

Narragansett Bay Commission – 2016 Monitoring Season Update

Environmental Monitoring Collaborative Meeting, November 3rd, 2016

Nitrogen Loading to Upper Narragansett Bay

- Field's Point in compliance with seasonal total nitrogen permit limits (5 mg/L) throughout 2016;
 - Avg. May–Oct 17 = 3.54 mg/L
- Bucklin Point exceeded the limit during the month of June (5.31 mg/L avg).
 - Avg. May–Oct 17 = 3.23 mg/L
- NBC seasonal 2016 loadings currently **83%** below 2003 loadings.
- Table at right compares N loading from all major sources to upper Bay pre- (2006 - 2013) and post-nitrogen treatment upgrades (2014 - present) at NBC facilities. Overall loadings are down 52% compared to the pre-upgrade period.

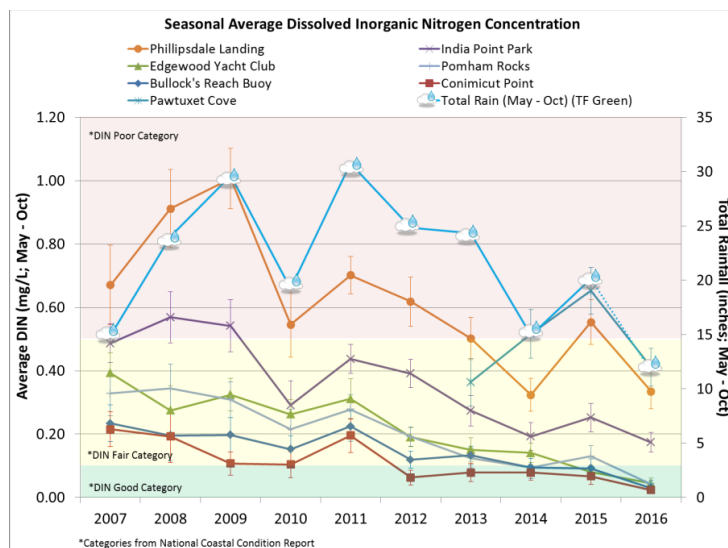
May - October	2006 - 2013 Average	% of Total Loading	2014 - Sept. 2016 Average Values	% of total loading
	lbs/day	%	lbs/day	%
Bucklin Point	1,184	5.8%	517	5.3%
Field's Point	3,985	19.5%	1,142	11.6%
Blackstone River*	4,426	21.7%	1,673	17.0%
Moshassuck River*	174	0.9%	103	1.1%
Woonasquaket River*	425	2.1%	103	1.0%
Pawtuxet River*	2,156	10.5%	1,067	10.9%
Ten Mile River*	812	4.0%	140	1.4%
East Providence WWTP**	517	2.5%	255	2.6%
Taunton River*	2,692	13.2%	955	9.7%
Fall River WWTP**	3,227	15.8%	3,015	30.7%
Other Sources TOTAL***	844	4.1%	843	8.6%
Total Contribution	20,442		9,811	

*River data is Total Dissolved Nitrogen only

**2016 East Providence and Fall River data are for the months of May - August.

*** "Other Sources" includes the East Greenwich, Bristol, and Warren WWTP; 2016 data are May - August.

Dissolved Inorganic Nitrogen in Upper Narragansett Bay



National Coastal Conditions Report

DIN Thresholds:

POOR	>0.5 ppm
FAIR	0.1-0.5 ppm
GOOD	< 0.1 ppm

Seasonal (May – Oct) Average:

DIN (ppm) Average	2015	2016
Phillipsdale Landing	0.55	0.33
India Point Park	0.25	0.17
Pomham Rocks	0.13	0.04
Edgewood Yacht Club	0.08	0.04
Pawtuxet Cove	0.65	0.41
Bullock's Reach Buoy	0.09	0.03
Conimicut Point	0.07	0.02

- 2016 data incomplete for May-Oct season (data shown through Sept. 14th)
- 4 stations in "good" category.
- Pawtuxet Cove remains site with highest DIN.

Fixed-Site Monitoring

- Phillipsdale Landing bottom – Fair DO, 17% of time was hypoxic (May – October).
- Bullock’s Reach bottom – Fair/Good DO, 3.3% of time hypoxic conditions at the bottom (June – October).
- New equipment – Seabird HydroCat EP’s tested alongside YSI 6600’s
- For data: <http://snapshot.narrabay.com/app/Buoys/Export>

Bay Fecal Monitoring: May – October Data

Sampling Location	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Point Street Bridge	2043	2054	3981	845	925	945	439	550	531	408	600	504	559
India Point	303	353	255	189	182	117	83	193	95	167	74	52	47
Collier Point Park	262	349	167	277	387	220	158	208	188	161	149	106	38
Off of FP Outfall	190	245	183	102	159	120	45	134	66	60	36	70	33
Save the Bay		54	61	75	46	42	37	46	38	34	21	36	11
South F.P. East	76	84	49	65	78	42	28	44	46	33	34	58	14
Edgewood Yacht Club	64	67	98	65	55	35	39	48	40	31	16	44	22
Pawtuxet/Providence Junction		77	157	116	81	59	42	77	69	43	40	52	30
Gaspee Point At Channel	55	67	70	48	61	30	38	37	64	18	15	39	11
Bullock Neck	35	16	31	27	23	18	25	25	46	19	14	11	8
Bullocks Reach Buoy	40	35	71	21	33	31	23	28	37	19	14	19	17
North of Nayatt Point		14	20	20	21	17	21	25	23	11	11	8	5
Shawomet		22	43	23	49	23	25	31	31	13	13	14	8
Conimicut Point	32	27	35	11	23	20	16	20	24	11	9	15	5
SEASONAL RAINFALL MAY - OCT	22.31	29.05	32.6	14.93	24.04	29.62	19.22	30.78	24.85	24.3	14.94	20.14	18.46
Storms ≥ 0.5 inches in 24 hours	17	16	19	9	11	21	13	20	21	15	7	13	13
<i>bold italicized numbers = minimum value of all years</i>													

Benthic Video Monitoring

- Continued development of this program throughout summer 2016.
- GoPro and underwater lights purchased in effort to improve video quality, visibility – still developing best methods.
- Analysis methods – Coastal and Marine Ecological Classification Standard (CMECS) being used to classify bottom types.
- Table at right indicates months in which transects were filmed (X). Video quality/visibility varies. Videos still in review.
- Summer visibility continues to be a problem, even with new equipment.
- This is the third year with good October footage.

	Edgewood	Sabin	Bullock Reach
January			
February			
March	X	X	X
April		X	
May	X	X	X
June	X	X	X
July			
August			
September			
October	X	X	X

