2016 Funded Section 6 Plant Proposals - AZ

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

This year we received 11 section 6 grant proposals and were able to fund 10 of these proposals with the $117,648 we had available to distribute. The Section 6 Committee (Fish and Wildlife Service, University of Arizona, and Arizona Department of Agriculture members) ranked the 11 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, 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) **Analysis of long-term *Purshia* [*subintegra*; Arizona cliffrose] data sets to determine population status and future recovery actions.**
   Principal Investigators: Kristin **Haskins, The Arboretum at Flagstaff**
   Federal Share: $14,538
   Project Description: The project is primarily an office-based review of existing data and stem samples to better elucidate population trends and examine changes in demographic traits such as seed production and seedling recruitment over time. This information will be used to correlate changes with climate conditions and ungulate browsing damage and project long-term viability of the populations. In addition, annual monitoring of long-term plots will take place, with information added to the analyzed dataset.

2) **Development Section 6 Program Facilitation.**
   Principal Investigator: Michelle **McMahan, The University of Arizona Herbarium**
   Federal Share: $8,457
   Project Description: The project continues UofA participation in the section 6 plant grant program over the next two funding cycles, by offering to advertise the program to a broad audience via a dynamic website, provide consultation in the form of scientific review of proposals, interim, and final reports completed by Section 6 grant awardees, and to facilitate researcher's access to herbarium specimens at the UofA Herbarium or through loans with other herbaria.

3) **Surveying for a rare species from the sky islands: *Pectis imberbis* [beardless chinchweed]**
   Principal Investigator: Kristin **Haskins, The Arboretum at Flagstaff**
   Federal Share: $8,664
   Project Description: The primary objective of this project is to relocate populations of *Pectis imberbis* to determine population location, size, and health prior to a listing decision in 2017. The goals are to establish if historic locations are still extant, how many individuals are at each location found, and assess the condition of the plants and their habitat, as well as any perceived threats. While conducting surveys for historic populations, searches for new populations will be incurred and, if new populations are located, they will be fully documented.

4) **Monitoring of *Eriogonum mortonianum* (Morton wild buckwheat, Polygonaceae) in northern Mohave County, Arizona.**
Principal Investigators: Glenn **Rink, Far Out Botany**
Federal Share: $3,829
Project Description: The objective of this project is to install permanent transects within all three of the known sub-populations of *Eriogonum mortonianum* along Highway 89 on Kaibab-Paiute Tribal land, with the purpose of determining whether this population is expanding or contracting over time. The project will be undertaken with the permission and assistance of the Kaibab-Paiute Tribe.

5) **Pilot Study to Test the Use of Scent-Detection Dogs for Surveys of Pima Pineapple Cactus [*Coryphantha scheeri* var. *robustispina*].**
Principal Investigators: Brian **Boroski, H.T. Harvey & Associates**
Federal Share: $22,180
Project Description: The Federally listed endangered Pima pineapple cactus is sparsely distributed within its range and the plant is small and often camouflaged by tall grasses or other vegetation, making surveying for the species time and cost intensive. The objective of this project is to determine feasibility for Pima pineapple cactus survey techniques that utilize scent detection dogs, rather than teams of people to locate Pima pineapple cacti on the landscape. Using scent-detection dogs is likely to improve the efficiency of survey efforts for the cactus, increase the number of cactus detections, and provide a less costly and more reliable alternative to traditional sampling for this species.

6) **Comparison of populations of *Cimicifuga arizonica* (Arizona bugbane, Ranunculaceae) with varying forest disturbance histories, Coconino County, Arizona.**
Principal Investigator: Andrea **Hazelton, private**
Federal Share: $16,529
Project Description: The objective of this project is to achieve a more robust interpretation of this species' response to canopy reduction from minimal recent canopy disturbance, as compared to overstories that have been visibly disturbed by fire, fire suppression activities, and a tornado. The following questions will be investigated: 1) How does disturbance-induced canopy reduction affect Arizona bugbane populations? (2) How does disturbance-induced canopy reduction affect the abiotic conditions and understory plant community at Arizona bugbane sites?

7) **Population Dynamics of Peebles Navajo Cactus (*Pediocactus peeblesianus* subsp. *peeblesianus*): Summary of a 33-Year Monitoring Program.**
Principal Investigator: Kirstin **Phillips**, Barb **Phillips**, and Andrea **Hazelton**, private
Federal Share: $17,340
Project Description: The objectives of this project are to 1) continue the long-term monitoring of Peebles Navajo Cactus in permanent plots near Joseph City established in 1985 and 1986; 2) statistically analyze the 33 years of demographic data of these populations; 3) survey and map the distribution of the populations in the Joseph City monitoring plot area with GPS; 4) record the prevalence of herbivory or other disturbance through the use of motion-activated cameras; and 5) survey for new populations

of Peebles Navajo Cactus on public land in Holbrook to replace permanent plot on private land.

8) **A demographic study of *Coryphantha scheeri* var. *robustispina* [Pima pineapple cactus]**
Principal Investigators: Brenda **Molano-Flores** and **Janice Coons, University of Illinois**
Federal Share: $11,111
Project Description: The objective of this project is to monitor six existing Pima pineapple cactus demographic plots that were established in 2002 by Rafael Routson and monitored by Marc Baker from 2005-2012. Data from these plots provide valuable information regarding the status of this species within the western half of the taxon's range.

9) **Survey for additional populations of *Cimicifuga arizonica* (Arizona bugbane, Ranunculaceae) in the Sierra Ancha of Gila County and canyons of the Mogollon Rim, Coconino County, Arizona.**
Principal Investigator: Glenn **Rink, Far Our Botany**
Federal Share: $5,710
Project Description: The objective of this project is to learn if more populations of Arizona bugbane occur in the Sierra Ancha and along canyons of the Mogollon Rim. Any new population finds will be vouchered with plant specimens that will be curated at the Deaver Herbarium on the Northern Arizona University campus, will have UTMs recorded, population size estimated, and associated species and habitat characteristics recorded. Knowing about other populations will allow land managers to make better informed decisions regarding the management of this species and inform any possible future listing decisions.

10) **Second half draft recovery plan revision for *Carex specuicola*, Navajo sedge**
Principal Investigators: Glenn Rink, Far Our Botany
Federal Share: $9,322
Project Description: A large portion of the preliminary work on an updated draft of the *Carex specuicola*, Navajo sedge, recovery plan has been drafted via previous section 6 funding provide to this PI. This project will move forward with the remainder of the writing of this draft document. The existing Recovery Plan for the species was written 27 years ago when the plant was known from 2 populations; it is currently known from over 50 populations on a variety of substrates and in different watersheds.