



Boeing Bats Baseline Survey in Wichita, KS



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Abstract: Collecting baseline data on species or taxa of interest is crucial prior to conducting targeted restoration or management activities to determine if such actions had the desired outcomes. The purpose of this project was to acoustically identify the species of bats present at the former Emery Landfill site in Wichita Kansas. Data collected will serve as a baseline for future monitoring and restoration activities at the site. Three SM4Bat acoustic detectors were deployed at the site from June-October, 2023. The recorded bat calls were analyzed using Kaleidoscope Pro software and will be compared to the acoustic data collected in 2021-2022 from nearby sites. Such surveys are increasingly important with the spread of white-nose syndrome causing dramatic declines in many bat species, including the Tricolored Bat (*Perimyotis subflavus*), which has been detected in Wichita. Learning which species of bats are using this site can also help inform conservation and remediation efforts for a previously unmeasured taxon.

Objectives: Acoustically identify the species of bats using the former Emery Landfill site, and provide baseline presence/absence data.

Methods:

- Deployed three bat detectors June-October 2023
- Placed three meters from trees and obstructions taller than the detector
- Detectors checked monthly
- Recorded bat calls analyzed by Kaleidoscope software to identify bats
- The data processed was then exported and analyzed in R



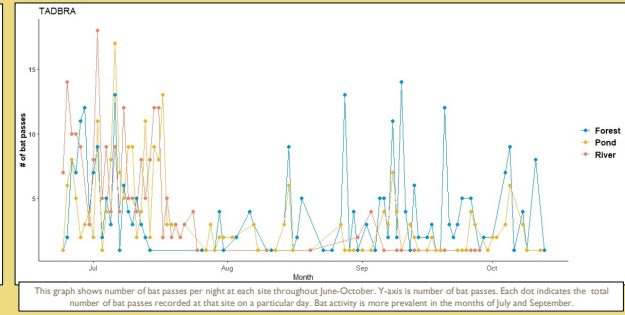
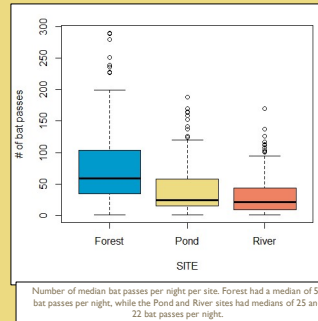
Map of former Boeing landfill site located at 2727 MacArthur Road in Wichita Kansas

Field sites:

Detectors placed at three different sites: Forest, Pond, and River.

Findings

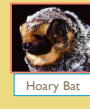
17,340 total bat calls were recorded. Nearly half of these calls (48.67%) were recorded at the Forest site.



Seven species of bats were detected; Eastern Red Bat, Big Brown Bat, and Mexican Free-tailed Bat were the most prevalent.



Tricolored Bat



Hoary Bat



Silver haired Bat

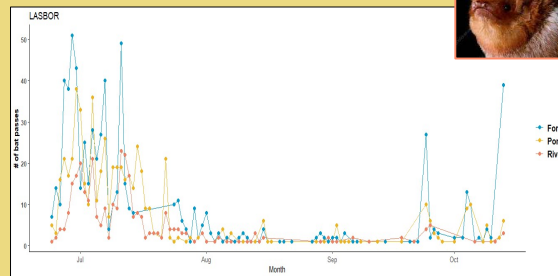


Evening Bat



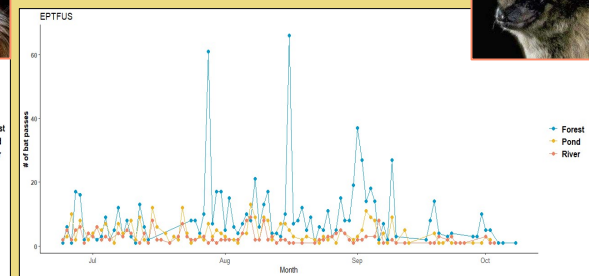
Mexican Free-tailed Bat

Eastern Red Bats (*Lasiurus borealis*) were the most recorded species. They are tree-roosting bats that prefer large cottonwood trees.



Number of Eastern Red Bat passes at each site throughout the sampling period. Each dot indicates the total number of bat passes recorded at that site on a particular day. Mid-June through mid-July have the most activity which probably indicates greater moth activity

Big Brown Bats (*Eptesicus fuscus*) were more frequently recorded at the Forest site. They most often roost in human made structures and trees.



Number of Big Brown Bat passes at each site throughout the sampling period. Each dot indicates the total number of bat passes recorded at that site on a particular day. They mainly eat hard-bodied insects like beetles, so they most likely are using the surrounding area to forage.