Table S1. Kruskal-Wallis p-values for the comparison of water quality parameters three days before and after the Nor'easter event. Data from the Urban site was unobtainable for this storm event.

Site	Salinity	pH	Turb.	Chl-a	FDOM	DO	Temp.
Suburban	0.35	0.01	0.41	<0.01	0.46	0.09	0.42
Rural	0.94	<0.01	0.35	0.35	0.18	0.63	0.18
Estuarine	0.26	0.02	0.56	0.07	0.41	0.63	0.36
Inlet	0.55	<0.01	0.42	0.35	0.45	0.55	0.31

Table S2. Kruskal-Wallis p-values for the comparison of water quality parameters three days before and after the November 5th rainfall event.

Site	Salinity	pH	Turb.	Chl-a	FDOM	DO	Temp.
Urban	0.19	<0.01	0.04	0.04	0.45	0.03	0.27
Suburban	0.16	<0.01	0.19	0.31	0.40	0.06	0.35
Rural	0.57	<0.01	0.79	0.36	0.04	<0.01	0.07
Estuarine	0.38	<0.01	0.75	0.54	0.41	<0.01	0.26

Table S3. Means and standard deviations of FDOM and turbidity for sites during a Nor'easter event that occurred between September 15-25, 2020. Data from the Urban site was unobtainable for this storm event. GTMNERR sites were not included because they do not possess FDOM sensors.

	FDOM		Turbidity				
Site	Std Dev	Mean	Std. Dev.	Mean	% Urban	Dist. from Freshwater (km)	Dist. from Inlet (km)
Suburban	42.8	69.4	23.7	24.7	41.6	6	11.25
Rural	11.3	146.1	0.6	2.2	4.8	0.5	21
Estuarine	45.8	82.2	4.4	9.9	N/A	12.5	9.5
Inlet	19.7	39.6	11.3	22.7	N/A	13.5	1.5

Table S4. Means and standard deviations of FDOM and turbidity for sites during three rain events that occurred between November 1-10, 2020. GTMNERR sites were not included because they do not possess FDOM sensors.

	FDOM		Turbidity				
Site	Std. Dev.	Mean	Std. Dev	Mean	% Urban	Dist. from Freshwater (km)	Dist. from Inlet (km)
Urban	17.0	68.5	1.3	4.3	56.2	5.5	9.3
Suburban	36.5	75.9	3.5	12.4	41.6	6	11.25
Rural	7.3	182.2	3.9	2.0	4.8	0.5	21
Estuarine	22.1	45.8	9.5	9.0	N/A	12.5	9.5
Inlet	5.0	17.7	2.2	7.4	N/A	13.5	1.5

Table S5. (a) Variables and their corresponding contribution for the first three principal components Urban, Suburban, and Rural sites were analyzed; **(b)** Variables and their corresponding contribution for the first three principal components when all sites were analyzed.

(a)	PC 1	PC2	PC3
Site	12.91	0.01	4.12
Distance to Inlet	14.22	0.90	1.00
Distance to Freshwater	13.82	1.73	0.23
Salinity	14.41	0.17	0.06
pH	13.04	2.79	0.88
Dissolved Oxygen	10.43	0.37	22.82
Turbidity	3.84	66.58	20.55
Chlorophyll-a	6.38	27.02	50.26
FDOM	10.95	0.42	0.10

(b)	PC 1	PC2	PC3
Site	16.19	0.05	0.04
Distance to Inlet	16.90	0.04	0.56
Distance to Freshwater	15.07	0.41	2.20
Salinity	16.87	0.25	0.77
pH	7.13	0.59	2.76
Dissolved Oxygen	16.31	2.90	0.05
Turbidity	2.88	4.25	58.93
Chlorophyll-a	8.57	1.51	28.34