

ASSESSMENT OF THE IMPACT OF FECAL POLLUTION ON COASTAL AREAS OF PUERTO RICO

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Water quality of 32 freshwater sites located across streams and rivers of coastal locations across Puerto Rico in Puerto Rico was assessed using IDEXX's Colilert assay to enumerate fecal indicator bacteria (FIB). Improper wastewater treatment is a threat to public health and aquatic resources, as human pathogens and nutrient pollution are detected alongside FIB's. Detection of fecal contamination exceeding the U.S. EPA's recommended threshold for recreational water quality at eleven of the sites, called for the use of quantitative PCR to identify the source of fecal contamination through molecular source tracking (MST) techniques. Probe based Taqman qPCR assays were utilized in the targeting of *Bacteroides* human-specific (HF183) marker, and a cow-specific (BacCowP) Bacteroidales 16S rRNA gene. The human-specific HF183 assay detected the presence of human fecal contamination in 34% of the sampled locations, whereas the cow-specific assay confirmed cow fecal contamination in 22% of the locations sampled. Assays to detect the presence of pathogenic genes associated with enterohemorrhagic *Escherichia coli* O157:H7, *Campylobacter jejuni*, and *Helicobacter pylori*, are currently being developed and results will be added to the final presentation of collected data.

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