

## ABSTRACT

The population of Sonoran pronghorn (SPH; *Antilocapra americana sonoriensis*), an endangered subspecies within the United States (US), has fluctuated from an estimated 282 individuals in 1994 to 21 in 2002 and back up to over 150 as of August 2014. As the population continues to recover from drought-associated stressors, more SPH frequent the Barry M. Goldwater military tactical range and the United States Air Force (USAF) closes more targets from training for longer periods of time. In this thesis, hotspot analyses are combined with maximum entropy distribution modeling to understand the geographic and seasonal variation in SPH distribution at North and South Tactical Ranges (NTAC, STAC) in the Barry M. Goldwater Range East, Arizona using data from a monitoring effort begun in 1997.

Results show hotspots of high densities of SPH near strafing and bombing targets, supporting previous studies using fewer data. In Maxent-derived habitat models, distance from targets had the strongest effect on model performance, followed by slope of the ground. According to the models, distance from roads had no effect on the SPH locations, nor did distance from observer. Prior studies attribute SPH preference for areas near targets to attractiveness of forb growth following disturbance as forage, and high visibility resulting from few tall shrubs or bushes. Output from the distribution model provides a predictive map of habitat use that can be used to evaluate effects of range use on SPH in the future.