2010 GRO Internship Final Report

Helicopter Monitoring Program

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For the past three months, I've had the pleasure of interning at the Environmental Protection Agency's (EPA) Region 2 Laboratory located in Edison, NJ. My internship was with the Helicopter Monitoring Program, coordinated by the Division of Environmental Science and Assessment's (DESA) Monitoring Assessment Branch (MAB). Overseeing my internship was Helen Grebe, Regional Coastal Monitoring Coordinator.

The EPA Helicopter Monitoring Program was established in 1977 and modified in 1989 to include the inter-agency "Floatables Action Plan." Multiple agencies contributed to the development of this program including: EPA, U.S. Army Corps of Engineers, U.S. Coast Guard, New Jersey Department of Environmental Protection (NJDEP), New York State Department of Conservation (DEC), and many other agencies. The "Floatables Action Plan" consists of aerial surveillance via helicopter and fixed-winged plane; a communications network to report floatable debris sightings and to coordinate cleanup response; and routine cleanups conducted by skimmer vessels in the New York and New Jersey harbor area.[1] Since its implementation, the plan has significantly reduced the amount of floatable debris escaping the New York and New Jersey harbor area. Over the years, the program has expanded to include water quality sampling for the beaches of Long Island and New Jersey.

Water sampling was achieved using a water sampling device called a Kemmerer. The device consists of a nylon rope attached to an aluminum cylinder that opens and closes to collect a water sample. Collecting these water samples proved to be a challenge during the first few weeks of sampling. Specifically, dissolved oxygen samples required the collection of water from up to 76 feet below the water's surface. Once the water samples were collected and brought back on board the helicopter, they would require chemical treatment and temperature collection. On average, there would only be approximately 3-4 minutes between each sample location to achieve chemical treatment and temperature analysis. Although it was a challenge to collect these water samples at first, sampling eventually became second nature as the weeks progressed. I've found learning how to collect water samples is just like learning how to ride a bicycle. At first it's frustrating and challenging, but over time it becomes fast, simple, and enjoyable. Overall, the most enjoyable reward came from knowing the samples I was collecting helped fulfill the EPA's mission.

The EPA Helicopter Monitoring Program protects human health and safeguards the environment by eliminating adverse impacts of floatable debris on the marine environment, and ensuring timely notifications to beach operators concerning potential wash-ups of floatable debris. The floatable debris I observed and reported during the internship was prevented from washing up along the natural shoreline and beaches surrounding New York and New Jersey. In fact, to date, approximately 377 million pounds of debris has been removed from the New York and New Jersey harbor area.[2] In addition, the prevention of floatable debris wash-up has greatly reduced the number of New York and New Jersey beach closures. To illustrate, in 1988,

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[1] Grebe, Helen. United States. New York Bight Floatables Action Plan Assessment Report 2007 and 2008. Edison: EPA, 2009. Print.

[2] Ibid.

floatable wash-ups were responsible for closing 60 miles of New York beaches. From 1989, when the program started, until 2009, New York experienced only 7 floatable debris beach closures and New Jersey experienced only10 floatable debris beach closures.[3] Current efforts have prevented any floatable debris beach closures in New York and New Jersey for the year 2010. In addition to data collection and observation, reporting the collected data and findings was another essential element to satisfying EPA's mission.

Presentations of the program are often given to high level management, the press, the public, school children, and regional employees. These presentations help inform others on current efforts and achievements being made by the program. This year, I was responsible for updating and presenting the Power Point presentation. I personally felt the communication and computer skills I acquired from college helped me give a successful and informed presentation. Topics covered in my presentation included: an overview of the Helicopter Monitoring Program, trends of floatable debris observations by size and location, beach closure incidences, and water sampling methods. In addition to applying some of my existing skills, interning here at EPA has also instilled some new and essential skills. One such skill was learning how to generate Standard Operating Procedures (SOPs). These SOPs are used to help keep consistency and give direction to methods used by EPA employees. Over my 3-month internship, I created a total of four SOPs, which will aid other EPA employees in the process of collecting water samples, and observing floatable debris. I believe it goes without saying; none of this could have been achieved without the helpful insight of my co-workers.

Throughout my internship, I've had the privilege of meeting and working with some of the brightest and most dedicated individuals in the environmental field. The employees here seem to have a passion for protecting and preserving our environment unlike any other. That passion has transferred to me throughout the internship and has inspired me to want to work for the EPA. After gaining all the experience and knowledge I have over the three months interning here in the Region 2 Lab, I feel I have become a better steward towards the environment. Looking back, I believe the time spent interning here was eternally beneficial towards my academic and employment future.

I leave this report with some words of advice to next year's GRO Fellows: don't be shy, meet and greet everybody you can. Doing so will help you gain valuable experience outside of your comfort zone and make you a much more well-rounded individual. But more importantly, you will become friends with some of the most amazing people you've had the privilege of working with.

[3] Ibid.