

Semi-Annual Progress Report, 10

16 June 2012

"Restoring Natural Fire Regimes at Golden Spike National Historic Site by Developing a Healthy Sagebrush/Grassland Vegetation Community to Prevent the Cheatgrass-Wildfire Cycle/Evaluating Restoration Seeding Techniques Using Native Herbaceous Species in Cheatgrass-Dominated Communities at Golden Spike National Historic Site"

RM-CESU Cooperative Agreement Number: H1200040001

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1. Progress to Date

The project was initiated on 1 September 2007. To date we have initiated four distinct research projects relevant to the goals of the cooperative agreement. One graduate student has completed an M.S. and the first data chapter has been converted into a manuscript for peer-reviewed publication; this paper is in review at the journal *Rangeland Ecology and Management*. A second student started on the project spring 2009 and is in the process of writing her thesis.

1.1. Seeding by seed-caching rodents

No work was completed on this part during the period covered by this report.

1.2. Seeding into existing sagebrush stands, and

1.3. Restoration of cheatgrass stands

I combine the second and third projects because the accomplishments are the same.

- I. Accomplishments and new preliminary results:
 - A. A manuscript on treatment effects on nutrient availability was prepared and is presently in review at *Rangeland Ecology and Management*.
 - B. The seed pool study is completed and analyses are in progress.
 - C. A second M.S. thesis is in the process of being written. At this stage analyses are being conducted on the seed bank results and on perennial grass emergence.
 - D. Line-point intercept transects were repeated to assess change in cover over the course of the study.

1.4. Seed ball study

- A. The seed ball experiment was censused. No results available yet

2. Plans for 11th Reporting Period, 1 July 2012 – 31 December 2012

2.1. Seeding by seed-caching rodents

We do not plan to work on this aspect of the project during the next 6 months.

2.2. Seeding into existing sagebrush stands, and

2.3. Restoration of cheatgrass stands

In the coming 6-month period we will:

- I. Work on manuscripts.
- II. Continue analyses of perennial seedling emergence and establishment and of seed banks and the writing of a second MS thesis.
- III. Write final report for initial grant.

1.4. Seed ball study

No additional work on this study planned.