

Habitat Suitability Modeling of the Least Tern

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Why Care about the Least Tern?

The Least Tern was listed as endangered from 1985 to 2021 and today the population is only around 18,000 individuals. This species has specific nesting habitat preferences and therefore is susceptible to extreme decline if change occurs to its nesting habitat. They nest on gravel or sand, prefer to be away from recreation areas and vegetation, and near waterways that provide the fish they forage for.



Methodology

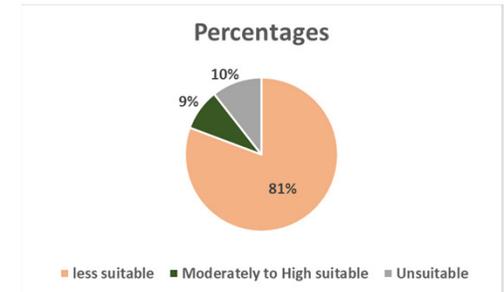
To create the habitat suitability model, we used MCDA model in ArcGIS Pro. The data we used were areas of recreation, waterbodies and streams, slope, tree canopy cover, soil and land use data.

- Then the data was reclassified on a 1 to 5 scale, with 5 being the most suitable condition and 1 least suitable.
- All reclassified perimeters were input into a weighted overlay tool to calculate suitability scores.
- Lastly, we masked out the unsuitable land (water bodies and Built-Up areas)

Results

The majority of land within Riley County were found to be less suitable. However, there were significant portions of land that were found to be suitable surrounding Tuttle Creek and the Kansas River.

Less suitable land were scores of 1 through 3. Moderately and High suitable were scores of 4 through 5.

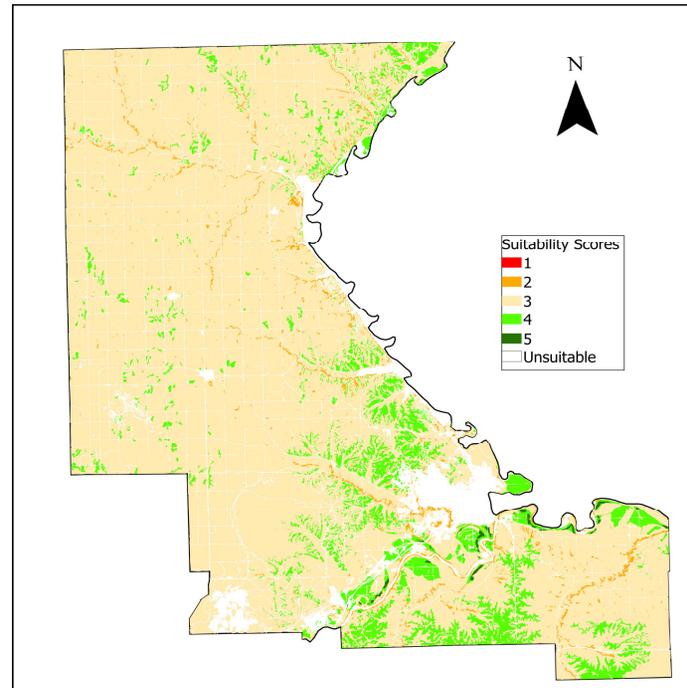


Objectives Of Our Project

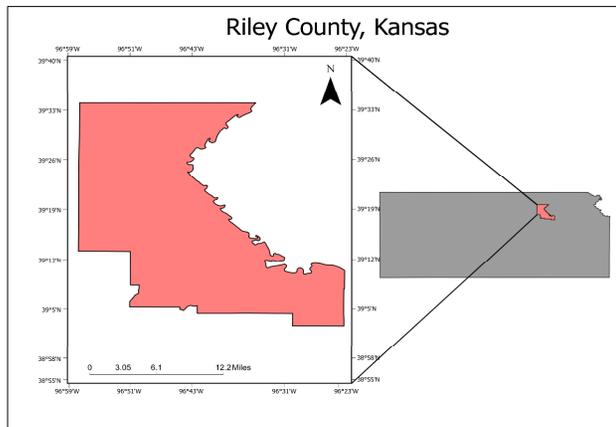
The main objectives for our project of producing a habitat suitability model for the Least Tern in the Riley County area are:

- Using our data, create a habitat suitability model for the Least Tern using Multi-Criteria Decision Analysis (MCDA)
- Analyze the most suitable habitats for Least Tern's in Riley County, and to test the accuracy of our model.

Habitat Suitability Model of Least Tern



Study Area



Accuracy

P-Value of $<2.2e-16$ for the Asymptotic two-sample Kolmogorov-Smirnov Test

