

United States Department of Agriculture Timber and Watershed Laboratory

Internship Report: Summer 2012

Established in 1920, the Monongahela National Forest spans more than 919,000 acres in the north central highlands of West Virginia. In 1934, 4,600 acres were dedicated to research and teaching and the Fernow Experimental Forest was created. The Northern Research Station's Timber and Watershed Laboratory conducts and oversees research on the Fernow. Silviculture and watershed studies began in the 1950s in search of improved management methods. Later, research expanded to encompass other aspects of forestry, including ecology, wildlife, and botany. This summer I had the opportunity to work with the various scientists at the Fernow Experimental Forest and gain insight into the research side of the United States Forest Service.

My responsibilities at the Fernow varied each day and were far and broad. The first project I was involved with consisted of conducting point count surveys of running buffalo clover. Running buffalo clover is an endangered species and as mandated by the Endangered Species Act, population counts must be taken to determine the success or demise of the species. Research on the Fernow has found that running buffalo clover is restricted to recently disturbed areas in soils that are derived from limestone parent material. Thus, counting took place primarily on skid roads that had been recently used creating a disturbance to promote their growth. Flags were used to mark each rooted clover and then were picked up and counted to determine the number of clover in each plot. More than anything, counting taught me patience. As my first project, it also allowed me to interact and connect with the scientists I was working and learn about the steps

they took to get where they are in the Forest Service. All of the scientists have earned masters or doctorate degrees and they offered insightful information about post-graduate programs that I plan to pursue after graduation.

The second major project I was involved with was assisting my boss with her manuscript. My responsibilities included entering missing sources into the references database and ordering sources that had been cited in her manuscript that we did not currently have. I learned how to find and order books and articles from the National Agricultural Library and became more familiar with searching for items on Google Scholar. This project showed me how much time and effort goes into publishing scholarly papers as well as the number of people often involved in order to prepare a paper for publishing. Along the same lines, I also had the opportunity to summarize research that had been specifically done on the Fernow. I completed two summaries on two heavily researched topics: prescribed fire to support oak regeneration and running buffalo clover. I was given all of the articles on these two topics that had been either written or co-written by current and previous scientists that had worked at the Fernow. After reading and highlighting the main points of these articles I had to compose a one page research summary that will eventually be posted to the Fernow website. I found it slightly difficult to take a large amount of research and shrink it down to the appropriate size without leaving important information out. However, my boss was very helpful and offered guidance when necessary. I feel that these summaries improved and made my writing more precise.

In the midst of assisting my boss with her manuscript, I had the opportunity to accompany the wildlife biologist and a graduate student to catch bats. Bats typically go straight to water sources when they wake in the evening. We set up nets around what we believed to be “popular” water sources and waited in the dark woods in hopes of

catching them. The student's project required placing transmitters on female bats and then tracking them during the day to determine the trees in which they are roosting. I was able to go out with them in early June and again in late July. In June we caught 17 bats at a weir pond and in July caught only three at the same location. Unfortunately, the decline in numbers is believed to be attributed to white nose syndrome. White nose syndrome has drastically reduced bat populations over the last few years and has led to the closure of many caves across the United States in hopes of preventing the spread of this fungus any further. I personally was not allowed to handle any of the bats but it was very interesting to see them up close and to watch the wildlife biologist handle them.

My favorite day at my internship was when my boss took the other intern and I out into the field for a "hydrological tour" of the Fernow. There are 14 watersheds on the Fernow that drain into the larger Elklick watershed. Because the Fernow is an experimental forest, scientists have been able to observe the behavior of watersheds under various conditions. For example, Fernow watershed #1 was clear-cut in 1957 without employing any best management practices. Thus, logging companies were not limited in the number of skid roads they could construct nor were they forced to employ any kind of water protection measures. Scientists compared the effects of watershed #1 to watershed #4 (the primary control watershed) and a different watershed that was clear-cut but with the implementation of best management practices. The first major rain following logging dumped large amounts of sediment into the stream causing the water to become very turbid. In contrast, the watershed that employed best management practices had much less turbid water. They also found that the stream flow increased following the clear-cut for 5-7 years following logging and returned to normal around year 8. I found this hydrology-focused tour of the Fernow intellectually stimulating and learned

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invaluable information from a well-respected hydrologist about forest hydrology and the impact that forested land has on a watershed.

My internship at the Timber and Watershed Laboratory gave me an idea of what it is like to work full-time at a “real” job. I believed that I gained insight into what a research-oriented career and the large amount of work that goes into the publication of one single research article. This internship was not what I expected going into it but I believe that it has shaped my career goals by helping me narrow down what I do and do not want to do. This experience is one that I will certainly not forget and I am grateful to those at the Timber and Watershed Laboratory who I had the opportunity to work with.