

2018 Funded Section 6 Plant Proposals - AZ

Note: Summaries of all section 6 plant proposals funded since 2004 are available online at <https://cals.arizona.edu/herbarium/content/previous-awards>

This year we received 15 section 6 grant proposals totaling \$196,326. We were able to fund 10 proposals in full and 1 proposal in part with the \$121,461 we had available to distribute. The Section 6 Committee (Fish and Wildlife Service, University of Arizona, and Arizona Department of Agriculture members) ranked the 15 proposals based on merit (e.g. the priority of the species for FWS work, the track record of the PI, clarity of the proposal, appropriateness of the budget, if the species occurred within the Mogollon Rim Emphasis Area, if the species is a listed entity, etc.) and incorporated feedback from species leads, who were given the opportunity to review all proposals associated with their species. The proposals are listed below in order of ranking:

1) Section 6 Program Facilitation

Principal Investigator: **Michelle McMahon**, University of Arizona

Federal Share: \$14,753

Project Description: This project ensures the continuation of the University of Arizona in the section 6 plant grant program. Their role is broad and includes advertisement of the program, website upkeep, serve on review board, and conducting correspondence with applicants and grant recipients.

2) Monitoring of three *Graptopetalum bartramii* (Bartram stonecrop, Crassulaceae) populations in Cochise, Pima and Santa Cruz Counties, Arizona

Principal Investigator: **George Ferguson**, private

Federal Share: \$7,044

Project Description: The researcher will evaluate three known populations in Arizona of *G. bartramii* for abundance, population structure (by size-class), habitat characteristics and threats to each population. The study will provide a temporal extension of previously collected 2 years of data. This species is under review for listing under the act and demographic data is needed.

3) Studying life history and demography of *Eryngium sparganophyllum* in Arizona

Principal Investigator: **Yue Li**, University of Arizona

Federal Share: \$14,210

Project Description: Researcher will determine environmental conditions favoring recruitment and adult growth of *E. sparganophyllum*. Essential demographic data of the two known populations in the U.S. will be acquired through this research and management guidance will be provided. This species has been petitioned for listing and has a positive 90 day finding pending.

4) Survey and seed, root collection of *Spiranthes delitescens* in southern Arizona

Principal Investigator: **Allegra Mont and Kurt Vaughn**, Borderlands Restoration Network

Federal Share: \$3,933

Project Description: Researchers will survey cienegas and other areas to attempt to locate *Spiranthes delitescens* populations and determine population extent & health. Seed and

orchid mycorrhizal fungi (root) material will be collected for delivery to the Desert Botanic Gardens for a future propagation study. Habitat restoration recommendations for each surveyed area will be made. This species is listed and occurs in four locations; fewer than 20 individuals have been found in recent years.

5) Long-term monitoring of *Erigeron rhizomatus* (Zuni fleabane) and targeted surveys for undocumented populations on the Navajo Nation

Principal Investigator: **Kyle Christie and Wendy McBride**, private

Federal Share: 19,393

Project Description: Researchers will establish permanent monitoring plots within five documented subpopulations of *Erigeron rhizomatus* on the Navajo Nation. In addition, all documented subpopulations will be revisited to assess population trends since the last monitoring 15 years ago. Distribution models and previously recommended survey sites will be used to guide surveys for undocumented populations. The FWS, Navajo Natural Heritage Program, and the New Mexico Natural Heritage Program have jointly identified this data collection as needed.

6) Propagation and establishment trials for the sensitive species *Pectis imberbis*

Principal Investigator: **Allegra Mont and Kurt Vaughn**, Borderlands Restoration Network

Federal Share: \$11,680

Project Description: The researchers will evaluate the potential of container planting methods for use in restoration of extirpated or low-resiliency populations of *Pectis imberbis* by collecting seed, propagating, and potentially out-planting the species with detailed data tracking and observation. This species is under review for listing and the research has been identified as needed by the FWS and NPS.

7) Grassland restoration for sub-populations of *Pectis imberbis* on the Coronado National Memorial

Principal Investigator: **Allegra Mont and Kurt Vaughn**, Borderlands Restoration Network

Federal Share: \$17,726

Project Description: Researchers will work to increase the resiliency of extant *Pectis imberbis* sub-populations by improving native grassland habitat at the Coronado National Memorial. They will use vegetation restoration techniques (e.g. herbicide, bunchgrass removal, native revegetation and seed-bank augmentation) on these sub-populations in hopes of increasing population resiliency of these and other at-risk populations of *Pectis imberbis* across southern Arizona. This species is under review for listing and the work has been identified as needed by FWS and NPS.

8) Census of permanent study plots of Lemmon's fleabane (*Erigeron lemmonii*) in the Huachuca Mts., Arizona

Principal Investigator: **Jim Malusa**, private

Federal Share: \$1,000

Project Description: Researcher will complete a census of the *Erigeron lemmonii* permanent plots and make comparisons to the 2006 and 2012 census data. This species is under a CA between Fort Huachuca and FWS and this will help determine trends.

9) Development of a germination protocol for *Actaea arizonica* (Arizona bugbane)

Principal Investigator: **Wendy McBride and Judy Springer**, private

Federal Share: \$4,728

Project Description: The researchers will develop a germination protocol for *Actaea arizonica* to aid in future recovery efforts. This species is under a CA between the Forest Service and FWS.

10) Navajo sedge population genetics study

Principal Investigators: **Glenn Rink and Teague Embrey**, Far Out botany.

Federal Share: \$13,636

Project Description: Researcher will quantify the genetic diversity of *Carex specuicola* in hanging gardens to help determine the number of discrete individuals they contain.

Exploring genetic relationships within a single site and between sites and watersheds will help understand if the range of the species presently is from vicariance or dispersal. This information has been identified as needed by the FWS.

11) Survey for an Arizona edaphic endemic *Eriogonum ericifolium* (Yavapai County buckwheat):

Principal Investigators: **Glenn Rink**, Far Out Botany

Federal Share: \$13,357.70

Project Description: The researchers will survey for additional habitat and locations of *Eriogonum ericifolium* in the Verde Valley and Burro Creek areas. This may expand the range and substrates where this plant has been found. Currently the habitat is limited and suffers from development pressure.