

QUINNIPIAC RIVER FUND FINAL REPORT- 2018

Please complete and submit completed form via e-mail to dcanning@cfgnh.org at The Community Foundation for Greater New Haven by October 31, 2019 (or as otherwise stated on the terms of grant).

Date: __January 5, 2020_____

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

Address: ____370 Prospect Street_____

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

Telephone #: __203-432-5748_____

Project Name: _____Quinnipiac Marsh Studies_____

Grant Number: __20180205_____

Name & title of person completing this form: __Shimon Anisfeld_____

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 4 objectives:

- A. Monitor 9 long-term elevation plots in spring 2018: *completed*
- B. Determine vegetation extent and water salinity in one lobe of the marsh in summer 2018: *completed*
- C. Analyze historic aerial photos to determine vegetation loss in the Quinnipiac marshes: *This was not completed due to technical difficulties in obtaining and analyzing the historic photographs.*
- D. Measure elevations (relative to tidal datums) in potential marsh migration zones of the Quinnipiac Meadows Preserve: *completed*

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?

We successfully continued our long-term elevation, vegetation, and salinity monitoring, but had unexpected difficulties in analyzing historical aerial photographs. I learned that I need to hire a student with more GIS/remote sensing experience to conduct that kind of work.

Our research during this project showed that:

- The Typha and healthy Phragmites sites continue to gain elevation at rates exceeding relative sea-level rise (RSLR), but the degrading Phragmites site is just keeping pace with RSLR.
- The salinity in the tidal portions of the Quinnipiac River is highly variable at tidal, storm-event, seasonal, and inter-annual time scales.
- The vegetation in the marsh mudflats is highly dynamic year-to-year.
- In the Quinnipiac Meadows Preserve, a shallow berm appears to be affecting tidal hydrology in marsh migration zones.

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 see an opportunity to understand the ways that climate change and other anthropogenic stressors affect a vital natural and recreational resource, namely the Quinnipiac River marshes.

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