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Modeling Potential Habitat in the Mojave Desert for the Mohave Ground Squirrel

Mohave ground squirrels (*Xerospermophilus mohavensis*) are small, ground-dwelling rodents that have a highly restricted range in the northwest Mojave Desert in California. Their small natural range is further reduced by habitat loss from agriculture, urban development, military training and recreational activities.

Development of wind and solar resources for renewable energy has the potential to reduce existing habitat further. In a study published in *Endangered Species Research*, USGS scientists built a potential-habitat model for the entire range of the Mohave ground squirrel, and assessed whether proposed energy development areas overlap with potential ground squirrel habitat.

The population status of the Mohave ground squirrel is widely unknown across the range. USGS scientists used maximum entropy habitat models to estimate current potential habitat in context of proposed energy development in the region.

While 16% of the species' historic habitat has been impacted or lost to urbanization already, an additional 10% may be affected by renewable energy development in the near future, under known scenarios for renewable energy development.

Additionally, the models show that Mohave ground squirrel habitat suitability is higher in areas slated for renewable energy development than those in surrounding areas.

Habitat maps generated by the model could be used to help resource managers develop sampling designs, evaluate conservation corridors, and inform development planning and decisions in the region.

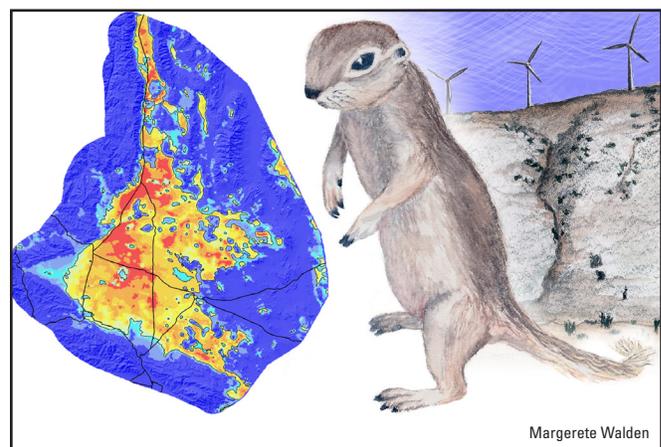
Management Implications

- While 16% of the Mohave ground squirrel's historic habitat has been impacted or lost to urbanization at present, an additional 10% may be affected by renewable energy development in the near future, under known scenarios for renewable energy development.
- USGS models show that Mohave ground squirrel habitat suitability is higher in some areas slated for renewable energy development than surrounding areas.
- USGS research in progress will model Mohave ground squirrel habitat under climate change scenarios.

THIS BRIEF REFERS TO:

Inman, RD, TC Esque, KE Nussear, P Leitner, MD Matocq, PJ Weisberg, TE Dilts, AG Vandergast. 2013. Is there room for all of us? Renewable energy and *Xerospermophilus mohavensis*. *Endangered Species Research*. doi: 10.3354/esr00487

<http://www.werc.usgs.gov/ProductDetails.aspx?ID=4856>
<http://www.werc.usgs.gov/esque>



The Mohave ground squirrel has been petitioned for federal listing in recent years.