David Little Livestock Range Management Endowment

AT THE UNIVERSITY OF IDAHO

2013 Project Progress Report:

Evaluating the impacts of mechanical and chemical treatments to reduce dense sagebrush cover and enhance sage grouse habitat.

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ACCOMPLISHMENTS:

Objective 1 Quantify the effects of two mechanical treatments (Lawson aerator and Dixie harrow) at two levels (one pass and two passes) on dense (25-35% cover) stands of sagebrush.

Currently we have completed the Lawson aerator treatment at both levels (one and two pass). We anticipate completing the Dixie harrow treatment as soon as enough snow has melted to be feasible but before sage grouse begin nesting.

Objective 2 Quantify the effects of reducing sagebrush cover in dense stands on native perennial forbs and grasses.

During late July of 2013, we set up treatment blocks and monitoring transects. There are four replicates of each block (See figure 1) and each treatment includes two 50-m transects in the center of the block (see figure 2). Pre-treatment vegetation measurements were completed in July and are currently being analyzed.

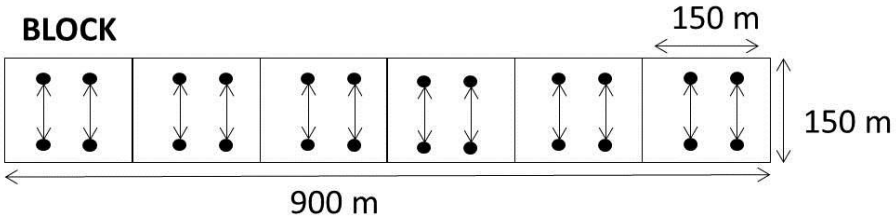

Figure 1. *Layout of treatments in a block or replicate.*

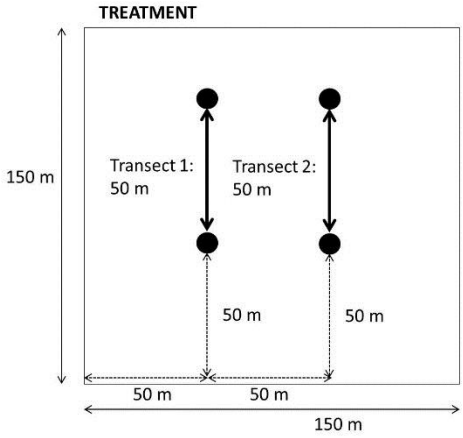

Figure 2. *Layout of a treatment including two 50-m transects in the center.*

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PROJECTIONS:

We are anticipating two current information series (CIS) publications and a refereed journal publication to come from this research. We anticipate submitting the vegetation and economic results in one journal article as a Technical Note to Rangeland Ecology and Management or a similar venue. The two CIS publications we anticipate publishing will have the vegetation and economic results reported separately because they will be geared at two different audiences. The vegetation results will likely include more of the technical equipment aspects and be intended to educate ranchers and range managers interested in using these techniques. The economic results will be aimed at informing land managers (primarily at the state and federal agencies) of the differences that can be expected among treatments and cost differences of those treatments. Additionally we also anticipate these results, both vegetation and economic, will be used in presentations by all three extension educators and specialists involved with this project.

During the time of this project, we have paired with Jason Pyron, sage grouse coordinator at the US Fish and Wildlife Service who is very interested in this project. He would like to see the monitoring of the vegetation response continue for at least five years following treatments and is willing to fund the monitoring.

Future projects might include replicated over time and space. This project was completed in just one pasture in eastern Idaho, so future research may replicate the project over different areas of the state. Additionally, the timing of treatments may also be investigated in the future. One of the criticisms of these mechanical treatments is the amount of soil disturbance. We completed the Lawson aerator treatments with approximately eight inches of snow and plan on completing the harrow treatments with a few inches of snow cover so we have inadvertently mitigated some soil disturbance. Additionally, we strongly recommend that future projects include a measure of sage grouse use before and after treatments to provide more quantitative data on how treatments change grouse use of treated and untreated areas.

PUBLICATIONS:

We had a press release from the College of Agricultural and Life Sciences which was picked up by the Capital Press and several farmer's market trade magazines. We anticipate the CIS publication and refereed journal article will have impacts on which treatments ranchers and land managers may choose to utilize.