GRO Summer Internship Final Report

Habitat Alteration Mitigation for a New England Lake

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I spent my summer internship at EPA's New England Regional Laboratory, located in Chelmsford, MA. My Project Advisor was the extremely helpful and accommodating Katrina Kipp, Manager of the Ecosystems Assessment Division. Much of what I learned over the summer was from my Mentor, Hilary Snook, New England Lakes and Ponds Project, who is an extremely knowledgeable biologist.

The title of my internship project was "Habitat Alteration Mitigation for a New England Lake." The lake on which I focused was Lake Attitash in Merrimac, MA, and Amesbury, NH. In accordance with the mission of the New England Lakes and Ponds Project, I assisted with the monitoring efforts associated with this lake. Throughout the summer, I collected and recorded water quality measurements and assisted in the planning of outside monitoring efforts with the assistance of the Lake Attitash Association (LAA), public participation from the University of New Hampshire (UNH), and the cooperation of the Massachusetts Department of Public Health (MDPH) and the Amesbury Department of Public Works (DPW).

My initial project goals were to establish a weekly water quality reading of Lake Attitash through joint efforts of the LAA, UNH, and MDPH; perform a dye study to see how water is being circulated throughout the lake; and prepare for a storm water event to measure nutrient input/output and flow rate. The end result would have been a preliminary nutrient budget of Lake Attitash along with water quality parameters as a comparative case study related to problematic cyanobacteria blooms in the summer.

My final project, however, ended up consisting of measurements throughout the summer from multiple sources, storm drain locations mapped out on Google Earth, a preliminary list of volunteers ready to assist in a storm water event, and no dye study. Though the compilation of data is sufficient for a summer study and a basic evaluation of the overall health of the lake, no nutrient budget was produced. However, I believe that within a couple more months a preliminary nutrient budget will be established.

Weather was a frequent challenge as most of my monitoring was done out on the water and the storm water event was rainfall dependent. Also, a lot of my work depended on the availability of others and the exchanging of information. This simply required flexibility in scheduling and adjustments in my approach to my initial project plan. I also learned to over-prepare as conditions out in the field were never as expected. By the end of the summer, I was prepared for anything that came up and almost always got the measurements I needed. In addition to learning a lot about boats and the over-preparedness necessary when out in the field, I also became a lot more comfortable with monitoring equipment (PAR meter, Flow-meter, Muliti-meter, GPS, Samplers etc), and with Google Earth, Ecowatch and other computer programs designed for data correlation. My prior experience with GIS, Word, and Excel made communication of data easy and fast and allowed me to easily navigate any problems that arose. It made accessing necessary information in the field and in the office quick and efficient.

My overall impression of EPA employees over the summer was that they are knowledgeable and hard working. I was able to participate in projects other than my own over the summer and my experience with those showed that the projects and missions put forth by EPA are generally successful and performed with the utmost consideration of the targeted community.

My interests in environmental fields have only been encouraged by this internship. My plans for graduate school have become more certain. At first, I was unsure about graduate school, but after my experience with this internship over the summer I intend to apply for a graduate degree program in Environmental Resource Management at the University of Hawaii. Though I feel that I am equipped now to enter the work force, I feel that further knowledge and experience in my field will be better in the long run. I believe my skill set would only be supported by furthering my education. I am sure now, from what I perceive as my success this summer, that I have both the potential and interest to succeed in this career field.

This was an incredible summer. I had so many amazing opportunities and challenges to learn from. which I otherwise would not have had if not for this internship. I am grateful for the opportunity to take part in this program and would recommend it to any undergraduate student wishing to excel in this field. I would tell incoming fellows to keep themselves open to new experiences, to always be ready to embrace any learning opportunity and most important, to ask lots of questions, meet new people, and make sure to have some fun.