

Soil Mapping the Easy Way: Remote Sensing of Soil Properties and Soil Units

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Creating accurate small scale soil maps is often very difficult due to the complex nature of soil variability. Map creation can involve several steps including surveying aerial photographs, using vegetation as a proxy for soil type, and digging numerous soil pits. In order to simplify this process we are investigating the feasibility of using remote sensing, particularly Landsat images of albedo, surface temperature and normalized difference vegetation index (NDVI), to identify soil properties and soil units. The investigation was accomplished by comparing these three properties, over three dates with varying antecedent moisture conditions. Maps were created using the existing NRCS soil map overlaid with each property for all three days to determine if there was a correlation between map unit and the properties. Because a visual comparison is very qualitative, a more quantitative approach is currently being used to test if values for each map unit are statistically different.

Biography

Emily was born in Buffalo, NY and raised in Charlotte, NC. She spent most of her time as a kid playing in creeks and wandering around in the woods, so it came as no surprise that as a junior in college that she decided to major in Earth Science under Dr. Craig Allan. She graduated from UNC Charlotte in December 2004 with her BS in Earth Science with a minor in Biology. During that time, she worked as a research assistant, helping several Masters students. After graduating, she spent another semester working for Dr. Allan on a number of projects before moving to New Mexico in June 2005. She is currently working on her Masters degree in Geology under Bruce Harrison, investigating controls on the partitioning of rainfall into runoff and infiltration on hillslopes of the Sevilleta NWR. Her only graduation goal is that she hopes to graduate some time before Marty.