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Joint Fire Science Program – Lake Mead National Recreation Area: Revegetating Burned Arid Lands: Identifying Successful Native Species Using Trait and Competition Analysis: Quarterly Progress Report, January 1– March 31, 2008

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QUARTERLY PROGRESS REPORT

University of Nevada, Las Vegas

Time Period: Jan. 1— March 31, 2008

Cooperative Agreement Number H8R07060001

Task Agreement Number J8360070199

Joint Fire Science Program – Lake Mead National Recreation Area
Revegetating Burned Arid Lands: Identifying Successful Native Species Using Trait and
Competition Analysis

Executive Summary

- Fence built.
- Seeds and plants obtained.
- Seeding experiment initiated at Goodsprings burn site.
- Three hundred twenty plants, comprising eight species, planted at the Goodsprings burn site on February 12, 2008.
- First of a series of Joint Fire Science update articles submitted to Mojave Applied Ecology Notes newsletter.

Program Activities

Fencing alternatives had to be pursued as the costs for a chain-link fence were too high (~\$8000). Alternative materials were purchased by Lake Mead National Recreation Area Vegetation Management Specialist Alice Newton to fence off the plots. The fence was built around the plots next to the nursery during the first week of January.

It was decided that the nursery project could not commence in January as the plants were severely deficient in numbers, due to a variety of factors at the Lake Mead nursery.

On January 7, we met with Christina Lund (BLM) and acquired seed for the seeding study at Goodsprings. We received plenty of seed to do multiple experiments and testing. Around this same time, we purchased several species of plants in gallon-sized pots to perform the outplanting experiment.

During the third and fourth weeks of January, Research Assistant Donovan Craig organized and started the seeding experiment at the Goodsprings burn site. Research Assistant Alex Suazo also helped with the experimental methods. With the help of the National Civilian Community Corps under the supervision of a Nevada Conservation Corps member, 40 exclusion cages were constructed for the seeding study. The purpose of the cages is to exclude granivory from the designated plots. Along with cage treatments, seeded plots also have a supplemental water treatment. As of January 31, 2008, all plots were seeded and treatments were initiated. Watering designated seed plots will continue at a rate of 0.5 gallons of water per month and

possibly every other week during the summer months. Plans are under way for a more in-depth examination of granivory by rodents using seed samples offered in a free-choice arrangement replicated in both burned and unburned areas. The question of seed selectivity by rodents altering revegetation attempts is interesting. In late February, Research Assistant Craig began testing this seed for germination potential using two methods at the Lake Mead nursery.

In early February, the outplanting portion of the study was implemented. A total of 320 plants comprising eight species were planted at the Goodsprings burn site on February 12, 2008. The questions in this study lie in the effectiveness of supplemental water (in the form of Rain Bird's DriWater passive irrigation) and shelter from herbivory (in the form of plastic Tubex tree sapling shelters). Ten plants of each species are receiving shelter and water, 10 are receiving shelter only, 10 are receiving water only, and 10 are receiving no shelter or water. Follow-up visits were made during the next two weeks to assess potential damage due to either Burros and/or high winds.

The first of a series of Joint Fire Science update articles was submitted for the Mojave Applied Ecology Notes newsletter. Research Assistant Craig will be a regular contributor for this quarterly newsletter.

During the first half of March, Research Assistants Jill Craig and Donovan Craig have been conducting a study examining microsite invasibility as affected by distance from roads and by the type of plant providing the microsites. Each site has five transects (or bands) set at 10 meter intervals moving away from the road. Thus far, 10 sites have been set up and sampled.

Submitted by:

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Margaret N. Rees, Project Administrator

04/29/2008

Date