

2005 Bacteria Data - Marine Sites

URI Watershed Watch uses the USEPA approved membrane filtration method with mTEC media for analyzing fecal coliform bacteria, species that can indicate the presence of human sewage and associated pathogens, or disease causing organisms. For the past several years URI Watershed Watch has been splitting primarily marine site samples to analyze enterococci values using the USEPA approved membrane filtration method with mE media. Enterococci are a different group of bacteria species which have been identified as better indicators of increased risks of contracting gastrointestinal illnesses than the fecal coliforms as a group.

As of 2004, the Rhode Island Department of Health adopted standards for licensed swimming beaches based on enterococci. Rhode Island Department of Environmental Management water quality standards still consider fecal coliform as indicators of overall water quality. Watershed Watch currently analyzes enterococci using the USEPA membrane filtration method.

Watershed Watch data is intended for screening purposes only, but is very valuable for targeting areas of concerns and for tracking potential sources of bacterial contamination.

Bacteria results are summarized using a geometric mean rather than an arithmetic mean (or straight average.) This is done because bacteria results can vary from 10 to 10,000 fold over a given period in response to local or short-term contaminations (I.e. bird feces or stormwater.) The geometric mean dampens that, and gives a better picture of overall contaminations.

Surfrider Sites - Blue Water Task Force Monitoring

Monitoring Location	5/14/05	6/11/05	7/23/05	8/20/05	9/10/05	**10/15/05	GeoMean
----- Number of Fecal coliform colony forming units per 100 mL -----							
Watch Hill	-	< 1	-	39	< 1	-	2
Misquam DEM Surf Area	-	< 1	-	6	< 1	40	3
Weekapaug Breechway	-	7	-	4	26	3380	40
Deep Hole	< 1	< 1	2	4	< 1	-	1
The K's	2	10	24	196	16	-	17
Conant Ave.	< 1	< 1	16	-	6	180	5
Scarboro South	< 1	2	1120*	-	4	38	11
Scarboro DEM Surf Area	< 1	< 1	400*	-	2	80	8
Monahan's	1	-	< 1	4	2	-	1
Narr Pier Beach Steps	< 1	-	2	47	2	760	9
First Beach	29	12	12	37	76	-	26
Second Beach	41	6	1	8	4	-	6
Third Beach	1	20	1	62	1	-	4

* Retested 7/27/05: South = 8, Surf Area = 16

Monitoring Location	5/14/05	6/11/05	7/23/05	8/20/05	9/10/05	**10/15/05	GeoMean
----- Number of Enterococci colony forming units per 100 mL -----							
Watch Hill	-	lab error	-	26	< 2	-	5
Misquam DEM Surf Area	-	lab error	-	2	2	30	5
Weekapaug Breechway	-	lab error	-	16	2	113	15
Deep Hole	< 2	lab error	6	10	< 2	-	3
The K's	< 2	lab error	8	74	< 2	-	2
Conant Ave.	< 2	lab error	86	-	2	87	11
Scarboro South	< 2	lab error	137*	-	12	77	18
Scarboro DEM Surf Area	< 2	2	250*	-	6	57	11
Monahan's	< 2	-	2	38	12	-	5
Narr Pier Beach Steps	< 2	-	< 2	46	< 2	373	7
First Beach	12	4	12	14	26	-	12
Second Beach	54	8	23	4	4	-	11
Third Beach	18	lab error	2	66	< 2	-	7

* Retested 7/27/05: South = 16, Surf Area = 9

** Samples collected after a + 6 inch rainfall in the previous 12 hours, following a week of rain.

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Salt Pond Coalition Sites - Salt Pond Watchers Monitoring

Monitoring Location	5/11/05	6/8/05	7/6/05	8/3/05	8/31/05	9/21/05	GeoMean
----- Number of Fecal coliform colony forming units per 100 mL -----							
Green Hill Pond - In Pond	-	6	12	1	-	56	8
Green Hill Pond - Indigo Point	<1	2	246	< 1	444	18	8
Green Hill Pond - Sea Lea	<1	17	57	30	65	51	10
Green Hill Pond - Teal Road	<4	1	41	1	-	72	3
Green Hill P - Twin Peninsula	3	5	27	119	73	40	23
Ninigret Pond - Crawford Dock	<1	7	5	1	17	28	2
Ninigret Pond - Pond Street	8	10	96	14	132	3840	62
Ninigret P - Tockwotten Dock	14	17	130	48	340	1252	93

Monitoring Location	5/11/05	6/8/05	7/6/05	8/3/05	8/31/05	9/21/05	GeoMean
----- Number of Enterococci colony forming units per 100 mL -----							
Green Hill Pond - In Pond	<2	<1	<1	6	-	6	0
Green Hill Pond - Indigo Point	2	2	30	< 2	152	< 4	12
Green Hill Pond - Sea Lea	2	12	12	10	12	20	9
Green Hill Pond - Teal Road	12	<2	72	4	-	70	8
Green Hill P - Twin Peninsula	<2	<2	26	52	28	36	5
Ninigret Pond - Crawford Dock	<2	3	<2	2	80	4	2
Ninigret Pond - Pond Street	2	8	8	10	60	< 4	9
Ninigret P - Tockwotten Dock	<2	12	52	6	136	8	9

Greenwich Bay - Narragansett Estuary Program Monitoring Program

Monitoring Location	5/14/05	6/11/05	7/23/05	8/20/05	9/10/05	**10/15/05	GeoMean
----- Number of Enterococci colony forming units per 100 mL -----							
GrBay #1 - Middle Ground Buoy		-	1400	54	2	460	91
GrBay #2 - Sally Rock		-	-	-	-	280	-
GrBay #3 - The Brothers		-	10	< 2	58	1720	32
GrBay #4 - Greenwich Bay Marina		-	4	2	4	800	13
GrBay #6 - Ponaug Marina		-	26	-	-	-	-
GrBay #8 - Little Rhody Boat Club		-	112	6	2	6500	54
GrBay #9 - Warwick Cove Marina		-	<2	2	10	4960	18
GrBay #10 - Greenwich Bay North Marina		-	14	8	4	6100	41
GrBay #11 - Mouth of Greenwich Cove		-	-	-	-	-	-
GrBay #12 - Harborside		-	-	-	-	-	-
GrBay #13 - EG Town Dock		-	12	70	4	900	42
GrBay #14 - Wharf Cove		-	-	16	22	6100	129

RI Department of Environmental Management standards for recreational contact (i.e. swimming):

Marine Waters - Not to exceed 50 fecal coliform per 100 mL.

Marine Waters Shellfishing - Not to exceed 14 fecal coliform per 100 mL.

RI Department of Health standards for recreational contact (i.e. swimming):

Marine Waters - Not to exceed 104 enterococci per 100 mL.

A factsheet describing how bacteria are monitored, what bacterial indicators are, where bacteria come from and how we can all help to reduce bacterial input into our local water resources is available at <http://www.uri.edu/ce/wq/www/resources/Bacteria.pdf>

See the Rhode Island Department of Health beach monitoring website (<http://www.ribeaches.org/>) for additional information about beach monitoring and state standards.

The Rhode Island Department of Environmental Management website has information on State efforts to restore waters impaired by bacteria and other pollutants (<http://www.dem.ri.gov/programs/benviron/water/quality/index.htm>).