

Statement of Judith Pederson, Ph.D., MIT Sea Grant College Program

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To: Metropolitan Beaches Commission

My name is Judith Pederson and I received my doctorate in marine ecology. For over 25 years, I have been involved with issues of water and sediment quality in Boston Harbor and the Massachusetts coast through my work at the Massachusetts Coastal Zone Management Program and at MIT Sea Grant. This document highlights some issues related to beach advisories.

For centuries, nearshore waters were on the receiving end of human wastes and they still are. Non-point source runoff continues to be problematic for urban areas where aging infrastructure, high-density populations and their activities, and paved surfaces bring rainwater carrying contaminants, pollutants, bacteria and pathogens to coastal and beach areas. Many studies show a correlation between rainfall and increased bacterial counts, including a peer-reviewed paper for the region by Coughlin, Rex and Shine.

To protect recreational beach users the US Environmental Protection Agency (EPA) established water quality criteria for closing beaches when bacterial counts exceed established standards and criteria. Because it takes at least 24 hours for samples to be processed, posted counts reflect the preceding day's values for water quality. Examination of daily monitoring records indicates that for days when counts exceed the bacterial standard, the next day levels usually fall below the threshold for recreational beach closures. Using only water quality criteria to post advisories means that beaches are closed more frequently than necessary.

EPA's new water quality criteria are intended as guidance (EPA Fact Sheet, 2012 Recreational Water Quality Criteria) and as quoted in the following statement. "*States and authorized tribes have the discretion to adopt, where appropriate, other scientifically defensible water quality criteria that differ from EPA's recommended criteria.*" Thus, beach managers with long-term daily monitoring may develop models that are more predictive of recreational beach closures than a system that relies solely on counts. If state regulations permit, the current basis for posting advisories should be revised to reflect conditions more accurately than counts alone.

The primary issue is to protect human health. Continued daily monitoring will support insights leading to best management practices for each beach, including advisories based on previous rainfall events. In addition, reducing the number of closures on days when criteria are not exceeded provides benefits to beach goers and has economic benefits to local businesses. It seems prudent to develop a best management plan for beaches.

Thank you for the opportunity to provide comments.