

MODERATE-SCALE REMOTE SENSING APPLICATIONS FOR VEGETATION MAPPING AND MONITORING

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ABSTRACT:

The Bureau of Land Management's (BLM) Assessment, Inventory, and Monitory (AIM) Strategy emphasizes the importance of integrating quantitative field measurements with multi-scale remote sensing data to improve landscape/rangeland monitoring efficiency and effectiveness at the field, regional, and national scale. Remote sensing data acquired at moderate-scale spatial resolutions (i.e., 5 - 30 meters) represent a valuable data source for developing regional scale vegetation mapping datasets that can be used for the measurement and analysis of key ecosystem attributes and for determining terrestrial status. This presentation highlights examples of the BLM's national priority management initiatives that employ moderate-scale remote sensing data (e.g., Landsat 8 and RapidEye) as principle data sources for integrated vegetation management activities. More specifically, the BLM and other agencies have multiple requirements for land cover/vegetation data products that are not typically met by existing national programs. Consequently, the BLM is leading a new 5 year collaborative effort with the Multi-Resolution Land Consortium (MRLC) to map grassland and shrubland ecosystems across the Western U.S. using a combination of WorldView-2 and Landsat 8 imagery. The resultant continuous field data products include Percent Bare Ground, Percent Herbaceous (Grass and Forbs), Percent Shrub, and Percent Sagebrush, and will be integrated into the National Land Cover Database (NLCD) with new updates occurring on a five year cycle to facilitate development of spatially-explicit monitoring products. These datasets represent essential components of BLM's monitoring strategy for the Greater Sage-Grouse initiative. At slightly finer scales, BLM's Emergency Stabilization and Rehabilitation (ES&R) program is currently adopting AIM field protocols and beginning to integrate sub-10 meter imagery to monitor vegetation recovery after large wildfires. AIM field data integration with multispectral RapidEye imagery associated with ES&R activities related to the 2012 Rush Fire in Northern California will also be presented.

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