

# Apalachicola National Estuarine Research Reserve

## SEACAR Water Quality Analysis

Last compiled on 06 March, 2025

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# Indicators

## Nutrients

### Total Nitrogen - Discrete

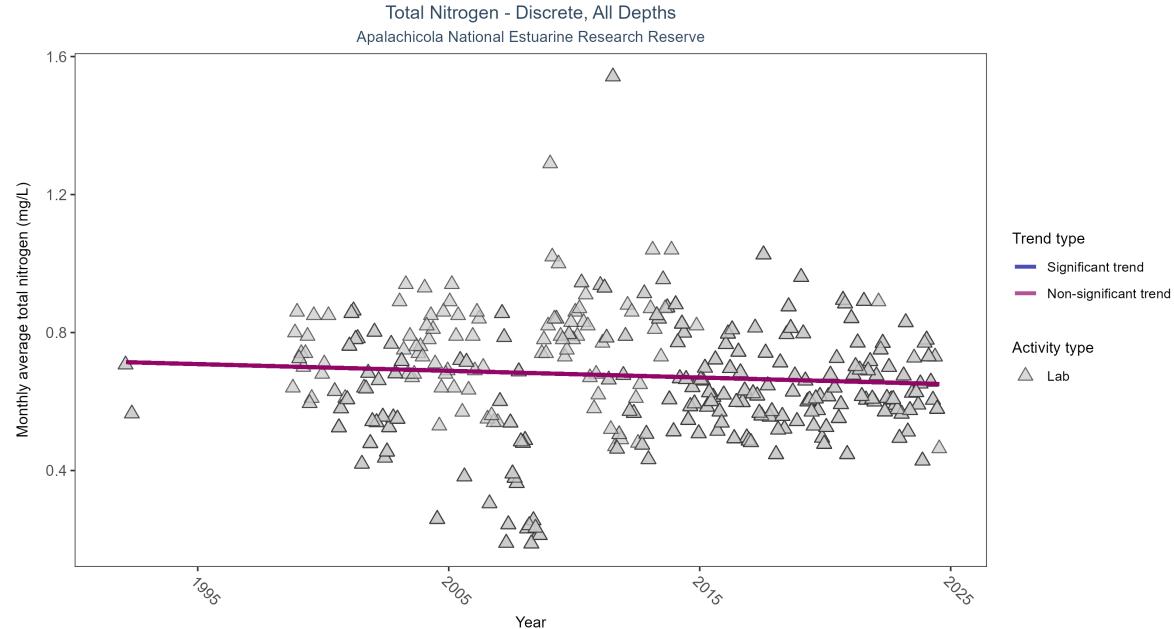
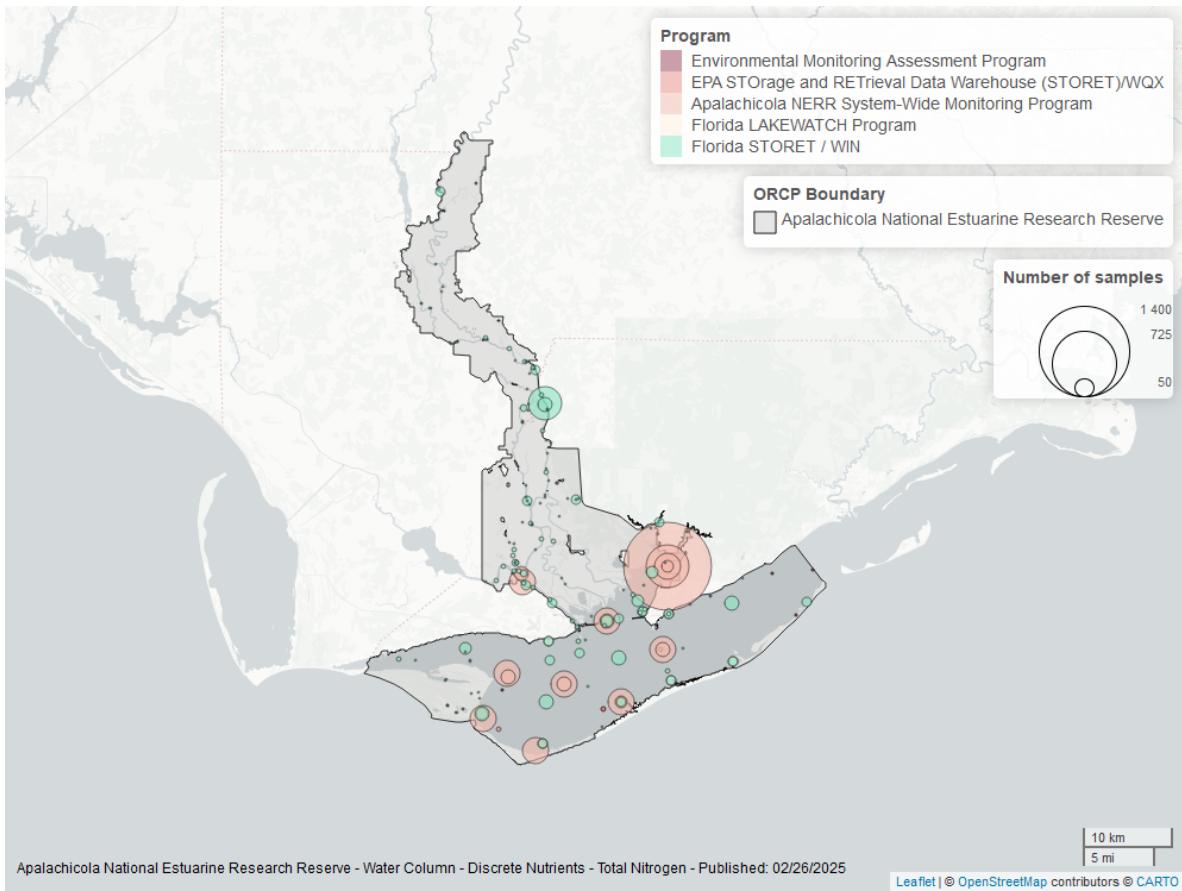


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	No significant trend	4164	28	1992 - 2024	0.63	-0.0658	0.71436	-0.00195	0.1371



## Total Phosphorus - Discrete

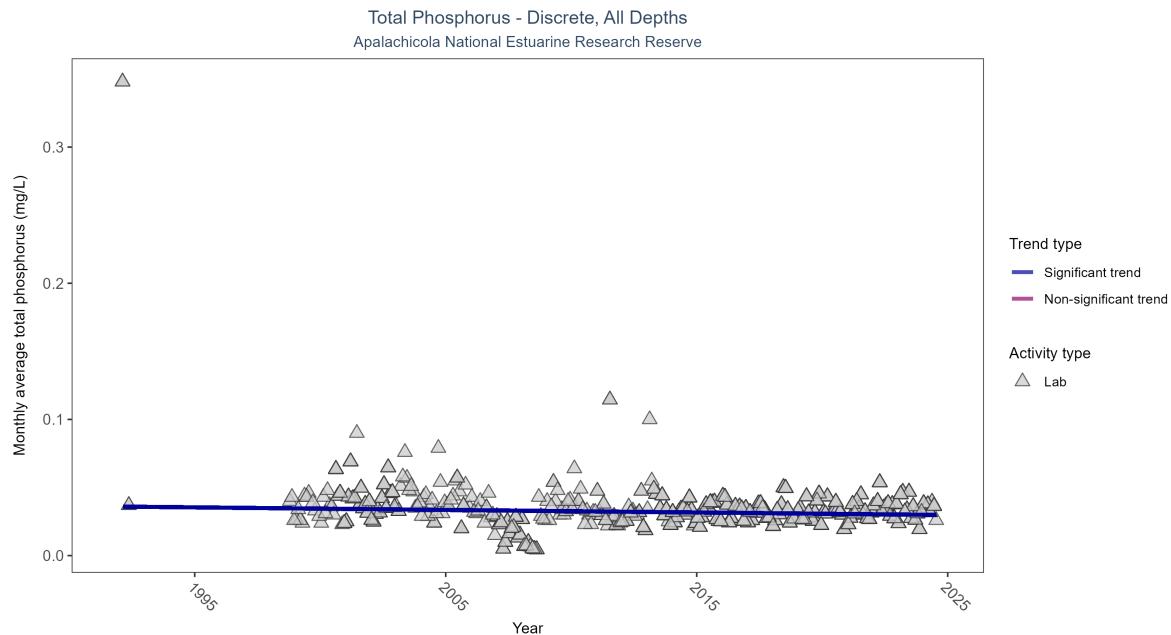
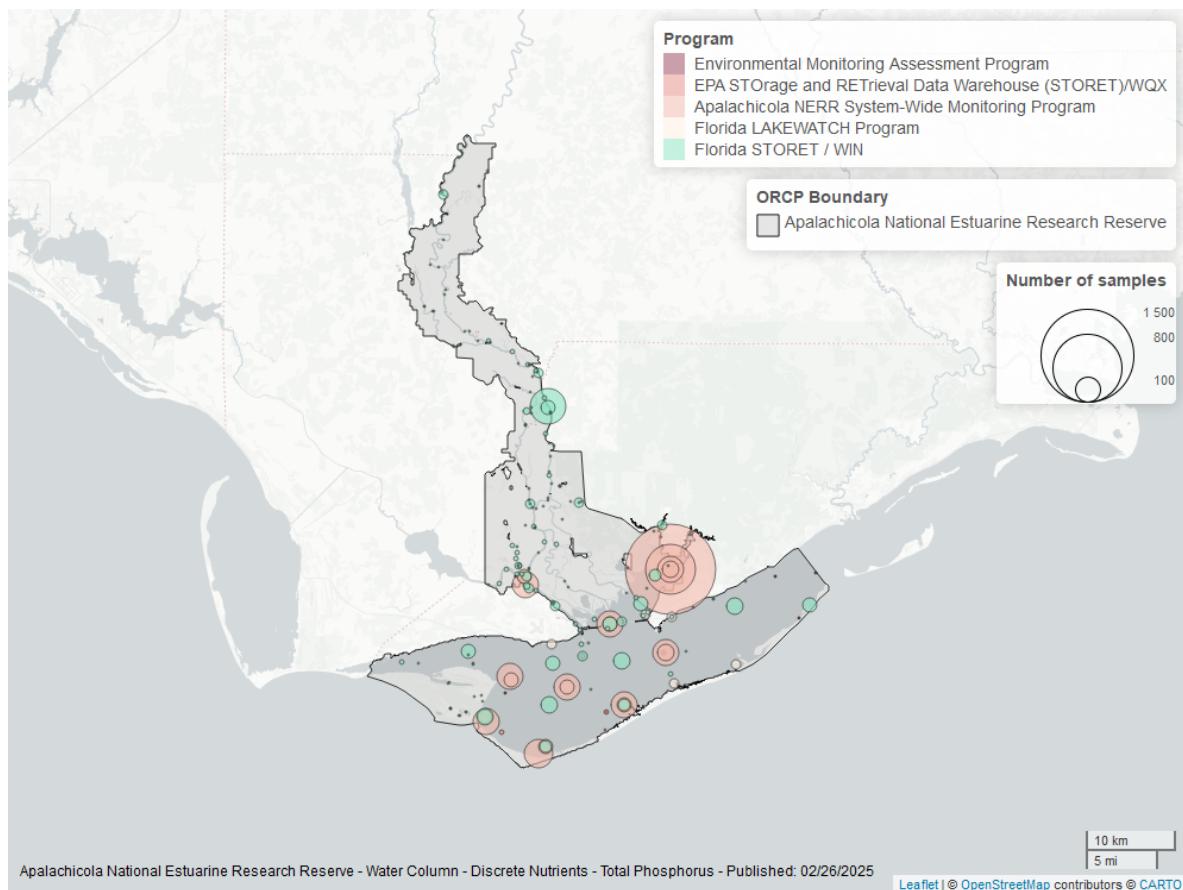


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Significantly decreasing trend	4504	28	1992 - 2024	0.031	-0.1188	0.03598	-0.00019	0.0041



## Water Quality

### Dissolved Oxygen - Discrete

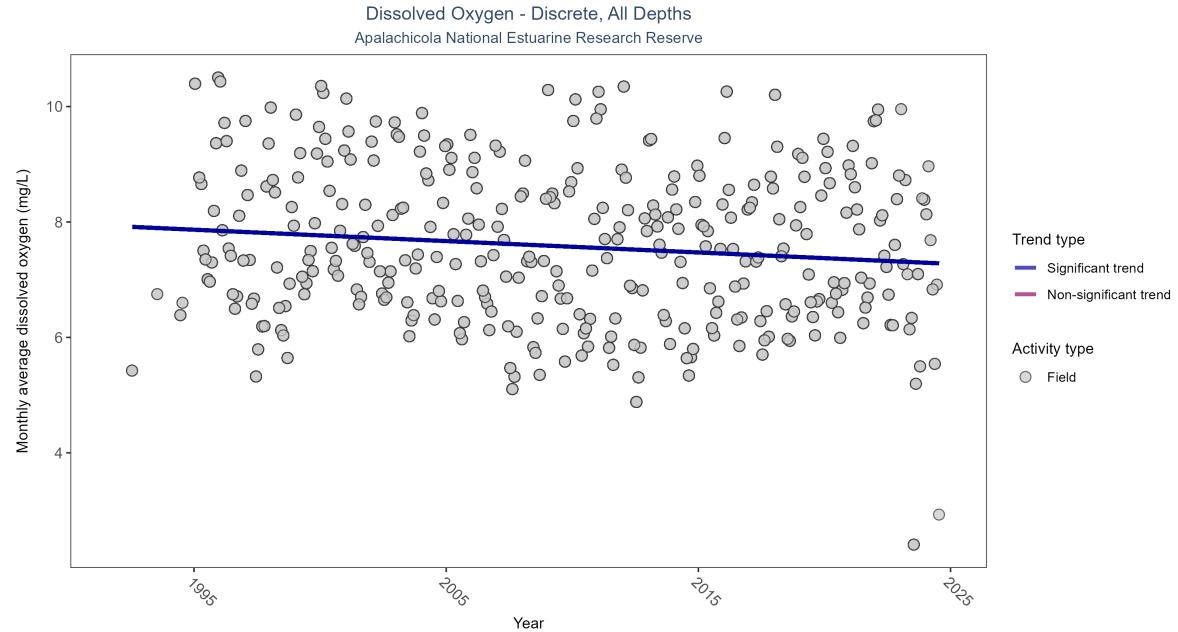
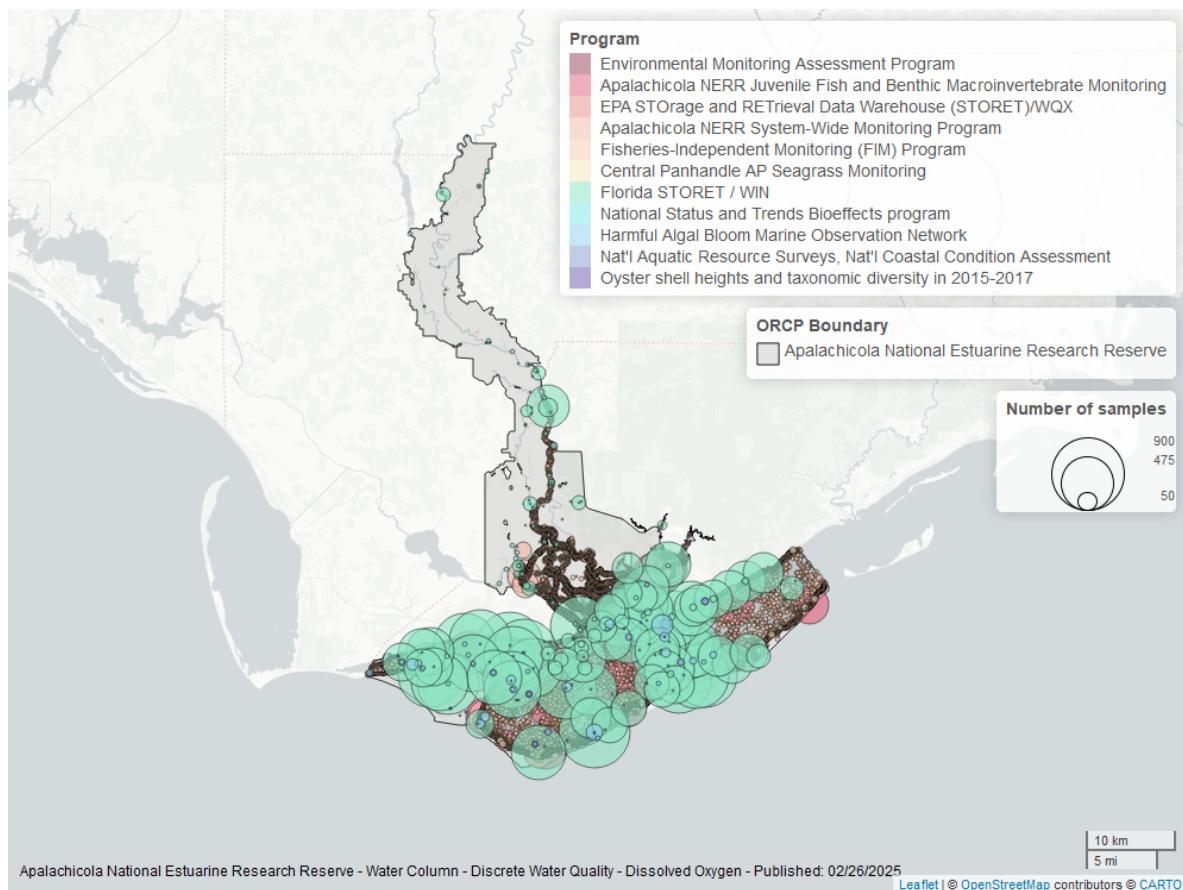


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

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	80793	33	1992 - 2024	7.5	-0.1569	7.9255	-0.01972	0.0000



## Dissolved Oxygen - Continuous

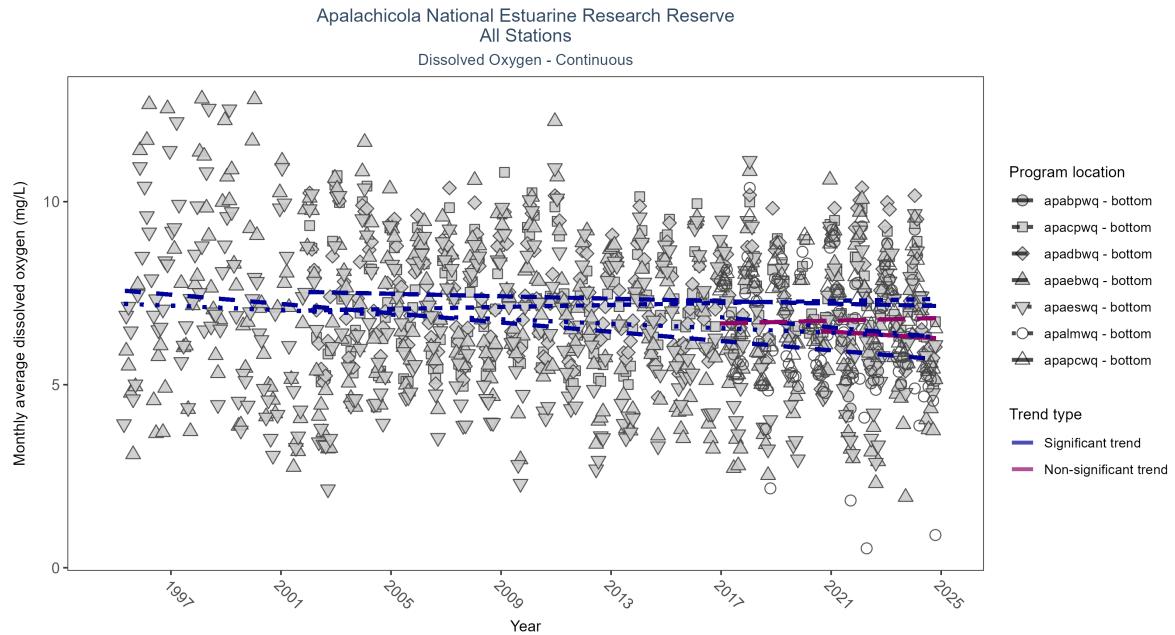
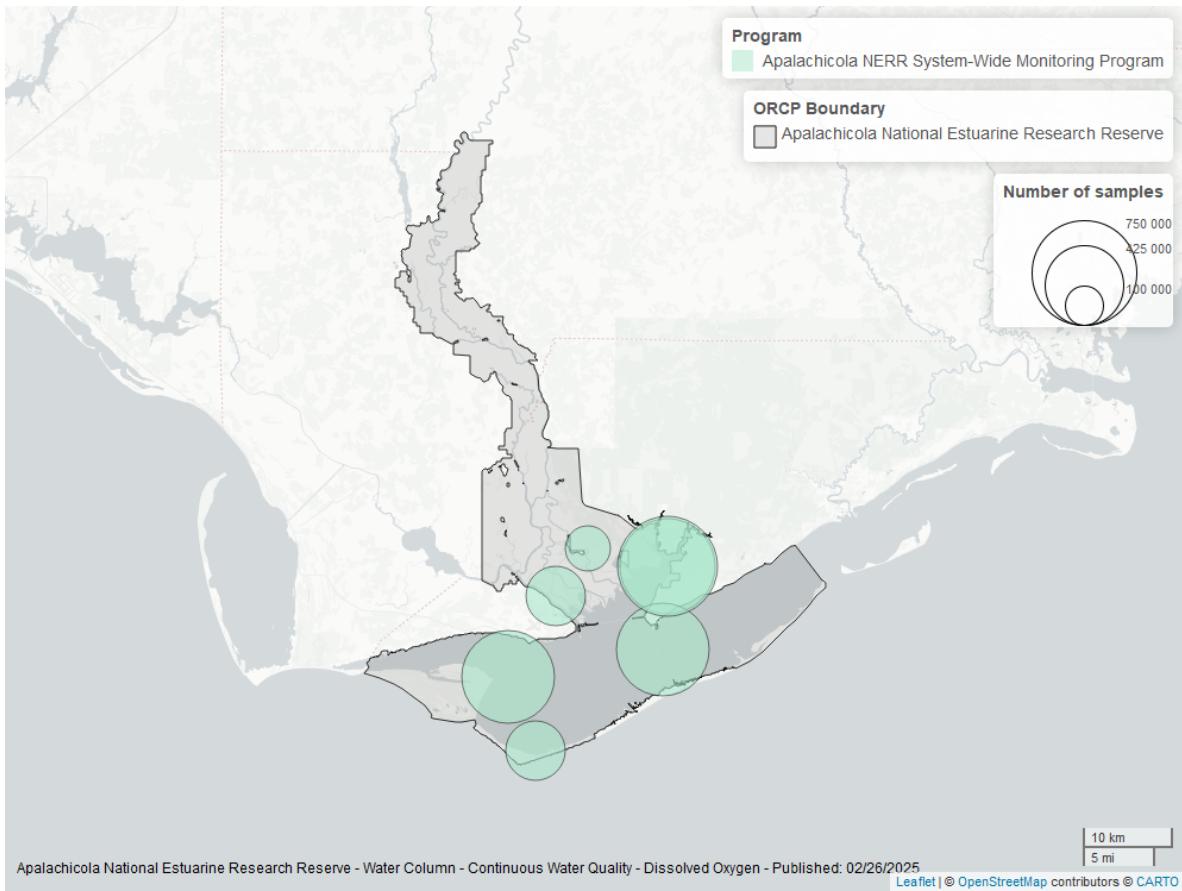


Table 4: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
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
apabpwq	No significant trend	139625	5	2020 - 2024	6.4	-0.12	6.50	-0.05	0.5361
apacpwq	Significantly increasing trend	607585	23	2002 - 2024	7.1	0.12	7.03	0.01	0.0052
apalmwq	Significantly decreasing trend	247064	9	2016 - 2024	6.3	-0.24	6.91	-0.07	0.0038
apapcqw	No significant trend	258495	9	2016 - 2024	6.9	0.06	6.66	0.02	0.4258
apaeswq	Significantly decreasing trend	705897	30	1995 - 2024	6.8	-0.16	7.22	-0.03	0.0000



## Dissolved Oxygen Saturation - Discrete

Dissolved Oxygen Saturation - Discrete, All Depths  
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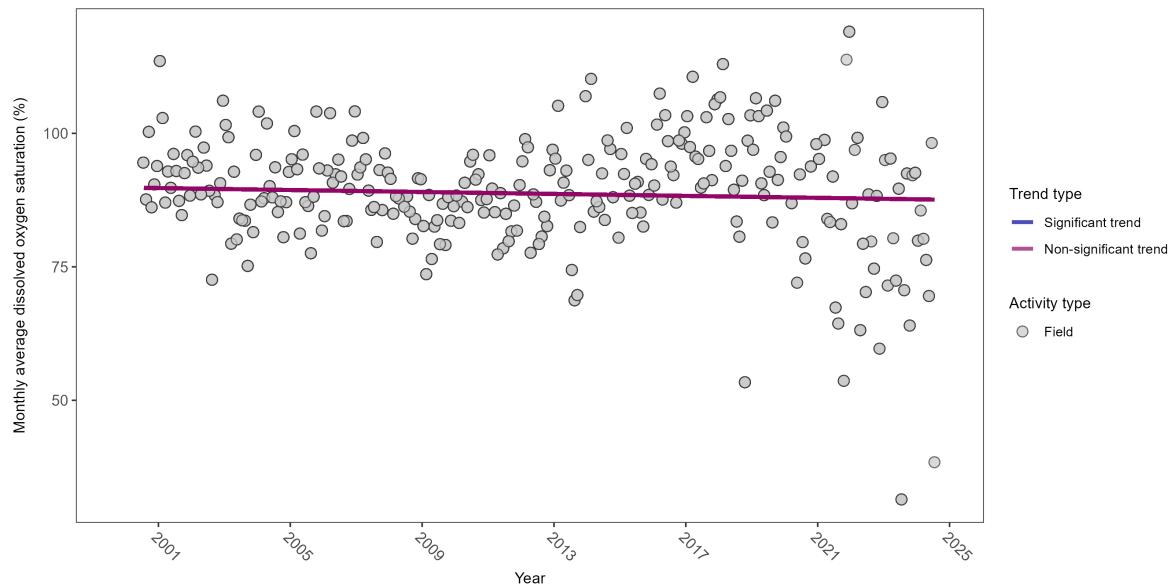
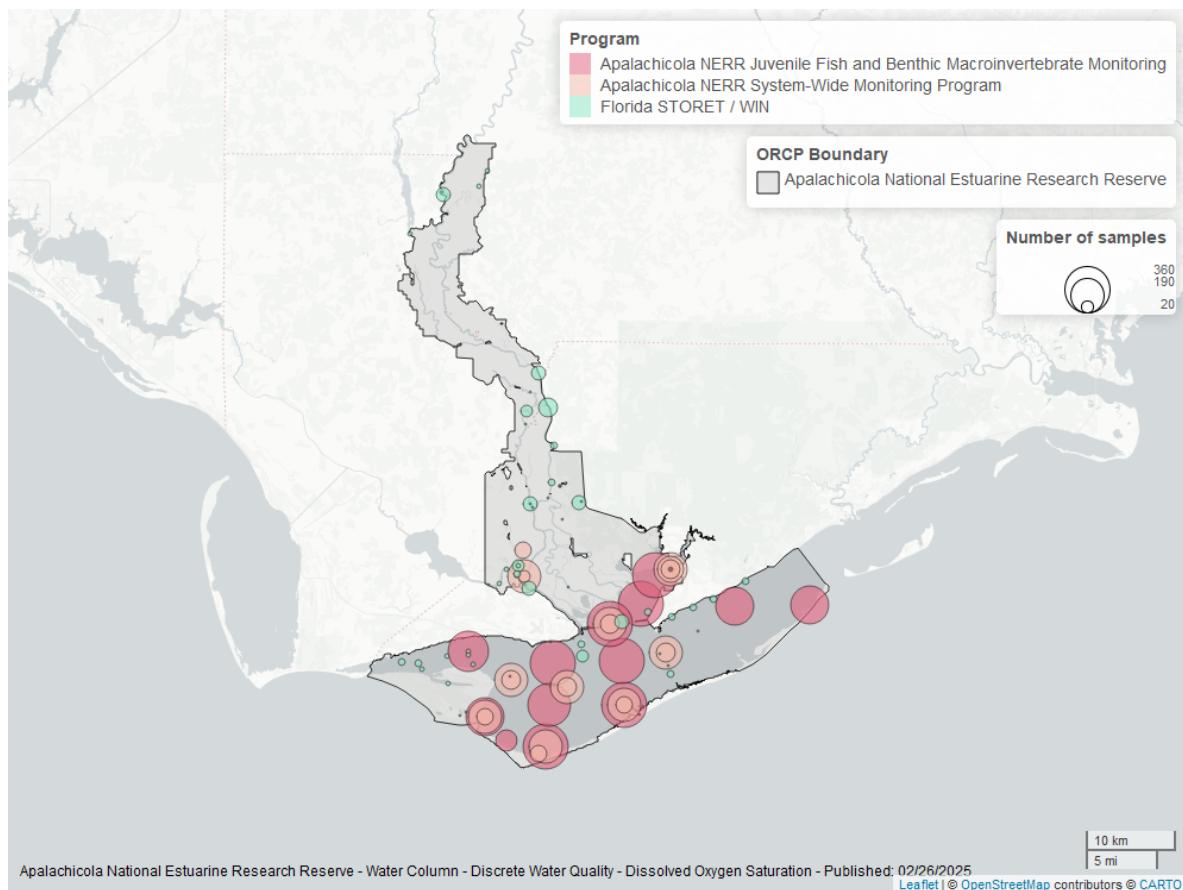


Table 5: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Field	No significant trend	6939	25	2000 - 2024	91.4	-0.0546	89.84157	-0.09142	0.1801



## Dissolved Oxygen Saturation - Continuous

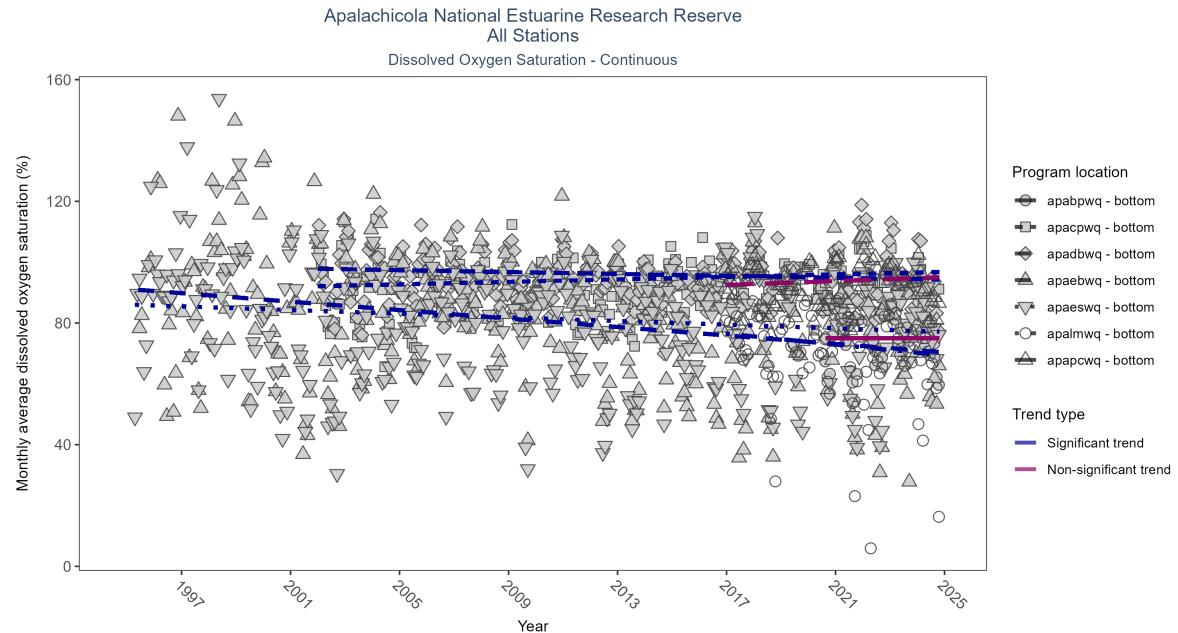
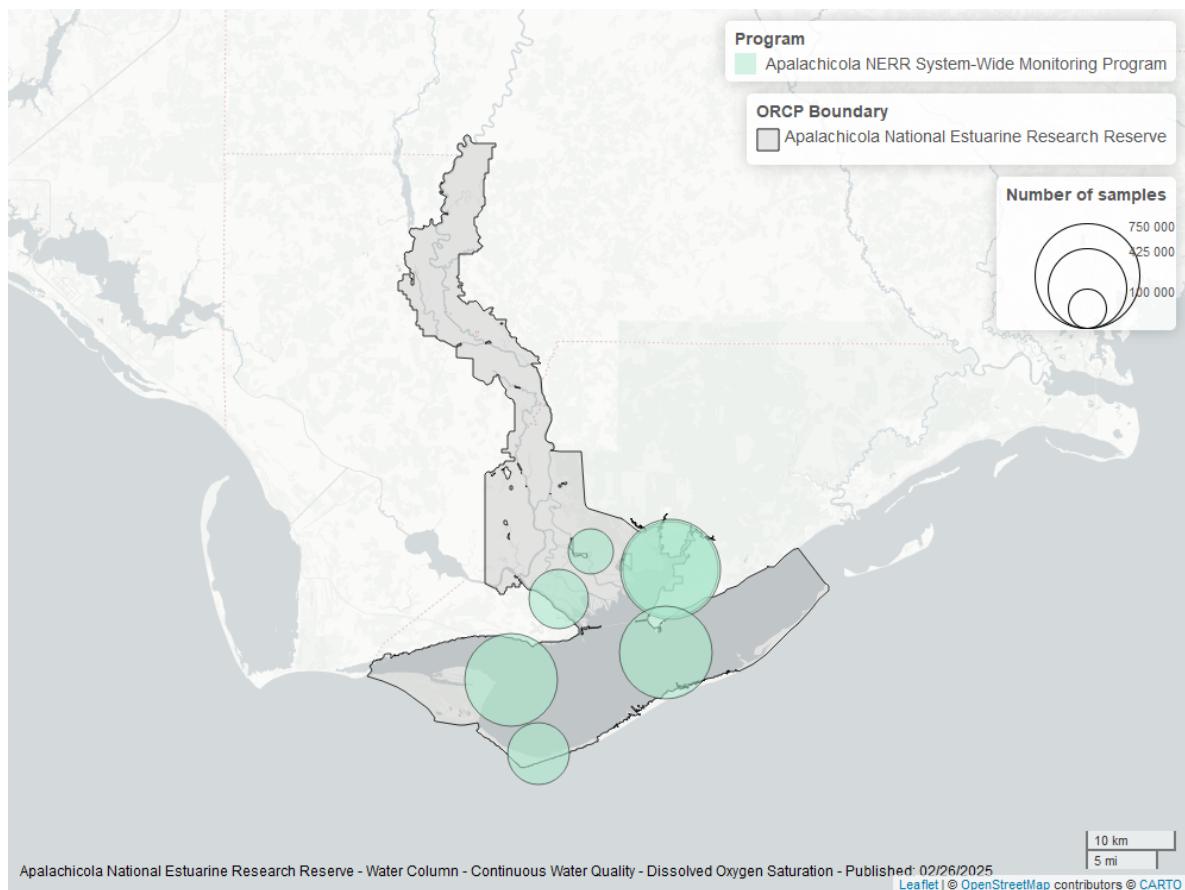


Table 6: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen Saturation

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
apaebwq	Significantly decreasing trend	651675	30	1995 - 2024	84.5	-0.27	91.20	-0.70	0.0000
apaeswq	Significantly decreasing trend	707062	30	1995 - 2024	83.9	-0.12	86.07	-0.30	0.0010
apadbwq	Significantly decreasing trend	615405	23	2002 - 2024	94.6	-0.11	97.83	-0.16	0.0180
apabpwq	No significant trend	139625	5	2020 - 2024	75.8	0.00	74.97	0.00	0.9296
apacpwq	Significantly increasing trend	609113	23	2002 - 2024	94.0	0.15	92.07	0.21	0.0003
apalmwq	Significantly decreasing trend	247600	9	2016 - 2024	74.4	-0.25	77.37	-0.89	0.0030
apapcwq	No significant trend	261951	9	2016 - 2024	94.0	0.10	92.20	0.32	0.2467



## Salinity - Discrete

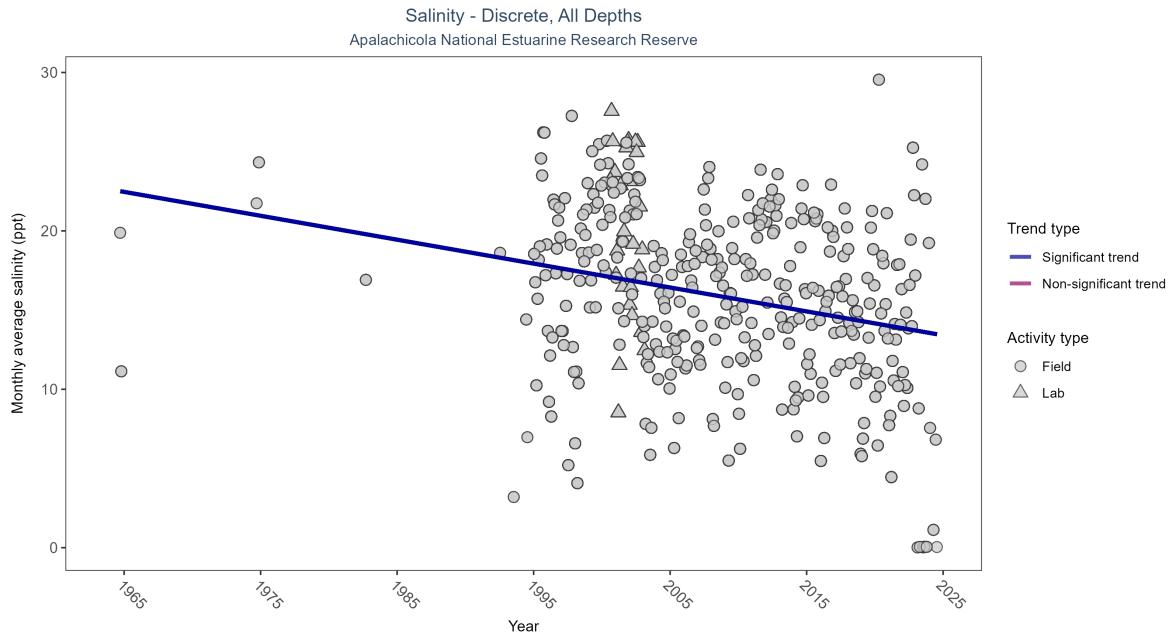
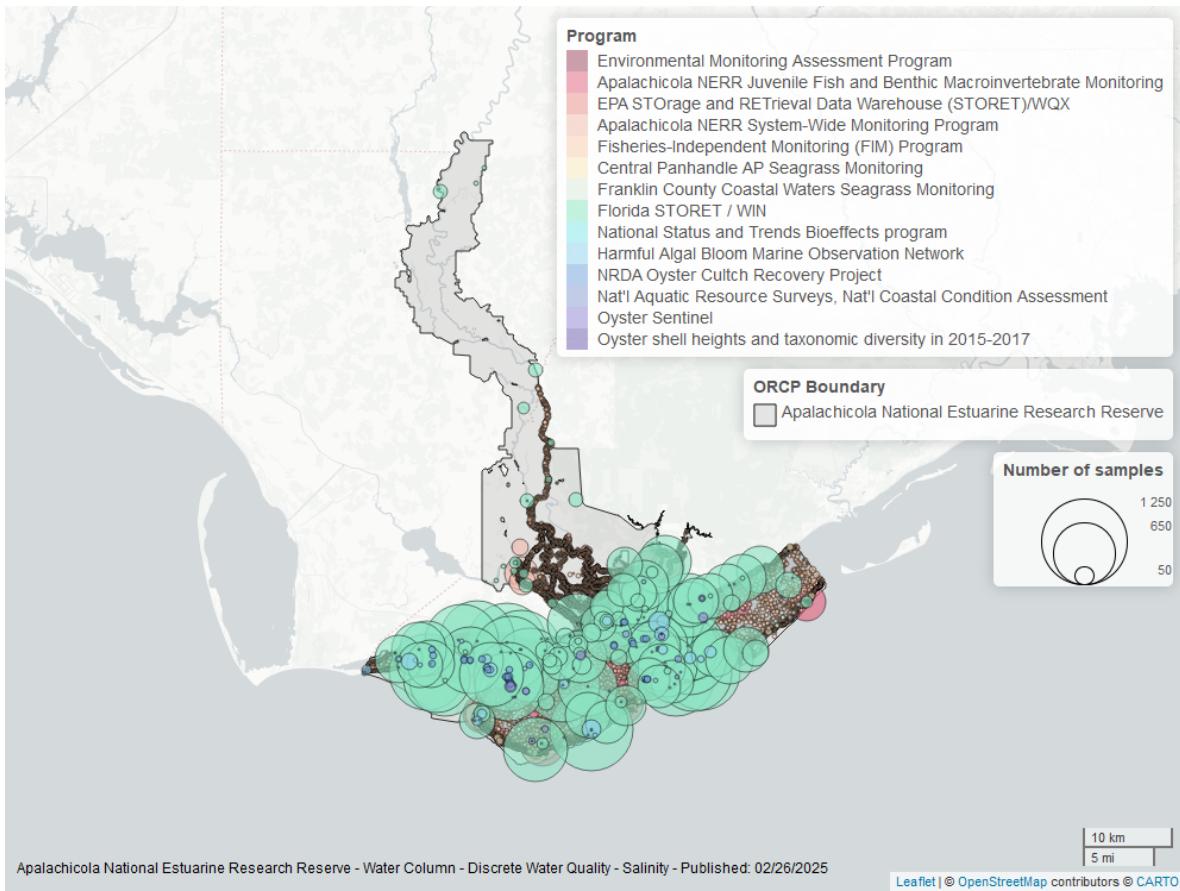


Table 7: Seasonal Kendall-Tau Results for - Salinity

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	93589	36	1964 - 2024	16.79	-0.2144	22.61307	-0.15092	0.0000



## Salinity - Continuous

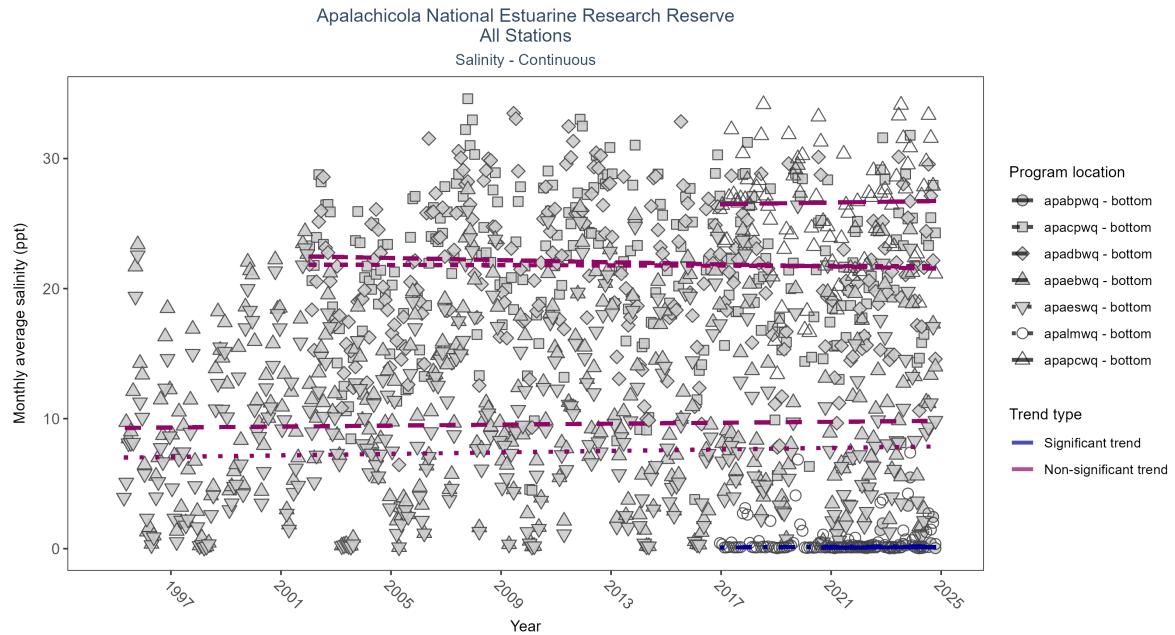
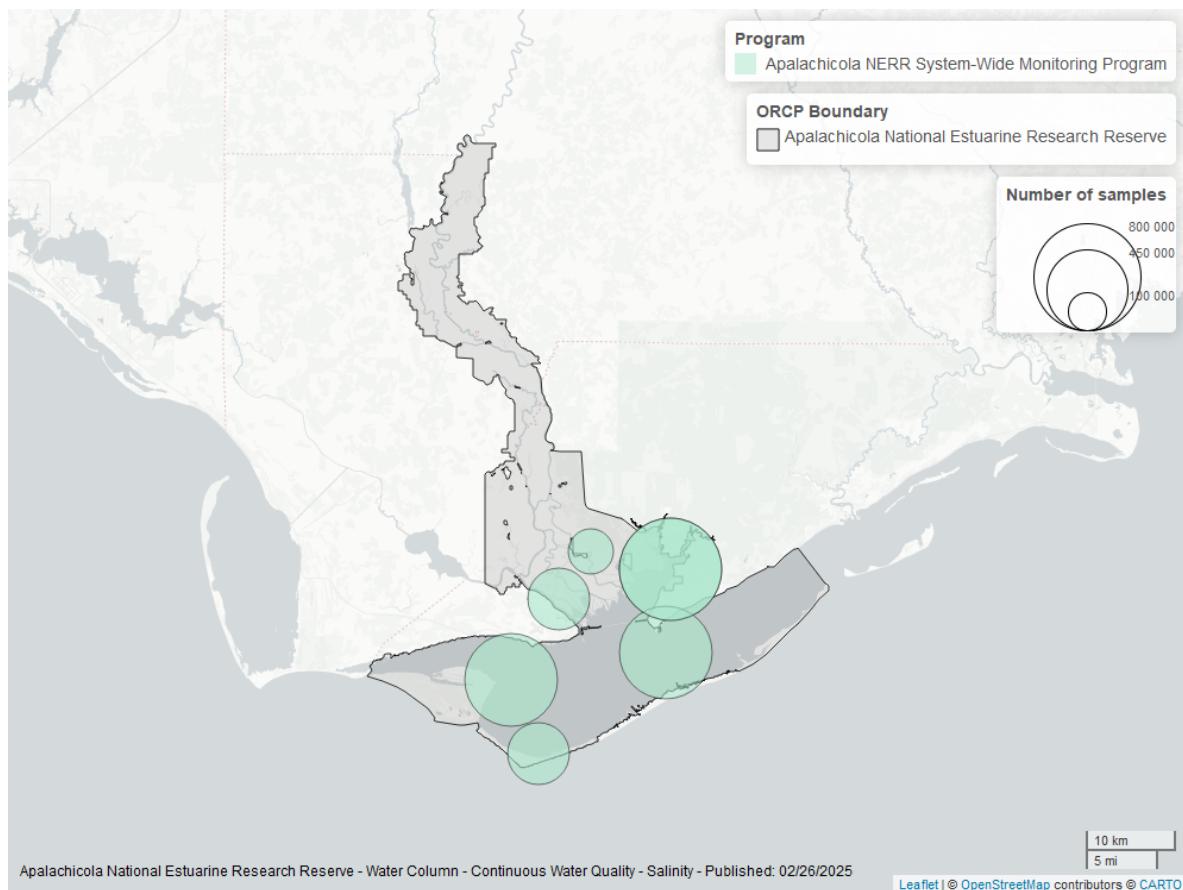


Table 8: Seasonal Kendall-Tau Results for All Stations - Salinity

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
apadbwq	No significant trend	610043	23	2002 - 2024	22.1	-0.05	22.47	-0.04	0.2984
apaeswq	No significant trend	750073	30	1995 - 2024	7.4	0.05	7.00	0.03	0.2183
apapcwq	No significant trend	260825	9	2016 - 2024	26.7	0.02	26.46	0.03	0.8849
apalmwq	Significantly increasing trend	262776	9	2016 - 2024	0.1	0.22	0.08	0.01	0.0091
apacpwq	No significant trend	621811	23	2002 - 2024	22.4	0.00	21.84	-0.01	0.8998
apabpwq	Significantly increasing trend	142177	5	2020 - 2024	0.1	0.33	0.07	0.01	0.0142
apaebwq	No significant trend	737644	30	1995 - 2024	9.8	0.03	9.28	0.02	0.4301



## Water Temperature - Discrete

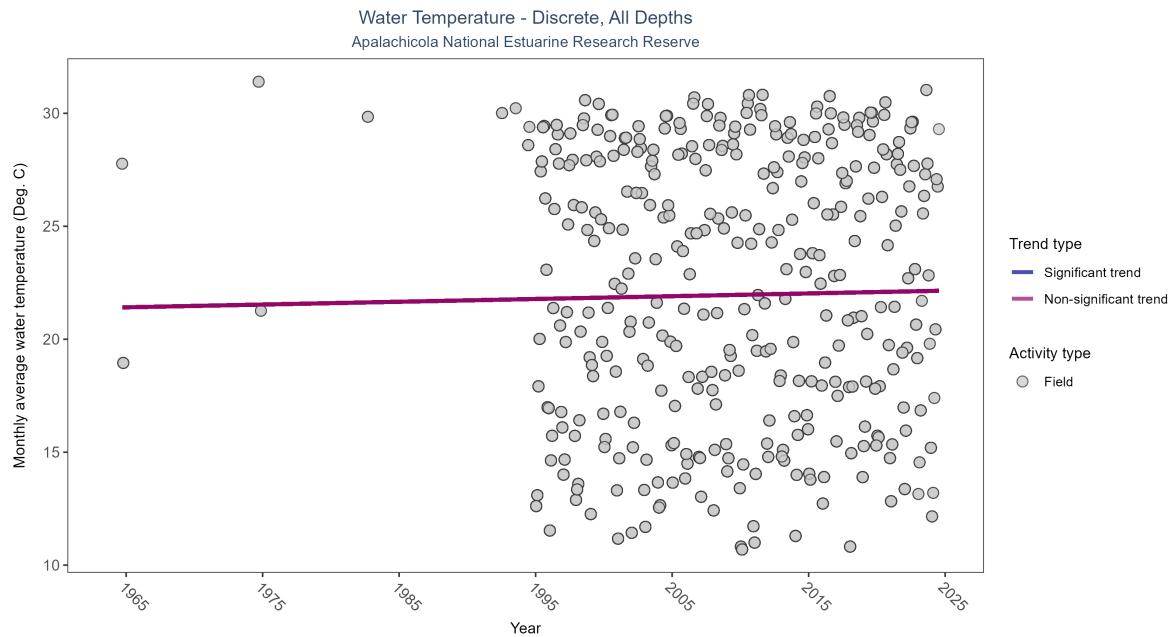
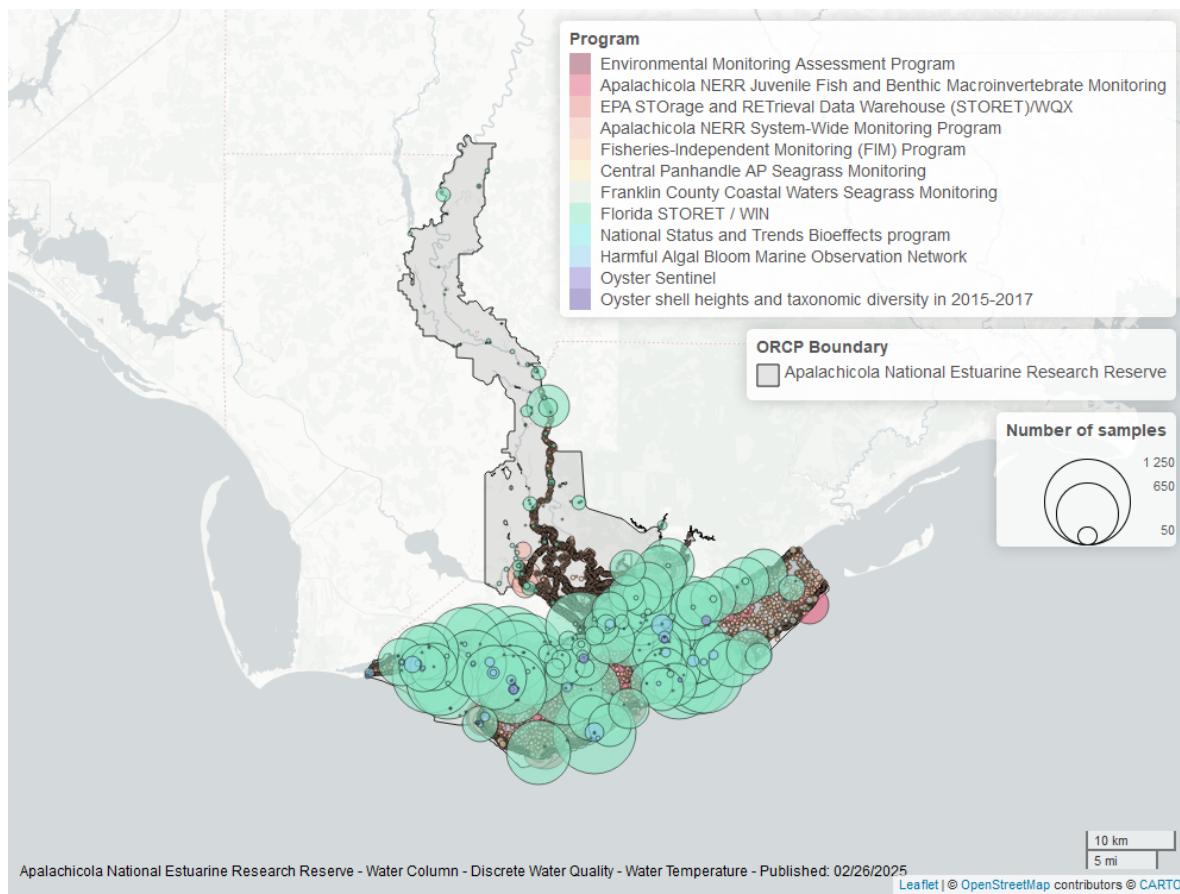


Table 9: Seasonal Kendall-Tau Results for - Water Temperature

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	93793	36	1964 - 2024	23.4	0.0683	21.40042	0.01229	0.0732



## Water Temperature - Continuous

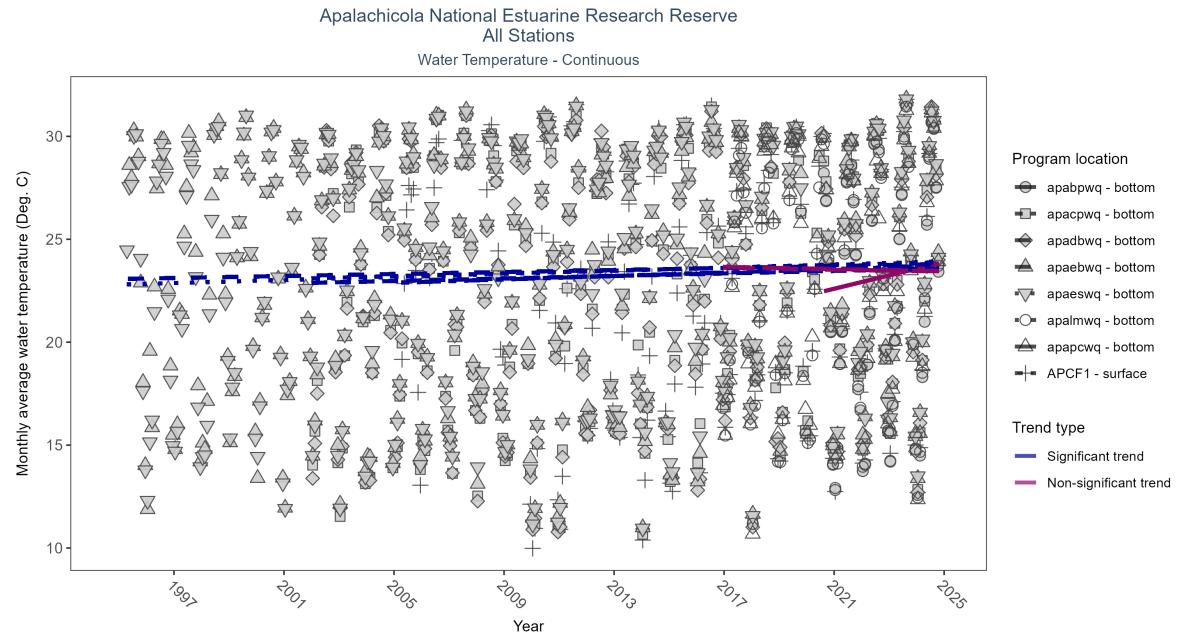
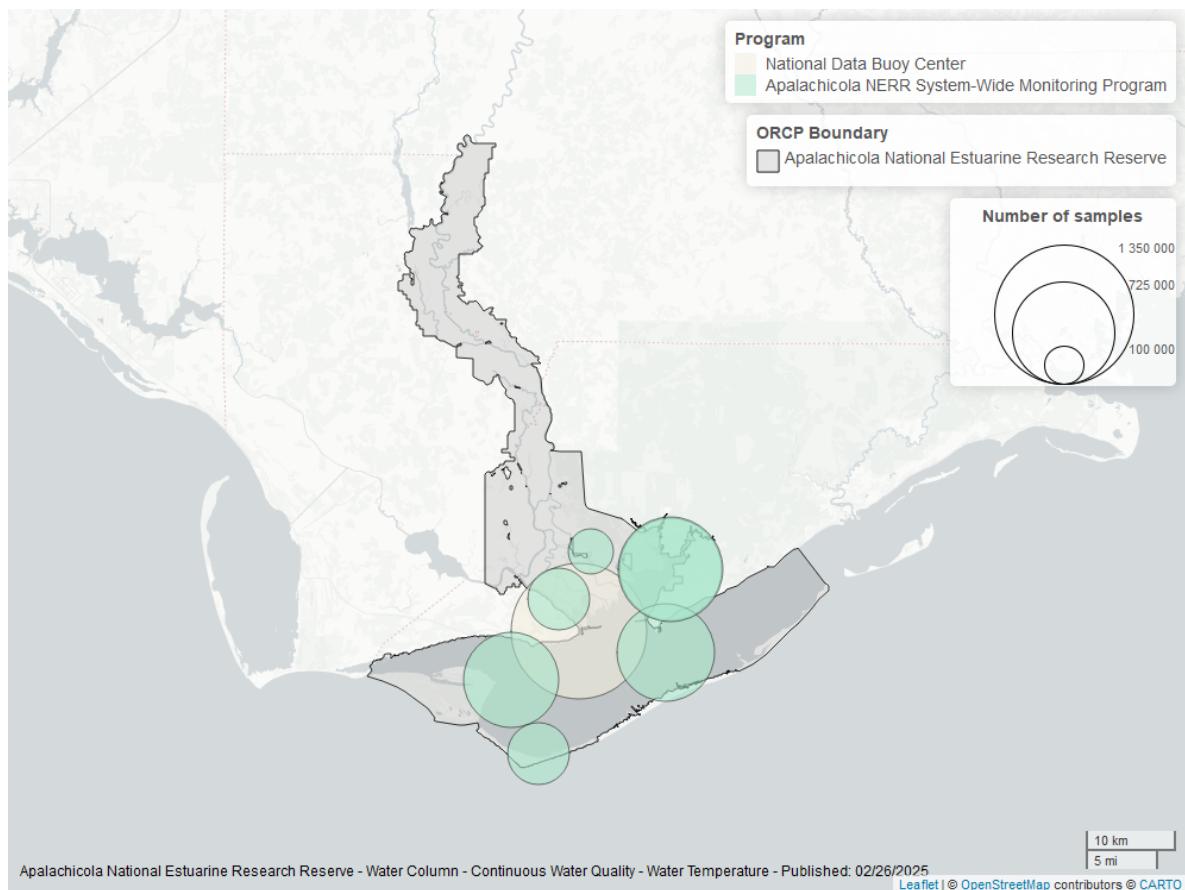


Table 10: Seasonal Kendall-Tau Results for All Stations - Water Temperature

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
APCF1	Significantly increasing trend	1317092	20	2005 - 2024	23.3	0.12	22.89	0.04	0.0324
apadbwq	Significantly increasing trend	635215	23	2002 - 2024	23.4	0.15	22.88	0.03	0.0010
apaebwq	Significantly increasing trend	752687	30	1995 - 2024	24.3	0.14	23.07	0.02	0.0002
apacpwq	Significantly increasing trend	660804	23	2002 - 2024	23.6	0.16	23.10	0.03	0.0004
apalmwq	No significant trend	265036	9	2016 - 2024	22.8	-0.03	23.64	-0.02	0.7721
apabpwq	No significant trend	142177	5	2020 - 2024	22.9	0.20	22.27	0.33	0.1329
apapcwq	No significant trend	264293	9	2016 - 2024	23.3	-0.05	23.68	-0.03	0.5624
apaeswq	Significantly increasing trend	759330	30	1995 - 2024	24.2	0.19	22.80	0.04	0.0000



## pH - Discrete

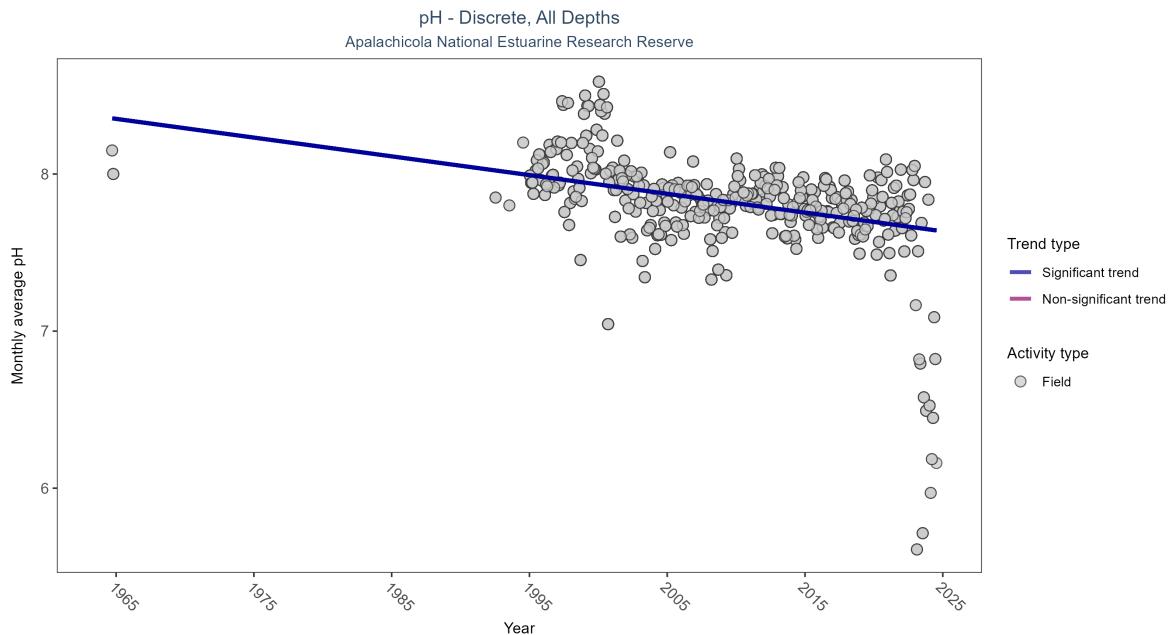
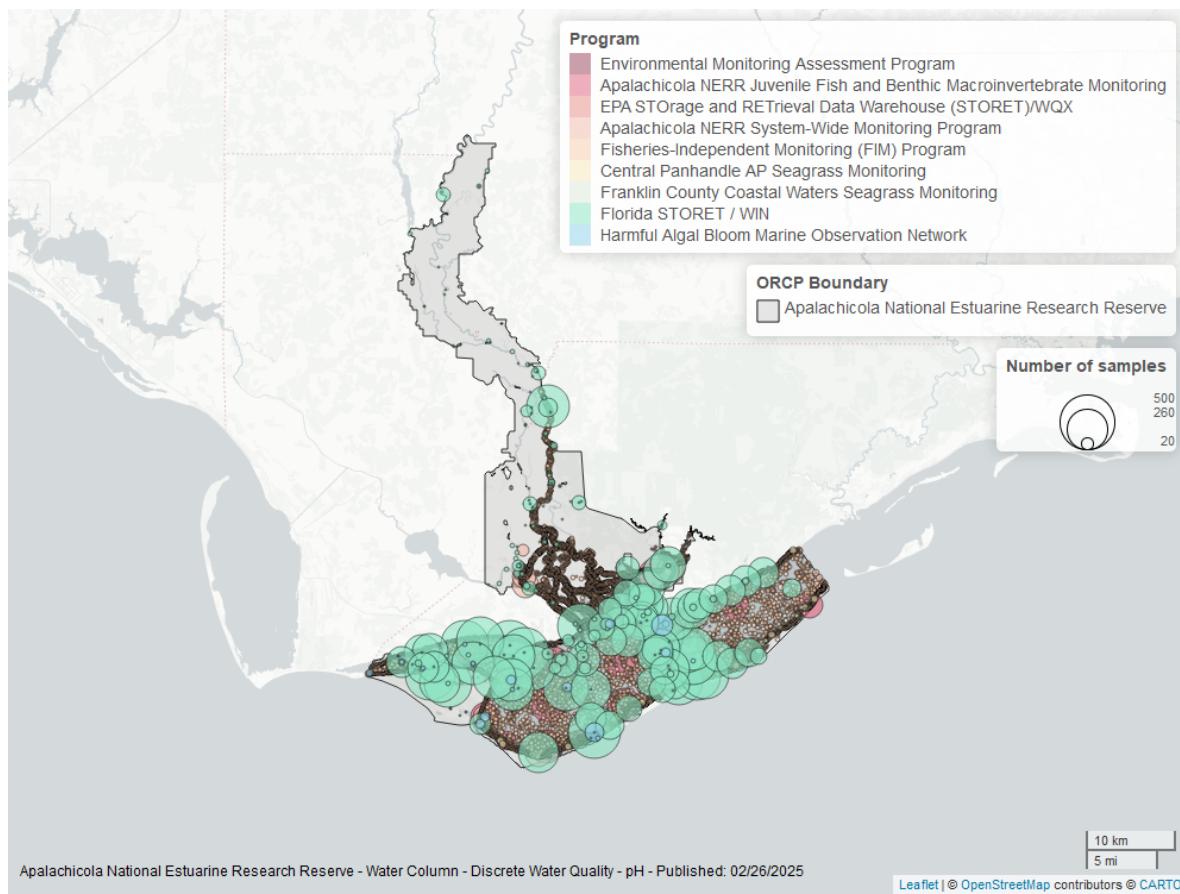


Table 11: Seasonal Kendall-Tau Results for - pH

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	65060	34	1964 - 2024	7.95	-0.3699	8.36298	-0.01193	0.0000



## pH - Continuous

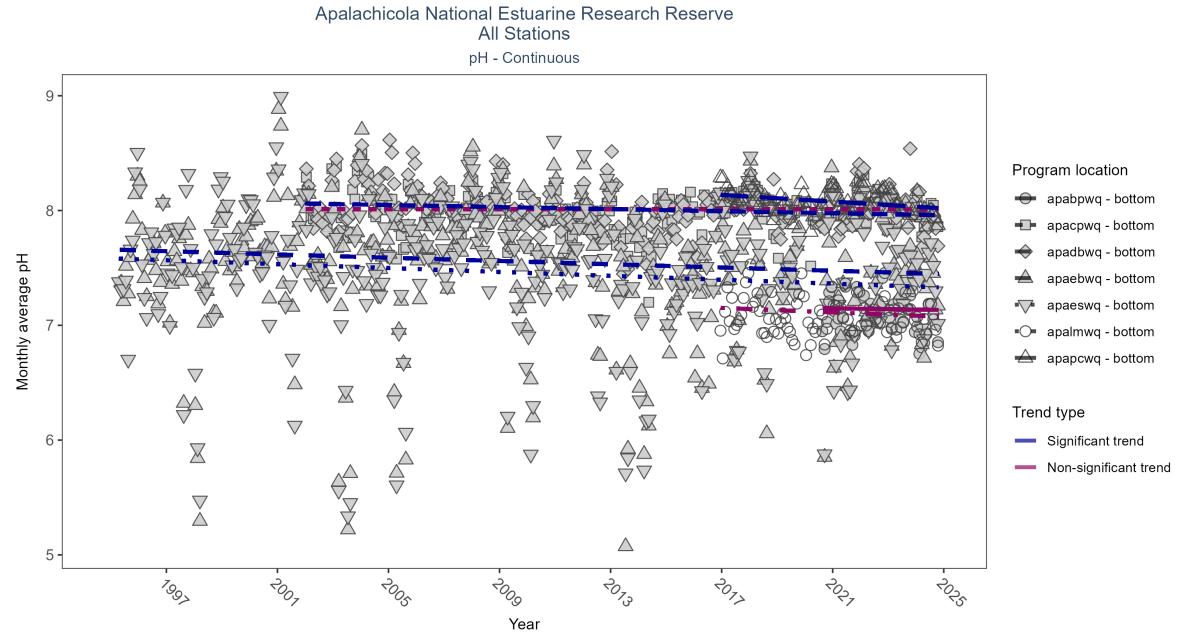
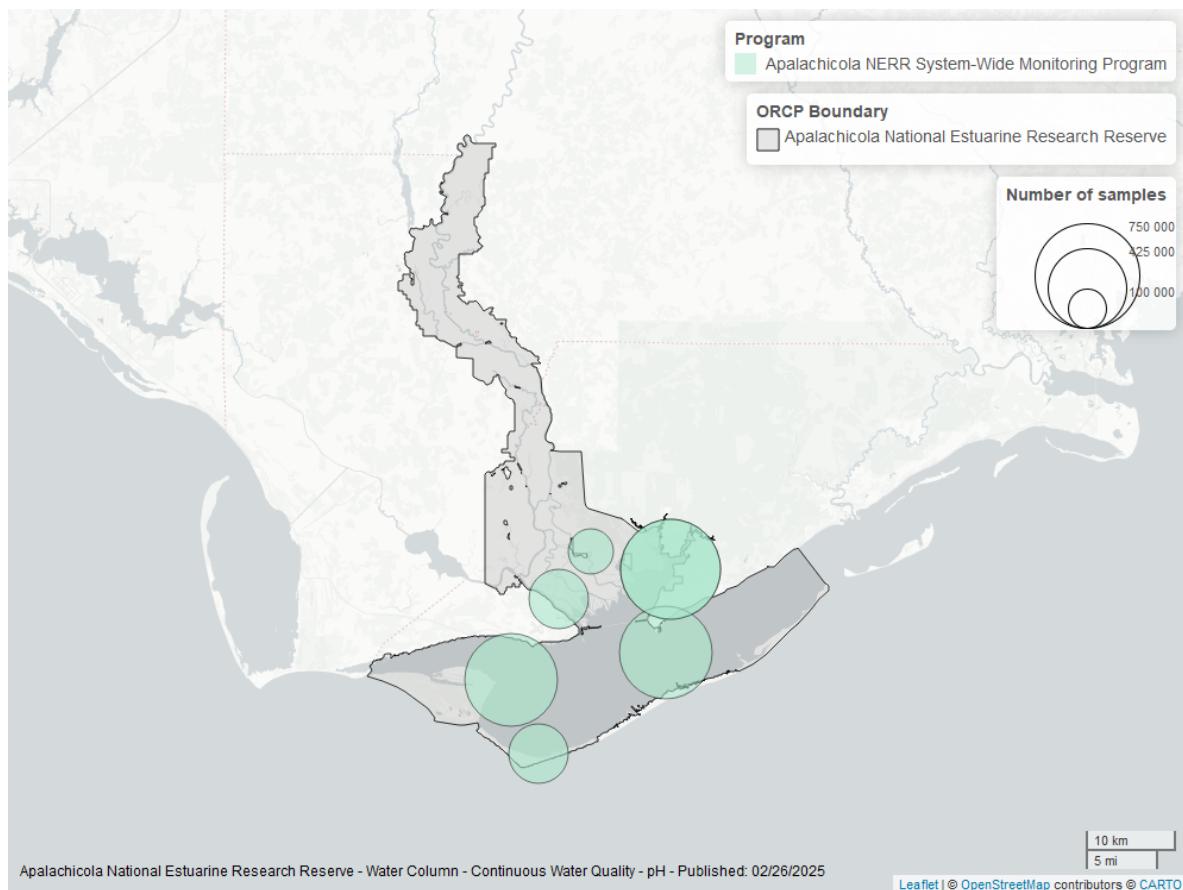


Table 12: Seasonal Kendall-Tau Results for All Stations - pH

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
apaeswq	Significantly decreasing trend	710126	30	1995 - 2024	7.5	-0.13	7.58	-0.01	0.0005
apacpwq	No significant trend	606691	23	2002 - 2024	8.0	-0.01	8.01	0.00	0.9435
apabpwq	No significant trend	140938	5	2020 - 2024	7.1	-0.03	7.15	0.00	1.0000
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
apapcwq	Significantly decreasing trend	258424	9	2016 - 2024	8.1	-0.29	8.15	-0.01	0.0007
apalmwq	No significant trend	255201	9	2016 - 2024	7.1	-0.07	7.16	-0.01	0.4258



## Water Clarity

### Turbidity - Discrete

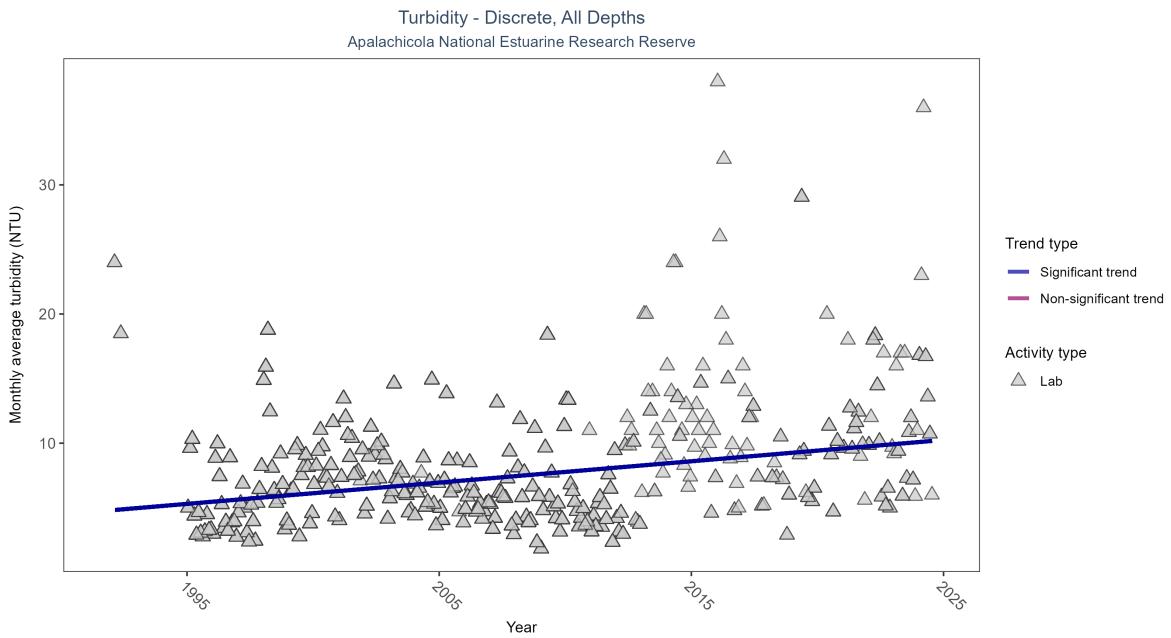
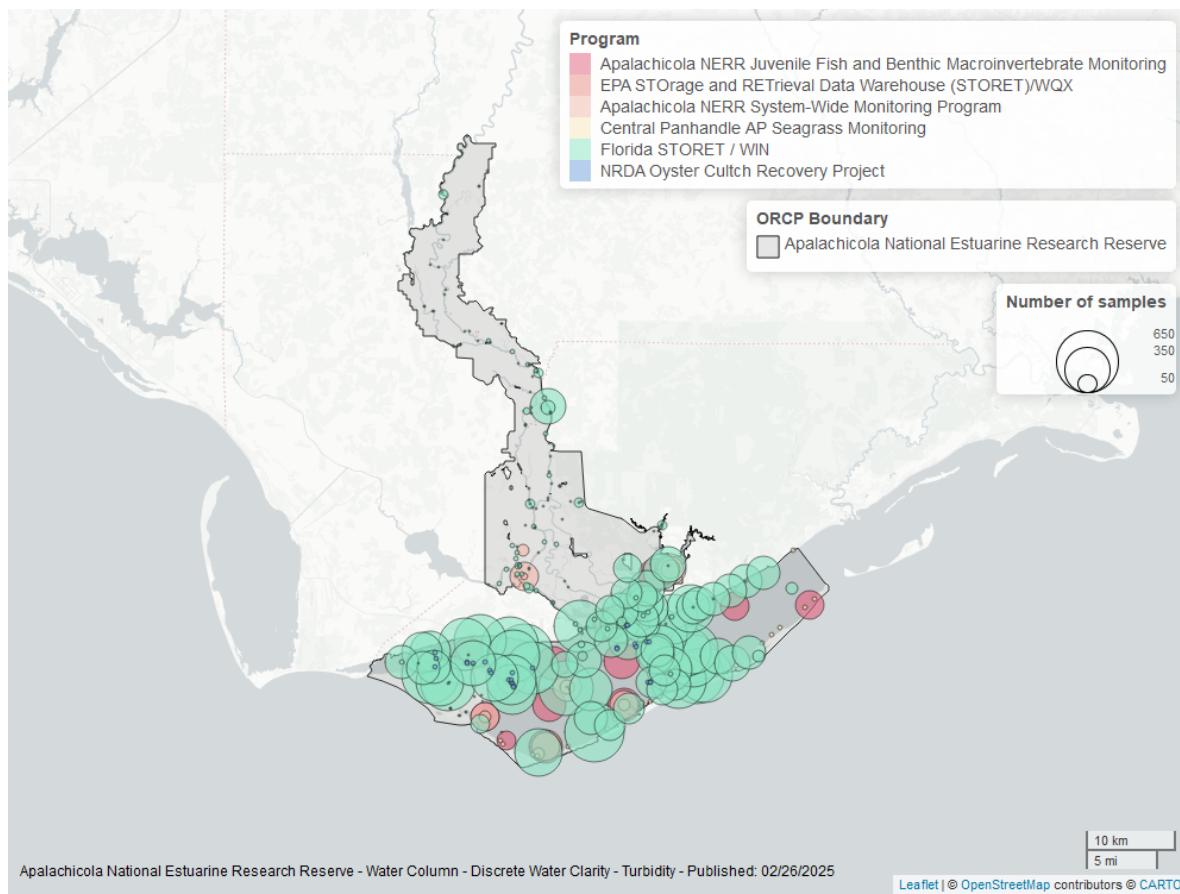


Table 13: Seasonal Kendall-Tau Results for - Turbidity

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Significantly increasing trend	22963	31	1992 - 2024	5.1	0.2567	4.80129	0.165	0.0000



## Turbidity - Continuous

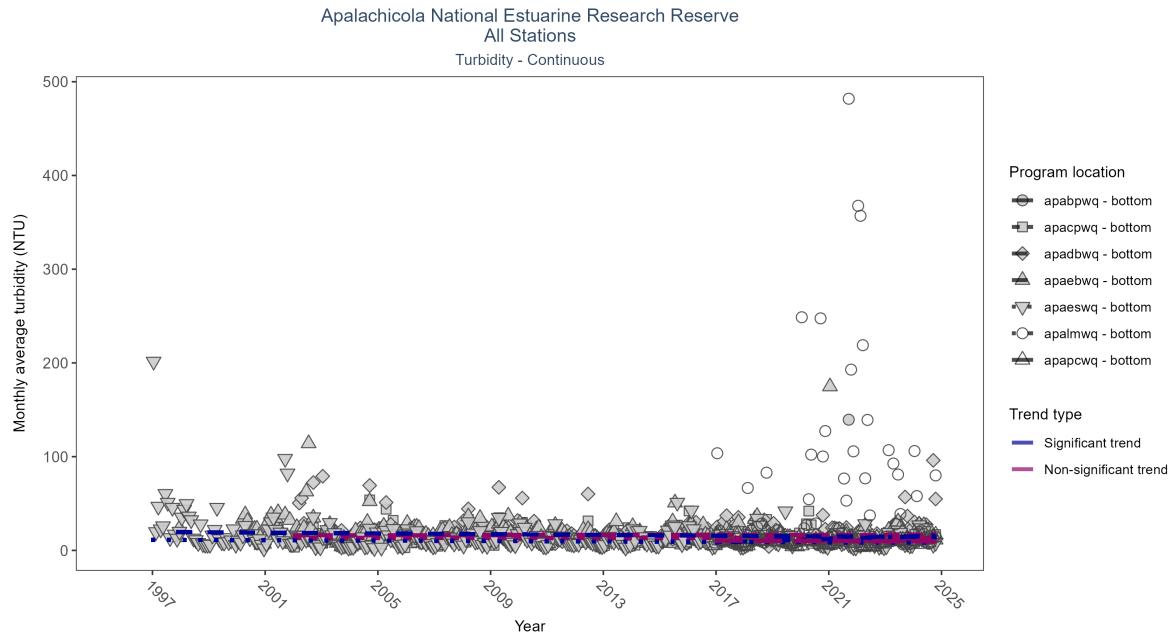
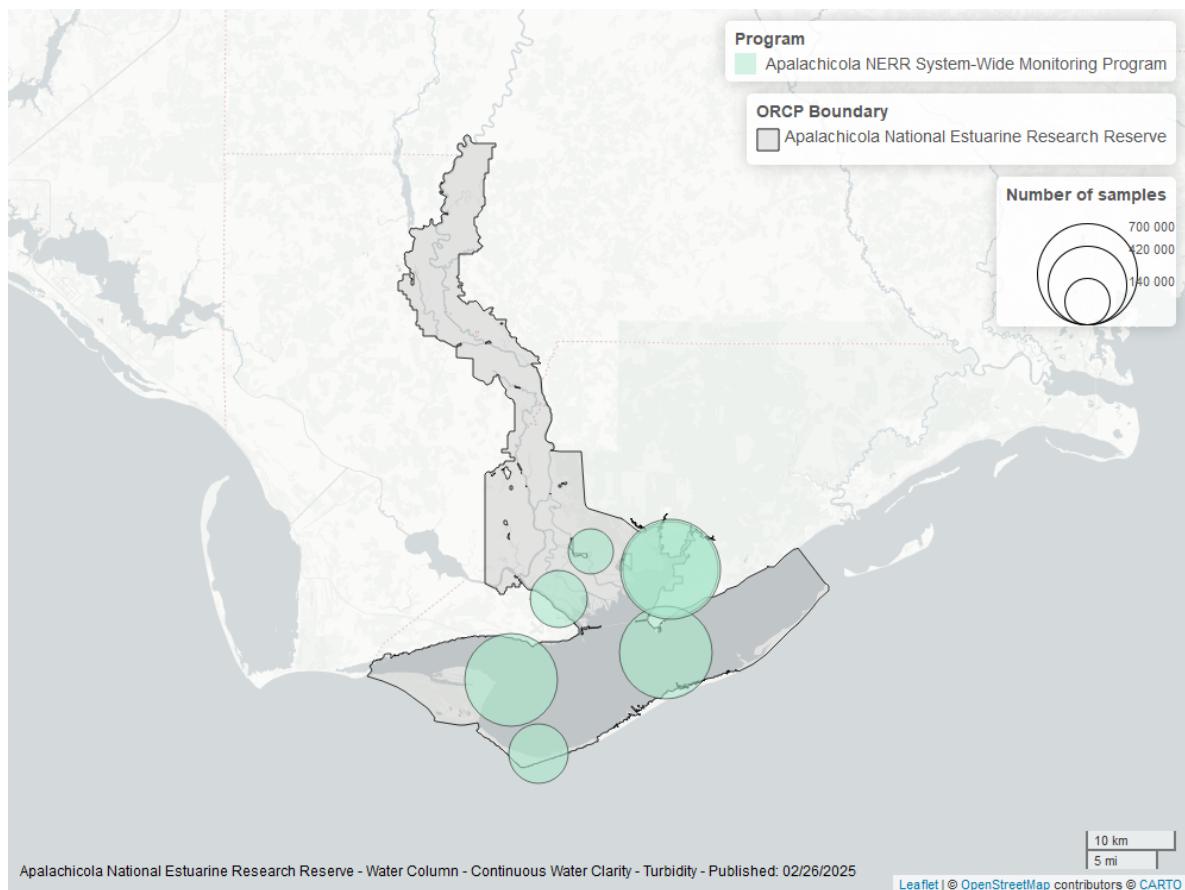


Table 14: Seasonal Kendall-Tau Results for All Stations - Turbidity

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
apabpwq	No significant trend	142173	5	2020 - 2024	11	0.08	10.09	0.19	0.6585
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
apacpwq	No significant trend	618864	23	2002 - 2024	8	0.00	13.20	0.00	0.9938
apalmwq	Significantly increasing trend	235869	9	2016 - 2024	12	0.24	7.63	0.93	0.0047
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



## Total Suspended Solids - Discrete

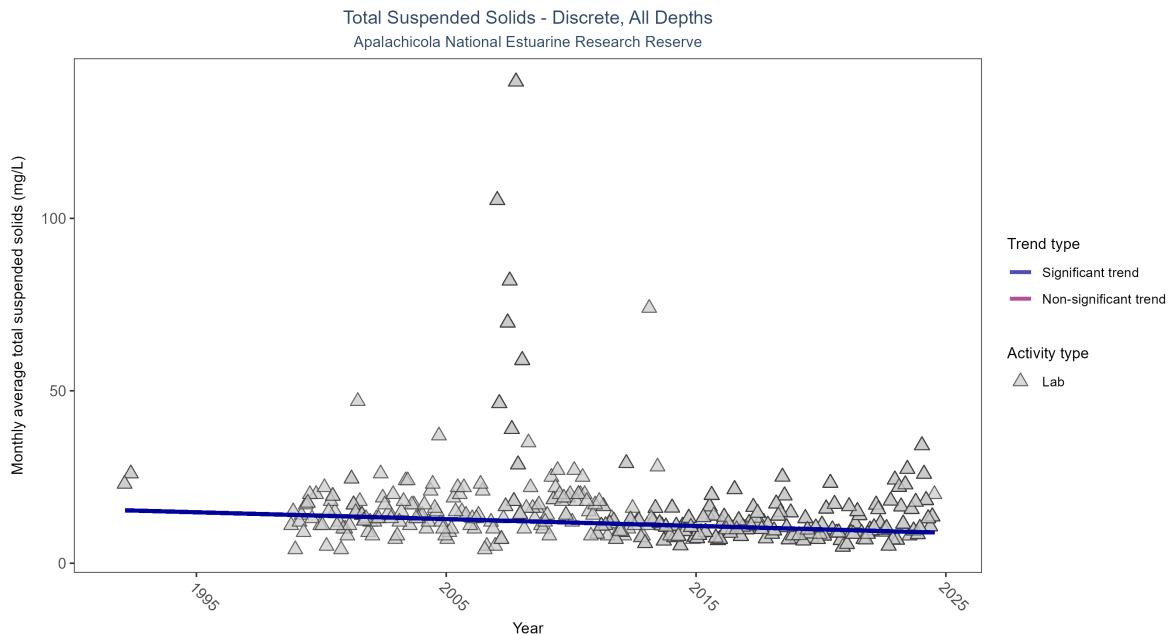
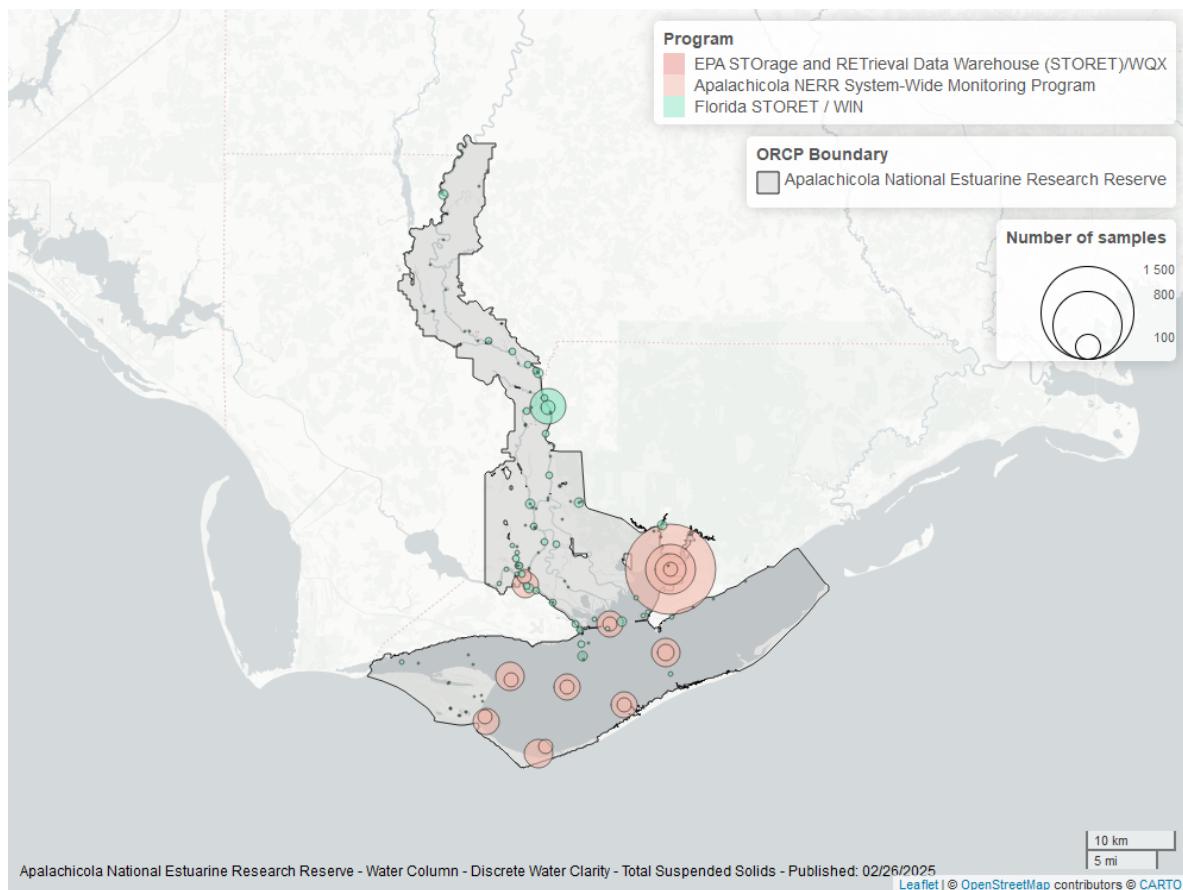


Table 15: Seasonal Kendall-Tau Results for - Total Suspended Solids

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P	
Lab	Significantly decreasing trend	3976	28	1992 - 2024		10	-0.2109	15.37229	-0.19829	0.0000



## Chlorophyll a, Uncorrected for Pheophytin - Discrete

Chlorophyll a, Uncorrected for Pheophytin - Discrete, All Depths  
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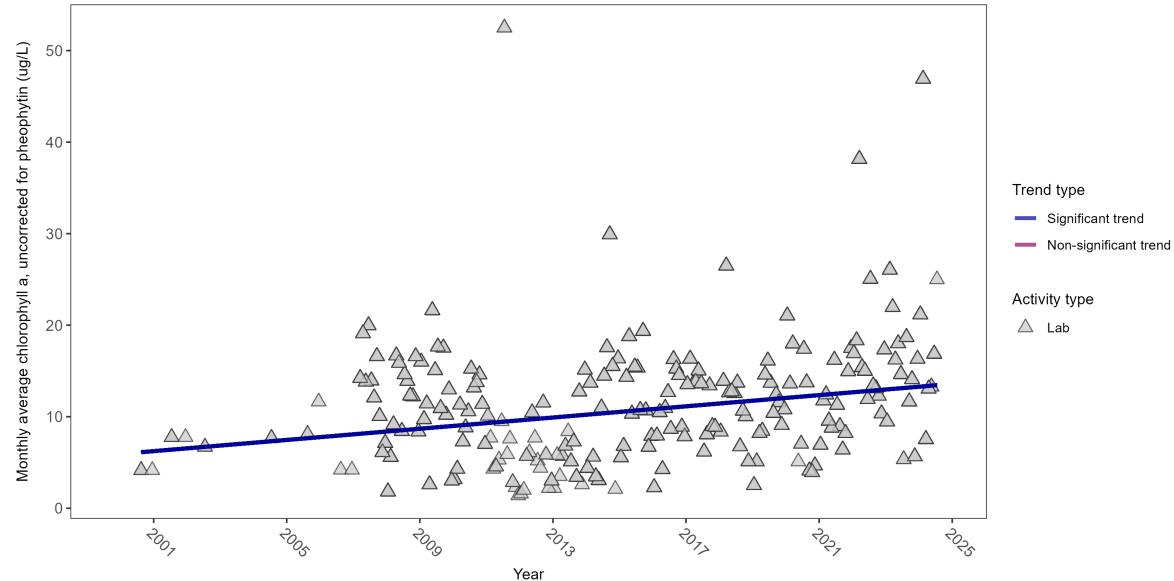
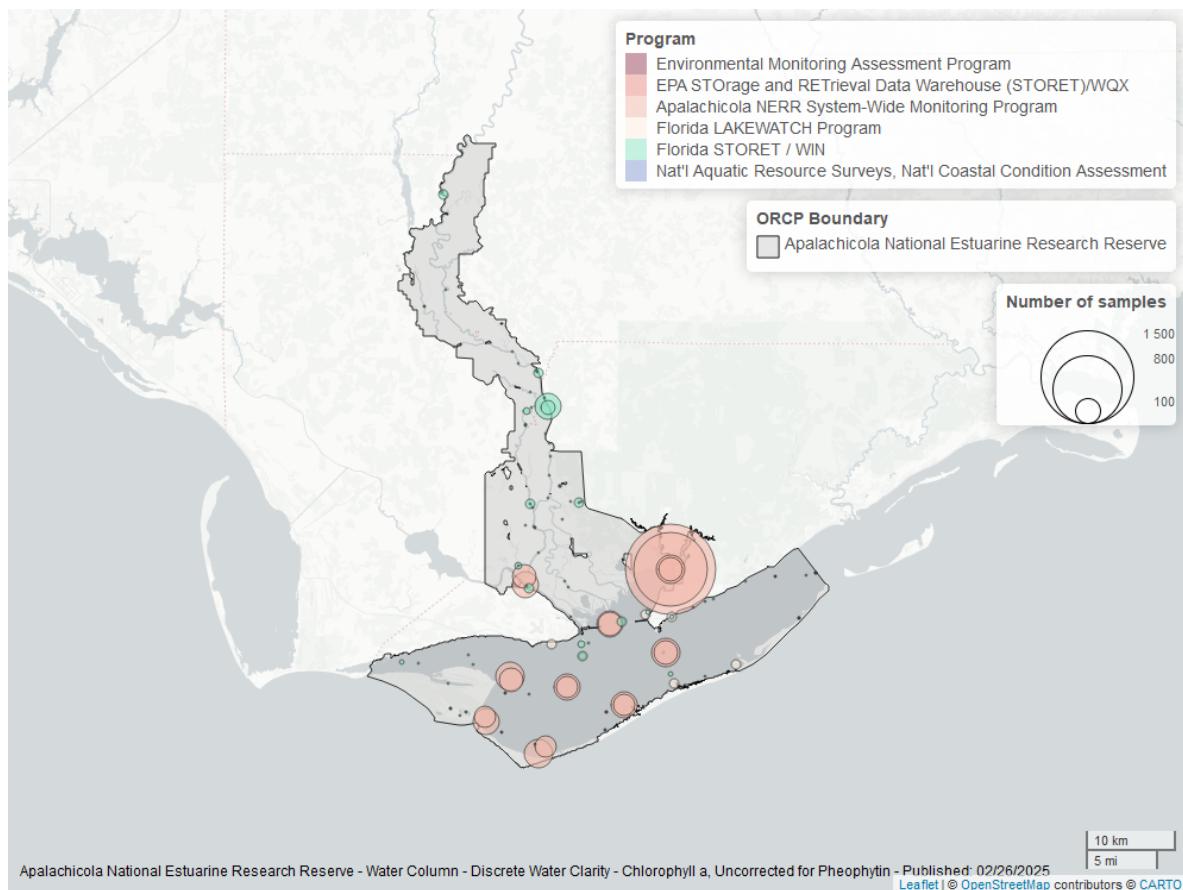


Table 16: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

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	4711	24	2000 - 2024	10	0.1868	5.93275	0.30605	0.0002



## Chlorophyll a, Corrected for Pheophytin - Discrete

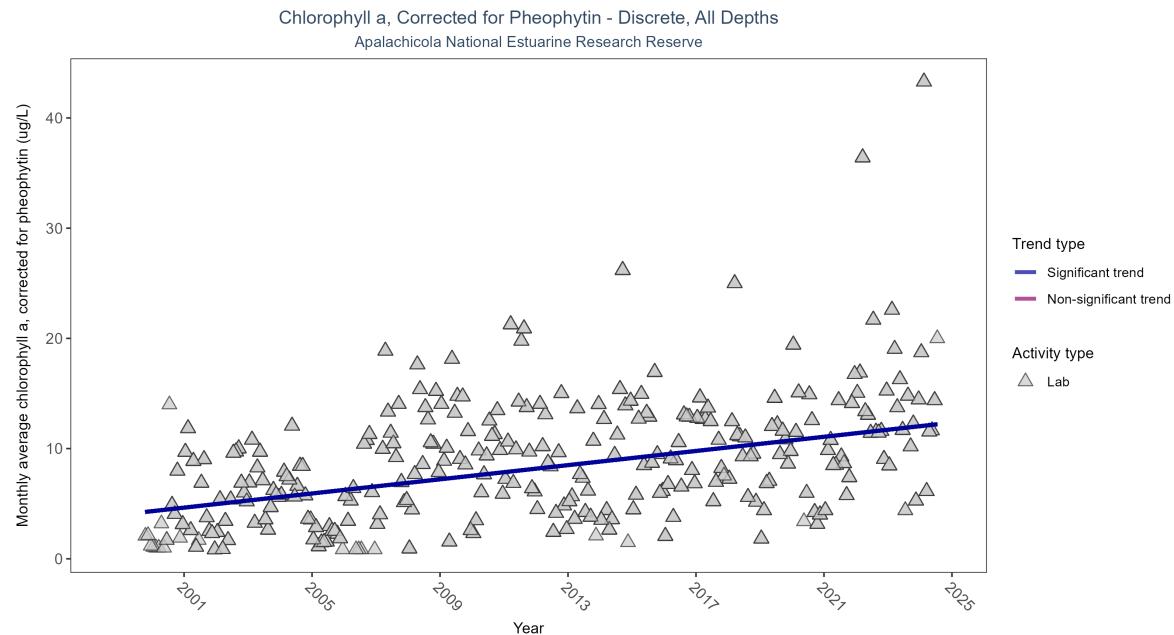
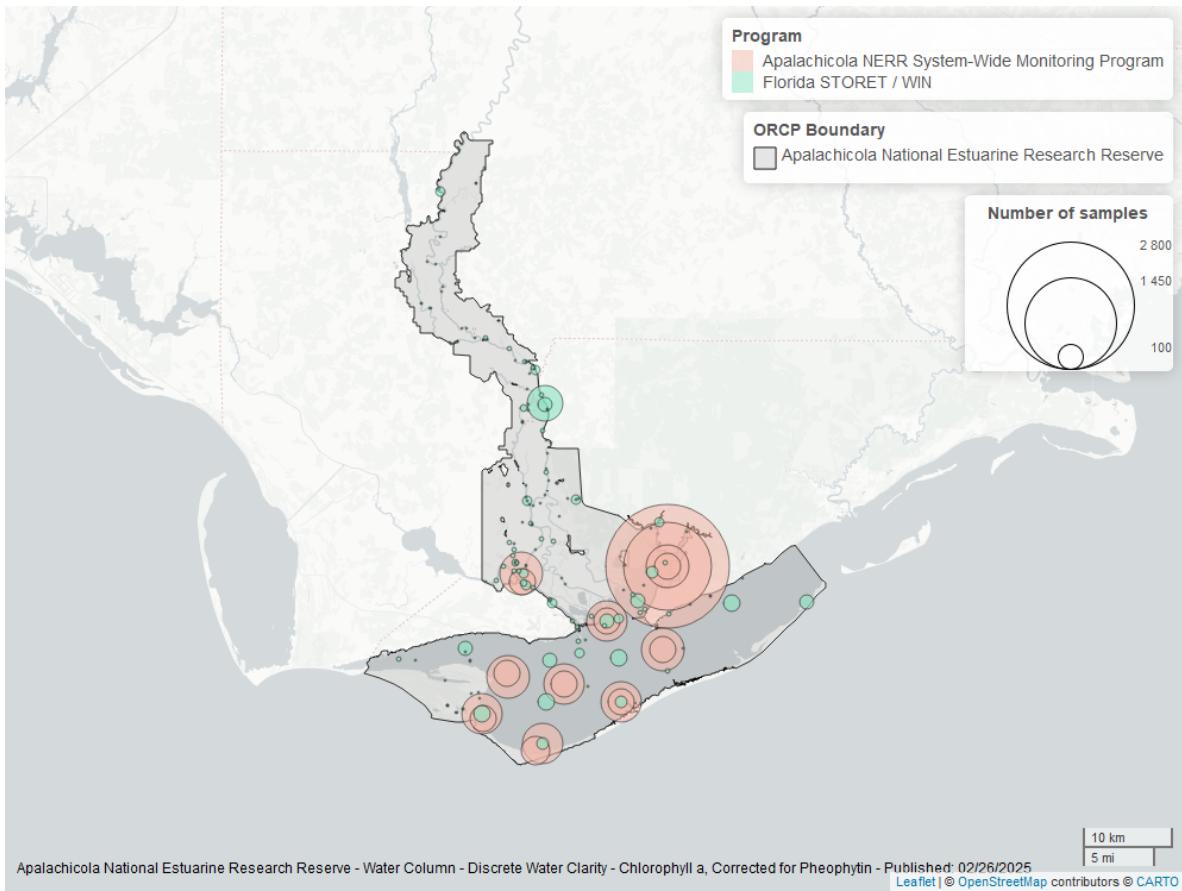


Table 17: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

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	8985	26	1999 - 2024	7.6	0.3411	4.00057	0.32135	0.0000



## Secchi Depth - Discrete

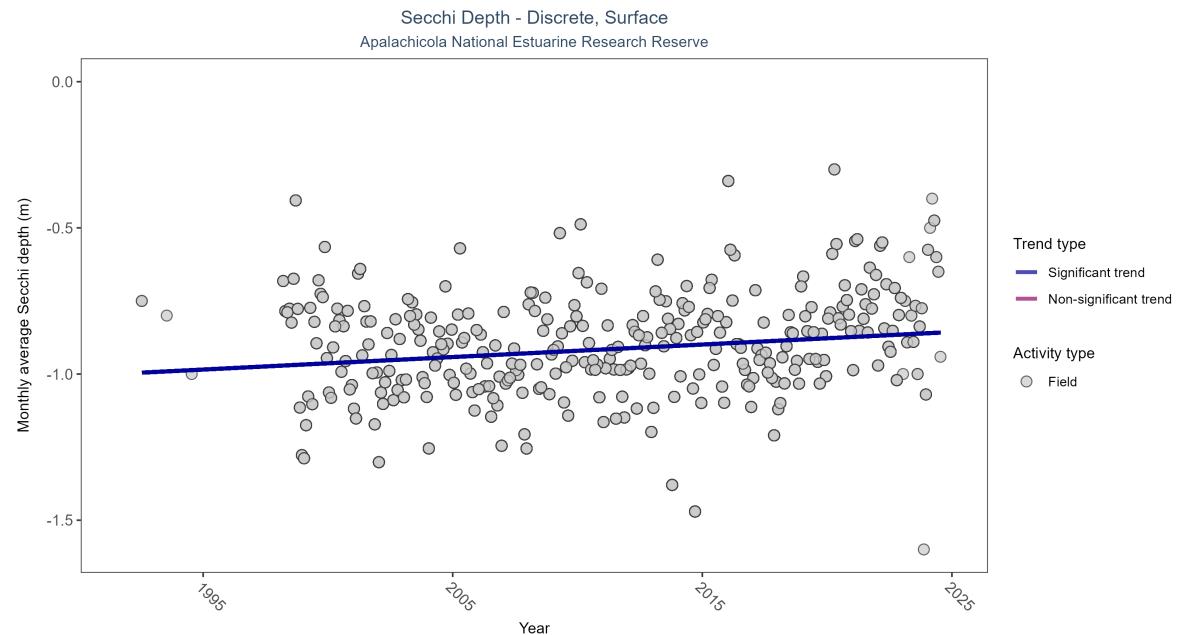
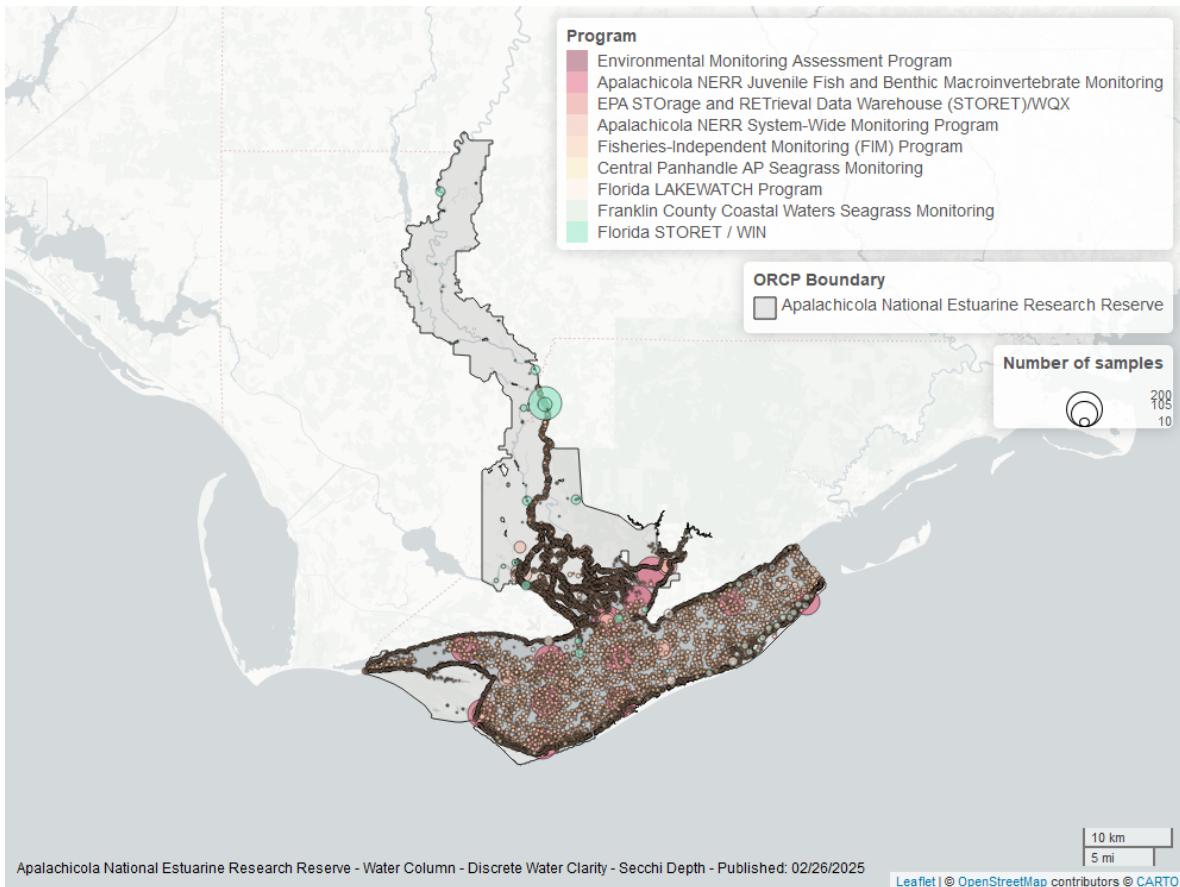


Table 18: Seasonal Kendall-Tau Results for - Secchi Depth

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Field	Significantly increasing trend	45158	30	1992 - 2024	-0.8	0.1556	-0.99753	0.00428	0.0001



## Colored Dissolved Organic Matter - Discrete

Colored Dissolved Organic Matter - Discrete, All Depths  
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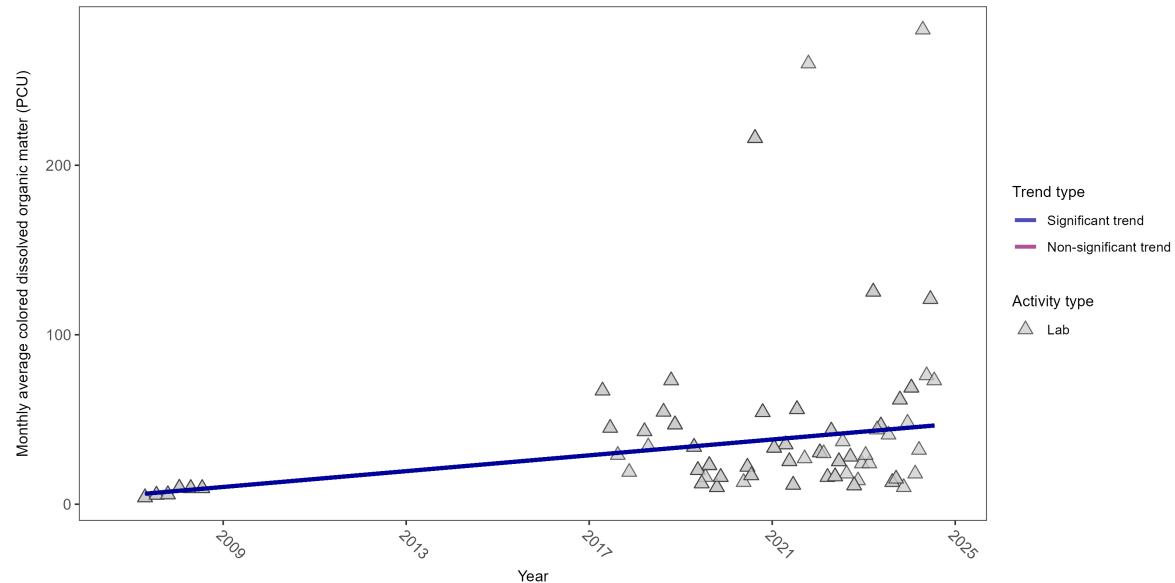


Table 19: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Significantly increasing trend	160	10	2007 - 2024	21.5	0.2061	5.51717	2.33333	0.0046

