

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Predicting Mexican Spotted Owl Habitat in the Chihuahuan Desert Using regression-based models

Type of Project: Research

Discipline: Natural

Funding Agency: National Park Service

Other Partners/Cooperators: Montana State University

Effective Dates: 8/1/2006- 6/1/08

Funding Amount: \$14,864

Investigators and Agency Representative:

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Project Abstract: Threatened and endangered wildlife species are among the list of vital monitoring targets within the CHDN park areas, including the Mexican Spotted Owl (MSOW) (*Strix occidentalis lucida*). The MSOW is a federally threatened species patchily distributed across relatively isolated mountain ranges and canyons from Utah to Texas. Several of the park units located in Chihuahuan Desert Network are known to have MSOW. In particular, Big Bend NP, Carlsbad Caverns NP, Guadalupe Mountains NP and the Davis Mountains contain high elevation areas with mesic vegetative communities that are spatially isolated in a generally arid region and are classically associated with the MSOW. These high elevation areas tend to be remote, rugged, difficult to access, and have low human visitation rates. Spotted owls are known to occur in these types of habitat, though their distribution, occupancy rates, and the extent of suitable habitat across these areas is poorly understood. Limited quantified information has been compiled on the presence, distribution, and relative abundance of the MSOW in these areas, and furthermore, to effectively manage the high elevation areas within park boundaries, and effectively use field surveys to monitor target species, CHDN has begun to gather geophysical-topographic-vegetation based wildlife habitat models to validate and analyze the predictive value of the maps prior to implementation of ground operations.

This proposed research project will provide maps of potential MSOW habitat developed from the Utah based habitat model. The data will be, as noted, part of the NPS Inventory and Monitoring Program. However, there are also regional and national avifaunal programs that may utilize this project's data (Mexican Spotted Owl Recovery Team). Further, understanding of these data will be enhanced by comparison with other regional sites with similar habitats, and validation of other habitat and forest structure models.

In FY07 there was an additional task and deliverable funded. (1) Through application of the Willey et al. (2006) model, provide a raster image that depicts the extent, and likelihood, of Mexican Spotted Owl habitat within the following specific area of Carlsbad Caverns National Park (1:24 000 USGS Quad map): Carlsbad, and (2) Analysis will follow same procedures and methods used in the development of raster images for Guadalupe Mountains National Park, Fort Davis National Historic Site and Big Bend National Park.

Outcomes with Completion Dates: Due by December 15, 2006

- Landsat scene mosaic of region of interest
- 7.5-minute quad mosaics of region of interest
- DEM mosaics of region of interest
- habitat model runs for region of interest
- final report

Due by September 15, 2007: GIS projection and model runs completed for Carlsbad, Inclusion of additional model data into current draft Final Report due by August 15,

2007; Final Report including results copied to media 15 days after receipt of comments from NPS-CHDN.

Keywords: Mexican spotted owl, Chihuahuan Desert I&M Network, Montana State University, habitat model, Big Bend NP, Carlsbad Caverns NP, Davis Mountains, Rio Grande WSR, Guadalupe Mountains NP.

For Administrative Use Only:

Date Annual Report Received:

Date Final Report Received: