



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: __February 22, 2018__

Group/Organization Name: __Quinnipiac University

Address: __275 Mount Carmel Ave_____

City, State, & Zip: __Hamden, CT 06518_____

Telephone #: __203-582-6420_____

Project Name: _ Identification, Characterization and Assessment of industrial pollutants in water and on indigenous fish populations in the Quinnipiac River

Grant Number: __20170077_____

Name & title of person completing this form: _ Dr. Courtney McGinnis, Associate Professor of Biology _____

E-mail address: _ courtney.mcginis@quinnipiac.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).
- Collect and analyze water from the Quinnipiac River at the industrial discharge points at Toelles Road, and at other predetermined locations in Wallingford, North Haven, Hamden, and the River's tidal marshes, in order to identify the presence of chemical pollutants.
 - Water samples were collected and analyzed from ten distinct sites throughout the Quinnipiac River on at least four separate occasions. In addition, the discharge pipe was sampled another two times on separate occasions.
 - A sample obtained from Sackett Point Rd. of North Haven has been sent out to the Connecticut Agriculture Station and it was identified as a nonspecific hydrocarbon oil
 - We have found no major plasticizers or phthalates throughout the river.

- Assess the impact of phenothiazine on a local fish species.
 - Fundulus heteroclitus* have been dosed with relative environmental concentrations: 0.5ppm, 1.0ppm, 2.0ppm for 7 days. Brain, liver and gonad tissue were collected and cDNA was created from RNA. Quantitative PCR (polymerase chain reaction) was completed to assess the impact of PTZ on downstream markers of glucocorticoid receptor (GR). Below is a summary table of our findings.

Gene	Tissue	Findings
CREB	Brain	NC
STAT5		NC
c-fos		NC
NF-KB		NC
HSP70		NC
CREB	Liver	NC
STAT5		Increase
c-fos		Increase
NF-KB		Increase
HSP70		Decrease *
CREB	Gonad	NC
STAT5		Decrease
c-fos		NC
NF-KB		NC
HSP70		NC

NC: No change

*: Increase biological repeats

- Measure water quality and climatic parameters, primarily water temperature, at sample sites during collection.
 - Water temperatures were taken at the collection sites.

- Communication to the community-at-large, our results will be disseminated by the Public Relations Department at Quinnipiac University to local newspapers like the New Haven Independent.
 - Data was presented at the Experimental Biology Conference, Chicago, IL (April 2017) and will be presented at the Quinnipiac University Interdisciplinary Research Scholars Program (October 2017).
 - We will also present our findings at the Graduate Student Sigma Xi Poster Conference in held at Quinnipiac University (April 2018)
- 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?
 - The Quinnipiac River needs to be continued to be monitored, without continuous monitoring there will be no way verify the health of the river.
- 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 have proposed to continue to monitor the health of the river through the collection and analysis of water samples via GC-MS, additionally if chemicals were detected we would verify the findings and attempt to identify the environmental impact.

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

