



Reflectance Measurements of Vegetation Communities in Arid Rangelands of New Mexico

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The USDA ARS Jornada Experimental Range (Jornada) in southern New Mexico and the Sevilleta National Wildlife Refuge (Sevilleta) in Central New Mexico are Long Term Ecological Research (LTER) sites that provide unique opportunities to study changing rangeland communities using remote sensing techniques. A research study began in 1997 using an Analytical Spectral Device (ASD-FR) spectroradiometer to collect radiance/reflectance measurements from vegetation communities (grass, grass/shrub transition, and shrub) typical of these arid rangelands of southwestern United States. Measurements were made on a 30-m grid at 5-m intervals in the Spring (April-May) and Fall (September-October) each year. Reflectance was highest from the shrub and shrub-grass transition communities and lowest from the grass community and was related to the amount of vegetation cover present. This has implications for the energy and water budgets in this region of the southwestern United States where shrub communities with low ground cover are invading and replacing grass communities. This research is part of a larger study where reflectance from ground (ASD), aircraft (MASTERS), and satellite (ASTER) data are being compared. Data from these different platforms are being used to evaluate the physical and vegetation changes over time and at different scales in these ecosystems.

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