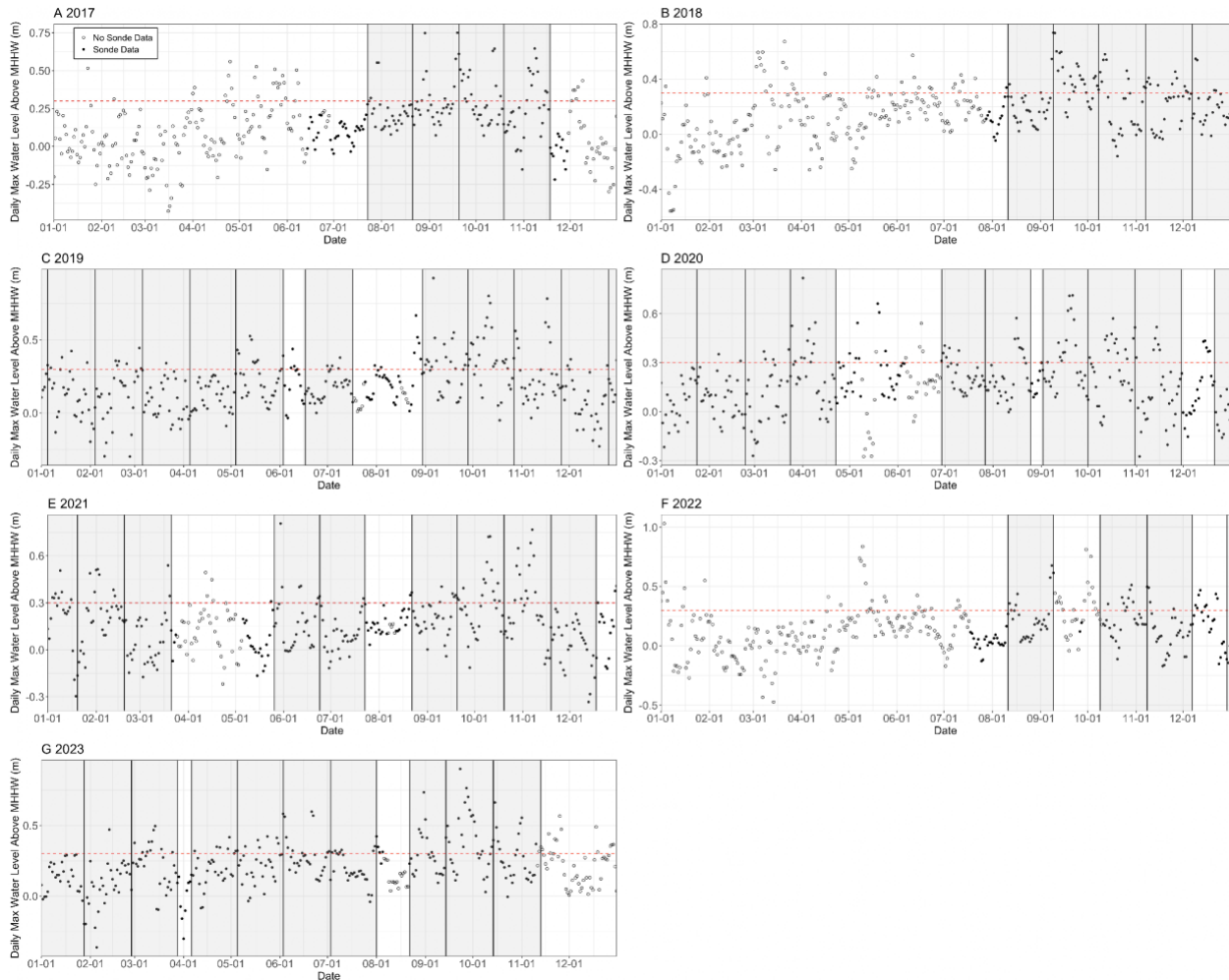


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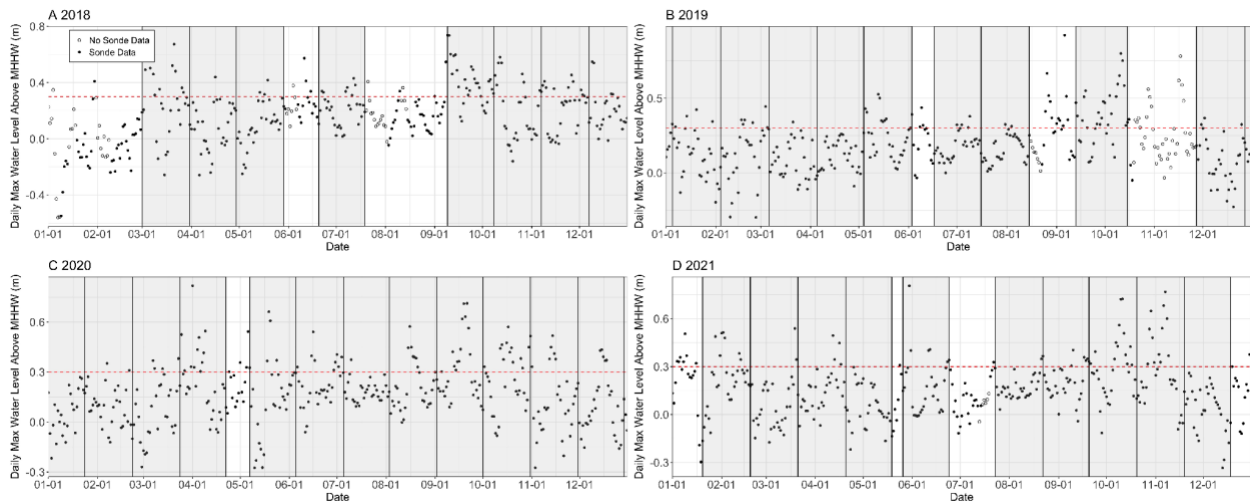


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3 Supplemental Figure 1. Daily max water level above MHHW plotted over time at the Ashland
 4 Circle (AC) station for 2017-2023 (a-g). Solid circles indicate when sonde data are available and
 5 open circles indicate when sonde data are missing. The red dashed lines indicate the minor
 6 flooding threshold and the shaded regions between mark the start/end of lunar cycles used in the
 7 cross-correlation analysis.

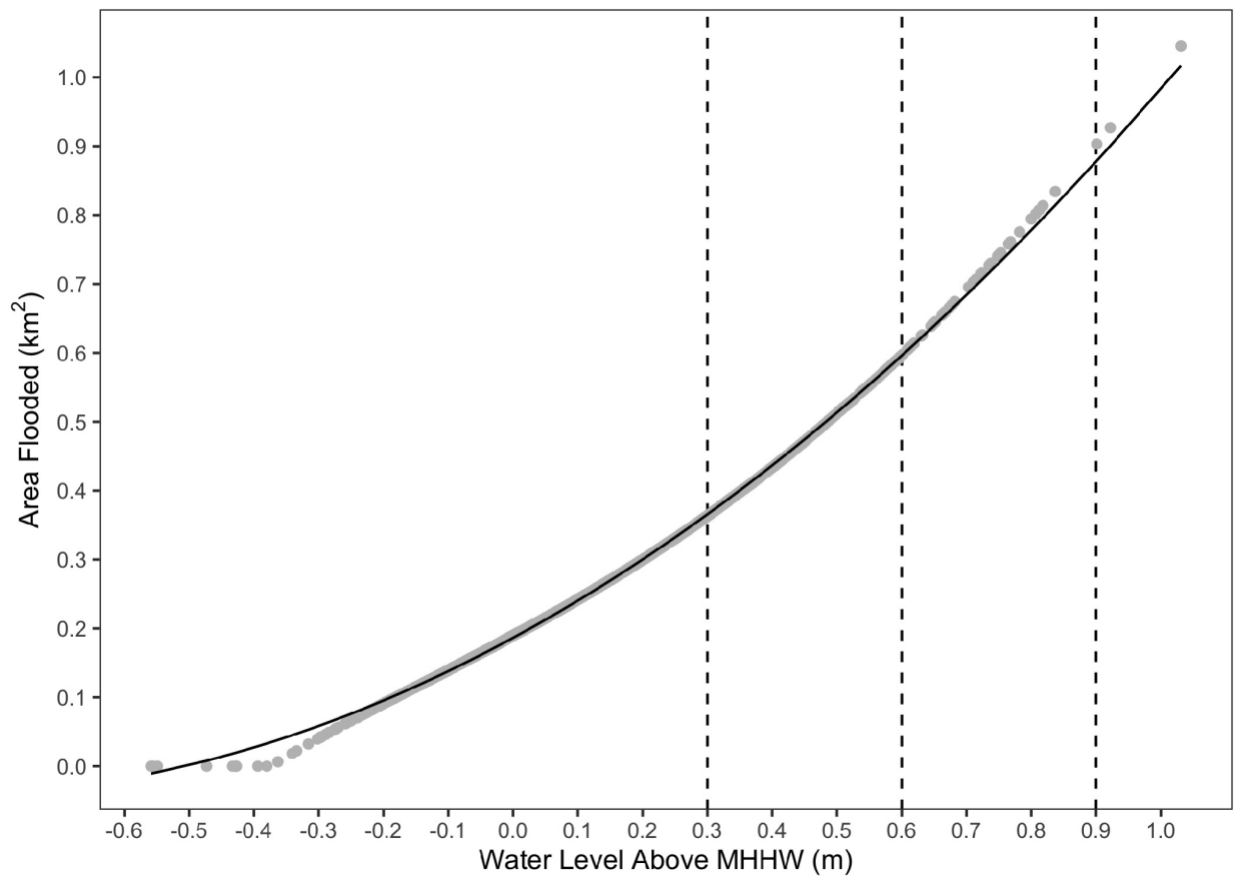
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Supplemental Figure 2. Daily max water level above MHHW plotted over time at the Norfolk Yacht & Country Club (NYCC) station for 2018-2021 (a-d). Solid circles indicate when sonde data are available and open circles indicate when sonde data are missing. The red dashed lines indicate the minor flooding threshold and the shaded regions between mark the start/end of lunar cycles used in the cross-correlation analysis.

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20 Supplemental Figure 3. The daily maximum tidal height above mean MHHW is plotted against
 21 the estimated area inundated by tidal floodwaters. The best fit for this relationship is quadratic
 22 ($F=1.66 \times 10^6$, $p<0.0001$, $R^2=0.999$). The vertical dashed lines at 0.3m, 0.6m, and 0.9m
 23 correspond to the minor, moderate, and major local flooding thresholds.

Supplemental Table 1. The details of the 88 cross-correlations; the start date, the end date, station, season, the number of hours that water level exceed the minor flooding threshold within the time period, the maximum cross-correlation coefficient and corresponding lag days. The cross correlations are for max daily Chl *a* concentration against maximum daily water level above MHHW, daily precipitation total, and daily average wind speed. All cross-correlations ranged from 7 days previous through 7 days forward in time and coefficients that exceed the 95% CI threshold are displayed in bold. Positive correlations are in italics.

Start Date	End Date	Station	Season	Flood Hours	Water Level		Precipitation		Wind	
					Max CC	Lag	Max CC	Lag	Max CC	Lag
2017-07-16	2017-08-14	AC	Summer	16	-0.25	-5	-0.28	0	-0.43	-6
2017-08-14	2017-09-13	AC	Fall	29	0.53	-5	0.49	-6	0.46	-6
2017-09-13	2017-10-12	AC	Fall	74	0.24	-7	-0.31	0	0.23	-7
2017-10-12	2017-11-10	AC	Fall	67	-0.45	-5	0.37	-3	-0.41	-7
2018-08-04	2018-09-02	AC	Summer	3	-0.24	-2	-0.17	-1	-0.41	0
2018-09-02	2018-10-02	AC	Fall	116	-0.35	-4	-0.10	-2	-0.19	-3
2018-10-02	2018-10-31	AC	Fall	44	-0.54	-3	0.21	-5	0.44	-5
2018-10-31	2018-11-30	AC	Fall	25	-0.37	-5	0.24	-2	0.45	-2
2018-11-30	2018-12-29	AC	Winter	16	-0.30	-4	0.28	-3	-0.30	0
2018-12-29	2019-01-27	AC	Winter	11	-0.22	-1	0.19	-3	0.25	-3
2019-01-27	2019-02-26	AC	Winter	10	-0.48	-1	-0.34	-2	-0.32	-6
2019-02-26	2019-03-28	AC	Spring	5	-0.46	-1	-0.38	-3	-0.27	-7
2019-03-28	2019-04-27	AC	Spring	0	-0.66	-1	-0.18	-6	-0.44	0
2019-04-27	2019-05-26	AC	Spring	35	-0.39	0	0.31	0	-0.28	-3
2019-05-26	2019-06-25	AC	Summer	12	-0.36	-3	-0.27	-7	0.28	-7
2019-08-23	2019-09-21	AC	Fall	96	-0.30	0	0.36	-5	0.37	-3
2019-09-21	2019-10-21	AC	Fall	108	0.36	-7	0.28	0	-0.48	-6
2019-10-21	2019-11-19	AC	Fall	68	-0.34	0	-0.43	-4	-0.25	-7
2019-11-19	2019-12-19	AC	Winter	13	-0.45	-3	0.42	-2	0.33	-3
2019-12-19	2020-01-17	AC	Winter	5	-0.30	-7	0.37	-7	0.39	0
2020-01-17	2020-02-15	AC	Winter	2	-0.46	-5	0.46	-7	0.50	-2
2020-02-15	2020-03-16	AC	Spring	5	0.36	0	0.58	0	0.41	-3

2020-03-16	2020-04-14	AC	Spring	54	0.37	0	0.53	-2	0.17	-5
2020-07-12	2020-08-10	AC	Summer	0	0.32	-6	0.45	0	0.47	-2
2020-08-10	2020-09-10	AC	Summer	30	-0.26	0	-0.36	-5	0.32	0
2020-09-10	2020-10-09	AC	Fall	69	0.15	0	-0.09	-5	0.12	-1
2020-10-09	2020-11-08	AC	Fall	51	-0.47	-1	0.15	-6	-0.40	-1
2020-11-08	2020-12-07	AC	Fall	16	-0.23	-2	-0.12	-2	-0.34	-2
2020-12-07	2021-01-06	AC	Winter	22	-0.36	0	0.24	-3	0.41	-2
2021-01-06	2021-02-04	AC	Winter	37	-0.72	0	-0.26	-7	-0.31	-4
2021-02-04	2021-03-05	AC	Winter	5	-0.57	-7	-0.35	0	-0.41	0
2021-06-02	2021-07-01	AC	Summer	13	0.33	-2	-0.20	-5	0.41	-6
2021-07-01	2021-07-31	AC	Summer	2	0.60	-5	0.31	-2	-0.33	0
2021-08-30	2021-09-28	AC	Fall	14	-0.35	-6	0.44	-4	-0.25	0
2021-09-28	2021-10-28	AC	Fall	66	-0.52	0	-0.20	0	-0.23	0
2021-10-28	2021-11-27	AC	Fall	70	0.49	0	-0.14	-6	0.56	0
2021-11-27	2021-12-26	AC	Winter	0	-0.32	-6	0.21	-5	-0.33	-3
2022-07-20	2022-08-19	AC	Summer	9	0.31	0	-0.40	-6	0.35	-3
2022-10-17	2022-11-16	AC	Fall	35	-0.41	0	0.41	0	-0.31	0
2022-11-16	2022-12-16	AC	Winter	16	-0.47	-1	-0.07	-1	-0.47	-1
2022-12-16	2023-01-15	AC	Winter	10	-0.54	-5	0.32	-4	-0.32	-5
2023-01-15	2023-02-13	AC	Winter	3	-0.62	0	-0.17	0	-0.23	-7
2023-02-13	2023-03-14	AC	Winter	30	-0.57	0	0.45	-4	0.46	0
2023-03-14	2023-04-13	AC	Spring	8	-0.33	-6	-0.16	-5	-0.26	-1
2023-04-13	2023-05-12	AC	Spring	14	0.15	-1	0.52	-1	0.25	-2
2023-05-12	2023-06-10	AC	Spring	35	-0.45	-1	0.32	0	0.39	-3
2023-06-10	2023-07-10	AC	Summer	27	-0.25	-4	-0.11	-2	0.32	-6
2023-09-06	2023-10-06	AC	Fall	105	-0.54	-5	-0.24	-7	-0.42	-7
2023-10-06	2023-11-05	AC	Fall	41	-0.39	-4	0.17	-7	0.39	0
2018-03-09	2018-04-08	NYCC	Spring	27	0.43	-7	-0.08	-5	0.22	-2
2018-04-08	2018-05-07	NYCC	Spring	4	-0.47	0	0.21	-1	-0.36	-7
2018-06-06	2018-07-06	NYCC	Summer	15	-0.25	-5	0.36	-3	-0.37	-7
2018-09-02	2018-10-02	NYCC	Fall	116	-0.55	-3	0.42	0	-0.44	0
2018-10-02	2018-10-31	NYCC	Fall	44	0.68	-3	-0.17	-1	-0.44	-7
2018-10-31	2018-11-30	NYCC	Fall	25	0.30	-1	-0.26	-2	0.43	-1
2018-11-30	2018-12-29	NYCC	Winter	16	-0.24	-1	-0.19	-2	-0.27	-2
2018-12-29	2019-01-27	NYCC	Winter	11	0.36	-7	0.45	-3	-0.33	-1
2019-01-27	2019-02-26	NYCC	Winter	10	0.08	-3	0.10	-3	-0.18	0

2019-02-26	2019-03-28	NYCC	Spring	5	0.34	-2	0.50	-3	-0.32	0
2019-03-28	2019-04-27	NYCC	Spring	0	-0.56	-1	-0.17	-2	0.15	-1
2019-04-27	2019-05-26	NYCC	Spring	35	0.29	-2	0.34	0	-0.37	-3
2019-05-26	2019-06-25	NYCC	Summer	12	0.34	-4	0.42	0	-0.38	-7
2019-06-25	2019-07-24	NYCC	Summer	9	0.58	-2	0.15	-2	0.16	0
2019-08-23	2019-09-21	NYCC	Fall	96	-0.36	-6	0.31	-3	-0.24	-7
2019-12-19	2020-01-17	NYCC	Winter	5	-0.43	0	-0.22	0	-0.29	0
2020-01-17	2020-02-15	NYCC	Winter	2	0.27	-1	0.55	-1	0.46	-5
2020-02-15	2020-03-16	NYCC	Spring	5	0.42	-5	0.60	-6	0.31	-5
2020-03-16	2020-04-14	NYCC	Spring	54	0.35	-5	-0.24	-5	-0.38	-3
2020-04-14	2020-05-14	NYCC	Spring	13	-0.39	-4	-0.11	-5	0.19	-4
2020-05-14	2020-06-12	NYCC	Summer	26	-0.29	-7	0.20	-3	0.41	-4
2020-06-12	2020-07-12	NYCC	Summer	31	0.37	-3	-0.33	-1	-0.27	-7
2020-07-12	2020-08-10	NYCC	Summer	0	0.30	-6	0.32	0	0.33	-2
2020-08-10	2020-09-10	NYCC	Summer	30	-0.40	0	0.36	-3	-0.39	0
2020-09-10	2020-10-09	NYCC	Fall	69	-0.36	0	0.12	-7	-0.25	0
2020-10-09	2020-11-08	NYCC	Fall	51	0.36	-7	-0.24	-6	-0.38	-3
2020-11-08	2020-12-07	NYCC	Winter	16	-0.29	-5	-0.15	-7	-0.22	-2
2020-12-07	2021-01-06	NYCC	Winter	22	0.37	-6	-0.25	-1	-0.20	-3
2021-01-06	2021-02-04	NYCC	Winter	37	0.48	-2	0.40	-4	0.22	-7
2021-02-04	2021-03-05	NYCC	Winter	5	-0.42	-4	-0.16	-2	0.15	-6
2021-03-05	2021-04-04	NYCC	Spring	9	0.00	0	-0.26	-2	-0.37	0
2021-04-04	2021-05-03	NYCC	Spring	13	0.53	-3	0.62	-1	-0.23	-5
2021-05-03	2021-06-02	NYCC	Spring	15	-0.20	-7	-0.17	-2	-0.24	-5
2021-06-02	2021-07-01	NYCC	Summer	13	-0.32	0	-0.32	0	0.37	-7
2021-07-31	2021-08-30	NYCC	Summer	4	-0.39	-7	0.38	-4	0.42	-4
2021-08-30	2021-09-28	NYCC	Fall	14	-0.30	0	-0.15	-1	0.37	-4
2021-09-28	2021-10-28	NYCC	Fall	66	0.48	-3	0.68	-2	0.47	-2
2021-10-28	2021-11-27	NYCC	Fall	70	0.38	0	0.56	-7	0.31	-2
2021-11-27	2021-12-26	NYCC	Fall	0	0.29	-7	-0.27	-5	-0.29	-5