Rocky Mountains Cooperative Ecosystem Studies Unit
Project Summary

Project Title: Ecohydrological Impacts of Roads in Arid Environments: Interruption of Sheetflow Pathways

Task Agreement: P18AC00925 **Mods:**
Discipline: Natural
Type of Project: Research
Funding Agency: National Park Service
Other Partners/Cooperators: Colorado State University
Student Participation:
Effective Dates: 4/1/18-12/31/2019
Funding Amount: $46,804

Investigators and Agency Representative:
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Project Abstract: Understanding the ecohydrological impacts of sheetflow disruption by roads in arid environments is critical to sustainable management of natural resources and conservation planning throughout the Southwest Border Region. This project will quantify potential impacts to changes in sheetflow patterns and vegetation characteristics at road crossings at two spatial scales.

Project Objectives –

1. Identify approximately five road crossings that are suspected of altering local hydrology within both Organ Pipe National Monument and Coronado National Memorial.
2. Evaluate the nature and spatial extent of alterations to plant community composition and vigor
3. Document the presence and abundance of invasive plant species.
4. Quantify changes to the frequency and duration of sheetflow at road crossings.
5. Create detailed topographic maps for modeling ecohydrological impacts from road crossings. Determine how vegetation cover and density have changed over time, and to delineate the spatial extent of any impacts.
6. Integrate existing data on topography, geology, soil types, and landscape configuration with observational data on road impacts to produce spatially explicit vulnerability maps for selected areas of interest.