

2014 Funded Section 6 Plant Proposals - AZ

The following proposals were funded in 2014 (Segment 18). Federal shares include Arizona Department of Agriculture administration costs. Abstracts from final reports will be posted once the segment is complete.

1) Seed bank analysis and drought response of *Lilaeopsis schaffneriana* var. *recurvata*

Principal Investigator(s): **Dr. Juliet Stromberg and Brenton Scott, Arizona State University**

Federal Share: \$18,159

Objective(s): To determine 1) whether viable seeds of *Lilaeopsis* persist in the soil at sites from which it has been recently extirpated, 2) the depth at which seeds are found in the soil, 3) the maximum and minimum burial depths at which seedlings emerge, and 4) how long seeds and rhizomes remain viable in soil during drought.

2) Updating our knowledge on the status of the newly-listed Fickeisen Plains Cactus

Principal Investigator(s): **Andrea Hazelton, Navajo Nation**

Federal Share: \$17,236

Objective(s): 1) Determine the current status of the 17 known Fickeisen plains cactus populations on the Navajo Nation, 2) fill in major gaps in the species' known distribution by searching for new populations, and 3) produce an updated status report for the species on Navajo Nation land.

3) Population and habitat assessment of *Spiranthes delitescens*

Principal Investigator(s): **Dr. Juliet Stromberg, Dustin Wolkis, Dr. Kimberlie McCue, and Steve Blackwell, Arizona State University and The Desert Botanical Gardens**

Federal Share: \$20,649

Objective(s): 1) Survey and assess the current population sizes of *Spiranthes delitescens* at areas where the species has been documented (Babocomari Cienega, the Canelo Hills/O'Donnell Creek Cienega complex, and Sheehy Springs Cienega), 2) assess the condition of the wetland habitat at these same sites, and 3) provide a review of the trends and status of the species and its cienega habitat.

4) Effect of fire on a population of the endangered cactus, *Coryphantha robustispina*, on three pastures of the King's Anvil Ranch, State Trust Land, Altar Valley, Pima County, Arizona (second year study)

Principal Investigator(s): **Pat King, Dr. Robert Schmalzel, Kristen Egan, and Katie Cline, private, NRCS**

Federal Share: \$3,889

Objective(s): 1) Pyrometers will be placed before and assessed after a 2015 prescribed burn, 2) fire intensity and coverage will be mapped following the prescribed burn, 3) of the approximately 250 individual Pima pineapple cacti located on belt transects during the 2013 pre-fire study, previously documented photo points will be re-photographed following the 2015 prescribed burn, and 4) fire effects on vegetation and individual PPC (with special emphasis on previously recorded plants) will be assessed in the field within one month of the prescribed burn.

5) Pollination biology of *Amsonia kearneyana*

Principal Investigator(s): **Drs. Kim Franklin and Clare Aslan, Arizona Sonora Desert Museum**

Federal Share: \$7,802

Objective(s): 1) Characterize the pollinator community for *A. kearneyana* across habitat types, and 2) determine the pollination requirements for this species.

6) Survey for *Eriogonum mortonianum* (Morton wild buckwheat, Polygonaceae) in northern Mohave County, Arizona

Principal Investigator(s): **Glenn Rink, private**

Federal Share: \$5,517

Objective(s): 1) To search known localities of *Eriogonum mortonianum* along Highway 89 and on Kaibab-Paiute land, if permission can be attained; if no permission is attained will survey adjacent lands with suitable habitat, and 2) determine general size and health of populations found and any obvious threats will be documented for upcoming FWS 12 month finding.

7) Draft recovery plan revision for *Carex specuicola*, Navajo sedge

Principal Investigator(s): **Glenn Rink, private**

Federal Share: \$11,520

Objective(s): With this partial funding amount (original request was for \$26,446), a portion of the Draft Recovery Plan for *Carex specuicola* will be written including sections on biology and hydrology of hanging gardens both currently and with projected climate change. This includes field work to evaluate hydrology of basins supplying hanging gardens supporting the species. Should further funding become available, the recovery strategy, goals, objectives, criteria, and other sections of the draft plan will be included in this project.

8) Survey for additional populations of *Cimicifuga arizonica* (Arizona bugbane, Ranunculaceae) in the Sierra Anchas of Gila County, Arizona

Principal Investigator(s): **Glenn Rink, private**

Federal Share: \$5,647

Objective(s): To survey for populations of *Cimicifuga arizonica* (Arizona bugbane) in suitable habitat near a known population in the Sierra Anchas (Coon Creek, the South Fork and North Forks of Parker Creek Canyon, two steep un-named canyons on the north side of Baker Mountain, Finton Creek, Pueblo Creek Canyon, Cold Spring Canyon, Devil's Chasm, an un-named canyon north of Devil's Chasm, Mud Spring, Rock Spring, and Cienega Spring), 2) new populations will be vouchered, locations documented with GPS, population size estimated, associated species listed, and habitat characteristics described, including any threats.

9) Monitoring of *Lesquerella kaibabensis* (Kaibab bladderpod, Brassicaceae) on the Kaibab Plateau, northern Coconino County, Arizona

Principal Investigator(s): **Glenn Rink**, private

Federal Share: \$4,534

Objective(s): 1) Repeat measures of permanent *Lesquerella kaibabensis* monitoring transects established in 2006, in association with original researcher that established transects. Data will help with upcoming FWS 12 month finding.

10) Dynamics of *Amsonia kearneyana* in four habitat types

Principal Investigator(s): **Dr. Juliet Stromberg and Tyna Yost, Arizona State University**

Federal Share: \$11,167

Objective(s): 1) Characterize four habitat types with respect to vegetation and soils, and compare seed production and density of *Amsonia kearneyana* between these habitat types (montane burned, montane unburned, mesoriparian, and xeroriparian), and 2) determine how seed germination, seedling growth and seed survivorship vary in response to variables that differ between these habitat types (soil texture, shade, charrate in soils).

11) Population surveys, reproductive ecology, seed ecology, and seed predator identification of *Physaria kaibabensis*

Principal Investigator(s): **Drs. Brenda Molano-Flores, David Zaya, and Janice Coons, University of Illinois**

Federal Share: \$20,880

Objective(s): 1) Survey historical, current, and newly found populations for *Physaria kaibabensis*, 2) conduct reproductive and seed ecology studies for *Physaria kaibabensis*, and 3) identify seed predators for *Physaria kaibabensis* and assess its impact on reproduction.