

2010 Cape Neddick River Water Quality Testing

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March 15, 2011

Overview:

The Community Development Department has been testing the bacteria levels in the Cape Neddick River for the past 4 years. The testing was initiated because the beach testing that the Parks and Recreation Department conducted showed consistently high levels of bacteria at Cape Neddick Beach. In 2007, our department tested 33 water samples upstream of the beach. In 2008, we tested 76 water samples, in 2009, we tested 160 water samples, and in 2010 we tested 56 water samples. We continued working with Maine Healthy Beaches program and all of our samples were tested for the presence of Enterococci bacteria.

2010 was a difficult year for our department due to the extended sick leave of our primary Code Enforcement Officer. Due to this hardship, we had very little staff time to devote to the water quality testing. Lucky for us, the volunteers stepped up and performed all of the testing. They chose 4 locations and tested each of them 14 times throughout the summer. The volunteers came out in full force this year and changed their name to the Cape Neddick River Association.

Results:

The results of our 2010 water samples are disappointing. The bacteria levels at these 4 locations were unsafe for swimming 44% of the time. The bacteria levels did go down somewhat compared to last year, which is probably due to the amount of rainfall we had this summer compared to the high amounts of rainfall that we had last year. It is important to note that the frequency of "bad samples" remained the same as last year, it was only the intensity of the bad samples went down. I determined that 4 of the 14 testing days were influenced by rain (more than one inch of rain in the 24 hours preceding the test). On those 4 days 63% of the samples were unsafe for swimming. This continues to demonstrate that rainfall increases bacteria levels, presumably by stressing marginal septic systems and washing pet and wildlife

waste down into the river. The following table represents the number of colonies of enterococci bacteria per 100mL of water.

	CNR-01	CNR-04	CNR-09	CNR-10				
6/11/2010	20	75	75	52				
6/18/2010	5	41	10	86				
6/22/2010	5	5	20	988				
6/28/2010	10	108	20					
7/12/2010	52	86	173	158				
7/15/2010	1301	1476	4106	1039			= high bacteria	
7/26/2010	10	96	63	20			= rain affected	
7/29/2010	10	677	1198	98				
8/9/2010	1658	613	8704	10112				
8/10/2010	20	19863	63	393				
8/18/2010	10	73	175	41				
8/23/2010	20	10	109	1043				
8/24/2010	30	10	75	246				
8/26/2010	4106	1178	9804	2224				
Geom. Mean	40.1	142.6	196.0	295.7				

Conclusions:

The bacteria levels in the Cape Neddick River have not improved since last year. We have found 2 more failing septic systems in the watershed and we are currently working to get them replaced prior to the summer season. The good news is that the Cape Neddick River Association has become more organized and has brought this issue to the forefront. The Selectmen have gotten involved and there is a wide range of people in Town who are working toward bettering the water quality in the Cape Neddick River. The Community development department is also working hard to solve this problem. Our Department has been doing field work in order to make our watershed maps more accurate. It is essential that we have accurate watershed maps in order to know exactly which properties are contributing water to each specific sample location. In the coming weeks we will also be sending out letters all the property owners in our 3 priority subwatersheds. These letters will let the property owners know that we will be going door to door looking for solutions to the bacteria problem. In April we will begin enforcing the ordinance that requires periodic septic system pumping. Although we will continue sampling in 2011, we are more focused on engaging the landowners.