



TOWN OF WELLFLEET
Health & Conservation Department

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Wellfleet's Bathing Beach Sampling Program

The State and Federal Beaches Acts were both enacted in 2000 and they require all public and semi public beaches to be monitored for bacterial contamination during the bathing season. The bathing season in Wellfleet runs from the third Saturday in June through Labor Day. During this time period The Health Department, with the assistance of Barnstable County Department of Health and the Environment collect samples from all freshwater ponds weekly and from unvarianced marine beaches weekly. Varianced marine beaches include: Cahoon Hollow, Duck Harbor, Indian Neck, Maguires Landing, Newcomb Hollow, Omaha, Powers Landing, and Whitecrest. These beaches are sampled once prior to bathing season and every 30 days thereafter.

The beach water samples are analyzed for indicator organisms, which of themselves are not harmful, but indicate the potential for the presence of human pathogens. A human pathogen is an organism or virus that is capable of producing an illness in a human host. It has been determined that certain levels of some indicator organisms in bathing beach waters represent a threat to public health. The indicator organisms that we sample for are Enterococcus and E. coli. Enterococcus has proven the most useful bacterial indicator for determining the extent of fecal contamination in marine recreational waters, while E. coli have proven most useful in freshwater. These organisms are commonly found in the intestine of warm-blooded animals, their presence suggests that other harmful organisms and viruses also in the intestine of warm blooded animals, including humans, may be present. If these harmful organisms and pathogens are present and are inadvertently ingested while swimming, they may cause a variety of illnesses. The good news is that the most common illness is a mild gastroenteritis with flu like symptomology however; even milder diseases can be problematic to immune-compromised people.

Runoff from rain events is the dominant cause for elevated indicator bacterial levels. Runoff carries pollutants from roads and other paved surfaces directly to the surface waters of beaches and ponds. Other possible causes include sewage, domesticated and wild animal waste. Common wastes witnessed include dogs, coyote, deer, fox, seals,

seagulls, ducks, herons, and geese. It is important to remember that most warm-blooded animals carry the same indicator bacterium used to classify recreational bathing waters.

Once a sample is taken, the water is brought back to the Barnstable County Laboratory and tested for the presence of the indicator organisms. Marine waters are tested for Enterococcus and freshwater bodies are tested for E. coli. It takes 24 hours to run both tests and determine whether the indicator organisms are present or not. For marine waters, the maximum allowable number of Enterococcus colony forming units per a 100 ml sample is 104. If a sample exceeds this limit, the beach must be closed to swimming and resampled. For freshwater bodies, the maximum number of allowable E. coli colony forming units allowed per a 100 ml sample is 235. If the sample exceeds this limit the beach must be closed to swimming and resampled.

When a sample exceeds the limit, a beach closed to swimming sign is posted and a resample is taken as soon as possible, generally the following day, and the beach will be reopened when the test results show acceptable bacteria levels. While the beach is closed to swimming it is safe for other activities to ensue. Some other activities may include: walking on the beach, building sand castles, collecting seashells, fishing from the land, and playing sport activities such as paddleball and football.

This being said there are a number of things we can all do to enhance water quality at our bathing beaches. At home, regularly maintain your septic system. Use natural substances like compost to fertilize gardens and lawns. Throw trash away in proper containers. Do not throw anything down storm drains. At the beach, throw away trash and pet waste in the receptacles provided or take it home with you. Use the public restrooms or outhouses as provided. Do not bury used diapers in the dirt or sand. Use walkways instead of walking across sensitive vegetation; this will help reduce erosion and preserve the vegetation that aids in filtering out pollutants.

In conclusion, the Barnstable County Lab analyzes samples from over 350 beaches each week. They are always looking for ways to make the beach sampling program more efficient because they provide the freshwater monitoring at no charge to the local municipalities. In an effort to contain costs and enhance efficiency freshwater ponds were sampled for Enterococcus this summer instead of the usual E. coli as allowed for in 105 CMR 445.000: Minimum Standards for Bathing Beaches. Theoretically, using either of the two indicator organisms would provide a comparable indication of public health status when the limits are observed. What we found when we started sampling was that the two indicators are not comparable, and the Enterococcus may be too conservative. We have resumed testing the freshwater bodies for the E. coli indicator while continuing to sample for Enterococcus so that data can be accumulated to support the questioning of the validity of the indicators as stated in the Bathing Beach Regulations. We will be basing our freshwater beach closures on E. coli based on professional judgment and the fact that over 20 years of monitoring have been done and we have not had any reported any increased illnesses associated with pond swimming while using the E. coli indicator organism and its predecessor fecal coliform.