

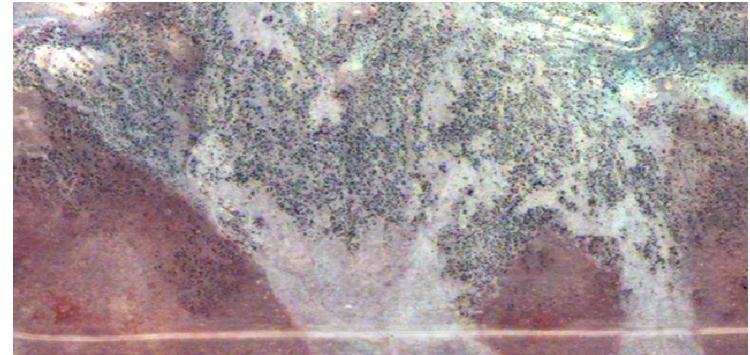
# Estimating Sub-pixel Proportions of Sagebrush with a Regression Tree

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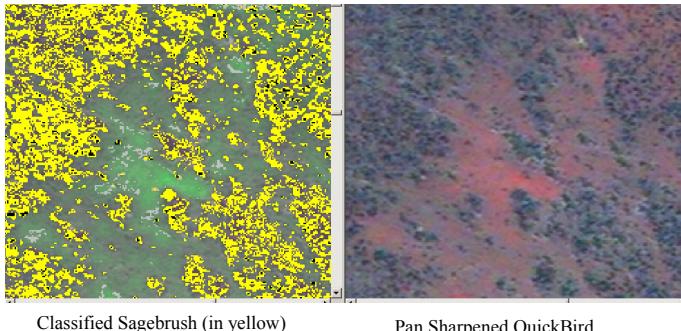
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The elimination and degradation of sagebrush steppe ecosystems throughout the western United States is affecting obligate wildlife species such as the sage-grouse. Federal and State agencies are expending huge amounts of resources to understand, mitigate and restore sagebrush steppe lands they manage, often with inferior spatial data. Sagebrush lands have typically been characterized with only general remote sensing methods. Here we introduce a new method of sagebrush characterization using a Regression Tree to predict the sub-pixel quantity of sagebrush in each pixel. This effort is designed to facilitate an ecosystem-wide effort to map, quantify and predict sagebrush steppe habitat in the Wyoming Basin for sage grouse.

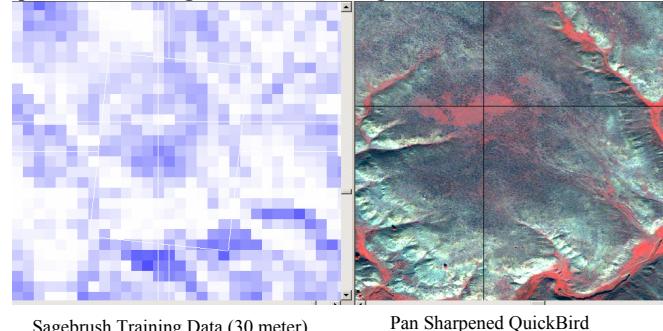


QuickBird offers Panchromatic resolution @ .6 meters, which when pan-merged with the other spectral bands allows discrimination of sagebrush

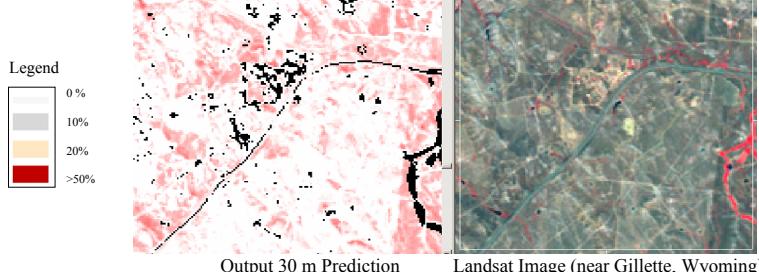
**Step 1. Classify sagebrush pixels (in yellow)**



**Step 2. Yellow sagebrush pixels are then interpolated to 30 meter predictions for Regression Tree training**



**Step 3. Apply training data in the Regression Tree using 3 dates of Landsat and a DEM**



**Full Extrapolation area in Eastern Wyoming with the 3 QuickBird training areas (in yellow)**

