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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, Time Period: January 1 – April 30, 2010**

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## QUARTERLY PROGRESS REPORT

University of Nevada, Las Vegas

Time Period: January 1— April 30, 2010

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

- Article entitled “Competitive Hierarchy of Native Desert Plants with Red Brome (*Bromus rubens*): Towards Identifying Invasion-Reducing Species” was submitted to the *Invasive Plant Science and Management* journal
- Maintained nursery plots and added installment of nitrogen treatment.
- Took measurements in nursery (competition) plots and harvested biomass.

### Program Activities

A manuscript entitled “Competitive Hierarchy of Native Desert Plants with Red Brome (*Bromus rubens*): Towards Identifying Invasion-Reducing Species” was submitted for publication in *Invasive Plant Science and Management*. This manuscript was produced from a joint effort of two investigations: a field survey and a greenhouse experiment conducted earlier. The field survey examined the abundance of exotic annual grass cover under a variety of native plant species in several locations. The greenhouse experiment examined the competitive hierarchy of native species growing with red brome (*Bromus rubens*). Combined, these investigations provided more insight into which native species could be most competitive with red brome.

The experimental plots at the Lake Mead nursery were maintained throughout this time period. The final nitrogen addition treatment was applied on February 1, 2010 and throughout the following weeks, much precipitation was received. Plots were checked periodically, but little watering was needed due to abundant precipitation and cooler-than-normal temperatures. In mid March, cover estimates were measured for both native and exotic grasses in the plots. Photographs were taken to illustrate the high production of native and/or exotic biomass in the plots. By the end of April 2010, biomass samples were taken from the plots as well as measurements of average plant height. Seed heads of red brome were collected from the community plots to assess differences in seed production among treatments. More measurements are planned including soil samples.

**Papers Submitted**

Abella, S.R., D.J. Craig, L.P. Chiquoine, K.A. Prengaman, S.M. Schmid, and T.M. Embrey.  
Competitive hierarchy of native desert plants with red brome (*Bromus rubens*): Towards  
identifying invasion-reducing species. Submitted to Invasive Plant Science and  
Management.

**Technical Assistance/Synergistic Work**

D.J. Craig is assisting in the development of an invasive/exotic plant monitoring protocol  
for the Mojave Inventory and Monitoring Network.

Submitted by:

A black rectangular redaction box covers the signature of the submitter. A blue ink scribble is visible to the right of the box.

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Margaret N. Rees, Project Administrator

04/30/2010

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Date