

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Vegetation Monitoring and Data Analysis

Discipline: Natural
Type of Project: Technical Assistance
Funding Agency: National Park Service
Cooperators: Colorado State University
Effective Dates: 6/1/2014 - 12/31/2019
Funding Amount: \$25,861

Investigators and Agency Representatives:

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Project Abstract: The flora and fauna of the Sonoran Desert are severely threatened by a single invasive grass, buffelgrass. This invasive perennial grass threatens to transform the desert ecosystem by outcompeting and displacing native species, and fueling fires in an ecosystem that is not fire adapted. Saguaro National Park staff became aware of the increasing spread of buffelgrass in the mid-1990s, and since 2000 have been steadily increasing buffelgrass management efforts. After numerous years of control efforts, the park has been able to significantly reduce the quantity of buffelgrass in several key areas of the park. However, current efforts cannot reach all the areas infested and keep pace with the spread.

Local area land managers recognized the need to do more than ground-based treatments and in 2009 began investigating aerial herbicide applications from a rotary-wind aircraft. In 2010, a demonstration project was implemented to:

- Determine if a helicopter using a boom sprayer can safely navigate steep, saguaro dominated terrain;
- Evaluate the effectiveness on buffelgrass of two different concentrations of herbicide and two different application rates;
- Determine the effects of herbicide on non-target native vegetation; and
- Evaluate herbicide drift outside of target locations.

In summary, the project demonstrated that it is feasible and effective with some limitations and caveats. For details, refer to the "Aerial Spraying of Herbicide to Control Buffelgrass in Southern Arizona: Efficacy, Non-Target Impacts and Application Recommendations" at <http://www.buffelgrass.org/content/evaluation-glyphosate-spraying-rotary-wing-aircraft>

Based on the outcomes of the demonstration project, Saguaro National Park in 2014 is proceeding from demonstration into operation implementation. It is essential that the project meet the outlined goals of aerial operation, minimize negative impacts to native vegetation, improve wilderness character, mitigate disturbances, enhance viewshed, and of the operations outweigh the negative impacts to wilderness, other societal values, and native plant communities. The park has a need to clearly understand the effects of treatments on both buffelgrass and native plants so that we can determine whether the project is meeting our goal to improve the health of our native plant community for future visitors to enjoy. The results of this project will be an essential part of an overall adaptive management program that will allow us optimize treatments and minimize adverse impacts.

Keywords: vegetation, monitoring, Sonoran Desert, Saguaro National Park, Colorado State University