



# Year 3 Metapopulation Dynamics: Le Conte's Thrasher (*Toxostoma lecontei*)

Project # 12-343

## Background:

Anthropogenic disturbances (e.g., military training, recreational activity, habitat fragmentation, etc.) within the distribution of the Le Conte's Thrasher (*Toxostoma lecontei*) have the potential to cause direct mortality and reduce habitat quality. It is prudent to understand the distribution, habitat associations, movement and home range of sensitive species such as the Le Conte's Thrasher on military ranges in the Southwest. This data will guide appropriate management decisions that reduce conflicts while maintaining military readiness.

Our research affixed radio transmitters and tracked 14 thrashers from seven nests located on surveys during the study period within BMGR.

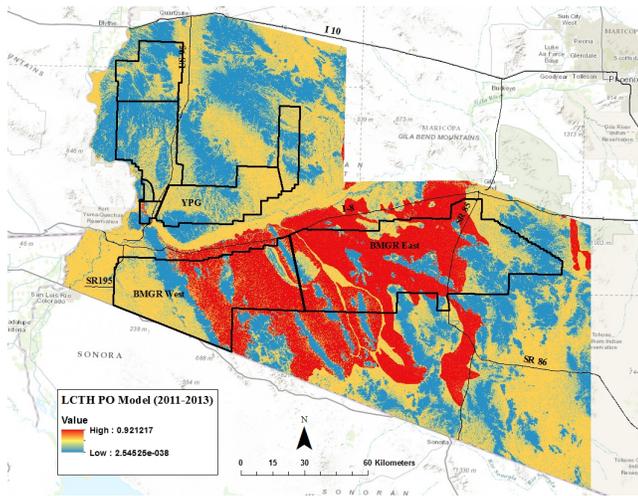
## Benefit:

BMGR and YPG contain large tracts of relatively undisturbed Sonoran Desert habitat in the southwestern United States. The 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. Movement and home range data will provide territory size estimates and quantify movement of thrashers during the post-fledging period that can be used in designing mitigation efforts to habitat loss and fragmentation on and off of military lands.

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.

## Accomplishments:

The estimated occupancy and detection probabilities of LCTH across the three DoD installations was 0.78 (SE  $\pm 0.04$ ) and 0.54 (SE  $\pm 0.06$ ) for all three years (2011-2013), respectively. Average home range for fledglings was 364.61  $\pm 224.35$  ha. Average core area was 87.28  $\pm 40.88$  ha. Data validated the refined 2013 PO model, as the numbers of plots with and without LCTH detections correspond to the respective detection probability classes. The PO Model can be combined with other Geographic Information System layers, providing land managers with accurate maps of areas where LCTH are most likely to occur.



## Objective:

The objectives of this study were to: determine the distribution and occupancy to improve the Prediction of Occurrence (PO) Model using data from Yuma Proving Ground (YPG; 2011-2012) and Barry M. Goldwater Range (BMGR; 2011-2013); and gather movement and home range data for juvenile Le Conte's Thrashers inhabiting BMGR.

## Summary of Approach:

The Arizona Game and Fish Department implemented a stratified random sampling design within three categories of predicted Le Conte's Thrasher habitat by the 2012 PO Model. Sixty plots were surveyed three times from January to April 2013 on BMGR. We conducted standardized surveys for thrashers using broadcast calls. One observer began at each plot and surveyed east from plot center, stopping at five broadcast points spaced 400m apart. Another five points were surveyed parallel to and south of the initial five points for a total of ten points per plot.

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