

Nassau River-St. Johns River Marshes 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

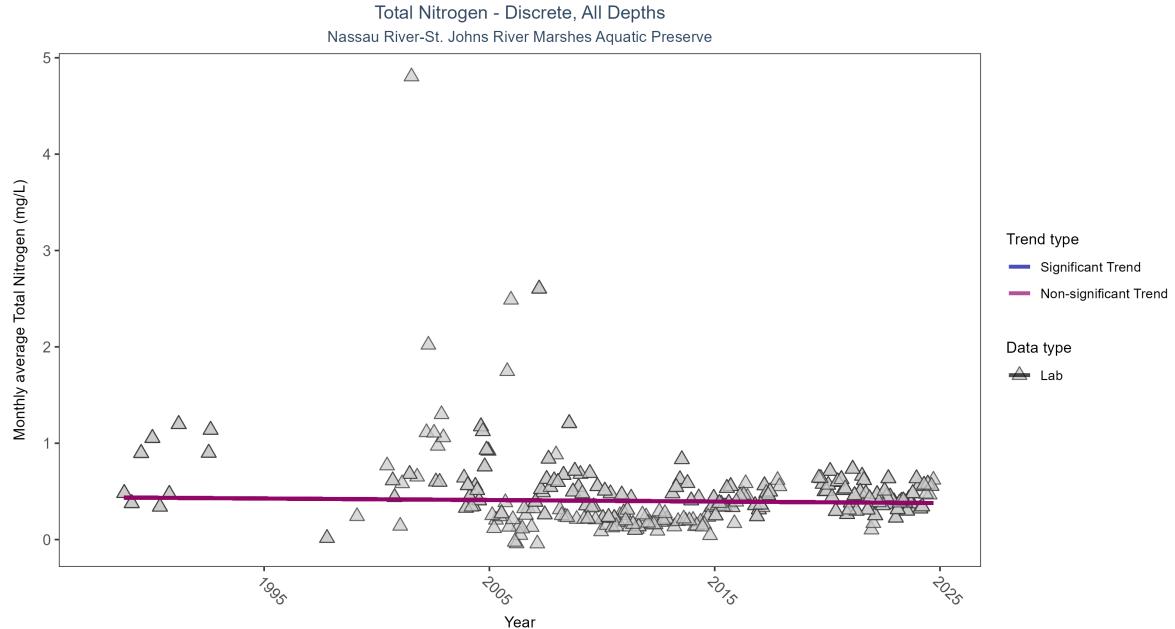


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	No significant trend	983	31	1988 - 2024	0.415	-0.0285	0.43734	-0.00157	0.5461

Total Phosphorus - Discrete

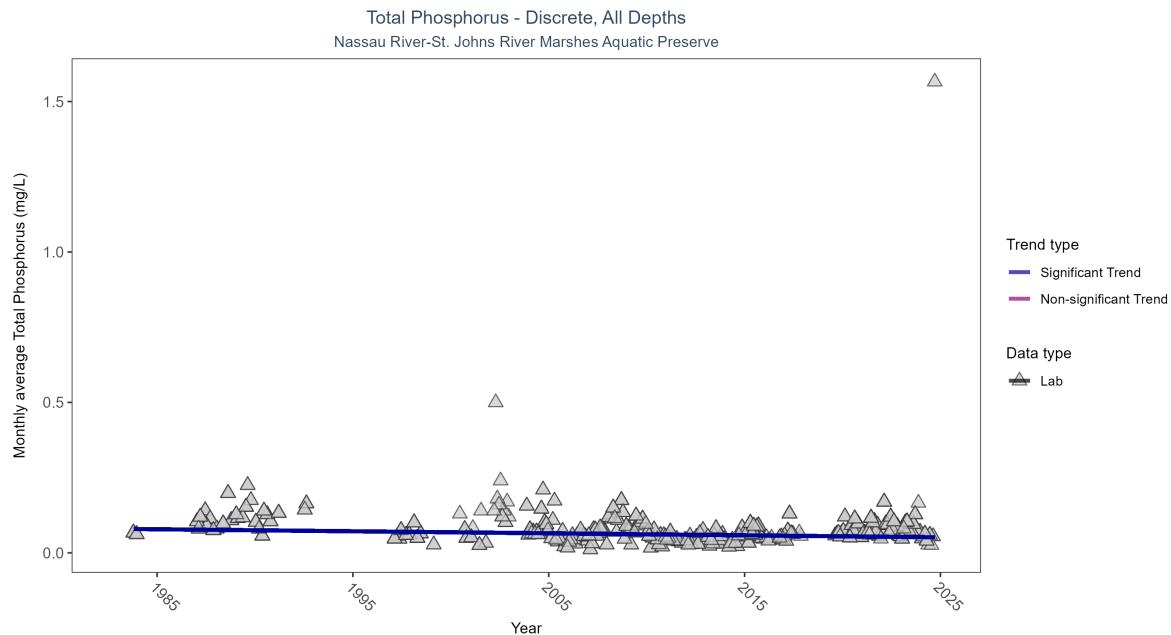


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly decreasing trend	1742	34	1983 - 2024	0.069	-0.1445	0.07969	-0.00067	0.0014

Water Quality

Dissolved Oxygen - Discrete

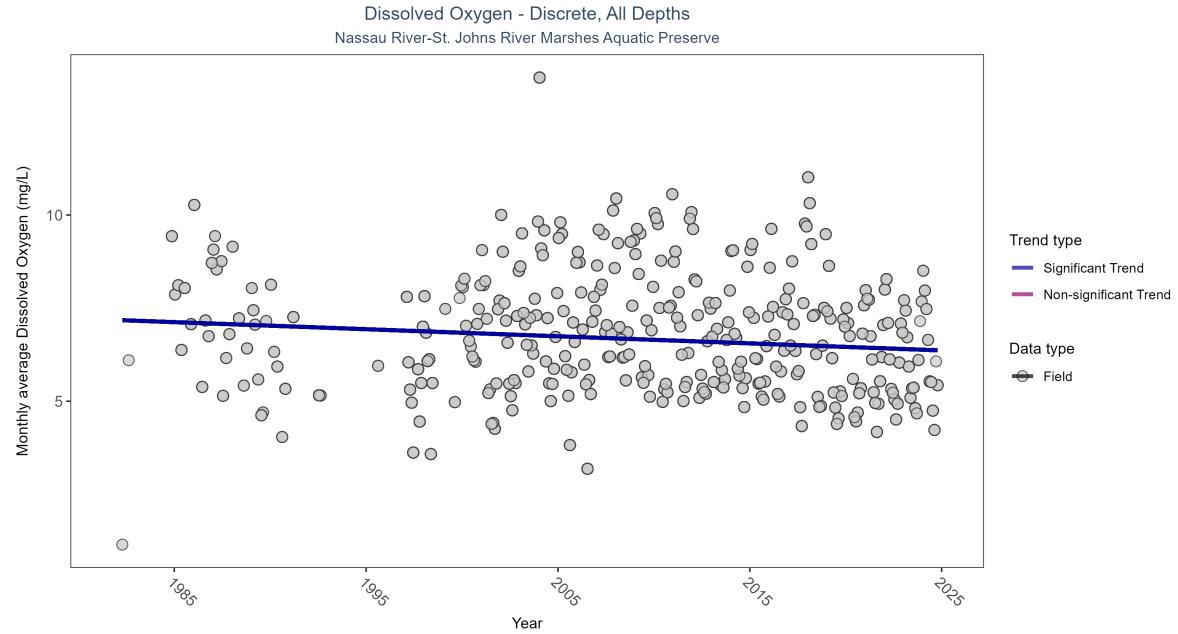


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Significantly decreasing trend	39300	39	1982 - 2024	6.3	-0.1548	7.18052	-0.01899	0.0000

Dissolved Oxygen - Continuous

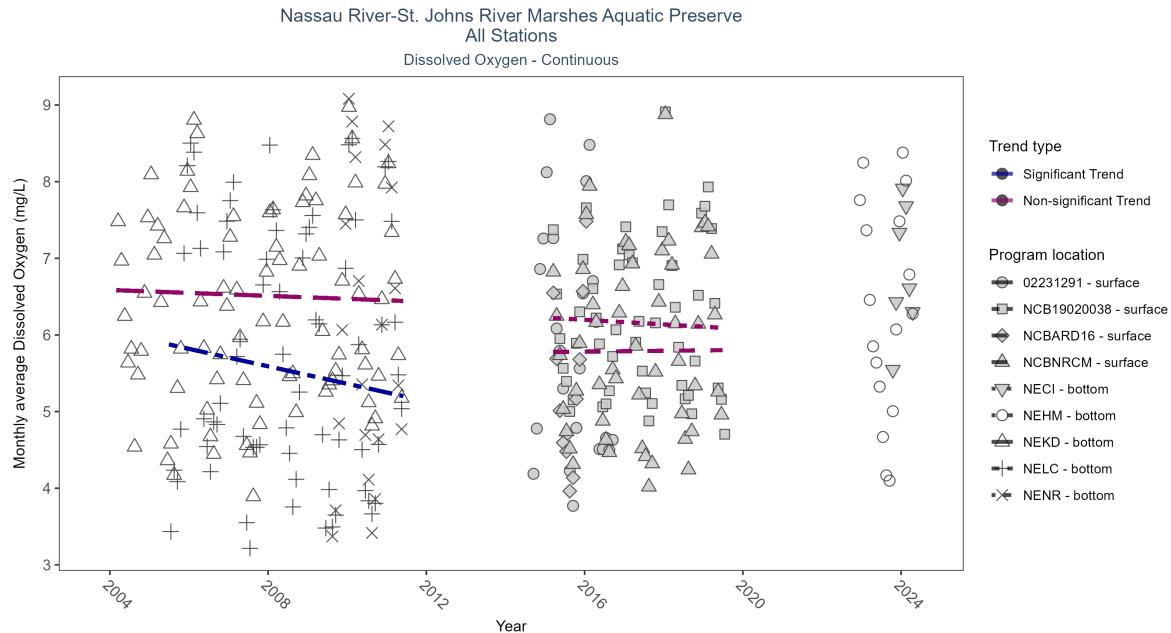


Table 4: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
02231291	Insufficient data to calculate trend	689	3	2014 - 2016	5.70	-	-	-	-
NEHM	Insufficient data to calculate trend	45684	3	2022 - 2024	6.20	-	-	-	-
NECI	Insufficient data to calculate trend	16044	2	2023 - 2024	7.10	-	-	-	-
NEKD	No significant trend	110958	8	2004 - 2011	6.40	-0.04	6.59	-0.02	0.5607
NELC	Significantly decreasing trend	95860	7	2005 - 2011	5.60	-0.34	5.93	-0.11	0.0014
NENR	Insufficient data to calculate trend	31438	3	2009 - 2011	5.80	-	-	-	-
NCBARD16	Insufficient data to calculate trend	7417	2	2015 - 2016	5.08	-	-	-	-
NCB19020038	No significant trend	34476	5	2015 - 2019	6.16	-0.03	6.23	-0.03	0.6108
NCBNRCM	No significant trend	35477	5	2015 - 2019	5.79	0.05	5.78	0.01	0.7970

Dissolved Oxygen Saturation - Discrete

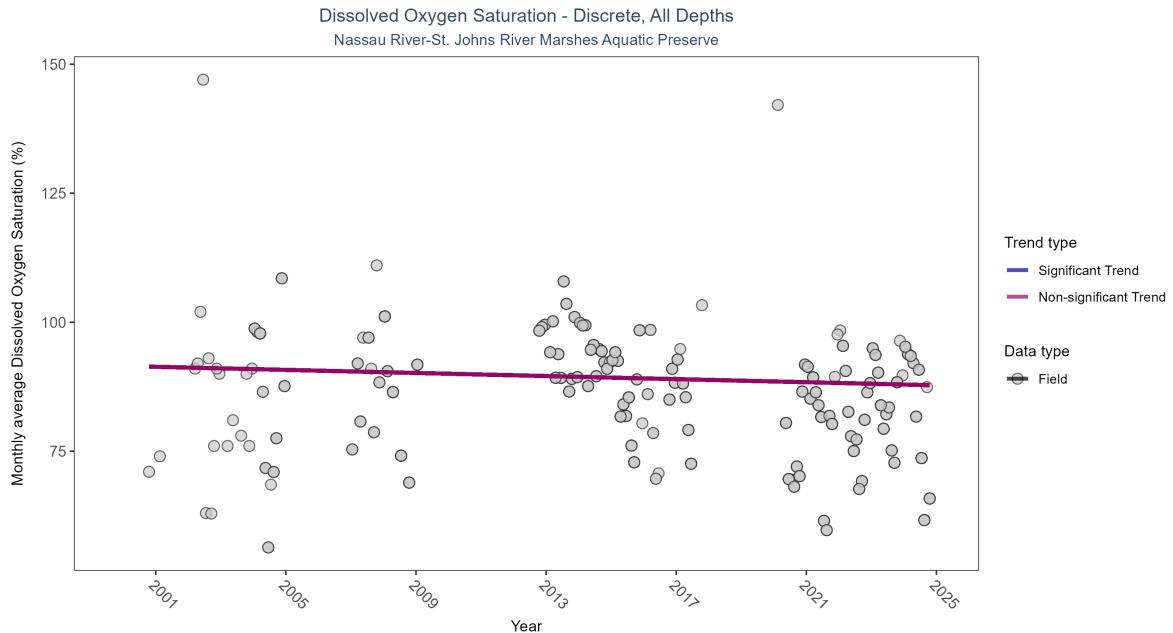


Table 5: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	No significant trend	1247	19	2000 - 2024	87.9	-0.1098	91.49915	-0.14957	0.0635

Dissolved Oxygen Saturation - Continuous

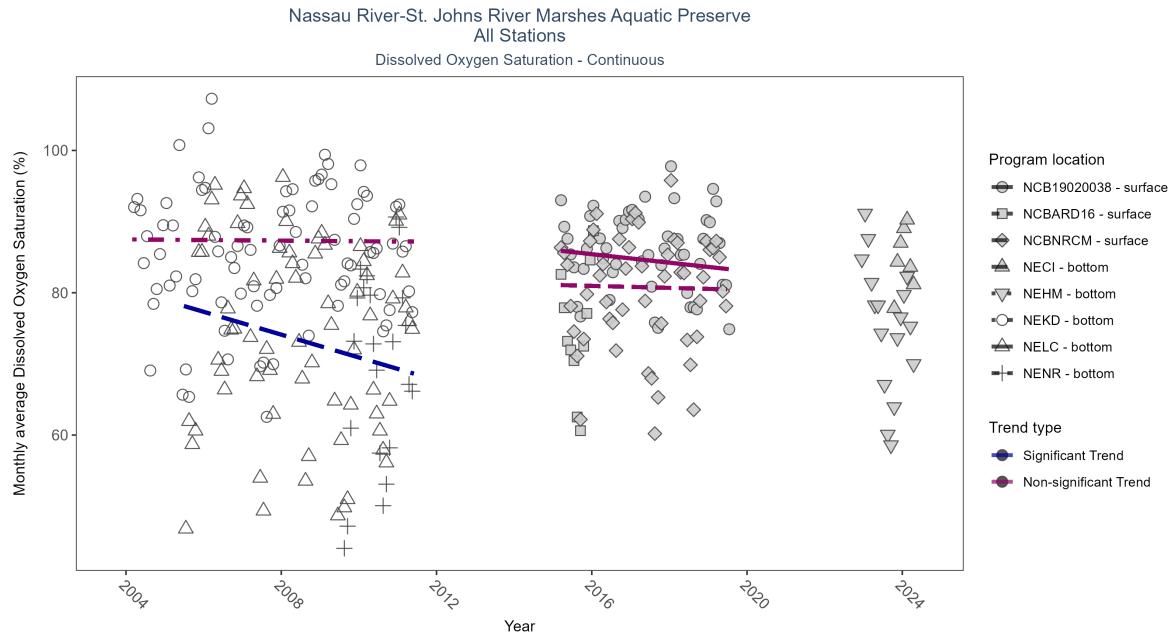


Table 6: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen Saturation

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
NEHM	Insufficient data to calculate trend	45684	3	2022 - 2024	76.40	-	-	-	-
NECI	Insufficient data to calculate trend	16044	2	2023 - 2024	86.60	-	-	-	-
NEKD	No significant trend	110983	8	2004 - 2011	89.10	0	87.49	-0.04	0.9338
NELC	Significantly decreasing trend	95868	7	2005 - 2011	77.90	-0.27	78.93	-1.6	0.0111
NENR	Insufficient data to calculate trend	31438	3	2009 - 2011	73.20	-	-	-	-
NCBARD16	Insufficient data to calculate trend	7417	2	2015 - 2016	74.44	-	-	-	-
NCBNRCM	No significant trend	35240	5	2015 - 2019	82.06	-0.05	81.1	-0.14	0.7970
NCB19020038	No significant trend	34438	5	2015 - 2019	87.06	-0.16	86.02	-0.6	0.1268

Salinity - Discrete

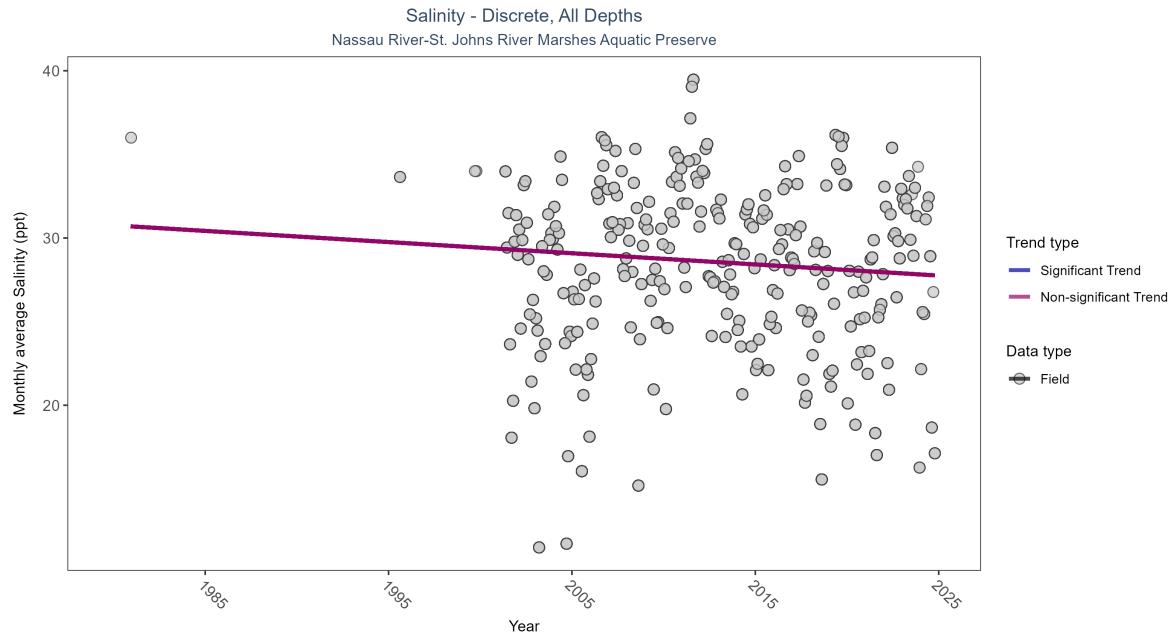


Table 7: Seasonal Kendall-Tau Results for - Salinity

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
All	No significant trend	21104	29	1980 - 2024	30.5	-0.0637	30.75849	-0.06678	0.1078

Salinity - Continuous

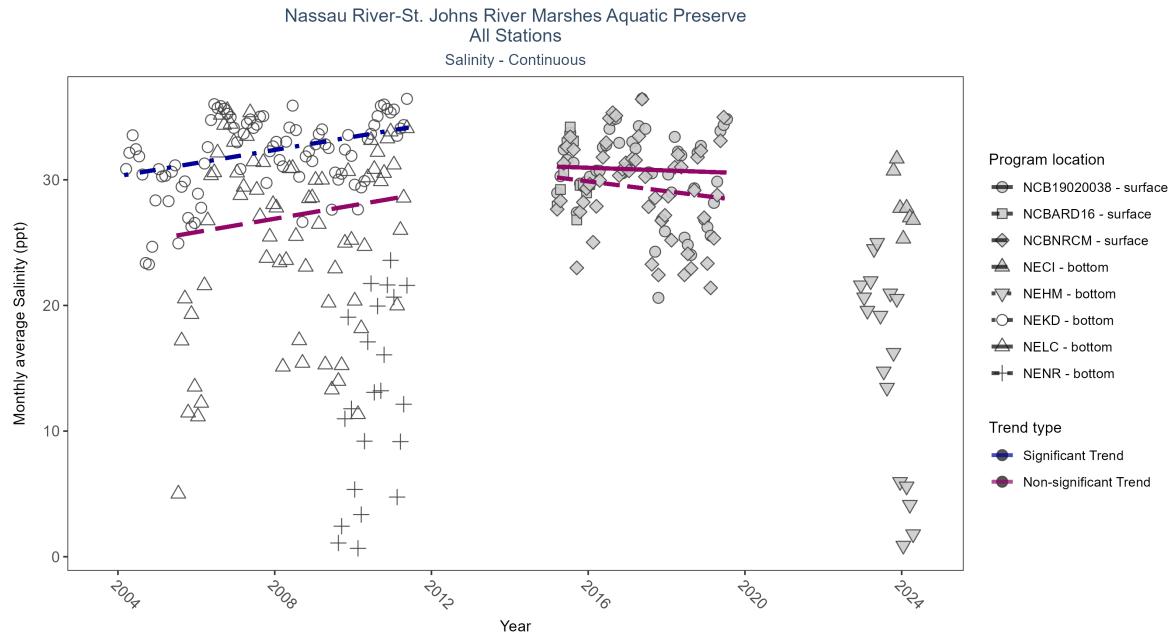


Table 8: Seasonal Kendall-Tau Results for All Stations - Salinity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
NEHM	Insufficient data to calculate trend	45691	3	2022 - 2024	17.40	-	-	-	-
NEKD	Significantly increasing trend	118328	8	2004 - 2011	33.20	0.31	30.29	0.52	0.0006
NECI	Insufficient data to calculate trend	16043	2	2023 - 2024	27.60	-	-	-	-
NELC	No significant trend	100339	7	2005 - 2011	27.90	0.09	25.3	0.53	0.4397
NENR	Insufficient data to calculate trend	31438	3	2009 - 2011	12.40	-	-	-	-
NCBNRCM	No significant trend	35411	5	2015 - 2019	30.29	-0.12	30.26	-0.39	0.5483
NCBARD16	Insufficient data to calculate trend	7418	2	2015 - 2016	30.07	-	-	-	-
NCB19020038	No significant trend	34438	5	2015 - 2019	31.75	-0.06	31.07	-0.11	1.0000

Water Temperature - Discrete

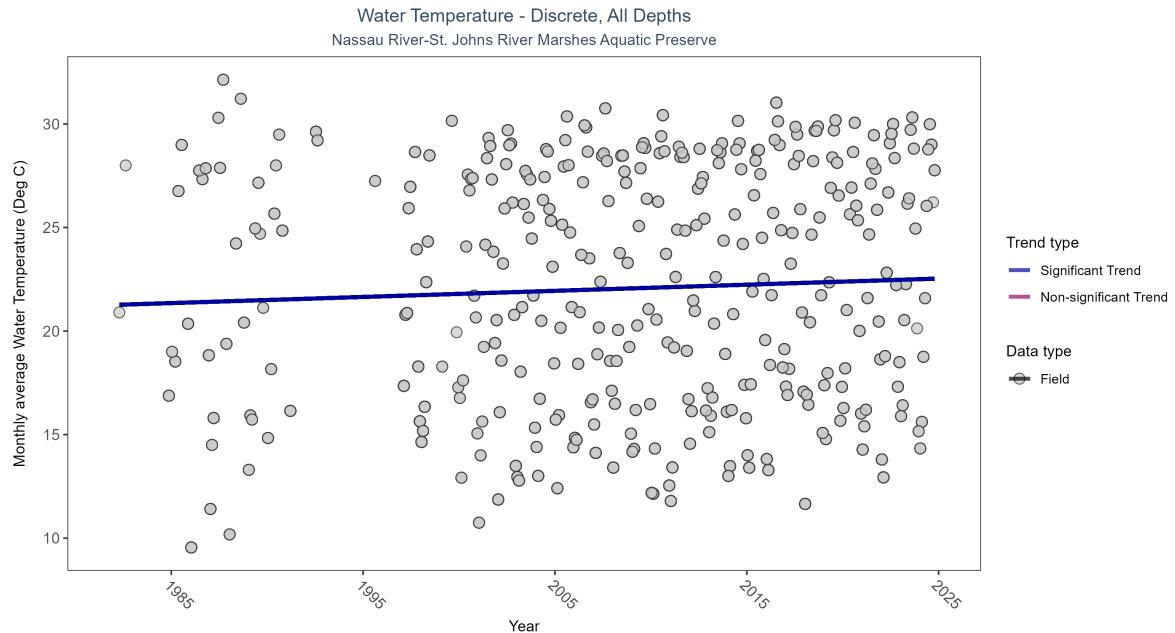


Table 9: Seasonal Kendall-Tau Results for - Water Temperature

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Significantly increasing trend	40859	39	1982 - 2024	21.6	0.1455	21.2625	0.0296	0.0001

Water Temperature - Continuous

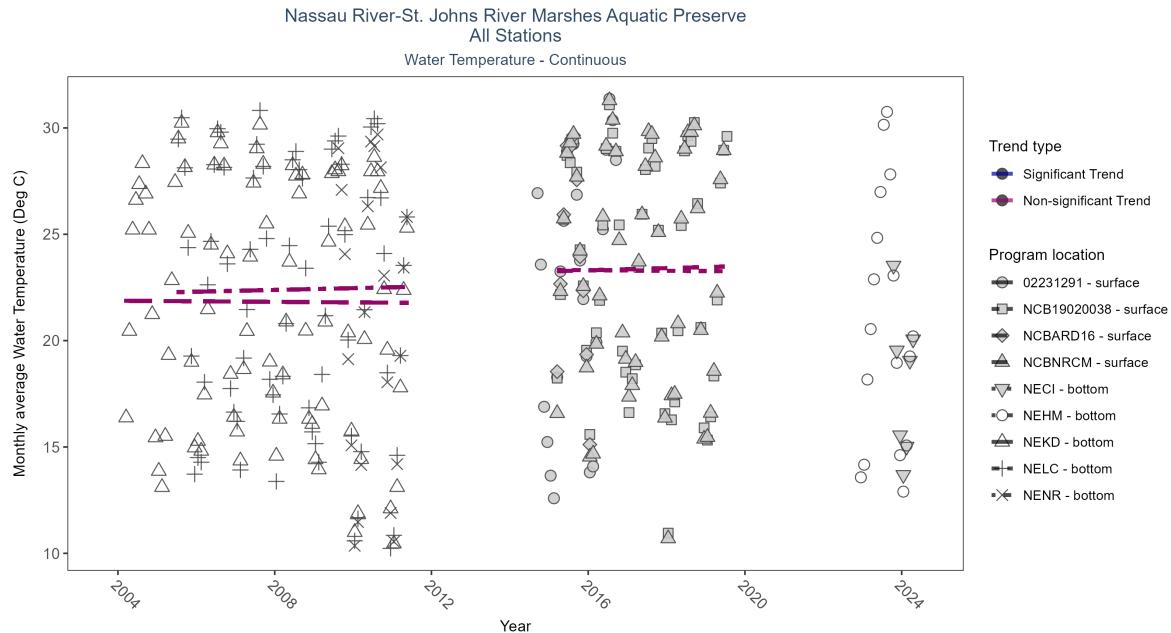


Table 10: Seasonal Kendall-Tau Results for All Stations - Water Temperature

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
02231291	Insufficient data to calculate trend	710	3	2014 - 2016	23.50	-	-	-	-
NEHM	Insufficient data to calculate trend	46096	3	2022 - 2024	20.50	-	-	-	-
NECI	Insufficient data to calculate trend	16049	2	2023 - 2024	16.60	-	-	-	-
NEKD	No significant trend	118328	8	2004 - 2011	22.10	-0.04	21.88	-0.01	0.8057
NELC	No significant trend	100343	7	2005 - 2011	22.70	0.05	22.26	0.04	0.7405
NENR	Insufficient data to calculate trend	31438	3	2009 - 2011	22.00	-	-	-	-
NCBNRCM	No significant trend	35817	5	2015 - 2019	24.03	0.07	23.26	0.05	0.6681
NCB19020038	No significant trend	34483	5	2015 - 2019	24.78	-0.03	23.32	-0.01	1.0000
NCBARD16	Insufficient data to calculate trend	7419	2	2015 - 2016	25.08	-	-	-	-

pH - Discrete

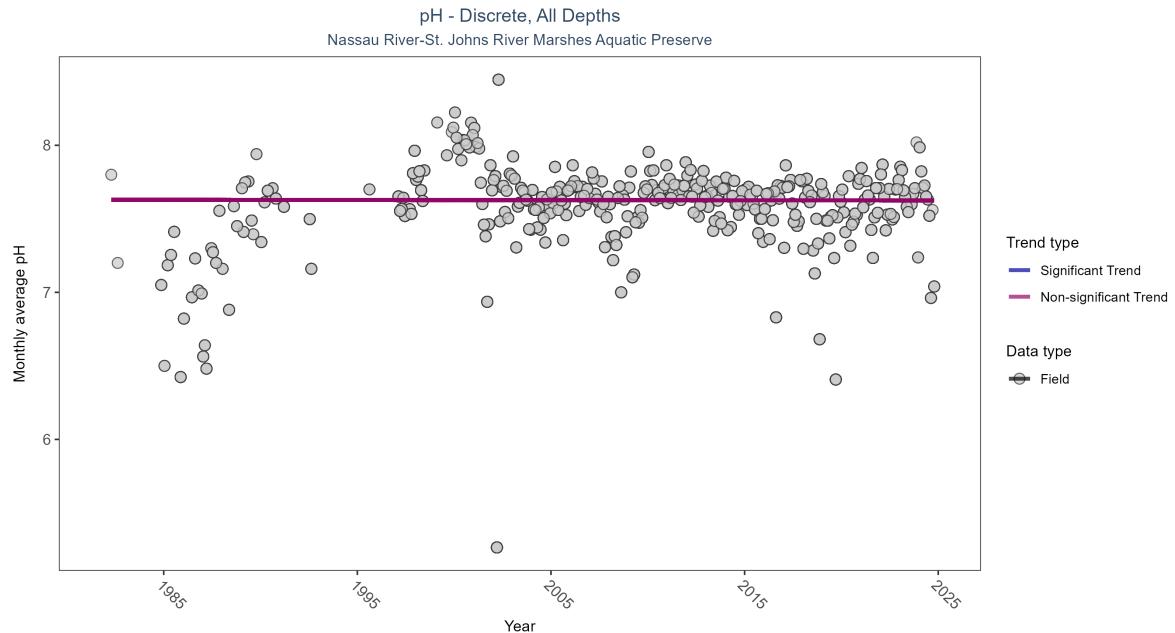


Table 11: Seasonal Kendall-Tau Results for - pH

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	No significant trend	29660	39	1982 - 2024	7.66	-0.0048	7.62944	-0.0001	0.9584

pH - Continuous

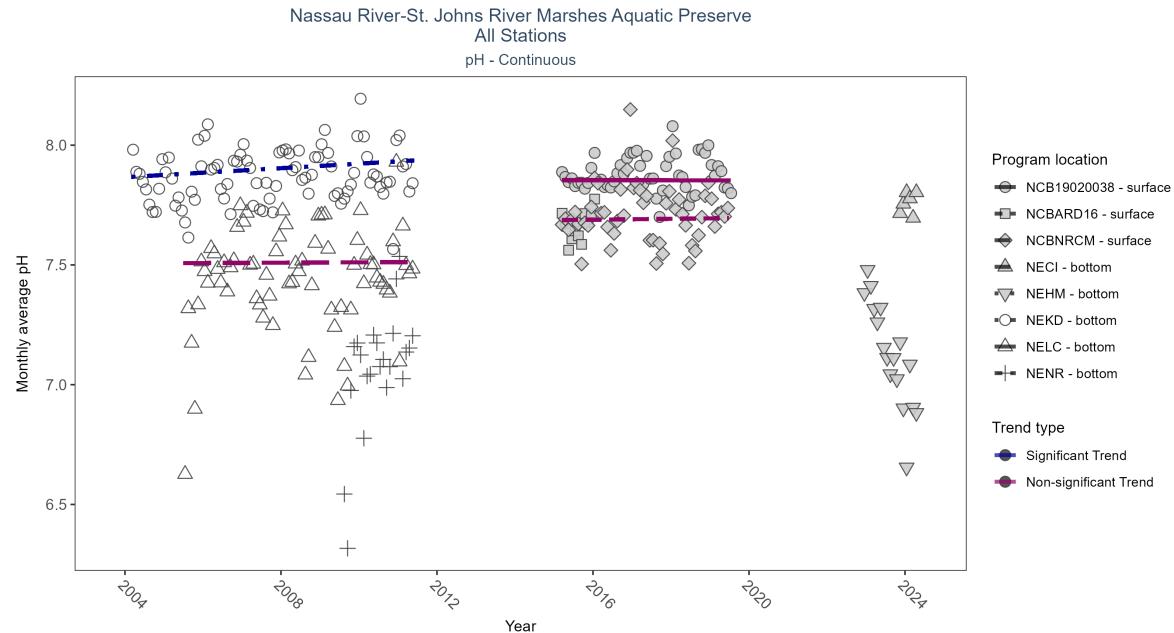


Table 12: Seasonal Kendall-Tau Results for All Stations - pH

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
NECI	Insufficient data to calculate trend	13737	2	2023 - 2024	7.80	-	-	-	-
NEHM	Insufficient data to calculate trend	45692	3	2022 - 2024	7.20	-	-	-	-
NEKD	Significantly increasing trend	113471	8	2004 - 2011	7.90	0.19	7.87	0.01	0.0491
NELC	No significant trend	96488	7	2005 - 2011	7.50	0.02	7.51	0	0.9121
NENR	Insufficient data to calculate trend	31438	3	2009 - 2011	7.10	-	-	-	-
NCB19020038	No significant trend	34405	5	2015 - 2019	7.88	-0.01	7.85	0	1.0000
NCBARD16	Insufficient data to calculate trend	6952	2	2015 - 2016	7.66	-	-	-	-
NCBNRCM	No significant trend	35819	5	2015 - 2019	7.72	-0.01	7.69	0	0.9317

Water Clarity

Turbidity - Discrete

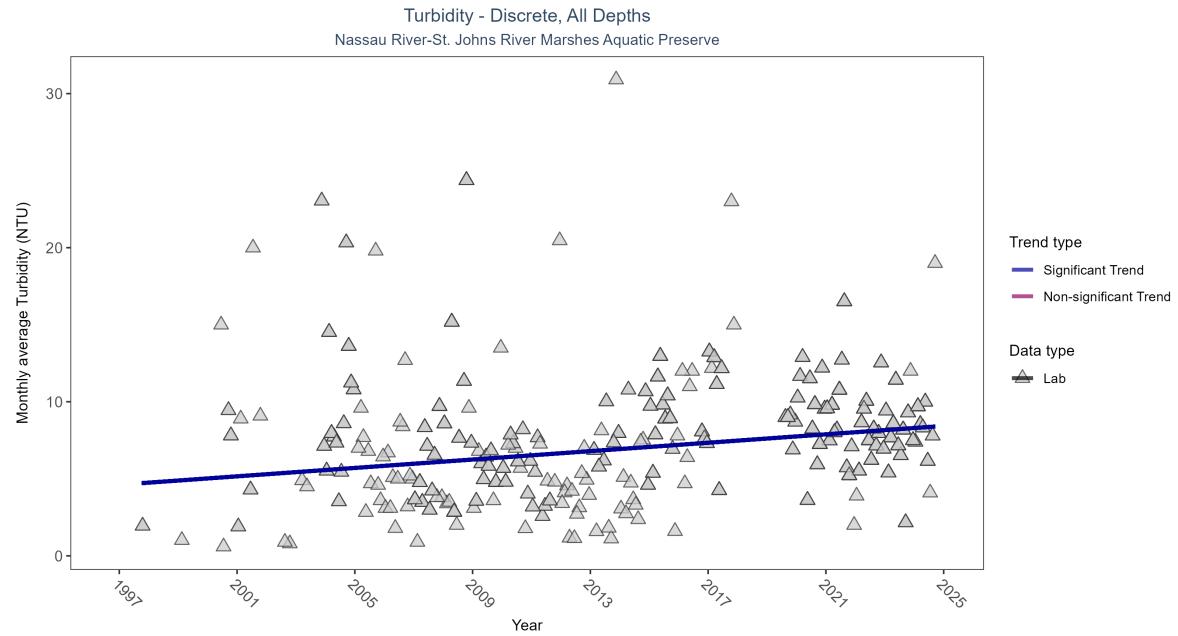


Table 13: Seasonal Kendall-Tau Results for - Turbidity

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	916	26	1997 - 2024	7	0.1738	4.61532	0.1363	0.0002

Turbidity - Continuous

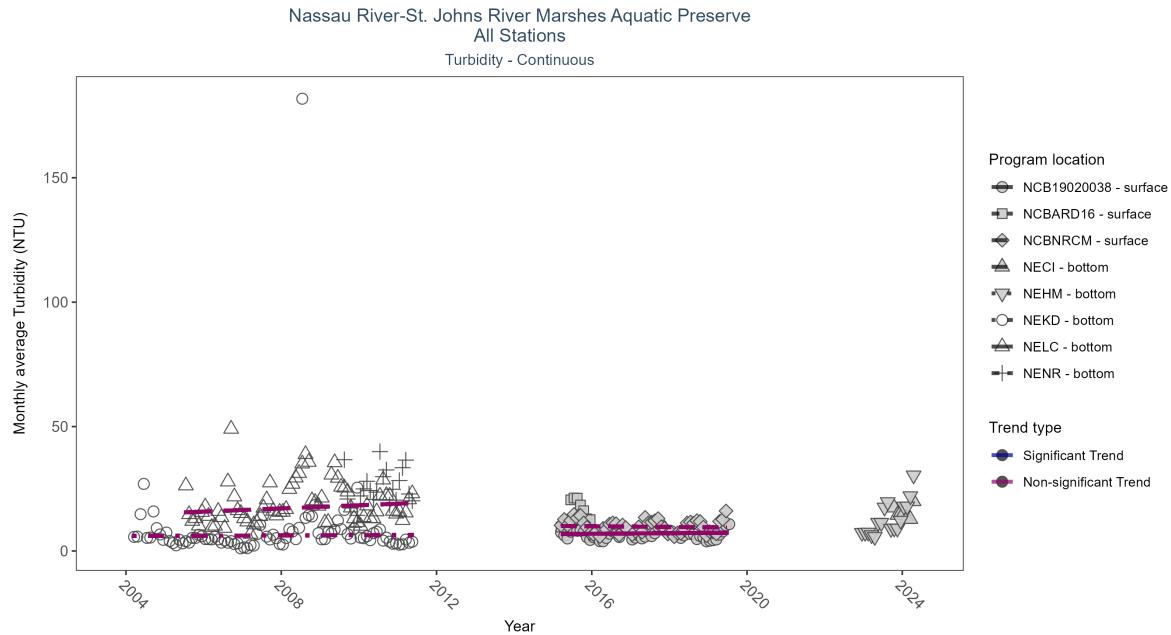


Table 14: Seasonal Kendall-Tau Results for All Stations - Turbidity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
NEHM	Insufficient data to calculate trend	45870	3	2022 - 2024	10.00	-	-	-	-
NEKD	No significant trend	114181	8	2004 - 2011	4.00	0.02	6.06	0.05	0.8697
NECI	Insufficient data to calculate trend	16045	2	2023 - 2024	12.00	-	-	-	-
NELC	No significant trend	96153	7	2005 - 2011	15.00	0.16	15.18	0.64	0.1513
NENR	Insufficient data to calculate trend	31087	3	2009 - 2011	21.00	-	-	-	-
NCB19020038	No significant trend	31407	5	2015 - 2019	5.77	-0.01	6.79	0.12	0.7876
NCBARD16	Insufficient data to calculate trend	7385	2	2015 - 2016	12.89	-	-	-	-
NCBNRCM	No significant trend	34696	5	2015 - 2019	8.64	-0.1	10.09	-0.14	0.6001

Total Suspended Solids - Discrete

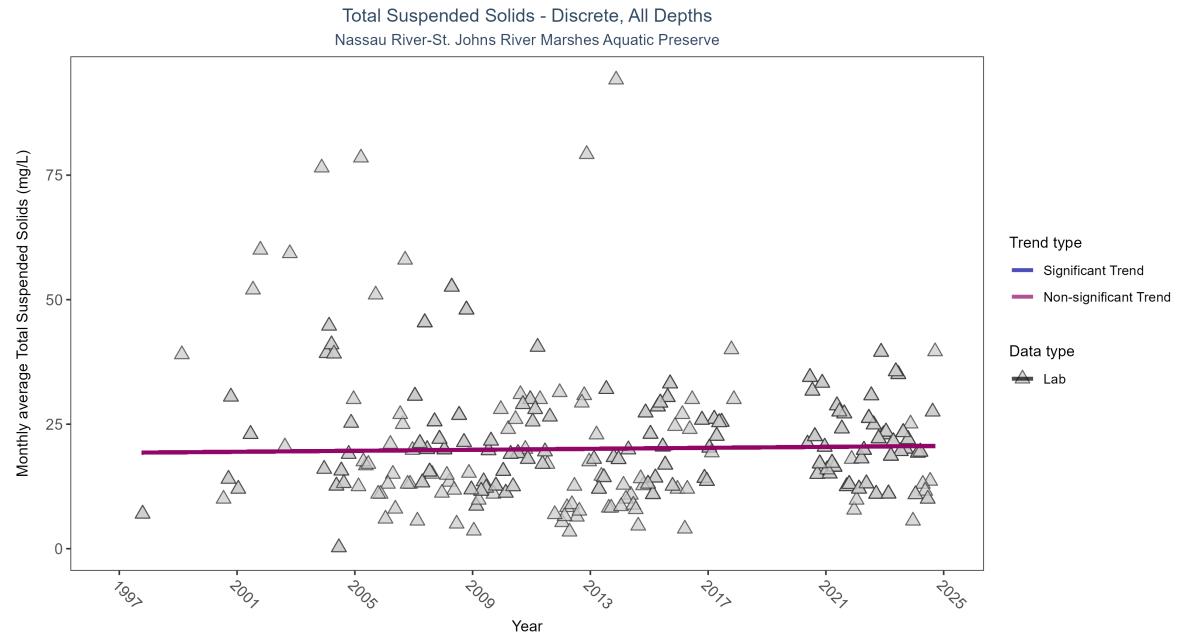


Table 15: Seasonal Kendall-Tau Results for - Total Suspended Solids

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	No significant trend	782	25	1997 - 2024	17.6	0.0206	19.25724	0.0495	0.6605

Chlorophyll a, Uncorrected for Pheophytin - Discrete

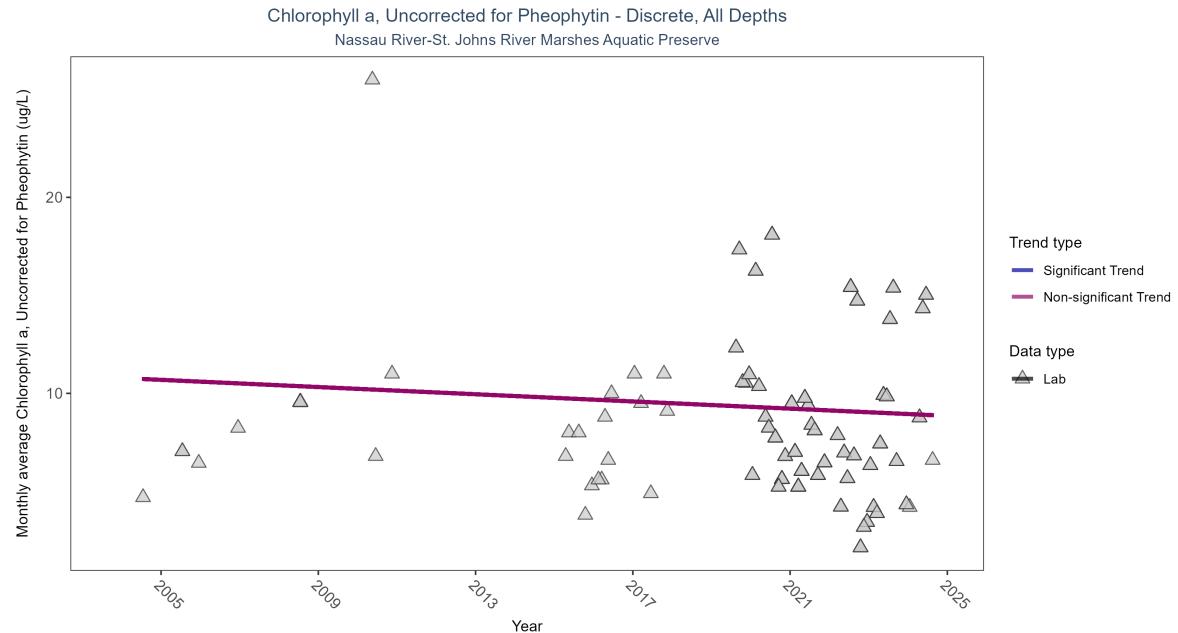


Table 16: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	No significant trend	437	14	2004 - 2024	7.75523	-0.1173	10.78143	-0.09179	0.5782

Chlorophyll a, Corrected for Pheophytin - Discrete

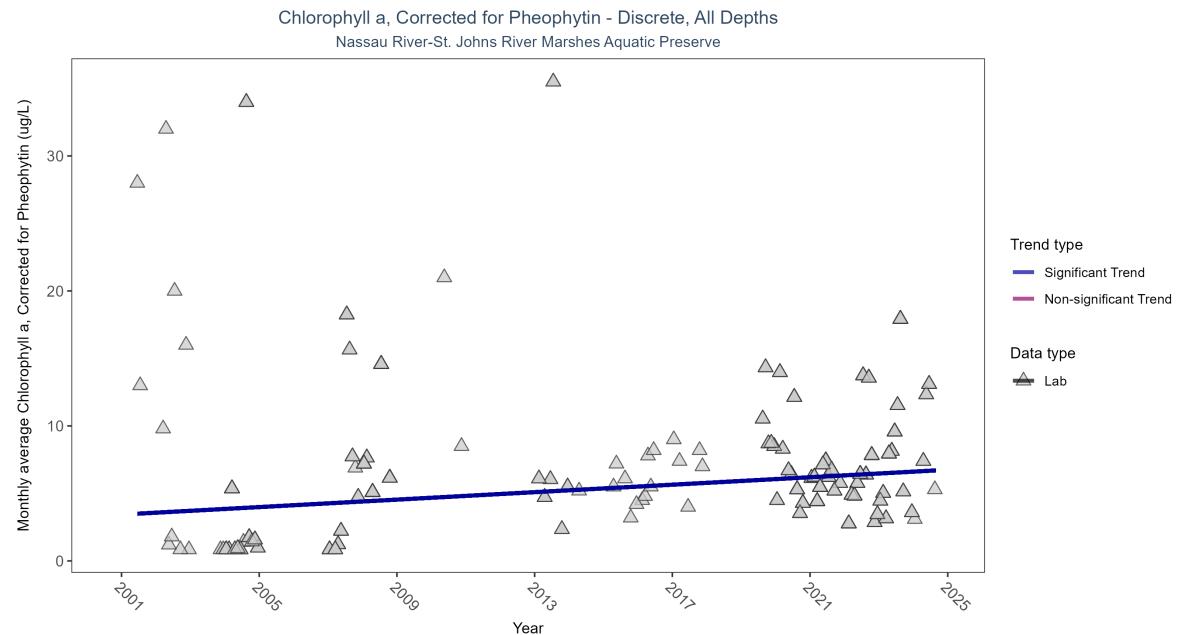


Table 17: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	603	18	2001 - 2024	5.8	0.1546	3.43503	0.13816	0.0262

Secchi Depth - Discrete

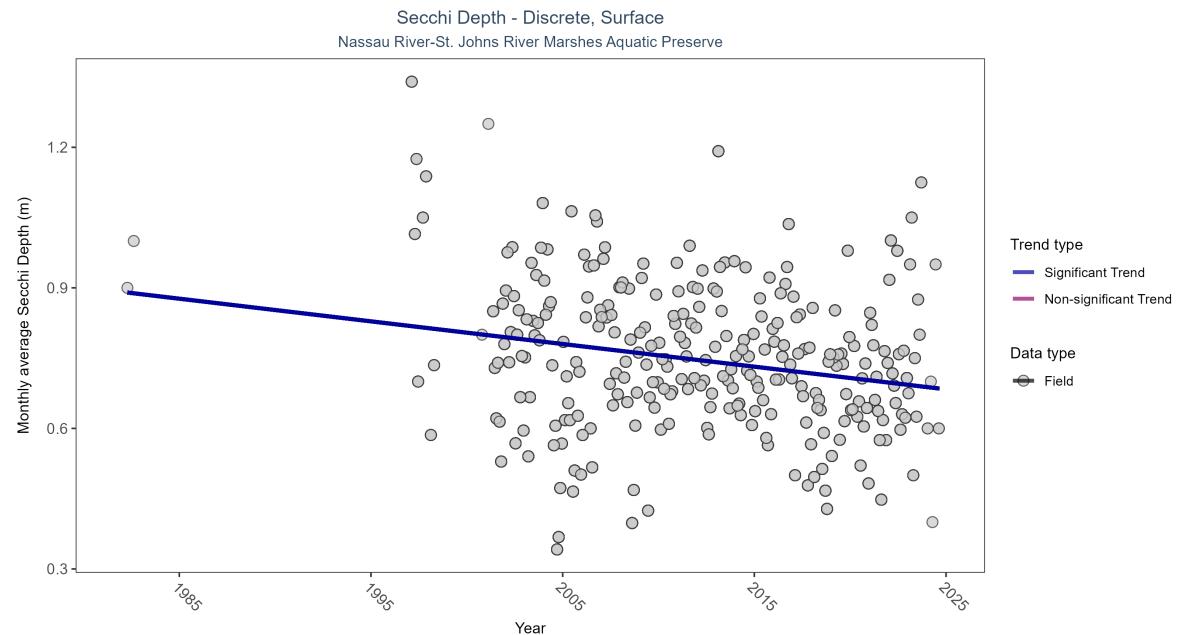


Table 18: Seasonal Kendall-Tau Results for - Secchi Depth

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Significantly decreasing trend	18753	28	1982 - 2024	0.7	-0.1629	0.89136	-0.00484	0.0001

Colored Dissolved Organic Matter - Discrete

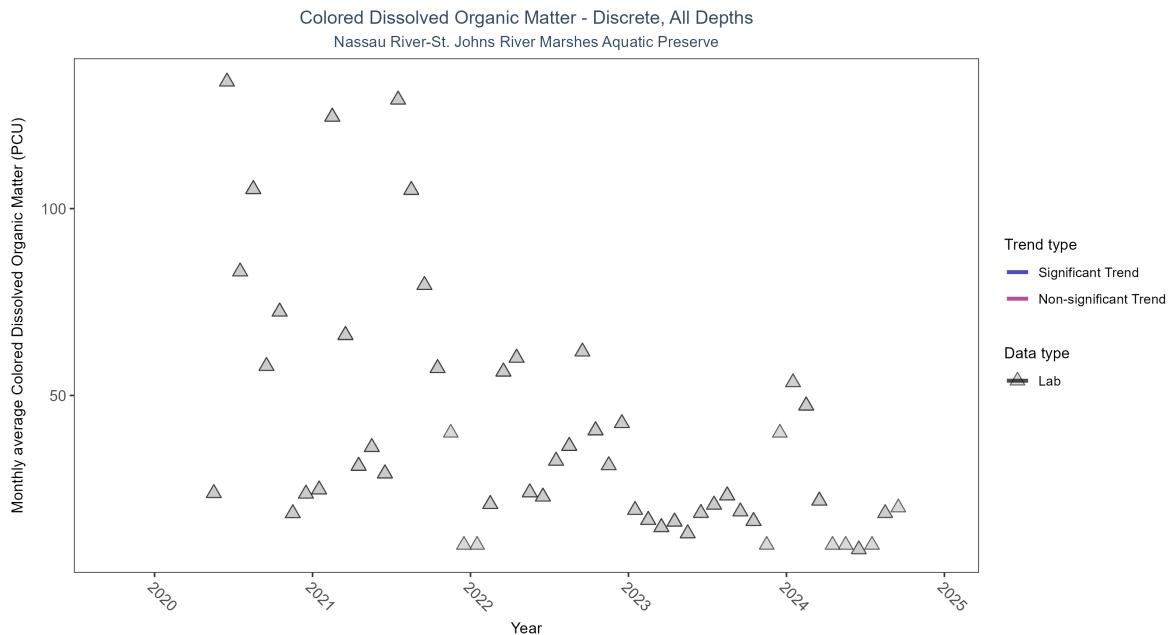


Table 19: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Insufficient data to calculate trend	385	5	2020 - 2024	27	-	-	-	NA