



CARICOOS

CARIBBEAN COASTAL OCEAN OBSERVING SYSTEM

SEMI-ANNUAL PROGRESS REPORT SURFRIDER FOUNDATION RINCÓN

PI: Steve Tamar

#19 Calle Nueva, Rincón PR 00677

email: stevetamar@gmail.com, surfriderfoundationrincon@gmail.com

Performance Period: June 1, 2020 – November 30, 2020

LONG-TERM GOALS

To continue weekly monitoring and testing of various recreational beach sites in northwestern PR for water quality (WQ) assessment by detection of levels of fecal bacteria contamination using quantified EPA-approved technology under our Blue Water Task Force (BWTF) program. To expand BWTF coverage to other sites, both beaches and recreational fresh water, as volunteer time and finances permit. To continue to acquire the most sensitive WQ parameter detection equipment to augment and assist in WQ assessment, and research capacity. To continue to explore additional internet or social media platforms for the dissemination of this data, and provide CariCOOS with a larger audience / user base, including installing physical infrastructure (signage) at BWTF sites to inform beach users of the WQ testing and direct them to the latest testing results of that site via posting of Surfrider Rincón and CariCOOS websites addresses.

MILESTONES / OBJECTIVES

The primary objective during this report period was simply to resume the regular weekly BWTF monitoring of the 'core' program in the Rincón and Aguada area, including the 2 freshwater sites, in compliance with the various COVID-19 restrictions that were in place during this period. Successful monitoring of these sites was accomplished for 100% of the scheduled sampling dates, and the lab processing and testing was conducted by a single individual to comply with the above mentioned restrictions..

WORK COMPLETED

Successful weekly sampling and testing of the 13 sites within the core BWTF Rincón program (Aguada and Rincón), and subsequent publication of that data, for 100% of scheduled sampling dates (n=24). In addition to this, supplemental sampling was conducted in the Special Study Area (the BWTF Steps Beach site in the Reserva Marina Tres Palmas southwards to the Playa Lala BWTF site) in an effort to document and attempt source identification of 4 instances of atypical WQ results (n=9). Sampling and testing of the two Añasco sites (Parque Vacacional and Balneario Tres Hermanos) was discontinued due to COVID-19 restrictions and loss of the local volunteer sample collector, but resuming regular monitoring of the Añasco 2 site (Balneario Tres Hermanos) is planned and new volunteers are in training. Sampling and testing of the Rescate Playas Isabela / Ramey School satellite program sites was also discontinued due to the closing

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of Ramey School by COVID-19 restrictions. However, IDEXX equipment on loan to Ramey School was relocated to a volunteer's house and a limited monitoring program resumed in September, sampling at the Sardineras WWTP outfall pipe (n=17) and the Crashboat beach site (n=5), depending on her availability.

MAJOR OUTCOMES

No new capabilities were generated during this reporting period. However, the difficulty of source identification of the anomalous bacterial contamination detected in the Special Study Area underscores the need to acquire sensitive digital equipment to measure on a real-time basis other WQ chemical / biochemical parameters to investigate their utility in indicating contemporaneous bacteria contamination. Above all, the long-term requirement would be for deploying some sort of rapid bacterial detection technique, even if not extremely accurate, to reduce the current 'lag time' of 24-30 hours between collecting the sample on site, and acquiring the quantified bacterial counts after incubation.

RELATED PROJECTS

The Rincón BWTF has committed to sponsoring, advising, and mentoring a water quality program for the Reserva Marina Arrecife de Isla Verde (RMAIV) by the non-profit group Arrecifes Pro Cuidad, which has acquired a one year loan from the EPA of standard IDEXX lab equipment, and volunteers from that group have received the standard BWTF training during a visit to Rincón. Once the initial pilot-project field trials period is over, the chapter will supply this group with IDEXX lab materials and other related consumables, verify their results quantification by examining photos of the test results, and create a new and separate BWTF reporting page for this one year project. This is currently scheduled to begin in calendar year 2021.

WORK PLAN FOR UPCOMING PERFORMANCE PERIOD (June 1, 2020 – November 30, 2020)

Due to the COV-19 pandemic and associated closures / restrictions, the Rincón BWTF has had delays or possible cancellation of 3 collaborative research projects scheduled for this calendar year. However, to the best of our knowledge, all three are still 'pending' and may begin at any time during the next reporting period, dependent on future COVID-19 status, situation, and restrictions.

- 1) Project title: "Enhancing Coastal Intelligence for the US Caribbean" PI: Prof. Pedro Resto UPRM. Status: IDEXX lab materials ordered for, and delivered to, Resto in Feb. However due to IDEXX reagents approaching their expiration date, those materials were returned to Surfrider BWTF and will be replaced at no additional cost when this project begins. Receipt and MOU regarding replacement sent to Resto on Sept. 7



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- 2) Project title: “Rapid On-Site Detection of Fecal Indicator Bacteria for Coastal Water Quality Monitoring” PI: Prof. David Arnold UFL. Status: approved for funding by PR Sea Grant, but status and timeline remains unknown.
- 3) Project description: Field trials of portable qPCR method for quasi- real time determination of fecal bacteria content of various types of water samples in PR. PI: Prof Ruth Randall U Cornell. Ongoing monthly discussions of project, but timeline remains unknown.

When COVID-19 restrictions are relaxed, and group work can begin again, to continue installing physical signage at BWTF monitoring sites, featuring links to BWTF and CariCOOS websites, apps, and social media outlets to provide the public with access to the most recent WQ test results for that site. Also, to replace already installed signage which is now outdated due to the change of the BWTF website address. This signage may continue to use individual QR codes specific to each site to provide a proxy value to indicate beach use by the public, after an assessment is made of its' utility so far, in January 2021.

PUBLICATIONS & PRODUCTS

NEW BWTF WEBSITE: <https://bwtf.surfrider.org/report/4>