

MICROBIAL SOURCE TRACKING APPROACHES OF THE NJ MST WORKING GROUP

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ABSTRACT

The importance and awareness of fecal bacterial contamination of our waterways continues to escalate. According to the US Environmental Protection Agency (USEPA) approximately 13% of surface waters in the United States do not meet designated use criteria as determined by high densities of fecal indicator bacteria. Utilizing emerging methodologies known as Bacterial Source Tracking (BST) or Microbial Source Tracking (MST) provides promise in detecting the specific nonpoint sources responsible for fecal contamination in local watersheds. This, in turn, allows for the proper design and implementation of Best Management Practices (BMP) in the watershed.

There is a great deal of interest in the application of MST tools to impaired waterbodies in the New Jersey coastal zone. Monmouth University has been conducting BST research using Antibiotic Resistance Analysis (ARA) in several important Monmouth County watersheds over the past several years, including the Manasquan River Estuary, the Shark River Estuary, Wreck Pond, and Deal Lake. In addition, the NJDEP Bureau of Marine Water Monitoring has initiated BST work in several areas, including the Navesink River and portions of Barnegat Bay.

In June, 2005 Rutgers Cooperative Research and Extension in collaboration with Monmouth University and NJDEP hosted a seminar entitled "Bacterial Source Tracking: Methods and Applications." We had an excellent response to this narrowly focused seminar - over 80 participants attended. Their interests range from responsibilities in NJDEP watershed management, Rutgers Extension Agents and Specialists, graduate students, private industry, USGS, county health boards, lake organizations and environmental groups. The Microbial Source Tracking as a Monitoring and Management Tool seminar followed up this successful seminar and led to a sustained effort. A Microbial Source Tracking Working Group consisting of university faculty and representatives from the public and private sector was subsequently formed with the purpose to further develop a more comprehensive, collaborative approach to the application of MST tools in New Jersey. The group focuses in part on development of a program responsive to the issues and discussions contained in the recently released USEPA report "Microbial Source Tracking Guide Document" and developing strategies that match appropriate MST tools to the objectives of watershed management efforts.

KEYWORDS

Microbial Source Tracking, MST, Bacterial Contamination