

## Diazotroph activity in surface Narragansett Bay sediments in summer is stimulated by hypoxia and organic matter delivery

R. F. Spinette, S. M. Brown, A.L. Ehrlich, G. Puggioni, C. Deacutis, B. D. Jenkins\*

\*Corresponding author: bjenkins@uri.edu

Marine Ecology Progress Series 614: 35–50 (2019)

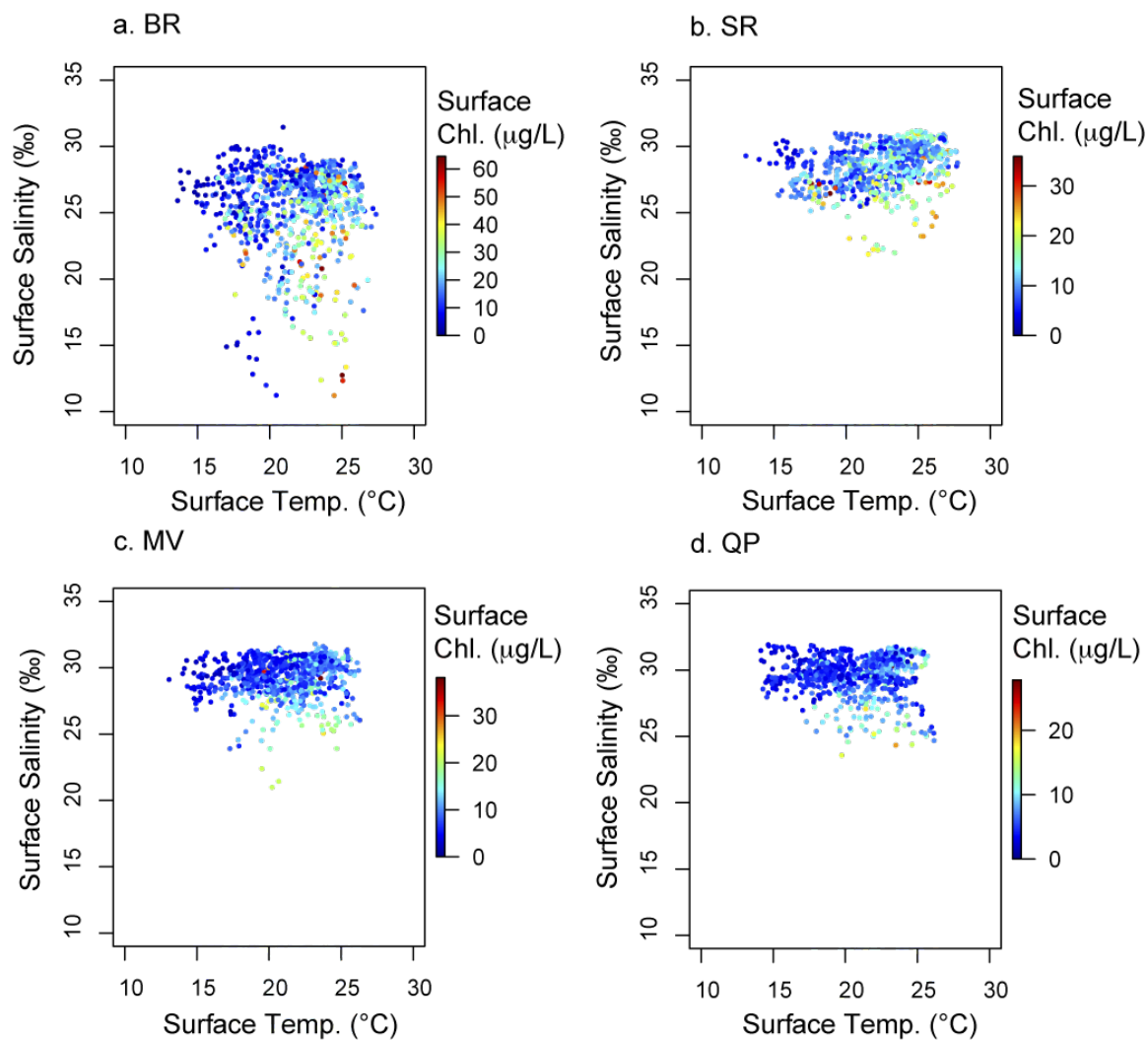


Fig. S1. Surface water chlorophyll averaged over a given day in relation to surface water temperature and surface water salinity averaged over that same day. Sites are Bullock Reach (BR), Sally Rock (SR), Mount View (MV), and Quonset Point (QP). Data include those available at the given sites spanning mostly the period of June 1<sup>st</sup> to August 31<sup>st</sup> for the years 2009 to 2014.

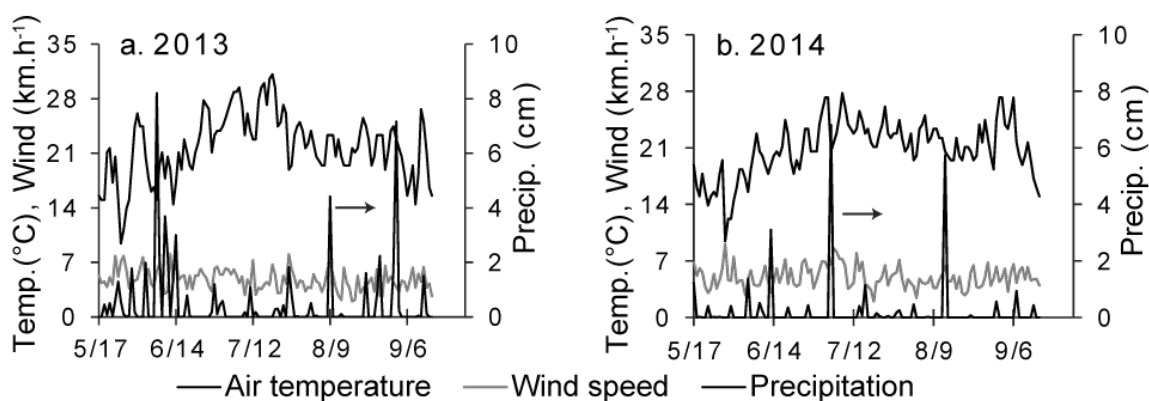


Fig. S2. Meteorological conditions recorded at the T.F. Green State Airport located in Warwick Rhode Island from June 1<sup>st</sup> to August 31<sup>st</sup> of 2013 and 2014 (NOAA Quality Controlled Local Climatological Data (QCLCD) database).

Table S1. Measured parameters for sampled cores. All measurements made on triplicate cores unless indicated by an asterisk (\*) next to the standard deviation (sd), in which case measurements were made on duplicate cores

Site	Sampling Date	Assay depth (cm)	Bottom temperature (°C)	Bottom DO mg.L <sup>-1</sup>	Porewater NH <sub>4</sub> <sup>+</sup> (mM)	sd	NA (nmol C <sub>2</sub> H <sub>4</sub> g <sup>-1</sup> .d <sup>-1</sup> )	sd
BR	5/31/13	0-2	15.4	7.4	NA		2.75	+/- 0.59*
	8/5/13	0-2	21.7	3.5	NA		4.58	+/- 2.09*
SR	5/31/13	0-2	19.7	9.1	NA		7.5	+/- 0.57*
	8/5/13	0-2	23.0	6.3	NA		3.5	+/- 0.67*
	6/20/14	0-3	20.3	4.5	515	+/- 58	1.61	+/- 0.7
	6/30/14	0-3	22.1	5.6	223	+/- 3	2.92	+/- 0.5
	7/10/14	0-3	24.0	4.4	202	+/- 15	2.04	+/- 0.4
	7/18/14	0-3	23.7	3.5	218	+/- 48	1.75	+/- 0.1
	7/24/14	0-3	23.6	4.4	139	+/- 24	2.92	+/- 0.5
	8/1/14	0-3	24.0	6.2	239	+/- 22	2.76	+/- 0.4
	8/7/14	0-3	23.2	2.9	514	+/- 51	2.49	+/- 0.9
	8/21/14	0-3	22.2	2.0	350	+/- 112	3.70	+/- 0.3
9/26/14	0-3	18.2	7.0	NA		3.58	+/- 0.9	

Site	Sampling Date	Assay depth (cm)	Bottom temperature (° C)	Bottom DO mg.L <sup>-1</sup>	Porewater NH <sub>4</sub> <sup>+</sup> (mM)	sd	NA (nmol C <sub>2</sub> H <sub>4</sub> g <sup>-1</sup> .d <sup>-1</sup> )	sd
GC	7/19/13	0-0.5	23.3	0.2	NA		15.59	+/- 1.26*
		0.5-2			NA		12.50	+/- 3.33*
	7/30/13	0-0.5	23.6	1.6	392	+/- 64	7.09	+/- 0.72
		0.5-2			NA		7.68	+/- 2.07*
	8/12/13	0-0.5	23.5	3.5	NA		6.04	+/- 0.79
		0.5-2			NA		4.87	+/- 1.54*
	6/20/14	0-3	21.2	2.6	249	+/- 21	1.98	+/- 0.5
	6/30/14	0-3	23.8	3.8	242	+/- 36	1.69	+/- 0.7
	7/10/14	0-3	24.2	3.3	244	+/- 49	1.70	+/- 0.3
	7/18/14	0-3	24.5	1.7	330	+/- 106	1.24	+/- 0.2
	7/24/14	0-3	24.6	2.4	188	+/- 33	1.69	+/- 0.7
	8/1/14	0-3	24.1	4.8	390	+/- 40	1.72	+/- 0.6
	8/7/14	0-3	24.4	1.8	212	+/- 78	1.80	+/- 0.3
	8/21/14	0-3	22.8	1.8	192	+/- 48	4.81	+/- 0.5
9/26/14	0-3	18.1	5.6	NA		4.41	+/- 0.7	
QP	7/15/13	0-0.5	19.3	4.9	5	+/- 4	4.63	+/- 1.01
		0.5-2					5.52	+/- 0.82
	8/6/13	0-0.5	20.1	4.1	NA		2.99	+/- 1.21*
		0.5-2					4.70	+/- 0.04*
	6/20/14	0-3	17.4	5.5	123	+/- 1	1.83	+/- 0.37
	6/30/14	0-3	18.6	6.2	59	+/- 9	1.94	+/- 0.18
	7/10/14	0-3	19.8	6.1	56	+/- 19	1.82	+/- 0.38
	7/18/14	0-3	20.2	5.6	74	+/- 1	1.67	+/- 0.54
	7/24/14	0-3	21.1	6.3	75	+/- 28	1.94	+/- 0.18
	8/1/14	0-3	20.9	6.0	50	+/- 15	1.72	+/- 0.47
	8/7/14	0-3	20.4	4.7	111	+/- 8	2.00	+/- 0.16
	8/21/14	0-3	20.3	5.1	212	+/- 65	3.67	+/- 0.23
	9/26/14	0-3	18.6	7.2	NA		3.15	+/- 0.31
MV	6/20/14	0-3	18.5	4.7	198	+/- 8	1.9	+/- 0.6
	6/30/14	0-3	20.4	5.3	291	+/- 32	2.8	+/- 0.7
	7/10/14	0-3	22.7	5.8	415	+/- 1	2.9	+/- 0.5
	7/18/14	0-3	22.1	5.1	535	+/- 415	2.4	+/- 0.2
	7/24/14	0-3	22.7	4.3	391	+/- 106	2.8	+/- 0.7
	8/1/14	0-3	22.8	6.2	421	+/- 30	2.5	+/- 0.3
	8/7/14	0-3	21.5	3.5	463	+/- 216	2.2	+/- 0.4
	8/21/14	0-3	21.1	3.9	NA		5.2	+/- 0.5
	9/26/14	0-3	18.6	7.0	NA		4.1	+/- 0.2