

# Cape Romano-Ten Thousand Islands Aquatic Preserve

## SEACAR Discrete Water Quality Analysis

Last compiled on 14 August, 2024

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# Indicators

## Nutrients

### Total Nitrogen - Discrete

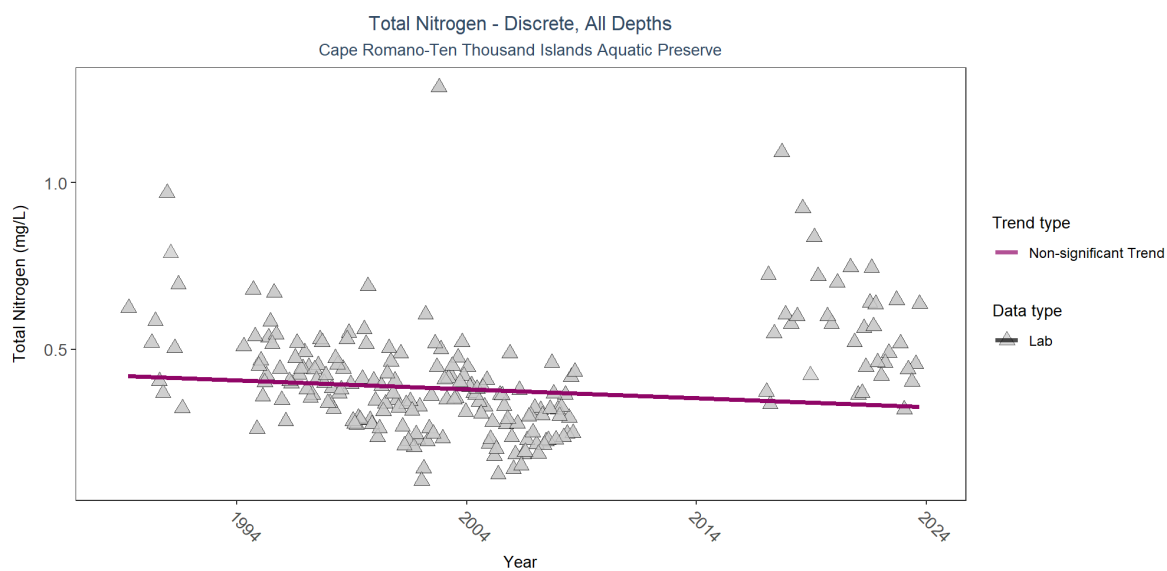


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	No significant trend	1808	25	1989 - 2023	0.36905	-0.1059	0.42034	-0.0027	0.0724

## Total Phosphorus - Discrete

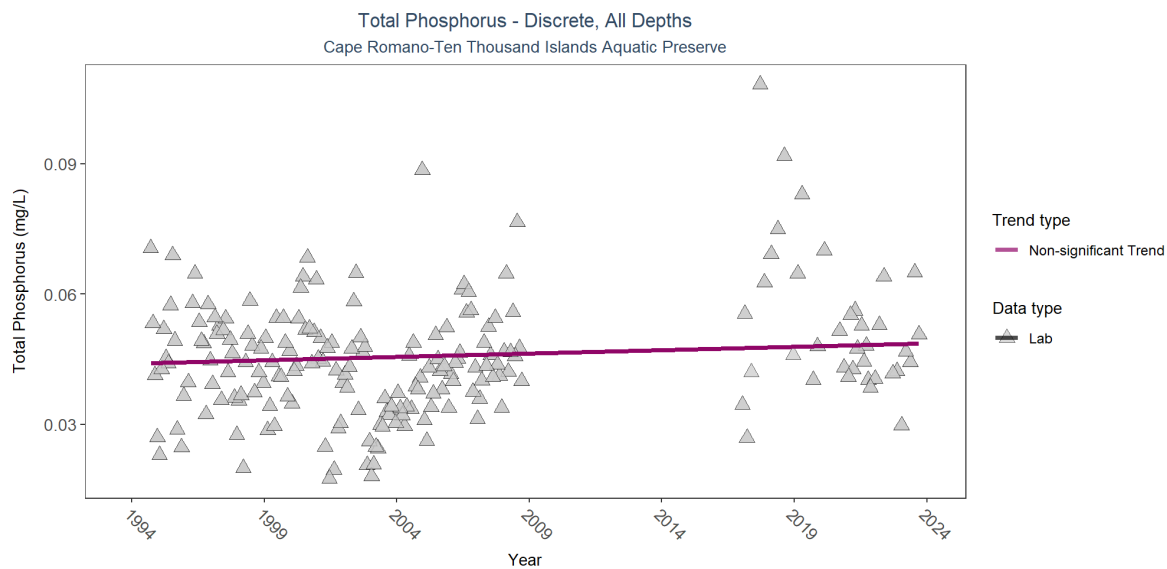


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	No significant trend	1796	22	1994 - 2023	0.0417	0.0693	0.044	0.00015	0.1468

## Water Quality

### Dissolved Oxygen - Discrete

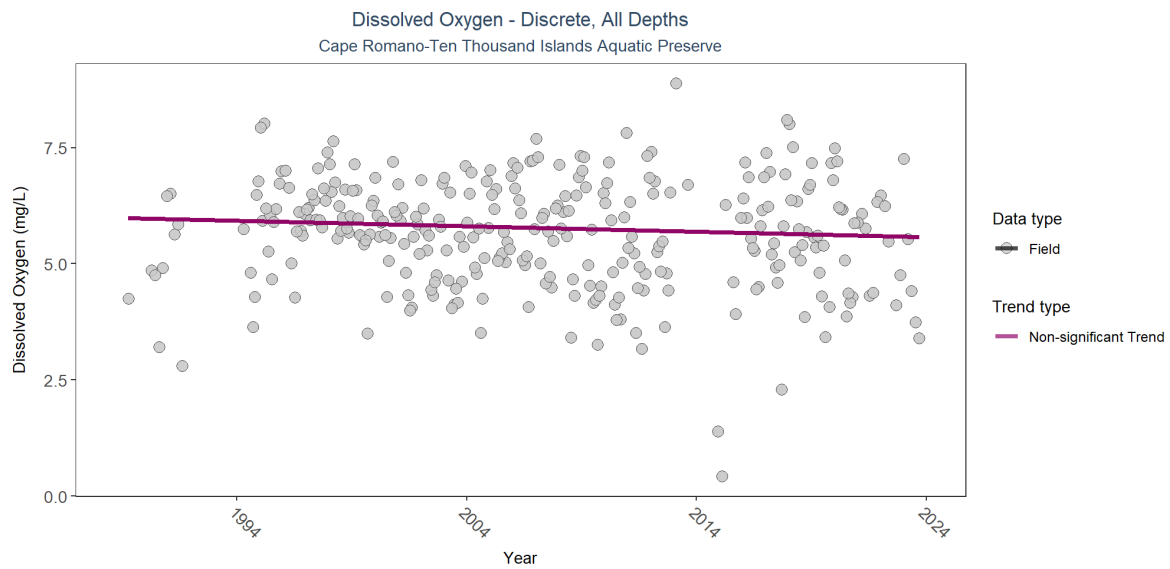


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	No significant trend	10010	33	1989 - 2023	5.8	-0.0746	5.98072	-0.01152	0.0650

## Dissolved Oxygen - Continuous

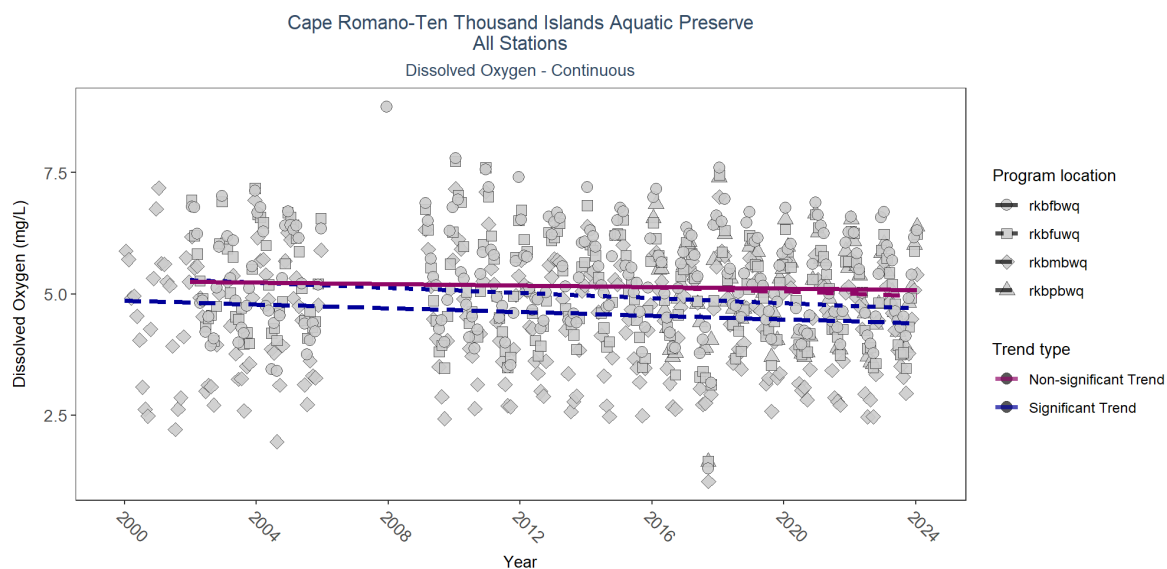


Table 4: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
rkbpbwq	No significant trend	265255	9	2016 - 2024	5.0	-0.14	5.14	-0.02	0.1209
rkmbbwq	Significantly decreasing trend	587313	22	2000 - 2024	4.4	-0.22	4.86	-0.02	0.0000
rkbfuwq	Significantly decreasing trend	568567	20	2002 - 2024	5.1	-0.31	5.29	-0.03	0.0000
rkbfbwq	No significant trend	533434	21	2002 - 2024	5.4	-0.06	5.25	-0.01	0.2007

## Dissolved Oxygen Saturation - Discrete

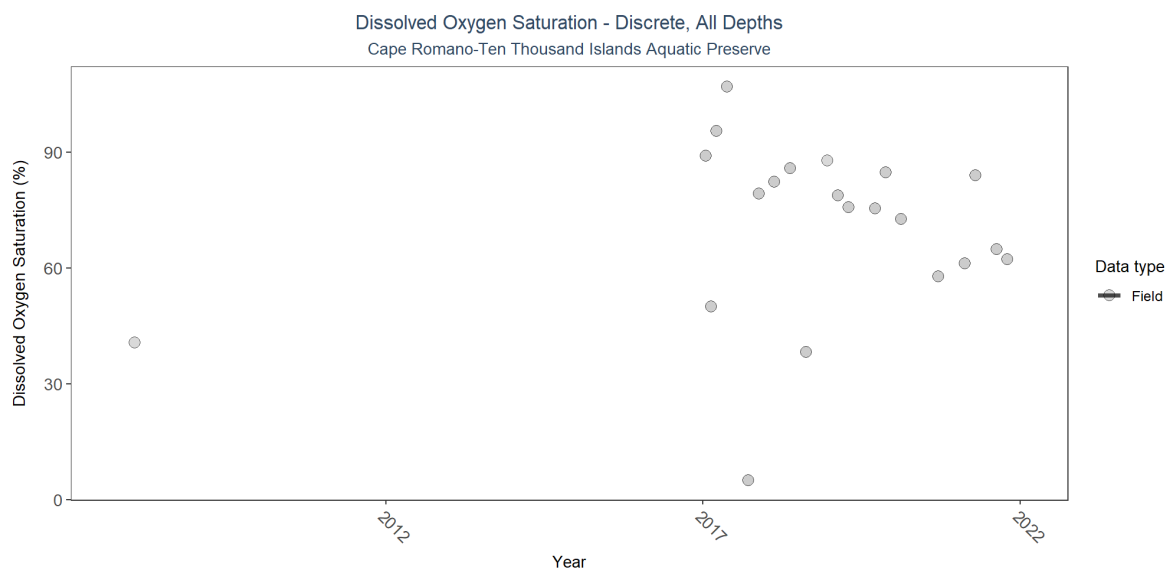


Table 5: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Insufficient data to calculate trend	72	6	2008 - 2021	75.25	-	-	-	NA

## Dissolved Oxygen Saturation - Continuous

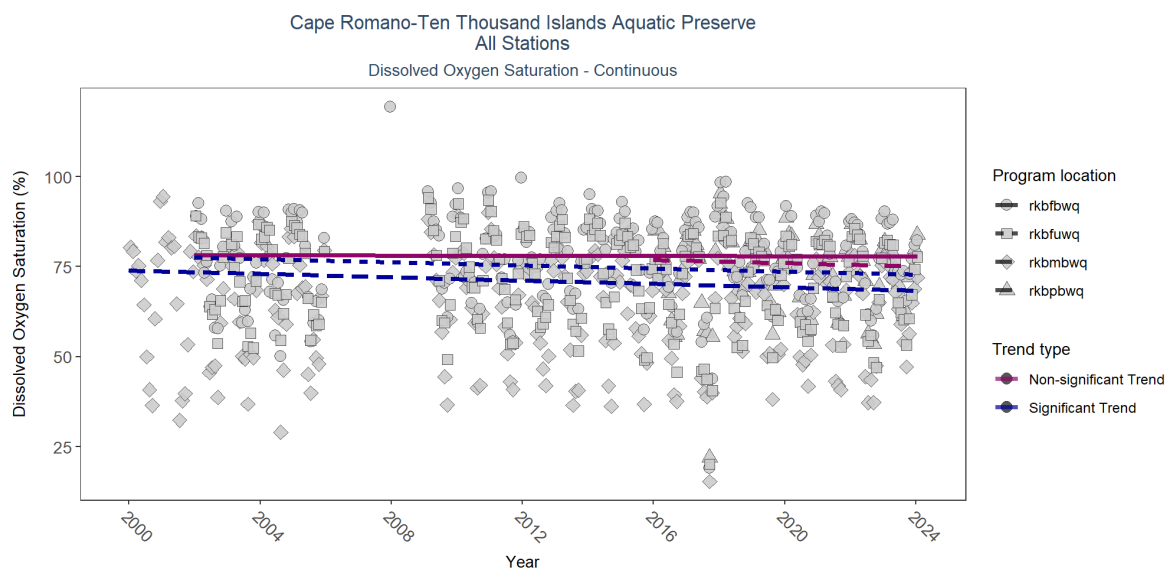


Table 6: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen Saturation

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
rkbpbwq	No significant trend	266877	9	2016 - 2024	72.8	-0.09	76.83	-0.23	0.2956
rkbbmwq	Significantly decreasing trend	593607	22	2000 - 2024	65.4	-0.19	73.98	-0.24	0.0000
rkbfbwq	No significant trend	537719	21	2002 - 2024	78.6	0.00	78.14	-0.01	0.9514
rkbfuwq	Significantly decreasing trend	568826	20	2002 - 2024	72.5	-0.22	77.54	-0.21	0.0000

## Salinity - Discrete

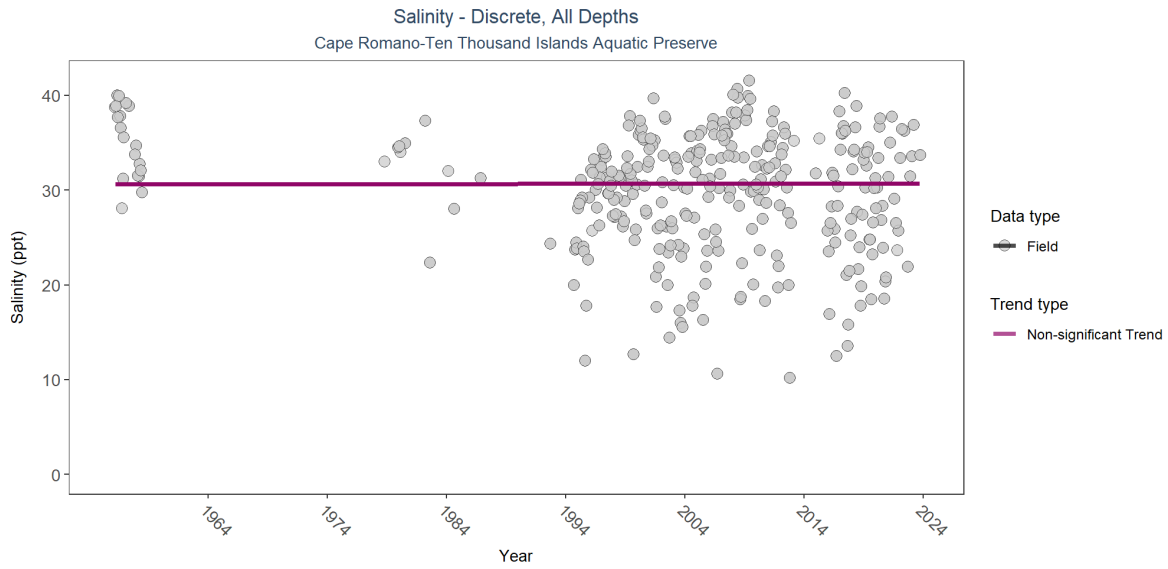


Table 7: Seasonal Kendall-Tau Results for - Salinity

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
All	No significant trend	10916	43	1956 - 2023	31.9	0.0004	30.64712	0.00039	0.9748



## Salinity - Continuous

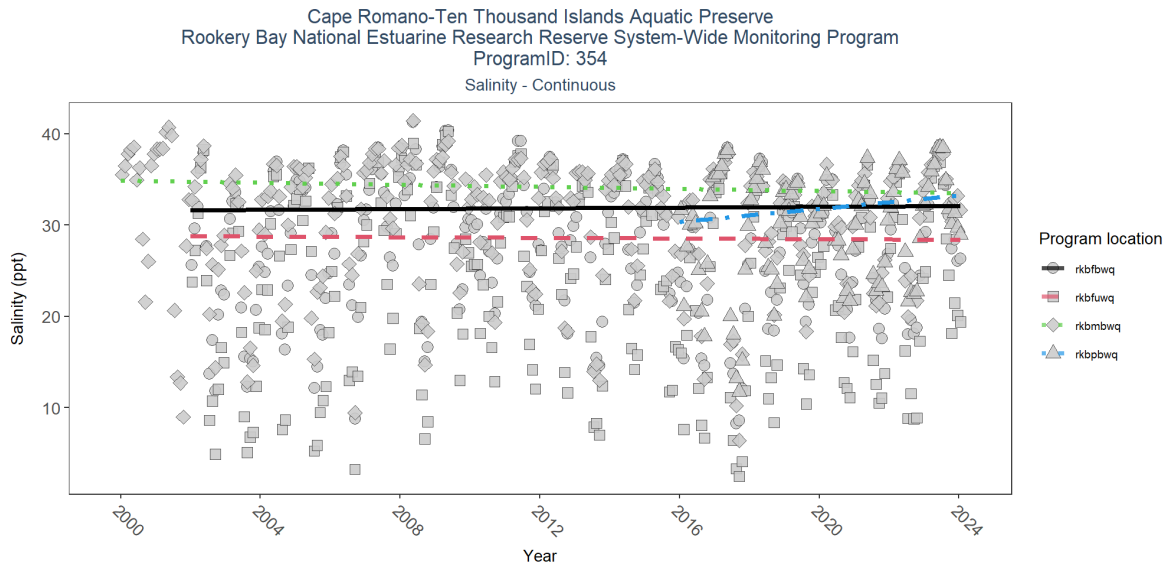


Table 8: Seasonal Kendall-Tau Results for All Stations - Salinity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
rkbpbwq	No significant trend	265563	9	2016 - 2024	30.5	0.15	30.35	0.36	0.0900
rkmbwbq	No significant trend	668919	25	2000 - 2024	33.4	-0.08	34.90	-0.06	0.0556
rkbfwbq	No significant trend	632702	23	2002 - 2024	29.9	0.02	31.64	0.02	0.6004
rkbfuwq	No significant trend	649121	23	2002 - 2024	26.3	-0.02	28.79	-0.02	0.7188

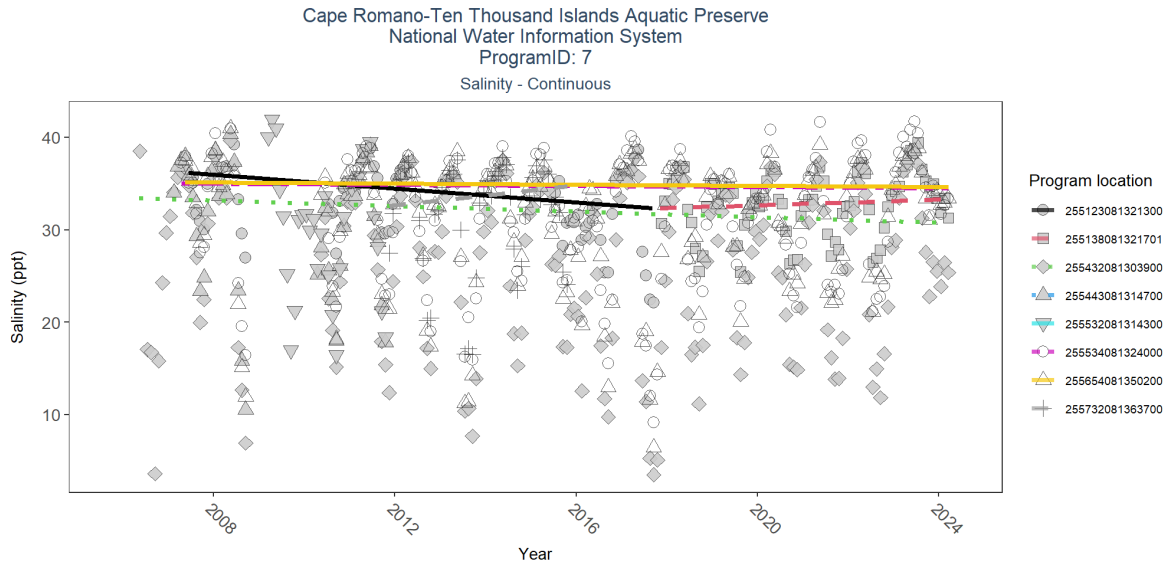


Table 9: Seasonal Kendall-Tau Results for All Stations - Salinity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
255654081350200	No significant trend	5992	17	2007 - 2024	34	-0.04	35.12	-0.03	0.4902
255138081321701	No significant trend	2288	8	2017 - 2024	33	0.14	32.22	0.15	0.2225
255534081324000	No significant trend	5987	17	2007 - 2024	33	-0.03	35.03	-0.03	0.6385
255443081314700	Insufficient data to calculate trend	1465	4	2007 - 2011	32	-	-	-	-
255732081363700	No significant trend	1434	5	2011 - 2015	34	0.25	32.15	0.52	0.0955
255432081303900	Significantly decreasing trend	6582	18	2006 - 2024	29	-0.14	33.45	-0.15	0.0072
255123081321300	Significantly decreasing trend	1809	8	2007 - 2017	34	-0.25	36.3	-0.37	0.0129
255532081314300	Insufficient data to calculate trend	902	3	2009 - 2011	31	-	-	-	-

## Water Temperature - Discrete

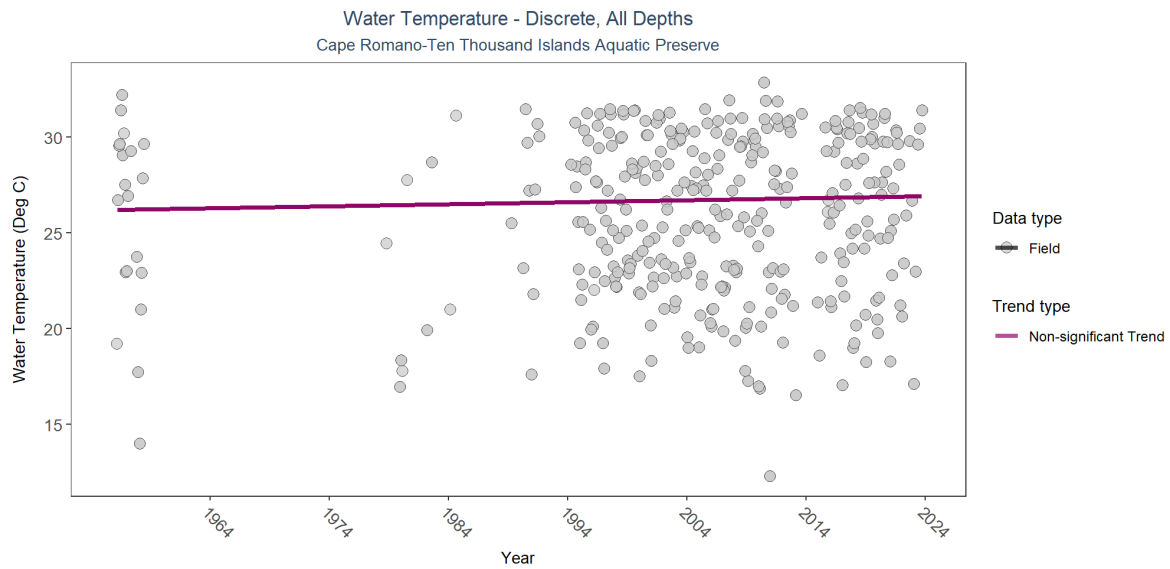


Table 10: Seasonal Kendall-Tau Results for - Water Temperature

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	No significant trend	10525	41	1956 - 2023	26.8	0.0563	26.22288	0.01055	0.1216

## Water Temperature - Continuous

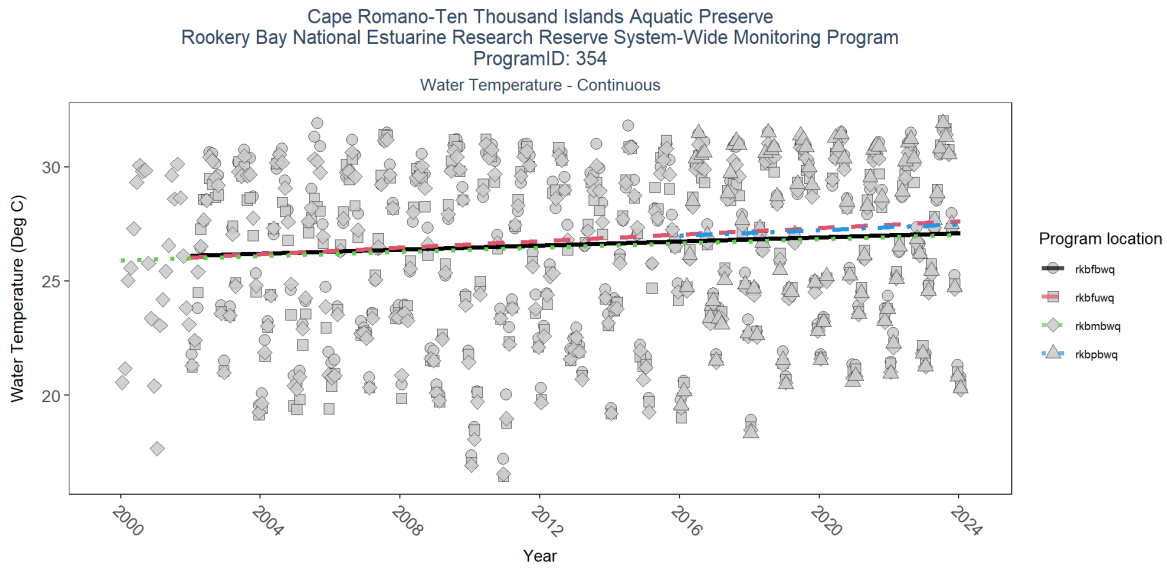


Table 11: Seasonal Kendall-Tau Results for All Stations - Water Temperature

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
rkmbwq	Significantly increasing trend	692233	25	2000 - 2024	26.8	0.25	25.91	0.05	0.0000
rkbpbwq	No significant trend	268436	9	2016 - 2024	27.4	0.11	27.00	0.06	0.2068
rkbfwq	Significantly increasing trend	648515	23	2002 - 2024	27.0	0.23	26.11	0.04	0.0000
rkbfuwq	Significantly increasing trend	659552	23	2002 - 2024	26.9	0.28	26.03	0.07	0.0000

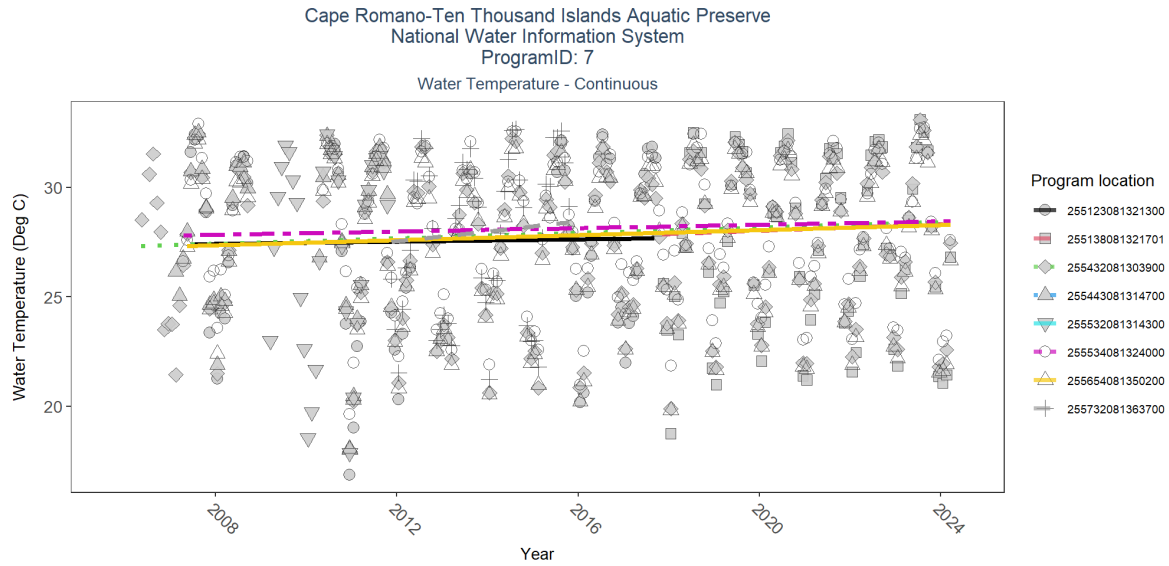


Table 12: Seasonal Kendall-Tau Results for All Stations - Water Temperature

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
255432081303900	Significantly increasing trend	6586	18	2006 - 2024	28.3	0.2	27.29	0.06	0.0001
255654081350200	Significantly increasing trend	6204	17	2007 - 2024	28.0	0.19	27.3	0.06	0.0007
255732081363700	No significant trend	1435	5	2011 - 2015	28.4	0.24	27.3	0.23	0.1149
255443081314700	Insufficient data to calculate trend	2011	4	2007 - 2011	29.3	-	-	-	-
255534081324000	Significantly increasing trend	6351	17	2007 - 2024	28.7	0.16	27.8	0.04	0.0044
255532081314300	Insufficient data to calculate trend	906	3	2009 - 2011	29.3	-	-	-	-
255138081321701	No significant trend	2303	8	2017 - 2024	27.9	0.1	27.79	0.07	0.3539
255123081321300	No significant trend	1818	8	2007 - 2017	28.2	0.1	27.39	0.03	0.4183

## pH - Discrete

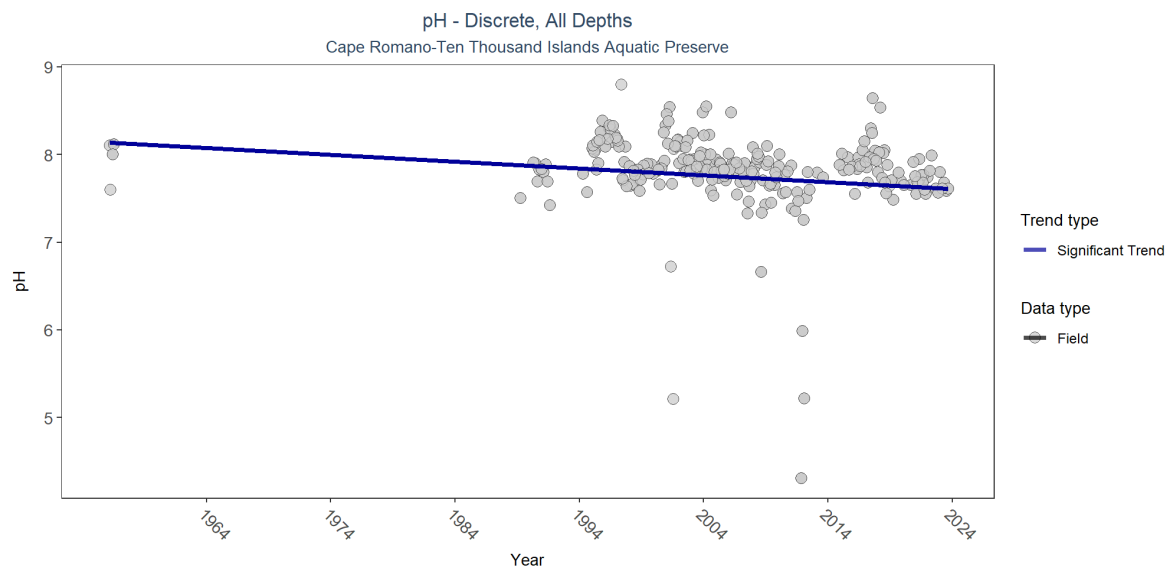


Table 13: Seasonal Kendall-Tau Results for - pH

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Significantly decreasing trend	4208	34	1956 - 2023	7.9	-0.2085	8.13643	-0.00776	0.0000

## pH - Continuous

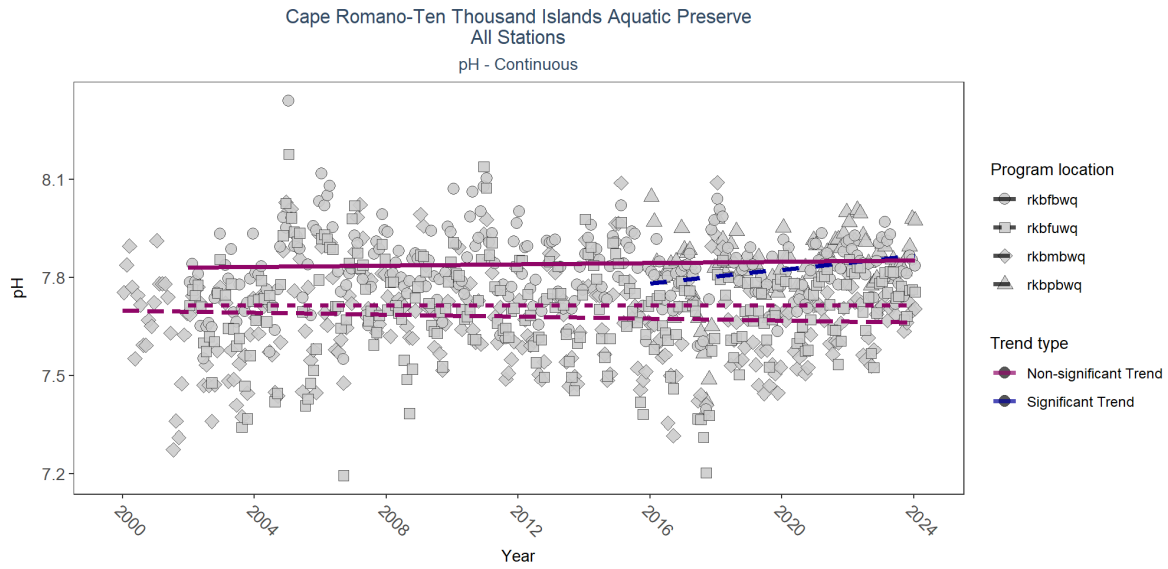


Table 14: Seasonal Kendall-Tau Results for All Stations - pH

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
rkbpbwq	Significantly increasing trend	258730	9	2016 - 2024	7.8	0.26	7.78	0.01	0.0035
rkmbbwq	No significant trend	657568	25	2000 - 2024	7.7	-0.07	7.70	0.00	0.1270
rkbfwbq	No significant trend	600183	23	2002 - 2024	7.8	0.05	7.83	0.00	0.2322
rkbfuwq	No significant trend	623866	23	2002 - 2024	7.7	0.00	7.72	0.00	0.9803

## Water Clarity

### Turbidity - Discrete

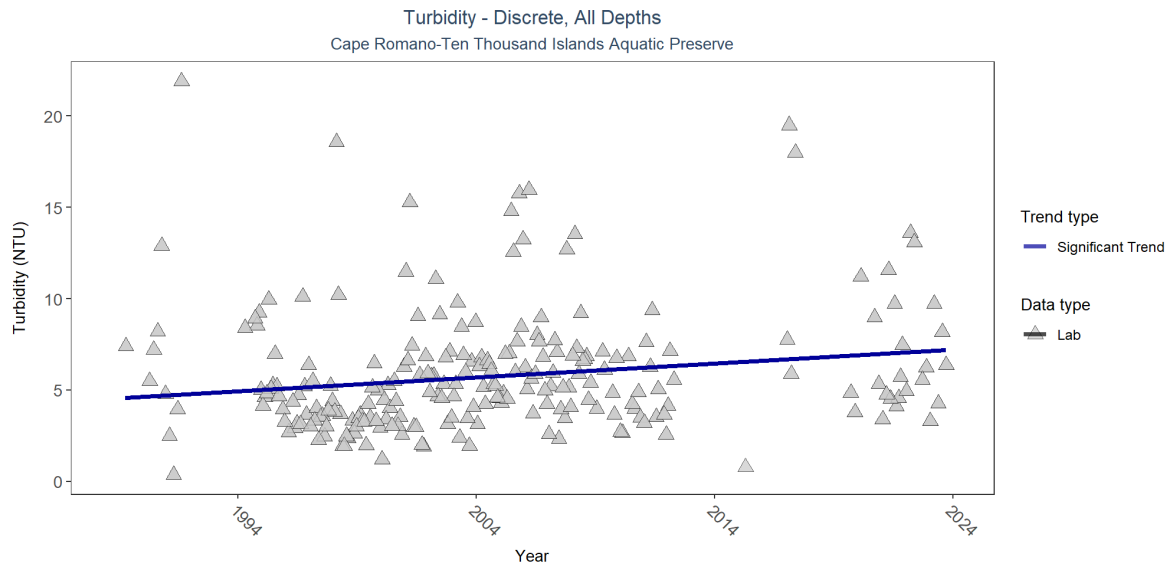


Table 15: Seasonal Kendall-Tau Results for - Turbidity

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	4619	29	1989 - 2023	3.965	0.1426	4.57026	0.07526	0.0023



## Turbidity - Continuous

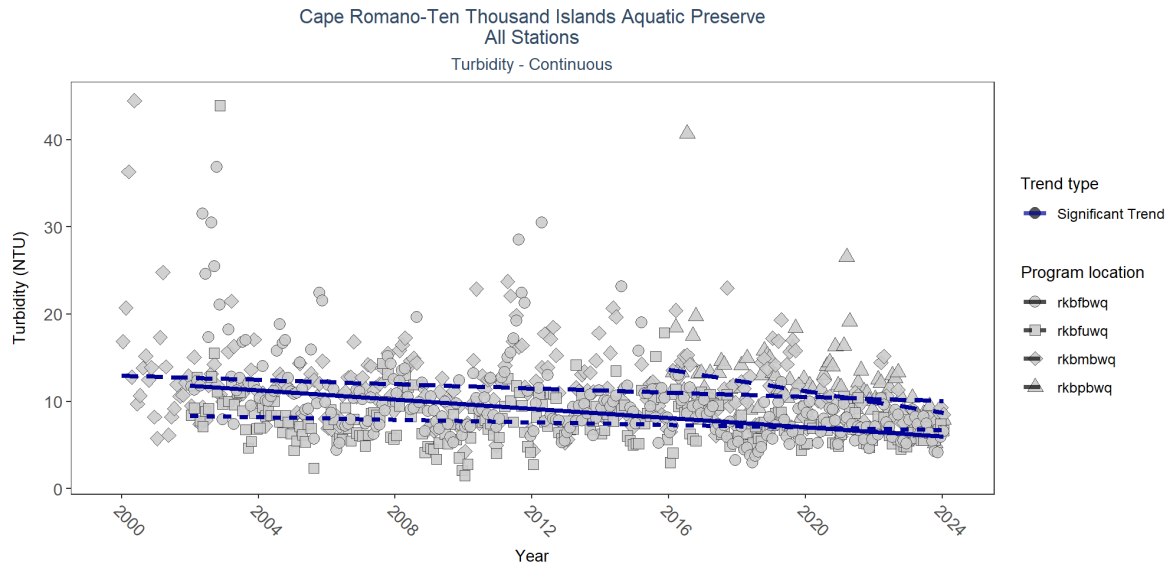


Table 16: Seasonal Kendall-Tau Results for All Stations - Turbidity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
rkbpbwq	Significantly decreasing trend	261955	9	2016 - 2024	10	-0.40	13.64	-0.62	0.0000
rkmbwq	Significantly decreasing trend	645856	25	2000 - 2024	10	-0.20	12.92	-0.12	0.0000
rkbfuwq	Significantly decreasing trend	589837	23	2002 - 2024	6	-0.17	8.37	-0.07	0.0002
rkfbwq	Significantly decreasing trend	612433	23	2002 - 2024	7	-0.40	11.80	-0.27	0.0000

## Total Suspended Solids - Discrete

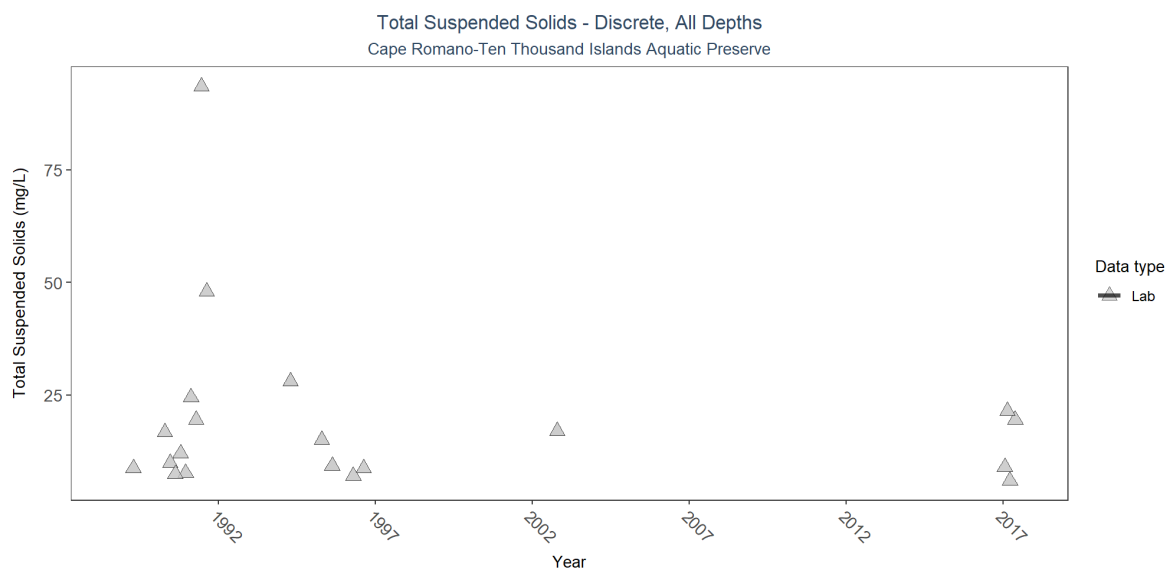


Table 17: Seasonal Kendall-Tau Results for - Total Suspended Solids

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Insufficient data to calculate trend	45	8	1989 - 2017	13	-	-	-	NA

## Chlorophyll a, Uncorrected for Pheophytin - Discrete

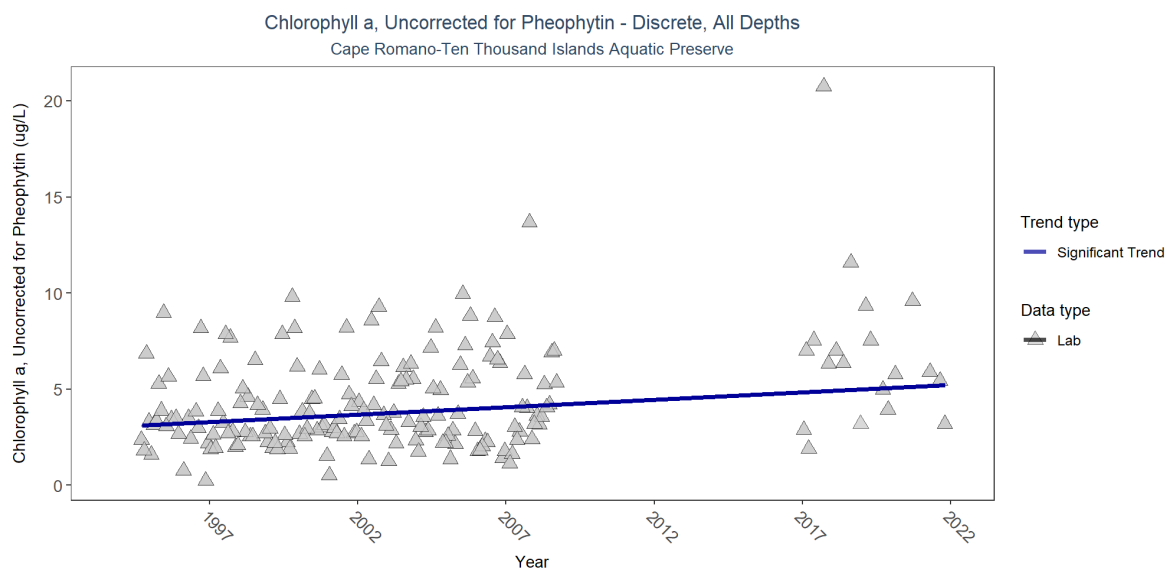


Table 18: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	1620	20	1994 - 2021	3.2344	0.1619	3.0689	0.07734	0.0024

## Chlorophyll a, Corrected for Pheophytin - Discrete

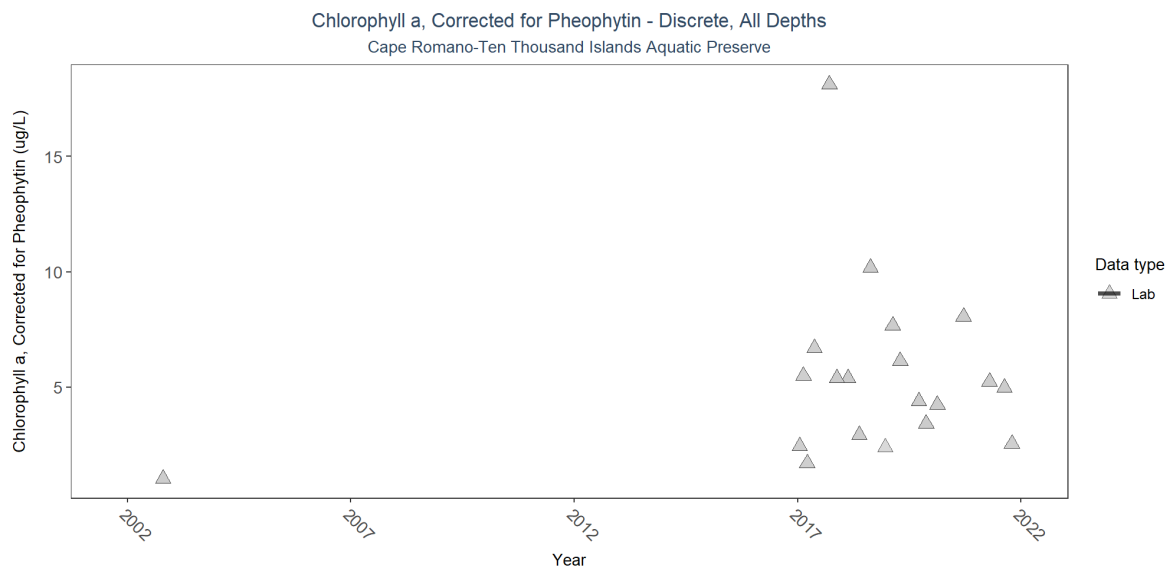


Table 19: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Insufficient data to calculate trend	66	6	2002 - 2021	4.45	-	-	-	NA

## Secchi Depth - Discrete

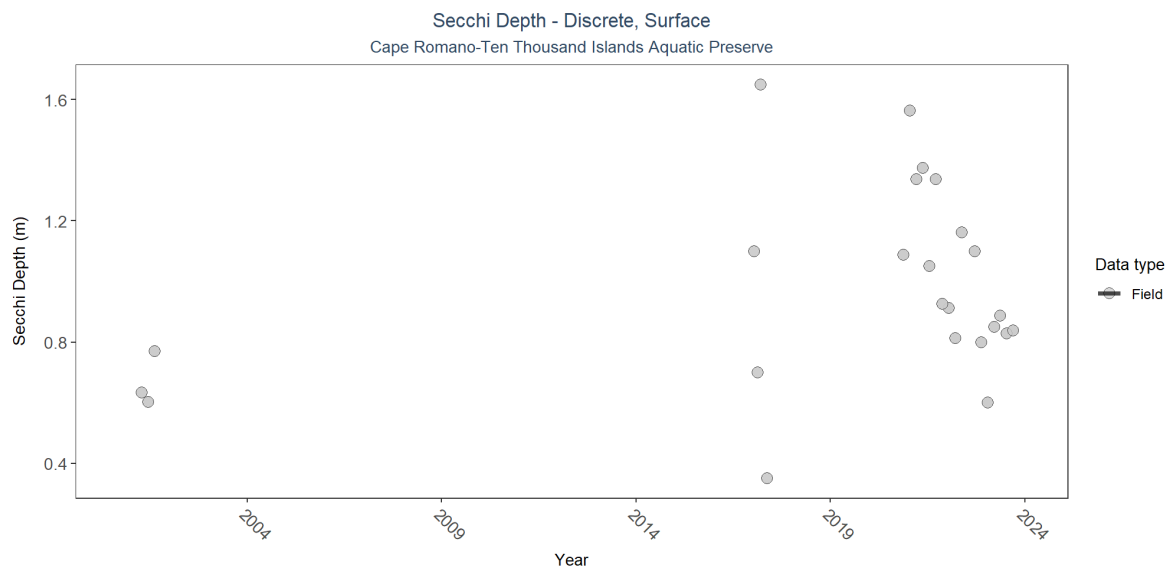


Table 20: Seasonal Kendall-Tau Results for - Secchi Depth

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Insufficient data to calculate trend	203	6	2001 - 2023	0.9	-	-	-	NA

## Colored Dissolved Organic Matter - Discrete

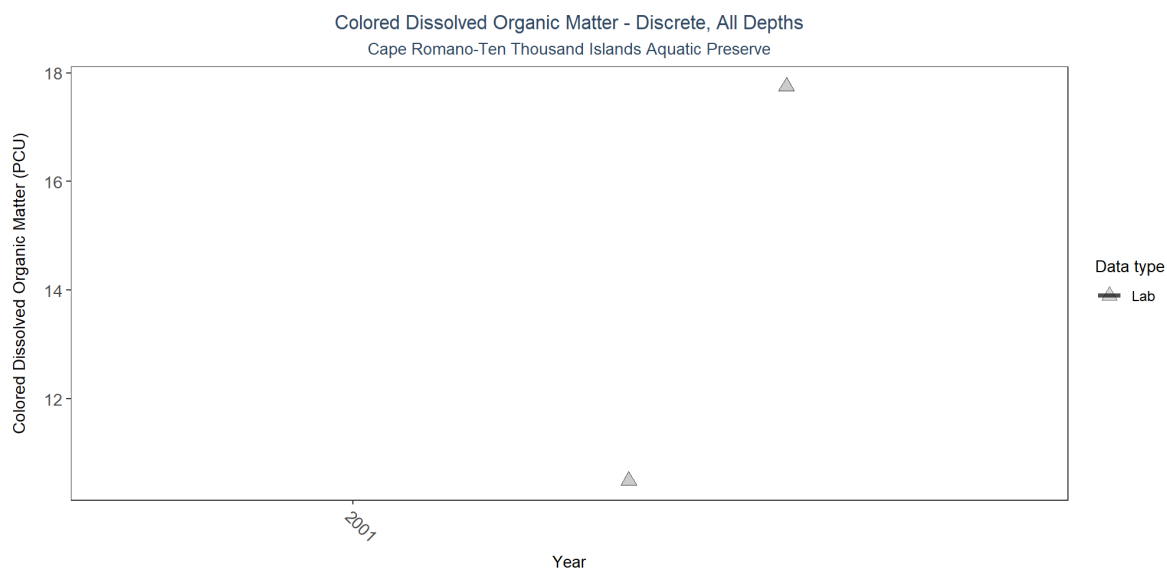


Table 21: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Insufficient data to calculate trend	8	1	2001 - 2001	13	-	-	-	NA