

USFS 2013 Research Experience

I am currently working on my master's thesis research project funded by the US Forest Service. My research is focused on leaf litter decomposition and the nutrient chemistry of leaves that have been exposed to acidic precipitation and powdered lime. This summer, Cassandra Soza an undergraduate UT San Antonio environmental science student and two graduate students Monica Juarez and Andrea Russie went along with me to perform fieldwork in the Nantahala National Forest, NC where my research project is taking place. Cassandra went with me on two fieldwork trips, one in May 2013 and the other in August of 2013, while the graduate students went only on the first trip. During the period between fieldwork collections Cassandra helped me process my samples and do chemical analysis in the lab. The activities performed during fieldwork included, collecting and replacing throughfall columns, taking soil respiration and litter respiration measurements using a LICOR 6400 soil chamber, and collecting litterbags placed in the field at four different sites in November of 2012. Laboratory activities included, weighing the litter to determine mass loss, cleaning the litter of non-litter material and cleaning any excess lime still adhered to the leaves. We ground the leaves to determine the Total Kjeldahl Nitrogen content of the leaves. We also ashed some of the leaf tissue and dissolved it in hydrochloric acid to determine the calcium, magnesium, and aluminum content by atomic absorption spectrophotometry. We all had a great time working together. Cassandra learned some useful laboratory skills and gained fieldwork experience that few undergraduate students have the opportunity to take part in. Monica and Andrea were able to get some fieldwork experience before they went and performed their own thesis fieldwork later in the summer. I gained experience in performing independent research by planning my fieldwork trips and laboratory analysis and I also had the opportunity to instruct and manage research assistants. It was a great success and a great research experience.