

## Keri Kaczor

Maine Healthy Beaches Program includes beaches from Kittery to Mount Desert. Each is unique in all aspects (monitoring regime, risk of pollution, posting beach status, tidal flushing, etc.)

Watershed health corresponds to health of the beach, because rain draining from the rivers, streams, and storm drains carries bacteria to the beach. Program uses fecal indicator bacteria

(Enterococci) that doesn't differentiate the source. We have to use something else to get that level of detail as we move up into the watershed.

Pollution source tracking toolbox includes:

- Fecal indicator bacteria
- Optical Brighteners (OBs)
- Circulation studies
- Pharmaceuticals and personal care products (PPCPs)
- Microbial source tracking (MST)
- GIS: Risk Analysis

Sanitary Survey: Explore bacteria pathways, targeting human sources, a tiered approach, inspections, IDDEs, reviewing compliance records. Eliminate problems when you find them. Licensed plumbing inspector typically responsible. Some grants available to help fix problems.

**\*\*When choosing a tool from the toolbox consider the potential sources, watershed characteristics, costs, methods, priority sites, and audience\*\***

## Fred Dillon

Willard Beach in South Portland is a very popular beach, well established neighborhood, many public access points, and very developed. MHB participant since 2003. History of elevated bacteria levels strongly correlated with the amount of impervious cover and pollutants from stormwater. More impervious=downstream effects magnified. When there is greater than 1 inch of rain in 24 hours then precautionary rainfall advisories are posted. Typically after 2 tidal cycles the bacteria concentration comes back down.

Where does bacteria contamination at Willard come from? Stormwater outfalls, beach activities, boats, wrack, Casco Bay. Potential septic still in the area. Have been working since 1990 to address the bacteria problem.

## Emily DiFranco

Canine Detection is a method to identify presence or absence of human wastewater. First time used in New England was July 2012. In two weeks the canine detection team will be utilized in eight more towns in Maine. The dogs can identify human sources of bacteria in storm drains, along shorelines, and at a watershed scale. What they can't do is identify other animal sources or give the level of contamination, only presence/absence (can take a water quality sample at the same time and analyze for specific number).

Do they work?

2010 Canine scent tracking and MST tracking study together. Positive results. No false negatives.

2011 MI DEQ added them to beach monitoring QAPP

2012 Fort Foster Beach Kittery: All canine detections positive (beach seepage, ocean, tidal pools, marsh). Found a Cesspool from old outhouse. Taking them back this year.

2012 Spruce Creek Kittery Maine: Before the dogs they just had aerials and drive by observations. Knew of high bacteria counts at farm and that downstream was not as bad upstream. Brought the sample to the dogs to sniff. Only one site had human sources. This narrows their search for septic investigations. Now they don't necessarily sample whole area but focus on certain areas of human sources.

John Bucci

Freshwater problems and the Microbial Source Tracking involved. Diffuse non-point sources of fecal waste include: municipal sewage, failing septics, fertilizers, stormwater runoff, pets, etc.

MST focus is on mammalian host sources. Nonpoint sources typically tied to nitrogen and bacteria. This discipline is moving quickly, new emerging technology.

Approach: Areas of suspected fecal contamination. Newer methods overcome limitations of phenotypic testing where you lack the identification of a host.

Case studies: Great Bay and College Brook, NH

Realtime PCR lets you quantify presence of human, dog, bovine, geese DNA. Reliable tool

Effective as comprehensive approach. Stakeholder input critical. Share with southern Maine watershed community to identify and monitor contamination.