



Occupancy and Distribution: Le Conte's Thrasher (*Toxostoma lecontei*)

Project # 10-343

Background:

Anthropogenic disturbances within the distribution of the Le Conte's thrasher (e.g., military training, recreational activity, habitat fragmentation, etc.) have the potential to cause direct mortality and reduce habitat quality through impacts to vegetation structure and soil characteristics. While impacts to habitat on active military training areas can be substantial, these ranges provide important refuges for thrashers and their habitat.

Given the possibility for ESA listing and the challenges that such a decision would impose upon the Department of Defense, it is prudent to understand the distribution and habitat associations of Le Conte's thrashers on military ranges in the Southwest. Combined with training area maps, these data will assist in identifying locations where overlaps exist and guide appropriate management decisions that reduce conflicts while maintaining the military readiness mission.



Photo: Arizona Game and Fish Department.

Objective:

The objective of this study was to develop a predictive habitat model for Le Conte's thrashers inhabiting the Yuma Proving Ground and Barry M. Goldwater Range. These installations represent the largest tracts of relatively undisturbed Sonoran Desert habitat in the southwestern United States. This model, validated with thrasher occupancy data, will be used to identify areas where thrasher occupancy is most likely and guide conservation planning on these ranges.

Summary of Approach:

We implemented a stratified random sampling design

in which random surveys were conducted in soil strata defined by the National Cooperative Soil Survey division of the Natural Resources Conservation Service. This approach reflected our hypothesis that Le Conte's thrasher occupancy should vary among soil designations at the landscape-scale.

We conducted standardized surveys for thrashers using broadcast calls. Two observers began at each randomly generated plot and walked in opposing directions (e.g., North/South or East/West) from the original point. Transects included five points along one transect away from the randomly generated plot and five points along the second transect parallel to the original transect. Forty random plots were surveyed three times within an occupancy modeling framework.

Benefit:

The results of this study will provide natural resource managers with the necessary data to make informed management decisions and engage in collaborative efforts across range boundaries to ensure the persistence of robust Le Conte's thrasher populations while maintaining the military readiness mission.

Accomplishments:

This project obtained its funding through the Legacy Program in FY2010. A total of 183 LCTH were detected at 107 points within 28 plots across the three DoD installations. Modeling at the plot scale produced an occupancy probability of 0.7642 (SE 0.0758) and a model-averaged detection probability of 0.6428 (SE 0.0889). Occupancy patterns observed in FY2010 indicate that Le Conte's thrasher locations are concentrated in valley centers where soft sand predominates within model classes 6-9.

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