

ESTIMATING GREEN BIOMASS OF BIG SAGEBRUSH USING REMOTE SENSING TECHNIQUES: PRELIMINARY RESULTS ^{TWS}

Tom Olenicki and Lynn Irby

Dept. of Ecology, Montana State University, Bozeman, MT 59717

An efficient method to estimate amounts of Big Sagebrush (*Artemisia tridentata*) would be helpful for assessing habitat for a wide range of species and determining change over time. Preliminary results from our work in sagebrush/grassland habitats of Yellowstone National Park and the Missouri Breaks indicate light reflectance from a portable radiometer can predict green biomass of big sagebrush (*Artemisia tridentata*) in addition to biomass of herbaceous vegetation. During 1999 and 2000, we took radiometer readings and dimension measurements of sagebrush plants in 0.75 m diameter plots prior to collecting all green portions of sagebrush plants. Individual bands of reflected light predicted green biomass ($R^2 = 0.68$) of sagebrush in 48 plots known to contain sagebrush. In itself, sampling with a portable radiometer could be used to quickly estimate green sage biomass over large areas. We are currently trying to apply our results to estimate sage biomass on a landscape scale using satellite imagery.