The Community Foundation *for* Greater New Haven

QUINNIPIAC RIVER FUND FINAL REPORT- 2017

Please complete and submit completed form via e-mail to dcanning@cfgnh.org at The Community Foundation for Greater New Haven by March 30, 2018.

Date: _January 8, 2019_____

Group/Organization Name: ____Yale University School of Forestry & Environmental Studies__

Address: _370 Prospect St._____

City, State, & Zip: __New Haven, CT 06511_____

Telephone #: ___203-432-5748_____

Project Name: ___Quinnipiac River Marsh Studies_____

Grant Number: __20170094_____

Name & title of person completing this form: __Dr. Shimon Anisfeld, Senior Lecturer and Research Scientist_____

E-mail address: _shimon.anisfeld@yale.edu_____

Please respond to the following statements:

1. List the specific objectives/outcomes of the project and tell how they were met during the grant period. Also, provide an update on any special conditions of the grant (if applicable).

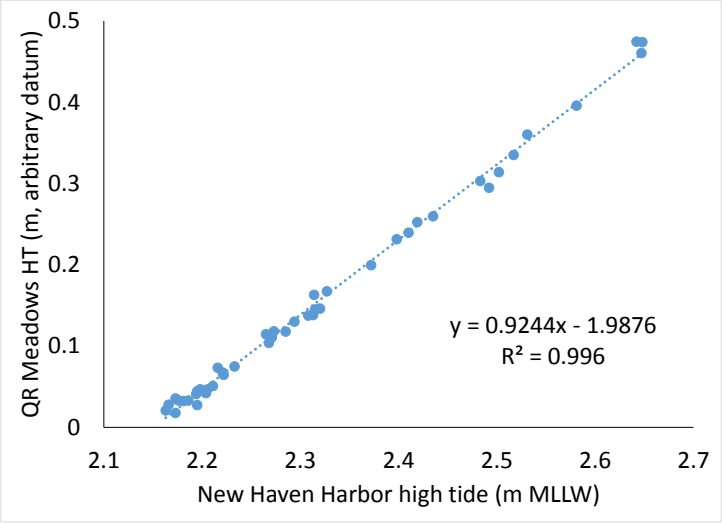
Our project had three objectives:

A. Monitor 9 long-term elevation plots in spring 2017.
We measured elevation change in these plots on May 3 and May 4, 2017.

B. Determine vegetation extent and water salinity in one lobe of the marsh in summer 2017.
We measured water salinity using a logger from July 25 to September 12, 2017. We collected drone imagery of vegetation on September 26, 2017.

C. Establish 4 marsh-migration transects at the Quinnipiac Meadows Preserve and collect elevation/flooding/vegetation/sediment data along these transects.
We collected tidal hydrology data at the Quinnipiac Meadows Preserve from June 22 to August 14, 2017, and used those data to estimate the hydrologic relationship between the Preserve and

the NOAA station in New Haven Harbor, which we found to be strong (see figure below). This allows us to calculate the relationship between elevation and flooding frequency at the Preserve. We also collected general vegetation community data for different parts of the Preserve. However, we were not able to collect the elevation, sediment, or specific vegetation data along transects, largely because of the difficulty of access (thick woody shrubs through much of the area of interest).



2. Please share your successes, challenges and any lessons learned through the implementation of your project. Were there any unintended consequences or lessons learned that may affect how you operate your program moving forward?

This year's work re-affirmed our confidence in our method of collecting and processing tidal hydrology data. It also provoked further interest in the unusually extensive area dominated by *Iva frutescens* at the Quinnipiac Meadows Preserve. However, we need to better take into account the difficulty of moving through this vegetation with equipment.

3. What are the opportunities and needs of your organization as it continues to move forward with its work to positively impact the Quinnipiac River?

We continue to believe in the importance of understanding the response over time of the Quinnipiac River marshes to sea-level rise and other stressors. We plan to increasingly focus on two areas of this system – the southwestern lobe of the main mudflat and the Iva frustescens patches at the Quinnipiac Meadows Preserve – since they can tell us the most about, respectively, the threats and opportunities facing this system.

Also, please include a photo or image that can be uploaded along with your report to The Quinnipiac River Fund website.