Will Rush

Sewanee Forest History Project Internship

Summer 2013

This summer, I was an intern under Dr. Christopher Van de Ven, the head of the Landscape Analysis Lab and a GIS professor at Sewanee. My internship was kindly funded by Sewanee's internship funding program. The primary objective of this internship was to complete a geodatabase of the historical records relating to the Sewanee Forest History Project.

The Sewanee Forest History Project began almost a decade ago in the accumulation of historical documents relating to Sewanee's forest management practices and studies in a series of file cabinets. These documents were in turn scanned and converted into a Microsoft Access database consisting of 616 separate events with a total of 3935 individual documents between them. This phase of the project was quite labor intensive and was carried out by students, staff, and volunteers.

My part in this was to create a spatial reference for this database. The geodatabase I created consisted of several datasets of the various types of activities, e.g. studies, harvests, fires, etc., and within these, featuresets dividing these activities by decade. The data I created can be used in a multitude of ways by future faculty and students. By layering everything, one may effectively see the entire history of a particular spot, such as a compartment, laid out before them. Another possibility is to see where the focus of activities has been at different times by viewing and comparing the various featuresets.

Thanks to the excellent organizational skills of those who came before me, the project flowed rather smoothly, and I was able to complete far more than what was anticipated. The individual documents had already been read and grouped together, with a rough idea of the location indicated if available. In the instances where a map was present, I would georeference it using the USGS Sewanee topographic map before adding the area to the geodatabase as a polygon. Although the organization allowed me to move through the project quickly, it will never truly be finished. Even in the course of my time in the office, new information came to light that required revision of my previous work. As new documents are found and new studies and management practices occur, the project will require updating. However, the work I have done has provided a solid foundation to build upon.

My work was not restricted to sitting behind a computer. The information regarding quarry sites on campus was quite sparse (to be generous), so I conducted a series of field investigations, searching the landscape for irregularities consistent with quarrying activity and recording them on a GPS. In doing so, I was able to provide far more precise data regarding the locations of the quarries than was previously available.

Following the (relative) completion of the Sewanee Forest History Project, I began working on a project regarding the springs of the Cumberland Plateau. This began with finding a means of downloading data on the springs, e.g. name and location, from the National Atlas, a geographic database maintained by the United States government. I then sorted out those which were on the Cumberland Plateau and prepared them to be published online by setting zoom levels for labels and other layers. The end goal of this project is to provide an online resource in which individuals may add their own knowledge of the springs, that is to say it is a sort of crowd-sourced history project. Beyond this aspect of it, I generated a series of maps of the

springs that may be printed out. Displaying the entire Cumberland Plateau with all of the springs on it with labels on a single page would be impossible, so I used a process called "data driven pages" to automatically generate the maps by zooming in on each individual county within the Cumberland Plateau boundary I had set. Due to the aforementioned zoom levels, this created near perfectly labeled regional maps in a fraction of the time that it would have taken to produce them for each of the eighty-eight counties of the study extent individually. In addition I provided maps that might be of future use to the project such as density maps and maps separating the springs by elevation.

As a Natural Resource major, there are many directions I could go in with my career, nearly all of which involve the use of geographic information systems in one way or another. This internship has provided me with the opportunity to evaluate my future goals. Having graduated this May, it is more pressing than ever before for me to decide what exactly it is that I would like to do with my life. In this internship I was exposed to what it was like to work with ArcGIS in a professional setting with client demands that need to be met. Apart from providing me with these insights, this internship provided me with the experience I will need to move on to a full time job. Furthermore, this internship exposed me to new GIS techniques that I had not encountered in the classroom such as data driven pages, zoom levels, advanced labeling, setting hyperlinks, and working with Microsoft Access.