

**Agency/Organization:** US Geological Survey

**Project Name:** Clark County Rare Plant Propagation Research Phase II

**Project Number:** 2021-USGS-2075A

**Reporting Period:** January 1, 2024 – March 31, 2023

**Project Contact Name and Information:** Lesley DeFalco, Ph.D.; USGS, Western Ecological Research Center; 500 Date St., Boulder City, NV; 89005. (702) 294-6591. ldefalco@usgs.gov

**QUESTION 1: What did you accomplish during this reporting period? How did these accomplishments help you reach the goal of your project? If relevant, what indicators or benchmarks were used to determine your progress?**

We completed the second round of watering on soil seedbank collections made at the Middle Muddy River population of *Eriogonum viscidulum* (ERVI) in late September 2023. Samples then underwent a second period of dry-down and are currently undergoing the third watering phase, which includes a potassium nitrate treatment.

We established experimental plots within the Mud Lake and Mormon Mesa populations of *Astragalus geyeri* var. *triquetrus* (ASGET) in October 2023 and began watering plots from early November to late December 2023. When winter rains arrived, we paused watering, then continued watering in early March 2024. Watering of plots is ongoing.

We are continuing with propagation efforts for seeds of *Arctomecon californica* we received from Kelsey Graham (USDA), with germination trials and embryo growth measurements on the seeds ongoing, which is our first step in the propagation effort for this species.

In mid-February, we planted *Penstemon albomarginatus* (PEAL) cuttings that had been potted in late June 2023 in our USGS common garden near Searchlight, Nevada, which is in a similar climate zone to Jean, Nevada. All cuttings were caged to exclude small mammals and randomized in a 2-level watering experiment at the time of planting.

Our subcontractor (Utah State University graduate student) collected PEAL cuttings (M12) at three of the four populations in Clark County in late March 2024 (Ivanpah, Hidden Valley, and Jean). We saw only 15 PEAL individuals with limited growth at the Roach site during repeated spring visits, and determined that plants were too small to withstand collection of 8 stems per plant. In the USGS greenhouse, cuttings were sanitized, dipped in rooting hormone to stimulate root growth, and placed in perlite to develop roots.

These Milestones are instrumental in field and greenhouse work and developing our final deliverables for this project.

**QUESTION 2: What, if any, problems were encountered? Briefly describe those problems and the manner in which they were dealt.**

No problems during the reporting period.

**QUESTION 3: What, if any, proposed activities were not completed? Briefly describe those activities, the reasons they were not completed and your plans for carrying them out.**

Due to an unforeseen scheduling conflict, we were not able to outplant *Cylindropuntia multigeniculata* (CYMU) cuttings collected in April 2023 into habitat in March 2024 (M11). Instead, we outplanted the cuttings on 1 April 2024 after our amendment requesting change in planting time was approved.

**QUESTION 4: What is the calculated percent of work completed?**

We are approximately 15% toward project completion.

**QUESTION 5: Do you foresee any upcoming problems with future project activities? If so, how do you propose to overcome those problems?**

None anticipated.

**QUESTION 6: Is there anything else you want to tell the DCP about this project?**

We have nothing additional to note concerning this project.

**QUESTION 7: What was produced during the reporting period?**

During the reporting period, we produced this Quarterly Progress Report (D10).