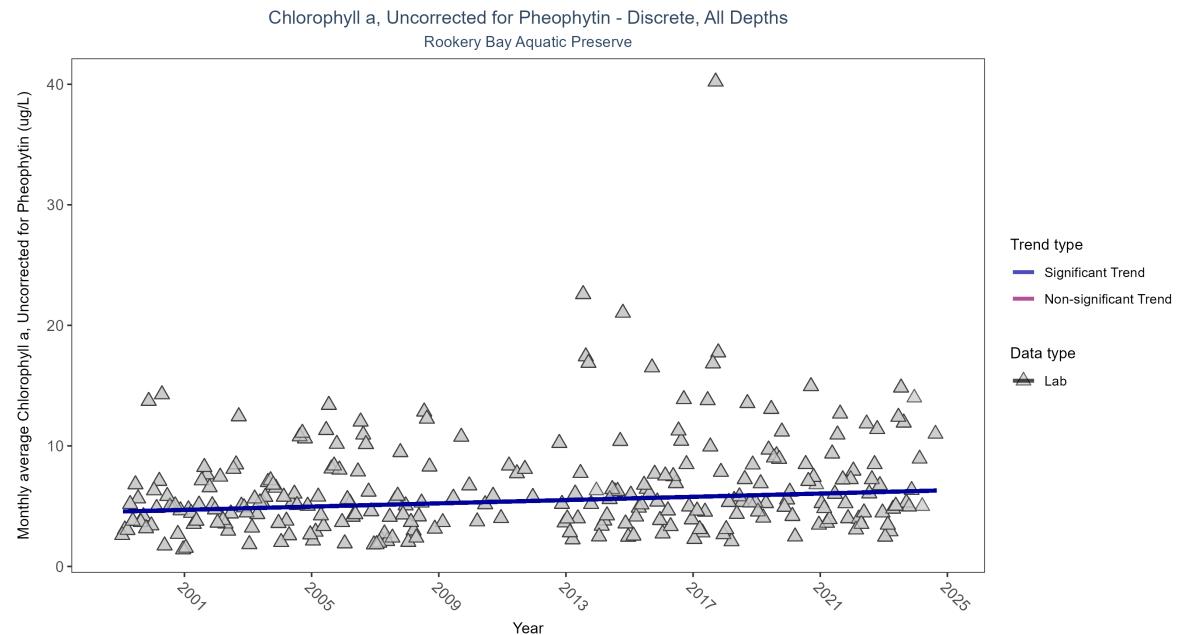


Table 16: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	3141	26	1999 - 2024	5	0.1899	4.55801	0.06768	0.0000

## Chlorophyll a, Corrected for Pheophytin - Discrete

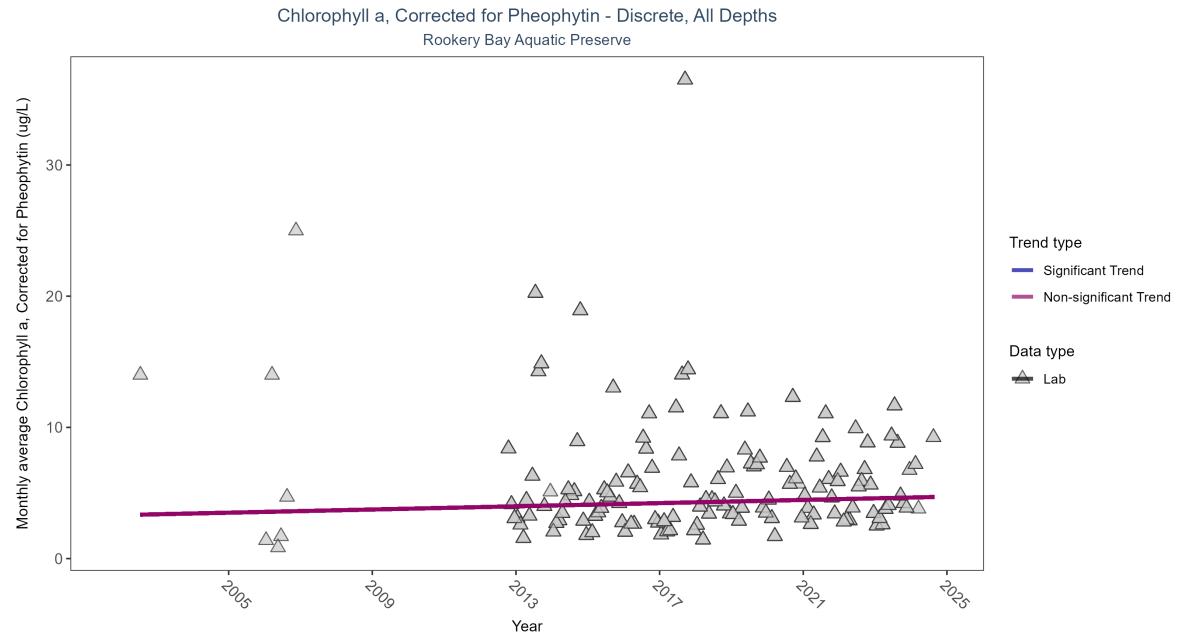


Table 17: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	No significant trend	1546	15	2002 - 2024	4.2	0.1077	3.31555	0.06083	0.0885

## Secchi Depth - Discrete

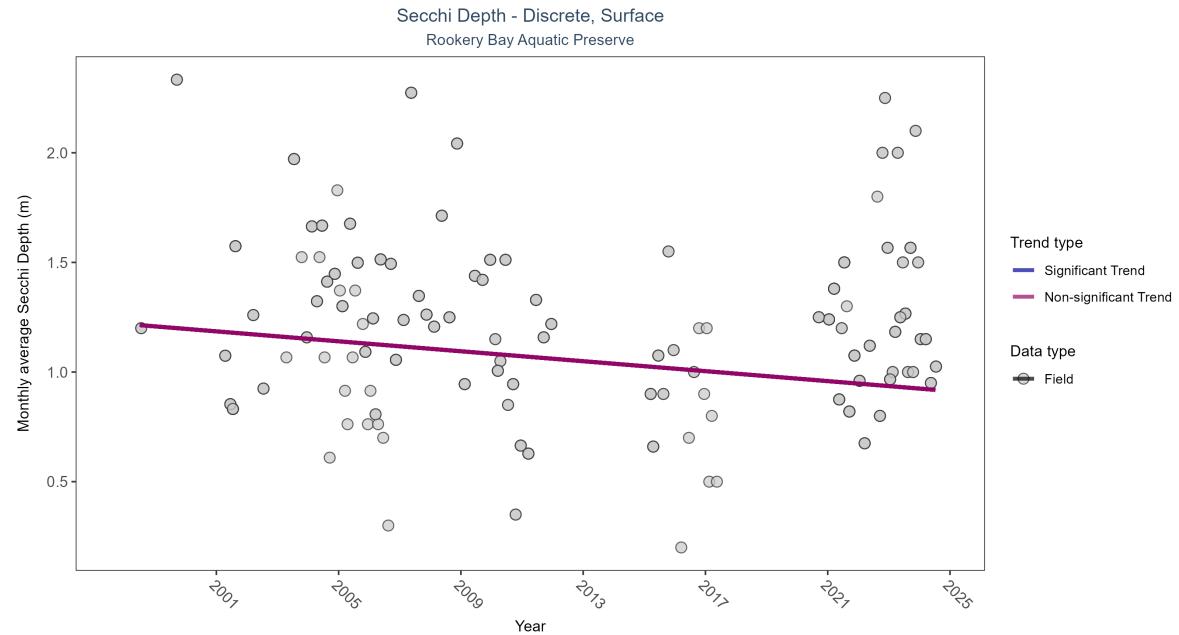


Table 18: Seasonal Kendall-Tau Results for - Secchi Depth

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	No significant trend	436	21	1998 - 2024	1.2	-0.1218	1.21954	-0.01134	0.1146

## Colored Dissolved Organic Matter - Discrete

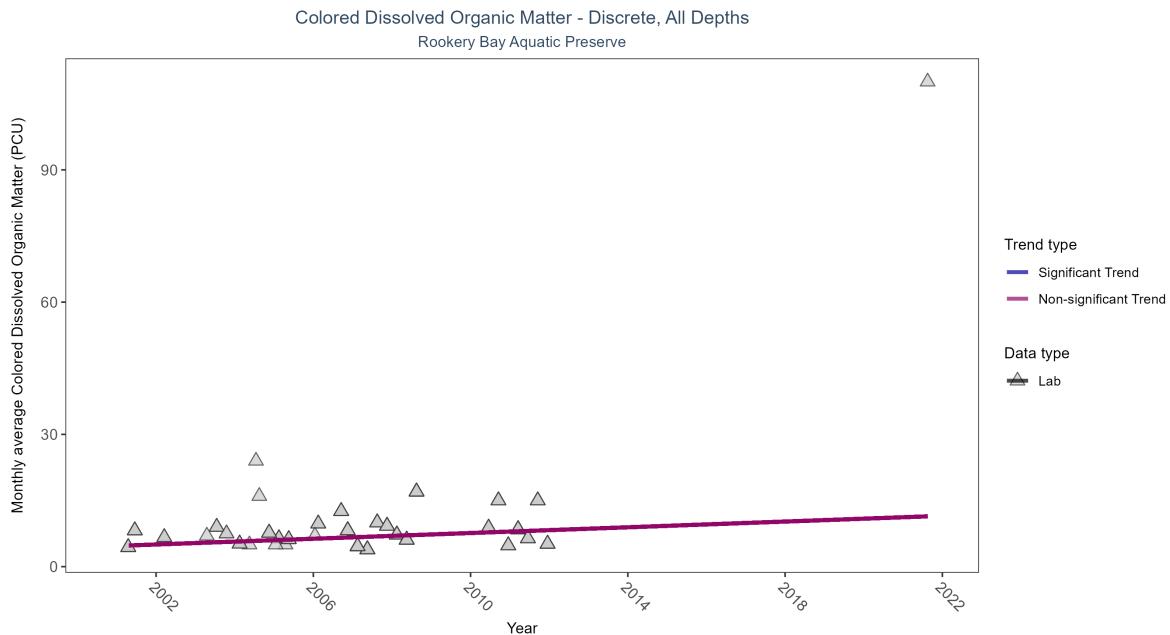


Table 19: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	No significant trend	183	11	2001 - 2021	7	0.5051	4.7	0.325	0.0515