

Working for the NRCS: A summer of soil, sweat, and excitement.

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Throughout my first three years living as a student in Durham, I often passed by the federal building on Madbury Road. When I would visit the Post Office to pick up stamps I was always curious about what went on up stairs at the USDA Natural Resource Conservation Service. I found out last spring, at the UNH internship fair when I met and gave my resume to the NRCS State Conservationist, Rick Ellsmore. He told me about their programs that help farmers and land owners manage their land and conserve it for future generations. Soon after, I was thrilled to be appointed to a fulltime internship position as a Soil Conservation Technician and Rick ensured me I would be outside, covered in mud, and checking for ticks all summer.

On my first day, my Supervisor, State Soil Scientist and Assistant State Conservationist for Technology, Kim McCracken, gave me the option of adopting a summer long project or working on a variety of projects within the technology team: I choose the latter. I wanted to test all the knowledge I've gained as an Environmental Conservation Studies major. I was able to do just that and more while working with the State Technical Resource Specialist in Ecology, Don Keirstead. At the same time, my curriculum at UNH did not expose me to the world of agriculture so I was thrilled to have the opportunity to work with the State Resource Conservationist in Agriculture, Brandon Smith.

My one hope coming into the NRCS was that I would be able to apply what I learned in my favorite class at UNH, Geographic Information Systems. To my delight, on my first day Don asked me if I know how to use GIS. In response to my enthusiasm I was assigned a GIS project—and this one did not come in a book with detailed hints and instructions. My task was to determine how much river is upstream of all the dams in the Lamprey River Watershed. Afterwards, I was to display the results along with the dam attributes in a map that depicts which dams are the most preferable to remove and would open up the most habitat to aquatic wildlife. The project concluded with a presentation to the Executive Director of the Lamprey River Watershed Association, who seemed pleased with my map and, in the end, requested 36 additional maps that feature each individual dam and the surrounding roads. Making these maps was indeed a challenge but it put both my GIS knowledge and creativity to a test which I believe they passed.

During my first week, Don also assigned me to assist UNH professor, John Litvaitis, in his research on turtle nesting habitats. The project involved extending the dry and sandy habitat where turtles prefer to nest in order to decrease roadside nesting and to protect threatened and endangered turtle species. The habitats were constructed at three separate sites. My role was to monitor a site in Lee, NH three times a week for turtle sightings, nesting activity, and potential predators. While I only detected two potential nests in Lee, occasional visits to the other locations—which were abundant with turtle nests—proved the project was indeed a success. Although my data sheets were lackluster, this task taught me that negative results are good results and still contribute to the conclusion of a research project.

Another assignment I took on under Don was to assist in the restoration efforts for the New England Cottontail. Since my hometown, Londonderry, NH, has a known population of cottontails, Don sent me out to investigate parcels of land around town and to report on whether they were suitable for restoration. As part of this investigation, I went to Londonderry Town Hall to collect information on the land owners of the parcels of interest. This involved tracking down the town's GIS specialist, working with him to find the parcel numbers, and looking them up on their online database. It was exciting to work on my own gathering information for this restoration project and later turning it in to Don; independence was certainly one of the best aspects of this internship.

While working with Brandon on the other side of the technology team, I met with many participants and partners in NRCS Environmental Quality Incentives Program. The Conservation Innovation Grant program under EQIP is quite small in comparison to other NRCS programs and was likewise a small portion of my experience; however, it was my favorite part of my internship. The CIG program provides funding to nongovernmental organizations and individuals to develop or enhance conservation practices or technology. CIG gives ordinary people a chance to develop big ideas. The grant program also facilitates community contribution to the repertoire of conservation practices the NRCS can offer. Along with getting a peek at the grant review process, I also had the chance to meet several CIG awardees and visit the sites of their projects. The most intriguing project I saw was at White Gates Farm in Tamworth, NH where the farm manager ran water pipes through compost piles and under the ground of his greenhouse to transfer the natural heat of decomposition to warm his crop beds. CIG was an unexpected and enlightening aspect of this federal agency and made me proud to be a part of it.

On two occasions Brandon invited me to field days, where New England farmers and members of agricultural organizations gather to learn about research or novel farming practices. My first field day was at Brookdale Fruit Farm in Hollis, NH for a drip irrigation demonstration. The farm managers stressed the water saving capabilities of drip irrigation and also addressed concerns of discouraged farmers. I also attended a field day at Beidler Farm in Vermont for a tour of their dairy farm and a demonstration on high quality forage crops. The farmers and UVM Extension presented the results of a research project that demonstrated how to optimize omega-3 and omega-6 in cow milk by grazing cattle at a specific time in the forage crops' development. At these field days I networked with local farmers and fellow NRCS employees and learned farming practices and concerns first hand.

A large portion of my time at the NRCS was spent assisting Brandon with research. This summer commenced a NRCS and UNH research project that tested several species and planting dates of cover crops and tillage radish. Cover crops such as clover, rye and Ethiopian teff grass act as a living mulch on farmland to maintain soil health while a plot is left fallow. Tillage radish are planted as a cover crop to naturally till the soil as their roots grow deep into the ground and are an essential tool in no-till farming to reduce soil compaction. I visited our plot of 114 test blocks at Woodman Farm weekly to either assist with planting, collect data, fertilize the radishes, or harvest. Throughout this project I was able to make connections to what I learned in my Studio Soils course, get a taste of agricultural research, and get to know the UNH horticultural research community at Woodman.

My job as a Soil Conservation Technician was an ideal internship experience as an Environmental Conservation Studies major. The daunting piles of paper work that preceded my first day before working in a federal agency were not, as I expected, foreshadowing a strict and serious work environment. I learned just from their motto, "Helping people help the land," that greeted me on my first day, that the NRCS is not a stereotypical, big brother federal agency—it is a supportive friend. Their purpose is clear in the welcoming attitude of its employees, all of whom were excellent mentors who taught me what I have yet to learn or do in a classroom. I learned firsthand the indicators of a rich woodland environment and that black birch smells like root beer; on long car rides to visit farmers, I learned about the ins and outs of organic farming and the world of agriculture; I walked through acres of untouched New Hampshire land while monitoring conservation easements; I spent hours in salt marshes and learned how to use electromagnetic interference to measure soil salinity; I can identify more native and invasive plants than I can count; and I even got to ride a cow. After all of the anticipation about what goes on above the Durham Post Office and what my role would be there, my expectations were only a shadow of what I actually experienced this summer in the two months I worked for the Natural Resource Conservation Service.