

Big Bend Seagrasses Aquatic Preserve

SEACAR Water Quality Analysis

Last compiled on 09 January, 2025

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Indicators

Nutrients

Total Nitrogen - Discrete

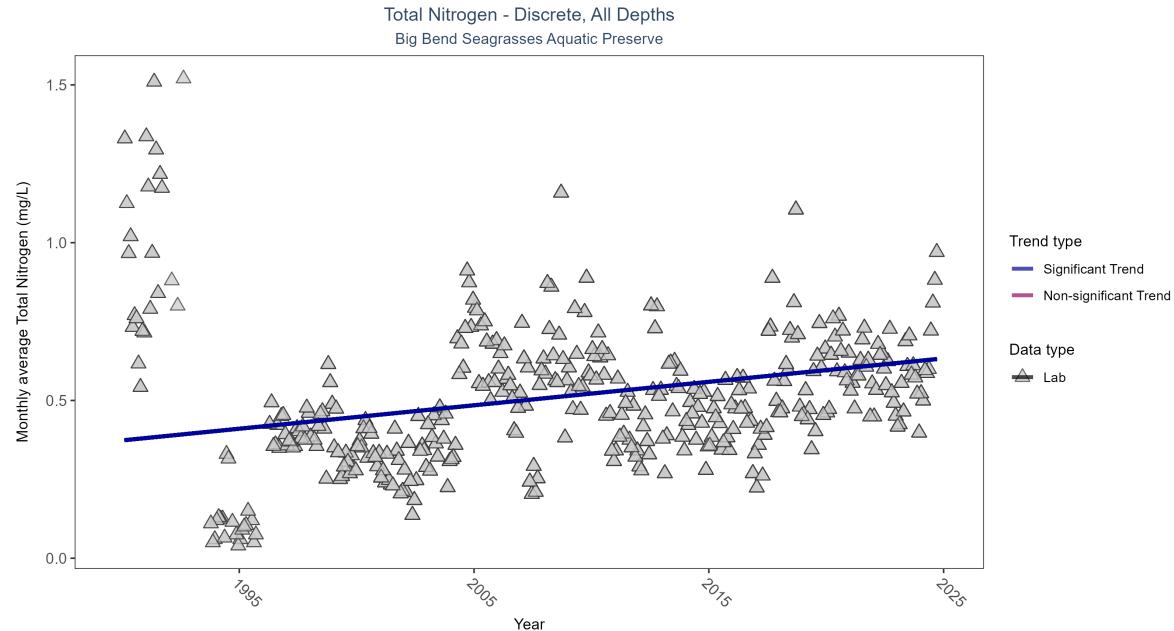


Table 1: Seasonal Kendall-Tau Results for - Total Nitrogen

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	8090	35	1990 - 2024	0.464	0.2297	0.3733	0.00743	0.0000

Total Phosphorus - Discrete

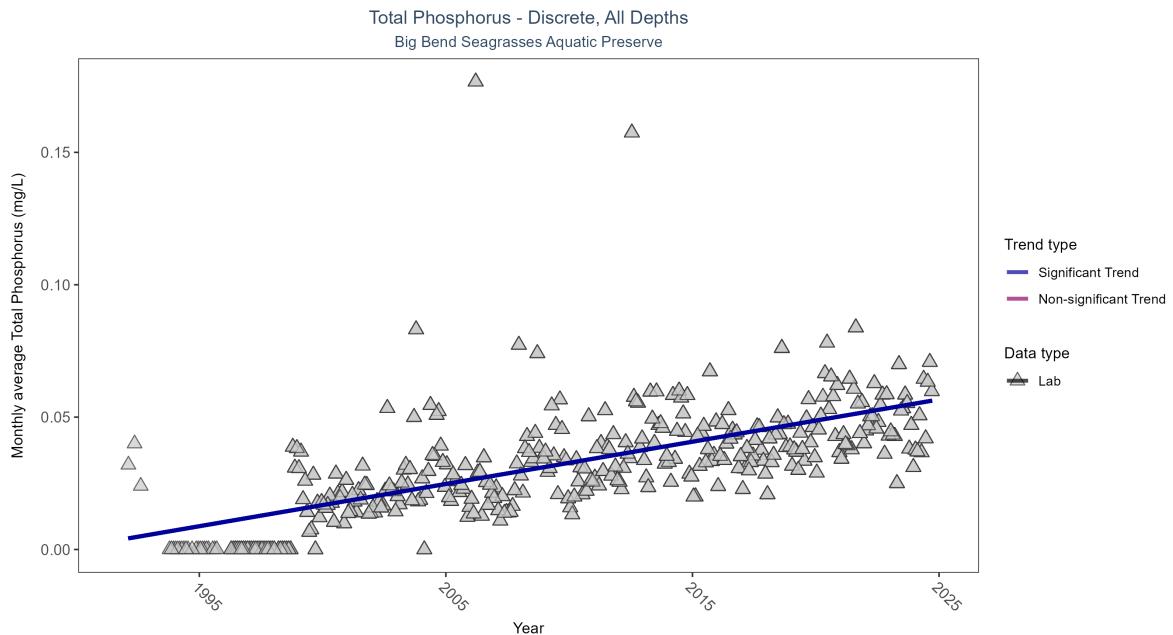


Table 2: Seasonal Kendall-Tau Results for - Total Phosphorus

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	6455	33	1992 - 2024	0.0314	0.5954	0.004	0.0016	0.0000

Water Quality

Dissolved Oxygen - Discrete

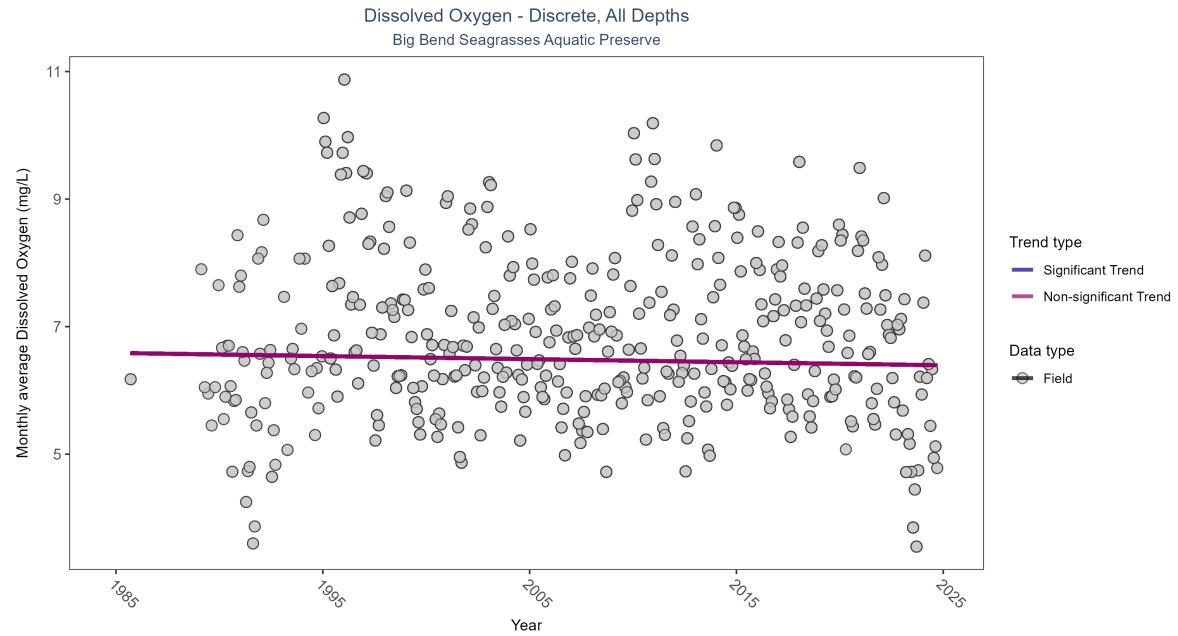


Table 3: Seasonal Kendall-Tau Results for - Dissolved Oxygen

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	No significant trend	149151	37	1985 - 2024	6.7	-0.044	6.58676	-0.00483	0.2240

Dissolved Oxygen - Continuous

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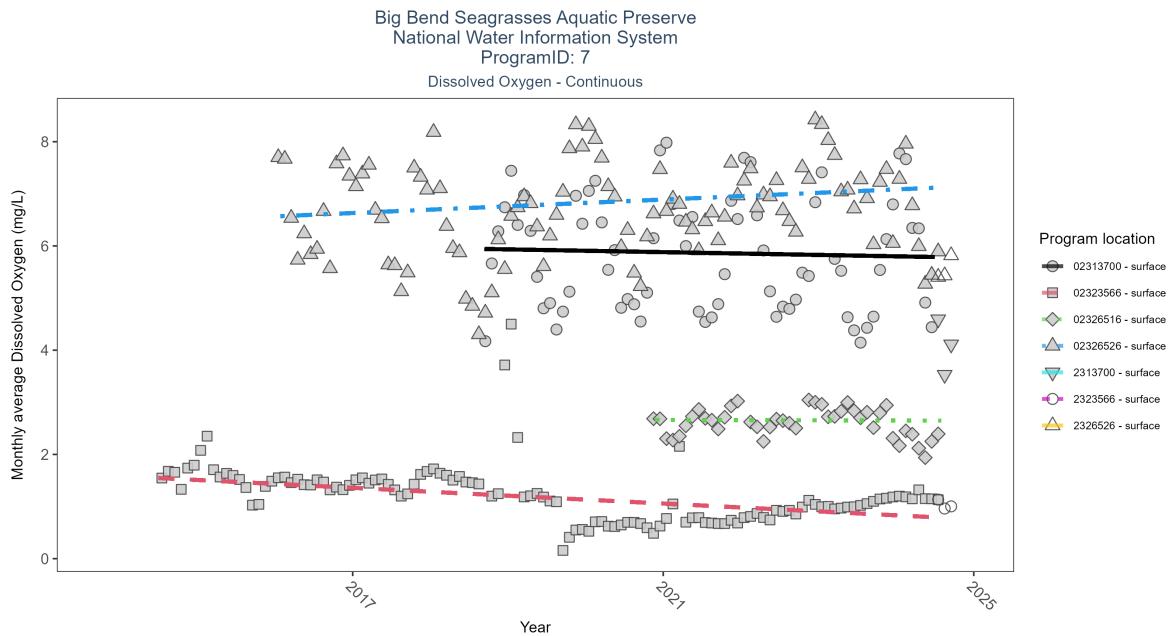


Table 4: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
02313700	No significant trend	2034	7	2018 - 2024	5.6	-0.08	5.96	-0.03	0.4228
02326526	Significantly increasing trend	2932	9	2016 - 2024	6.7	0.18	6.57	0.06	0.0191
02323566	Significantly decreasing trend	3484	11	2014 - 2024	1.2	-0.43	1.59	-0.08	0.0000
02326516	No significant trend	1200	5	2020 - 2024	2.6	0.05	2.67	0	1.0000
2323566	Insufficient data to calculate trend	68	1	2024 - 2024	1.0	-	-	-	-
2313700	Insufficient data to calculate trend	87	1	2024 - 2024	4.1	-	-	-	-
2326526	Insufficient data to calculate trend	82	1	2024 - 2024	5.8	-	-	-	-

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 Dissolved Oxygen - Continuous

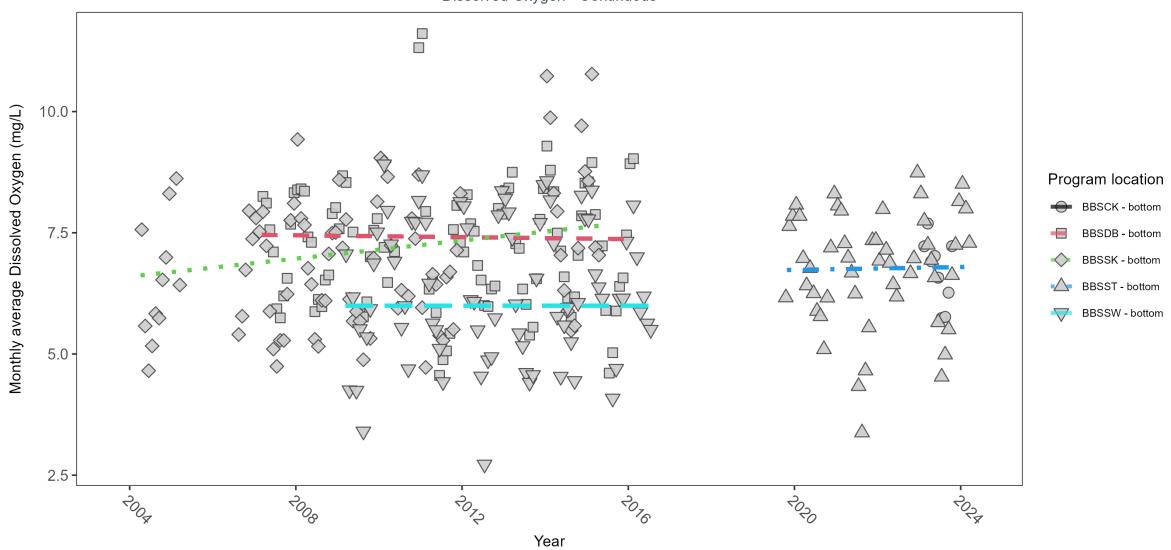


Table 5: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
BBSCK	Insufficient data to calculate trend	14788	1	2023 - 2023	6.7	-	-	-	-
BBSDB	No significant trend	184327	10	2007 - 2016	7.3	-0.05	7.46	-0.01	0.6066
BBSSK	Significantly increasing trend	134287	10	2004 - 2015	7.1	0.28	6.6	0.09	0.0023
BBSST	No significant trend	128978	6	2019 - 2024	7.0	0.01	6.72	0.01	0.7325
BBSSW	No significant trend	182327	8	2009 - 2016	6.2	0	6	0	1.0000

Dissolved Oxygen Saturation - Discrete

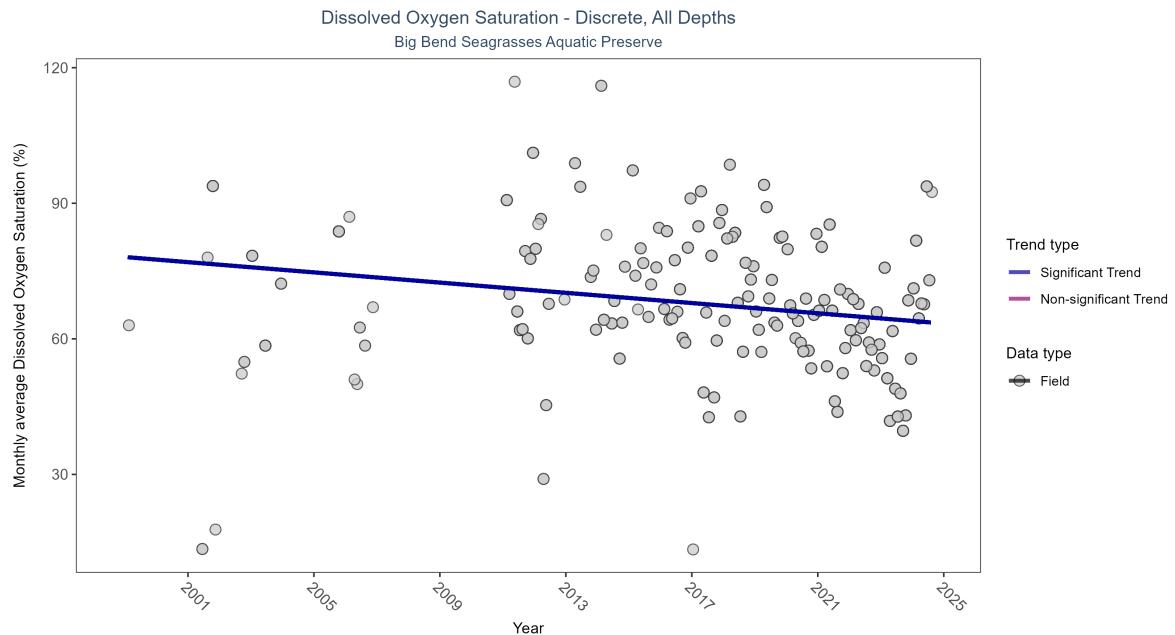


Table 6: Seasonal Kendall-Tau Results for - Dissolved Oxygen Saturation

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Significantly decreasing trend	1630	20	1999 - 2024	69.4	-0.1375	78.10245	-0.56561	0.0393

Dissolved Oxygen Saturation - Continuous

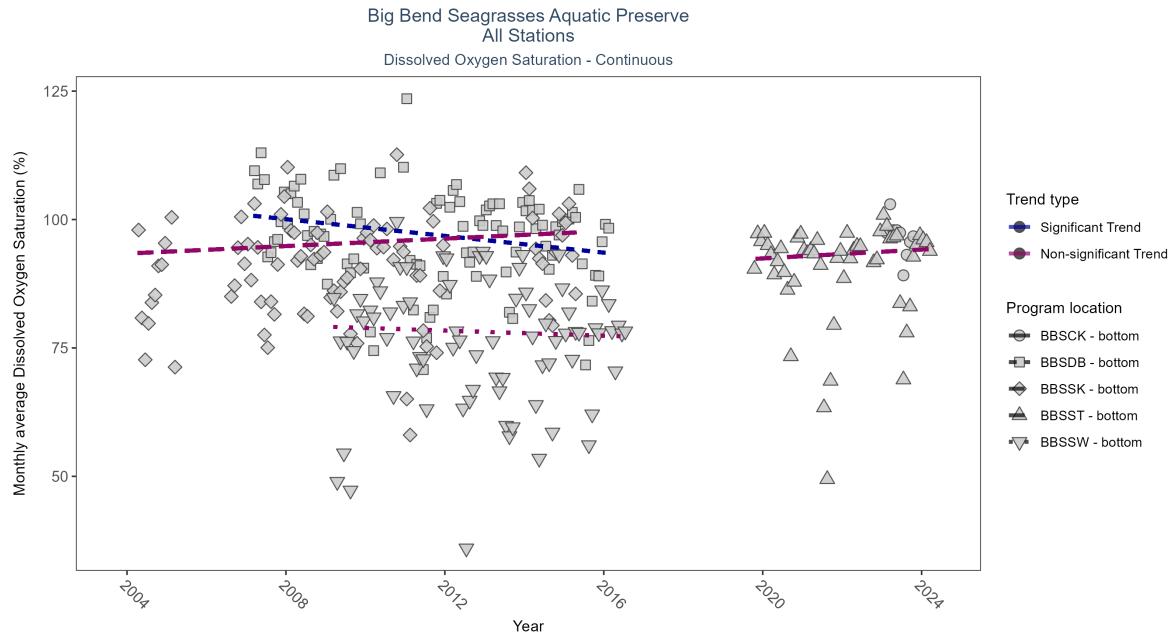


Table 7: Seasonal Kendall-Tau Results for All Stations - Dissolved Oxygen Saturation

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
BBSCK	Insufficient data to calculate trend	19834	1	2023 - 2023	95.7	-	-	-	-
BBSDB	Significantly decreasing trend	183530	10	2007 - 2016	97.6	-0.3	100.88	-0.81	0.0003
BBSSK	No significant trend	134196	10	2004 - 2015	91.8	0.12	93.37	0.36	0.2612
BBSSW	No significant trend	182158	8	2009 - 2016	75.8	-0.05	79.14	-0.25	0.6835
BBSST	No significant trend	132032	6	2019 - 2024	93.8	0.14	91.99	0.43	0.3053

Salinity - Discrete



Table 8: 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	154406	39	1964 - 2024	23.2	-0.0592	24.24274	-0.03384	0.0970

Salinity - Continuous

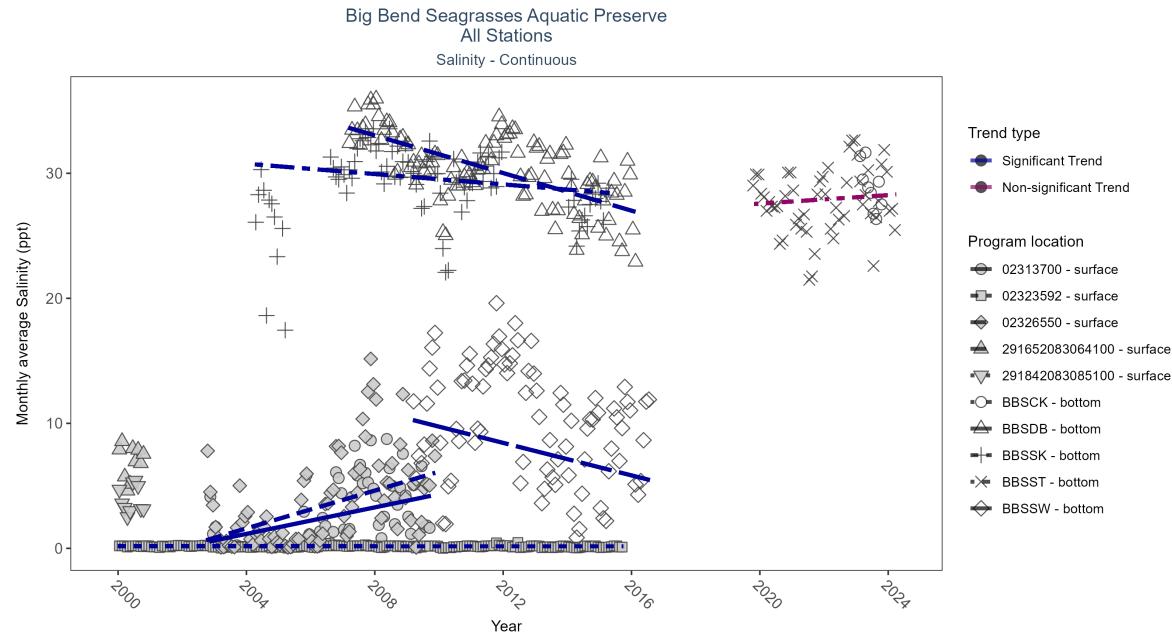


Table 9: Seasonal Kendall-Tau Results for All Stations - Salinity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
02326550	Significantly increasing trend	2507	8	2002 - 2009	1.7	0.48	0.09	0.76	0.0000
02323592	Significantly decreasing trend	6064	16	2000 - 2015	0.1	-0.13	0.18	0	0.0156
02313700	Significantly increasing trend	1601	7	2002 - 2009	2.1	0.52	0.1	0.53	0.0000
291652083064100	Insufficient data to calculate trend	827	1	2000 - 2000	6.7	-	-	-	-
291842083085100	Insufficient data to calculate trend	584	1	2000 - 2000	3.7	-	-	-	-
BBSCK	Insufficient data to calculate trend	14782	1	2023 - 2023	29.2	-	-	-	-
BBSDB	Significantly decreasing trend	265544	10	2007 - 2016	30.6	-0.53	33.78	-0.75	0.0000
BBSK	Significantly decreasing trend	178356	10	2004 - 2015	29.6	-0.22	30.77	-0.21	0.0197
BBSSW	Significantly decreasing trend	221696	8	2009 - 2016	7.5	-0.23	10.39	-0.65	0.0160
BBSST	No significant trend	139551	6	2019 - 2024	28.7	0.11	27.41	0.17	0.4095

Water Temperature - Discrete

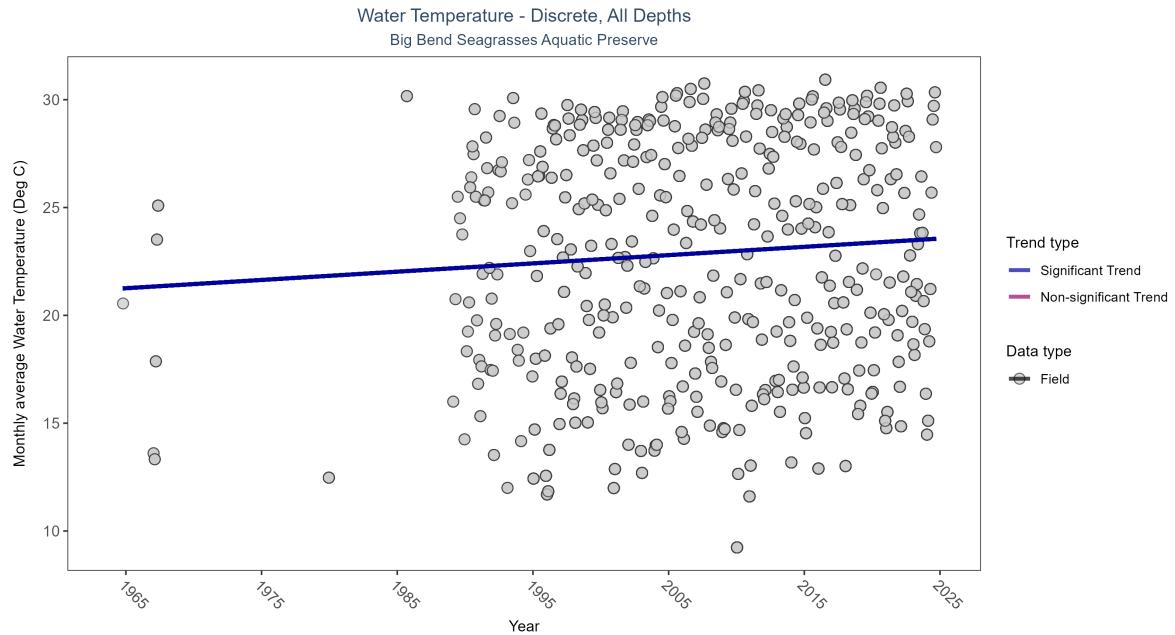


Table 10: Seasonal Kendall-Tau Results for - Water Temperature

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	Significantly increasing trend	155933	40	1964 - 2024	24.1	0.1978	21.21887	0.03839	0.0000

Water Temperature - Continuous

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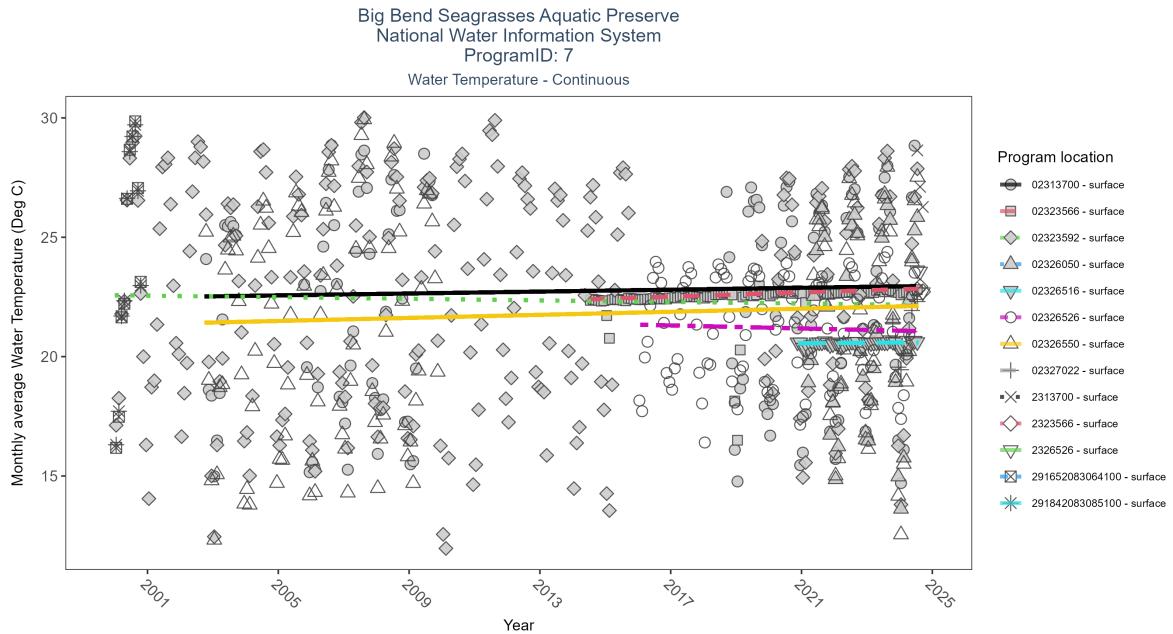


Table 11: Seasonal Kendall-Tau Results for All Stations - Water Temperature

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
02313700	No significant trend	3706	14	2002 - 2024	22.9	0.1	22.51	0.02	0.1620
02323592	No significant trend	12465	22	2000 - 2024	23.3	-0.06	22.57	-0.02	0.1933
02326550	Significantly increasing trend	4278	12	2002 - 2024	22.2	0.17	21.4	0.03	0.0212
02323566	Significantly increasing trend	3622	11	2014 - 2024	22.6	0.74	22.38	0.04	0.0000
291652083064100	Insufficient data to calculate trend	473	1	2000 - 2000	26.1	-	-	-	-
02326526	No significant trend	2978	9	2016 - 2024	21.4	-0.1	21.34	-0.03	0.2285
291842083085100	Insufficient data to calculate trend	542	1	2000 - 2000	23.1	-	-	-	-
02326516	No significant trend	1238	5	2020 - 2024	20.6	0.25	20.55	0.01	0.1244
02326050	Insufficient data to calculate trend	1321	4	2021 - 2024	21.7	-	-	-	-
02327022	Insufficient data to calculate trend	274	2	2023 - 2024	20.9	-	-	-	-
2323566	Insufficient data to calculate trend	70	1	2024 - 2024	22.8	-	-	-	-
2313700	Insufficient data to calculate trend	87	1	2024 - 2024	27.3	-	-	-	-
2326526	Insufficient data to calculate trend	92	1	2024 - 2024	23.4	-	-	-	-

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 Water Temperature - Continuous

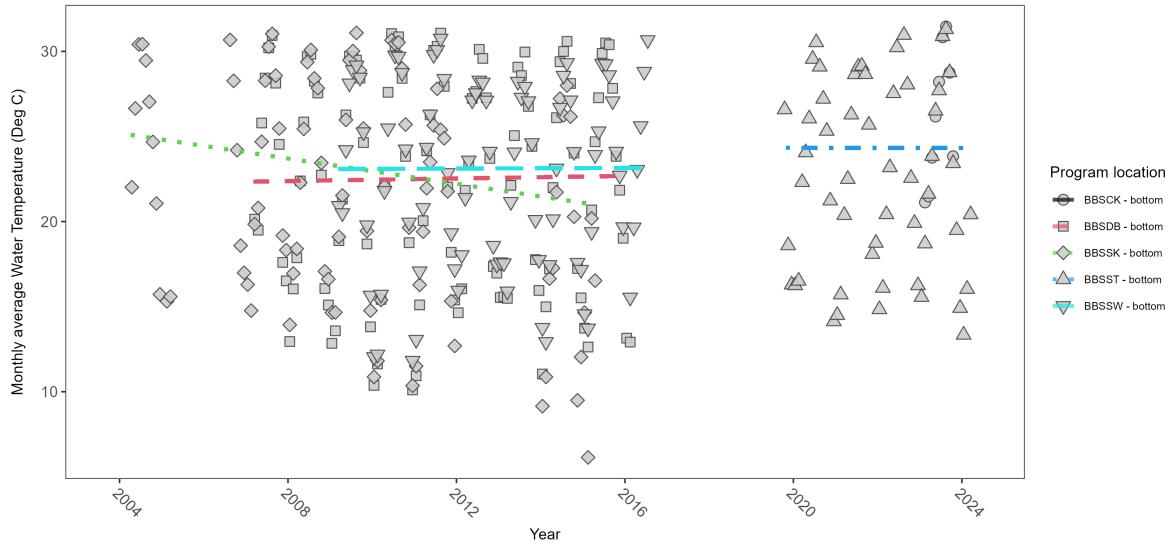


Table 12: Seasonal Kendall-Tau Results for All Stations - Water Temperature

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
BBSCK	Insufficient data to calculate trend	22232	1	2023 - 2023	26.4	-	-	-	-
BBSDB	No significant trend	265988	10	2007 - 2016	23.2	0.08	22.34	0.04	0.2922
BBSSK	Significantly decreasing trend	179213	10	2004 - 2015	21.7	-0.33	25.19	-0.37	0.0002
BBSST	No significant trend	146056	6	2019 - 2024	22.7	0.04	24.34	0	1.0000
BBSSW	No significant trend	227996	8	2009 - 2016	23.7	0.02	23.09	0.01	0.9025

pH - Discrete

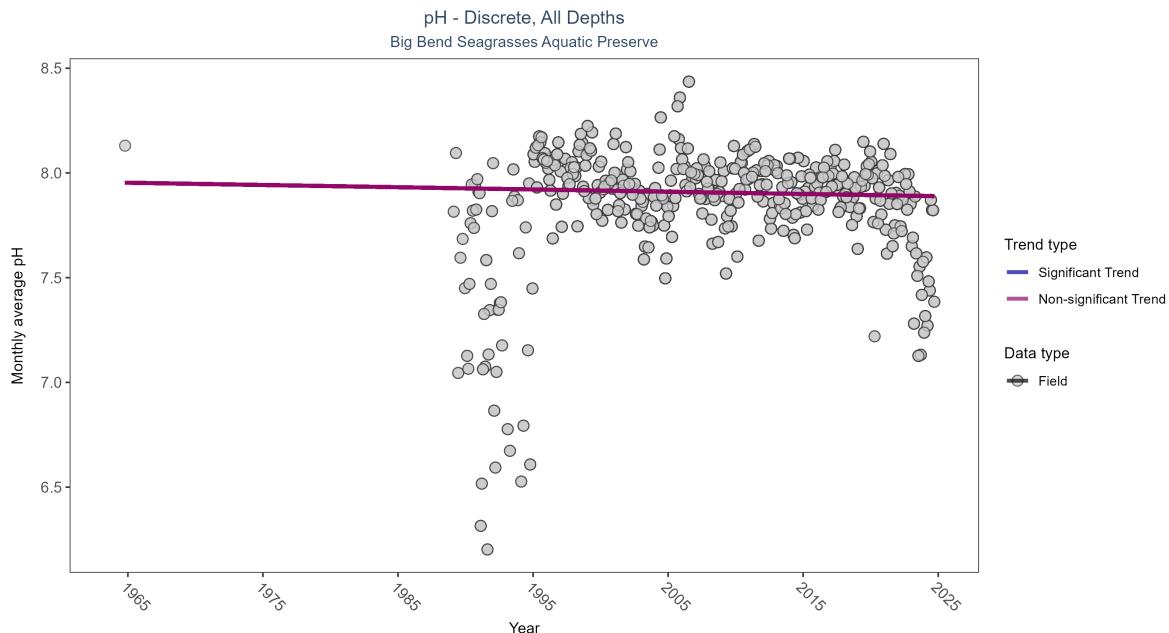


Table 13: Seasonal Kendall-Tau Results for - pH

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	No significant trend	106743	37	1964 - 2024	8	-0.0425	7.95421	-0.00107	0.2724

pH - Continuous

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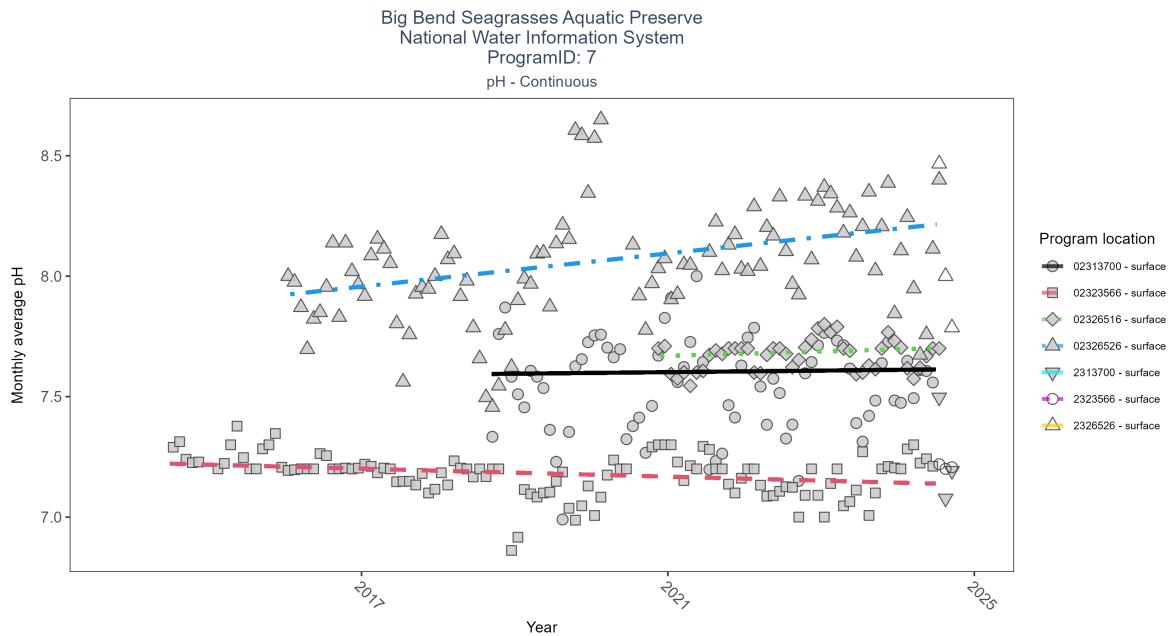


Table 14: Seasonal Kendall-Tau Results for All Stations - pH

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
02313700	No significant trend	1997	7	2018 - 2024	7.6	0.03	7.59	0	0.9088
02323566	Significantly decreasing trend	3303	11	2014 - 2024	7.2	-0.22	7.23	-0.01	0.0035
02326516	No significant trend	1221	5	2020 - 2024	7.7	0.18	7.66	0.01	0.1610
2323566	Insufficient data to calculate trend	90	1	2024 - 2024	7.2	-	-	-	-
2326526	Insufficient data to calculate trend	91	1	2024 - 2024	8.0	-	-	-	-
02326526	Significantly increasing trend	2733	9	2016 - 2024	8.0	0.3	7.92	0.03	0.0003
2313700	Insufficient data to calculate trend	87	1	2024 - 2024	7.3	-	-	-	-

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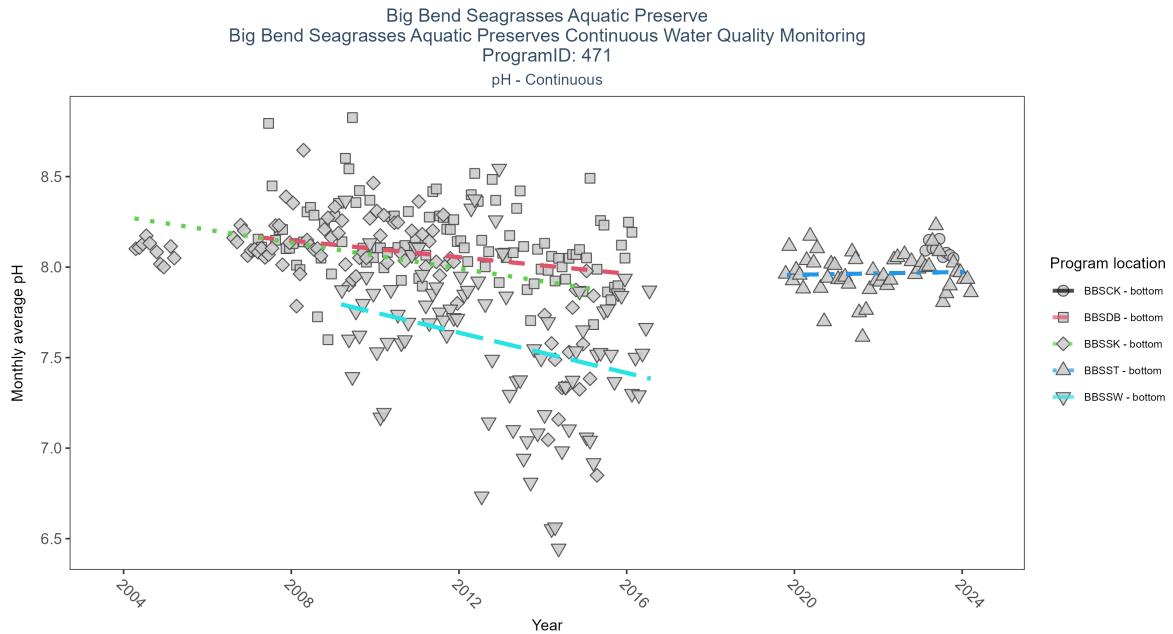


Table 15: Seasonal Kendall-Tau Results for All Stations - pH

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
BBSCK	Insufficient data to calculate trend	18185	1	2023 - 2023	8.1	-	-	-	-
BBSDB	Significantly decreasing trend	250183	10	2007 - 2016	8.1	-0.28	8.17	-0.02	0.0004
BBSSK	Significantly decreasing trend	168278	10	2004 - 2015	8.1	-0.37	8.28	-0.04	0.0000
BBSST	No significant trend	136969	6	2019 - 2024	8.0	0.08	7.95	0	0.8012
BBSSW	Significantly decreasing trend	224733	8	2009 - 2016	7.6	-0.29	7.8	-0.06	0.0017

Water Clarity

Turbidity - Discrete

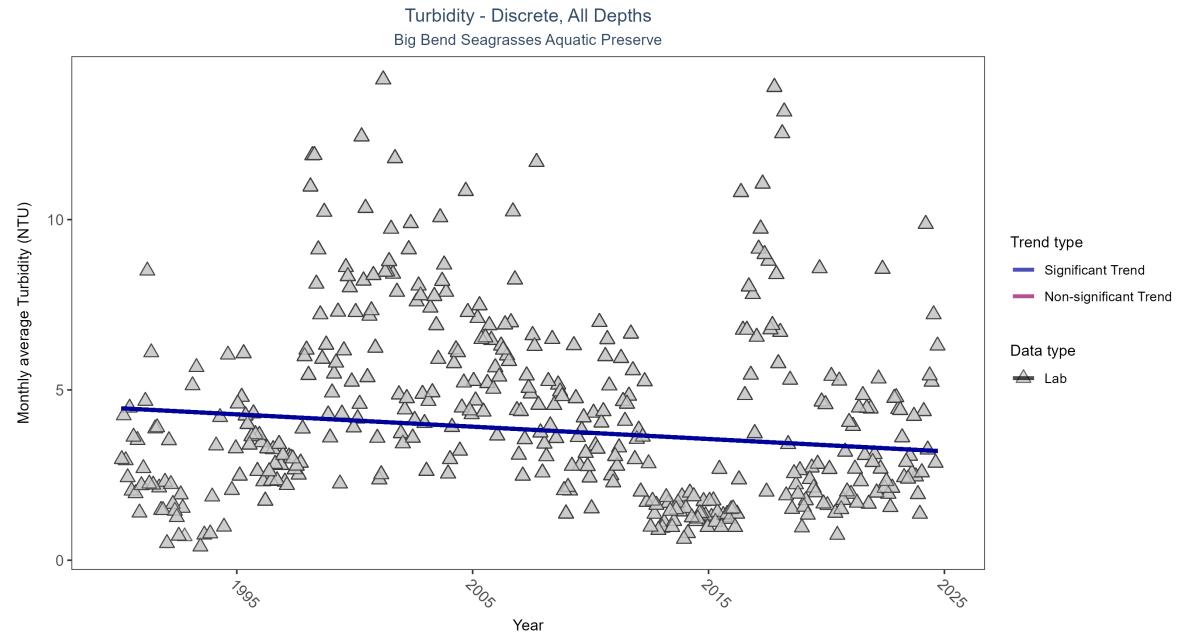


Table 16: Seasonal Kendall-Tau Results for - Turbidity

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly decreasing trend	42779	35	1990 - 2024	3.4	-0.1027	4.46361	-0.03619	0.0032

Turbidity - Continuous

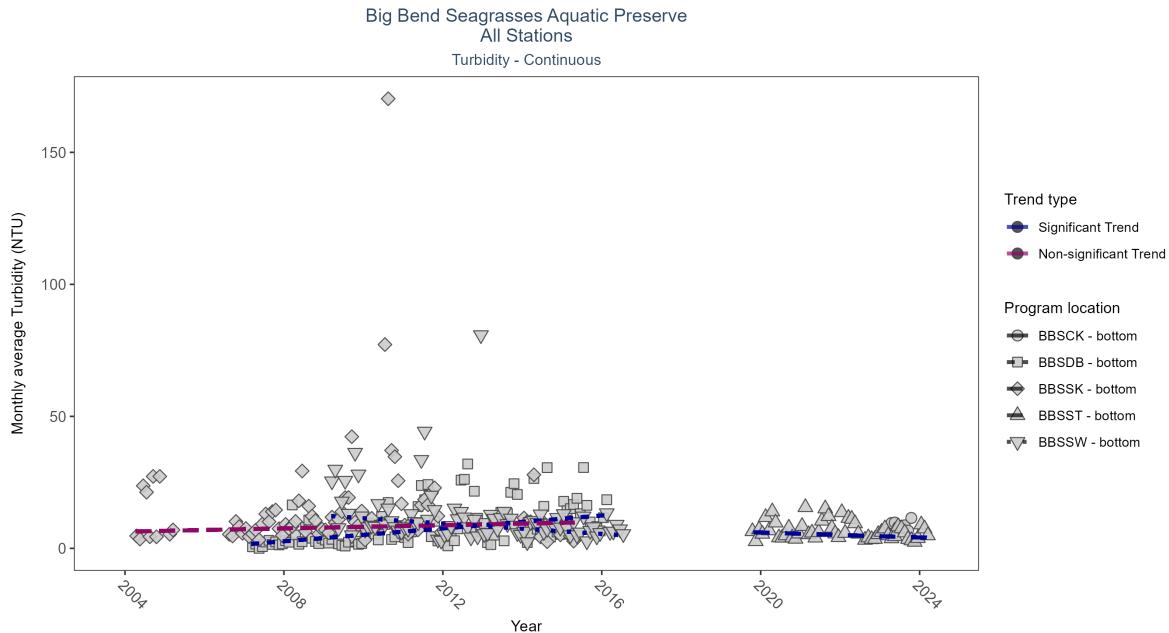


Table 17: Seasonal Kendall-Tau Results for All Stations - Turbidity

ProgramLocationID	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
BBSCK	Insufficient data to calculate trend	23243	1	2023 - 2023	7	-	-	-	-
BBSDB	Significantly increasing trend	224613	10	2007 - 2016	1	0.49	1.47	1.22	0.0000
BBSSK	No significant trend	165043	10	2004 - 2015	5	0.11	6.35	0.3	0.1867
BBSST	Significantly decreasing trend	142812	6	2019 - 2024	4	-0.26	6.49	-0.47	0.0320
BBSSW	Significantly decreasing trend	202699	8	2009 - 2016	6	-0.35	12.41	-0.99	0.0001

Total Suspended Solids - Discrete

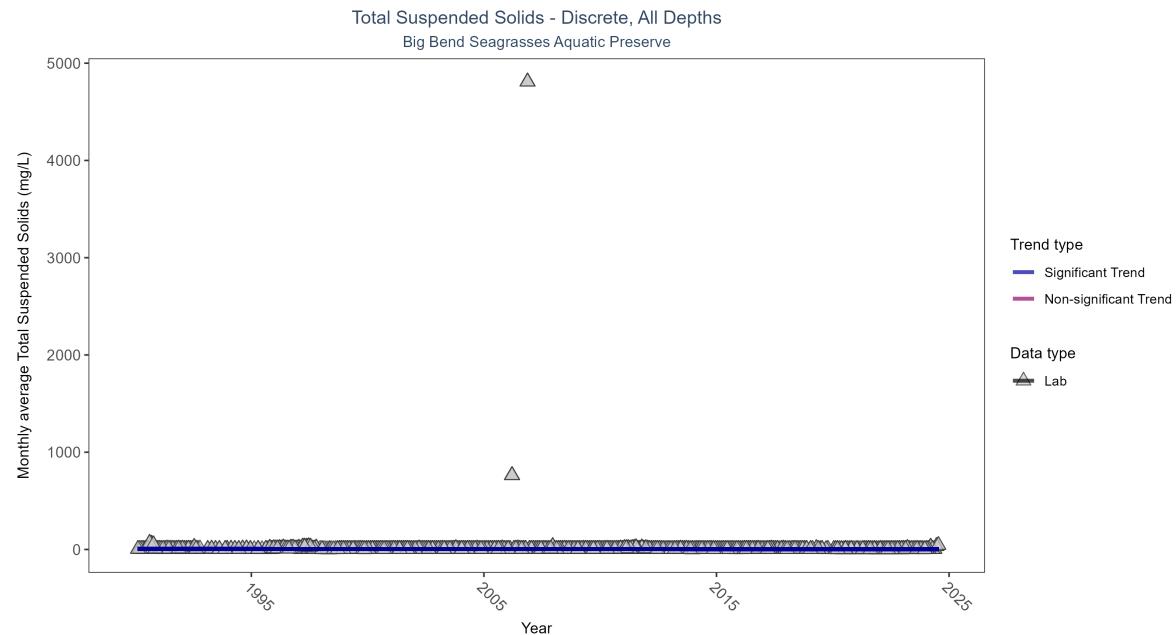


Table 18: Seasonal Kendall-Tau Results for - Total Suspended Solids

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly decreasing trend	2931	35	1990 - 2024	4	-0.3393	5.30641	-0.07407	0.0000

Chlorophyll a, Uncorrected for Pheophytin - Discrete

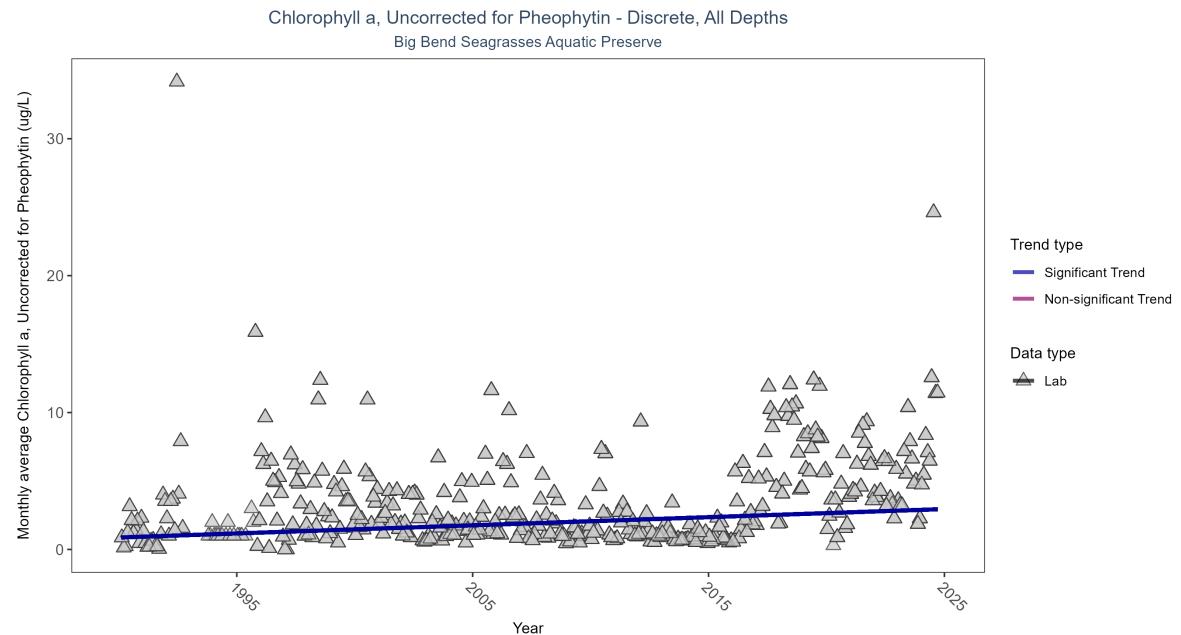


Table 19: Seasonal Kendall-Tau Results for - Chlorophyll a, Uncorrected for Pheophytin

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	6343	35	1990 - 2024	1.204	0.21	0.87232	0.05936	0.0000

Chlorophyll a, Corrected for Pheophytin - Discrete

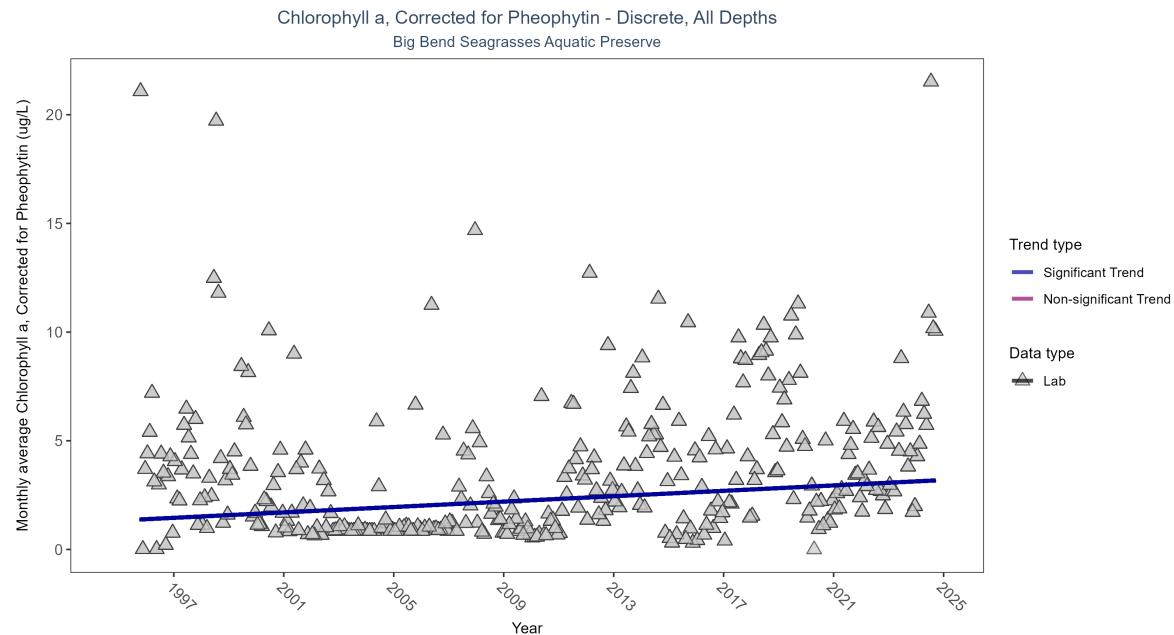


Table 20: Seasonal Kendall-Tau Results for - Chlorophyll a, Corrected for Pheophytin

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	4739	30	1995 - 2024	1.1	0.179	1.33026	0.0621	0.0000

Secchi Depth - Discrete

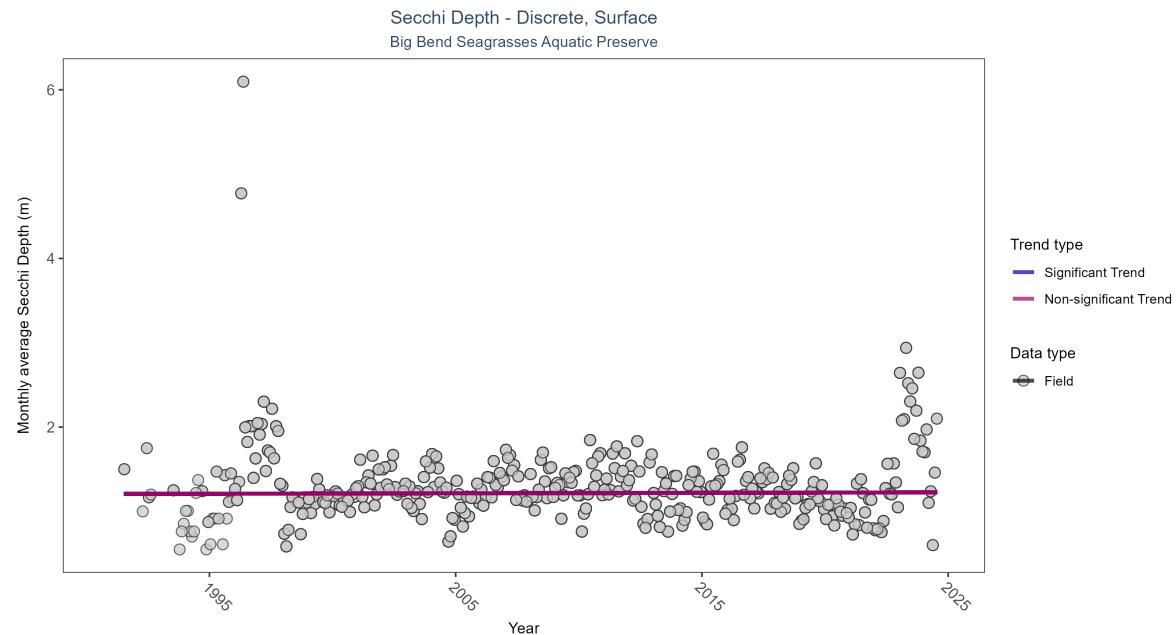


Table 21: Seasonal Kendall-Tau Results for - Secchi Depth

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Field	No significant trend	58818	34	1991 - 2024	0.9	0.0079	1.20675	0.00055	0.8148

Colored Dissolved Organic Matter - Discrete

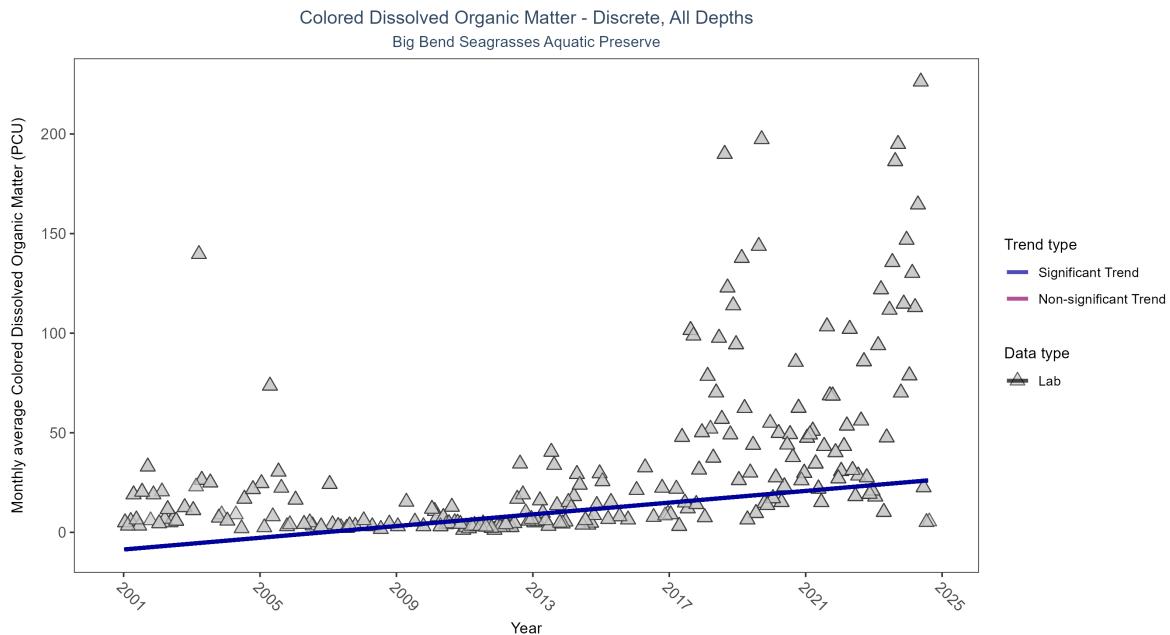


Table 22: Seasonal Kendall-Tau Results for - Colored Dissolved Organic Matter

ActivityType	Statistical Trend	N-Data	N-Years	Period of Record	Median	tau	SennIntercept	SennSlope	p
Lab	Significantly increasing trend	2756	24	2001 - 2024	17	0.4381	-8.59754	1.4704	0.0000