

QUINNIPIAC RIVER FUND FINAL REPORT- 2019

Please complete and submit completed form via e-mail to dcanning@cfgnh.org at The Community Foundation for Greater New Haven by October 30, 2020 (or as otherwise stated on the terms of grant).

Date: January 20, 2021

Group/Organization Name: Yale University

Address: School of the Environment, 370 Prospect Street

City, State, & Zip: New Haven, CT 06511

Telephone #: 203-432-5748

Project Name: Quinnipiac Marsh Research

Grant Number: 20190124

Name & title of person completing this form: Shimon Anisfeld, Senior Lecturer & Research Scientist

Email 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).
 - A. Monitor 9 long-term elevation plots in spring 2019: These measurements were successfully carried out on April 29, April 30, and May 14, 2019.
 - B. Determine vegetation extent and water salinity in one lobe of the marsh in summer 2019: The drone photography was obtained on September 18, 2019. The salinity logger was in place from July 2, 2019 to September 29, 2019.
 - C. Measure soil salinity and vegetation type in potential marsh migration zones of the Quinnipiac Meadows Preserve: Soil salinity and vegetation type (Phragmites presence/absence) were determined along a 100-m transect on July 8, 2019.

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?

I would like to address this question with respect to each of the components of the project:

- A. Elevation change: This monitoring is labor-intensive but routine, and continues to unspool a long-term picture of how the marsh is responding to climate change.
- B. Vegetation/salinity: We have not figured out the optimal way to process the drone photography. Still, these photographs provide a sense of the dynamic nature of this marsh, with the extent of *Spartina alterniflora* varying substantially from year to year. The extent to which this is correlated with salinity is a puzzle we are still working to unpack.
- C. Quinnipiac Meadows: There is a large area of this site that shows intermediate soil salinity and a vegetation composition intermediate between marsh and upland; this area is prime territory for marsh migration. The topography of this area is complicated by the fill that was placed on the site, which presents a barrier to migration.

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 hope to continue our unique combination of long-term monitoring and targeted analysis, in order to better understand the fate of the Quinnipiac marshes in a time of rapid climate change.

Also, please email a photo or image that can be uploaded along with your report to The Quinnipiac River Fund website to dcanning@cfgnh.org.

