



Landscape Genomics of the desert kangaroo rat (*Dipodomys deserti*) and Merriam's kangaroo rat (*Dipodomys merriami*)

Cirena Torres and Dr. Brett Riddle

University of Nevada, Las Vegas

This research will focus on the landscape genomics of two congeneric and codistributed Kangaroo rats: desert kangaroo rat (*Dipodomys deserti*) and Merriam's kangaroo rat (*Dipodomys merriami*). Merriam's kangaroo rat is a substrate generalist and the desert kangaroo rat is a sand specialist. This research will test for potential dispersal barriers, population structure, and selection. This study will also take into consideration the dynamic character of desert kangaroo rats and include climatic models. Many samples for genetic analysis are available in our lab but more will be collected. Next generation sequencing methods and various statistical tests will be used to examine habitat and population structure of the kangaroo rats. The desert kangaroo rat is a species of concern for which fragmentation, connectivity and genetic analysis studies are needed. Merriam's kangaroo rat which has a more widespread distribution will serve as a good comparison species. Both of these species occupy areas where solar development is expected and where there are existing facilities. There are very few studies that have investigated the impacts of solar energy development on animals. This study has the potential to contribute to utility scale solar energy development impacts on wildlife.



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