

Project Highlight – SD State Wildlife Grant

Project Type Research and monitoring

Title Preliminary investigation into migratory movements of bats in South Dakota

In a nutshell Little is known about bat migratory patterns and habitat needs, which has become a critical information need in light of increasing wind energy development. This project uses acoustic bat detectors to remotely gather bat calls that are then analyzed to determine to describe how and where different bat species migrate.

Relevant Species of Greatest Conservation Need

- Silver-haired Bat (*Lasionycteris noctivagans*)

Cooperators Batworks (Joel Tigner)

Purpose

- Describe (graphically) and detect (statistically) significant peaks in annual, monthly, and nightly bat activity (as measured by a bat activity index) at 15 selected bat migration stations located throughout South Dakota.
- Determine if the 15 selected monitoring stations experience peaks in bat activity during spring and fall migration during each calendar year of the study.
- Determine if a correlation exists between environmental variables (time, temperature, wind speed, etc.) and a bat activity index at each of the 15 selected bat migration stations during spring and fall or throughout the calendar year.
- Measure annual and seasonal (spring and fall) bat species (or species group) richness at each of 15 selected bat migration stations.
- Provide recommendations for a long-term bat migration monitoring program.

Timeframe January 2011 – June 2013; this project was resubmitted for funding to allow call analysis to be completed – new end date is December 2015

Summary or Important Findings

- Fifteen sites were selected because of expectation that they represented habitat for migratory bats and were within potential migration corridors.
- SM2BAT acoustic detectors used to record sound files. Call analysis was done using SonoBat to identify to bat species or species pairs.
- Weather data were collected from automated weather stations.
- This project generated a much greater amount of data than anticipated. Calls from 4 of the 15 sites have been analyzed. They are Hiddenwood State Park in Campbell County, Bad River Ranches in Stanley County, Elk Mountain fire tower in Custer County and Shadehill Reservoir in Perkins County.
- A better understanding of bat migration patterns is expected when the project concludes.

Best contact person Silka Kempema, SDGFP or Joel Tigner, Batworks

More Information

Kempema, S. L. K. Preliminary investigation into migratory movements of bats in South Dakota. Final report to U.S. Fish and Wildlife Service for project T-49.