

## **\*\*Evaluating Habitat Suitability for Lesser Prairie-Chicken Reintroduction (Poster)**

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Large-scale patterns of land-use and habitat fragmentation have significantly reduced the range and numbers of Lesser prairie-chickens in the southern Great Plains. Because lesser prairie-chickens are generally a residential species with limited dispersal abilities, increasing the size and connectivity of sub-populations and restoring habitat in areas previously occupied is essential for species' recovery. To guide future management practices for lesser prairie-chicken recovery, we will use locations of stable leks collected from lek survey data from 2010 -2019 to develop resource selection models for the species' current distribution in the mixed-grass prairie ecoregion. We will extrapolate our best resource selection model to the historic range of lesser prairie-chickens to identify and quantify potential habitat patches for reintroduction, as well as to evaluate the relative connectivity of potential habitat patches to existing lesser prairie-chicken populations using a least-cost path analysis. We will then use our resource selection model with habitat-based ratio estimators to estimate population sizes at potential habitat patches. Habitat patches will be prioritized for lesser prairie-chicken reintroduction based on habitat patch size, total available lesser prairie-chicken habitat, and relative connectivity of potential habitat patches to existing populations. Finally, we will use our resource selection model to quantify the relative improvement in available lesser prairie-chicken habitat for areas that recently participated in restorative management actions by comparing current habitat conditions to habitat conditions prior to management actions. Our resource selection models will assist future reintroduction and habitat restoration plans by identifying habitat conditions that predict the presence of stable lesser prairie-chicken leks, and the highest quality, most connected habitat patches in the mixed-grass prairie ecoregion.