

The background of the slide is a light gray gradient, decorated with numerous realistic water droplets of various sizes. Some droplets are large and prominent, while others are small and scattered. They are rendered with soft shadows and highlights, giving them a three-dimensional appearance.

WOODWARD AND CURRAN GRB WATER QUALITY ANALYSIS / EDUCATION PROPOSAL

February 27, 2023

HISTORY

- Testing for FIB (Enterococci) has been occurring at GRB since 2004.
- Analyses of these data show clear trends showing that FIB concentrations are:
 - Highest at mouths of our two tidal rivers,
 - Highest at low tidal states (especially with high tidal throws),
 - Highest after significant rainfall (>1.0 inches) during the prior 48 hours.
- Scientific literature supports the facts that:
 - Because of “inter-species barriers”, risks to human health are predominately driven by exposure to human-sourced bacteria.
 - Enterococci multiply in saltmarsh soil and vegetation in the absence of any human source.

HISTORY

- Because of the addition of saltmarsh-grown bacteria, the concentration of Enterococci in water samples can be largely decoupled from potential concentrations of human-sourced bacteria.
- Acknowledging this, in 2018 the Town moved away from simply measuring FIB concentrations and began having UNH test directly for human-sourced bacteria using DNA analyses.
- Several issues have been identified with our current DNA testing approach:
 - Turn around time is very long – measured in months,
 - Price is high,
 - Quality concerns, given academic reliance on student technicians.

HISTORY

- John Kraeuter and Jon Dykstra have been meeting with the Town over the past two years to discuss water sampling/analysis/future with the Town.
- Several Key issues we identified:
 - Improvements are needed in our DNA processing quality and turn around times.
 - The Town needs to improve how we communicate sampling results.
 - The Town needs to educate and inform residents so that they can make appropriate decisions based on water testing results.
- This winter we approached Woodward and Curran to discuss how to improve water quality sampling & analyses, and how to best communicate with the public.

HISTORY

- Woodward and Curran have provided a proposal to the Town to do the following:
 - Have their water quality experts review and study the historical DNA Enterococci and DNA data.
 - Based on these analyses, provide guidance as how best to augment our current DNA sampling and testing to improve data quality and consistency.
 - Develop web and social media-based materials maximize the effectiveness of communicating water quality information to the public.
 - Create educational materials, focused on the issues specific to GRB, to help educate the public on how to make appropriate decisions based on water quality results.
- Deliverable would come in late-Spring (assuming an early March go-ahead).
- Fee: \$13,200. Town is requesting BAC recommendation to allocate funding from the Beach Maintenance Fund.