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Western Ecological Research Center

Publication Brief for Resource Managers

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Evaluation of Mohave Ground Squirrel Trapping Data

The Mohave ground squirrel (*Spermophilus mohavensis*) is endemic to 2 million hectares in the western Mojave Desert, constituting the smallest range of the 7 *Spermophilus* ground squirrels in California. It is currently listed as "threatened" by the California Fish and Game Commission, due to deterioration and loss of habitat within its limited geographic range. This listing has been challenged based on the general lack of information on this species, which is needed to delineate critical habitat and evaluate population trends. In a recent study, published in the journal *California Fish and Game*, USGS scientists Dr. Matt Brooks and John Matchett reviewed the existing Mohave ground squirrel trapping records and developed a set of recommendations to facilitate future habitat modeling and population trend predictions.

The sources of Mohave ground squirrel trapping data include its species account in the California Natural Diversity Database and summaries of trapping studies (including 2 published papers and 17 unpublished reports). The scientists found that these current datasets, while a rich source of data on Mohave ground squirrel occurrences, are of limited use for developing habitat models, because survey methods varied in reliability, surveys that did not find squirrels were rarely reported, and many important environmental variables were inconsistently reported. To improve the utility of future datasets, the scientists presented a set of 40 variables that should be quantified in all trapping studies. These variables are related to trap characteristics, trapping protocol, demographic features, health information, weather parameters, and site descriptions.

The scientists also found that trapping success decreased significantly between 1980 and 2000 across most of the Mohave ground squirrel range, except for the far

Management Implications:

- Future trapping reports should attempt to include information describing the 40 trapping variables presented in this study.
- The results of all future trapping studies, both where animals are and are not found, should be maintained in a database by the California Department of Fish and Game for future habitat modeling and population trend studies.
- Studies should be initiated to determine if the decline in trapping success continues into the near future, and to identify the causes and implications of this trend.

northwestern Coso geothermal region. This trend was not correlated with winter rainfall, which generally increased between 1984 and 1998. There is growing concern that the decrease in trapping success reflects declining Mohave ground squirrel numbers across most of its geographic range. However, additional studies are needed to determine if numbers are actually declining, and if they are, to understand the reasons for this trend.

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