

Rocky Mountains Cooperative Ecosystem Studies Unit
Project Summary

Project Title: Implementing a fecal DNA sampling method for obtaining demographic and genetic monitoring data for the endangered Sonoran pronghorn and bighorn sheep in Organ Pipe Cactus National Monument, Mexico, and surrounding areas

Task Agreement #: P18AC00287
Discipline: Natural
Type of Project: Technical Assistance/Research
Funding Agency: National Park Service
Other Partners/Cooperators: University of Idaho
Student Participation: Yes
Effective Dates: June 15, 2018 to January 31, 2020
Funding Amount: \$39,521

Investigators and Agency Representative:

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Project Abstract: This project will provide Organ Pipe Cactus National Monument (OPCNM) managers with a total of 6 years of critical baseline information on pronghorn numbers, genetic diversity, connectivity, and responses to visitors, border activity and climate. Four years of data will be centered on OPCNM to guide resource management, recovery actions for Sonoran pronghorn, and address some of the key stressors highlighted in the 2010 Natural Resources Vital Signs Report (OPCNM 2011). We will add one year of data to our 2017 pilot data on bighorn sheep numbers, genetic diversity and connectivity in our targeted sampling areas. This project will produce multiple peer-reviewed journal articles. In addition, park staff will have access to all data, become trained in sampling protocols, and benefit from collaborating with researchers who can provide real-time information.

Project Objectives –

This project will address five main research questions:

- How many pronghorn and what proportion of the US and Mexico populations use OPCNM? How has this number changed over the monitoring period?
- What is the survival rate of pronghorn fawns and adults? Has this changed over the monitoring period?
- What is the minimum count of bighorn sheep in the targeted sampling areas?
- What are levels of genetic diversity for pronghorn and bighorn sheep in OPCNM and how does this compare to other sampling regions in US and Mexico?
- What is the level of connectivity of OPCNM pronghorn and bighorn sheep to the US and Mexican populations and is it restricted due to road and border