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Western Ecological Research Center http://www.werc.usgs.gov

Mojave Desert Studies

The Mojave Desert, stretching across southern California, southern Nevada, northeastern Arizona, and southwestern Utah, has some of the fastest-growing municipalities in the country. The desert provides space for urban growth and recreational opportunities for a burgeoning population, but is also critical habitat for many sensitive animal and plant species. Rapid population growth has resulted in loss of wildlife habitat, degradation of air quality, and depletion of water resources.

Successful land management of the Mojave depends on the availability and application of scientific information regarding biological and physical resources. It is especially important to know the condition of the resource and how that condition is changing in response to management actions and natural and human change. Without a way to assess changing conditions, land managers cannot measure conservation progress or the effectiveness of actions prescribed in land management plans. Scientists at the Western Ecological Research Center (WERC) are working to provide information that managers need to evaluate the success of their efforts to protect these lands for wildlife and people.

WERC research has documented the legacy of human occupancy of the Mojave Desert and land uses that have altered the desert ecosystem. Studies on species such as saltcedar and nonnative grasses show how invasive species may reach even remote parts of the desert. Current studies on invasive species include investigations into how nonnative grasses are affecting desert tortoise habitat, the profound effects of plant invasions and wildfire on native plants and animals, and the response by native and nonnative plants to elevated amounts of carbon dioxide in the atmosphere.

A signature species of the Mojave Desert, the federally threatened desert tortoise. Photo: K. Meyer.

Research is still needed on:

- Development of a long-term monitoring strategy for the Mojave ecosystem
- Development of effective desert restoration techniques
- The adequacy of the existing system of reserves
- Urban impacts
- The interaction and impacts of natural and human-caused variability

Research on desert tortoises is revealing human impacts on populations and habitat of this threatened species, and includes investigations of their reproductive output, diseases, predation, survivorship, and the fate of environmental contaminants along roadways. These and other studies of desert ecology are providing information that supports development of scientifically based habitat conservation plans by management agencies.

Other studies are shedding light on ecology of bighorn sheep at Death Valley National Park and in the vicinity of the Eagle Mountain landfill project. WERC scientists are studying the distribution and the status of birds that use riparian habitats in Nevada; and the status, demography, and reproduction of the western pond turtle.

For more information, contact:

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