

# Apalachicola National Estuarine Research Reserve

## SEACAR Water Quality Analysis

Last compiled on 18 March, 2025

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# Indicators

## Nutrients

### Total Nitrogen - Discrete

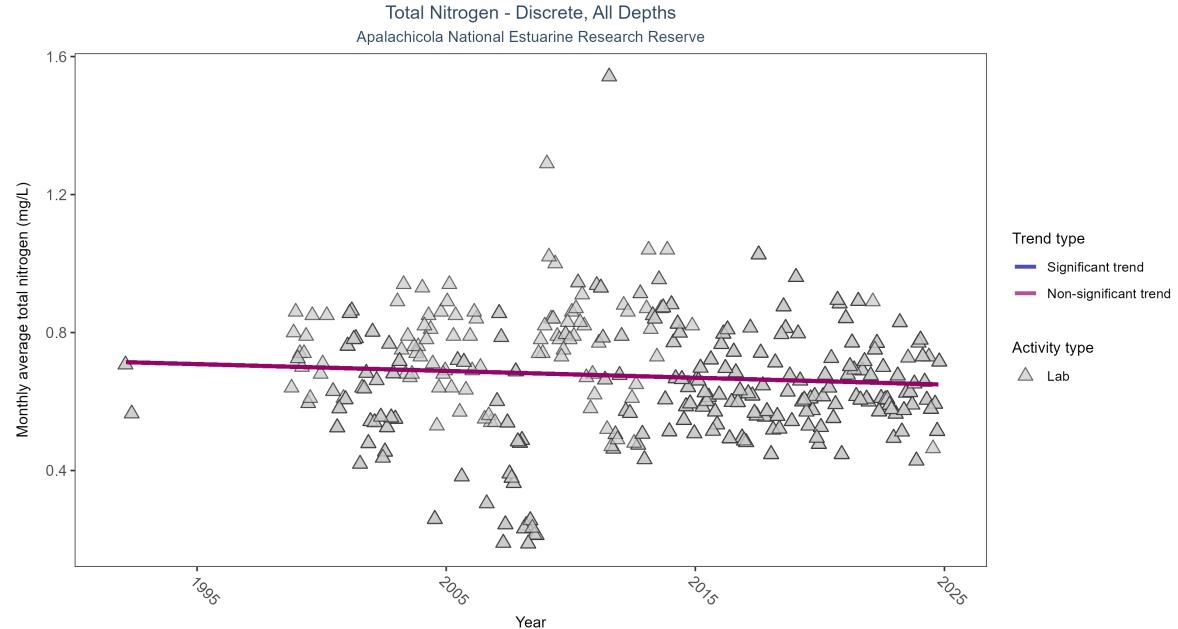
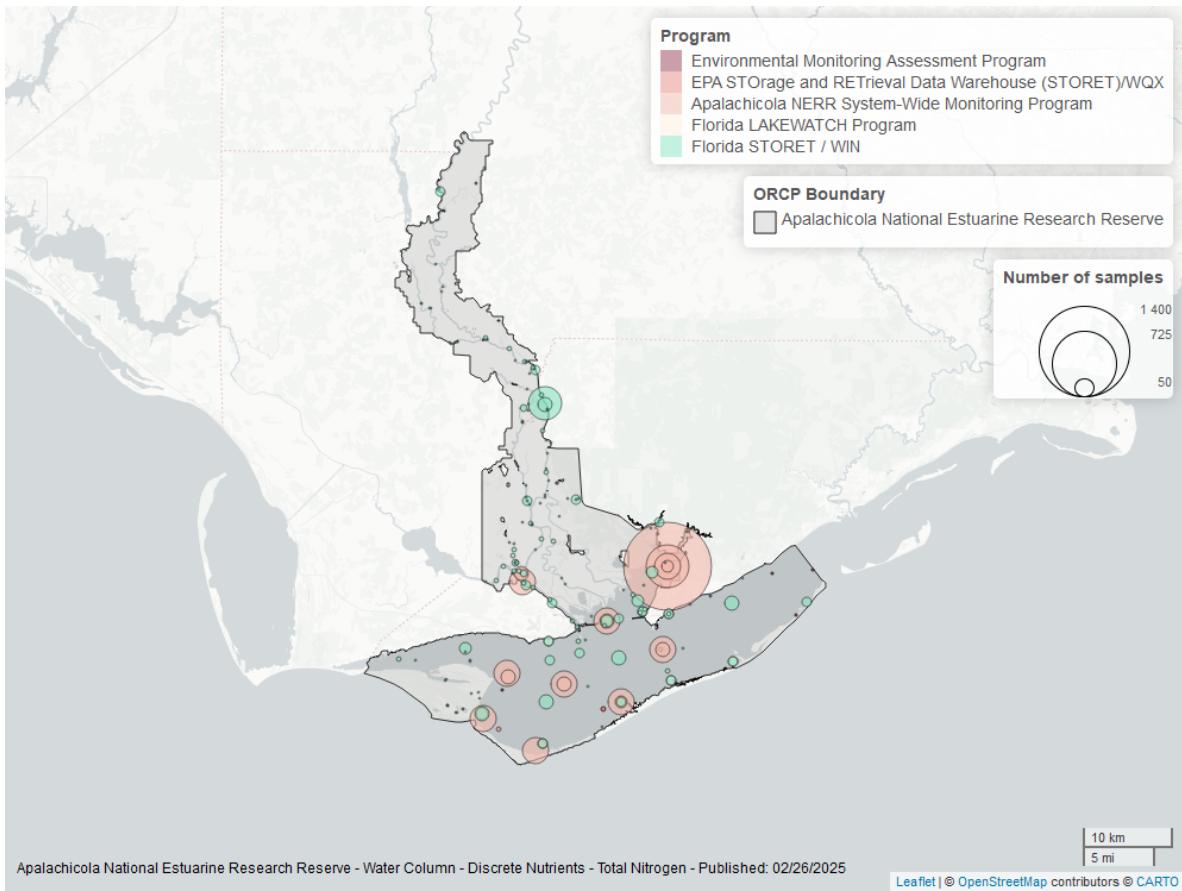


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

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	4227	28	1992 - 2024	0.63	-0.06907	0.71436	-0.00197	0.12370399965893651150761201052



## Total Phosphorus - Discrete

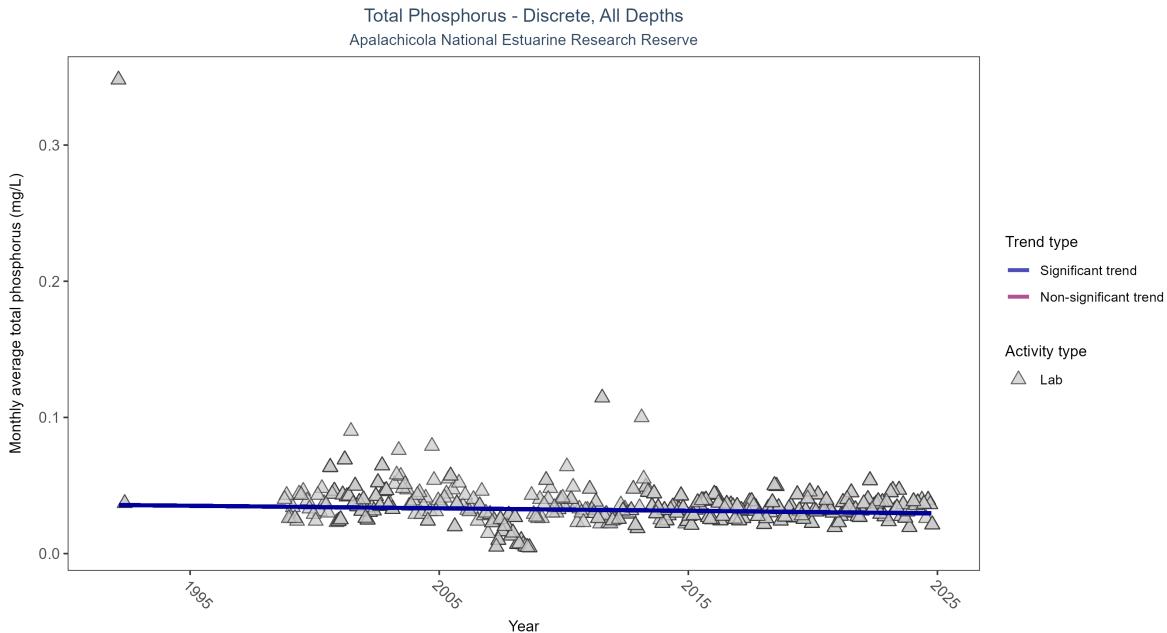
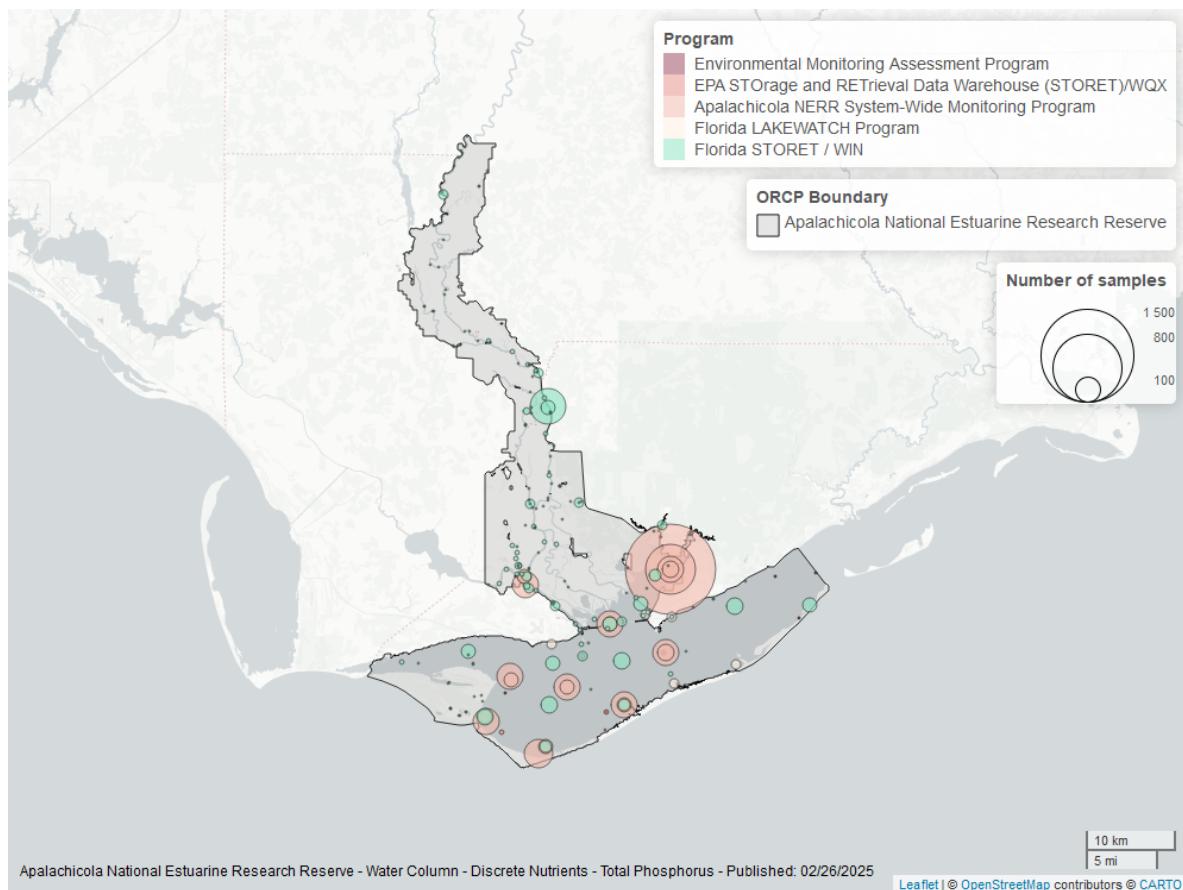


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

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	4566	28	1992 - 2024	0.031	-0.11651	0.03569	-0.00019	0.0042458545270611172672836630681558744981884956359863281250000000



## Water Quality

### Dissolved Oxygen - Discrete

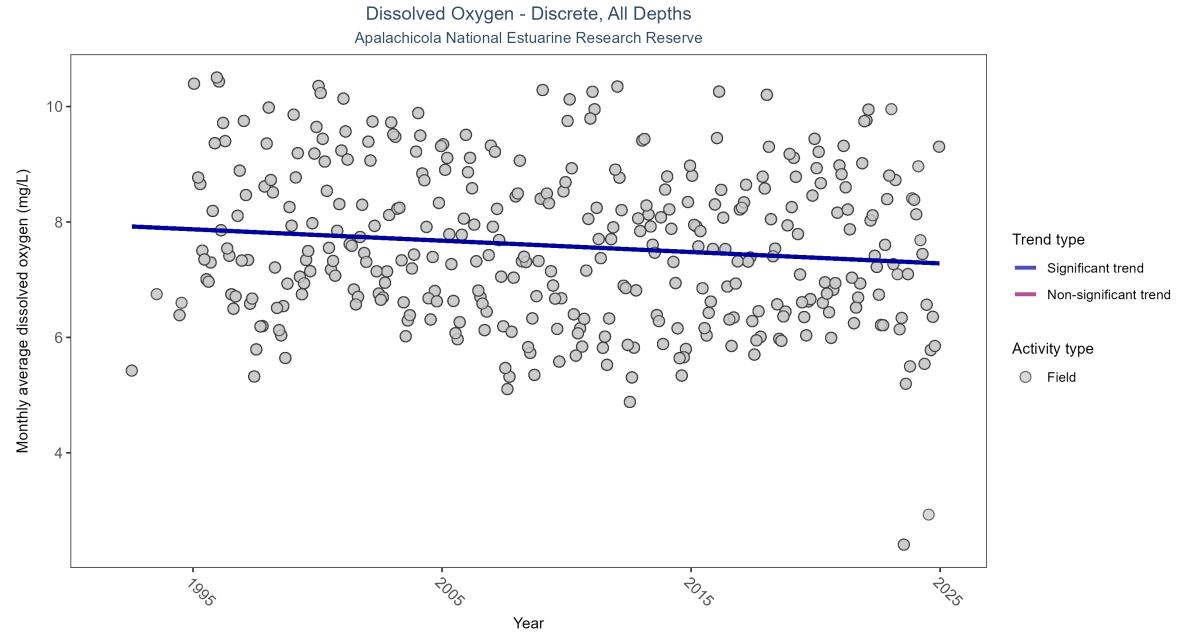
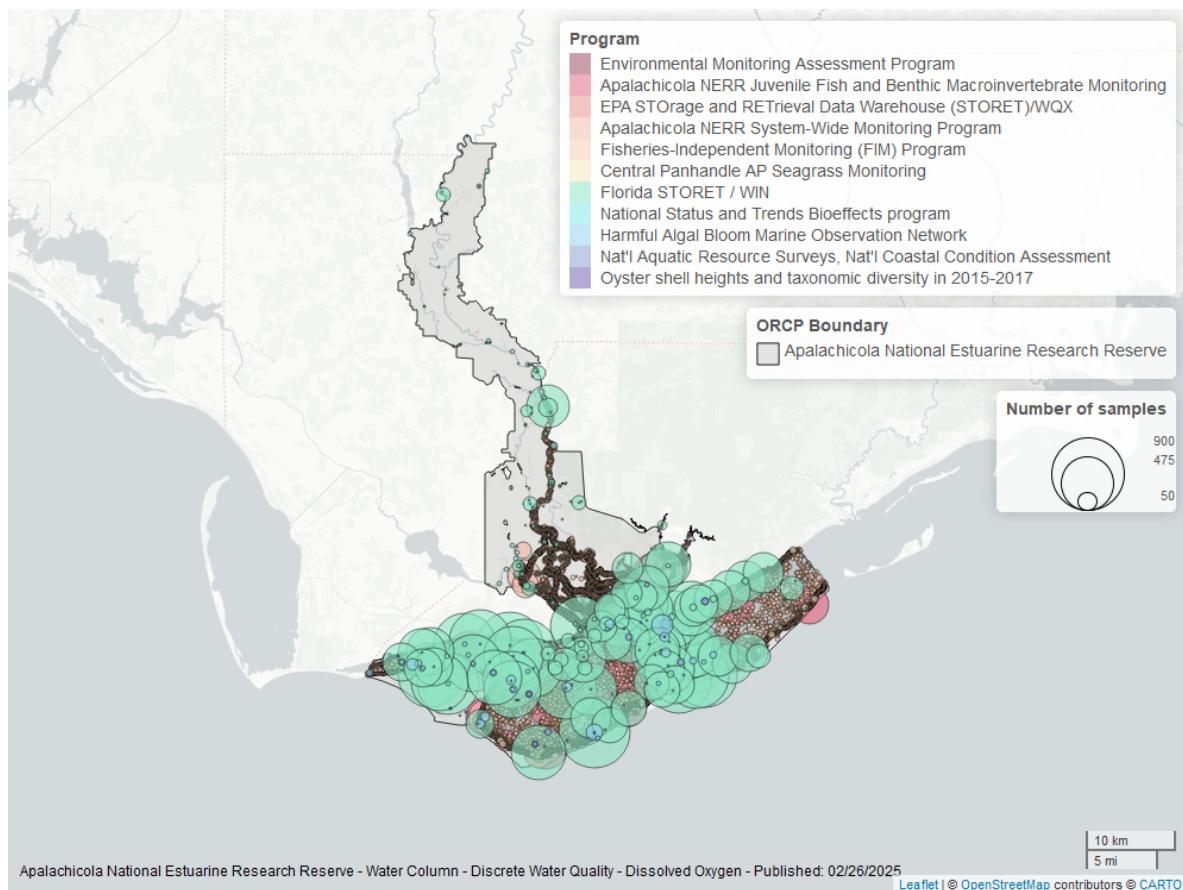


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

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	80895	33	1992 - 2024	7.5	-0.16117	7.93197	-0.01969	0.00001445910742790



## Dissolved Oxygen - Continuous

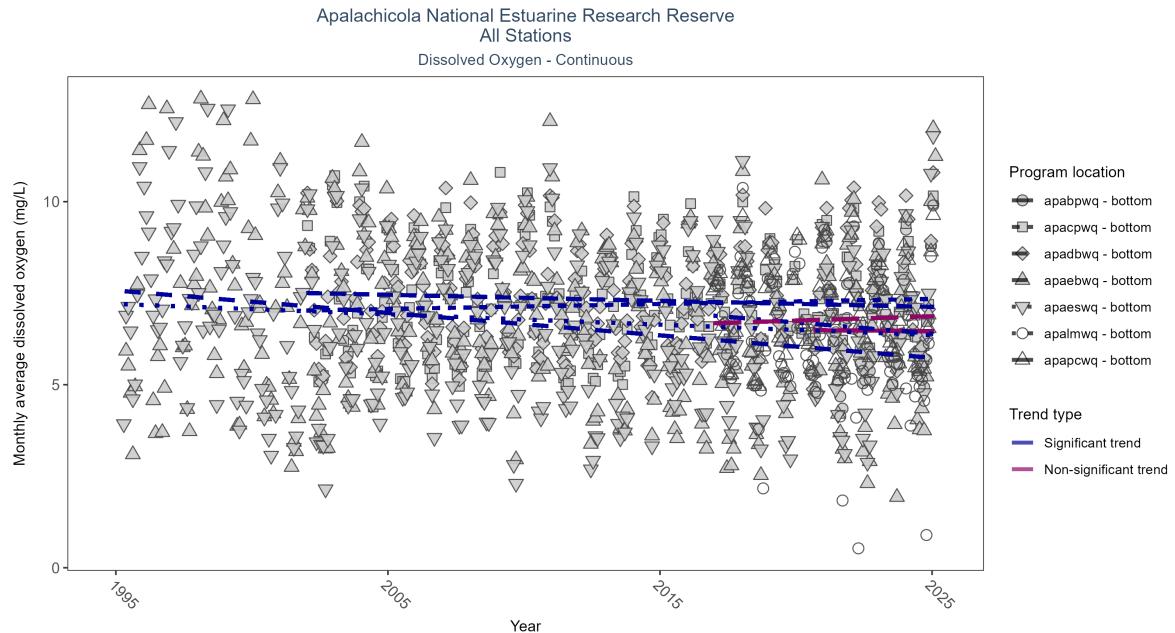
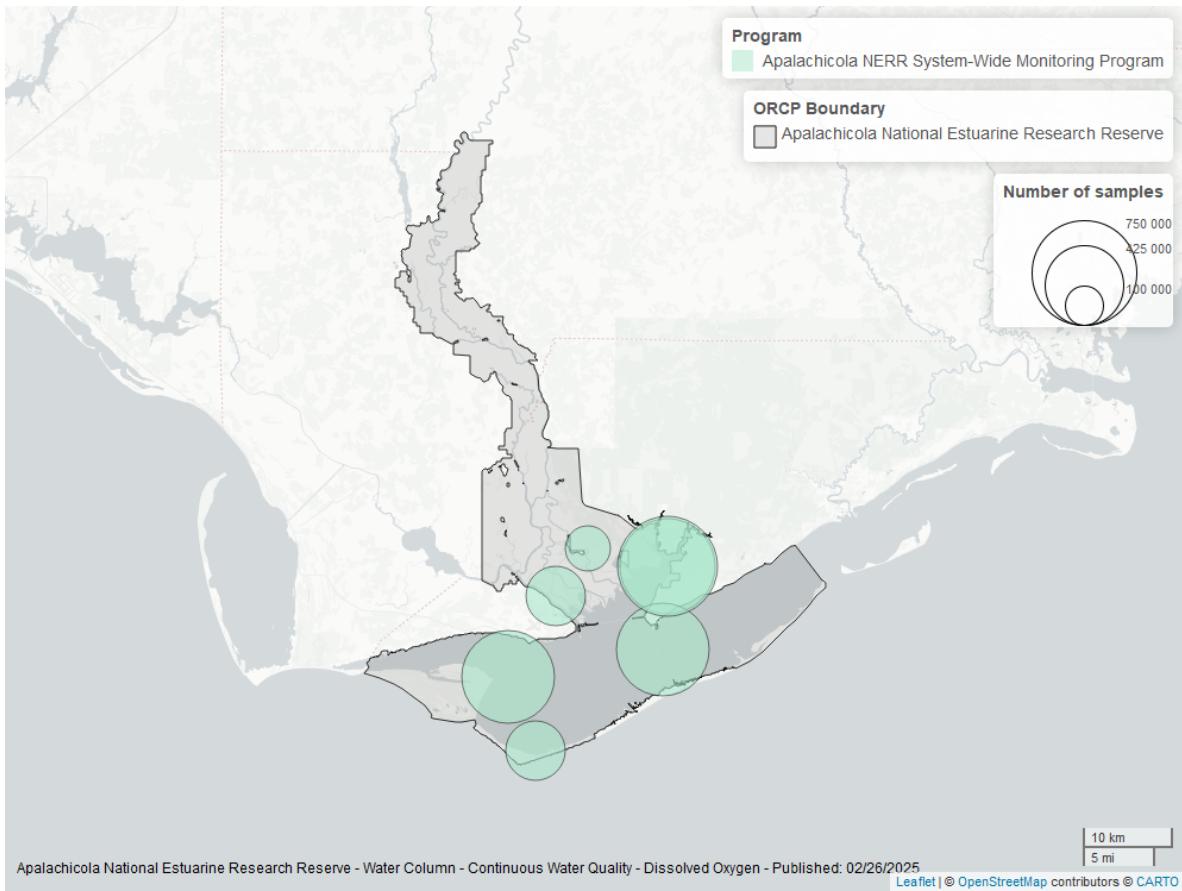


Table 4: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
apaeswq	Significantly decreasing trend	715193	31	1995 - 2025	6.8	-0.15	7.21	-0.03	0.0001022870936938433
apaebwq	Significantly decreasing trend	665356	31	1995 - 2025	6.8	-0.28	7.57	-0.06	0.0000000000003254452
apapcwq	No significant trend	267810	10	2016 - 2025	6.9	0.07	6.66	0.02	0.3507834416771971608
apadbwq	Significantly decreasing trend	621272	24	2002 - 2025	7.3	-0.15	7.50	-0.02	0.0006328747670497813
apabpwq	No significant trend	149136	6	2020 - 2025	6.5	-0.05	6.50	-0.01	0.9353539079559519687
apalmwq	Significantly decreasing trend	255049	10	2016 - 2025	6.3	-0.22	6.94	-0.06	0.0095457724965874631
apacpwq	Significantly increasing trend	616896	24	2002 - 2025	7.1	0.12	7.03	0.01	0.0045846751730579663



## Dissolved Oxygen Saturation - Discrete

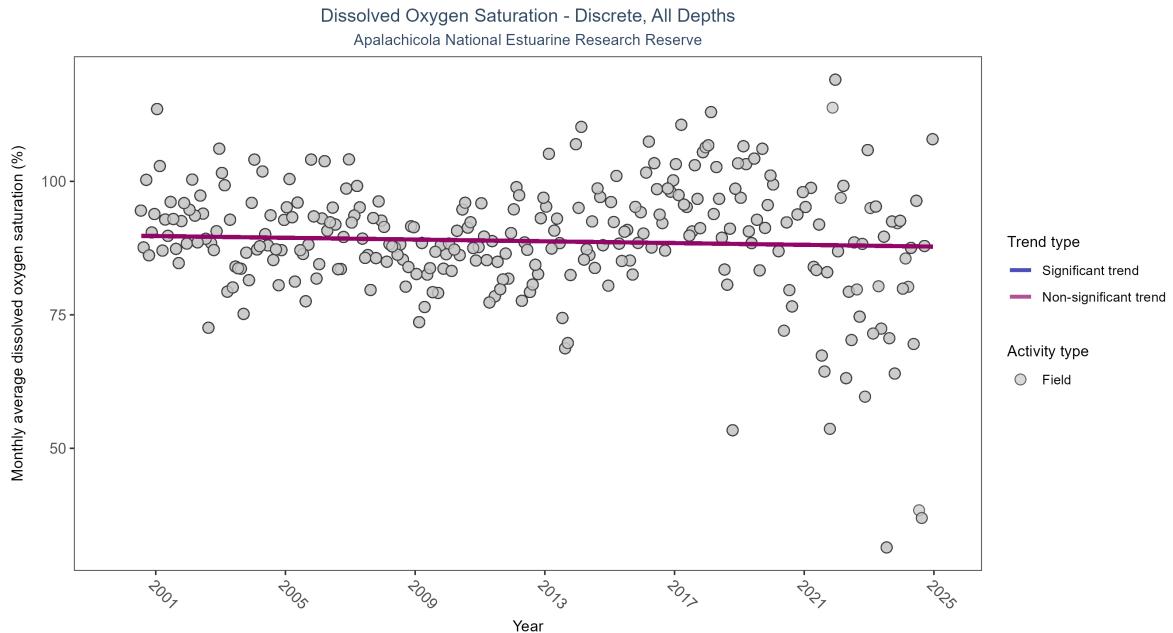
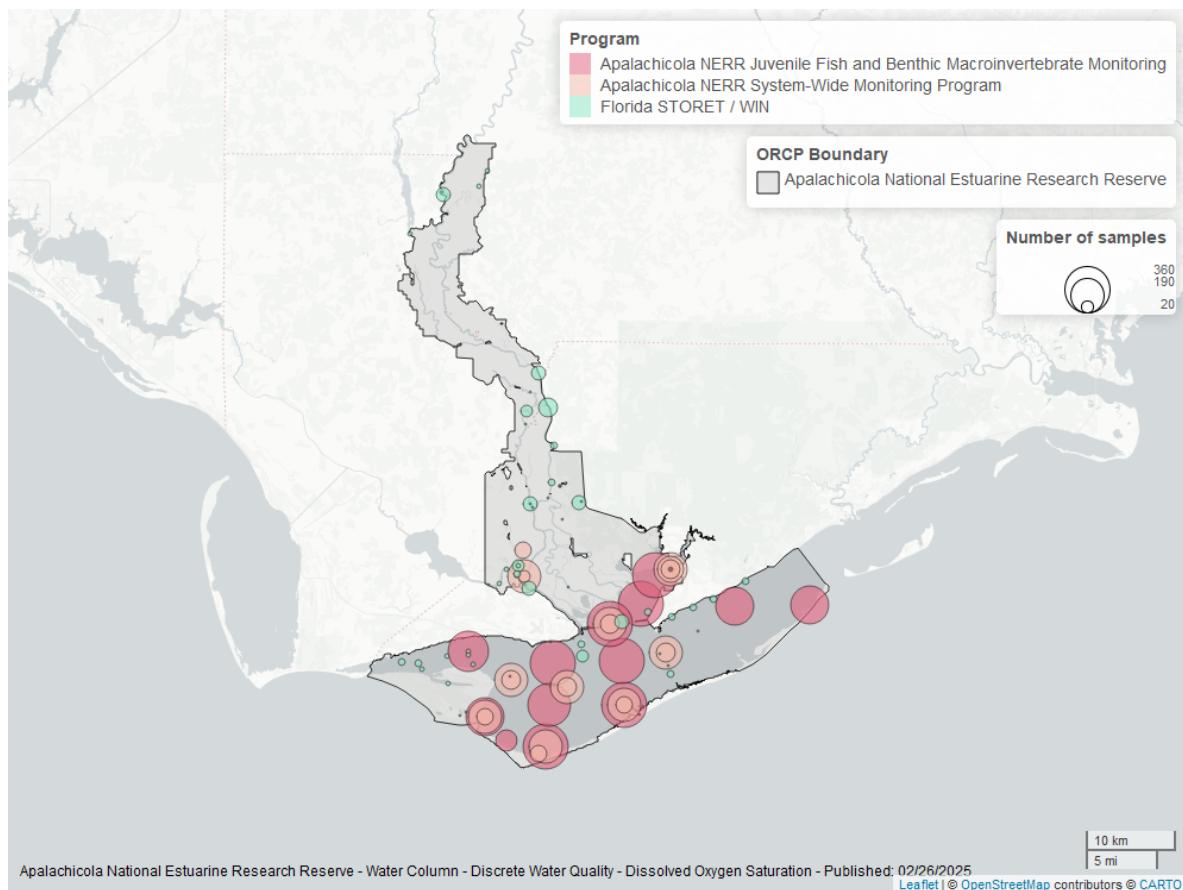


Table 5: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation



## Dissolved Oxygen Saturation - Continuous

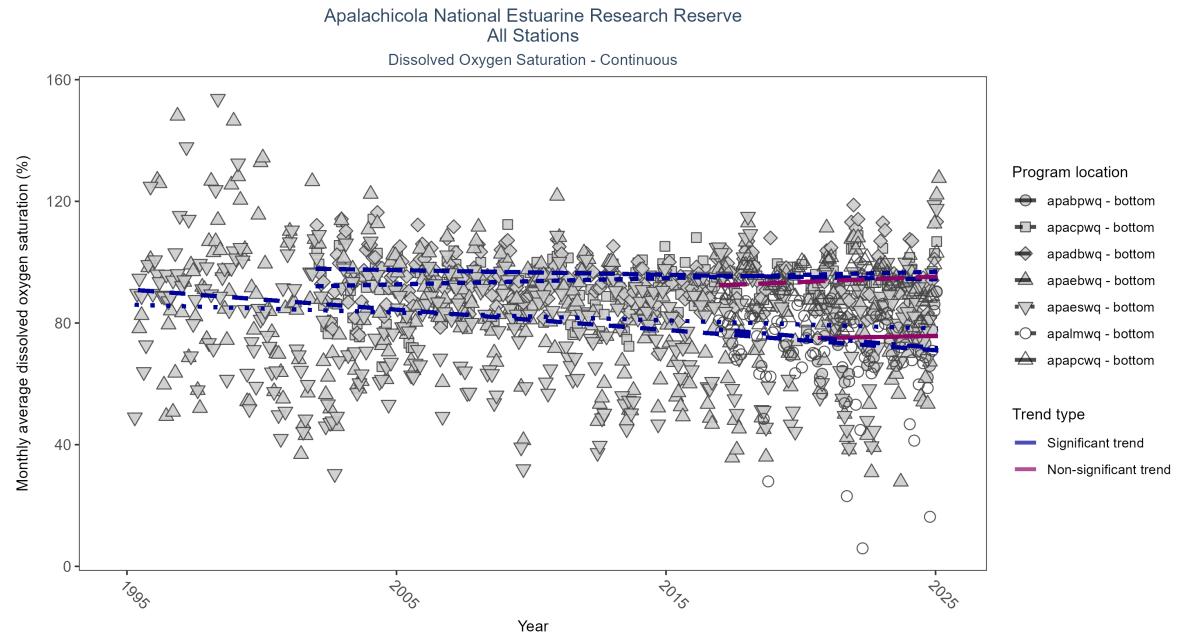
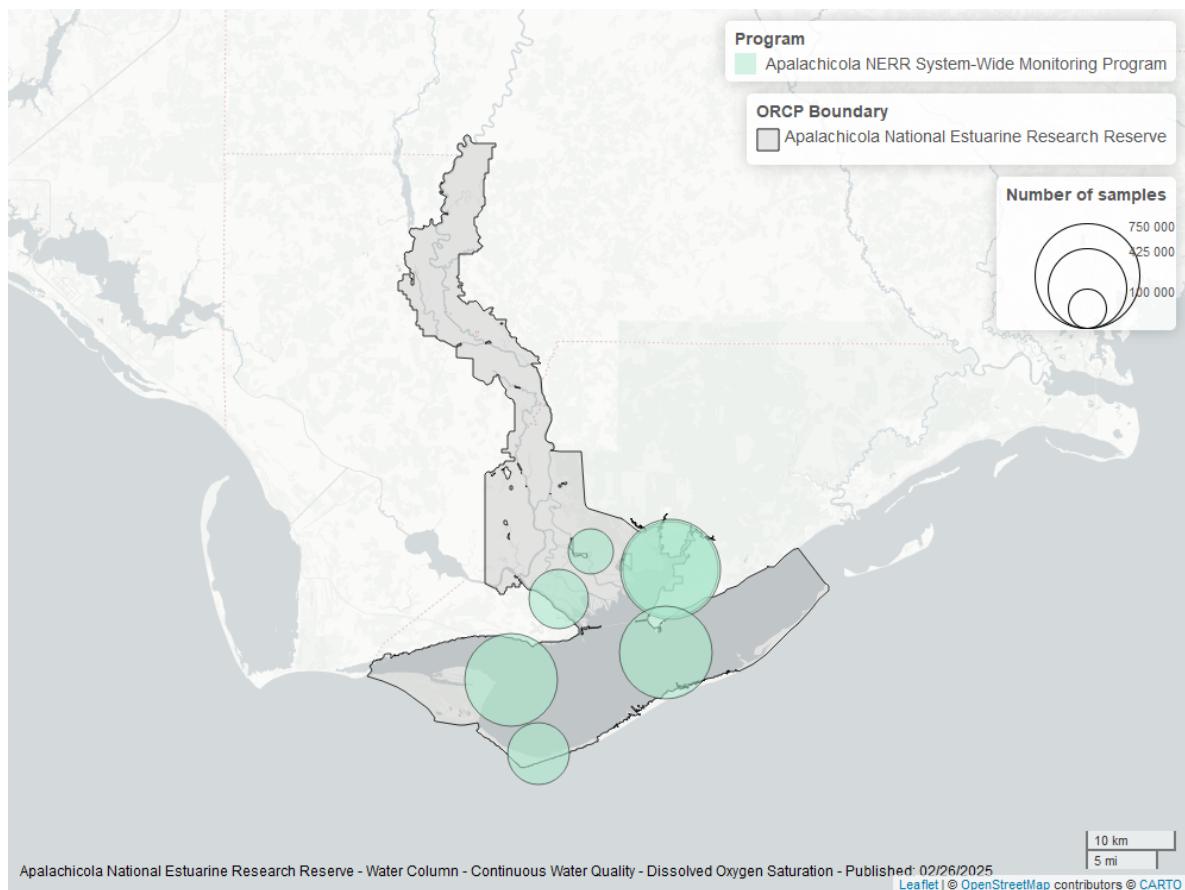


Table 6: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen Saturation

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
apadbwq	Significantly decreasing trend	624721	24	2002 - 2025	94.7	-0.10	97.83	-0.15	0.02473376191715601
apalmwq	Significantly decreasing trend	255585	10	2016 - 2025	74.7	-0.22	78.57	-0.75	0.00779136918673684
apacpwq	Significantly increasing trend	618424	24	2002 - 2025	94.2	0.16	92.07	0.21	0.00014761645762982
apaebwq	Significantly decreasing trend	661181	31	1995 - 2025	84.8	-0.25	91.06	-0.67	0.00000000007637786
apapcwq	No significant trend	271266	10	2016 - 2025	94.1	0.11	92.05	0.35	0.15651649174938898
apabpwq	No significant trend	149136	6	2020 - 2025	76.5	0.07	74.97	0.15	0.46539238812426637
apaeswq	Significantly decreasing trend	716357	31	1995 - 2025	84.2	-0.11	86.07	-0.26	0.00445566210914369



## Salinity - Discrete

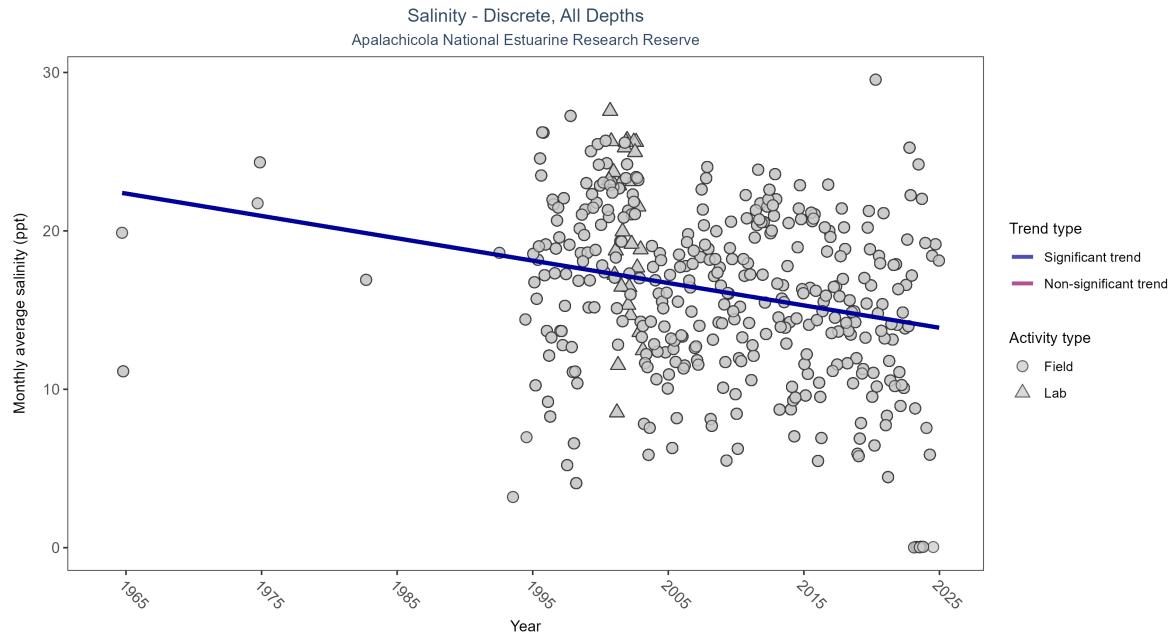
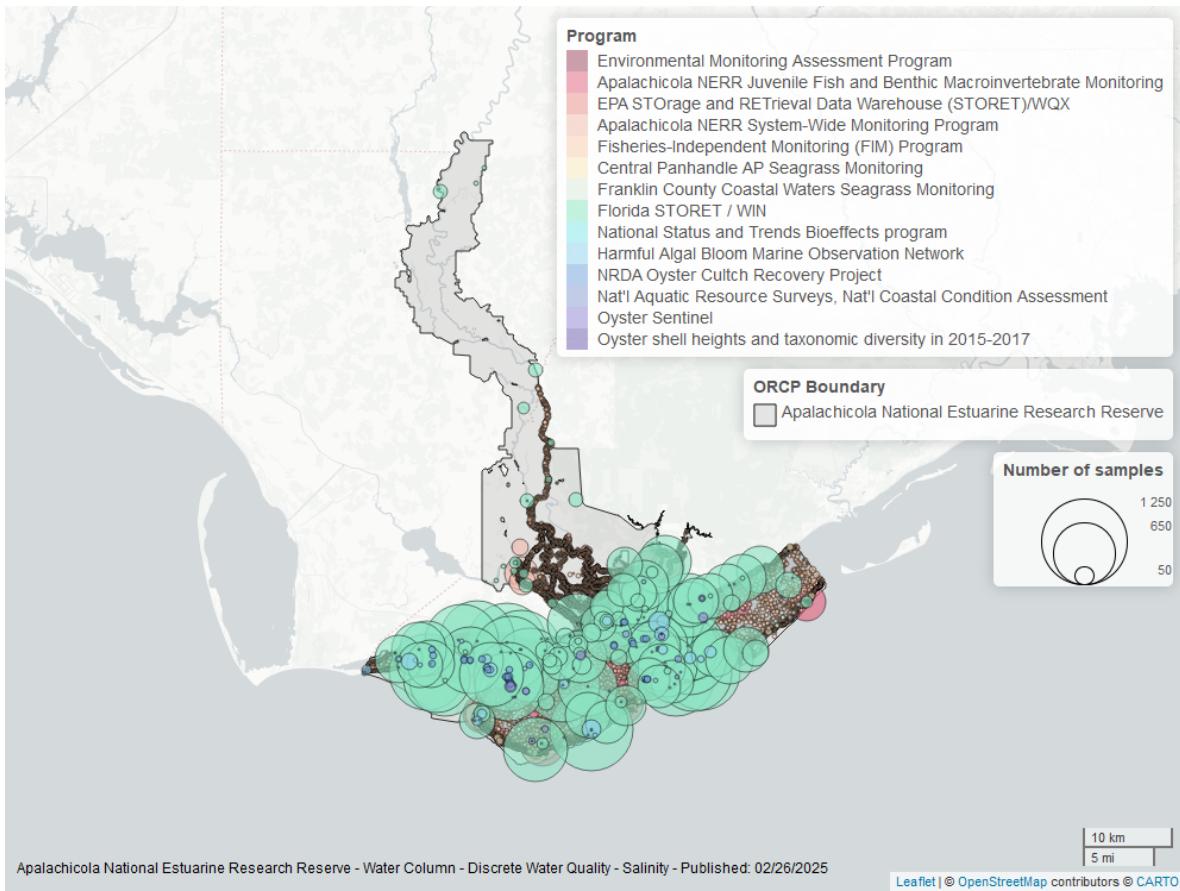


Table 7: Seasonal Kendall-Tau Results for - Salinity

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	93661	36	1964 - 2024	16.79	-0.2034	22.49707	-0.14119	0.000000069571920222408580186279198898091635783



## Salinity - Continuous

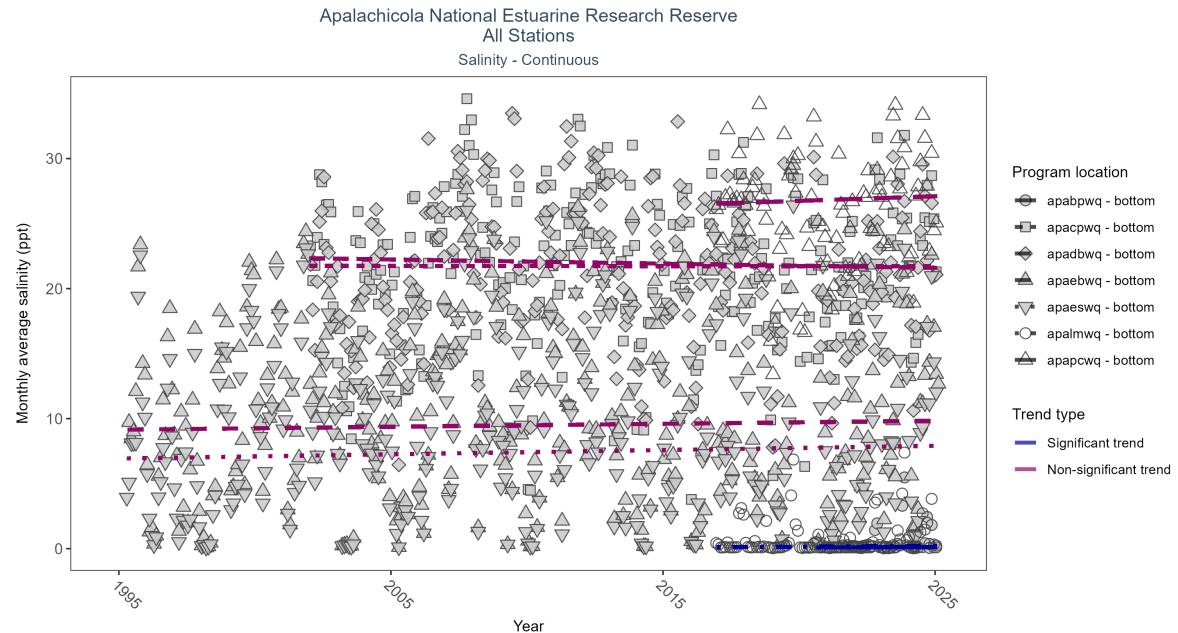
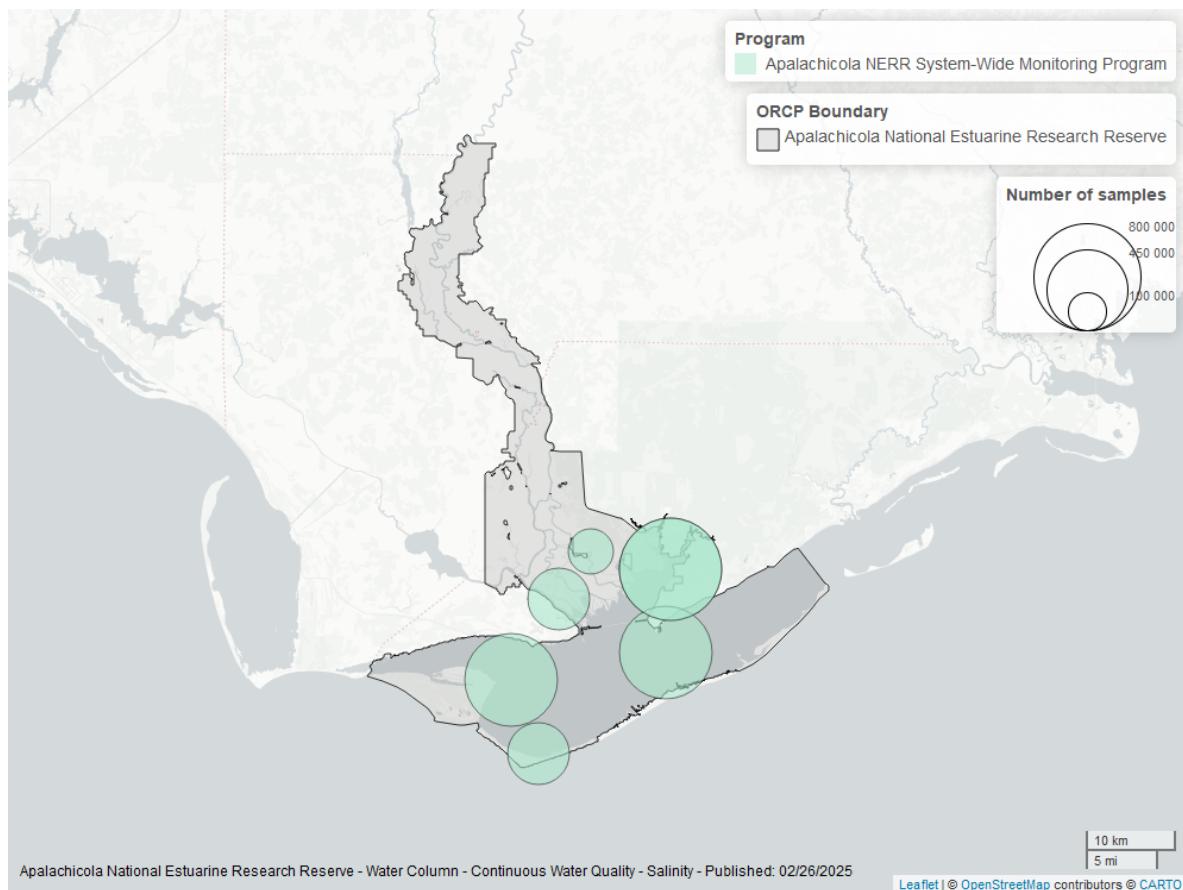


Table 8: Seasonal Kendall-Tau Results for All Stations - Salinity

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	619355	24	2002 - 2025	22.1	-0.03	22.34	-0.03	0.437116444623261935
apalmwq	Significantly increasing trend	270761	10	2016 - 2025	0.1	0.23	0.09	0.01	0.006269134862473398
apaebwq	No significant trend	747149	31	1995 - 2025	9.9	0.04	9.14	0.02	0.305911126244353404
apaeswq	No significant trend	759370	31	1995 - 2025	7.6	0.05	6.93	0.03	0.172428086074580489
apapcwq	No significant trend	270115	10	2016 - 2025	26.8	0.03	26.46	0.07	0.703841543814700765
apacpwq	No significant trend	631122	24	2002 - 2025	22.5	0.00	21.74	0.00	0.987648979002581417
apabpwq	Significantly increasing trend	151688	6	2020 - 2025	0.1	0.28	0.09	0.01	0.016147899109073254



## Water Temperature - Discrete

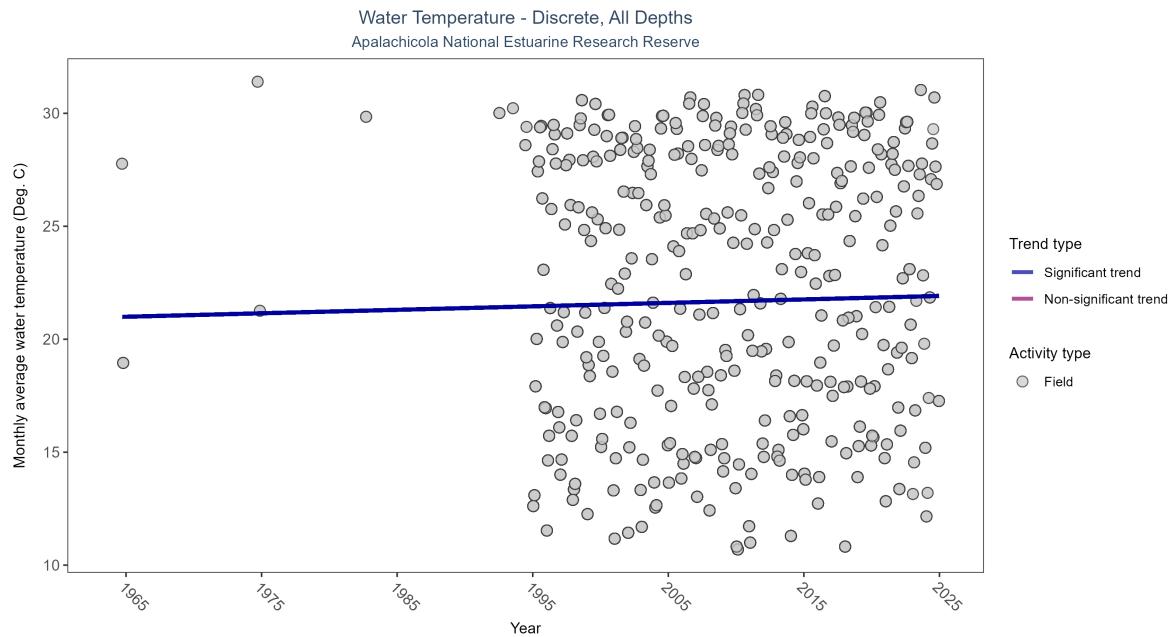
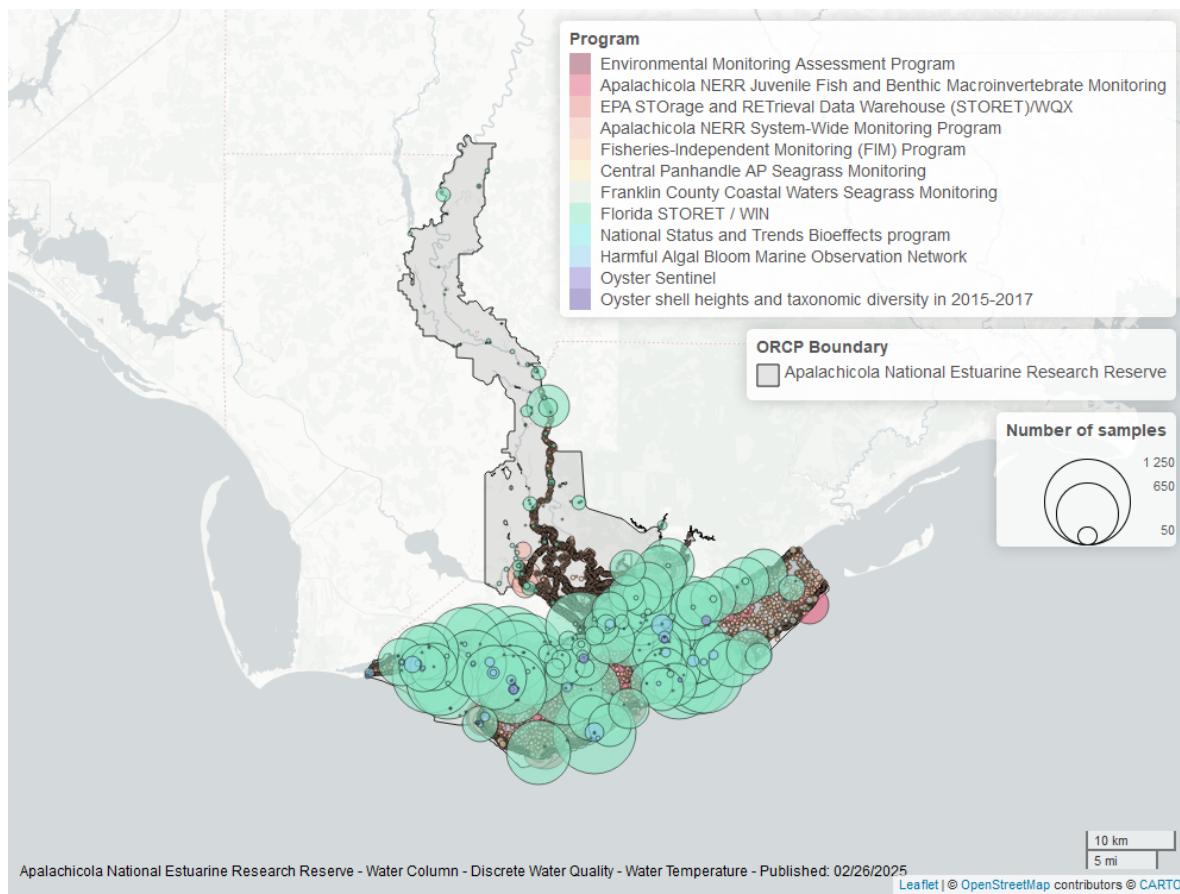


Table 9: Seasonal Kendall-Tau Results for - Water Temperature

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Field	Significantly increasing trend	93895	36	1964 - 2024	23.4	0.08605	20.9793	0.01535	0.022166966824686427



## Water Temperature - Continuous

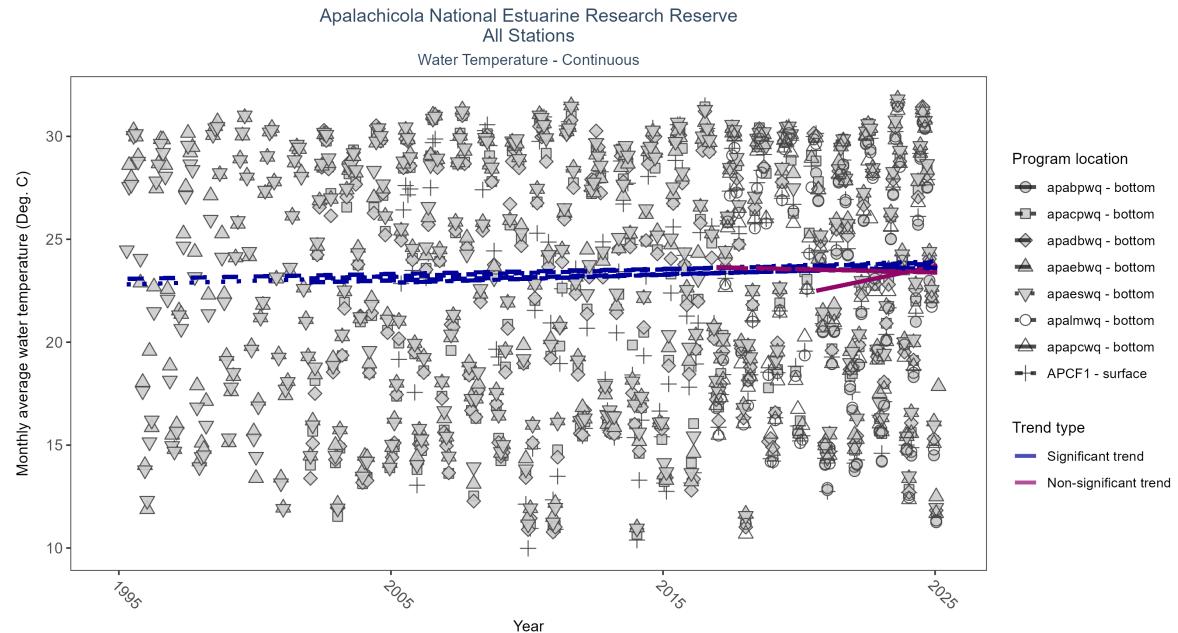
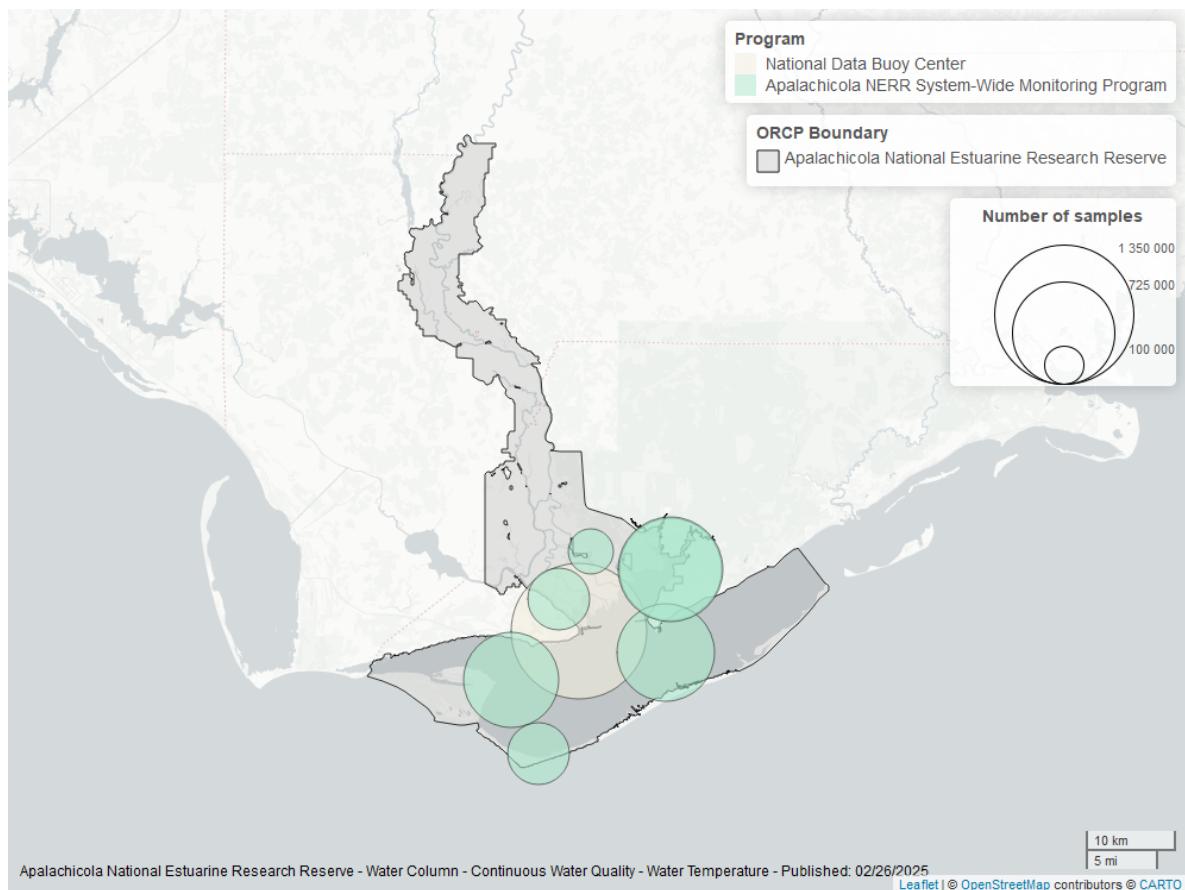


Table 10: Seasonal Kendall-Tau Results for All Stations - Water Temperature

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	1331232	20	2005 - 2024	23.5	0.12	22.89	0.04	0.0284119229077766342894673101682201
apaebwq	Significantly increasing trend	762203	31	1995 - 2025	24.2	0.15	23.07	0.02	0.0001219612130893453564835574032266
apalmwq	No significant trend	273020	10	2016 - 2025	22.6	-0.03	23.64	-0.02	0.7038415438147007652247566511505283
apaeswq	Significantly increasing trend	768616	31	1995 - 2025	24.2	0.19	22.80	0.04	0.0000008382569713109097570002958832
apadbwq	Significantly increasing trend	644531	24	2002 - 2025	23.3	0.14	22.90	0.03	0.0010729242965580232035960328573765
apapcwq	Significantly increasing trend	670115	24	2002 - 2025	23.5	0.15	23.10	0.03	0.000406317909079227131367919668037
apabpwq	No significant trend	151688	6	2020 - 2025	22.5	0.17	22.32	0.27	0.22373353496132509377218866575726
apapewq	No significant trend	273607	10	2016 - 2025	23.1	-0.06	23.68	-0.03	0.4680094008781411352160262140387204



## pH - Discrete

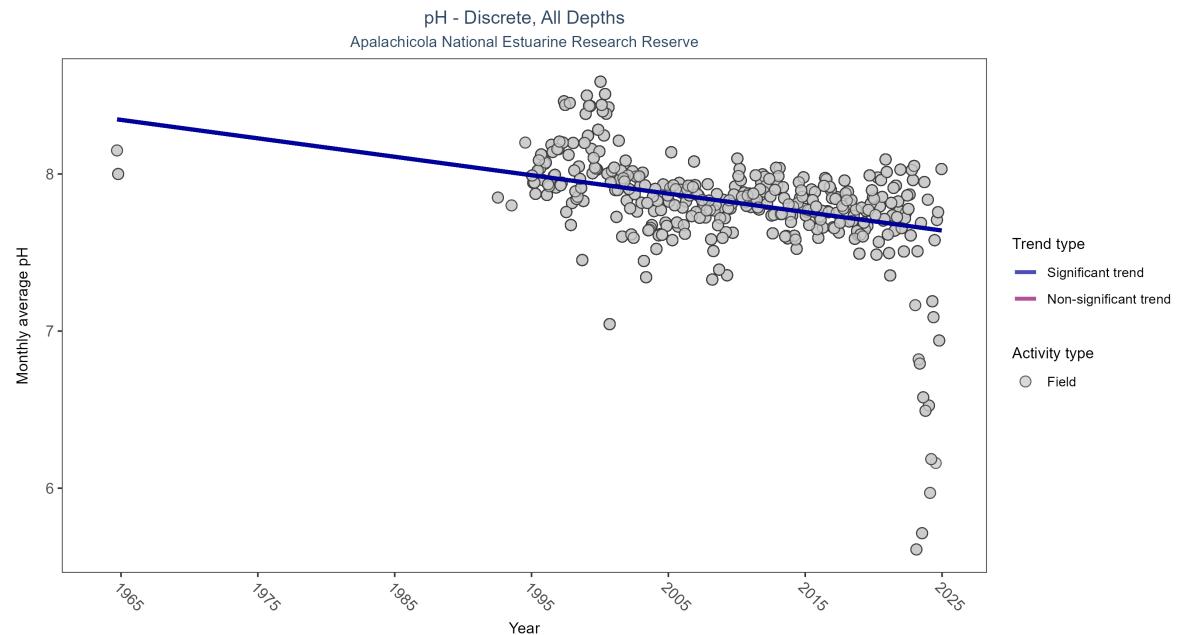
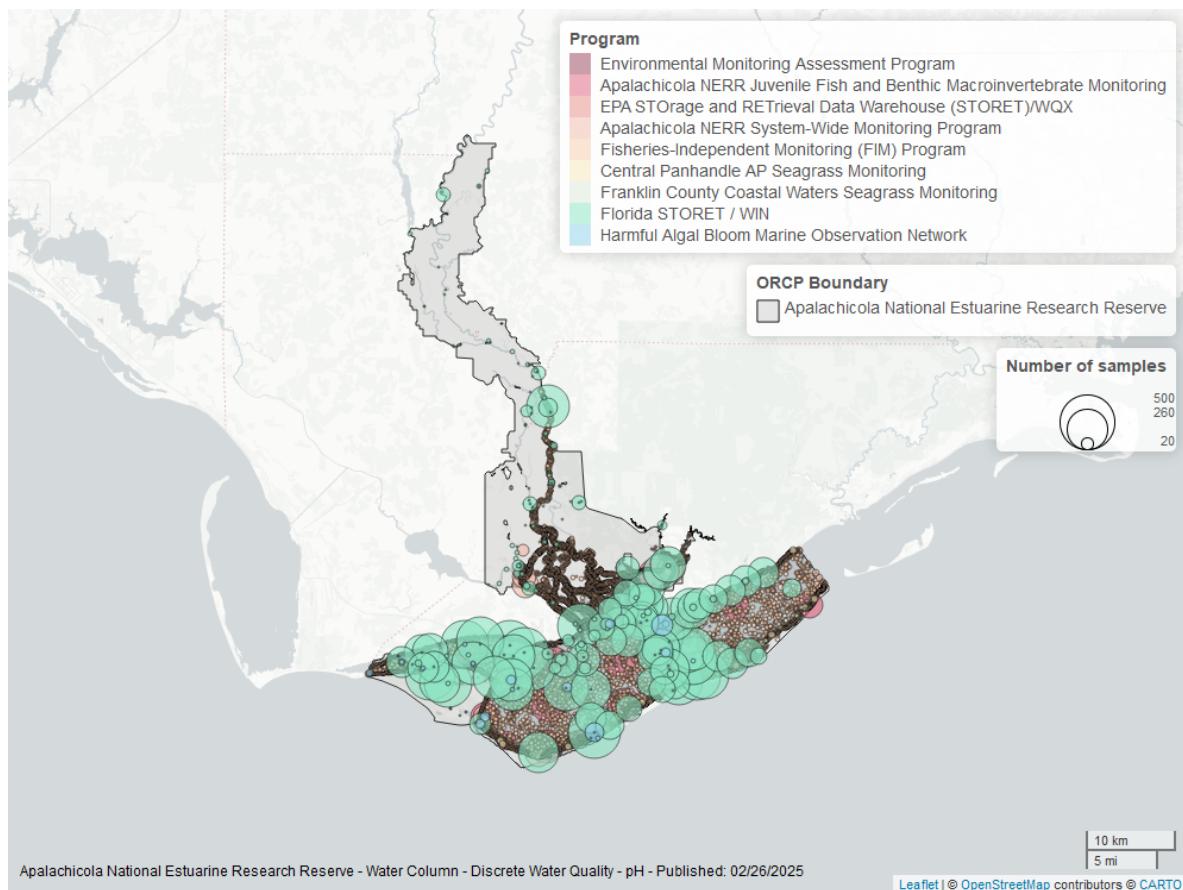


Table 11: Seasonal Kendall-Tau Results for - pH



## pH - Continuous

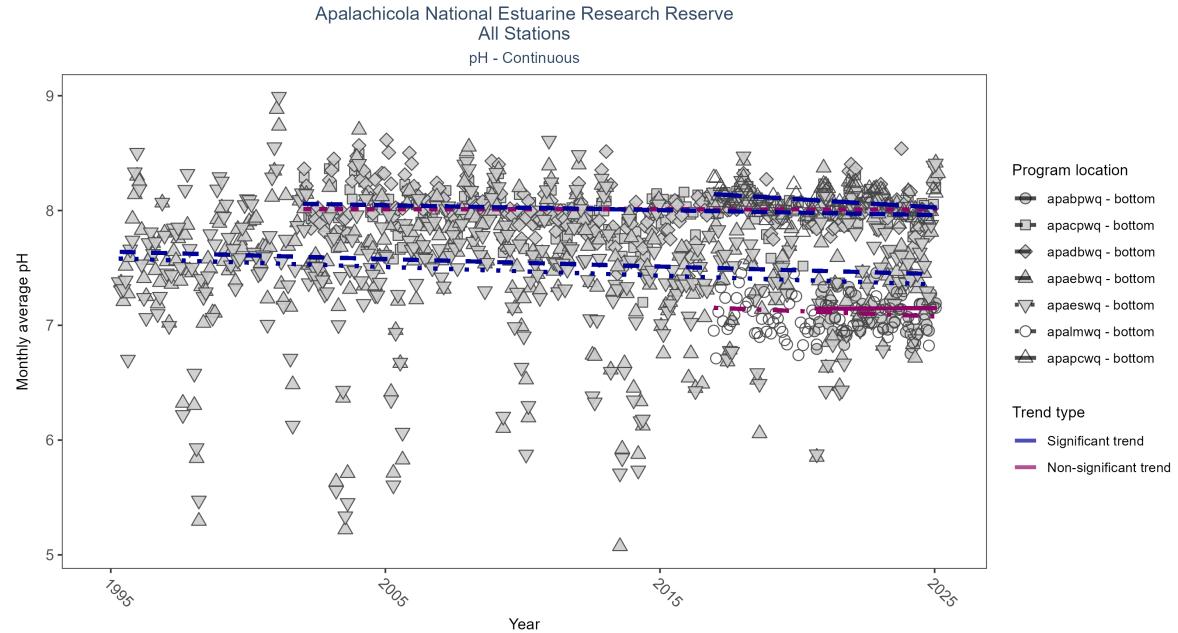
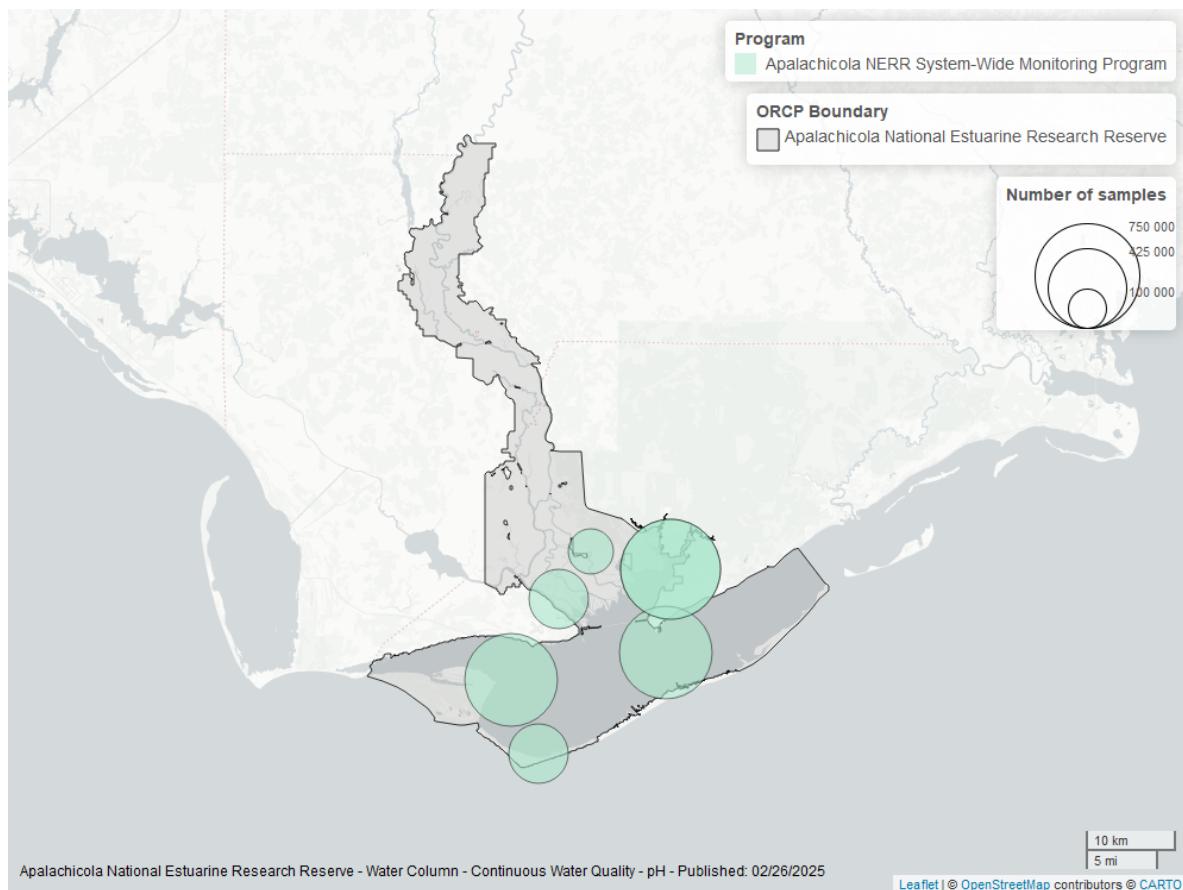


Table 12: Seasonal Kendall-Tau Results for All Stations - pH

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
apaebwq	Significantly decreasing trend	717948	31	1995 - 2025	7.6	-0.11	7.64	-0.01	0.00293877308
apalmwq	No significant trend	263183	10	2016 - 2025	7.1	-0.07	7.16	-0.01	0.42670771780
apaeswq	Significantly decreasing trend	719429	31	1995 - 2025	7.5	-0.12	7.58	-0.01	0.00107025466
apadbwq	Significantly decreasing trend	602330	24	2002 - 2025	8.0	-0.14	8.06	0.00	0.00193450571
apacpwq	No significant trend	614654	24	2002 - 2025	8.0	-0.01	8.01	0.00	0.91370831124
apabpwq	No significant trend	150448	6	2020 - 2025	7.1	-0.01	7.14	0.00	1.00000000000
apapcwq	Significantly decreasing trend	267739	10	2016 - 2025	8.1	-0.28	8.16	-0.01	0.00062331848



## Water Clarity

### Turbidity - Discrete

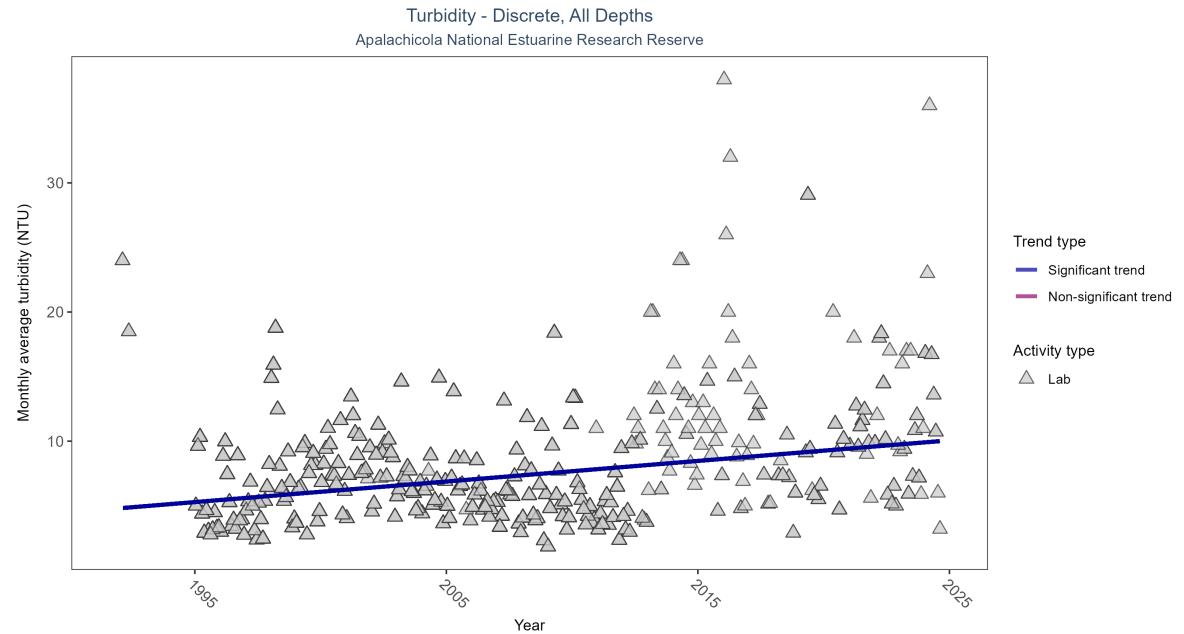
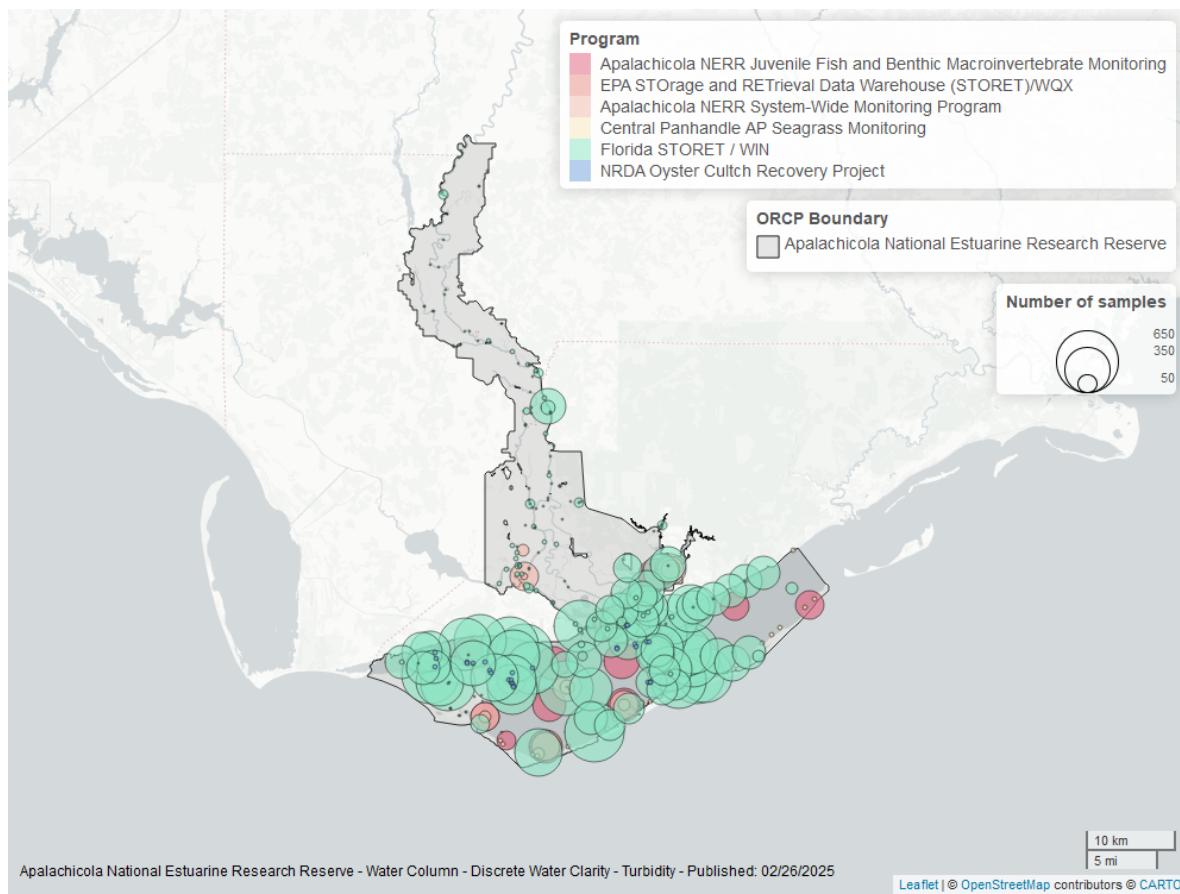


Table 13: Seasonal Kendall-Tau Results for - Turbidity

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	22964	31	1992 - 2024	5.1	0.24931	4.80129	0.15943	0.00000000011841065890



## Turbidity - Continuous

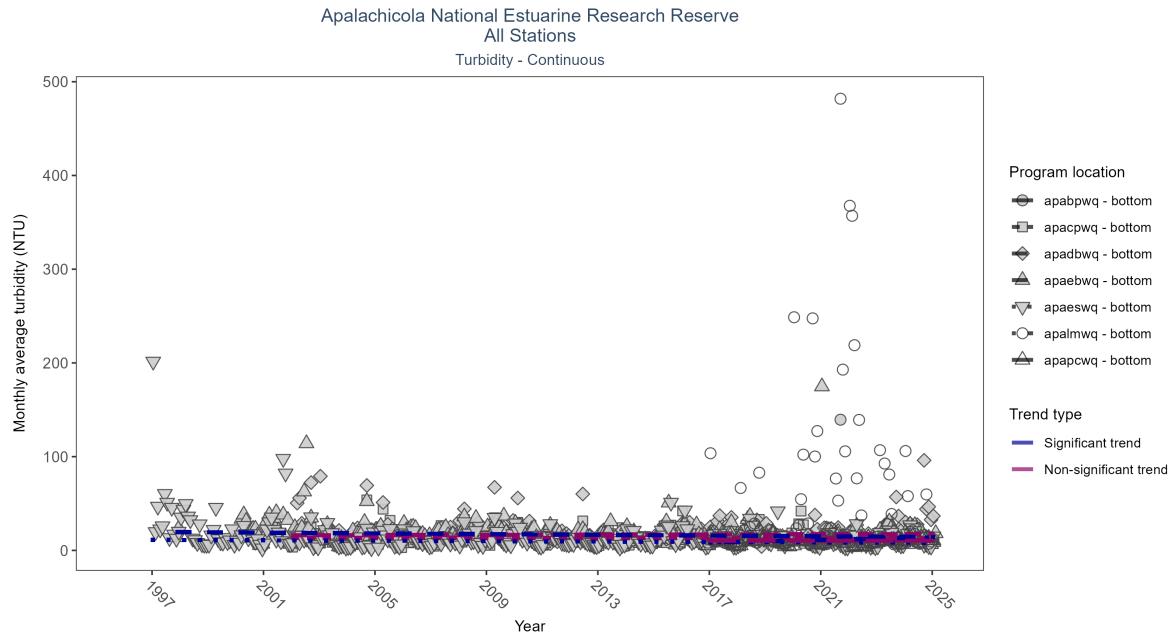
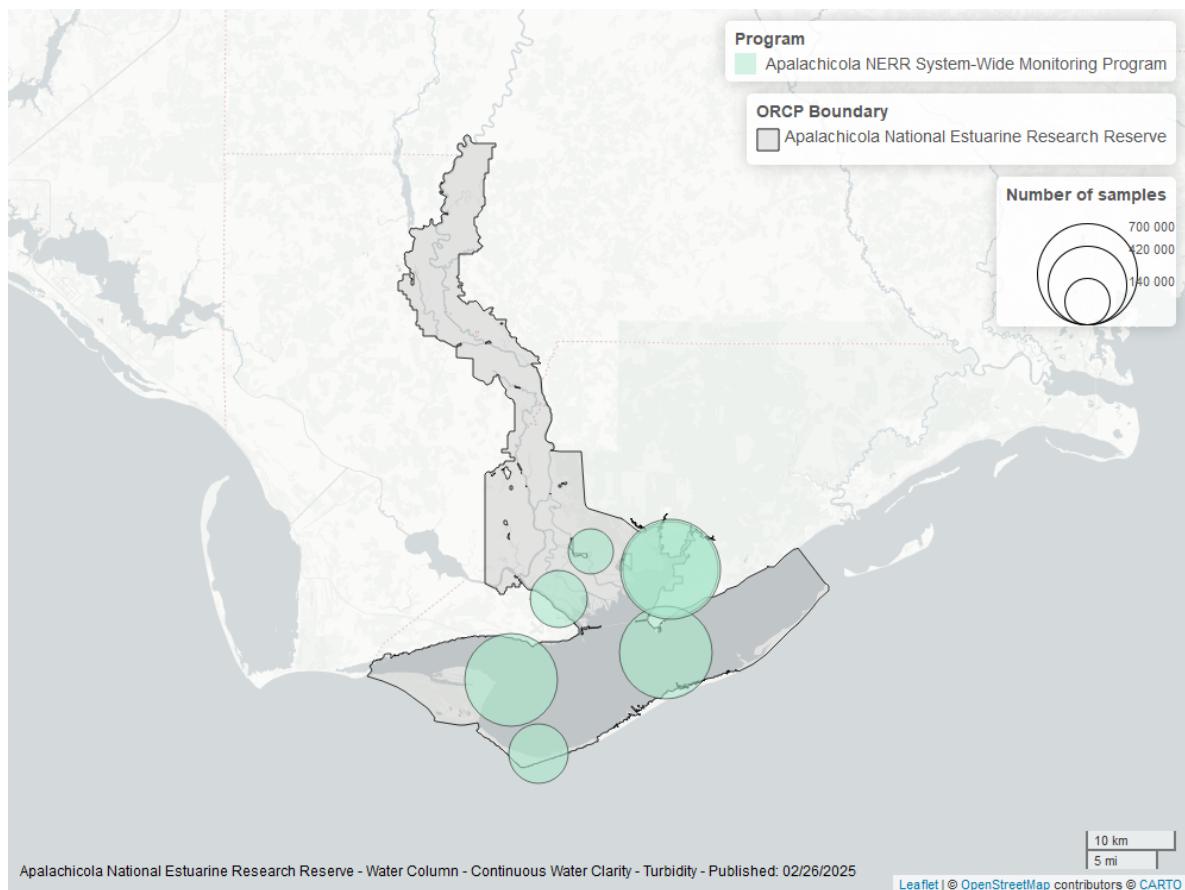


Table 14: Seasonal Kendall-Tau Results for All Stations - Turbidity

Program Location	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
apaebwq	Significantly decreasing trend	635704	27	1997 - 2025	13	-0.19	19.68	-0.19	0.0000055443408821
apaeswq	Significantly decreasing trend	703229	30	1996 - 2025	9	-0.15	11.32	-0.11	0.0001793902946904
apacpwq	No significant trend	628175	24	2002 - 2025	8	-0.01	13.20	-0.01	0.8661773504630084
apabpwq	No significant trend	151683	6	2020 - 2025	11	0.09	10.12	0.19	0.6850706623180767
apadbwq	No significant trend	605643	24	2002 - 2025	10	0.04	16.11	0.05	0.3209088857261738
apalmwq	Significantly increasing trend	245206	10	2016 - 2025	12	0.20	7.63	0.70	0.0173131039581622
apapcwq	No significant trend	258576	10	2016 - 2025	7	-0.03	10.47	-0.03	0.7794783999643059



## Total Suspended Solids - Discrete

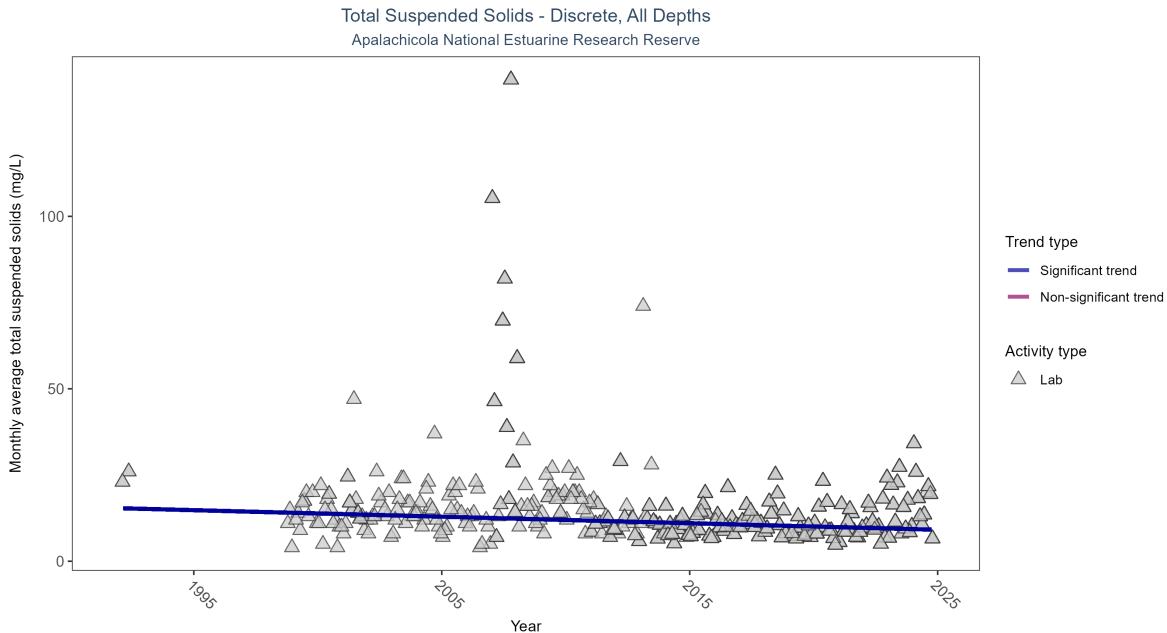
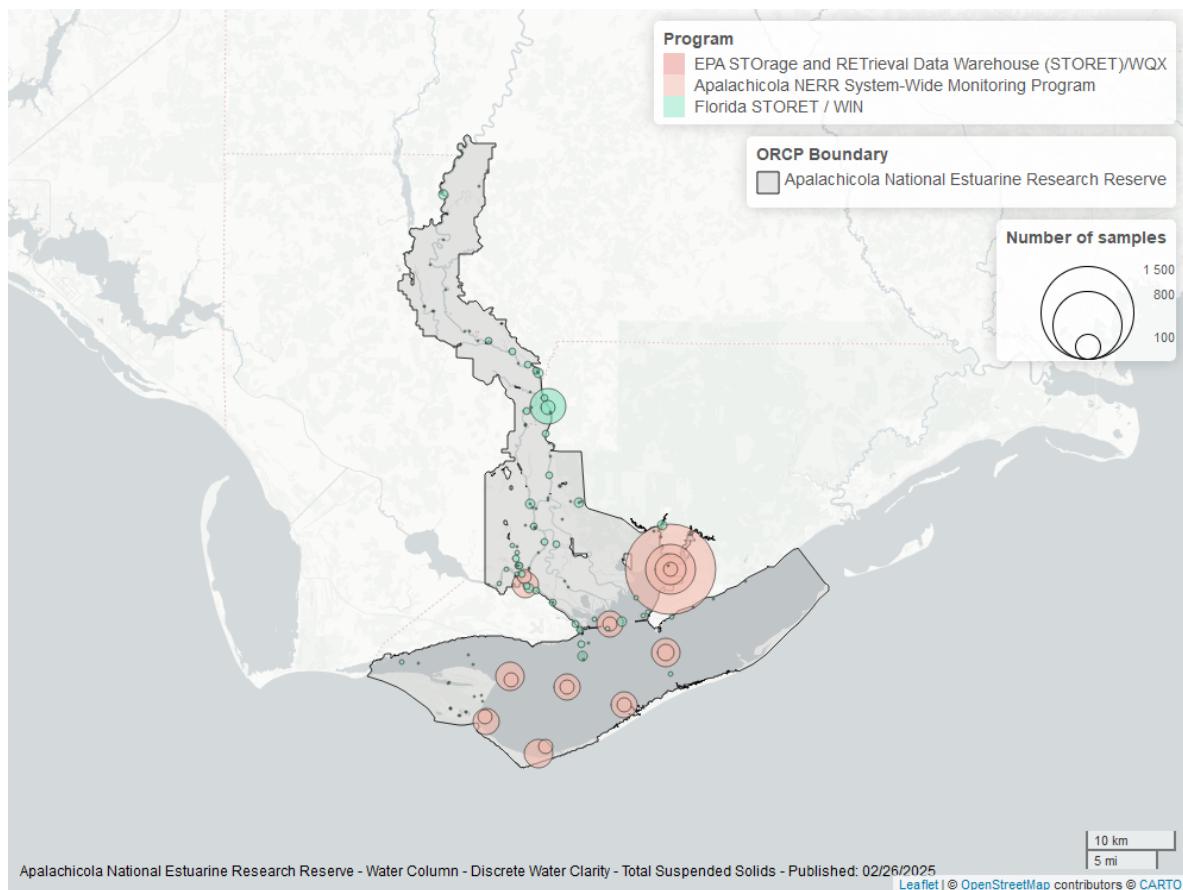


Table 15: Seasonal Kendall-Tau Results for - Total Suspended Solids

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	4038	28	1992 - 2024		10	-0.20031	15.37229	-0.18939	0.000000874052724185245420371326297



## Chlorophyll a, Uncorrected for Pheophytin - Discrete

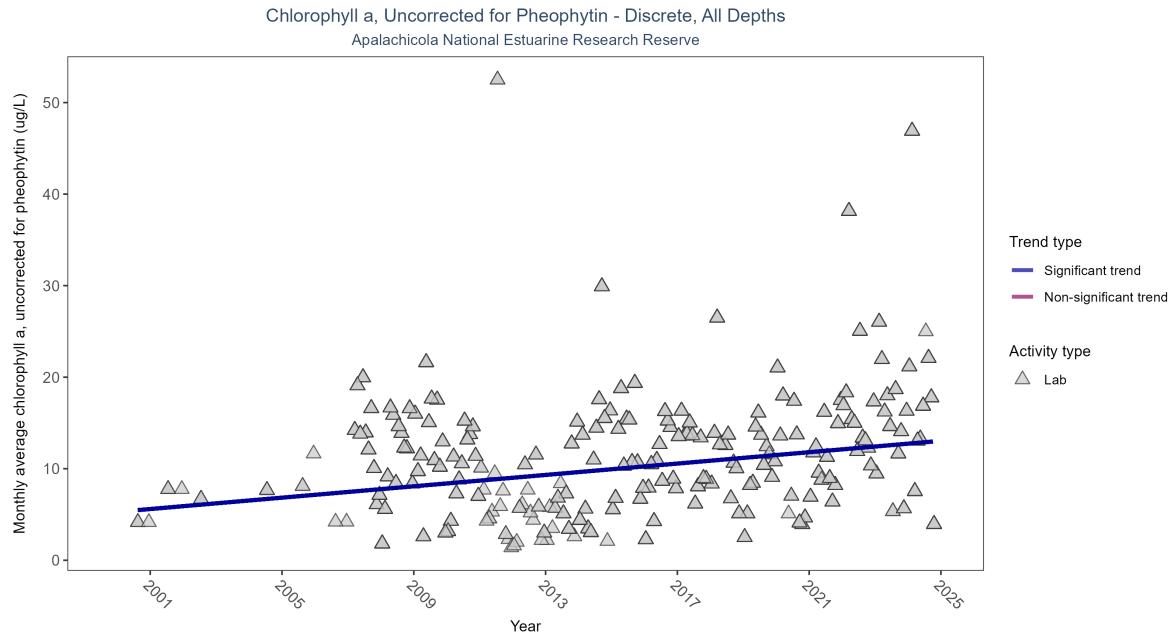
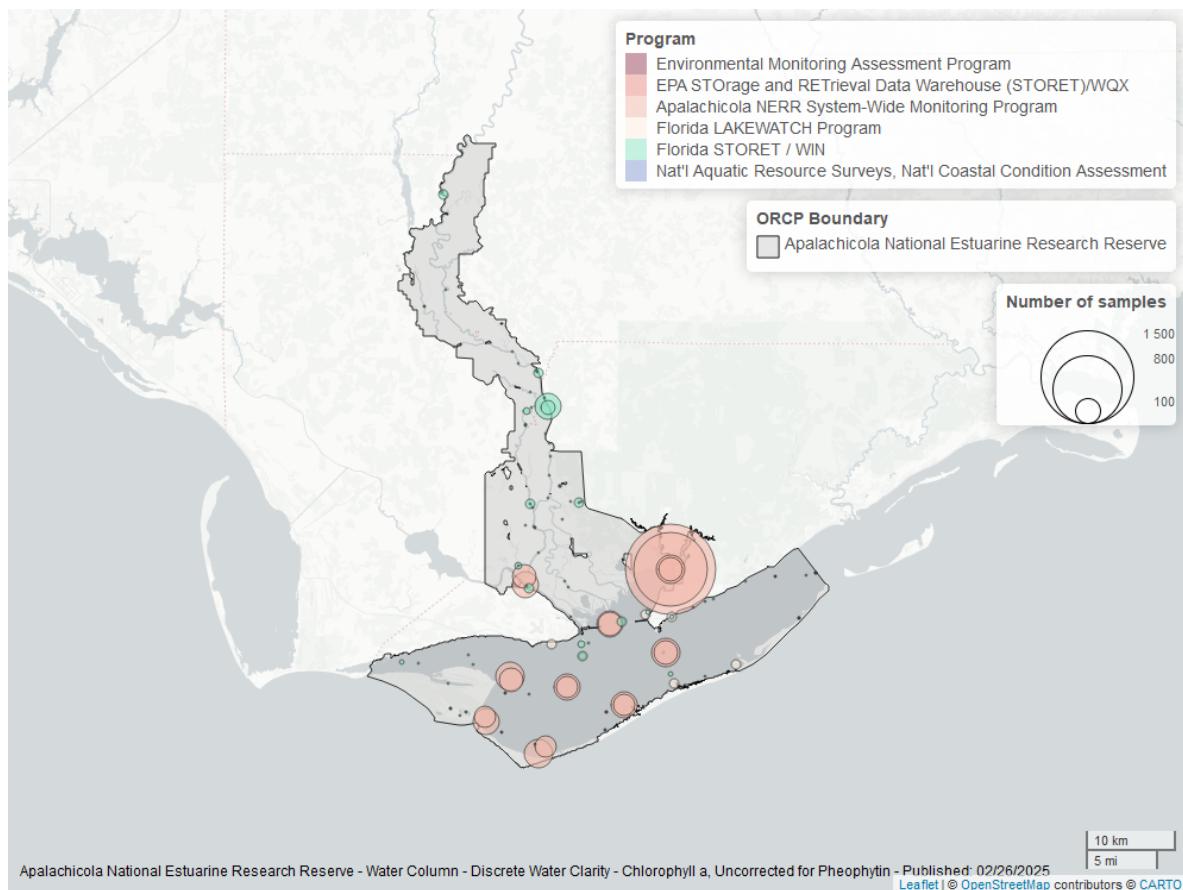


Table 16: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

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	4773	24	2000 - 2024	10	0.19315	5.28634	0.31038	0.00010254802461261513612904



## Chlorophyll a, Corrected for Pheophytin - Discrete

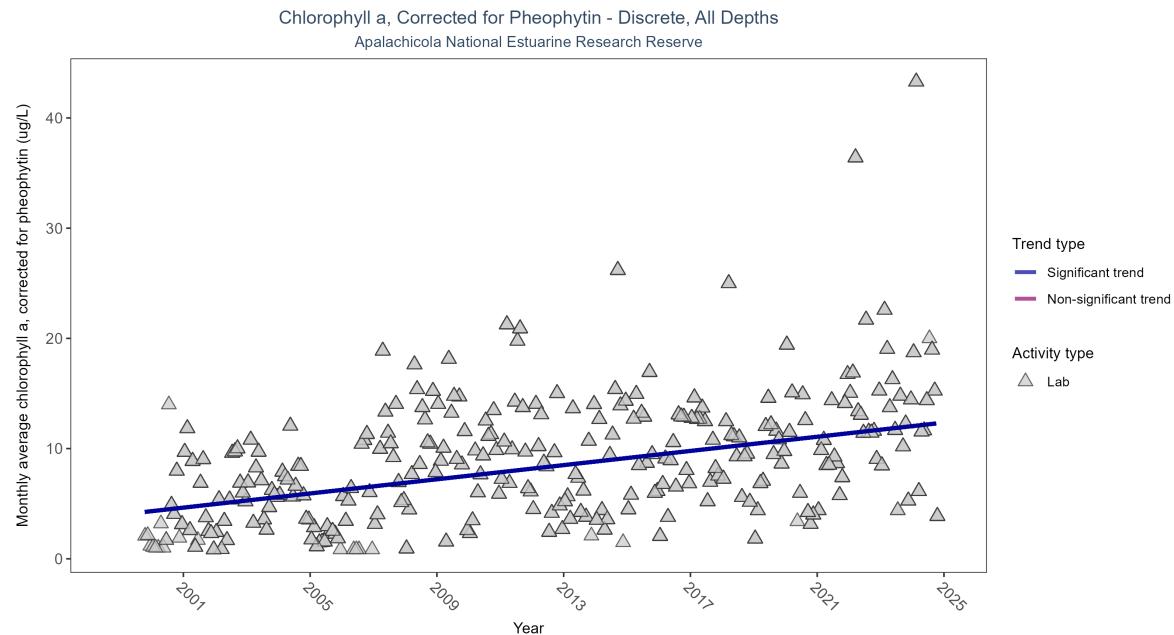
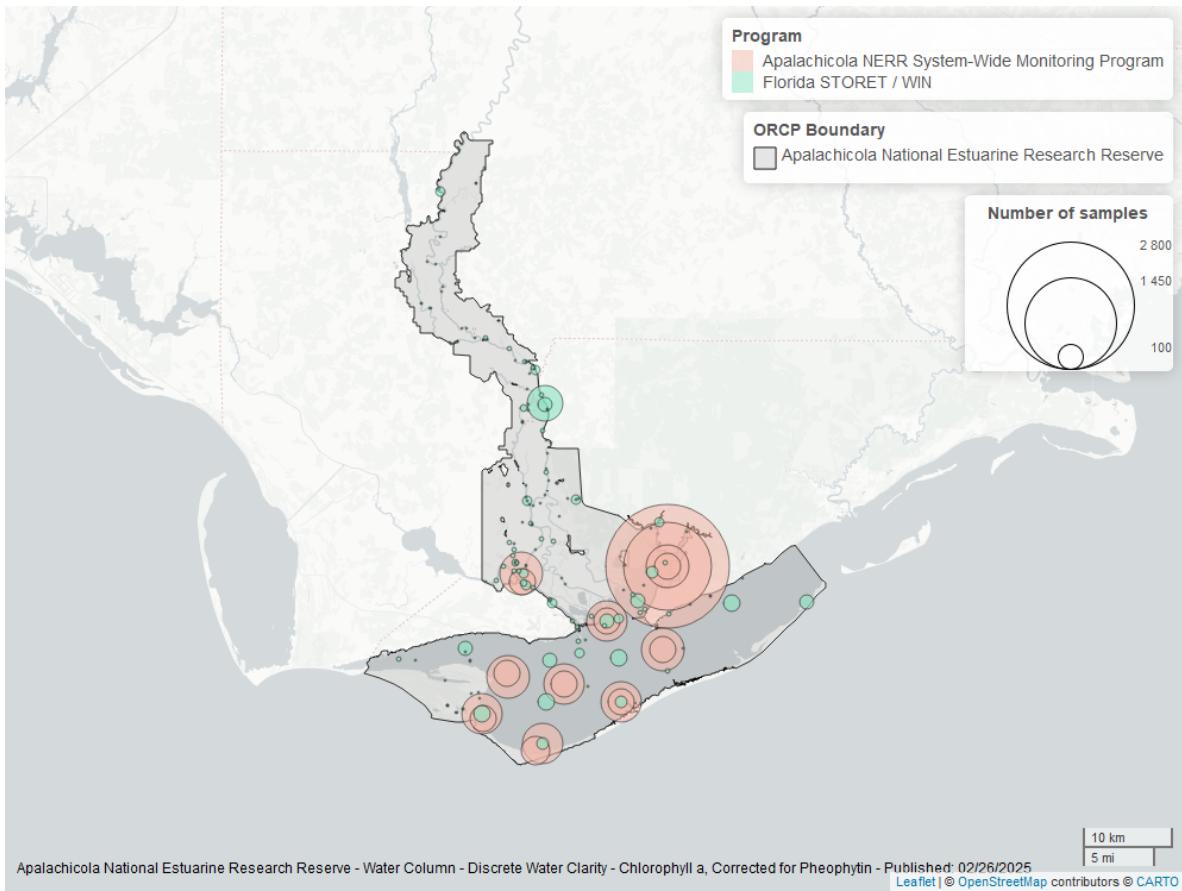


Table 17: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

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	9047	26	1999 - 2024	7.6	0.34228	4.00057	0.3215	0.0000000000000002630062281871



## Secchi Depth - Discrete

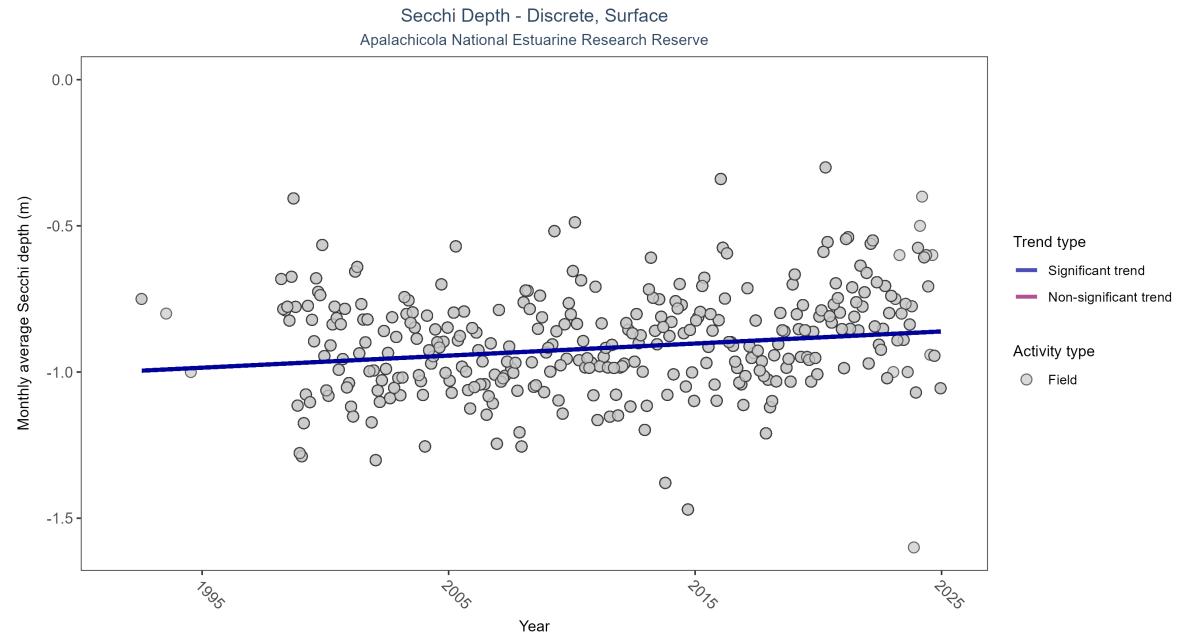
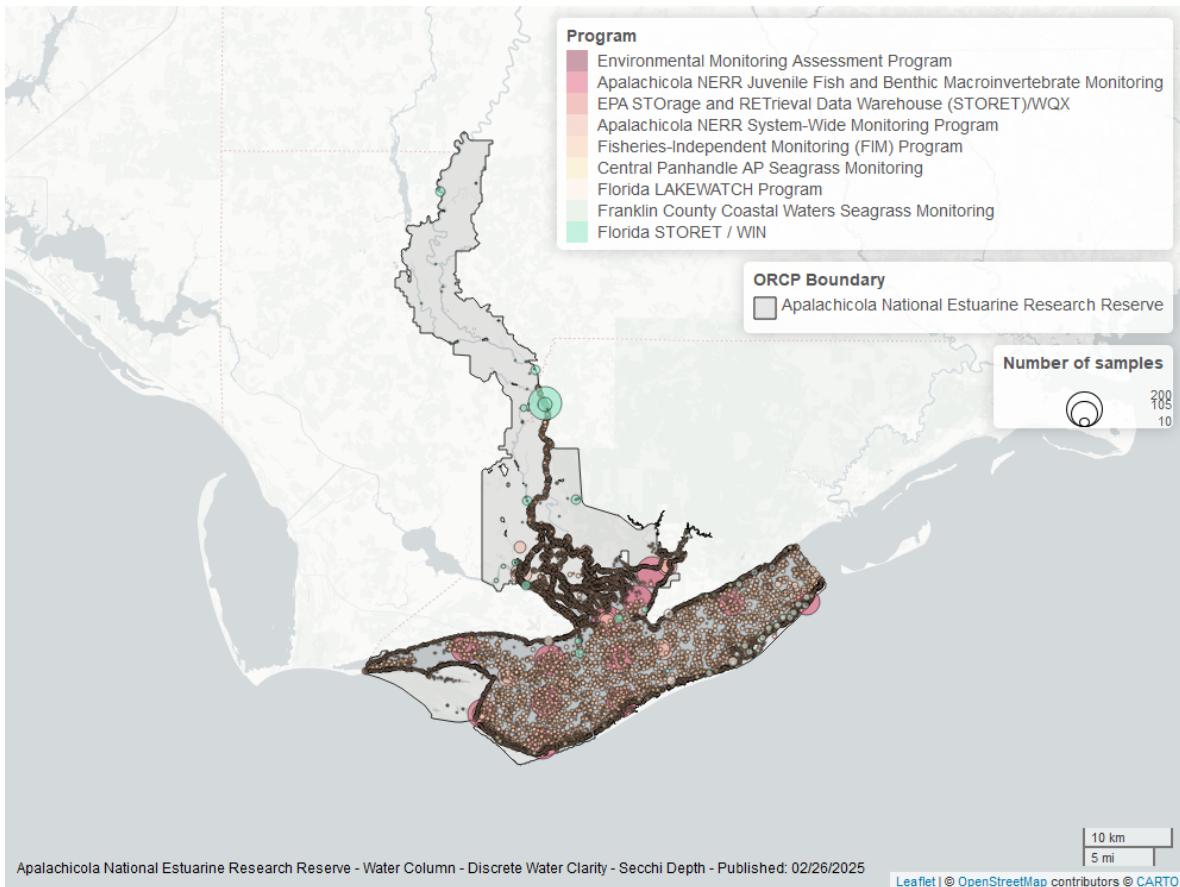


Table 18: Seasonal Kendall-Tau Results for - Secchi Depth

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	45190	30	1992 - 2024	-0.8	0.15466	-0.99753	0.00413	0.0001217813162732268649846370523



## Colored Dissolved Organic Matter - Discrete

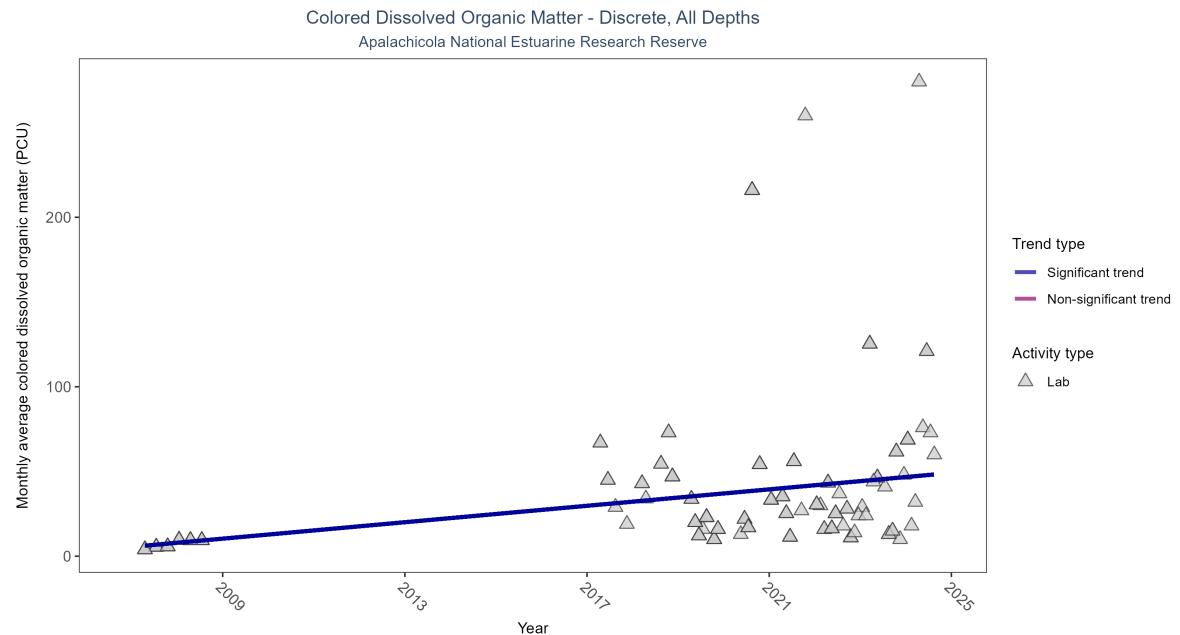


Table 19: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

Activity Type	Statistical Trend	Sample Count	Years with Data	Period of Record	Median Result Value	Tau	Sen Intercept	Sen Slope	P
Lab	Significantly increasing trend	161	10	2007 - 2024	22	0.23062	5.51717	2.42381	0.002877037802902942306010

