Supervised Classification of Russian Olive in the Animas Valley with NAIP Imagery and Object-Based Image Analysis

Anna Riling*[1]

[1]University of Denver, Department of Geography and the Environment, Denver, Colorado, annariling@gmail.com

Object-based image analysis (OBIA) incorporates not only spectral but textural and spatial elements of a class and avoids the "salt and pepper" effect of pixel-based classification with high-resolution imagery. Russian olive (*Elaeagnus angustifolia*) is an invasive species prevalent in the Animas Valley in southwest Colorado and is easily distinguished in aerial imagery due to its silvery-green canopy. This study used free, 1-meter, 4-band National Agricultural Image Program (NAIP) imagery to classify Russian olive in a study area on the Animas River, achieving a user's accuracy of 91.3 percent with a K Nearest Neighbor classifier. Methodology and parameters from this pilot study are intended to be used in future efforts with feature extraction classifications for mapping Russian olive on a regional scale.