

## Millers & Otter Rivers: Bacteria Sampling for healthy contact.

Site	Date:	6/14/11	6/28/11	7/12/11	7/26/11	8/9/11	8/23/11	9/6/11	geomean	geoMN dry
e coli count: cfu										
Millers-M										
Upper Athol-MUA1		88	68	12	100	170	90	72	69.60	
Cass Meadow/Rich Env Park-MCM1		90	52	90	320	160	160	168	128.54	110.41
Fielding Way-MFW1		142	64	110	TNTC	210	140	400	150.79	124.06
Orange River Front park-MORF1		154	80	46	72	240	80	102	96.85	
West Orange-MWO1		120	108	70	420	150	100	420	157.47	106.36
Otter-O										
Whitney St - headwaters-OHWW1		114	28	40	34	150	10	NA	43.21	
Rt 2A crossing-OR2A1		34	70	76	580	290	50	180	115.48	68.55
Rt 101 Crossing-OR101		72	88	116	590	670	70	580	197.68	84.69
Baldwinville, Rt 202-OBW1		92	88	64	280	800	150	1400	219.27	93.89

Weather notes (wet/dry period)	dry/wet "	dry	dry	wet	wet	wet/dry*	wet^
Rain - M/O- inches-48 hr	0.07/0.28	0.04/0.06	0/0	0.52/0.62	0.85/0.77	0.39/0.14	0.66/0.46

State limit for primary contact = 235 cfu single date maximum (seasonal geometric mean of 126 cfu)

Secondary contact is acceptable up to a geometric mean of 630 cfu / 1240 cfu single date

TNTC > 2000 (not included in mean calculation) (geo mean dry excludes wet exceedance events)

" dry/wet = low rain @ Orange Airport, but wet weather @ Fitchburg Airport Weather Station.

\*wet/dry = rain @ Orange Airport met wet criteria, but not @ Fitchburg Airport.

^major rain event the week before

high value- exceeds primary contact standard

**Primary Contact Recreation.** Any recreation or other water use in which there is prolonged and intimate contact with the water with a significant risk of ingestion of water. These include, but are not limited to, wading, swimming, diving, surfing and water skiing.

**Secondary Contact Recreation.** Any recreation or other water use in which contact with the water is either incidental or accidental. These include but are not limited to fishing, including human consumption of fish, boating and limited contact incident to shoreline activities. Where designated, secondary contact recreation also includes

M=Millers river area, O=Otter River area

mean dry column notes only dry conditions



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## **MRWC Bacteria Monitoring Program 2011 Summary Report: Millers & Otter Rivers**

In mid-2011 MRWC inaugurated a bacteria sampling program on several river stretches with high recreational potential. Due to a lack of existing data, the need for this was quite clear, particularly since MRWC was embarking on a new “BLUE TRAILS” program to promote recreation and stewardship. Nine volunteers came forward and helped make the start of this program a success. All received training in proper sampling techniques, and bi-weekly sampling began on June 14, 2011 and ran through September 6. In all we conducted seven sampling events at nine sampling sites on the Millers and Otter Rivers.

Volunteers also noted temperature and other site conditions observed during the sampling event. Weather conditions within 48 hours of sampling events were recorded to measure the effects of stormwater runoff. Bacteria data can be found on the reverse side.

This first (pilot) sampling year was a strong success. Volunteer samplers did well and there were few complications. This experience will inform and guide the enhancement of MRWC’s monitoring program as we look to expand the number of monitoring sites, and encourage more people to explore the Watershed and its rivers.

### ***Conclusions/Discussion***

#### **Observations from results:**

The data from the 2011 sampling season offers a number of clear interpretations.

- Dry weather events met both primary and secondary contact standards.
  - Wet weather events met secondary contact standards at all sites.
  - Sites away from urban centers met both standards wet or dry.
  - Sites near urban centers did not meet primary contact standards in wet conditions.
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- It appears very likely that stormwater runoff from urban areas does affect water quality in the Millers and Otter Rivers. Immediately following a rain storm, river areas in and immediately below urban areas may not be suitable for primary contact, but secondary contact may be acceptable. In dry weather conditions, these rivers appear acceptable for full river recreation.
  - Communities wishing to fully meet primary contact standards should consider implementing (and maintaining) a comprehensive stormwater management program. Such a program would offer improvements in water quality that would benefit both people and river health. Copies of the full report are available from MRWC.