

August 19, 2019

**Re: Acoustic Monitoring of Bat Species Within the Expedition Wind Project Boundaries:
Marion County, KS
(R0020630.00)**

To Whom It May Concern,

During the initial phases of the Expedition Wind Project, Westwood Professional Services (WPS) contracted a third party consulting service to collect and analyze acoustic bat data at two locations in the project area between August 1 and November 1, 2018. The report received by WPS indicated the presence of seven bat species, including the Indiana bat (*Myotis sodalist*), a federally-listed endangered species not previously known to be present in Marion County, Kansas. There were eleven Indiana bat calls identified in the report, with five of them categorized as definitive and constituting three percent of the total bat calls identified.

Biologists at WPS conducted a further analysis of the acoustic data using the Auto ID for Bats function of Wildlife Acoustics' Kaleidoscope Pro software Version 5.1.9. The U.S. Geological Survey Ecosystems Division conducted tests of the 5.1.0 version of the software and concluded that having a balanced (0) setting was acceptable for use for Indiana bats. Further tests run by the USGS conclude that setting 0 nominally passes for Indiana bats and setting +1 passes for Indiana bats. The U.S. Fish and Wildlife Service and have taken the tests done by the USGS and approved the 5.1.0 version of the software for Auto-ID identification of Indiana bats. Version 5.1.9 was used because of various bug fixes within the program along with what were determined to be insubstantial changes to other aspects of the program.

Default settings were used in the analysis covering a frequency range from 8-120 kHz with a length of detected pulses from 2-500ms to encompass all possible acoustic bat signatures in the region. A minimum threshold of 2 pulses with a 500ms maximum inter-syllable gap were also used with a balanced (0) analysis classifier for the state of Kansas as per recommendations referenced above for the Auto-ID function of the Kaleidoscope Pro software. The resulting data was then analyzed for the potential of Indiana bat presence.

Kaleidoscope Pro Auto-ID did not identify any files as containing Indiana bat audio signatures, however there were thirty-six files identified with gray bat (*Myotis grisescens*) audio signatures. Gray bats are listed as endangered by both the state of Kansas and the USFWS and have been found to reside in the south-east Kansas counties of Cherokee and Crawford, approximately 150 miles away. Kaleidoscope classifier performance tests list, for the gray bat, a true positive rate of 69%, a correct classification rate of 88%, and a positive predictive value of 99%. It also calculated a presence p-value for the analyzed files of <0.00000 based on the Maximum Likelihood Estimator established by the USFWS 2019 survey guidelines.

It was determined that further analysis was necessary for a confident conclusion on the presence of bat species either state or federally listed in any capacity. A team at Environmental Solutions and Innovations, Inc. (ESI) were consulted first with the 36 files the Auto-ID function identified as gray bats, then subsequently consulted for the entirety of the data collected at the Expedition Wind Project sites. ESI

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concluded that the original 36 files consisted of a mix of eastern red bats (*Lasiurus borealis*) and tricolored bats (*Perimyotis subflavus*). Reviewing all files from the two locations in the project area, ESI did not find any calls that were entirely consistent with Indiana bats. Several files were identified as needing additional examination but were subsequently discounted.

Throughout this process, care was taken by all individuals to ensure no risk was posed to a listed species by the construction of this project. Several files were originally flagged as having the potential for listed species including the Indiana bat and the gray bat, but upon further analysis these species were deemed not present. It is based on this thorough analysis that Westwood Professional Services is confident in the determination that no listed species are present within the Expedition Wind Project boundaries.

Sincerely,

WESTWOOD PROFESSIONAL SERVICES

A handwritten signature in black ink that reads "Eric Hansen". The signature is written in a cursive, flowing style.

Eric Hansen, PG, PE

Director Environmental Services