July 1, 2026

DESERT CONSERVATION PROGRAM PROJECT COMPLETION SUMMARY
Pocket Mouse Conservation Physiology
2023-UNLV-2340B

The work for the above referenced project has been completed. Below is a summary of project related information.

The purpose of the above referenced project was:

The desert pocket mouse has been identified as a species of conservation concern that warrants status as a Covered Species under a proposed amendment to the Multiple Species Habitat Conservation Plan and associated take permit. However, information is lacking on habitat requirements, landscape connectivity, population genomics, distribution, and abundance of the species, which impacts the feasibility of identifying threats to the species, and thus the development of effective conservation strategies and management actions. The purpose of this project is to conduct a Pocket Mouse Conservation Physiology study that informs and supports broader efforts by the County to develop and implement a Desert Pocket Mouse Threats Assessment and Population Monitoring Program that includes conservation goals and management actions designed to minimize or mitigate threats posed to the species by climate change.

The major accomplishments or findings of this project include:

The project utilized respirometry, transcriptomics, and behavioral observations to assess how increasing temperatures and variable precipitation impact the species' physiological limits and adaptive capacity. It was found that low humidity environments (simulating drought) caused a nine-fold increase in water loss compared to control conditions. Based on the results, the biggest threat posed by climate change is reduced humidity during nightly foraging. However, measurements of burrow climates indicate that relative humidity in deeper burrows remains high. Changes in behavior through shortened foraging bouts or foraging later at night are likely to occur to withstand the decreased humidity on the surface. The rising temperatures do not adversely affect the desert pocket mouse as the temperatures are still within the capacity of the species. The results of the project suggest that climate change is not likely to be a significant threat to the

species, so research and management should focus on more immediate threats such as fragmentation and habitat quality. Continued long-term monitoring and maintaining and increasing the quality of existing habitat is of utmost importance for the covered species.

For more information about this project and/or for other Project Reports or Symposium Reports, please visit our website.

If you have any questions about this project, please contact Caryn Wright, at (702) 455-2972.