POST-CONSTRUCTION BAT MONITORING ASSESSMENT REPORT (AUGUST 2022 – OCTOBER 2022)

JORDAN CREEK WIND ENERGY CENTER
WARREN AND BENTON COUNTIES, INDIANA

Prepared for

Jordan Creek Wind Farm, LLC
700 Universe Boulevard
Juno Beach, FL 33408

Atwell Project No. 20004828

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EXECUTIVE SUMMARY

The Jordan Creek Wind Energy Center (project) is an operational 404.1-megawatt (MW) wind facility equipped with 131 General Electric (GE) 2.82 MW wind turbine generators (WTG), 14 GE 2.3 MW WTGs, and one GE 2.52 MW WTG, located in Warren and Benton counties, Indiana. The project consists of approximately 70,904 acres and is located approximately 20 miles west of West Lafayette, Indiana, 10 miles northeast of Danville, Illinois, and six miles east of Hoopeston, Illinois. Jordan Creek Wind Farm, LLC (JCW) contracted Atwell, LLC (Atwell) to determine the potential impact on bats during the 2022 fall season.

In June 2022, JCW submitted a Habitat Conservation Plan (HCP) to the U.S. Fish and Wildlife Service – Indiana Field Office (USFWS – INFO) in support of an Incidental Take Permit (ITP) for federally listed endangered Indiana bats (*Myotis sodalis*) and federally listed threatened northern long-eared bats (*Myotis septentrionalis*). The USFWS – INFO issued an ITP on July 22, 2022, which authorizes the take of 193 Indiana bats and 97 northern long-eared bats over the 30-year permit term and is subject to compliance with, and implementation of the HCP. The Jordan Creek Wind Energy Center has been operating under the ITP requirements since August 1, 2022, which included conducting post-construction mortality monitoring (PCMM) for bats.

In total, 7,401 road and pad plot searches and 3,202 full plot searches were completed for standardized PCMM surveys during the fall season (August 2 through October 15, 2022). All 146 turbines were typically searched daily. Prior to the start of standardized surveys, a “clearance” search was performed to remove any carcasses from search plots. Clearance searchers were conducted at 145 turbines on August 1, 2022, and at one turbine on August 2, 2022.

A total of 891 bat fatalities representing eight species were found during standardized surveys, including: silver-haired bat (*Lasionycteris noctivagans*; 388 fatalities), eastern red bat (*Lasiurus borealis*; 279 fatalities), hoary bat (*Lasiurus cinereus*; 109 fatalities), big brown bat (*Eptesicus fuscus*; 87 fatalities), evening bat (*Nycticeius humeralis*; state-listed endangered; 15 fatalities), Indiana bat (federally and state-listed endangered; five fatalities), Seminole bat (*Lasiurus seminolus*; five fatalities), tricolored bat (*Perimyotis subflavus;* state-listed endangered; one fatality), and little brown bat (*Myotis lucifugus*; state-listed endangered; one fatality). One additional bat was identified as either eastern red bat or Seminole bat but could not be identified to species.

In total, 155 searcher efficiency trial carcasses consisting of commercially available mouse carcasses (i.e., bat surrogates) were placed throughout the study period, including 80 at full plots and 75 at road and pad plots. Searcher efficiency rates were 60.5% and 89.0% at full plots and road and pad plots, respectively. In total, 60 carcass persistence trials consisting of bats found during the 2021 monitoring season (30 per plot type) were placed throughout the study. Trial carcasses were monitored for 30 days. The estimated median probabilities of persistence by day 1

in the fall were 0.97 and 0.90 at full plots and road and pad plots, respectively. The estimated median probabilities of persistence by day 7 in the fall were 0.80 and 0.61 at full plots and road and pad plots, respectively. The estimated median probabilities of persistence by day 28 in the fall were 0.56 and 0.34 at full plots and road and pad plots, respectively.

Using a Generalized Mortality Estimator (GenEst), the bat fatality estimate at the project was 37.08 bats/turbine (13.40 bats/MW; 5413.69 total bats) in the fall.

A total of five Indiana bats and no northern long-eared bat carcasses were found during standardized surveys. Based on Evidence of Absence (EoA) modelling for each species, the median take estimates were 19 Indiana bats and zero northern long-eared bats in fall 2022. The mean mortality rate (λ) was 20.20 (95% confidence interval: 7.000, 40.470) for Indiana bats and 1.84 (95% confidence interval: 0.002, 9.253) for northern long-eared bats. The estimated overall detection probability for both species was 0.272 (95% confidence interval: 0.253, 0.292; Ba = 519.3037 and Bb= 1388.4086), which exceeded the target detection probability of 0.20.

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
AICc	Akaike information criterion (corrected)
AMMs	avoidance and minimization measures
Atwell	Atwell, LLC
JCW	Jordan Creek Wind Farm, LLC
DWP	density-weighted proportion
EoA	Evidence of Absence (v2.0)
ESA	Endangered Species Act
FRWF	Fowler Ridge Wind Farm
ft	foot/feet
GE	General Electric
GenEst	Generalized Mortality Estimator
HCP	Habitat Conservation Plan
ITP	Incidental Take Permit
m	meter(s)
m/s	meter(s) per second
MW	megawatt
PCMM	post-construction mortality monitoring
project	Jordan Creek Wind Energy Center
TAL	technical assistance letter
U.S.C.	U.S. Code
USFWS	U.S. Fish and Wildlife Service
USFWS-INFO	U.S. Fish and Wildlife Service - Indiana Field Office
WTG	wind turbine generator

FALL 2022 SUMMARY TABLE

	Full Plots	Road/Pad Plots	Fall 2022
Dates	August 1 through October 15		-
Search Interval (days)	1		-
Number of Plots Searched	44	102	-
Plot Shape	Square	Circle	-
Plot Dimensions	100 m x 100 m	100 m radius	-
Searcher Efficiency (SEEF)	0.605	0.890	-
SEEF Carcass Type	Mice	Mice	-
Median Carcass Persistence (CP)	14.50 days	4.81 days	-
CP Carcass Type	Bats	Bats	-
EoA Detection Probability (ĝ)	-	-	0.272
Average DWP	0.8890	0.0630	0.3119
Count of Observed Carcasses	641	250	891
Estimated Number of Fatalities (GenEst)	-		5413.69
Estimated Indiana Bat Fatalities (EoA)	-		19
Estimated Northern Long-eared Bat Fatalities (EoA)	-		0

1 INTRODUCTION

Jordan Creek Wind Farm, LLC (JCW) is a limited liability company and an indirect wholly owned subsidiary of NextEra Energy Resources, LLC. The Jordan Creek Wind Energy Center (project) is an operational 404.1-megawatt (MW) wind farm equipped with 131 General Electric (GE) 2.82 MW wind turbine generators (WTG), 14 GE 2.3 MW WTGs, and one GE 2.52 MW WTG, located in Warren and Benton counties, Indiana (Figure 1).

JCW contracted Atwell, LLC (Atwell) to perform post-construction mortality monitoring (PCMM) surveys and evaluate the potential impact from project operations on bats during the 2022 fall season. This report documents the results of that work. The survey and statistical methods were developed in coordination with U.S. Fish and Wildlife Service (USFWS) and incorporated relevant guidance and research findings.

This study was conducted under a Habitat Conservation Plan (HCP) that was submitted to the USFWS in support of an application for an Incidental Take Permit (ITP; see Section 1.3) for the federally listed endangered Indiana bat (*Myotis sodalis*) and federally listed threatened northern long-eared bat (*Myotis septentrionalis*). On November 29, 2022, the USFWS announced a final rule to reclassify the northern long-eared bat as endangered. The rule is expected to take effect on March 31, 2023.

This report covers the first year of baseline PCMM studies (fall season only) for the project since implementation of the HCP. Results from the spring monitoring season, while the project was operating under a technical assistance letter (TAL) from the USFWS, are provided under separate cover (Atwell 2023).

1.1 STUDY AREA

The project consists of approximately 70,904 acres and is located in west-central Indiana, approximately 20 miles west of West Lafayette, Indiana, 10 miles northeast of Danville, Illinois, and six miles east of Hoopeston, Illinois (Figure 1). The project spans portions of Jordan, Liberty, Prairie, Pine, and Steuben townships within Warren County, and portions of Grant and Hickory Grove townships within Benton County (Figure 1).

The topography within the project is relatively flat, with elevations ranging from approximately 656 feet (ft) to 834 ft above mean sea level.

Overall, the project is dominated by agricultural land-use consisting mostly of corn (*Zea mays*) and soybeans (*Glycine max*). According to the 2016 National Land Cover Database, 95.6% of the land is classified as cultivated crops (67,770.0 acres), followed by 3.6% (2531.3 acres) of land classified as developed (open space; low, medium, and high intensities), 0.4% (312.0 acres) of land classified

as deciduous forest, and 0.3% (191.4 acres) classified as hay/pasture. Woody wetlands, open water, emergent herbaceous wetlands, herbaceous land cover, barren land, and mixed and evergreen forests collectively make up the remaining 0.1% (99.3 acres) of land cover within the project area (Figure 2) (MRLC 2019). Conservation Reserve Program land is also located within the project area.

1.2 BUFFERED AREAS

In November 2018, USFWS and JCW established 1,000 ft protective buffers around forested lands that were identified as potential summer habitat for the federally listed endangered Indiana bat and federally listed threatened northern long-eared bat. These protective buffers (hereafter referred to singularly as a "bat avoidance buffer") cover 4,532 acres of the 70,904-acre project. The bat avoidance buffer was based on communication with the U.S. Fish and Wildlife Service – Indiana Field Office (USFWS – INFO) and was informed by desktop research, on-site investigation, and 2017 mist netting and telemetry surveys. All turbines have been sited outside of this 1,000-ft bat avoidance buffer to minimize potential summer impacts to Indiana bats and northern long-eared bats (Figure 3).

1.3 INCIDENTAL TAKE PERMIT

JCW has determined that operation of the project may result in take of the federally listed endangered Indiana bat and the federally listed threatened northern long-eared bat. Section 9(a)(1)(B) of the Endangered Species Act (ESA), 16 U.S. Code (U.S.C.) § 1538 (a)(1)(B) states that it is unlawful for any person to "take" an endangered species. In addition, take of any threatened species is prohibited pursuant to 50 Code of Federal Regulations § 17.31, issued by the USFWS under the authority of Sections 4(d) and 9(a)(1)(G) of the ESA, 16 U.S.C, §§ 1533 (d) and 1538(a)(1)(G), respectively. Under the ESA, otherwise lawful activities that may cause or result in the incidental take of federally listed threatened or endangered species is prohibited. Section 10 of the ESA allows for certain limited exceptions to the ESA's prohibitions for private actions. Section 10(a)(1)(B) of the ESA provides a mechanism for the USFWS to issue an ITP that authorizes the take of a species listed as threatened or endangered, provided that the take is incidental to, and not the purpose of, the operation of the otherwise lawful activity.

In June 2022, JCW submitted to the USFWS – INFO a final HCP in support of that ITP application and in accordance with the requirements set forth under Section 10(a)(1)(B) of the ESA, as amended, and applicable USFWS guidance documents (Atwell 2022).

On July 22, 2022, the USFWS – INFO issued JCW an incidental take permit (Permit Number: ESPER0047314), which authorizes the take of 193 Indiana bats and 97 northern long-eared bats over the 30-year permit term and is subject to compliance with, and implementation of the HCP. JCW seeks to reduce take of Indiana and northern long-eared bats by at least 50% of unminimized

take estimates through careful project planning and turbine siting (implemented prior to construction of the project), as well as implementation of operational curtailment strategies (Atwell 2022). These curtailment strategies are described in Section 1.3.1.

JCW has developed three PCMM protocols to be used for the project: Baseline Monitoring, Implementation Monitoring, and Adaptive Management Monitoring. Details of these protocols are described within the HCP (Atwell 2022). A fourth PCMM protocol, Preliminary Monitoring, was implemented prior to HCP development and ITP issuance. The timing of these protocols is implemented as follows:

- JCW performed preliminary monitoring at the project in spring and fall 2021 and spring of 2022. These studies were conducted under a TAL from the USFWS – INFO to allow for operations while JCW prepared the HCP.
- Baseline monitoring will be conducted for the first three years of operation under the ITP.
- Implementation monitoring will be conducted from year 4 through year 30.
- Adaptive management monitoring will occur for two years following any deviations from avoidance and minimization measures (AMMs) outlined in the HCP, including if any short or long-term trigger has been met (see Section 3.7.1).

2022 is the first year of PCMM studies for the project since implementation of the HCP. As such, PCMM studies were conducted under the baseline monitoring protocol. Prior to the start of the fall monitoring season, and in consultation with USFWS – INFO, JCW decided to increase monitoring effort beyond what was outlined in the HCP (Atwell 2022) in order to ensure a detection probability of at least 0.20. Monitoring methods used for the study summarized in this report are described in Section 2.

To satisfy ITP report requirements, this report summarizes estimates of bat mortality and the results of take compliance monitoring at the project completed for fall 2022 under the July 22, 2022, ITP.

1.3.1 ITP Minimization Measures

The following minimization measures were proposed within the June 2022 HCP and authorized under the July 22, 2022, ITP as a means of reducing Indiana bat and northern long-eared bat take over the permit term:

- Curtailment of all fall turbine operation by feathering to a cut-in speed of 5.0 meters/second (m/s) based on a 10-minute rolling average from ½ hour before sunset to ½ hour after sunrise during the fall migratory season (August 1 – October 15) when ambient temperature is above 10 degrees Celsius (°C).

The USFWS requested data verifying fall 2022 operational compliance for turbines 7, 20, 46, 88, 93, and 134 on August 1, September 25, and October 9. This data is provided in Appendix A.

1.4 STUDY OBJECTIVES

The objectives of the study were to do the following:

- Perform scheduled carcass searches and associated bias trials for the fall season (in accordance with the HCP).
- Collect information on bat fatalities found during the search period at the project.
- Evaluate and calculate project-specific bat mortality estimates for the fall survey season.
- Estimate take of Indiana and northern long-eared bats (i.e., covered species) to monitor compliance with limits authorized in the ITP.

2 SURVEY METHODS

2.1 STANDARDIZED FATALITY SEARCHES

Standardized fatality monitoring occurred during the fall season (August 2 to October 15, 2022). Turbines were assigned one of two search plot types: road and pad plot or full plot. Road and pad plots were searched out to 100 meters (m) from the center of the turbine. Searchers scanned the entire surface area of the road and pad for carcasses by walking transects, with the initial survey start location at 100 m from the turbine (Figure 4). The road and pad search area was field-delineated using a Trimble DA2 Catalyst global navigation satellite system receiver (Trimble, Inc. 2021) with submeter accuracy.

Full plot search areas comprised a 100 m by 100 m plot with the wind turbine located at the center of the search area. Full plots were mowed to keep vegetation low and increase searcher efficiency. Plots were surveyed by walking 17 linear transects, each approximately 6 m wide, until the entire plot was surveyed (Figure 4).

Prior to the fall season, a “clearance” search was performed to remove any carcasses from standardized search plots. Pre-fall clearance searches were conducted at 145 of 146 turbines on August 1, 2022, and at one turbine (turbine 58) on August 2, 2022. Any carcasses located during clearance searches were designated as incidental and were excluded from analysis. To provide a more conservative fatality estimate, carcasses present within the search area during the clearance search that were potentially missed by the searcher but located during a subsequent search, were included in the fatality estimate. These potentially missed carcasses included fatalities found after the initial clearance search that were assigned an estimated time of death prior to the clearance search.

During the fall migration season, all 146 turbines were generally searched daily; 44 turbines were searched as full plots and only road and pad searches were conducted at the remaining 102 turbines. Each turbine's assigned plot type remained the same throughout the monitoring period. Some turbines, on occasion, were not searched on a particular day due to turbine maintenance, farming activity, technician availability, or inclement weather conditions (e.g., lightning, impassable roads). The lack of searches at some turbines during the scheduled timeframe was accounted for during statistical analysis.

Standardized fatalities were defined as those found within the scheduled search window and search area. Incidental finds were defined as fatalities found outside of the scheduled search window or search area (i.e., off plot). Incidental finds were not included in fatality estimates but are reported in Appendix B-1.

For each bat fatality found, the following data were collected:

- Unique carcass ID
- Survey date and time
- Turbine (i.e., plot) number
- Distance and bearing from the nearest turbine
- UTM coordinates
- Species
- Carcass sex, age, and reproductive condition (when possible)
- Carcass condition (intact, partial, dismembered, fur/feather spot(s), alive, or other)
- Forearm length, when possible
- Ground cover where fatality was found
- Estimated time of death
- Current weather conditions/previous night weather conditions

When avian fatalities were encountered during searches, the same data as above were generally collected for the carcass (excluding forearm length); however, avian fatalities were not included in analysis for this study. A list of avian fatalities found during the 2022 fall season is provided as Appendix B-2.

2.2 SEARCHER EFFICIENCY TRIALS

The objective of searcher efficiency trials was to correct for detection bias by adjusting for trial carcasses found compared to total carcasses available to the searcher. Trials were conducted blindly so the searcher was not aware of when trials were being conducted. Commercially available dark, large (i.e., 18 – 30 grams) mice (RodentPro.com, LLC 2022) with tails removed were used as surrogates to represent bats during searcher efficiency trials. A total of 155 trial carcasses were placed throughout the fall season, including 80 at full plots and 75 at road and pad plots.

Date, turbine number, distance from the turbine, and direction from the turbine were recorded prior to placement within the plot. Turbines were randomly selected for the searcher efficiency trial and no more than two carcasses were placed at a single turbine. Carcasses were discreetly marked (in a manner so the marking did not influence searcher detection) to indicate that the carcass was part of the study. Any trial carcasses that were missed on the first search following placement were collected and were not available to be found during subsequent searches.

2.3 CARCASS PERSISTENCE TRIALS

Carcass persistence trials were used to determine the length of time a carcass would remain within the search area before being scavenged (e.g., by scavengers, insects) or removed from the search area by another means (e.g., weather event, full plot mowing, agricultural tilling). Carcass persistence trials were conducted twice during the season. Carcasses used for the trials consisted of bats (eastern red bat, silver-haired bat, big-brown bat) that were 2021 fatalities with confirmed species identifications found on site. For each trial, 30 carcasses were placed at randomly selected turbines (60 carcasses total). Samples were allocated to each plot type evenly for a total of 15 carcasses per trial (30 carcasses total) placed at each plot type.

Carcasses were typically checked by searchers daily for 30 days, as survey conditions allowed. Condition of each carcass was recorded as intact, signs of scavenging, fur spot, or missing during each day of observation. Once a carcass was recorded as “missing,” technicians continued daily checks for the carcass for the subsequent seven days. If the carcass was not rediscovered during this seven-day period, the carcass was deemed missing on the originally missed day. If a missing carcass was relocated within or after the seven-day period, technicians would continue checking that carcass daily. This check protocol was implemented to account for carcass checks where the carcass was missed by the observer (e.g., due to condition or location shift) rather than being truly missing. Once the 30-day trial concluded, remaining carcasses were removed.

3 STATISTICAL METHODOLOGY

3.1 GENEST

Analyses were performed using a Generalized Mortality Estimator (GenEst) v1.4.6 (Dalthorp et al. 2018; Simonis et al. 2018). This program uses five separate data sources and user-populated general inputs to run three separate, but related, analyses. The three analyses (discussed in further detail below) used to estimate the mortality rate include searcher efficiency, carcass persistence, and density-weighted proportion (DWP). DWP was calculated separately for each turbine based on the total number of observed carcasses, their distances from the nearest turbine, and area of the plot searched, and was input into GenEst. These analyses, combined with the carcass observation data and a known search schedule, ultimately provide a median estimate of the number of fatalities at a wind facility while taking into consideration imperfect detection probability. GenEst provides a median estimate rather than a mean because the mortality probability distribution is generally right-skewed, which is not uncommon for mortality data. Because a mean estimate may be strongly influenced by the degree of skewness (Simonis et al. 2018), the median is a more robust measure.

GenEst uses a sophisticated, carcass-specific detection probability to provide fatality estimates. However, for simplicity, the program provides basic detection probability summaries that are based on searcher efficiency, carcass persistence, and the average search interval. The estimates are then stratified by the covariates or predictor variables selected for fatality estimation. While these detection probability summaries are not specifically used to provide a fatality estimate, an estimate of detection probability may provide useful planning insight (Simonis et al. 2018).

To determine median estimates, the number of parametric bootstrap iterations was set to 10,000 in GenEst and was used to build 90% confidence intervals around parameter estimates (Simonis et al. 2018). As this study focused on providing a fatality estimate for bats only, size class was not included as a variable.

3.2 DEFINITION OF VARIABLES

Table 1 provides definitions for variables used for the GenEst statistical analysis.

Table 1. Definitions of Variables Used for Analysis

Variable	Definition
I	Search interval—the number of days between searches
v	Temporal coverage—the proportion of all carcasses expected to arrive during the monitored period.
p	Searcher efficiency—the probability an observer will find a present carcass during the first search after it arrived
k	The proportional change in searcher efficiency with successive searches
r_t	The estimated probability that a carcass arriving at a uniform random time in an interval of *t* days persists until the end of the interval
MedianCP	The median number of days a carcass will persist after day 0
$\widehat{M}_i$	The estimated number of carcasses falling within distance band *i*
$\sum \widehat{M}_i$	The total number of estimated carcasses
$f\widehat{M}_i$	The estimated proportion of carcasses falling within distance band *i*
X	The total number of observed carcasses during searches
X_i	The total number of carcasses observed within distance band *i*, pooled across the entire wind facility
fA_{Avg_i}	The proportion of area surveyed in distance band *i* averaged across all turbines
$fA_{search_{i,j}}$	The proportion of area surveyed within distance band *i* at turbine *j*
f_{within}	A correction factor representing the estimated proportion of fatalities occurring within the turbine search radius. This correction factor is applied to the calculated DWP for RP to account for carcasses falling outside of the search radius. For this study, this value was set to 0.99.
a	Spatial coverage-- a density-weighted proportion (DWP) of carcasses falling within the searched area.
DWP_j	The calculated, uncorrected DWP for turbine *j*
DWP_{c_j}	The corrected DWP value for turbine *j*. This is the product of $DWP_j * f_{within}$
g	The probability of detection
M*	Estimated number of fatalities
λ	Fatality rate
Ba and Bb	Parameters that characterize the detection probability

3.3 SEARCHER EFFICIENCY

Searcher efficiency is the probability that a searcher will find a carcass given that the carcass falls within the search area (Simonis et al. 2018). Searcher efficiency was modeled with two parameters: *p*, the probability that a present carcass is found during the first search after it arrived, and *k*, the proportional change in searcher efficiency with successive searches. Plot type (full plot or road and pad plot) was included as a predictor variable. Data from all searcher efficiency trials were pooled, and searcher efficiency was modeled with *k* set at 0.75. While searchers in this study had only one opportunity to find trial carcasses, data suggests that *k* tends to remain relatively consistent at 0.75 (Dalthorp 2019 pers. comm.).

GenEst provided corrected Akaike information criterion (AICc) results for two models (Table 2). AICc estimates the relative quality of statistical models for a given set of data. Models with lower AICc scores are generally considered to fit the data better while using fewer predictor variables.

Table 2. Models Evaluated for Searcher Efficiency Trials

Model	k value[a]	AICc[b]	ΔAICc[c]
p ~ PlotType	k fixed at 0.75	156.5	0.00
p ~ constant	k fixed at 0.75	171.2	14.72

[a]k is the proportional change in searcher efficiency with successive searches. It remains fixed at 0.75 per D. Dalthorp (personal communication).

[b] AICc is the corrected Akaike's Information Criterion.

[c] ΔAICc is the difference in AICc values between a particular model and the top model. When comparing a set of models, lower ΔAICc values are generally considered better models.

The *p ~ PlotType* model was selected for fatality estimation (Table 3) as it had the lower AICc score (ΔAICc = 14.72 where ΔAICc is the difference between the model with the lowest and second lowest AICc value).

Table 3. Searcher Efficiency and Carcass Persistence Models Selected for Fatality Estimation in GenEst

Analysis	Model[a]
Searcher Efficiency	p ~ PlotType
Carcass Persistence	lognormal distribution; l~PlotType, s~constant

[a] For carcass persistence, "l" refers to location and "s" refers to scale in GenEst. Exponential distributions are not modeled with a scale parameter.

3.4 CARCASS PERSISTENCE

Carcass persistence is the probability that a carcass arriving on day 0 will remain on day *t* (e.g., despite scavenging, decomposition, mowing, weather event, etc.) (Simonis et al. 2018). All trial carcasses from each trial were pooled for analysis. For 60 trial carcasses, the last day of detection from day 0 and first day of absence from day 0 were input into GenEst with plot type used as predictor variable. Four distributions were modeled: exponential, Weibull, lognormal, and loglogistic. The resulting 14 models were compared using AICc (Table 4), and the most parsimonious model was selected for fatality estimation (Table 3). The selected model was the lognormal distribution with the location formula a function of plot type and a constant scale formula (ΔAICc = 0.69).

Table 4. Models Evaluated to Determine the Best Distribution and Explanatory Variables for Estimating Carcass Persistence Time

Distribution	Location Formula	Scale Formula	AICc	ΔAICc
lognormal	l ~ PlotType	s ~ constant	318.25	0.00
loglogistic	l ~ PlotType	s ~ constant	318.94	0.69
lognormal	l ~ PlotType	s ~ PlotType	319.45	1.20
loglogistic	l ~ PlotType	s ~ PlotType	320.20	1.95
lognormal	l ~ constant	s ~ constant	321.09	2.84
lognormal	l ~ constant	s ~ PlotType	321.43	3.18
loglogistic	l ~ constant	s ~ constant	321.47	3.22
loglogistic	l ~ constant	s ~ PlotType	322.06	3.81
Weibull	l ~ PlotType	s ~ constant	324.18	5.93
Weibull	l ~ PlotType	s ~ PlotType	324.60	6.35
Weibull	l ~ constant	s ~ PlotType	324.94	6.69
Weibull	l ~ constant	s ~ constant	324.94	6.69
exponential	l ~ PlotType	-	335.65	17.40
exponential	l ~ constant	-	337.18	18.93

3.5 DENSITY-WEIGHTED PROPORTION

DWP is the expected proportion of carcasses to fall within the searched area of each individual turbine (Simonis et al. 2018). This estimated value takes into consideration the distance of a carcass from the turbine as carcass density around a turbine may differ with increasing distance from the turbine (Hull and Muir 2010).

For road and pad plots, pooled counts of carcasses within 10 m distance bands were used to estimate the proportion of carcasses falling within each band, $f\widehat{M}_i$, where i = the distance band (e.g., 0 to 10 m, out to a maximum of 100 m). These proportions were then multiplied by the turbine-specific proportion of searched area in the plot at each distance band, i. Only non-incidental carcasses found at road and pad plots during the fall season were used for DWP calculation.

Specifically, $f\widehat{M}_i = \widehat{M}_i / \sum \widehat{M}_i$ where $\widehat{M}_i = X_i / fA_{Avg_i}$ and $\sum \widehat{M}_i$ is the sum of $\widehat{M}$ across all distance bands. X_i is the number of pooled carcass observations in each distance band, i, and fA_{Avg_i} is the average proportion of area surveyed in each distance band, i, across all turbines assigned to road and pad plots. DWP at each turbine is then calculated as $DWP_j = \sum \left(f\widehat{M}_i * fA_{Search_{i,j}} \right)$, where j is the specific turbine number and $fA_{search_{i,j}}$ is the proportion of area surveyed within distance band i at turbine j.

The calculated DWP within the 100 m search radius (DWP_j) was then adjusted to account for carcasses falling beyond the search radius using $DWP_{C_j} = DWP_j * f_{within}$ where f_{within} is the estimated proportion of fatalities occurring within the search radius. For this study, f_{within} is determined from publicly available results from similar studies.

Hull and Muir (2010) reported percentile distances of the fall zone modeled for bats at small, medium, and large turbine sizes based on data from their study sites. For large size turbines (94 m hub height and 112 m rotor diameter, similar to those in operation at the project), modeling suggested that 99% of bat carcasses fell within 66.46 m of the turbine (Hull and Muir 2010). This is less than the 100 m search radius of this study's road and pad plots. Therefore, turbine-specific DWP values for road and pad plots were calculated as $DWP_{C_j} = DWP_j * 0.99$. The average corrected DWP for road and pad plots at the project in fall 2022 was 0.0630.

The Fowler Ridge HCP (WEST 2013) estimated the proportion of bat fatalities to fall within its square 80 m x 80 m full plots' dimensions based on a 2011 PCMM study that assessed carcasses within an 80-m radius circular full plot (Good et al. 2012). Fowler Ridge Wind Farm (FRWF) is located approximately five miles north of the project, in Benton County Indiana, and is located within a similar physiography and is at a similar elevation as the project. FRWF studies were designed with a robust sample size of large cleared plots that were used to provide mortality estimates that better accounted for carcasses found at greater distances from turbines (Good et al. 2012). Using the full set of fatality data from the 2011 PCMM season at Fowler Ridge Wind Farm (Good et al. 2012), DWP values for 100 m x 100 m full plot locations at the project were calculated as 0.889 (i.e., approximately 88.9% of bat fatalities fall within the 100 m x 100 m square plot).

3.6 PROJECT-SPECIFIC FATALITY ESTIMATE

To calculate a fatality estimate using GenEst, searcher efficiency models and carcass persistence models were first selected (see Sections 3.3 and 3.4 above; Table 3). For searcher efficiency, the "plot type" model (*p* ~ PlotType) was selected. For carcass persistence, a lognormal distribution with the location formula a function of plot type (i.e., l ~ PlotType) and the scale formula constant (*s*~constant) was selected (Table 3).

Other inputs required to calculate mortality in GenEst included the *Fraction of Facility Surveyed*, turbine-specific *Density-Weighted Proportions* (discussed above), and the *Observation Date* for each carcass found. GenEst combines the carcass *Observation Date* with *Turbine Search Schedule* (uploaded to GenEst as a separate database) to estimate detection probability following arrival (Simonis et al. 2018). All 146 turbines within the project were surveyed for carcasses in the fall. Therefore, *Fraction of Facility Surveyed* was set to 1. *Density-weighted Proportion* and *Turbine Search Schedule* are provided as separate CSV files that are uploaded to GenEst.

3.7 EVIDENCE OF ABSENCE

Evidence of Absence (EoA) software version 2.0 (Dalthorp et al. 2017) multiple class module was used to model estimated take of federally listed endangered Indiana bats and federally listed threatened northern long-eared bats during the monitoring period. EoA uses several parameters to estimate a detection probability (*g*), which is ultimately used to estimate take levels at a user-defined credibility level. Detection probability is a function of search interval, timespan of survey effort, spatial (*a*) and temporal (*v*) coverage, searcher efficiency (p), the factor by which searcher efficiency changes between subsequent searches (*k*),and carcass persistence (*r*).

Within the multiple class module, total mortality (M) was estimated with a 50% credibility level and g parameters were calculated from monitoring data by adding a search class for each plot type. A credibility level of 50% was used as this value provides a median estimate. Inputs used for each class (i.e., plot type) are provided in Table 4.

Table 5.Search Class Inputs for Multiple Class Analysis in EoA

Variable	Full Plots	Road and Pad Plots
Search Schedule		
Start of monitoring	2022-08-02	2022-08-02
Search interval (days)	1	1
Number of searches	75	75
Temporal coverage (v)	1	1
Searcher Efficiency		
Carcasses available	76	73
Carcasses found	46	65
Factor by which searcher efficiency changes with each search (k)	0.75	0.75
Persistence Distribution (from field trials)		
Distribution	Lognormal	Lognormal
Shape (α)	2.3745	4.0884
Scale (β)	2.6098	1.5688
95% confidence interval for β	[1.9867, 3.233]	[0.7755, 2.362]
r for Ir = 1	0.982	0.876
95% confidence interval for r	[0.937, 0.998]	[0.771, 0.958]
Fatality Estimation		
Indiana bat carcass count (X)	5	0
Northern long-eared bat carcass count (X)	0	0
Credibility level	0.5	0.5

Fall mortality monitoring began on August 2, 2022, with surveys being conducted daily for 75 days. Temporal coverage was set to 1 in order to keep the period of inference restricted to the fall season.

Searcher efficiency and carcass persistence data collected during the fall season were based on field trials, and the results were entered into EoA. The factor by which searcher efficiency changes between subsequent searches was set to 0.75 (Dalthorp 2019 pers. comm.) and lognormal persistence distributions were selected for both plot types as it was recommended as the most appropriate model by EoA given the data from field trials. A total of five Indiana bat carcasses and zero northern long-eared bat carcasses were found over the course of standardized surveys in the fall. Therefore, the analysis was run twice: once with carcass count (X) set to five to represent observed Indiana bat take in the fall and once with carcass count set to zero to represent observed northern long-eared bat take in the fall. Searcher efficiency and carcass persistence estimates using EoA for each search class are provided in Section 4.6.

Associated Ba and Bb values, which are parameters that characterize the detection probability, are also provided with the EoA search class output. These Ba and Bb values (see Section 4.6) for each search class were entered into the multiple class module to provide a single combined take estimate for each covered species during the monitoring period.

Spatial coverage for each plot type was manually entered into the “dwp” field of the multiple class module. Spatial coverage was the average DWP (see Section 3.5) of turbines searched for each plot type (i.e., 0.8890 and 0.0630 for full plots and road and pad plots, respectively), weighted by the proportion of each plot type (i.e., 0.301 and 0.699 for full plots and road and pad plots, respectively). Therefore, spatial coverage at full plots was 0.2679, whereas spatial coverage at road and pad plots was 0.0440. The dwp for unsearched areas was 0.6881.

Cumulative take estimates (M*) will be tracked with a 50% credibility level over the life of the ITP using the “Track past mortality” option in EoA’s multiple years module.

3.7.1 Adaptive Management Triggers

The EoA software has incorporated a framework that addresses specific adaptive management “triggers” to help ensure permit compliance and potentially alleviate the project from current AMMs described in Section 6.2 of the HCP (Atwell 2022). Adaptive management triggers built into the software include the short-term trigger, long-term trigger, and reversion trigger (Dalthorp et al. 2017) and are described below:

- The short-term trigger acts as a warning tool and fires when the annual fatality rate is greater than a given threshold over the course of one or a few years. JCW will utilize a 3-year window for the short-term trigger against the estimated annual take (6.41 Indiana

bats and 3.20 northern long-eared bats) with a 99% credibility level (Atwell 2022), as recommended by the software to protect against the trigger firing unnecessarily (Dalthorp et al. 2017). The short-term trigger was not applicable to the 2022 monitoring results as it was the first year of monitoring under the HCP and ITP.

- The long-term trigger indicates when total cumulative take has exceeded the authorized threshold (i.e., 193 Indiana bats and 97 northern long-eared bats) with a certain credibility level. As described above, JCW will track estimated cumulative take (M*) using EoA's multiple years module with a 50% credibility level. This credibility level was determined to most accurately track fatality rates over time while reducing the likelihood of a false trigger (i.e., firing before the cumulative take limit has been exceeded) (Dalthorp et al. 2017).
- The reversion trigger indicates when fatality rates are low enough to allow for a less restrictive operational minimization strategy that will not result in annual fatality rates exceeding the take limit at a given credibility level. JCW is requesting take of 6.41 Indiana bats/year and 3.20 northern long-eared bats/year based on an estimated 50% reduction in take due to the implementations of AMMs. JCW is committed to this biological goal and will utilize the reversion trigger against the lesser of the estimated rate (i.e., (t) will be 6.41 Indiana bats and 3.20 northern long-eared bats) or the average annual take rate as calculated using EoA after three years of Baseline Monitoring. JCW will initially run the reversion test with a 99% credibility level and 50% assumed relative mortality rate (ρ) in Year 5, allowing for 3 years of Baseline Monitoring and 2 years of Implementation Monitoring to be completed prior to considering reducing AMMs.

4 RESULTS

4.1 BAT FATALITY SURVEYS

Throughout the fall season at the project, 7,401 road and pad plot and 3,202 full plot searches were completed during standardized surveys, excluding clearance searches at 102 road and pad plots and 44 plots. A total of 891 bat fatalities representing nine species were found across 137 turbine locations during standardized searches (Figure 5). Silver-haired bat (*Lasionycteris noctivagans*) and eastern red bat (*Lasiurus borealis*) were the most commonly found species, followed by hoary bat (*Lasiurus borealis*). One bat was identified as either eastern red bat or Seminole bat but could not be identified to species.

Fatality counts of all bat species found during standardized surveys, as well as the proportion of all bats represented by each species, are presented in Table 6.

Table 6. Species Composition of Observed Bat Fatalities

Common Name	Federal Status[a]	State Status[b]	Scientific Name	Count[c]	Percentage of All Bat Fatalities
Silver-haired bat	-	SC	*Lasionycteris noctivagans*	388	43.5%
Eastern red bat	-	SC	*Lasiurus borealis*	279	31.3%
Hoary bat	-	SC	*Lasiurus cinereus*	109	12.2%
Big brown bat	-	-	*Eptesicus fuscus*	87	9.8%
Evening bat	-	SE	*Nycticeius humeralis*	15	1.7%
Indiana bat	FE	SE	*Myotis sodalis*	5	0.6%
Seminole bat	-	-	*Lasiurus seminolus*	5	0.6%
Eastern red or Seminole bat	-	SC/-	*Lasiurus borealis/seminolus*	1	0.1%
Little brown bat[d]	-	SE	*Myotis lucifugus*	1	0.1%
Tricolored bat[d]	-	SE	*Perimyotis subflavus*	1	0.1%
All Species	-	-	-	891	100.0%

[a] FE = federally listed endangered. A hyphen indicates no listing status.

[b] SE = state-listed endangered; SC = state special concern; a hyphen indicates no listing status.

[c] Incidental finds were excluded from analysis and are not included in this table.

[d] As of preparation of this table, little brown bat is under review for federal listing status and tricolored bat is proposed Endangered.

In addition to the 891 bats found during standardized surveys, 85 bats were found incidentally, including bats found during the clearance survey and outside of standardized search areas. A list of all bat fatalities found during searches, including incidentals not summarized in Table 6, is provided in Appendix B-1. Avian fatalities were not included in the analysis; however, a list of avian fatalities found during searches is provided in Appendix B-2.

Most bat fatalities were found at full plots compared to road and pad plots (641 fatalities, or 71.9% at full plots; 250 fatalities, or 28.1% at road and pad plots). At full plots, a majority of fatalities were found within 40 m of the turbine (62.1%). At road and pad plots, a majority of fatalities were found within 10 m of the turbine (50.8%). A breakdown of the distribution of bat fatalities at each plot type is provided in Table 7.

Table 7. Total Counts of Bat Fatalities by Plot Type and Distance from Turbine

Distance Band (m)	Count (Full Plots)[a]	Percentage[a, b] (Full Plots)	Count (Roads/Pads Plots)	Percentage[b] (Road and Pad Plots)	Total Standardized Fatalities[c]	Percentage[b] (All Plots)
0 to 10	54	8.4%	127	50.8%	181	20.3%
10 to 20	112	17.5%	36	14.4%	148	16.6%
20 to 30	102	15.9%	18	7.2%	120	13.5%
30 to 40	130	20.3%	19	7.6%	149	16.7%
40 to 50	148	23.1%	28	11.2%	176	19.8%
50 to 60	80	12.5%	16	6.4%	96	10.8%
60 to 70	15	2.3	4	1.6%	19	2.1%
70 to 80	N/A	N/A	1	0.4%	1	0.1%
80 to 90	N/A	N/A	0	0.0%	0	0.0%
90 to 100	N/A	N/A	1	0.4%	1	0.1%
Total	641	71.9%	250	28.1%	891	100.0%

[a] N/A indicates not applicable. The maximum distance a fatality could be found within the standardized 100 m x 100 m full plot was approximately 70.7 m (i.e., the corner of the square plot).

[b] Percentage for each distance band is based on the total number of standardized fatalities for each plot type. The total percentage for each plot type is based on all plots combined.

[c] Incidental finds were excluded from analysis and are not included in this table.

4.2 SENSITIVE SPECIES

A total of five Indiana bat fatalities were found over the course of standardized fall surveys (Figure 6). All Indiana bat fatalities were found at full plots, including one each at turbines 5 (September 17, 2022), 73 (September 7, 2022), and 104 (August 28, 2022), as well as two at turbine 105 (September 6 and 23, 2022). No federally listed threatened or endangered species were found incidentally.

One state-listed endangered little brown bat (*Myotis lucifugus*), one state-listed endangered tricolored bat (*Perimyotis subflavus*), and 15 state-listed endangered evening bats (*Nycticeius humeralis*) were found on site during standardized surveys (Figure 6). The little brown bat was found at turbine 74 on August 8, 2022, and the tricolored bat was found at turbine 116 on August 20, 2022. Little brown bat is currently under review for federal listing status (USFWS 2022a) and tricolored bat has been proposed for federal endangered species status (USFWS 2022b). Evening bats were found at the following turbines:

- turbine 1 (August 2, 2022)
- turbine 73 (August 2, 3, and 5, 2022)
- turbine 89 (September 22, 2022)

- turbine 97 (August 4, 2022)
- turbine 102 (August 5, 2022)
- turbine 104 (September 5, 2022)
- turbine 105 (August 5 and 26, 2022)
- turbine 115 (September 25, 2022)
- turbine 123 (August 8, 2022)
- turbine 129 (August 5, 2022)
- turbine 140 (August 7, 2022)
- turbine 144 (August 22, 2022)

No state-listed endangered species were found incidentally during the survey period; however, one state-listed endangered evening bat was found incidentally at turbine 11 on October 24, 2022 (outside of the survey period).

Two state-listed endangered golden-winged warblers (*Vermivora chrysoptera*) were found over the course of standardized PCMM surveys, including one at turbine 109 on September 6, 2022, and one at turbine 48 on September 19, 2022 (Appendix B-2).

4.3 SEARCHER EFFICIENCY

In total, 155 searcher efficiency trial carcasses were placed throughout the study period. A total of 80 were placed at full plots and 75 were placed at road and pad plots. Six carcasses were scavenged prior to the search and were subsequently removed from the searcher efficiency calculation, including four at full plots and two at road and pad plots. As such, the total number of available carcasses for searchers was 76 at full plots and 73 at road and pad plots. Estimated searcher efficiency was higher at road and pad plots (89.0%; Table 8) compared to full plots (60.5%; Table 8).

Table 8. Searcher Efficiency Estimates by Plot Type

Predictor Variable	n[a]	*p*[b]	90% Confidence Interval	
Full Plots	76	0.605	0.510	0.693
Road and Pad Plots	73	0.890	0.814	0.938
Overall[c]	149	0.745	0.682	0.799

[a] n is the number of carcasses placed for the searcher efficiency trial excluding carcasses scavenged prior to search.

[b] *p* is the calculated searcher efficiency.

[c] Overall searcher efficiency was estimated in GenEst using a constant searcher efficiency model. However, this model was not selected for fatality estimation.

4.4 CARCASS PERSISTENCE

In all, 60 trial carcasses were placed throughout the study period, including 30 at full plots and 30 at road and pad plots. After one day, 88.3% of carcasses were remaining. By mid-trial (day 15), 36.7% of carcasses were remaining. By the end of the trial (day 30), 26.7% of carcasses were remaining.

In general, the probability of persisting at full plots was greater than road and pad plots. Estimated median carcass persistence was 14.5 days at full plots compared to 4.8 days at road and pad plots. By day 1 after placement, the estimated probability of persisting was 97% at full plots compared to 90% at road and pad plots. By day 7, the probability of persisting was 80% at full plots compared to 61% at road and pad plots. The probability of persisting throughout the entire trial period was also greater at full plots compared to road and pad plots (56% vs. 34% by day 28, respectively) (Table 9; Figure 7). The estimated overall median probabilities of persisting to days 1, 7, and 28 were 94%, 71%, and 45%, respectively (Table 9). Estimates provided in Table 9 do not represent the proportion of carcasses remaining at the end of an interval of *t* days (where *t* = 1, 3, 7, 14, or 28 days) but rather the probability that a carcass arriving within an interval of *t* days persists until the end of the interval.

Table 9. Carcass Persistence Estimates by Plot Type

					Probability of Persistence[c]														
Plot Type	**n[a]**	**MedianCP[b]**	**90% CI (lower)**	**90% CI (upper)**	**r_1**	**90% CI (lower)**	**90% CI (upper)**	**r_3**	**90% CI (lower)**	**90% CI (upper)**	**r_7**	**90% CI (lower)**	**90% CI (upper)**	**r_{14}**	**90% CI (lower)**	**90% CI (upper)**	**r_{28}**	**90% CI (lower)**	**90% CI (upper)**
Full Plots	30	14.50	8.16	25.74	0.97	0.93	0.99	0.90	0.83	0.95	0.80	0.71	0.88	0.69	0.58	0.79	0.56	0.44	0.66
Road and Pad Plots	30	4.81	2.75	8.43	0.90	0.83	0.96	0.76	0.66	0.85	0.61	0.50	0.72	0.47	0.36	0.58	0.34	0.24	0.45
Overall[d]	60	8.43	5.53	12.83	0.94	0.89	0.97	0.83	0.77	0.89	0.71	0.63	0.78	0.58	0.50	0.66	0.45	0.37	0.53

[a] n is the number of carcasses placed for the carcass persistence trial.

[b] MedianCP is the estimated median number of days a carcass will persist after day 0.

[c] Probability of persistence is the estimated median probability that a carcass arriving at a uniform random time in an interval of t days (i.e., 1, 3, 7, 14, 28 days) persists until the end of the interval.

[d] Overall estimates were determined using a lognormal distribution with constant location and scale formulas; however, this model was not selected for fatality estimation.

4.5 PROJECT-SPECIFIC FATALITY ESTIMATION

In total, 891 bat fatalities (Appendix B-1) were found during standardized searches and input into GenEst to calculate adjusted project-specific fatality estimates for the fall season. The probability of detection (g) was similar at both road and pad plot locations and full plot locations (Table 10). As previously mentioned, the g-values provided in GenEst (and presented in Table 10) are simplistic estimates based on searcher efficiency estimates, carcass persistence estimates, and the average search interval. However, these estimates do not incorporate spatial coverage of survey plots (i.e., DWP).

Table 10. GenEst Detection Probability Estimates by Plot Type

Plot Type	Estimated Detection Probability (g)[a]	90% Confidence Interval (lower)	90% Confidence Interval (upper)
Full Plots	0.866	0.796	0.919
Road and Pad Plots	0.872	0.792	0.935
Overall[b]	0.873	0.816	0.919

[a] The g-values presented in this table are a function of the selected searcher efficiency model, the selected carcass persistence model, and the average search interval. They do not account for spatial coverage (i.e., DWP).

[b] The overall detection probability was determined using constant searcher efficiency and carcass persistence models, which were not selected for fatality estimation in GenEst.

The overall median project fatality rate estimate for bats in the fall was 5,413.69, which equates to 37.08 bat fatalities per turbine or 13.04 bat fatalities per MW (Table 11).

Table 11. Bat Fatality Estimates for the Fall Season

Season	Median Fatality Estimate	90 % CI (lower)	90 % CI (upper)
Facility-Wide	5413.69	4850.62	6103.37
Per Turbine[a]	37.08	33.22	41.80
Per Megawatt[b]	13.40	12.00	15.10

[a] Based on 146 turbines.

[b] Based on 404.1 MW.

4.6 ESTIMATED TAKE OF COVERED SPECIES

Fatalities of five Indiana bats, a species covered under the HCP (Atwell 2022), were found during fall surveys. No northern long-eared bat fatalities were found at the project during fall surveys.

Results from the searcher efficiency and carcass removal trials, as well as spatial coverage of the site, were input into EoA to model estimated Indiana bat and northern long-eared bat take. Using the multiple class module, EoA estimated searcher efficiency during the fall season to be 0.605

(95% confidence interval: 0.493, 0.71) at full plots and 0.890 (95% confidence interval: 0.804, 0.947) at road and pad plots. For a search interval of one day, carcass persistence (*r*) during the fall season was estimated to be 0.982 (95% confidence interval: 0.932, 0.998) at full plots and 0.876 (95% confidence interval: 0.757, 0.958) at road and pad plots. Ba and Bb values, detection probabilities, and dwp values that were input into the multiple classes module for each plot type are shown in Table 12. The overall spatial coverage for full plots and road and pad plots combined was 0.3119.

Table 12. Multiple Class Module Inputs to Estimate Take of HCP-Covered Species using EoA

Plot Type	dwp[a]	Carcass Count (X) by Species	Ba[b]	Bb[b]	Detection Probability (g)	95% CI for g (lower limit)[c]	95% CI for g (upper limit)[c]
Full Plots	0.2679	Indiana bat: 5 Northern long-eared bat: 0	68.7449	9.6078	0.877	0.7970	0.9400
Road and Pad Plots	0.0440	Indiana bat: 0 Northern long-eared bat: 0	32.2360	5.9309	0.845	0.7160	0.9400

[a] "dwp" is the average dwp for each plot type weighted by the proportion of plots the plot type comprises (i.e., 30.1% full plots and 69.9% road/pad plots).

[b] Ba and Bb values for each plot type were determined from search class inputs in EoA's multiple class module.

[c] CI = Confidence Interval.

The estimated overall detection probability in fall 2022 was 0.272 (95% confidence interval: 0.252, 0.292; Ba = 519.3037 and Bb= 1388.4086; Table 13). With five Indiana bat fatalities found at full plots during standardized surveys (X = 5), the median fatality estimate for Indiana bats (M*) was 19 fatalities in fall 2022 and the mean mortality rate (λ) was 20.20 (95% confidence interval: 7.00, 40.47; Table 13). The median fatality estimate for northern long-eared bats was zero fatalities in fall 2022 and the mean λ was 1.84 (95% confidence interval: 0.002, 9.253; Table 13). EoA outputs are provided in Appendix C.

Table 13. Overall Detection Probability, Median Fatality Estimate, and Median Fatality Rate Estimate for HCP-Covered Species

Species	Carcass Count (x)	Overall Detection Probability (g-value)	95% CI for g (lower limit)[a]	95% CI for g (upper limit)[a]	Ba[b]	Bb[b]	Median Fatality Estimate (M*)	95% CI for M* (lower limit)[a]	95% CI for M* (upper limit)[a]	Median Fatality Rate Estimate (λ)	95% CI for λ (lower limit)[a]	95% CI for λ (upper limit)[a]
Indiana bat	5	0.272	0.252	0.292	519.3037	1388.4086	19	5	37	20.20	7.000	40.470
Northern long-eared bat	0	0.272	0.252	0.292	519.3037	1388.4086	0	0	6	1.84	0.002	9.253

[a] CI = Confidence Interval.

[b] Ba and Bb values were calculated from EoA's multiple class module and characterize the overall detection probability.

5 DISCUSSION

Over the course of the study, 891 bat fatalities representing nine species were found during standardized surveys. Using GenEst, the estimated adjusted fatality rate in the fall was approximately 37.08 bats/turbine (13.40 bats/MW; 5413.69 total bats). This was higher than recent mean fatality estimates at the nearby FRWF in fall 2021 (5.27 bats/MW), which had turbines feathered below a cut-in speed of 5.0 m/s (Good et al. 2022).

Eastern red bats, silver-haired bats, and hoary bats made up a majority of the fatalities found at the project and are similar to the species composition found at other wind facilities throughout the Midwest, though specific proportions of each species may differ (Arnett et al. 2008). Based on the timing of peak fatality, it was likely that these were fall migrants.

Bat fatality counts generally peaked in late August/early September and again in mid-September (Figure 8). This temporal influx of fatalities at the project is similar to trends from other wind facilities throughout the Midwest and United States as a whole. A majority of bat fatalities tend to correspond with the fall migratory period and dispersal from summer breeding grounds (Johnson 2005; Arnett et al. 2008; AWWI 2018). Eastern red, hoary, and big brown bat fatalities at the project tended to peak in early August and gradually decrease through late September and early-to-mid-October (Figure 9). Silver-haired bats tended to arrive a few weeks later than most species and consistently represented the greatest proportion of fatalities each week through the remainder of the fall season (Figure 9).

The peak in observed fatalities the week of August 29 was driven by a significant fatality event that occurred the night of August 30 to 31. A total of 82 bats were found during standardized searches on August 31. An additional 65 bats were found during standardized searches the following day (September 1). Silver-haired bats comprised the majority of fatalities (82.3%) during this two-day period, followed by eastern red bats (10.2%) and hoary bats (6.8%). The later peak in mid-September was also driven primarily by a second influx of silver-haired bats (Figure 9).

On an individual turbine basis, full plots had more observed bat fatalities at the project than road and pad plots. This was expected since full plots have a greater amount of area searched compared to roads and pads, particularly at distance bands closer to the turbine tower where a greater proportion of fatalities are likely to be found (Hull and Muir 2010). Mortality rate estimates were adjusted during data analysis to account for the differences in search area between plot types. While turbines closest to the eastern boundary of the project area, tended to have a slightly higher count of observed bat carcasses, fatalities at the project were generally distributed throughout the array and there did not appear to be any areas of major concentration for bats overall (Figure 5). The eastern edge of the project is closest to Mud Pine Creek and associated woodland habitat.

Five federally listed endangered Indiana bats were found over the course of standardized surveys in the fall. An additional 15 state-listed endangered evening bats, one state-listed endangered little brown bat, and one state-listed tricolored bat were found on-site during standardized surveys. These species tended to be found at turbines near the eastern boundary of the project. Four of the five Indiana bats were at some of the eastern-most turbines, which are closest to woodland habitat associated with Mud Pine Creek (Figure 6). Similarly, the little brown bat and a majority of evening bat fatalities were found at turbines in the eastern portion of the project, while the tricolored bat was found at a turbine in the north-central portion of the project.

In response to high numbers of observed bat fatalities, including Indiana bats, JCW increased turbine cut-in speed from 5.0 m/s to 6.9 m/s on September 24, 2022. The weekly number of fatalities found during standardized searches decreased by 55.3% between the week of September 19 and the week of September 26 (i.e., the first full week following the increased cut-in speed; Figure 8). However, the extent to which this was a result of increased cut-in speed, as opposed to seasonal influence (i.e., past peak migratory activity), is unclear.

As previously mentioned, five Indiana bats and no northern long-eared bats were detected during PCMM surveys and the cumulative take after one year of monitoring, based on EoA modelling, is estimated to be 19 Indiana bats and zero northern long eared bats. The estimated detection probability of 0.272 exceeded the target detection probability of 0.20. The long-term trigger threshold has not been exceeded for either species. As this was the first year of baseline monitoring under the HCP, the short-term trigger is not applicable since a minimum of three years of monitoring data will be used to determine if the project is at risk of exceeding its take limit. Long-term progress toward the total authorized take limit will be tracked over the life of the ITP using EoA's multiple years module.

6 REFERENCES

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FIGURES

Jordan Creek Wind Energy Center

Figure 1: Regional Setting

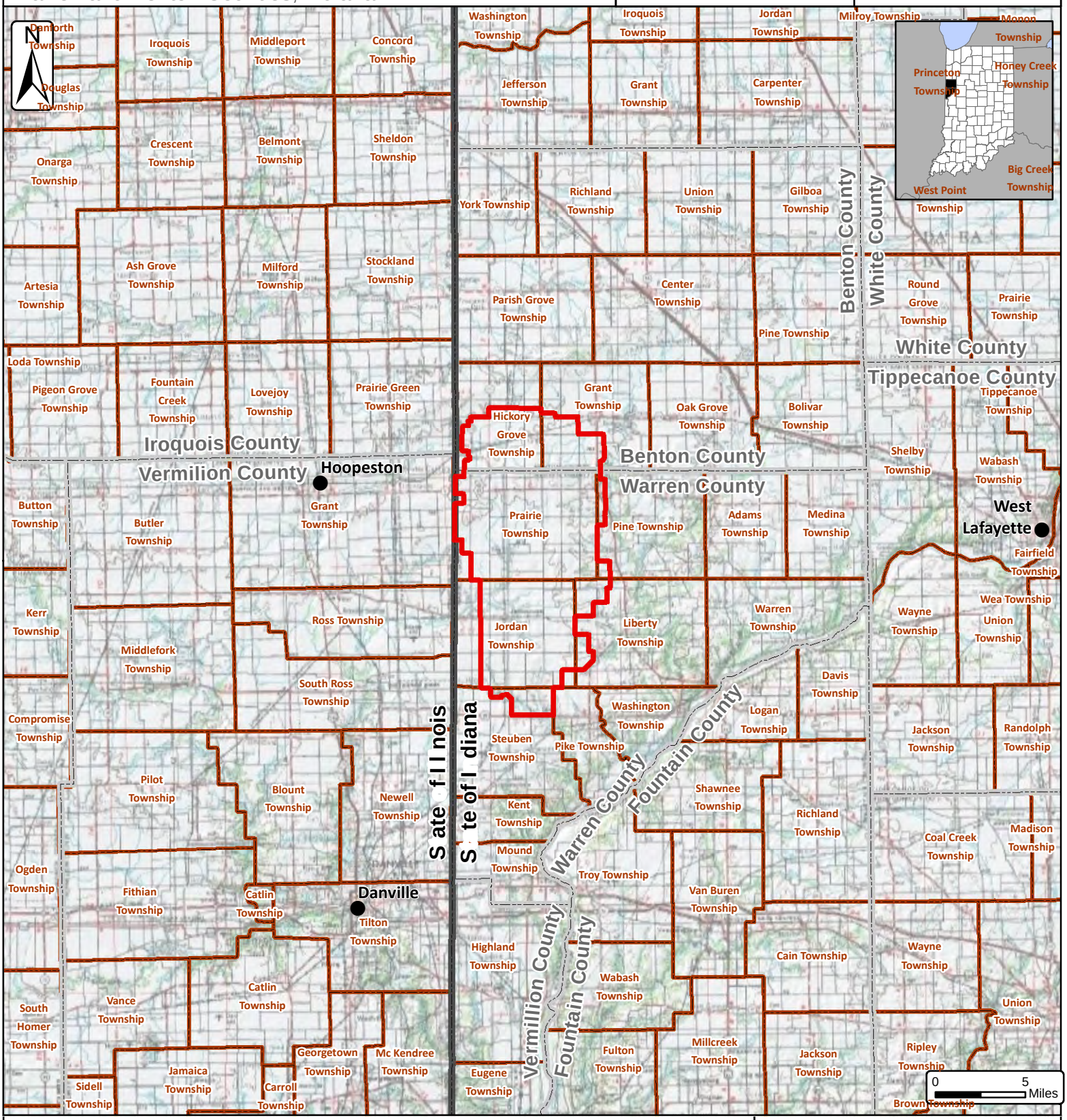
Warren and Benton Counties, Indiana

Client:

Jordan Creek Wind Farm, LLC

Issue Date:
1/5/2022

Atwell, LLC Project:
20004828



- Populated Places (USGS)
- Project Boundary (06/06/2019) (~70,904 Ac.)
- Township Boundary
- State Boundary
- County Boundary

Source: USGS Topographic Basemap

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Jordan Creek Wind Energy Center

Figure 2: National Land Cover Database

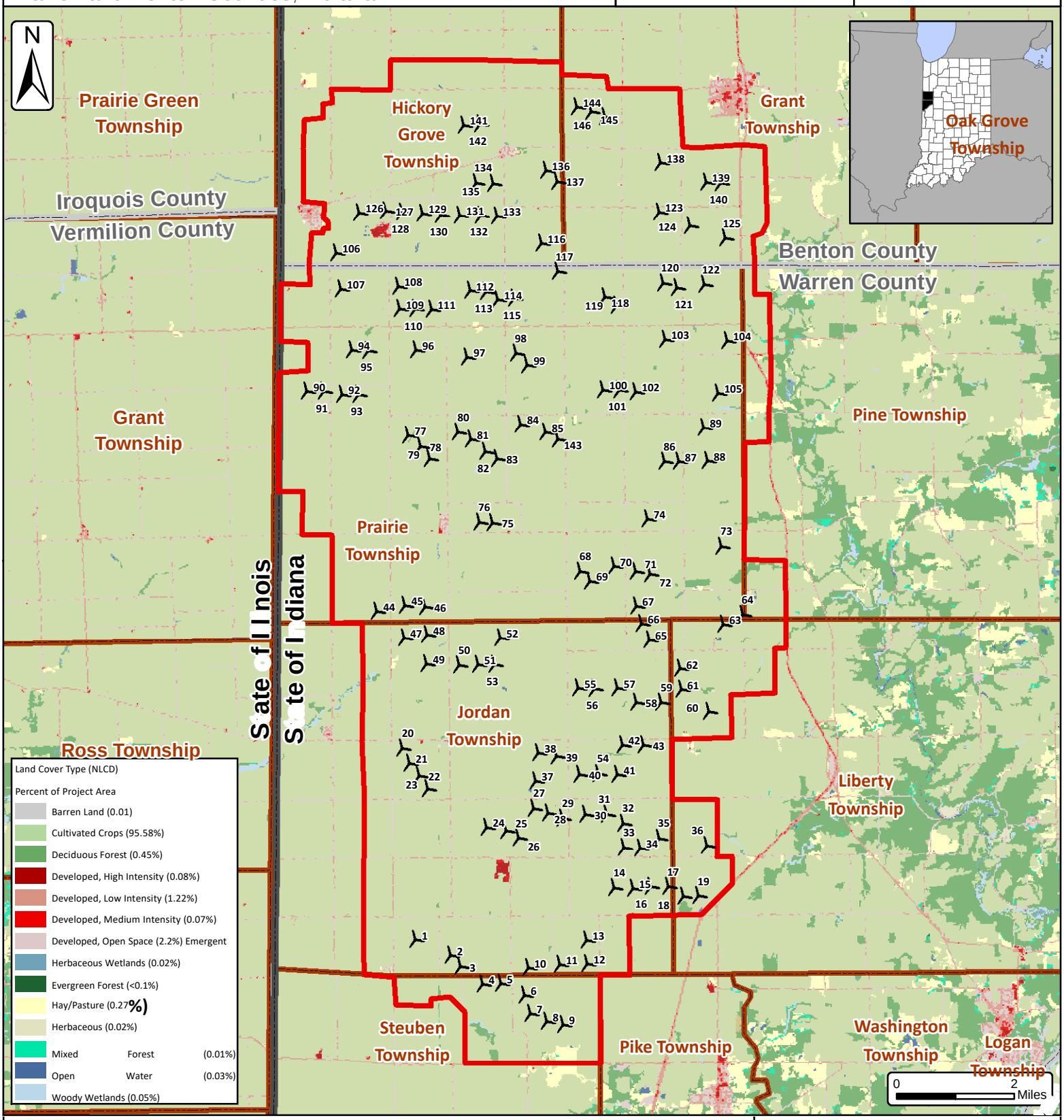
Warren and Benton Counties, Indiana

Client:

Jordan Creek Wind Farm, LLC

Issue Date:
1/5/2022

Atwell, LLC Project:
20004828



Land Cover Type (NLCD)

Percent of Project Area

- Barren Land (0.01)
- Cultivated Crops (95.58%)
- Deciduous Forest (0.45%)
- Developed, High Intensity (0.08%)
- Developed, Low Intensity (1.22%)
- Developed, Medium Intensity (0.07%)
- Developed, Open Space (2.2%) Emergent
- Herbaceous Wetlands (0.02%)
- Evergreen Forest (<0.1%)
- Hay/Pasture (0.27%)
- Herbaceous (0.02%)
- Mixed Forest (0.01%)
- Open Water (0.03%)
- Woody Wetlands (0.05%)

As-Built Turbine Locations (4/16/2020)

Project Boundary (06/06/2019) (~70,904 Ac.)

Township Boundary

State Boundary

County Boundary

SOURCE: USGS NLCD Land Cover

ATWELL

Jordan Creek Wind Energy Center

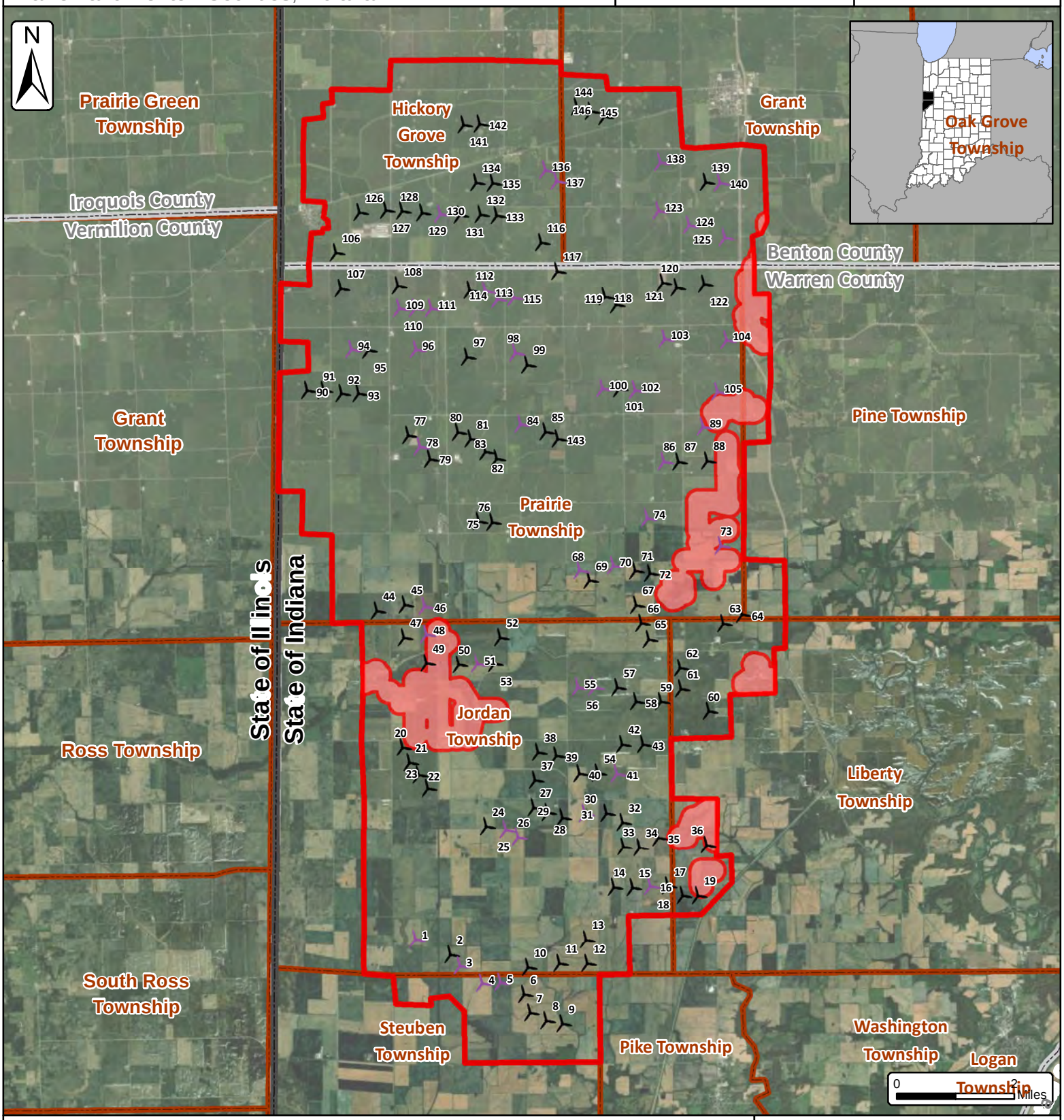
Figure 3: As-Built Turbines and Bat Fatality Search Locations

Warren and Benton Counties, Indiana

Client:
Jordan Creek Wind Farm, LLC

Issue Date:
10/31/2022

Atwell, LLC Project:
20004828



As-Built Turbine Locations (4/16/2020)

- 102 Turbines Surveyed as Road and Pad Plots
- 44 Turbines Surveyed as 100 meter x 100 meter Cleared Full Plots

- USFWS Bat Avoidance Buffer
- Project Boundary (06/06/2019) (~70,904 acres)

- Township Boundary
- State Boundary
- County Boundary

Source: Esri World Imagery

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Jordan Creek Wind Energy Center

Figure 4: Example Schematic of Two Search Strategies

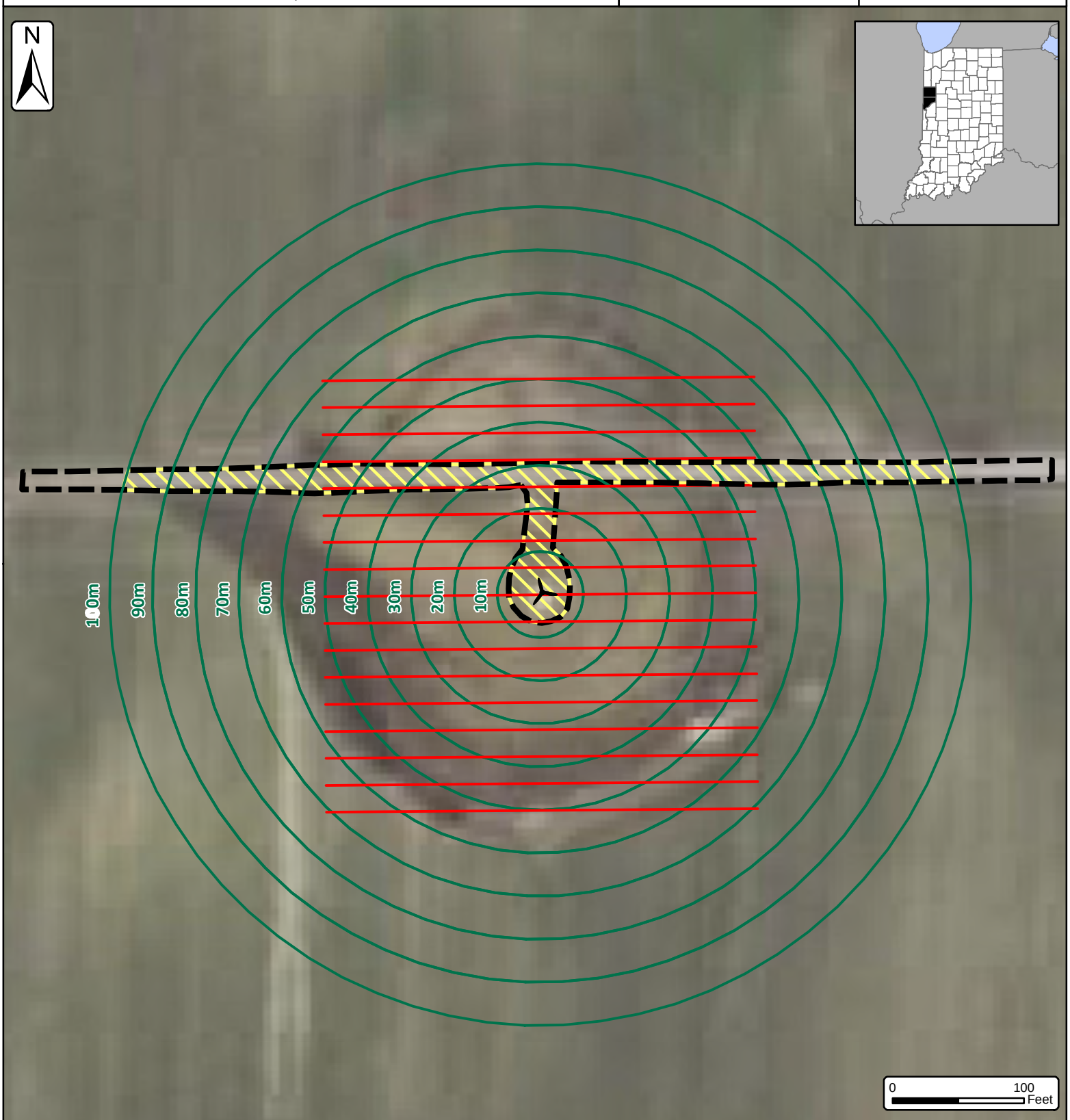
Warren and Benton Counties, Indiana

Client:

Jordan Creek Wind Farm, LLC

Issue Date: 10/31/2022

Atwell, LLC Project: 20004828



As-Built Turbine Locations (4/16/2020)

100 X 100 Meter Survey Plot

10 Meter Distance Bands

Field-delineated Access Road

Road and Pad Search Area

Source: National Agriculture Imagery Program (2020)

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Jordan Creek Wind Energy Center

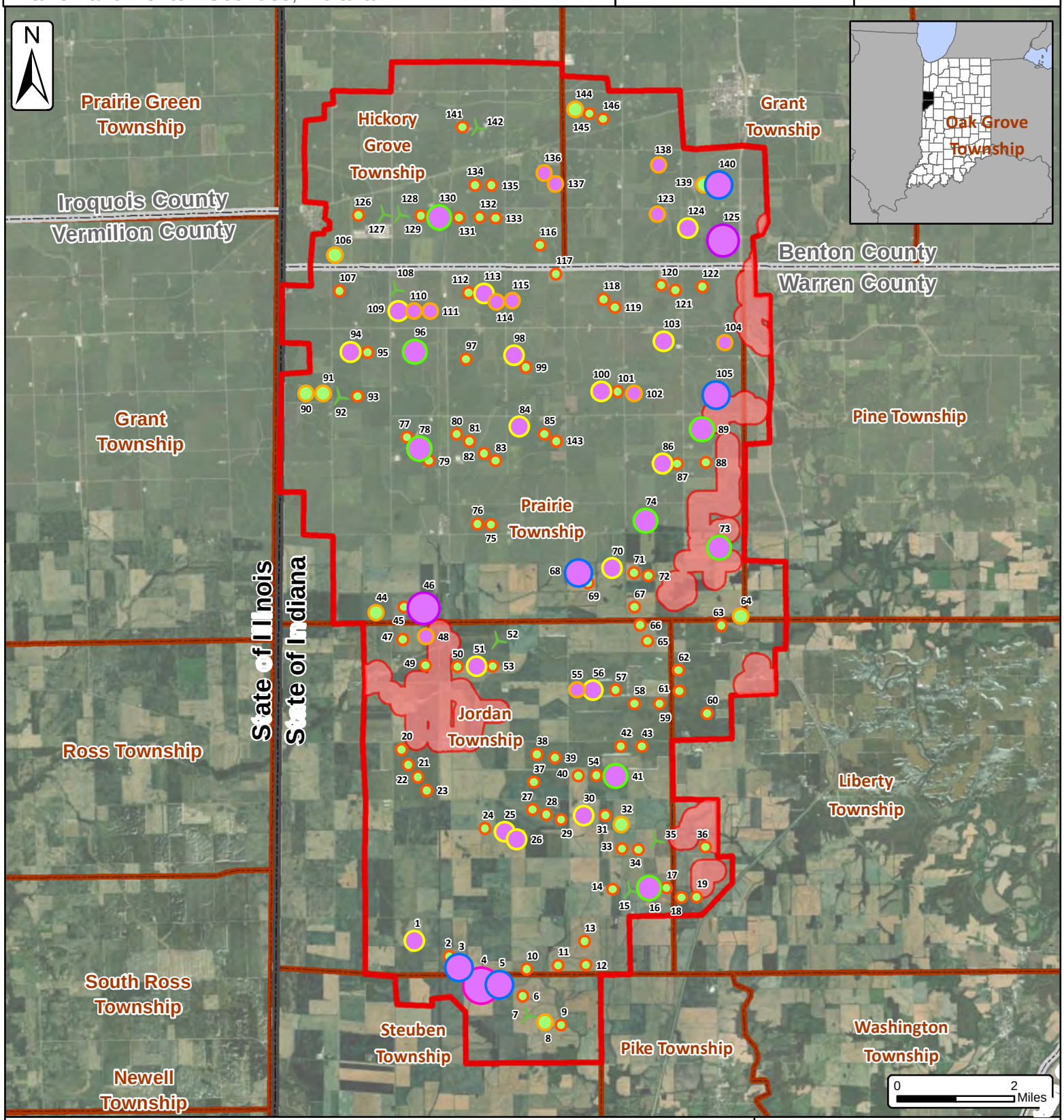
Figure 5: Weighted Standardized Bat Fatalities

Warren and Benton Counties, Indiana

Client:
Jordan Creek Wind Farm, LLC

Issue Date:
10/31/2022

Atwell, LLC Project:
20004828



- Road and Pad Plot with Standardized Bat Fatalities
- Cleared Full Plot with Standardized Bat Fatalities
- Road and Pad Plot with Zero Standardized Bat Fatalities
- Cleared Full Plot with Zero Standardized Bat Fatalities
- USFWS Bat Avoidance Buffer
- Project Boundary (06/06/2019) (~70,904 Ac.)
- Township Boundary
- State Boundary
- County Boundary

Weighted Standardized Fatalities

- 1 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- 21 - 25
- 26 - 30
- 31 - 35

Source: Esri World Imagery

ATWELL

Jordan Creek Wind Energy Center

Figure 6: Locations of Sensitive Bat Species

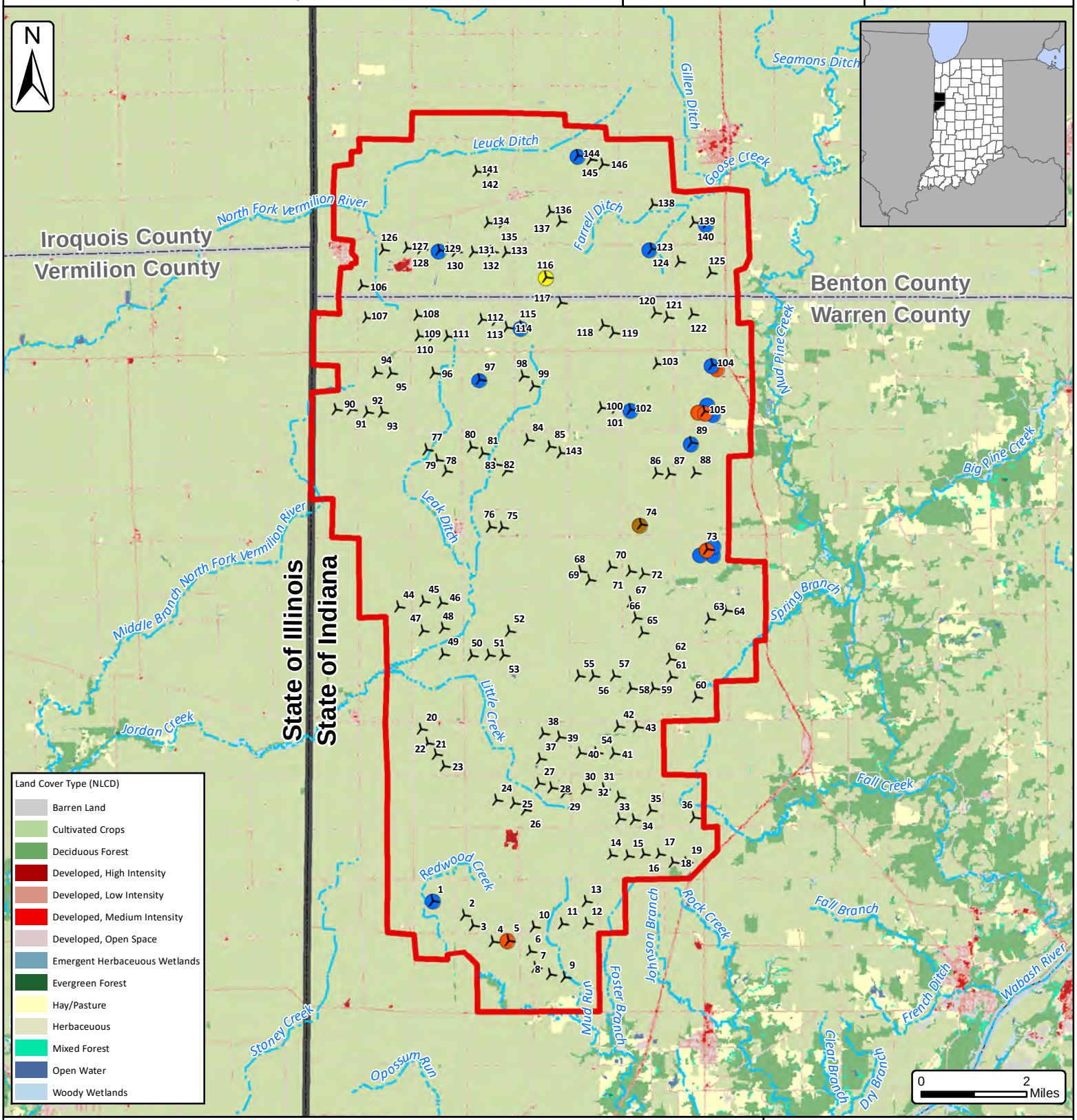
Warren and Benton Counties, Indiana

Client:

Jordan Creek Wind Farm, LLC

Issue Date:
1/26/2023

Atwell, LLC Project:
20004828



- Indiana bat (federally and state-listed endangered)
- Little brown bat (state-listed endangered*)
- Evening bat (state-listed endangered)
- Tricolored bat (state-listed endangered*)
- As-Built Turbine Locations (4/16/2020)
- Watercourse (NHD)
- Project Boundary (06/06/2019) (~70,904 Ac.)
- State Boundary
- County Boundary

*As of the preparation of this report, little brown bat is under review for federal listing status and tricolored bat has been proposed for federal endangered species status.

Source: USGS NLCD Land Cover

ATWELL

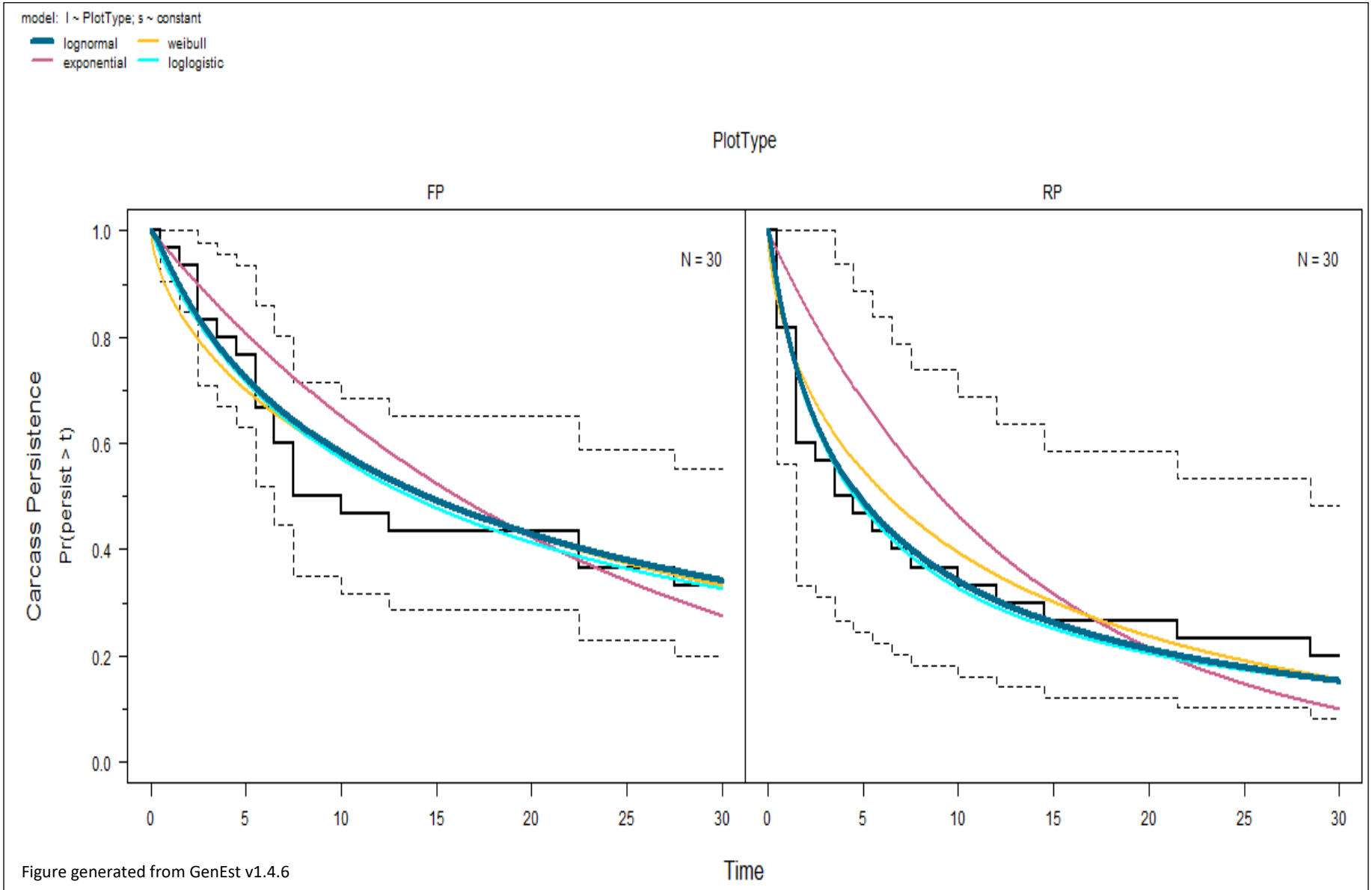
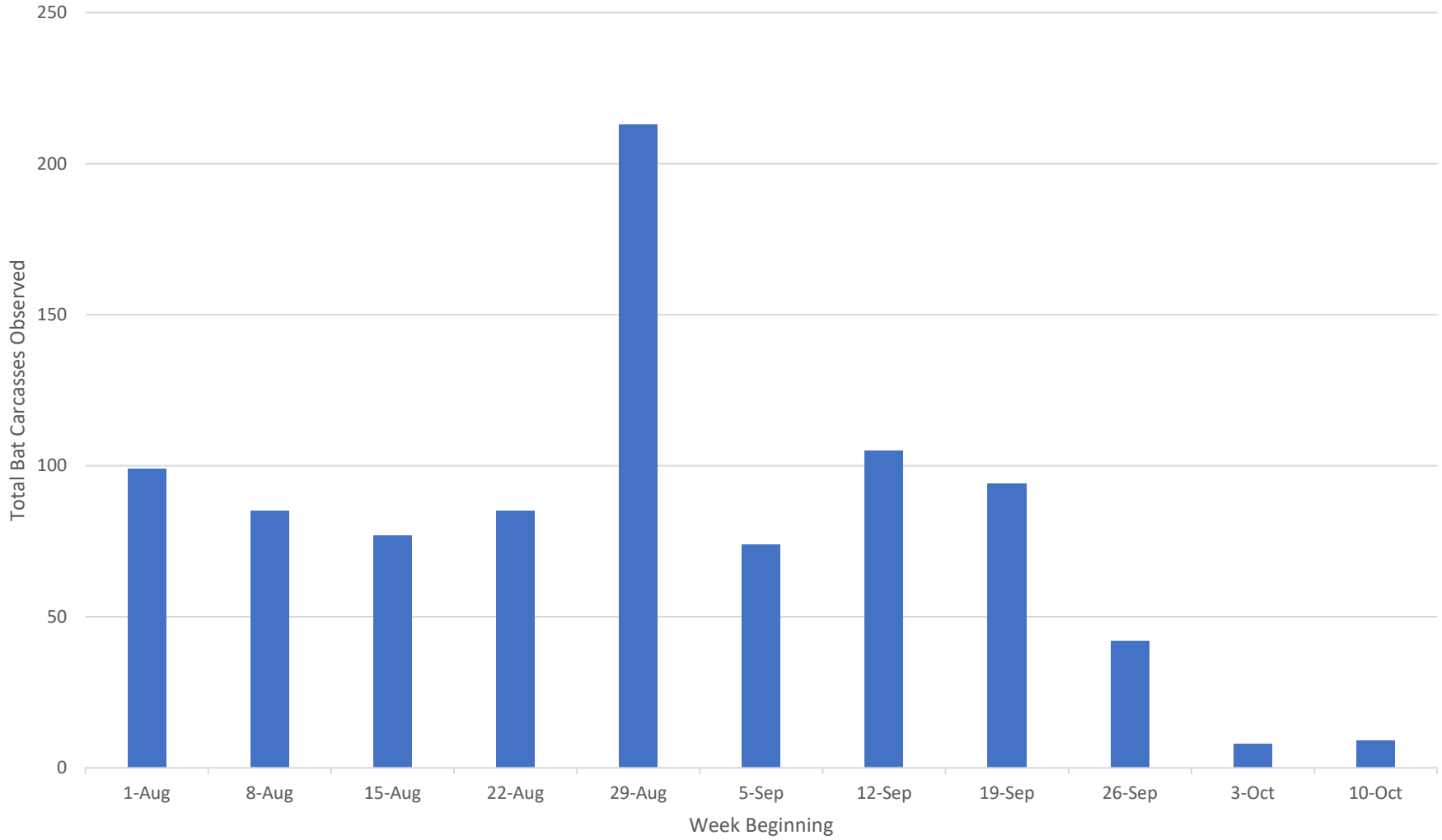


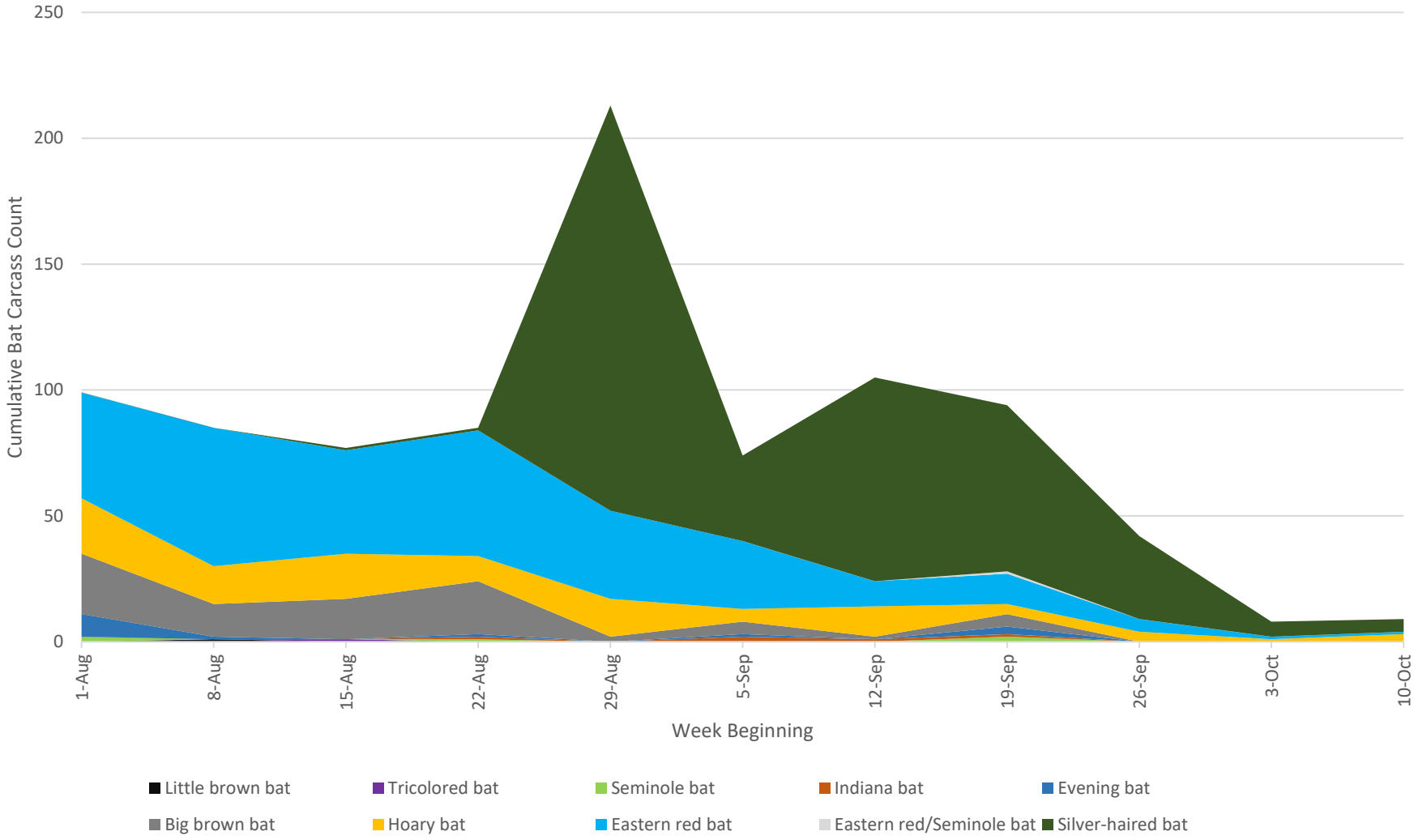
Figure generated from GenEst v1.4.6



1-Aug to 24-Sep = 5.0 m/s cut-in
24-Sep to 15-Oct = 6.9 m/s cut-in

Total Bat Fatalities by Week at Jordan Creek Wind Energy Center

Figure 8



1-Aug to 24-Sep = 5.0 m/s cut-in
24-Sep to 15-Oct = 6.9 m/s cut-in

Cumulative Bat Species Fatalities by Week at Jordan Creek Wind Energy Center

Figure 9

APPENDICES

List of Bat Fatalities Located during Fall Post-construction Monitoring Surveys at Jordan Creek Wind Energy Center

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Big brown bat	*Eptesicus fuscus*	20220802_BBBA_001_1	1	FP	08/02/22	9.5	25	16T 458839 4462319	P	47.8	J	U	No
Evening bat	*Nycticeius humeralis*	20220802_EVBA_001_1	1	FP	08/02/22	29.1	36	16T 458852 4462334	P	38.1	A	F	No
Eastern red bat	*Lasiurus borealis*	20220802_ERBA_003_1	3	FP	08/02/22	50.8	138	16T 460085 4461518	I	41.4	J	M	No
Hoary bat	*Lasiurus cinereus*	20220802_HOBA_003_1	3	FP	08/02/22	37.1	12	16T 460059 4461592	P	51.8	A	U	No
Big brown bat	*Eptesicus fuscus*	20220802_BBBA_004_1	4	FP	08/02/22	18.0	51	16T 460669 4461077	I	47.1	U	M	No
Big brown bat	*Eptesicus fuscus*	20220802_BBBA_005_1	5	FP	08/02/22	39.4	8	16T 461157 4461126	I	45.2	J	M	No
Big brown bat	*Eptesicus fuscus*	20220802_BBBA_014_1	14	RP	08/02/22	19.2	179	16T 464291 4463657	I	47.8	A	U	No
Eastern red bat	*Lasiurus borealis*	20220802_ERBA_018_1	18	RP	08/02/22	5.5	342	16T 466171 4463433	D	39.5	U	F	No
Eastern red bat	*Lasiurus borealis*	20220802_ERBA_050_1	50	RP	08/02/22	6.2	339	16T 460093 4469824	I	39.2	U	U	No
Big brown bat	*Eptesicus fuscus*	20220802_BBBA_051_1	51	FP	08/02/22	14.8	136	16T 460623 4469819	I	46.4	A	F	No
Eastern red bat	*Lasiurus borealis*	20220802_ERBA_051_1	51	FP	08/02/22	60.6	234	16T 460564 4469794	F	38.6	A	M	No
Hoary bat	*Lasiurus cinereus*	20220802_HOBA_055_1	55	FP	08/02/22	31.5	130	16T 463382 4469130	I	53.4	J	M	No
Evening bat	*Nycticeius humeralis*	20220802_EVBA_073_1	73	FP	08/02/22	60.3	32	16T 467345 4473063	I	34.9	J	F	No
Eastern red bat	*Lasiurus borealis*	20220802_ERBA_078_1	78	FP	08/02/22	1.6	122	16T 459094 4475816	I	37.4	U	F	No
Eastern red bat	*Lasiurus borealis*	20220802_ERBA_086_1	86	FP	08/02/22	41.0	15	16T 465788 4475384	D	NA	U	U	No
Hoary bat	*Lasiurus cinereus*	20220802_HOBA_091_1	91	RP	08/02/22	16.4	3	16T 456466 4477379	I	54.5	J	M	No
Hoary bat	*Lasiurus cinereus*	20220802_HOBA_094_1	94	FP	08/02/22	44.2	104	16T 457282 4478481	I	55.9	A	F	No
Big brown bat	*Eptesicus fuscus*	20220802_BBBA_096_1	96	FP	08/02/22	9.5	58	16T 459009 4478480	I	46.2	J	M	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Eastern red bat	*Lasiurus borealis*	20220802_ERBA_100_1	100	FP	08/02/22	39.2	271	16T 464074 4477340	I	41.5	A	F	No
Big brown bat	*Eptesicus fuscus*	20220802_BBBA_103_1	103	FP	08/02/22	6.1	360	16T 465827 4478702	P	40.0	J	U	No
Eastern red bat	*Lasiurus borealis*	20220802_ERBA_103_1	103	FP	08/02/22	52.8	127	16T 465869 4478664	I	41.0	A	F	No
Big brown bat	*Eptesicus fuscus*	20220802_BBBA_104_1	104	FP	08/02/22	30.2	213	16T 467506 4478622	I	48.0	A	M	No
Big brown bat	*Eptesicus fuscus*	20220802_BBBA_113_1	113	FP	08/02/22	26.1	107	16T 460949 4480050	D	42.3	U	U	No
Big brown bat	*Eptesicus fuscus*	20220802_BBBA_117_1	117	RP	08/02/22	4.9	103	16T 462906 4480578	I	48.0	U	U	No
Eastern red bat	*Lasiurus borealis*	20220802_ERBA_124_1	124	FP	08/02/22	20.8	162	16T 466537 4481775	I	40.2	A	M	No
Big brown bat	*Eptesicus fuscus*	20220802_BBBA_140_1	140	FP	08/02/22	31.2	28	16T 467405 4482998	P	49.2	A	U	No
Eastern red bat	*Lasiurus borealis*	20220802_ERBA_140_1	140	FP	08/02/22	36.8	15	16T 467400 4483006	I	40.3	A	F	No
Big brown bat	*Eptesicus fuscus*	20220803_BBBA_004_1	4	FP	08/03/22	20.7	75	16T 460675 4461071	I	46.6	J	M	No
Hoary bat	*Lasiurus cinereus*	20220803_HOBA_004_1	4	FP	08/03/22	25.4	55	16T 460676 4461080	I	55.6	A	U	No
Eastern red bat	*Lasiurus borealis*	20220803_ERBA_016_1	16	FP	08/03/22	57.2	335	16T 465265 4463745	P	39.6	A	U	No
Hoary bat	*Lasiurus cinereus*	20220803_HOBA_016_1	16	FP	08/03/22	49.5	62	16T 465333 4463716	I	52.7	A	F	No
Hoary bat	*Lasiurus cinereus*	20220803_HOBA_026_1	26	FP	08/03/22	61.8	319	16T 461637 4465118	I	55.6	A	F	No
Big brown bat	*Eptesicus fuscus*	20220803_BBBA_027_1	27	RP	08/03/22	73.0	358	16T 462107 4465955	P	46.1	U	U	No
Eastern red bat	*Lasiurus borealis*	20220803_ERBA_041_1	41	FP	08/03/22	35.7	337	16T 464391 4466812	I	37.9	A	M	No
Hoary bat	*Lasiurus cinereus*	20220803_HOBA_046_1	46	FP	08/03/22	18.0	284	16T 459157 4471434	I	50.8	A	U	No
Hoary bat	*Lasiurus cinereus*	20220803_HOBA_060_1	60	RP	08/03/22	4.6	59	16T 466935 4468475	I	51.2	J	M	No
Big brown bat	*Eptesicus fuscus*	20220803_BBBA_064_1	64	RP	08/03/22	6.2	297	16T 467868 4471134	I	44.2	J	M	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Evening bat	*Nycticeius humeralis*	20220803_EVBA_073_1	73	FP	08/03/22	24.4	263	16T 467289 4473009	I	36.3	J	U	No
Hoary bat	*Lasiurus cinereus*	20220803_HOBA_075_1	75	RP	08/03/22	8.1	215	16T 461049 4473708	I	51.2	A	U	No
Big brown bat	*Eptesicus fuscus*	20220803_BBBA_078_1	78	FP	08/03/22	33.8	203	16T 459079 4475786	I	44.6	A	U	No
Eastern red bat	*Lasiurus borealis*	20220803_ERBA_084_1	84	FP	08/03/22	18.5	102	16T 461871 4476395	I	41.2	J	M	No
Hoary bat	*Lasiurus cinereus*	20220803_HOBA_086_1	86	FP	08/03/22	25.8	53	16T 465798 4475360	I	51.4	J	F	No
Hoary bat	*Lasiurus cinereus*	20220803_HOBA_086_2	86	FP	08/03/22	41.8	311	16T 465746 4475372	I	53.8	A	F	No
Eastern red bat	*Lasiurus borealis*	20220803_ERBA_089_1	89	FP	08/03/22	59.0	312	16T 466816 4476314	I	39.7	A	F	No
Hoary bat	*Lasiurus cinereus*	20220803_HOBA_094_1	94	FP	08/03/22	7.3	278	16T 457232 4478493	P	47.5	U	U	No
Eastern red bat	*Lasiurus borealis*	20220803_ERBA_098_1	98	FP	08/03/22	17.4	114	16T 461747 4478348	I	36.0	A	M	No
Hoary bat	*Lasiurus cinereus*	20220803_HOBA_098_1	98	FP	08/03/22	17.8	321	16T 461720 4478369	I	54.9	J	F	No
Eastern red bat	*Lasiurus borealis*	20220803_ERBA_109_1	109	FP	08/03/22	54.6	239	16T 458517 4479573	I	36.8	A	M	No
Hoary bat	*Lasiurus cinereus*	20220803_HOBA_115_1	115	FP	08/03/22	52.2	329	16T 461673 4479910	I	54.3	A	U	No
Eastern red bat	*Lasiurus borealis*	20220803_ERBA_137_1	137	FP	08/03/22	15.7	37	16T 462916 4483067	I	37.7	A	M	No
Eastern red bat	*Lasiurus borealis*	20220803_ERBA_143_1	143	RP	08/03/22	7.4	298	16T 462855 4475994	P	40.0	U	U	No
Big brown bat	*Eptesicus fuscus*	20220804_BBBA_004_1	4	FP	08/04/22	34.7	108	16T 460688 4461055	I	46.4	A	M	No
Big brown bat	*Eptesicus fuscus*	20220804_BBBA_036_1	36	RP	08/04/22	7.3	157	16T 466843 4464800	I	48.5	J	U	No
Big brown bat	*Eptesicus fuscus*	20220804_BBBA_096_1	96	FP	08/04/22	31.1	356	16T 458999 4478506	P	47.5	U	U	No
Hoary bat	*Lasiurus cinereus*	20220804_HOBA_096_1	96	FP	08/04/22	18.8	238	16T 458963 4478497	I	54.2	U	U	No
Evening bat	*Nycticeius humeralis*	20220804_EVBA_097_1	97	RP	08/04/22	2.5	109	16T 460401 4478260	P	35.8	U	U	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Seminole bat	*Lasiurus seminolus*	20220804_SEBA_140_1	140	FP	08/04/22	17.3	327	16T 467381 4482985	I	41.8	A	U	No
Eastern red bat	*Lasiurus borealis*	20220805_ERBA_003_1	3	FP	08/05/22	42.7	50	16T 460084 4461583	I	38.3	A	M	No
Big brown bat	*Eptesicus fuscus*	20220805_BBBA_005_1	5	FP	08/05/22	20.0	117	16T 461169 4461078	I	47.1	A	F	No
Eastern red bat	*Lasiurus borealis*	20220805_ERBA_005_1	5	FP	08/05/22	41.8	260	16T 461110 4461080	I	35.5	A	M	No
Eastern red bat	*Lasiurus borealis*	20220805_ERBA_008_1	8	RP	08/05/22	3.4	199	16T 462395 4460034	I	40.7	A	F	No
Eastern red bat	*Lasiurus borealis*	20220805_ERBA_019_1	19	RP	08/05/22	9.5	219	16T 466586 4463422	I	37.5	A	M	No
Eastern red bat	*Lasiurus borealis*	20220805_ERBA_030_1	30	FP	08/05/22	32.7	41	16T 463541 4465726	I	39.5	A	F	No
Eastern red bat	*Lasiurus borealis*	20220805_ERBA_051_1	51	FP	08/05/22	59.1	304	16T 460564 4469863	P	38.2	U	M	No
Eastern red bat	*Lasiurus borealis*	20220805_ERBA_072_1	72	RP	08/05/22	8.0	269	16T 465349 4472270	I	40.1	U	F	No
Evening bat	*Nycticeius humeralis*	20220805_EVBA_073_1	73	FP	08/05/22	6.4	154	16T 467316 4473006	I	38.9	J	F	No
Hoary bat	*Lasiurus cinereus*	20220805_HOBA_082_1	82	RP	08/05/22	37.2	88	16T 460913 4475668	I	52.8	J	F	No
Evening bat	*Nycticeius humeralis*	20220805_EVBA_102_1	102	FP	08/05/22	10.5	86	16T 465013 4477279	P	37.6	J	U	No
Evening bat	*Nycticeius humeralis*	20220805_EVBA_105_1	105	FP	08/05/22	47.7	141	16T 467293 4477174	I	36.0	J	F	No
Hoary bat	*Lasiurus cinereus*	20220805_HOBA_105_1	105	FP	08/05/22	23.4	141	16T 467278 4477193	I	54.3	U	U	No
Hoary bat	*Lasiurus cinereus*	20220805_HOBA_110_1	110	FP	08/05/22	58.4	315	16T 458952 4479636	D	NA	A	U	No
Evening bat	*Nycticeius humeralis*	20220805_EVBA_129_1	129	RP	08/05/22	5.3	274	16T 459206 4482211	D	NA	U	F	No
Eastern red bat	*Lasiurus borealis*	20220805_ERBA_135_1	135	RP	08/05/22	41.4	359	16T 461157 4483069	I	41.0	A	M	No
Eastern red bat	*Lasiurus borealis*	20220806_ERBA_005_1	5	FP	08/06/22	13.5	144	16T 461159 4461076	I	40.7	J	F	No
Big brown bat	*Eptesicus fuscus*	20220806_BBBA_030_1	30	FP	08/06/22	30.9	79	16T 463550 4465707	I	47.5	A	U	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Eastern red bat	*Lasiurus borealis*	20220806_ERBA_032_1	32	RP	08/06/22	3.2	288	16T 464545 4465447	A	NA	U	U	No
Eastern red bat	*Lasiurus borealis*	20220806_ERBA_046_1	46	FP	08/06/22	46.5	36	16T 459202 4471467	I	38.5	A	M	No
Hoary bat	*Lasiurus cinereus*	20220806_HOBA_055_1	55	FP	08/06/22	54.9	324	16T 463326 4469195	I	53.5	J	F	No
Eastern red bat	*Lasiurus borealis*	20220806_ERBA_124_1	124	FP	08/06/22	25.9	232	16T 466510 4481779	I	41.1	J	F	No
Big brown bat	*Eptesicus fuscus*	20220806_BBBA_140_1	140	FP	08/06/22	13.6	51	16T 467401 4482979	I	47.3	J	F	No
Big brown bat	*Eptesicus fuscus*	20220806_BBBA_145_1	145	RP	08/06/22	6.5	304	16T 463851 4484970	I	44.4	A	F	No
Big brown bat	*Eptesicus fuscus*	20220807_BBBA_004_1	4	FP	08/07/22	21.0	72	16T 460675 4461072	I	44.0	J	F	No
Eastern red bat	*Lasiurus borealis*	20220807_ERBA_004_1	4	FP	08/07/22	38.6	51	16T 460685 4461090	I	39.7	A	F	No
Eastern red bat	*Lasiurus borealis*	20220807_ERBA_005_1	5	FP	08/07/22	14.6	303	16T 461139 4461095	I	42.0	J	F	No
Eastern red bat	*Lasiurus borealis*	20220807_ERBA_005_2	5	FP	08/07/22	7.1	74	16T 461158 4461089	I	40.5	A	F	No
Hoary bat	*Lasiurus cinereus*	20220807_HOBA_017_1	17	RP	08/07/22	1.6	254	16T 465766 4463689	I	55.9	J	F	No
Big brown bat	*Eptesicus fuscus*	20220807_BBBA_028_1	28	RP	08/07/22	11.7	350	16T 462493 4465752	I	44.8	J	M	No
Eastern red bat	*Lasiurus borealis*	20220807_ERBA_048_1	48	FP	08/07/22	8.5	333	16T 459220 4470669	I	41.7	A	F	No
Eastern red bat	*Lasiurus borealis*	20220807_ERBA_068_1	68	FP	08/07/22	28.6	273	16T 463411 4472363	I	41.0	J	F	No
Eastern red bat	*Lasiurus borealis*	20220807_ERBA_068_2	68	FP	08/07/22	31.1	275	16T 463409 4472363	I	41.6	A	F	No
Eastern red bat	*Lasiurus borealis*	20220807_ERBA_084_1	84	FP	08/07/22	16.9	270	16T 461836 4476399	P	36.0	U	U	No
Eastern red bat	*Lasiurus borealis*	20220807_ERBA_084_2	84	FP	08/07/22	52.2	244	16T 461806 4476376	I	41.2	J	M	No
Eastern red bat	*Lasiurus borealis*	20220807_ERBA_094_1	94	FP	08/07/22	45.0	330	16T 457217 4478531	I	41.7	A	F	No
Eastern red bat	*Lasiurus borealis*	20220807_ERBA_096_1	96	FP	08/07/22	50.2	329	16T 458975 4478518	D	38.6	A	U	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Eastern red bat	*Lasiurus borealis*	20220807_ERBA_105_1	105	FP	08/07/22	6.5	266	16T 467257 4477211	I	37.1	A	U	No
Hoary bat	*Lasiurus cinereus*	20220807_HOBA_106_1	106	RP	08/07/22	6.4	241	16T 456828 4481146	I	51.1	A	M	No
Eastern red bat	*Lasiurus borealis*	20220807_ERBA_125_1	125	FP	08/07/22	34.1	300	16T 467470 4481467	I	38.3	J	M	No
Seminole bat	*Lasiurus seminolus*	20220807_SEBA_130_1	130	FP	08/07/22	16.1	79	16T 459727 4482169	I	41.7	A	F	No
Evening bat	*Nycticeius humeralis*	20220807_EVBA_140_1	140	FP	08/07/22	21.4	215	16T 467378 4482953	I	36.8	U	U	No
Big brown bat	*Eptesicus fuscus*	20220808_BBBA_016_1	16	FP	08/08/22	28.6	306	16T 465266 4463710	I	44.9	A	M	No
Eastern red bat	*Lasiurus borealis*	20220808_ERBA_016_1	16	FP	08/08/22	41.1	304	16T 465255 4463716	I	39.5	A	U	No
Big brown bat	*Eptesicus fuscus*	20220808_BBBA_032_1	32	RP	08/08/22	5.4	338	16T 464546 4465451	I	49.0	J	U	No
Big brown bat	*Eptesicus fuscus*	20220808_BBBA_046_1	46	FP	08/08/22	52.2	61	16T 459220 4471455	I	42.5	A	M	No
Eastern red bat	*Lasiurus borealis*	20220808_ERBA_047_1	47	RP	08/08/22	7.9	313	16T 458592 4470595	I	42.5	A	F	No
Eastern red bat	*Lasiurus borealis*	20220808_ERBA_050_1	50	RP	08/08/22	4.3	280	16T 460091 4469819	I	39.2	A	F	No
Eastern red bat	*Lasiurus borealis*	20220808_ERBA_053_1	53	RP	08/08/22	8.3	352	16T 461064 4469836	I	38.9	A	M	No
Eastern red bat	*Lasiurus borealis*	20220808_ERBA_057_1	57	RP	08/08/22	37.0	351	16T 464425 4469178	I	41.3	A	F	No
Eastern red bat	*Lasiurus borealis*	20220808_ERBA_074_1	74	FP	08/08/22	22.4	324	16T 465285 4473797	I	33.3	A	M	No
Little brown bat	*Myotis lucifugus*	20220808_LLBA_074_1	74	FP	08/08/22	22.1	286	16T 465277 4473785	I	36.1	J	M	No
Eastern red bat	*Lasiurus borealis*	20220808_ERBA_095_1	95	RP	08/08/22	22.0	87	16T 457719 4478476	I	39.7	J	F	No
Big brown bat	*Eptesicus fuscus*	20220808_BBBA_096_1	96	FP	08/08/22	36.4	339	16T 458988 4478509	I	47.6	J	F	No
Eastern red bat	*Lasiurus borealis*	20220808_ERBA_111_1	111	FP	08/08/22	10.3	254	16T 459428 4479586	P	39.0	J	U	No
Eastern red bat	*Lasiurus borealis*	20220808_ERBA_113_1	113	FP	08/08/22	45.2	52	16T 460960 4480085	I	37.4	J	M	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Evening bat	*Nycticeius humeralis*	20220808_EVBA_123_1	123	FP	08/08/22	49.9	276	16T 465647 4482199	I	35.2	J	U	No
Eastern red bat	*Lasiurus borealis*	20220808_ERBA_124_1	124	FP	08/08/22	54.5	39	16T 466565 4481837	I	39.8	A	F	No
Eastern red bat	*Lasiurus borealis*	20220808_ERBA_125_1	125	FP	08/08/22	20.5	220	16T 467486 4481434	I	36.4	A	M	No
Big brown bat	*Eptesicus fuscus*	20220808_BBBA_140_1	140	FP	08/08/22	25.4	317	16T 467373 4482989	I	46.3	J	U	No
Big brown bat	*Eptesicus fuscus*	20220808_BBBA_140_2	140	FP	08/08/22	35.7	86	16T 467426 4482973	I	45.2	A	U	No
Eastern red bat	*Lasiurus borealis*	20220808_ERBA_140_1	140	FP	08/08/22	10.6	115	16T 467400 4482966	I	41.6	A	F	No
Eastern red bat	*Lasiurus borealis*	20220809_ERBA_011_1	11	RP	08/09/22	9.9	222	16T 462769 4461588	I	37.0	A	M	No
Eastern red bat	*Lasiurus borealis*	20220809_ERBA_013_1	13	RP	08/09/22	4.9	203	16T 463509 4462248	I	40.5	A	F	No
Hoary bat	*Lasiurus cinereus*	20220809_HOBA_041_1	41	FP	08/09/22	18.2	279	16T 464387 4466782	I	52.5	J	U	No
Eastern red bat	*Lasiurus borealis*	20220809_ERBA_068_1	68	FP	08/09/22	40.8	160	16T 463454 4472322	I	38.1	A	M	No
Big brown bat	*Eptesicus fuscus*	20220809_BBBA_069_1	69	RP	08/09/22	2.8	147	16T 463706 4472093	I	44.2	A	F	No
Big brown bat	*Eptesicus fuscus*	20220809_BBBA_070_1	70	FP	08/09/22	46.0	253	16T 464315 4472475	I	44.6	J	M	No
Eastern red bat	*Lasiurus borealis*	20220809_ERBA_095_1	95	RP	08/09/22	43.2	84	16T 457740 4478479	I	40.3	A	F	No
Big brown bat	*Eptesicus fuscus*	20220809_BBBA_096_1	96	FP	08/09/22	54.8	308	16T 458958 4478509	I	45.5	U	U	No
Eastern red bat	*Lasiurus borealis*	20220809_ERBA_103_1	103	FP	08/09/22	19.1	276	16T 465808 4478698	I	39.1	A	M	No
Eastern red bat	*Lasiurus borealis*	20220809_ERBA_105_1	105	FP	08/09/22	46.7	242	16T 467222 4477190	I	39.7	A	M	No
Eastern red bat	*Lasiurus borealis*	20220809_ERBA_109_1	109	FP	08/09/22	50.8	244	16T 458518 4479579	I	37.8	A	M	No
Eastern red bat	*Lasiurus borealis*	20220809_ERBA_115_1	115	FP	08/09/22	51.1	180	16T 461699 4479814	I	38.7	A	M	No
Hoary bat	*Lasiurus cinereus*	20220809_HOBA_120_1	120	RP	08/09/22	5.4	193	16T 465788 4480233	I	52.0	J	M	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Hoary bat	*Lasiurus cinereus*	20220809_HOBA_130_1	130	FP	08/09/22	43.3	300	16T 459674 4482188	I	50.7	A	U	No
Hoary bat	*Lasiurus cinereus*	20220810_HOBA_001_1	1	FP	08/10/22	25.3	107	16T 458859 4462303	I	53.0	A	M	No
Eastern red bat	*Lasiurus borealis*	20220810_ERBA_003_1	3	FP	08/10/22	28.4	168	16T 460057 4461528	I	41.0	A	M	No
Eastern red bat	*Lasiurus borealis*	20220810_ERBA_009_1	9	RP	08/10/22	7.2	343	16T 462840 4459957	I	38.0	J	F	No
Eastern red bat	*Lasiurus borealis*	20220810_ERBA_016_1	16	FP	08/10/22	45.6	128	16T 465325 4463665	I	37.0	J	M	No
Eastern red bat	*Lasiurus borealis*	20220810_ERBA_016_2	16	FP	08/10/22	37.8	253	16T 465253 4463682	I	41.5	U	F	No
Hoary bat	*Lasiurus cinereus*	20220810_HOBA_046_1	46	FP	08/10/22	31.6	179	16T 459175 4471398	I	52.5	U	M	No
Eastern red bat	*Lasiurus borealis*	20220810_ERBA_080_1	80	RP	08/10/22	6.3	183	16T 460131 4476193	I	39.5	A	M	No
Big brown bat	*Eptesicus fuscus*	20220810_BBBA_084_1	84	FP	08/10/22	26.0	274	16T 461827 4476401	I	47.3	J	F	No
Hoary bat	*Lasiurus cinereus*	20220810_HOBA_084_1	84	FP	08/10/22	35.5	158	16T 461866 4476366	I	51.5	J	M	No
Hoary bat	*Lasiurus cinereus*	20220810_HOBA_098_1	98	FP	08/10/22	44.2	227	16T 461699 4478325	I	53.2	A	M	No
Big brown bat	*Eptesicus fuscus*	20220810_BBBA_100_1	100	FP	08/10/22	26.5	110	16T 464138 4477330	I	47.9	U	F	No
Eastern red bat	*Lasiurus borealis*	20220810_ERBA_100_1	100	FP	08/10/22	44.8	299	16T 464074 4477361	I	40.6	A	M	No
Eastern red bat	*Lasiurus borealis*	20220810_ERBA_105_1	105	FP	08/10/22	52.3	148	16T 467291 4477167	I	40.2	A	F	No
Eastern red bat	*Lasiurus borealis*	20220810_ERBA_111_1	111	FP	08/10/22	25.2	123	16T 459459 4479575	I	37.0	A	M	No
Eastern red bat	*Lasiurus borealis*	20220810_ERBA_112_1	112	RP	08/10/22	4.6	296	16T 460489 4480084	I	38.9	A	M	No
Eastern red bat	*Lasiurus borealis*	20220810_ERBA_114_1	114	FP	08/10/22	44.2	237	16T 461219 4479809	I	38.4	A	M	No
Eastern red bat	*Lasiurus borealis*	20220810_ERBA_130_1	130	FP	08/10/22	59.1	310	16T 459666 4482204	I	40.7	A	F	No
Eastern red bat	*Lasiurus borealis*	20220810_ERBA_140_1	140	FP	08/10/22	36.7	160	16T 467403 4482936	I	39.4	A	M	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Eastern red bat	*Lasiurus borealis*	20220811_ERBA_041_1	41	FP	08/11/22	17.4	145	16T 464415 4466765	I	38.0	J	U	No
Hoary bat	*Lasiurus cinereus*	20220811_HOBA_094_1	94	FP	08/11/22	37.8	71	16T 457275 4478504	I	51.3	U	U	No
Hoary bat	*Lasiurus cinereus*	20220811_HOBA_094_2	94	FP	08/11/22	22.2	199	16T 457232 4478471	I	53.4	A	F	No
Eastern red bat	*Lasiurus borealis*	20220811_ERBA_096_1	96	FP	08/11/22	47.9	349	16T 458992 4478522	I	38.2	A	M	No
Eastern red bat	*Lasiurus borealis*	20220811_ERBA_096_2	96	FP	08/11/22	44.4	255	16T 458958 4478464	I	38.9	A	F	No
Hoary bat	*Lasiurus cinereus*	20220811_HOBA_100_1	100	FP	08/11/22	38.0	191	16T 464106 4477302	I	51.2	A	M	No
Eastern red bat	*Lasiurus borealis*	20220812_ERBA_048_1	48	FP	08/12/22	35.9	139	16T 459247 4470634	I	38.5	A	M	No
Big brown bat	*Eptesicus fuscus*	20220812_BBBA_058_1	58	RP	08/12/22	5.6	130	16T 464944 4468753	I	40.0	A	M	No
Eastern red bat	*Lasiurus borealis*	20220812_ERBA_086_1	86	FP	08/12/22	51.1	214	16T 465749 4475302	I	42.4	J	M	No
Eastern red bat	*Lasiurus borealis*	20220812_ERBA_089_1	89	FP	08/12/22	43.5	254	16T 466818 4476263	I	38.1	J	M	No
Eastern red bat	*Lasiurus borealis*	20220812_ERBA_098_1	98	FP	08/12/22	30.3	303	16T 461706 4478372	D	28.2	U	U	No
Hoary bat	*Lasiurus cinereus*	20220812_HOBA_111_1	111	FP	08/12/22	33.8	246	16T 459407 4479575	I	53.6	A	F	No
Eastern red bat	*Lasiurus borealis*	20220813_ERBA_016_1	16	FP	08/13/22	47.3	144	16T 465317 4463655	I	40.6	U	U	No
Big brown bat	*Eptesicus fuscus*	20220813_BBBA_113_1	113	FP	08/13/22	20.1	97	16T 460944 4480055	I	46.5	A	U	No
Eastern red bat	*Lasiurus borealis*	20220813_ERBA_113_1	113	FP	08/13/22	10.5	71	16T 460934 4480061	I	39.2	J	U	No
Eastern red bat	*Lasiurus borealis*	20220813_ERBA_125_1	125	FP	08/13/22	7.3	273	16T 467492 4481450	I	40.9	J	F	No
Eastern red bat	*Lasiurus borealis*	20220813_ERBA_140_1	140	FP	08/13/22	26.3	31	16T 467404 4482993	I	39.5	A	M	No
Hoary bat	*Lasiurus cinereus*	20220813_HOBA_140_1	140	FP	08/13/22	16.9	167	16T 467394 4482954	I	55.6	A	F	No
Eastern red bat	*Lasiurus borealis*	20220814_ERBA_003_1	3	FP	08/14/22	12.5	107	16T 460063 4461552	I	39.0	A	M	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Eastern red bat	*Lasiurus borealis*	20220814_ERBA_005_1	5	FP	08/14/22	40.1	202	16T 461136 4461050	I	40.6	U	U	No
Eastern red bat	*Lasiurus borealis*	20220814_ERBA_026_1	26	FP	08/14/22	57.0	31	16T 461707 4465120	I	38.2	A	M	No
Eastern red bat	*Lasiurus borealis*	20220814_ERBA_028_1	28	RP	08/14/22	34.6	360	16T 462495 4465775	I	39.5	A	F	No
Eastern red bat	*Lasiurus borealis*	20220814_ERBA_039_1	39	RP	08/14/22	16.6	11	16T 462749 4467313	I	36.5	A	M	No
Eastern red bat	*Lasiurus borealis*	20220814_ERBA_049_1	49	RP	08/14/22	5.2	144	16T 459212 4469862	I	39.1	A	M	No
Hoary bat	*Lasiurus cinereus*	20220814_HOBA_056_1	56	FP	08/14/22	42.1	340	16T 463785 4469184	I	52.7	J	M	No
Eastern red bat	*Lasiurus borealis*	20220814_ERBA_070_1	70	FP	08/14/22	38.2	275	16T 464321 4472492	I	36.5	U	M	No
Hoary bat	*Lasiurus cinereus*	20220814_HOBA_081_1	81	RP	08/14/22	6.5	274	16T 460471 4476008	I	49.6	A	M	No
Eastern red bat	*Lasiurus borealis*	20220814_ERBA_090_1	90	RP	08/14/22	21.0	42	16T 456019 4477385	I	39.1	A	M	No
Eastern red bat	*Lasiurus borealis*	20220814_ERBA_102_1	102	FP	08/14/22	13.8	358	16T 465002 4477292	I	40.6	A	F	No
Eastern red bat	*Lasiurus borealis*	20220814_ERBA_114_1	114	FP	08/14/22	39.9	58	16T 461290 4479854	I	39.7	A	F	No
Eastern red bat	*Lasiurus borealis*	20220814_ERBA_121_1	121	RP	08/14/22	50.8	26	16T 466189 4480151	I	40.0	A	M	No
Hoary bat	*Lasiurus cinereus*	20220814_HOBA_123_1	123	FP	08/14/22	7.6	45	16T 465702 4482199	I	54.8	J	M	No
Eastern red bat	*Lasiurus borealis*	20220814_ERBA_124_1	124	FP	08/14/22	43.6	68	16T 466571 4481811	I	36.9	A	M	No
Big brown bat	*Eptesicus fuscus*	20220815_BBBA_005_1	5	FP	08/15/22	44.0	259	16T 461108 4461079	I	46.8	J	F	No
Eastern red bat	*Lasiurus borealis*	20220815_ERBA_028_1	28	RP	08/15/22	4.6	138	16T 462498 4465737	I	40.0	U	F	No
Eastern red bat	*Lasiurus borealis*	20220815_ERBA_068_1	68	FP	08/15/22	17.8	263	16T 463422 4472359	I	38.8	A	M	No
Eastern red bat	*Lasiurus borealis*	20220815_ERBA_068_2	68	FP	08/15/22	21.6	128	16T 463457 4472347	I	39.1	U	M	No
Hoary bat	*Lasiurus cinereus*	20220815_HOBA_068_1	68	FP	08/15/22	59.1	327	16T 463408 4472410	I	52.7	A	M	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Eastern red bat	*Lasiurus borealis*	20220815_ERBA_083_1	83	RP	08/15/22	3.3	324	16T 461186 4475469	D	41.1	A	M	No
Hoary bat	*Lasiurus cinereus*	20220815_HOBA_089_1	89	FP	08/15/22	43.5	299	16T 466822 4476296	I	51.0	A	M	No
Hoary bat	*Lasiurus cinereus*	20220815_HOBA_102_1	102	FP	08/15/22	49.3	242	16T 464959 4477255	I	51.9	J	F	No
Eastern red bat	*Lasiurus borealis*	20220815_ERBA_104_1	104	FP	08/15/22	44.3	183	16T 467520 4478603	I	40.9	A	F	No
Big brown bat	*Eptesicus fuscus*	20220815_BBBA_105_1	105	FP	08/15/22	44.4	180	16T 467263 4477167	I	47.8	J	F	No
Eastern red bat	*Lasiurus borealis*	20220815_ERBA_105_1	105	FP	08/15/22	31.4	205	16T 467250 4477183	I	42.1	A	U	No
Eastern red bat	*Lasiurus borealis*	20220815_ERBA_117_1	117	RP	08/15/22	11.1	75	16T 462912 4480582	I	38.5	A	M	No
Eastern red bat	*Lasiurus borealis*	20220815_ERBA_124_1	124	FP	08/15/22	55.7	42	16T 466568 4481836	I	40.4	A	F	No
Eastern red bat	*Lasiurus borealis*	20220815_ERBA_140_1	140	FP	08/15/22	36.7	277	16T 467354 4482975	I	39.5	A	U	No
Eastern red bat	*Lasiurus borealis*	20220816_ERBA_021_1	21	RP	08/16/22	2.6	300	16T 458710 4467146	I	39.1	J	F	No
Eastern red bat	*Lasiurus borealis*	20220816_ERBA_033_1	33	RP	08/16/22	3.6	352	16T 464563 4464782	I	38.4	J	M	No
Eastern red bat	*Lasiurus borealis*	20220816_ERBA_034_1	34	RP	08/16/22	11.8	185	16T 465003 4464745	I	38.0	U	M	No
Big brown bat	*Eptesicus fuscus*	20220816_BBBA_036_1	36	RP	08/16/22	5.0	236	16T 466836 4464804	I	46.8	J	M	No
Hoary bat	*Lasiurus cinereus*	20220816_HOBA_055_1	55	FP	08/16/22	29.6	301	16T 463333 4469166	I	51.4	U	U	No
Eastern red bat	*Lasiurus borealis*	20220816_ERBA_073_1	73	FP	08/16/22	6.2	306	16T 463435 4472364	I	40.3	J	F	No
Hoary bat	*Lasiurus cinereus*	20220816_HOBA_098_1	98	FP	08/16/22	43.0	259	16T 461689 4478347	I	52.8	A	M	No
Hoary bat	*Lasiurus cinereus*	20220816_HOBA_111_1	111	FP	08/16/22	17.7	13	16T 459442 4479606	I	50.9	J	U	No
Hoary bat	*Lasiurus cinereus*	20220816_HOBA_115_1	115	FP	08/16/22	54.3	225	16T 461661 4479827	I	46.8	A	M	No
Eastern red bat	*Lasiurus borealis*	20220816_ERBA_120_1	120	RP	08/16/22	5.5	289	16T 465784 4480240	I	41.8	J	F	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Eastern red bat	*Lasiurus borealis*	20220816_ERBA_123_1	123	FP	08/16/22	63.0	137	16T 465739 4482147	I	40.4	A	M	No
Hoary bat	*Lasiurus cinereus*	20220816_HOBA_124_1	124	FP	08/16/22	56.9	140	16T 466567 4481751	I	53.9	A	F	No
Eastern red bat	*Lasiurus borealis*	20220816_ERBA_125_1	125	FP	08/16/22	50.2	300	16T 467456 4481475	I	37.7	A	M	No
Eastern red bat	*Lasiurus borealis*	20220816_ERBA_137_1	137	FP	08/16/22	45.5	268	16T 462861 4483053	I	38.5	A	M	No
Hoary bat	*Lasiurus cinereus*	20220817_HOBA_025_1	25	FP	08/17/22	37.8	261	16T 461302 4465277	I	54.0	A	M	No
Hoary bat	*Lasiurus cinereus*	20220817_HOBA_046_1	46	FP	08/17/22	7.0	200	16T 459172 4471423	I	51.4	J	M	No
Hoary bat	*Lasiurus cinereus*	20220817_HOBA_046_2	46	FP	08/17/22	51.2	104	16T 459224 4471417	I	56.6	J	U	No
Eastern red bat	*Lasiurus borealis*	20220817_ERBA_068_1	68	FP	08/17/22	39.4	255	16T 463402 4472350	I	38.4	A	M	No
Big brown bat	*Eptesicus fuscus*	20220817_BBBA_071_1	71	RP	08/17/22	37.7	185	16T 464950 4472317	I	44.9	J	F	No
Eastern red bat	*Lasiurus borealis*	20220817_ERBA_105_1	105	FP	08/17/22	8.5	92	16T 467272 4477211	I	38.4	J	M	No
Big brown bat	*Eptesicus fuscus*	20220817_BBBA_123_1	123	FP	08/17/22	30.6	271	16T 465666 4482194	I	43.5	J	F	No
Eastern red bat	*Lasiurus borealis*	20220817_ERBA_143_1	143	RP	08/17/22	12.6	277	16T 462849 4475992	I	41.6	A	F	No
Hoary bat	*Lasiurus cinereus*	20220818_HOBA_018_1	18	RP	08/18/22	6.9	255	16T 466166 4463426	I	53.7	A	F	No
Eastern red bat	*Lasiurus borealis*	20220818_ERBA_019_1	19	RP	08/18/22	6.1	294	16T 466587 4463431	I	39.9	J	F	No
Eastern red bat	*Lasiurus borealis*	20220818_ERBA_056_1	56	FP	08/18/22	16.4	134	16T 463811 4469132	I	36.2	A	M	No
Eastern red bat	*Lasiurus borealis*	20220818_ERBA_056_2	56	FP	08/18/22	50.0	255	16T 463751 4469131	I	40.1	U	M	No
Eastern red bat	*Lasiurus borealis*	20220818_ERBA_056_3	56	FP	08/18/22	32.4	271	16T 463767 4469144	I	36.8	A	M	No
Eastern red bat	*Lasiurus borealis*	20220818_ERBA_064_1	64	RP	08/18/22	3.2	27	16T 467875 4471134	A	NA	U	U	No
Eastern red bat	*Lasiurus borealis*	20220818_ERBA_068_1	68	FP	08/18/22	22.0	269	16T 463418 4472360	P	40.5	A	F	No

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Big brown bat	*Eptesicus fuscus*	20220818_BBBA_074_1	74	FP	08/18/22	33.7	132	16T 465323 4473756	I	45.3	A	F	No
Big brown bat	*Eptesicus fuscus*	20220818_BBBA_074_2	74	FP	08/18/22	7.3	315	16T 465293 4473784	I	47.5	J	F	No
Eastern red bat	*Lasiurus borealis*	20220818_ERBA_074_1	74	FP	08/18/22	15.2	204	16T 465292 4473765	I	39.6	A	F	No
Eastern red bat	*Lasiurus borealis*	20220818_ERBA_105_1	105	FP	08/18/22	3.0	330	16T 467262 4477214	I	40.0	A	M	No
Hoary bat	*Lasiurus cinereus*	20220818_HOBA_125_1	125	FP	08/18/22	59.9	139	16T 467538 4481404	I	52.8	A	F	No
Eastern red bat	*Lasiurus borealis*	20220819_ERBA_067_1	67	RP	08/19/22	2.4	353	16T 464965 4471408	I	38.6	A	M	No
Big brown bat	*Eptesicus fuscus*	20220819_BBBA_089_1	89	FP	08/19/22	6.0	263	16T 466854 4476274	I	46.4	A	F	No
Eastern red bat	*Lasiurus borealis*	20220820_ERBA_048_1	48	FP	08/20/22	50.8	54	16T 459265 4470691	I	37.4	A	M	No
Eastern red bat	*Lasiurus borealis*	20220820_ERBA_051_1	51	FP	08/20/22	49.3	288	16T 460566 4469845	I	39.3	A	F	No
Big brown bat	*Eptesicus fuscus*	20220820_BBBA_073_1	73	FP	08/20/22	10.3	307	16T 467305 4473018	I	47.5	J	F	No
Big brown bat	*Eptesicus fuscus*	20220820_BBBA_073_2	73	FP	08/20/22	10.6	223	16T 467306 4473004	P	47.8	J	U	No
Hoary bat	*Lasiurus cinereus*	20220820_HOBA_073_1	73	FP	08/20/22	14.8	89	16T 467328 4473012	I	53.4	J	F	No
Eastern red bat	*Lasiurus borealis*	20220820_ERBA_093_1	93	RP	08/20/22	27.7	357	16T 457415 4477300	I	38.3	A	M	No
Eastern red bat	*Lasiurus borealis*	20220820_ERBA_093_2	93	RP	08/20/22	13.8	6	16T 457418 4477286	P	38.3	A	U	No
Hoary bat	*Lasiurus cinereus*	20220820_HOBA_100_1	100	FP	08/20/22	31.6	260	16T 464082 4477334	I	51.8	A	M	No
Hoary bat	*Lasiurus cinereus*	20220820_HOBA_107_1	107	RP	08/20/22	50.8	273	16T 456902 4480170	I	40.5	A	M	No
Hoary bat	*Lasiurus cinereus*	20220820_HOBA_115_1	115	FP	08/20/22	7.1	185	16T 461699 4479858	I	57.0	A	F	No
Tricolored bat	*Perimyotis subflavus*	20220820_TRBA_116_1	116	RP	08/20/22	9.9	66	16T 462473 4481371	I	35.4	J	F	No
Hoary bat	*Lasiurus cinereus*	20220820_HOBA_125_1	125	FP	08/20/22	24.6	295	16T 467477 4481460	I	53.6	A	U	No

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Eastern red bat	*Lasiurus borealis*	20220820_ERBA_130_1	130	FP	08/20/22	46.0	11	16T 459720 4482211	I	42.3	A	F	No
Eastern red bat	*Lasiurus borealis*	20220820_ERBA_130_2	130	FP	08/20/22	30.2	34	16T 459728 4482191	I	39.8	A	M	No
Big brown bat	*Eptesicus fuscus*	20220820_BBBA_140_1	140	FP	08/20/22	2.0	224	16T 467389 4482969	I	43.2	J	M	No
Eastern red bat	*Lasiurus borealis*	20220820_ERBA_141_1	141	RP	08/20/22	43.4	356	16T 460367 4484671	I	41.6	U	F	No
Eastern red bat	*Lasiurus borealis*	20220821_ERBA_001_1	1	FP	08/21/22	49.5	163	16T 458849 4462263	I	44.8	J	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220821_SHBA_023_1	23	RP	08/21/22	4.0	176	16T 459214 4466435	I	41.4	J	F	No
Eastern red bat	*Lasiurus borealis*	20220821_ERBA_030_1	30	FP	08/21/22	31.9	291	16T 463490 4465713	I	38.5	A	M	No
Big brown bat	*Eptesicus fuscus*	20220821_BBBA_064_1	64	RP	08/21/22	13.3	173	16T 467875 4471118	P	NA	U	U	No
Big brown bat	*Eptesicus fuscus*	20220821_BBBA_084_1	84	FP	08/21/22	13.9	291	16T 461840 4476404	I	44.2	A	F	No
Eastern red bat	*Lasiurus borealis*	20220821_ERBA_089_1	89	FP	08/21/22	11.1	55	16T 466869 4476281	I	40.8	A	F	No
Big brown bat	*Eptesicus fuscus*	20220821_BBBA_100_1	100	FP	08/21/22	64.1	48	16T 464161 4477382	I	47.0	A	M	No
Big brown bat	*Eptesicus fuscus*	20220821_BBBA_103_1	103	FP	08/21/22	40.1	1	16T 465828 4478736	I	43.4	A	M	No
Eastern red bat	*Lasiurus borealis*	20220821_ERBA_104_1	104	FP	08/21/22	23.7	315	16T 467506 4478664	I	39.2	A	M	No
Big brown bat	*Eptesicus fuscus*	20220821_BBBA_105_1	105	FP	08/21/22	27.9	80	16T 467291 4477216	I	45.1	A	M	No
Eastern red bat	*Lasiurus borealis*	20220821_ERBA_105_1	105	FP	08/21/22	43.9	31	16T 467286 4477249	I	39.1	A	M	No
Eastern red bat	*Lasiurus borealis*	20220822_ERBA_004_1	4	FP	08/22/22	22.9	74	16T 460677 4461072	P	44.5	A	M	No
Eastern red bat	*Lasiurus borealis*	20220822_ERBA_005_1	5	FP	08/22/22	8.0	76	16T 461159 4461089	I	38.2	U	U	No
Big brown bat	*Eptesicus fuscus*	20220822_BBBA_016_1	16	FP	08/22/22	43.9	254	16T 465247 4463681	I	44.5	A	M	No
Eastern red bat	*Lasiurus borealis*	20220822_ERBA_033_1	33	RP	08/22/22	14.9	205	16T 464557 4464765	I	33.2	A	M	No

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Hoary bat	*Lasiurus cinereus*	20220822_HOBA_078_1	78	FP	08/22/22	35.7	250	16T 459059 4475805	I	55.0	J	F	No
Eastern red bat	*Lasiurus borealis*	20220822_ERBA_079_1	79	RP	08/22/22	7.0	348	16T 459353 4475485	I	37.9	J	F	No
Eastern red bat	*Lasiurus borealis*	20220822_ERBA_088_1	88	RP	08/22/22	5.1	63	16T 466965 4475359	I	34.7	A	M	No
Big brown bat	*Eptesicus fuscus*	20220822_BBBA_096_1	96	FP	08/22/22	42.0	270	16T 458959 4478475	I	48.6	U	F	No
Eastern red bat	*Lasiurus borealis*	20220822_ERBA_106_1	106	RP	08/22/22	3.9	5	16T 456834 4481153	I	38.8	A	M	No
Eastern red bat	*Lasiurus borealis*	20220822_ERBA_106_2	106	RP	08/22/22	7.9	284	16T 456826 4481151	D	NA	U	U	No
Eastern red bat	*Lasiurus borealis*	20220822_ERBA_110_1	110	FP	08/22/22	58.8	223	16T 458953 4479552	I	39.6	A	F	No
Eastern red bat	*Lasiurus borealis*	20220822_ERBA_115_1	115	FP	08/22/22	3.8	253	16T 461696 4479864	I	35.7	J	M	No
Eastern red bat	*Lasiurus borealis*	20220823_ERBA_002_1	2	RP	08/23/22	44.5	269	16T 459744 4461870	I	40.2	U	U	No
Eastern red bat	*Lasiurus borealis*	20220823_ERBA_070_1	70	FP	08/23/22	9.0	273	16T 464350 4472489	I	39.8	A	F	No
Eastern red bat	*Lasiurus borealis*	20220823_ERBA_105_1	105	FP	08/23/22	26.9	99	16T 467290 4477207	I	39.4	A	M	No
Big brown bat	*Eptesicus fuscus*	20220823_BBBA_114_1	114	FP	08/23/22	38.8	122	16T 461289 4479812	I	49.0	J	F	No
Big brown bat	*Eptesicus fuscus*	20220823_BBBA_114_2	114	FP	08/23/22	51.7	150	16T 461282 4479788	I	46.9	J	M	No
Eastern red bat	*Lasiurus borealis*	20220823_ERBA_124_1	124	FP	08/23/22	36.3	259	16T 466495 4481788	I	40.0	A	F	No
Eastern red bat	*Lasiurus borealis*	20220825_ERBA_046_1	46	FP	08/25/22	33.3	161	16T 459185 4471398	I	38.7	U	U	No
Big brown bat	*Eptesicus fuscus*	20220825_BBBA_051_1	51	FP	08/25/22	28.4	97	16T 460641 4469826	I	46.0	A	M	No
Eastern red bat	*Lasiurus borealis*	20220825_ERBA_068_1	68	FP	08/25/22	55.0	149	16T 463468 4472313	I	37.6	U	U	No
Eastern red bat	*Lasiurus borealis*	20220825_ERBA_070_1	70	FP	08/25/22	22.3	99	16T 464381 4472485	I	38.8	U	M	No
Hoary bat	*Lasiurus cinereus*	20220825_HOBA_109_1	109	FP	08/25/22	35.2	171	16T 458569 4479566	I	52.2	U	U	No

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Big brown bat	*Eptesicus fuscus*	20220825_BBBA_110_1	110	FP	08/25/22	17.9	294	16T 458977 4479602	P	40.5	U	U	No
Big brown bat	*Eptesicus fuscus*	20220825_BBBA_124_1	124	FP	08/25/22	38.4	71	16T 466567 4481807	D	47.1	U	U	No
Eastern red bat	*Lasiurus borealis*	20220825_ERBA_130_1	130	FP	08/25/22	44.1	118	16T 459750 4482145	I	40.1	U	F	No
Hoary bat	*Lasiurus cinereus*	20220825_HOBA_130_1	130	FP	08/25/22	35.0	145	16T 459731 4482137	I	NA	U	U	No
Big brown bat	*Eptesicus fuscus*	20220826_BBBA_003_1	3	FP	08/26/22	51.6	152	16T 460075 4461510	I	48.7	A	F	No
Eastern red bat	*Lasiurus borealis*	20220826_ERBA_003_1	3	FP	08/26/22	40.2	283	16T 460012 4461565	I	40.9	A	F	No
Hoary bat	*Lasiurus cinereus*	20220826_HOBA_003_1	3	FP	08/26/22	32.2	14	16T 460059 4461587	I	50.7	A	M	No
Big brown bat	*Eptesicus fuscus*	20220826_BBBA_005_1	5	FP	08/26/22	30.2	107	16T 461180 4461078	P	40.1	U	F	No
Big brown bat	*Eptesicus fuscus*	20220826_BBBA_019_1	19	RP	08/26/22	5.1	151	16T 466595 4463424	I	51.0	J	F	No
Eastern red bat	*Lasiurus borealis*	20220826_ERBA_074_1	74	FP	08/26/22	25.1	254	16T 465274 4473772	I	37.2	U	M	No
Big brown bat	*Eptesicus fuscus*	20220826_BBBA_078_1	78	FP	08/26/22	47.3	79	16T 459139 4475826	I	48.6	J	F	No
Eastern red bat	*Lasiurus borealis*	20220826_ERBA_078_1	78	FP	08/26/22	37.1	64	16T 459126 4475833	I	38.3	A	M	No
Hoary bat	*Lasiurus cinereus*	20220826_HOBA_084_1	84	FP	08/26/22	21.2	64	16T 461872 4476408	I	52.7	U	F	No
Hoary bat	*Lasiurus cinereus*	20220826_HOBA_094_1	94	FP	08/26/22	41.5	59	16T 457275 4478513	P	54.4	U	U	No
Eastern red bat	*Lasiurus borealis*	20220826_ERBA_102_1	102	FP	08/26/22	28.1	133	16T 465023 4477259	I	40.1	A	F	No
Evening bat	*Nycticeius humeralis*	20220826_EVBA_105_1	105	FP	08/26/22	49.9	150	16T 467288 4477168	I	36.5	J	F	No
Eastern red bat	*Lasiurus borealis*	20220826_ERBA_109_1	109	FP	08/26/22	44.4	121	16T 458602 4479578	I	42.3	A	F	No
Eastern red bat	*Lasiurus borealis*	20220826_ERBA_109_2	109	FP	08/26/22	58.3	42	16T 458603 4479644	I	42.7	A	F	No
Eastern red bat	*Lasiurus borealis*	20220826_ERBA_122_1	122	RP	08/26/22	18.0	349	16T 466911 4480207	I	38.1	A	M	No

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Big brown bat	*Eptesicus fuscus*	20220826_BBBA_139_1	139	RP	08/26/22	4.8	109	16T 466992 4482991	I	44.0	A	M	No
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_001_1	1	FP	08/27/22	47.9	281	16T 458788 4462320	I	36.6	A	M	No
Big brown bat	*Eptesicus fuscus*	20220827_BBBA_004_1	4	FP	08/27/22	49.3	252	16T 460608 4461051	I	47.5	A	F	No
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_004_1	4	FP	08/27/22	31.7	182	16T 460654 4461034	I	35.7	U	M	No
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_004_2	4	FP	08/27/22	16.1	96	16T 460671 4461064	I	35.5	A	M	No
Big brown bat	*Eptesicus fuscus*	20220827_BBBA_005_1	5	FP	08/27/22	24.9	301	16T 461130 4461100	I	47.8	A	M	No
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_005_1	5	FP	08/27/22	30.8	199	16T 461141 4461058	I	39.3	J	F	No
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_026_1	26	FP	08/27/22	39.4	153	16T 461695 4465036	I	41.4	U	F	No
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_044_1	44	RP	08/27/22	42.0	186	16T 457861 4471280	I	37.2	U	M	No
Hoary bat	*Lasiurus cinereus*	20220827_HOBA_048_1	48	FP	08/27/22	49.7	247	16T 459178 4470642	I	51.6	U	M	No
Seminole bat	*Lasiurus seminolus*	20220827_SEBA_068_1	68	FP	08/27/22	4.3	67	16T 463444 4472362	I	41.2	A	F	No
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_071_1	71	RP	08/27/22	5.0	314	16T 464950 4472358	P	44.9	U	M	No
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_103_1	103	FP	08/27/22	14.7	208	16T 465820 4478683	I	40.2	A	M	No
Big brown bat	*Eptesicus fuscus*	20220827_BBBA_104_1	104	FP	08/27/22	57.5	147	16T 467554 4478599	I	48.9	A	U	No
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_109_2	109	FP	08/27/22	1.4	126	16T 458565 4479600	I	39.7	A	F	No
Big brown bat	*Eptesicus fuscus*	20220827_BBBA_123_1	123	FP	08/27/22	25.8	151	16T 465709 4482171	I	48.3	J	M	No
Hoary bat	*Lasiurus cinereus*	20220827_HOBA_124_1	124	FP	08/27/22	40.6	301	16T 466496 4481816	I	50.1	A	M	No
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_125_1	125	FP	08/27/22	60.8	310	16T 467453 4481489	I	40.0	J	M	No
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_125_2	125	FP	08/27/22	59.3	216	16T 467464 4481402	I	37.1	A	M	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_125_3	125	FP	08/27/22	10.7	154	16T 467504 4481440	I	39.1	U	F	No
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_125_4	125	FP	08/27/22	13.2	163	16T 467503 4481437	I	40.3	A	F	No
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_130_1	130	FP	08/27/22	27.9	295	16T 459686 4482178	I	40.4	J	M	No
Eastern red bat	*Lasiurus borealis*	20220828_ERBA_001_1	1	FP	08/28/22	35.9	57	16T 458865 4462330	I	41.3	U	F	No
Hoary bat	*Lasiurus cinereus*	20220828_HOBA_001_1	1	FP	08/28/22	42.9	272	16T 458792 4462312	I	48.3	U	M	No
Eastern red bat	*Lasiurus borealis*	20220828_ERBA_004_1	4	FP	08/28/22	38.4	357	16T 460653 4461104	I	38.6	U	F	No
Eastern red bat	*Lasiurus borealis*	20220828_ERBA_004_2	4	FP	08/28/22	46.9	232	16T 460618 4461037	I	40.7	U	F	No
Big brown bat	*Eptesicus fuscus*	20220828_BBBA_005_1	5	FP	08/28/22	24.5	26	16T 461162 4461109	I	46.2	A	M	No
Eastern red bat	*Lasiurus borealis*	20220828_ERBA_008_1	8	RP	08/28/22	14.2	176	16T 462397 4460023	I	37.1	A	M	No
Big brown bat	*Eptesicus fuscus*	20220828_BBBA_025_1	25	FP	08/28/22	53.5	292	16T 461290 4465303	I	45.2	A	F	No
Eastern red bat	*Lasiurus borealis*	20220828_ERBA_041_1	41	FP	08/28/22	56.2	238	16T 464357 4466750	I	40.0	A	F	No
Eastern red bat	*Lasiurus borealis*	20220828_ERBA_046_1	46	FP	08/28/22	7.0	158	16T 459177 4471423	P	40.0	U	M	No
Eastern red bat	*Lasiurus borealis*	20220828_ERBA_074_1	74	FP	08/28/22	40.3	171	16T 465304 4473739	I	39.9	U	F	No
Big brown bat	*Eptesicus fuscus*	20220828_BBBA_078_1	78	FP	08/28/22	37.1	330	16T 459074 4475849	I	47.3	A	F	No
Eastern red bat	*Lasiurus borealis*	20220828_ERBA_104_1	104	FP	08/28/22	14.7	273	16T 467508 4478648	I	41.2	A	F	No
Indiana bat	*Myotis sodalis*	20220828_INBA_104_1	104	FP	08/28/22	15.6	102	16T 467538 4478644	I	39.5	U	F	No
Big brown bat	*Eptesicus fuscus*	20220828_BBBA_111_1	111	FP	08/28/22	53.9	333	16T 459414 4479637	I	46.2	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220828_SHBA_118_1	118	RP	08/28/22	5.2	85	16T 464199 4479873	P	39.6	U	U	No
Big brown bat	*Eptesicus fuscus*	20220828_BBBA_124_1	124	FP	08/28/22	38.1	261	16T 466493 4481789	I	45.2	A	U	No

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Eastern red bat	*Lasiurus borealis*	20220828_ERBA_125_1	125	FP	08/28/22	26.9	172	16T 467503 4481423	I	41.0	A	F	No
Eastern red bat	*Lasiurus borealis*	20220828_ERBA_133_1	133	RP	08/28/22	25.2	240	16T 461225 4482113	I	39.3	A	F	No
Eastern red bat	*Lasiurus borealis*	20220828_ERBA_136_1	136	FP	08/28/22	19.2	161	16T 462610 4483339	I	41.5	U	U	No
Hoary bat	*Lasiurus cinereus*	20220828_HOBA_139_1	139	RP	08/28/22	6.7	256	16T 466981 4482991	I	53.7	A	M	No
Eastern red bat	*Lasiurus borealis*	20220828_ERBA_140_1	140	FP	08/28/22	22.6	335	16T 467381 4482991	I	39.7	A	F	No
Eastern red bat	*Lasiurus borealis*	20220829_ERBA_003_1	3	FP	08/29/22	16.9	187	16T 460049 4461539	I	39.4	A	F	No
Eastern red bat	*Lasiurus borealis*	20220829_ERBA_012_1	12	RP	08/29/22	36.4	183	16T 463532 4461559	I	40.9	A	U	No
Eastern red bat	*Lasiurus borealis*	20220829_ERBA_025_1	25	FP	08/29/22	37.7	70	16T 461375 4465295	I	35.6	U	M	No
Big brown bat	*Eptesicus fuscus*	20220829_BBBA_029_1	29	RP	08/29/22	3.9	242	16T 462891 4465594	I	48.0	J	F	No
Eastern red bat	*Lasiurus borealis*	20220829_ERBA_030_1	30	FP	08/29/22	18.5	201	16T 463513 4465684	I	40.6	A	M	No
Hoary bat	*Lasiurus cinereus*	20220829_HOBA_041_1	41	FP	08/29/22	12.6	72	16T 464417 4466783	I	56.7	U	F	No
Eastern red bat	*Lasiurus borealis*	20220829_ERBA_056_1	56	FP	08/29/22	65.2	47	16T 463847 4469188	I	35.5	J	M	No
Hoary bat	*Lasiurus cinereus*	20220829_HOBA_100_1	100	FP	08/29/22	19.2	205	16T 464105 4477322	I	57.0	A	F	No
Eastern red bat	*Lasiurus borealis*	20220829_ERBA_101_1	101	RP	08/29/22	20.8	308	16T 464543 4477342	I	40.9	A	U	No
Eastern red bat	*Lasiurus borealis*	20220829_ERBA_105_1	105	FP	08/29/22	57.7	55	16T 467311 4477244	I	41.4	A	F	No
Eastern red bat	*Lasiurus borealis*	20220829_ERBA_123_1	123	FP	08/29/22	30.3	245	16T 465669 4482181	I	37.3	U	M	No
Hoary bat	*Lasiurus cinereus*	20220829_HOBA_137_1	137	FP	08/29/22	8.8	253	16T 462898 4483052	P	48.7	U	U	No
Eastern red bat	*Lasiurus borealis*	20220830_ERBA_026_1	26	FP	08/30/22	48.4	232	16T 461639 4465042	I	39.9	J	F	No
Eastern red bat	*Lasiurus borealis*	20220830_ERBA_032_1	32	RP	08/30/22	50.3	342	16T 464533 4465494	I	40.4	U	U	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220830_SHBA_032_1	32	RP	08/30/22	5.7	315	16T 464544 4465450	A	NA	U	U	No
Eastern red bat	*Lasiurus borealis*	20220830_ERBA_071_1	71	RP	08/30/22	7.6	273	16T 464946 4472355	I	39.3	A	M	No
Hoary bat	*Lasiurus cinereus*	20220830_HOBA_102_1	102	FP	08/30/22	12.5	86	16T 465015 4477279	I	54.0	J	F	No
Hoary bat	*Lasiurus cinereus*	20220830_HOBA_115_1	115	FP	08/30/22	15.4	90	16T 461715 4479865	I	53.3	U	U	No
Eastern red bat	*Lasiurus borealis*	20220831_ERBA_020_1	20	RP	08/31/22	2.9	258	16T 458523 4467566	I	41.1	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_021_1	21	RP	08/31/22	4.3	261	16T 458708 4467144	I	41.1	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_023_1	23	RP	08/31/22	5.1	236	16T 459209 4466437	I	41.4	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_025_1	25	FP	08/31/22	14.7	95	16T 461354 4465281	I	40.2	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_026_1	26	FP	08/31/22	15.0	44	16T 461688 4465082	I	41.6	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_026_2	26	FP	08/31/22	49.6	129	16T 461716 4465040	I	41.7	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_037_1	37	RP	08/31/22	7.8	177	16T 462157 4466627	I	43.2	A	M	No
Hoary bat	*Lasiurus cinereus*	20220831_HOBA_044_1	44	RP	08/31/22	4.9	329	16T 457863 4471326	I	56.0	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_044_1	44	RP	08/31/22	27.8	181	16T 457865 4471294	I	40.1	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_044_2	44	RP	08/31/22	3.3	8	16T 457866 4471325	I	39.4	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_044_3	44	RP	08/31/22	9.5	202	16T 457862 4471313	I	40.9	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_044_4	44	RP	08/31/22	12.3	217	16T 457858 4471312	I	41.8	J	M	No
Hoary bat	*Lasiurus cinereus*	20220831_HOBA_046_1	46	FP	08/31/22	43.4	73	16T 459216 4471442	I	55.3	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_046_1	46	FP	08/31/22	45.8	185	16T 459170 4471384	I	41.4	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_046_10	46	FP	08/31/22	35.6	76	16T 459209 4471438	I	40.5	U	U	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_046_11	46	FP	08/31/22	48.8	72	16T 459221 4471444	I	41.1	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_046_12	46	FP	08/31/22	50.7	70	16T 459222 4471447	I	41.1	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_046_13	46	FP	08/31/22	28.6	93	16T 459203 4471428	I	38.1	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_046_2	46	FP	08/31/22	25.9	190	16T 459170 4471404	I	39.8	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_046_3	46	FP	08/31/22	24.2	193	16T 459169 4471406	I	39.9	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_046_4	46	FP	08/31/22	26.0	160	16T 459183 4471405	I	42.1	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_046_5	46	FP	08/31/22	22.7	155	16T 459184 4471409	I	40.6	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_046_6	46	FP	08/31/22	8.0	161	16T 459177 4471422	I	41.0	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_046_7	46	FP	08/31/22	49.2	112	16T 459220 4471411	I	41.0	A	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_046_8	46	FP	08/31/22	49.6	118	16T 459218 4471406	I	41.9	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_046_9	46	FP	08/31/22	41.7	86	16T 459216 4471432	I	42.0	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_049_1	49	RP	08/31/22	3.4	300	16T 459206 4469868	I	41.8	U	F	No
Eastern red bat	*Lasiurus borealis*	20220831_ERBA_051_1	51	FP	08/31/22	18.0	16	16T 460618 4469847	I	37.4	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_053_1	53	RP	08/31/22	4.1	133	16T 461068 4469825	I	39.6	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_055_1	55	FP	08/31/22	6.4	113	16T 463364 4469148	A	NA	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_056_1	56	FP	08/31/22	27.5	1	16T 463800 4469171	I	40.6	U	M	No
Eastern red bat	*Lasiurus borealis*	20220831_ERBA_064_1	64	RP	08/31/22	16.3	175	16T 467875 4471115	I	38.6	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_064_1	64	RP	08/31/22	7.6	161	16T 467876 4471124	I	38.5	J	M	No
Eastern red bat	*Lasiurus borealis*	20220831_ERBA_065_1	65	RP	08/31/22	7.5	202	16T 465306 4470465	I	42.5	A	F	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_068_1	68	FP	08/31/22	28.3	118	16T 463465 4472347	I	40.1	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_070_2	70	FP	08/31/22	36.0	90	16T 464395 4472488	I	40.6	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_070_3	70	FP	08/31/22	43.3	121	16T 464396 4472466	I	39.3	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_072_1	72	RP	08/31/22	4.2	193	16T 465356 4472266	I	36.9	J	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_074_1	74	FP	08/31/22	43.9	43	16T 465328 4473811	I	40.2	J	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_074_2	74	FP	08/31/22	30.0	196	16T 465290 4473750	I	40.9	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_076_1	76	RP	08/31/22	5.4	90	16T 460688 4473740	I	40.5	J	F	No
Hoary bat	*Lasiurus cinereus*	20220831_HOBA_078_1	78	FP	08/31/22	10.4	345	16T 459090 4475827	I	56.0	U	F	No
Hoary bat	*Lasiurus cinereus*	20220831_HOBA_078_2	78	FP	08/31/22	11.5	99	16T 459104 4475815	I	51.5	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_080_1	80	RP	08/31/22	11.3	176	16T 460132 4476188	I	36.6	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_080_2	80	RP	08/31/22	7.2	242	16T 460125 4476196	I	39.7	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_082_1	82	RP	08/31/22	47.2	93	16T 460923 4475664	P	43.5	A	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_082_2	82	RP	08/31/22	27.2	87	16T 460903 4475668	P	41.9	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_085_1	85	RP	08/31/22	25.4	96	16T 462555 4476183	I	41.9	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_085_2	85	RP	08/31/22	11.6	75	16T 462541 4476188	I	40.6	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_087_1	87	RP	08/31/22	7.9	153	16T 466173 4475329	I	39.8	J	F	No
Eastern red bat	*Lasiurus borealis*	20220831_ERBA_089_1	89	FP	08/31/22	40.3	113	16T 466897 4476259	I	38.8	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_089_1	89	FP	08/31/22	19.5	68	16T 466878 4476282	I	40.7	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_089_2	89	FP	08/31/22	20.6	32	16T 466871 4476292	I	41.3	U	M	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_090_1	90	RP	08/31/22	52.7	76	16T 456056 4477382	I	39.5	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_090_2	90	RP	08/31/22	48.1	73	16T 456051 4477383	I	41.5	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_090_3	90	RP	08/31/22	43.7	70	16T 456046 4477384	I	40.7	J	U	No
Eastern red bat	*Lasiurus borealis*	20220831_ERBA_091_1	91	RP	08/31/22	40.4	63	16T 456501 4477381	I	41.3	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_091_1	91	RP	08/31/22	53.0	67	16T 456514 4477383	D	39.6	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_093_1	93	RP	08/31/22	4.5	266	16T 457412 4477272	I	41.7	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_094_1	94	FP	08/31/22	42.9	68	16T 457279 4478508	I	42.5	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_094_2	94	FP	08/31/22	41.7	215	16T 457215 4478458	I	40.5	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_103_1	103	FP	08/31/22	27.8	59	16T 465851 4478710	I	42.0	U	M	No
Eastern red bat	*Lasiurus borealis*	20220831_ERBA_106_1	106	RP	08/31/22	39.1	181	16T 456833 4481110	I	38.1	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_106_1	106	RP	08/31/22	39.1	181	16T 456833 4481110	I	41.3	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_106_2	106	RP	08/31/22	29.1	181	16T 456833 4481120	I	42.9	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_106_3	106	RP	08/31/22	30.5	188	16T 456829 4481119	I	37.5	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_106_4	106	RP	08/31/22	24.4	188	16T 456830 4481125	I	38.3	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_106_5	106	RP	08/31/22	2.5	146	16T 456835 4481147	I	40.8	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_109_1	109	FP	08/31/22	10.5	29	16T 458569 4479610	I	39.8	A	F	No
Eastern red bat	*Lasiurus borealis*	20220831_ERBA_110_1	110	FP	08/31/22	4.2	39	16T 458996 4479598	D	31.3	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_110_1	110	FP	08/31/22	5.7	336	16T 458991 4479600	I	40.6	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_111_1	111	FP	08/31/22	4.4	14	16T 459439 4479593	I	39.3	J	M	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_113_1	113	FP	08/31/22	38.9	187	16T 460919 4480019	D	40.3	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_113_2	113	FP	08/31/22	47.1	171	16T 460931 4480011	I	41.8	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_118_1	118	RP	08/31/22	9.6	185	16T 464193 4479863	I	40.1	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_119_1	119	RP	08/31/22	35.0	92	16T 464537 4479646	P	41.0	J	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_120_1	120	RP	08/31/22	4.2	139	16T 465792 4480235	I	40.0	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_130_1	130	FP	08/31/22	39.2	37	16T 459735 4482197	D	NA	U	U	No
Eastern red bat	*Lasiurus borealis*	20220831_ERBA_131_1	131	RP	08/31/22	11.2	191	16T 460240 4482137	I	38.4	U	M	No
Eastern red bat	*Lasiurus borealis*	20220831_ERBA_132_1	132	RP	08/31/22	39.9	184	16T 460812 4482113	I	40.8	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_136_1	136	FP	08/31/22	18.8	75	16T 462622 4483362	I	40.8	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_141_1	141	RP	08/31/22	4.8	26	16T 460372 4484632	I	41.4	J	M	No
Hoary bat	*Lasiurus cinereus*	20220901_HOBA_003_1	3	FP	09/01/22	18.9	174	16T 460053 4461537	I	53.2	J	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_003_1	3	FP	09/01/22	35.9	76	16T 460086 4461564	I	39.6	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_003_2	3	FP	09/01/22	53.3	122	16T 460096 4461527	I	40.4	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_003_3	3	FP	09/01/22	4.9	219	16T 460048 4461552	I	40.6	U	F	No
Hoary bat	*Lasiurus cinereus*	20220901_HOBA_004_1	4	FP	09/01/22	52.2	131	16T 460694 4461031	I	47.5	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_004_1	4	FP	09/01/22	44.1	151	16T 460676 4461027	I	39.4	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_004_2	4	FP	09/01/22	41.4	149	16T 460676 4461030	I	39.2	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_004_3	4	FP	09/01/22	32.8	215	16T 460636 4461039	I	37.8	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_004_4	4	FP	09/01/22	27.1	204	16T 460644 4461041	I	40.8	J	M	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_004_5	4	FP	09/01/22	8.0	95	16T 460663 4461065	I	40.6	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_008_1	8	RP	09/01/22	28.7	167	16T 462402 4460010	I	40.9	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_008_2	8	RP	09/01/22	6.5	163	16T 462398 4460031	I	41.5	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_010_1	10	RP	09/01/22	4.3	340	16T 461910 4461507	I	41.3	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_010_2	10	RP	09/01/22	3.3	206	16T 461910 4461500	I	40.7	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_011_1	11	RP	09/01/22	41.4	179	16T 462776 4461554	I	40.7	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_011_2	11	RP	09/01/22	10.7	194	16T 462773 4461585	I	40.4	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_012_1	12	RP	09/01/22	11.4	186	16T 463533 4461584	I	39.4	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_020_1	20	RP	09/01/22	64.3	92	16T 458590 4467564	P	41.2	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_025_1	25	FP	09/01/22	44.7	93	16T 461384 4465280	I	39.3	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_025_2	25	FP	09/01/22	39.2	51	16T 461370 4465307	I	41.2	A	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_025_3	25	FP	09/01/22	9.7	28	16T 461344 4465291	P	41.5	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_032_1	32	RP	09/01/22	6.3	288	16T 464542 4465448	I	40.3	A	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_040_1	40	RP	09/01/22	4.0	244	16T 463368 4466793	I	43.1	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_041_1	41	FP	09/01/22	21.7	335	16T 464396 4466799	I	42.6	A	U	No
Eastern red bat	*Lasiurus borealis*	20220901_ERBA_043_1	43	RP	09/01/22	5.9	259	16T 465121 4467585	I	38.3	U	M	No
Hoary bat	*Lasiurus cinereus*	20220901_HOBA_046_1	46	FP	09/01/22	29.2	50	16T 459197 4471448	I	50.9	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_046_1	46	FP	09/01/22	47.8	128	16T 459212 4471400	I	39.5	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_049_1	49	RP	09/01/22	6.4	249	16T 459203 4469864	P	40.4	U	U	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_051_1	51	FP	09/01/22	23.5	25	16T 460623 4469851	I	40.1	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_051_2	51	FP	09/01/22	9.0	192	16T 460611 4469821	I	41.6	U	U	No
Hoary bat	*Lasiurus cinereus*	20220901_HOBA_054_1	54	RP	09/01/22	43.3	153	16T 463896 4466773	I	55.4	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_056_1	56	FP	09/01/22	9.4	266	16T 463790 4469143	I	42.4	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_057_1	57	RP	09/01/22	0.7	323	16T 464430 4469142	I	41.4	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_059_1	59	RP	09/01/22	10.8	226	16T 465621 4468742	I	43.0	U	U	No
Eastern red bat	*Lasiurus borealis*	20220901_ERBA_063_1	63	RP	09/01/22	11.0	1	16T 467350 4470893	I	42.4	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_068_1	68	FP	09/01/22	21.0	42	16T 463454 4472376	I	41.5	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_068_2	68	FP	09/01/22	36.9	24	16T 463455 4472394	I	41.4	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_070_1	70	FP	09/01/22	2.5	180	16T 464359 4472486	I	40.8	U	M	No
Hoary bat	*Lasiurus cinereus*	20220901_HOBA_074_1	74	FP	09/01/22	26.7	138	16T 465316 4473759	I	55.0	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_074_1	74	FP	09/01/22	29.3	333	16T 465285 4473805	I	40.6	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_074_2	74	FP	09/01/22	16.5	317	16T 465287 4473791	I	41.2	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_077_1	77	RP	09/01/22	3.9	18	16T 458771 4476132	I	40.9	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_078_1	78	FP	09/01/22	51.3	187	16T 459086 4475766	I	41.1	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_078_2	78	FP	09/01/22	58.4	209	16T 459064 4475766	I	41.2	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_086_1	86	FP	09/01/22	50.5	40	16T 465810 4475383	I	41.4	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_086_2	86	FP	09/01/22	45.5	40	16T 465807 4475379	I	40.1	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_086_3	86	FP	09/01/22	43.7	108	16T 465819 4475331	I	41.5	A	M	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_086_4	86	FP	09/01/22	20.4	178	16T 465778 4475324	I	38.2	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_090_1	90	RP	09/01/22	42.8	74	16T 456046 4477381	I	41.1	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_090_2	90	RP	09/01/22	24.6	47	16T 456023 4477386	I	36.5	J	M	No
Eastern red bat	*Lasiurus borealis*	20220901_ERBA_091_1	91	RP	09/01/22	44.9	63	16T 456505 4477383	I	36.4	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_091_1	91	RP	09/01/22	49.8	64	16T 456510 4477384	I	40.0	J	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_104_1	104	FP	09/01/22	19.3	234	16T 467507 4478636	I	41.0	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_109_1	109	FP	09/01/22	30.2	53	16T 458588 4479619	I	39.7	J	F	No
Eastern red bat	*Lasiurus borealis*	20220901_ERBA_125_1	125	FP	09/01/22	37.0	10	16T 467506 4481486	I	42.9	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_125_3	125	FP	09/01/22	15.1	65	16T 467513 4481456	I	39.8	J	M	No
Hoary bat	*Lasiurus cinereus*	20220901_HOBA_130_1	130	FP	09/01/22	52.6	127	16T 459753 4482134	I	53.4	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_131_1	131	RP	09/01/22	47.1	144	16T 460270 4482110	I	37.4	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_131_2	131	RP	09/01/22	42.0	155	16T 460260 4482110	P	36.5	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_138_1	138	FP	09/01/22	38.4	35	16T 465773 4483573	P	39.0	U	F	No
Big brown bat	*Eptesicus fuscus*	20220901_BBBA_140_1	140	FP	09/01/22	16.4	139	16T 467401 4482958	P	43.0	U	M	No
Eastern red bat	*Lasiurus borealis*	20220901_ERBA_144_1	144	RP	09/01/22	52.7	115	16T 463521 4485065	I	40.0	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_144_1	144	RP	09/01/22	5.5	60	16T 463478 4485090	I	40.3	J	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_146_1	146	RP	09/01/22	44.6	89	16T 464272 4484818	I	40.8	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_146_2	146	RP	09/01/22	38.6	90	16T 464266 4484817	I	39.7	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_001_1	1	FP	09/02/22	48.3	84	16T 458883 4462315	I	40.5	U	U	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_003_1	3	FP	09/02/22	16.5	10	16T 460054 4461572	P	37.8	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_003_2	3	FP	09/02/22	34.9	89	16T 460086 4461556	P	40.4	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_004_1	4	FP	09/02/22	38.7	206	16T 460638 4461031	I	38.1	U	F	No
Eastern red bat	*Lasiurus borealis*	20220902_ERBA_005_1	5	FP	09/02/22	29.4	275	16T 461122 4461090	P	38.4	J	F	No
Eastern red bat	*Lasiurus borealis*	20220902_ERBA_012_1	12	RP	09/02/22	3.4	281	16T 463531 4461596	I	39.4	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_013_1	13	RP	09/02/22	8.4	122	16T 463518 4462248	I	41.0	A	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_017_1	17	RP	09/02/22	3.9	337	16T 465766 4463693	I	38.9	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_024_1	24	RP	09/02/22	52.5	181	16T 460805 4465323	I	40.9	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_026_1	26	FP	09/02/22	23.8	153	16T 461688 4465050	I	40.5	A	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_036_1	36	RP	09/02/22	5.1	272	16T 466835 4464807	A	NA	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_086_1	86	FP	09/02/22	10.6	114	16T 465787 4475340	I	40.3	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_094_1	94	FP	09/02/22	22.3	7	16T 457242 4478514	D	39.5	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_098_1	98	FP	09/02/22	43.3	176	16T 461734 4478312	I	39.2	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_102_1	102	FP	09/02/22	15.8	5	16T 465004 4477294	I	40.2	J	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_103_1	103	FP	09/02/22	10.2	101	16T 465837 4478694	I	39.6	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_105_1	105	FP	09/02/22	31.3	166	16T 467271 4477181	I	40.8	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_105_2	105	FP	09/02/22	30.3	28	16T 467278 4477238	I	38.4	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_109_1	109	FP	09/02/22	16.6	103	16T 458580 4479597	I	40.1	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_110_1	110	FP	09/02/22	51.6	70	16T 459042 4479612	I	41.3	U	U	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_113_1	113	FP	09/02/22	17.7	244	16T 460908 4480050	P	41.2	U	M	No
Eastern red bat	*Lasiurus borealis*	20220902_ERBA_114_1	114	FP	09/02/22	34.4	138	16T 461279 4479807	I	39.8	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_130_1	130	FP	09/02/22	41.6	159	16T 459726 4482127	P	NA	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_130_2	130	FP	09/02/22	14.7	138	16T 459721 4482155	I	40.6	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_130_3	130	FP	09/02/22	11.9	176	16T 459712 4482154	I	41.5	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_137_1	137	FP	09/02/22	5.8	105	16T 462912 4483053	I	42.1	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220903_SHBA_016_1	16	FP	09/03/22	29.1	194	16T 465282 4463665	I	40.8	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220903_SHBA_026_1	26	FP	09/03/22	21.6	170	16T 461681 4465050	D	NA	U	U	No
Eastern red bat	*Lasiurus borealis*	20220903_ERBA_030_1	30	FP	09/03/22	47.4	222	16T 463488 4465666	D	39.3	U	U	No
Eastern red bat	*Lasiurus borealis*	20220903_ERBA_060_1	60	RP	09/03/22	4.6	354	16T 466930 4468478	I	39.5	U	F	No
Eastern red bat	*Lasiurus borealis*	20220903_ERBA_073_1	73	FP	09/03/22	11.4	160	16T 467317 4473001	P	41.1	U	U	No
Eastern red bat	*Lasiurus borealis*	20220903_ERBA_074_1	74	FP	09/03/22	30.2	171	16T 465303 4473749	I	40.1	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220903_SHBA_074_1	74	FP	09/03/22	39.7	162	16T 465310 4473741	I	40.8	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220903_SHBA_094_1	94	FP	09/03/22	56.5	54	16T 457285 4478525	P	40.8	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220903_SHBA_110_1	110	FP	09/03/22	54.1	136	16T 459031 4479556	I	39.3	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220903_SHBA_111_1	111	FP	09/03/22	50.6	7	16T 459444 4479639	P	39.8	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220904_SHBA_004_1	4	FP	09/04/22	48.7	105	16T 460702 4461053	I	42.1	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220904_SHBA_004_2	4	FP	09/04/22	61.3	134	16T 460699 4461023	I	40.3	U	M	No
Eastern red bat	*Lasiurus borealis*	20220904_ERBA_016_1	16	FP	09/04/22	23.0	342	16T 465282 4463715	D	41.8	U	U	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Silver-haired bat	*Lasionycteris noctivagans*	20220904_SHBA_025_1	25	FP	09/04/22	36.4	78	16T 461375 4465290	D	42.0	A	U	No
Eastern red bat	*Lasiurus borealis*	20220904_ERBA_046_1	46	FP	09/04/22	50.0	103	16T 459223 4471418	I	39.0	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220904_SHBA_048_1	48	FP	09/04/22	43.1	46	16T 459255 4470691	I	38.5	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220904_SHBA_098_1	98	FP	09/04/22	44.1	168	16T 461740 4478312	I	40.4	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220904_SHBA_103_1	103	FP	09/04/22	23.3	99	16T 465850 4478692	I	42.0	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220904_SHBA_110_1	110	FP	09/04/22	30.5	76	16T 459023 4479602	P	40.9	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220904_SHBA_113_1	113	FP	09/04/22	26.7	219	16T 460907 4480037	I	40.2	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220904_SHBA_123_1	123	FP	09/04/22	31.3	13	16T 465704 4482224	I	41.3	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220904_SHBA_130_1	130	FP	09/04/22	46.2	127	16T 459748 4482138	D	NA	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220905_SHBA_003_1	3	FP	09/05/22	39.0	60	16T 460085 4461575	I	NA	U	U	No
Eastern red bat	*Lasiurus borealis*	20220905_ERBA_004_1	4	FP	09/05/22	62.1	222	16T 460613 4461020	I	40.5	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220905_SHBA_004_1	4	FP	09/05/22	49.2	194	16T 460643 4461018	I	40.1	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220905_SHBA_005_1	5	FP	09/05/22	18.3	151	16T 461160 4461071	I	38.5	U	U	No
Hoary bat	*Lasiurus cinereus*	20220905_HOBA_040_1	40	RP	09/05/22	22.8	176	16T 463373 4466772	I	55.7	A	U	No
Eastern red bat	*Lasiurus borealis*	20220905_ERBA_041_1	41	FP	09/05/22	51.3	121	16T 464449 4466753	I	38.4	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220905_SHBA_041_1	41	FP	09/05/22	49.0	164	16T 464418 4466732	I	41.0	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220905_SHBA_049_1	49	RP	09/05/22	5.7	32	16T 459212 4469871	I	40.1	U	F	No
Hoary bat	*Lasiurus cinereus*	20220905_HOBA_051_1	51	FP	09/05/22	53.7	293	16T 460563 4469852	I	52.0	U	U	No
Big brown bat	*Eptesicus fuscus*	20220905_BBBA_056_1	56	FP	09/05/22	11.3	246	16T 463789 4469139	I	50.9	A	F	No

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Eastern red bat	*Lasiurus borealis*	20220905_ERBA_069_1	69	RP	09/05/22	50.5	269	16T 463654 4472095	I	35.0	A	M	No
Eastern red bat	*Lasiurus borealis*	20220905_ERBA_071_1	71	RP	09/05/22	35.6	179	16T 464954 4472319	I	39.5	J	M	No
Eastern red bat	*Lasiurus borealis*	20220905_ERBA_084_1	84	FP	09/05/22	45.8	148	16T 461877 4476360	I	40.8	A	F	No
Eastern red bat	*Lasiurus borealis*	20220905_ERBA_098_1	98	FP	09/05/22	42.7	309	16T 461698 4478382	I	41.3	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220905_SHBA_098_1	98	FP	09/05/22	44.2	228	16T 461698 4478326	I	40.8	A	M	No
Eastern red bat	*Lasiurus borealis*	20220905_ERBA_099_1	99	RP	09/05/22	10.2	273	16T 462036 4478029	I	38.2	U	F	No
Eastern red bat	*Lasiurus borealis*	20220905_ERBA_102_1	102	FP	09/05/22	50.1	136	16T 465037 4477242	I	39.7	U	F	No
Hoary bat	*Lasiurus cinereus*	20220905_HOBA_103_1	103	FP	09/05/22	49.0	168	16T 465837 4478648	I	53.1	U	F	No
Evening bat	*Nycticeius humeralis*	20220905_EVBA_104_1	104	FP	09/05/22	6.7	268	16T 467516 4478647	I	35.9	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220905_SHBA_105_1	105	FP	09/05/22	33.2	78	16T 467296 4477218	F	36.0	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220905_SHBA_120_1	120	RP	09/05/22	2.5	209	16T 465788 4480236	I	43.1	J	F	No
Eastern red bat	*Lasiurus borealis*	20220905_ERBA_124_1	124	FP	09/05/22	39.7	162	16T 466543 4481757	I	36.9	A	M	No
Eastern red bat	*Lasiurus borealis*	20220905_ERBA_138_1	138	FP	09/05/22	43.9	282	16T 465708 4483551	I	39.1	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220905_SHBA_139_1	139	RP	09/05/22	2.6	191	16T 466987 4482990	I	41.7	J	F	No
Eastern red bat	*Lasiurus borealis*	20220906_ERBA_004_1	4	FP	09/06/22	15.8	315	16T 460644 4461077	I	42.0	A	U	No
Big brown bat	*Eptesicus fuscus*	20220906_BBBA_016_1	16	FP	09/06/22	59.5	132	16T 465333 4463653	I	45.5	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220906_SHBA_016_1	16	FP	09/06/22	30.2	159	16T 465300 4463665	I	40.7	J	M	No
Eastern red bat	*Lasiurus borealis*	20220906_ERBA_017_1	17	RP	09/06/22	4.4	306	16T 465764 4463692	I	38.4	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220906_SHBA_024_1	24	RP	09/06/22	40.5	180	16T 460806 4465335	I	42.2	U	U	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220906_SHBA_045_1	45	RP	09/06/22	4.5	287	16T 458629 4471479	A	NA	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220906_SHBA_051_1	51	FP	09/06/22	18.8	114	16T 460630 4469822	I	42.1	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220906_SHBA_051_2	51	FP	09/06/22	11.4	10	16T 460615 4469841	I	41.4	J	M	No
Eastern red bat	*Lasiurus borealis*	20220906_ERBA_062_1	62	RP	09/06/22	40.2	176	16T 466158 4469623	I	40.5	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220906_SHBA_073_1	73	FP	09/06/22	33.1	141	16T 467334 4472986	I	41.1	A	M	No
Big brown bat	*Eptesicus fuscus*	20220906_BBBA_074_1	74	FP	09/06/22	49.7	122	16T 465340 4473752	I	47.2	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220906_SHBA_077_1	77	RP	09/06/22	9.1	255	16T 458761 4476126	I	35.8	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220906_SHBA_080_1	80	RP	09/06/22	1.4	256	16T 460130 4476199	A	NA	U	U	No
Big brown bat	*Eptesicus fuscus*	20220906_BBBA_089_1	89	FP	09/06/22	15.3	231	16T 466848 4476265	I	47.2	A	M	No
Eastern red bat	*Lasiurus borealis*	20220906_ERBA_098_1	98	FP	09/06/22	52.5	197	16T 461716 4478305	I	41.0	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220906_SHBA_102_1	102	FP	09/06/22	39.5	173	16T 465007 4477239	I	38.3	U	M	No
Indiana bat	*Myotis sodalis*	20220906_INBA_105_1	105	FP	09/06/22	49.6	274	16T 467214 4477215	I	38.2	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220906_SHBA_135_1	135	RP	09/06/22	5.7	294	16T 461152 4483030	I	39.9	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220906_SHBA_139_1	139	RP	09/06/22	7.7	258	16T 466980 4482991	I	39.1	J	F	No
Eastern red bat	*Lasiurus borealis*	20220907_ERBA_068_1	68	FP	09/07/22	40.2	162	16T 463452 4472322	I	40.6	U	F	No
Indiana bat	*Myotis sodalis*	20220907_INBA_073_1	73	FP	09/07/22	11.9	186	16T 467312 4473000	I	37.6	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220907_SHBA_073_1	73	FP	09/07/22	42.9	183	16T 467311 4472969	D	41.3	U	U	No
Eastern red bat	*Lasiurus borealis*	20220907_ERBA_093_1	93	RP	09/07/22	8.9	30	16T 457421 4477280	I	39.7	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220907_SHBA_125_1	125	FP	09/07/22	38.8	174	16T 467503 4481411	I	40.2	A	U	No

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Eastern red bat	*Lasiurus borealis*	20220907_ERBA_137_1	137	FP	09/07/22	27.5	285	16T 462880 4483062	I	35.1	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220907_SHBA_138_1	138	FP	09/07/22	43.8	177	16T 465753 4483498	I	40.2	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220908_SHBA_006_1	6	RP	09/08/22	14.4	262	16T 461786 4460758	I	42.0	A	M	No
Eastern red bat	*Lasiurus borealis*	20220908_ERBA_025_1	25	FP	09/08/22	19.0	166	16T 461344 4465264	I	40.6	J	F	No
Eastern red bat	*Lasiurus borealis*	20220908_ERBA_055_1	55	FP	09/08/22	4.6	345	16T 463357 4469155	P	37.5	A	M	No
Eastern red bat	*Lasiurus borealis*	20220908_ERBA_064_1	64	RP	09/08/22	10.3	172	16T 467875 4471121	I	41.5	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220908_SHBA_064_1	64	RP	09/08/22	28.2	177	16T 467875 4471103	I	40.9	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220908_SHBA_089_1	89	FP	09/08/22	18.7	104	16T 466878 4476270	I	39.4	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220908_SHBA_096_1	96	FP	09/08/22	48.1	273	16T 458953 4478478	I	39.2	U	U	No
Eastern red bat	*Lasiurus borealis*	20220908_ERBA_109_1	109	FP	09/08/22	49.5	251	16T 458517 4479585	I	38.0	A	M	No
Eastern red bat	*Lasiurus borealis*	20220908_ERBA_121_1	121	RP	09/08/22	1.6	14	16T 466167 4480107	I	36.3	A	M	No
Eastern red bat	*Lasiurus borealis*	20220909_ERBA_012_1	12	RP	09/09/22	11.8	196	16T 463531 4461584	I	38.0	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220909_SHBA_016_1	16	FP	09/09/22	20.2	180	16T 465289 4463673	I	40.5	A	F	No
Eastern red bat	*Lasiurus borealis*	20220909_ERBA_031_1	31	RP	09/09/22	19.0	357	16T 464099 4465719	I	39.7	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220909_SHBA_059_1	59	RP	09/09/22	2.7	154	16T 465630 4468747	I	40.9	J	M	No
Eastern red bat	*Lasiurus borealis*	20220909_ERBA_061_1	61	RP	09/09/22	55.8	352	16T 466166 4469150	I	41.8	J	F	No
Big brown bat	*Eptesicus fuscus*	20220909_BBBA_089_1	89	FP	09/09/22	26.1	129	16T 466880 4476258	I	46.9	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220909_SHBA_101_1	101	RP	09/09/22	32.0	293	16T 464530 4477342	I	39.5	U	U	No
Eastern red bat	*Lasiurus borealis*	20220909_ERBA_110_1	110	FP	09/09/22	23.5	240	16T 458973 4479583	I	36.6	U	F	No

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Hoary bat	*Lasiurus cinereus*	20220909_HOBA_125_1	125	FP	09/09/22	38.4	2	16T 467501 4481488	I	54.2	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220909_SHBA_129_1	129	RP	09/09/22	3.4	316	16T 459209 4482213	I	39.2	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220909_SHBA_138_1	138	FP	09/09/22	22.6	334	16T 465741 4483562	P	40.9	U	F	No
Hoary bat	*Lasiurus cinereus*	20220911_HOBA_001_1	1	FP	09/11/22	19.0	348	16T 458831 4462329	I	54.4	J	F	No
Eastern red bat	*Lasiurus borealis*	20220911_ERBA_003_1	3	FP	09/11/22	56.1	48	16T 460093 4461593	I	40.6	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220911_SHBA_004_1	4	FP	09/11/22	27.3	287	16T 460629 4461074	I	42.2	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220911_SHBA_133_1	133	RP	09/11/22	3.2	354	16T 461247 4482125	I	37.3	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_003_1	3	FP	09/12/22	19.5	120	16T 460068 4461546	I	40.4	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_004_1	4	FP	09/12/22	49.3	20	16T 460672 4461112	I	40.0	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_025_1	25	FP	09/12/22	29.1	57	16T 461364 4465298	I	41.0	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_026_1	26	FP	09/12/22	38.1	131	16T 461706 4465046	I	43.5	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_027_1	27	RP	09/12/22	5.3	276	16T 462104 4465882	I	42.7	U	U	No
Eastern red bat	*Lasiurus borealis*	20220912_ERBA_030_1	30	FP	09/12/22	52.1	137	16T 463555 4465663	I	38.5	A	M	No
Hoary bat	*Lasiurus cinereus*	20220912_HOBA_030_1	30	FP	09/12/22	33.7	138	16T 463542 4465676	I	51.1	U	U	No
Eastern red bat	*Lasiurus borealis*	20220912_ERBA_040_1	40	RP	09/12/22	37.7	123	16T 463403 4466774	I	39.8	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_073_1	73	FP	09/12/22	47.4	42	16T 467345 4473047	I	41.1	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_074_1	74	FP	09/12/22	56.9	123	16T 465346 4473748	I	39.9	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_078_1	78	FP	09/12/22	41.3	68	16T 459131 4475832	I	40.4	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_078_2	78	FP	09/12/22	33.5	21	16T 459105 4475848	D	38.7	U	U	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_078_3	78	FP	09/12/22	39.4	353	16T 459088 4475856	I	39.8	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_084_1	84	FP	09/12/22	48.9	62	16T 461896 4476422	I	40.7	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_089_1	89	FP	09/12/22	38.5	355	16T 466857 4476313	I	41.5	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_094_1	94	FP	09/12/22	47.3	98	16T 457286 4478485	I	42.1	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_098_1	98	FP	09/12/22	48.1	149	16T 461756 4478314	I	40.8	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_101_1	101	RP	09/12/22	12.3	344	16T 464556 4477341	I	41.4	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_136_1	136	FP	09/12/22	46.3	68	16T 462647 4483374	I	44.5	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_136_2	136	FP	09/12/22	50.4	69	16T 462651 4483375	A	NA	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_139_1	139	RP	09/12/22	2.9	31	16T 466989 4482995	A	NA	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_144_1	144	RP	09/12/22	54.6	57	16T 463519 4485117	I	34.4	J	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_144_2	144	RP	09/12/22	5.4	256	16T 463468 4485086	I	41.0	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_005_1	5	FP	09/13/22	35.1	125	16T 461180 4461067	I	43.2	A	F	No
Eastern red bat	*Lasiurus borealis*	20220913_ERBA_016_1	16	FP	09/13/22	7.2	302	16T 465283 4463697	I	37.7	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_016_1	16	FP	09/13/22	45.7	73	16T 465333 4463706	I	43.4	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_025_1	25	FP	09/13/22	37.5	137	16T 461365 4465255	I	41.5	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_041_1	41	FP	09/13/22	48.5	114	16T 464449 4466759	I	40.2	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_055_1	55	FP	09/13/22	49.8	64	16T 463403 4469172	I	40.6	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_055_2	55	FP	09/13/22	58.8	53	16T 463405 4469186	I	42.1	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_075_1	75	RP	09/13/22	6.1	157	16T 461056 4473709	I	41.3	U	F	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_077_1	77	RP	09/13/22	3.3	78	16T 458773 4476129	I	41.7	J	F	No
Hoary bat	*Lasiurus cinereus*	20220913_HOBA_078_1	78	FP	09/13/22	48.5	139	16T 459124 4475780	I	53.6	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_078_1	78	FP	09/13/22	44.6	95	16T 459137 4475813	I	42.3	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_082_1	82	RP	09/13/22	4.8	217	16T 460873 4475663	I	42.4	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_094_1	94	FP	09/13/22	36.8	86	16T 457276 4478494	I	40.1	J	M	No
Eastern red bat	*Lasiurus borealis*	20220913_ERBA_100_1	100	FP	09/13/22	53.4	18	16T 464130 4477390	I	36.8	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_102_1	102	FP	09/13/22	12.8	353	16T 465001 4477291	I	41.5	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_103_1	103	FP	09/13/22	65.7	135	16T 465873 4478649	I	39.3	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_105_1	105	FP	09/13/22	28.1	160	16T 467273 4477185	I	38.3	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_105_2	105	FP	09/13/22	16.5	91	16T 467280 4477211	I	40.7	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_111_1	111	FP	09/13/22	26.1	35	16T 459453 4479610	I	42.4	J	F	No
Eastern red bat	*Lasiurus borealis*	20220913_ERBA_114_1	114	FP	09/13/22	28.1	62	16T 461281 4479846	I	39.2	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_114_1	114	FP	09/13/22	40.8	124	16T 461290 4479810	I	41.1	J	M	No
Eastern red bat	*Lasiurus borealis*	20220913_ERBA_117_1	117	RP	09/13/22	56.8	90	16T 462958 4480579	P	35.0	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_119_1	119	RP	09/13/22	15.0	86	16T 464517 4479648	I	42.6	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_121_1	121	RP	09/13/22	13.1	344	16T 466163 4480118	I	41.2	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_123_1	123	FP	09/13/22	3.6	276	16T 465693 4482194	I	41.1	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_126_1	126	RP	09/13/22	41.2	108	16T 457524 4482233	I	42.3	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_126_2	126	RP	09/13/22	3.8	331	16T 457483 4482249	I	38.3	U	F	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_131_1	131	RP	09/13/22	45.2	149	16T 460265 4482109	I	40.1	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_131_2	131	RP	09/13/22	7.0	181	16T 460242 4482141	I	39.6	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_134_1	134	RP	09/13/22	42.8	20	16T 460712 4483081	I	41.6	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220914_SHBA_004_1	4	FP	09/14/22	61.8	48	16T 460701 4461107	I	41.0	J	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220914_SHBA_068_1	68	FP	09/14/22	54.4	146	16T 463470 4472315	I	40.8	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220914_SHBA_068_2	68	FP	09/14/22	37.4	183	16T 463438 4472323	I	40.4	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220914_SHBA_096_1	96	FP	09/14/22	62.2	36	16T 459038 4478525	I	40.6	J	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220914_SHBA_105_1	105	FP	09/14/22	43.3	140	16T 467291 4477178	I	39.5	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220915_SHBA_124_1	124	FP	09/15/22	13.0	61	16T 466542 4481801	I	41.6	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220915_SHBA_130_1	130	FP	09/15/22	27.7	40	16T 459729 4482187	I	38.6	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220915_SHBA_140_1	140	FP	09/15/22	14.1	222	16T 467381 4482960	I	41.3	J	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220916_SHBA_004_1	4	FP	09/16/22	6.3	360	16T 460655 4461072	I	40.9	A	F	No
Big brown bat	*Eptesicus fuscus*	20220916_BBBA_005_1	5	FP	09/16/22	32.2	250	16T 461121 4461076	D	44.4	U	U	No
Hoary bat	*Lasiurus cinereus*	20220916_HOBA_009_1	9	RP	09/16/22	4.2	254	16T 462838 4459949	I	50.9	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220916_SHBA_041_1	41	FP	09/16/22	45.7	339	16T 464389 4466822	I	41.6	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220916_SHBA_047_1	47	RP	09/16/22	11.3	22	16T 458602 4470600	I	41.2	J	F	No
Eastern red bat	*Lasiurus borealis*	20220916_ERBA_056_1	56	FP	09/16/22	46.0	55	16T 463837 4469170	I	35.8	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220916_SHBA_056_1	56	FP	09/16/22	9.3	46	16T 463806 4469150	I	43.7	U	U	No
Hoary bat	*Lasiurus cinereus*	20220916_HOBA_063_1	63	RP	09/16/22	8.0	331	16T 467346 4470889	I	51.8	J	F	No

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Eastern red bat	*Lasiurus borealis*	20220916_ERBA_091_1	91	RP	09/16/22	12.4	355	16T 456464 4477375	I	38.9	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220916_SHBA_100_1	100	FP	09/16/22	1.3	187	16T 464113 4477338	I	41.8	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220916_SHBA_137_1	137	FP	09/16/22	27.5	315	16T 462887 4483074	I	48.5	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220917_SHBA_003_1	3	FP	09/17/22	38.9	329	16T 460031 4461589	I	40.8	U	F	No
Indiana bat	*Myotis sodalis*	20220917_INBA_005_1	5	FP	09/17/22	46.6	307	16T 461114 4461115	I	39.7	U	M	No
Hoary bat	*Lasiurus cinereus*	20220917_HOBA_016_1	16	FP	09/17/22	44.5	15	16T 465301 4463736	I	50.0	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220917_SHBA_017_1	17	RP	09/17/22	4.4	34	16T 465770 4463693	I	38.5	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220917_SHBA_041_1	41	FP	09/17/22	45.4	26	16T 464425 4466820	I	40.4	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220917_SHBA_050_1	50	RP	09/17/22	45.0	45	16T 460127 4469850	I	37.8	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220917_SHBA_066_1	66	RP	09/17/22	36.8	273	16T 465073 4470922	I	42.7	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220917_SHBA_068_1	68	FP	09/17/22	36.7	360	16T 463440 4472397	I	39.9	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220917_SHBA_074_1	74	FP	09/17/22	26.5	310	16T 465278 4473796	I	41.5	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220917_SHBA_086_1	86	FP	09/17/22	53.9	296	16T 465729 4475368	P	39.1	A	F	No
Eastern red bat	*Lasiurus borealis*	20220917_ERBA_089_1	89	FP	09/17/22	19.0	345	16T 466855 4476293	I	40.7	U	F	No
Hoary bat	*Lasiurus cinereus*	20220917_HOBA_105_1	105	FP	09/17/22	35.1	247	16T 467231 4477198	I	55.9	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220917_SHBA_105_1	105	FP	09/17/22	48.7	275	16T 467215 4477216	I	41.4	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220917_SHBA_120_1	120	RP	09/17/22	9.4	169	16T 465791 4480229	I	39.4	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220917_SHBA_130_1	130	FP	09/17/22	21.3	275	16T 459690 4482168	I	41.1	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220917_SHBA_137_1	137	FP	09/17/22	27.4	269	16T 462879 4483054	I	40.4	J	F	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220917_SHBA_138_1	138	FP	09/17/22	15.9	264	16T 465735 4483540	I	39.1	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220918_SHBA_004_1	4	FP	09/18/22	52.3	322	16T 460623 4461107	I	40.6	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220918_SHBA_004_2	4	FP	09/18/22	49.8	41	16T 460688 4461103	I	41.8	J	F	No
Hoary bat	*Lasiurus cinereus*	20220918_HOBA_016_1	16	FP	09/18/22	14.9	289	16T 465275 4463698	I	54.0	U	F	No
Eastern red bat	*Lasiurus borealis*	20220918_ERBA_032_1	32	RP	09/18/22	6.1	279	16T 464542 4465447	I	39.1	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220918_SHBA_056_1	56	FP	09/18/22	57.4	43	16T 463839 4469185	I	40.5	A	M	No
Hoary bat	*Lasiurus cinereus*	20220918_HOBA_068_1	68	FP	09/18/22	36.6	273	16T 463403 4472363	I	49.2	U	U	No
Hoary bat	*Lasiurus cinereus*	20220918_HOBA_073_1	73	FP	09/18/22	52.7	38	16T 467346 4473053	I	52.8	A	M	No
Hoary bat	*Lasiurus cinereus*	20220918_HOBA_078_1	78	FP	09/18/22	45.0	183	16T 459090 4475772	I	56.0	A	F	No
Hoary bat	*Lasiurus cinereus*	20220918_HOBA_084_1	84	FP	09/18/22	38.2	4	16T 461856 4476437	I	51.8	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220918_SHBA_084_1	84	FP	09/18/22	35.8	324	16T 461832 4476428	D	41.7	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220918_SHBA_084_2	84	FP	09/18/22	31.5	22	16T 461865 4476428	I	41.1	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220918_SHBA_100_1	100	FP	09/18/22	11.1	247	16T 464103 4477335	I	40.6	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220918_SHBA_109_1	109	FP	09/18/22	53.2	296	16T 458516 4479624	P	41.1	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220918_SHBA_115_1	115	FP	09/18/22	20.6	272	16T 461679 4479866	I	41.8	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220918_SHBA_117_1	117	RP	09/18/22	14.0	78	16T 462915 4480582	I	38.9	U	M	No
Hoary bat	*Lasiurus cinereus*	20220918_HOBA_125_1	125	FP	09/18/22	40.5	56	16T 467533 4481472	I	50.4	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220919_SHBA_016_1	16	FP	09/19/22	26.2	319	16T 465272 4463713	I	39.4	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220919_SHBA_036_1	36	RP	09/19/22	5.3	308	16T 466836 4464810	I	39.9	U	F	No

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Eastern red bat	*Lasiurus borealis*	20220919_ERBA_041_1	41	FP	09/19/22	45.1	282	16T 464361 4466789	I	43.0	A	F	No
Eastern red bat	*Lasiurus borealis*	20220919_ERBA_049_1	49	RP	09/19/22	20.5	188	16T 459206 4469846	I	39.1	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220919_SHBA_061_1	61	RP	09/19/22	3.8	329	16T 466172 4469098	A	NA	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220919_SHBA_073_1	73	FP	09/19/22	53.7	36	16T 467345 4473055	I	41.1	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220919_SHBA_094_1	94	FP	09/19/22	34.9	94	16T 457274 4478489	I	41.4	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220919_SHBA_100_1	100	FP	09/19/22	18.8	91	16T 464132 4477339	I	42.0	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220919_SHBA_101_1	101	RP	09/19/22	20.0	57	16T 464576 4477340	I	39.6	J	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220919_SHBA_102_1	102	FP	09/19/22	53.2	66	16T 465051 4477300	I	39.6	U	F	No
Big brown bat	*Eptesicus fuscus*	20220919_BBBA_104_1	104	FP	09/19/22	40.4	175	16T 467526 4478607	I	49.4	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220919_SHBA_124_1	124	FP	09/19/22	56.6	318	16T 466493 4481837	I	41.0	U	U	No
Hoary bat	*Lasiurus cinereus*	20220919_HOBA_125_1	125	FP	09/19/22	11.0	104	16T 467510 4481447	I	51.7	U	F	No
Seminole bat	*Lasiurus seminolus*	20220919_SEBA_134_1	135	RP	09/19/22	3.6	183	16T 461157 4483024	I	39.5	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220919_SHBA_138_1	138	FP	09/19/22	54.9	215	16T 465719 4483497	I	39.7	U	U	No
Hoary bat	*Lasiurus cinereus*	20220920_HOBA_001_1	1	FP	09/20/22	7.3	250	16T 458828 4462308	P	50.3	U	M	No
Hoary bat	*Lasiurus cinereus*	20220920_HOBA_002_1	2	RP	09/20/22	14.4	269	16T 459774 4461870	I	54.5	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220920_SHBA_084_1	84	FP	09/20/22	36.8	313	16T 461826 4476424	I	41.7	U	U	No
Big brown bat	*Eptesicus fuscus*	20220920_BBBA_123_1	123	FP	09/20/22	26.4	358	16T 465696 4482220	I	48.3	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220920_SHBA_125_1	125	FP	09/20/22	16.4	41	16T 467510 4481462	I	41.8	U	U	No
Eastern red bat	*Lasiurus borealis*	20220920_ERBA_137_1	137	FP	09/20/22	40.2	349	16T 462899 4483094	I	40.4	A	M	No

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Big brown bat	*Eptesicus fuscus*	20220921_BBBA_002_1	2	RP	09/21/22	22.5	267	16T 459766 4461869	I	47.7	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220921_SHBA_079_1	79	RP	09/21/22	48.0	322	16T 459325 4475516	I	40.3	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220921_SHBA_079_2	79	RP	09/21/22	41.3	336	16T 459338 4475516	I	41.8	A	F	No
Eastern red bat	*Lasiurus borealis*	20220921_ERBA_100_1	100	FP	09/21/22	21.9	115	16T 464133 4477330	I	38.1	U	M	No
Eastern red bat	*Lasiurus borealis*	20220921_ERBA_113_1	113	FP	09/21/22	7.8	296	16T 460917 4480061	I	40.4	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220921_SHBA_113_1	113	FP	09/21/22	17.0	95	16T 460941 4480056	I	42.3	U	F	No
Eastern red bat	*Lasiurus borealis*	20220921_ERBA_129_1	129	RP	09/21/22	5.5	308	16T 459207 4482214	I	37.5	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220921_SHBA_135_1	135	RP	09/21/22	51.5	337	16T 461137 4483075	I	41.4	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_023_1	23	RP	09/22/22	5.1	14	16T 459215 4466444	I	42.2	U	F	No
Eastern red bat	*Lasiurus borealis*	20220922_ERBA_037_1	37	RP	09/22/22	59.8	179	16T 462157 4466575	I	39.7	A	F	No
Eastern red bat	*Lasiurus borealis*	20220922_ERBA_042_1	42	RP	09/22/22	42.1	356	16T 464547 4467635	D	39.1	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_045_1	45	RP	09/22/22	25.6	178	16T 458634 4471452	I	41.6	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_075_1	75	RP	09/22/22	38.7	182	16T 461052 4473676	I	41.8	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_086_1	86	FP	09/22/22	19.5	147	16T 465788 4475328	I	38.7	A	M	No
Evening bat	*Nycticeius humeralis*	20220922_EVBA_089_1	89	FP	09/22/22	16.7	176	16T 466861 4476258	I	35.8	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_097_1	97	RP	09/22/22	26.9	185	16T 460396 4478234	I	42.7	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_100_1	100	FP	09/22/22	51.6	112	16T 464161 4477320	I	44.0	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_111_1	111	FP	09/22/22	5.8	189	16T 459437 4479583	I	42.7	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_111_2	111	FP	09/22/22	51.5	294	16T 459391 4479610	I	38.2	U	U	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_119_1	119	RP	09/22/22	50.1	92	16T 464552 4479645	I	39.5	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_123_1	123	FP	09/22/22	15.1	124	16T 465709 4482185	I	41.2	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_125_1	125	FP	09/22/22	50.0	63	16T 467544 4481472	I	38.3	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_125_2	125	FP	09/22/22	24.9	82	16T 467524 4481452	I	40.7	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_125_3	125	FP	09/22/22	23.2	63	16T 467520 4481460	I	41.5	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_138_1	138	FP	09/22/22	22.0	33	16T 465763 4483560	I	39.5	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_140_1	140	FP	09/22/22	10.4	244	16T 467381 4482966	P	NA	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_140_2	140	FP	09/22/22	15.0	14	16T 467394 4482985	I	41.8	J	M	No
Evening bat	*Nycticeius humeralis*	20220922_EVBA_144_1	144	RP	09/22/22	3.2	57	16T 463476 4485089	I	37.9	J	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_144_1	144	RP	09/22/22	47.2	97	16T 463520 4485081	I	40.9	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_008_1	8	RP	09/23/22	60.8	115	16T 462451 4460011	I	41.2	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_008_2	8	RP	09/23/22	39.6	215	16T 462373 4460005	I	41.0	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_011_1	11	RP	09/23/22	48.4	181	16T 462775 4461547	I	41.6	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_056_1	56	FP	09/23/22	32.8	138	16T 463821 4469119	I	41.3	A	M	No
Silver-haired bat	*Lasiurus noctivagans*	20220923_SHBA_070_1	70	FP	09/23/22	29.0	324	16T 464342 4472512	P	39.5	U	U	No
Silver-haired bat	*Lasiurus noctivagans*	20220923_SHBA_073_1	73	FP	09/23/22	38.0	123	16T 467345 4472991	I	41.6	U	M	No
Seminole bat	*Lasiurus Seminolus*	20220923_SEBA_074_1	74	FP	09/23/22	42.7	325	16T 465274 4473814	I	41.2	U	U	No
Silver-haired bat	*Lasiurus noctivagans*	20220923_SHBA_074_1	74	FP	09/23/22	38.1	165	16T 465308 4473742	P	41.0	U	U	No
Silver-haired bat	*Lasiurus noctivagans*	20220923_SHBA_074_2	74	FP	09/23/22	62.7	320	16T 465258 4473827	P	41.5	U	U	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_084_1	84	FP	09/23/22	38.3	123	16T 461885 4476378	I	41.8	U	F	No
Silver-haired bat	*Lasiurus noctivagans*	20220923_SHBA_086_2	86	FP	09/23/22	49.2	112	16T 465823 4475326	I	43.8	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_094_1	94	FP	09/23/22	46.0	111	16T 457282 4478475	I	41.5	U	M	No
Indiana bat	*Myotis sodalis*	20220923_INBA_105_1	105	FP	09/23/22	41.9	129	16T 467296 4477185	I	37.0	A	M	No
Eastern red bat	*Lasiurus borealis*	20220923_ERBA_109_1	109	FP	09/23/22	27.4	336	16T 458553 4479626	I	40.6	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_113_1	113	FP	09/23/22	44.1	93	16T 460968 4480055	I	40.1	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_113_2	113	FP	09/23/22	28.9	116	16T 460950 4480045	I	41.7	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_114_1	114	FP	09/23/22	35.7	317	16T 461232 4479859	I	40.8	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_114_2	114	FP	09/23/22	41.9	176	16T 461259 4479791	I	40.5	J	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_125_1	125	FP	09/23/22	21.1	309	16T 467483 4481463	I	38.1	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_136_1	136	FP	09/23/22	49.2	86	16T 462653 4483360	I	41.7	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_136_2	136	FP	09/23/22	33.6	99	16T 462637 4483352	P	41.0	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_136_3	136	FP	09/23/22	17.3	186	16T 462602 4483340	I	40.6	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220924_SHBA_016_1	16	FP	09/24/22	20.8	209	16T 465279 4463675	I	41.4	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220924_SHBA_046_1	46	FP	09/24/22	38.8	153	16T 459192 4471395	I	41.8	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220924_SHBA_046_2	46	FP	09/24/22	44.9	331	16T 459153 4471469	P	42.8	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220924_SHBA_089_1	89	FP	09/24/22	54.9	61	16T 466908 4476301	I	39.4	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220924_SHBA_091_1	91	RP	09/24/22	12.1	340	16T 456461 4477374	P	NA	U	U	No
Hoary bat	*Lasiurus cinereus*	20220924_HOBA_124_1	124	FP	09/24/22	49.5	190	16T 466522 4481746	I	51.9	U	F	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220925_SHBA_001_1	1	FP	09/25/22	44.4	278	16T 458791 4462317	I	40.2	U	U	No
Big brown bat	*Eptesicus fuscus*	20220925_BBBA_005_1	5	FP	09/25/22	15.7	284	16T 461136 4461091	P	47.3	U	U	No
Big brown bat	*Eptesicus fuscus*	20220925_BBBA_005_2	5	FP	09/25/22	15.4	247	16T 461137 4461081	I	46.6	U	U	No
Eastern red/Seminole bat	*Lasiurus borealis/seminolus*	20220925_ERBA/SEBA_005_1	5	FP	09/25/22	14.8	86	16T 461166 4461088	A	NA	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220925_SHBA_019_1	19	RP	09/25/22	7.0	201	16T 466590 4463422	I	41.8	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220925_SHBA_026_1	26	FP	09/25/22	13.4	219	16T 461669 4465061	I	42.5	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220925_SHBA_055_1	55	FP	09/25/22	32.0	94	16T 463390 4469148	I	41.8	U	F	No
Eastern red bat	*Lasiurus borealis*	20220925_ERBA_070_1	70	FP	09/25/22	54.6	52	16T 464402 4472522	I	38.8	U	M	No
Eastern red bat	*Lasiurus borealis*	20220925_ERBA_084_1	84	FP	09/25/22	53.4	212	16T 461824 4476354	I	39.5	U	F	No
Eastern red bat	*Lasiurus borealis*	20220925_ERBA_098_1	98	FP	09/25/22	36.7	196	16T 461721 4478320	I	40.6	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220925_SHBA_103_1	103	FP	09/25/22	40.4	130	16T 465858 4478670	I	40.3	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220925_SHBA_109_1	109	FP	09/25/22	41.2	87	16T 458605 4479603	I	43.9	U	F	No
Evening bat	*Nycticeius humeralis*	20220925_EVBA_115_1	115	FP	09/25/22	39.9	211	16T 461679 4479831	I	33.1	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220925_SHBA_115_1	115	FP	09/25/22	32.8	24	16T 461713 4479895	I	41.4	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220925_SHBA_132_1	132	RP	09/25/22	4.5	286	16T 460811 4482154	I	40.6	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220925_SHBA_144_1	144	RP	09/25/22	62.5	130	16T 463521 4485047	I	NA	U	U	No
Eastern red bat	*Lasiurus borealis*	20220926_ERBA_001_1	1	FP	09/26/22	19.6	119	16T 458852 4462301	I	37.8	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220926_SHBA_003_1	3	FP	09/26/22	31.8	165	16T 460059 4461525	I	42.7	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220926_SHBA_004_1	4	FP	09/26/22	21.0	54	16T 460672 4461078	P	42.4	U	U	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220926_SHBA_030_1	30	FP	09/26/22	9.7	243	16T 463511 4465697	I	40.9	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220926_SHBA_038_1	38	RP	09/26/22	58.3	88	16T 462308 4467399	I	39.0	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220926_SHBA_046_1	46	FP	09/26/22	40.7	76	16T 459214 4471439	P	41.7	J	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220926_SHBA_078_1	78	FP	09/26/22	3.9	222	16T 459090 4475814	I	40.1	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220926_SHBA_082_1	82	RP	09/26/22	67.2	90	16T 460943 4475667	I	41.8	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220926_SHBA_098_1	98	FP	09/26/22	28.8	90	16T 461760 4478355	I	42.7	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220926_SHBA_114_1	114	FP	09/26/22	17.9	174	16T 461258 4479815	I	40.5	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220926_SHBA_139_1	139	RP	09/26/22	32.0	130	16T 467012 4482972	I	37.3	U	M	No
Eastern red bat	*Lasiurus borealis*	20220927_ERBA_020_1	20	RP	09/27/22	10.5	104	16T 458536 4467564	I	38.4	U	M	No
Eastern red bat	*Lasiurus borealis*	20220927_ERBA_030_1	30	FP	09/27/22	39.9	337	16T 463504 4465738	I	42.0	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220927_SHBA_030_1	30	FP	09/27/22	35.3	117	16T 463551 4465685	I	42.4	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220927_SHBA_041_1	41	FP	09/27/22	43.2	77	16T 464447 4466789	I	41.3	U	M	No
Eastern red bat	*Lasiurus borealis*	20220927_ERBA_140_1	140	FP	09/27/22	47.6	294	16T 467347 4482990	I	40.1	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220928_SHBA_001_1	1	FP	09/28/22	39.2	93	16T 458874 4462308	I	43.0	U	M	No
Hoary bat	*Lasiurus cinereus*	20220928_HOBA_003_1	3	FP	09/28/22	52.4	66	16T 460099 4461577	P	NA	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220928_SHBA_004_1	4	FP	09/28/22	17.2	204	16T 460648 4461050	I	NA	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220928_SHBA_041_1	41	FP	09/28/22	6.0	122	16T 464410 4466776	I	40.4	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220928_SHBA_041_2	41	FP	09/28/22	8.6	224	16T 464399 4466773	I	39.6	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220928_SHBA_046_1	46	FP	09/28/22	43.3	156	16T 459192 4471390	I	41.4	A	F	No

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Silver-haired bat	*Lasionycteris noctivagans*	20220928_SHBA_046_2	46	FP	09/28/22	47.3	151	16T 459197 4471388	P	42.1	U	U	No
Hoary bat	*Lasiurus cinereus*	20220928_HOBA_068_1	68	FP	09/28/22	51.7	303	16T 463397 4472389	I	51.3	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220928_SHBA_068_1	68	FP	09/28/22	46.9	195	16T 463428 4472315	P	40.2	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220928_SHBA_068_2	68	FP	09/28/22	22.6	111	16T 463461 4472352	I	40.9	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220928_SHBA_094_1	94	FP	09/28/22	48.0	254	16T 457193 4478479	I	40.8	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220928_SHBA_096_1	96	FP	09/28/22	31.3	140	16T 459021 4478451	P	40.6	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220928_SHBA_096_2	96	FP	09/28/22	32.1	75	16T 459032 4478483	I	39.9	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220928_SHBA_096_3	96	FP	09/28/22	46.4	82	16T 459047 4478481	I	40.9	U	F	No
Hoary bat	*Lasiurus cinereus*	20220928_HOBA_113_1	113	FP	09/28/22	32.2	311	16T 460900 4480079	P	55.0	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220929_SHBA_096_1	96	FP	09/29/22	10.6	228	16T 458993 4478468	I	42.3	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220929_SHBA_125_1	125	FP	09/29/22	49.7	67	16T 467545 4481469	I	41.1	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20220930_SHBA_003_1	3	FP	09/30/22	36.9	25	16T 460067 4461589	I	39.8	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20220930_SHBA_073_1	73	FP	09/30/22	37.4	55	16T 467344 4473033	P	39.5	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20220930_SHBA_121_1	121	RP	09/30/22	5.0	119	16T 466171 4480103	I	40.6	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20221001_SHBA_022_1	22	RP	10/01/22	54.8	182	16T 458967 4466750	I	42.1	U	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20221001_SHBA_098_1	98	FP	10/01/22	5.2	182	16T 461731 4478350	I	40.1	U	M	No
Eastern red bat	*Lasiurus borealis*	20221002_ERBA_006_1	6	RP	10/02/22	39.3	273	16T 461761 4460762	I	41.6	U	F	No
Hoary bat	*Lasiurus cinereus*	20221002_HOBA_010_1	10	RP	10/02/22	93.0	181	16T 461910 4461410	I	52.3	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20221002_SHBA_125_1	125	FP	10/02/22	34.7	25	16T 467514 4481481	I	41.0	U	U	No

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Silver-haired bat	*Lasionycteris noctivagans*	20221002_SHBA_140_1	140	FP	10/02/22	37.4	269	16T 467353 4482970	I	41.9	U	U	No
Hoary bat	*Lasiurus cinereus*	20221003_HOBA_125_1	125	FP	10/03/22	32.1	137	16T 467521 4481426	I	53.8	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20221004_SHBA_140_1	140	FP	10/04/22	16.7	95	16T 467407 4482969	I	41.1	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20221005_SHBA_096_1	96	FP	10/05/22	14.3	282	16T 458987 4478478	I	41.1	U	U	No
Eastern red bat	*Lasiurus borealis*	20221005_ERBA_101_1	101	RP	10/05/22	8.2	344	16T 464557 4477337	I	37.6	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20221006_SHBA_070_1	70	FP	10/06/22	15.9	316	16T 464348 4472500	I	40.2	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20221006_SHBA_130_1	130	FP	10/06/22	16.3	223	16T 459700 4482154	I	40.9	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20221009_SHBA_055_1	55	FP	10/09/22	43.0	228	16T 463326 4469122	I	42.7	A	F	No
Silver-haired bat	*Lasionycteris noctivagans*	20221009_SHBA_110_1	110	FP	10/09/22	65.3	221	16T 458950 4479546	I	40.6	A	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20221010_SHBA_041_1	41	FP	10/10/22	9.1	41	16T 464411 4466786	I	37.0	U	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20221011_SHBA_016_1	16	FP	10/11/22	56.8	325	16T 465257 4463740	I	42.7	A	F	No
Hoary bat	*Lasiurus cinereus*	20221011_HOBA_026_1	26	FP	10/11/22	26.7	237	16T 461655 4465057	I	53.3	U	M	No
Eastern red bat	*Lasiurus borealis*	20221011_ERBA_048_1	48	FP	10/11/22	34.3	70	16T 459256 4470673	I	40.5	A	M	No
Hoary bat	*Lasiurus cinereus*	20221011_HOBA_115_1	115	FP	10/11/22	17.4	308	16T 461686 4479876	I	55.2	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20221011_SHBA_125_1	125	FP	10/11/22	52.8	115	16T 467547 4481427	I	42.3	A	U	No
Hoary bat	*Lasiurus cinereus*	20221012_HOBA_030_1	30	FP	10/12/22	61.2	311	16T 463474 4465742	I	51.8	A	M	No
Silver-haired bat	*Lasionycteris noctivagans*	20221013_SHBA_089_1	89	FP	10/13/22	24.4	360	16T 466860 4476299	I	40.5	U	U	No
Silver-haired bat	*Lasionycteris noctivagans*	20221015_SHBA_078_1	78	FP	10/15/22	13.6	344	16T 459089 4475830	I	42.0	U	M	No
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_003_1	3	FP	08/01/22	7.8	181	16T 460051 4461548	I	48.9	J	U	Yes

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_004_1	4	FP	08/01/22	11.5	350	16T 460653 4461077	P	50.1	U	U	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_005_1	5	FP	08/01/22	14.1	7	16T 461153 4461101	D	38.2	A	U	Yes
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_007_1	7	RP	08/01/22	3.2	329	16T 461956 4460259	I	52.9	J	M	Yes
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_016_1	16	FP	08/01/22	27.0	308	16T 465268 4463710	I	51.1	J	M	Yes
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_017_1	17	RP	08/01/22	9.9	130	16T 465775 4463683	I	55.6	A	U	Yes
Big brown bat	*Eptesicus fuscus*	20220801_BBBA_030_1	30	FP	08/01/22	11.8	305	16T 463510 4465708	I	43.2	J	M	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_030_1	30	FP	08/01/22	4.5	162	16T 463521 4465697	I	41.3	J	U	Yes
Big brown bat	*Eptesicus fuscus*	20220801_BBBA_031_1	31	RP	08/01/22	54.0	360	16T 464100 4465754	I	45.2	U	U	Yes
Big brown bat	*Eptesicus fuscus*	20220801_BBBA_032_1	32	RP	08/01/22	2.2	206	16T 464547 4465444	P	45.3	J	U	Yes
Big brown bat	*Eptesicus fuscus*	20220801_BBBA_035_1	35	RP	08/01/22	2.2	272	16T 465520 4465025	P	32.0	J	M	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_035_1	35	RP	08/01/22	7.2	226	16T 465517 4465020	I	40.2	U	U	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_036_1	36	RP	08/01/22	18.5	196	16T 466835 4464789	I	40.6	A	F	Yes
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_037_1	37	RP	08/01/22	4.5	18	16T 462158 4466639	D	NA	U	U	Yes
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_048_1	48	FP	08/01/22	7.4	26	16T 459227 4470668	I	55.5	J	F	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_050_1	50	RP	08/01/22	32.2	343	16T 460085 4469850	I	38.9	A	M	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_051_1	51	FP	08/01/22	3.0	255	16T 460610 4469829	I	39.0	A	F	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_051_2	51	FP	08/01/22	15.3	164	16T 460617 4469815	I	37.1	J	U	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_051_3	51	FP	08/01/22	12.8	316	16T 460604 4469839	I	34.7	A	F	Yes
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_051_1	51	FP	08/01/22	36.2	148	16T 460632 4469799	I	53.3	U	U	Yes

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_061_1	61	RP	08/01/22	19.3	360	16T 466174 4469114	I	51.5	J	M	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_073_1	73	FP	08/01/22	11.8	94	16T 467325 4473011	P	37.0	J	U	Yes
Big brown bat	*Eptesicus fuscus*	20220801_BBBA_075_1	75	RP	08/01/22	4.4	351	16T 461053 4473719	P	48.2	J	U	Yes
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_076_1	76	RP	08/01/22	3.4	90	16T 460686 4473740	I	47.0	J	M	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_079_1	79	RP	08/01/22	7.3	341	16T 459352 4475485	I	39.4	J	F	Yes
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_083_1	83	RP	08/01/22	16.1	87	16T 461204 4475467	P	52.4	U	U	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_084_1	84	FP	08/01/22	37.5	314	16T 461826 4476425	I	38.9	U	U	Yes
Big brown bat	*Eptesicus fuscus*	20220801_BBBA_087_1	87	RP	08/01/22	3.9	41	16T 466172 4475339	I	49.0	J	F	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_090_1	90	RP	08/01/22	64.6	74	16T 456067 4477387	I	38.5	A	F	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_096_1	96	FP	08/01/22	6.3	288	16T 458995 4478477	I	40.3	J	M	Yes
Big brown bat	*Eptesicus fuscus*	20220801_BBBA_100_1	100	FP	08/01/22	10.0	272	16T 464102 4477340	I	49.1	A	M	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_100_1	100	FP	08/01/22	NA	NA	NA	I	37.3	J	M	Yes
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_100_1	100	FP	08/01/22	18.0	268	16T 464095 4477340	I	53.0	A	M	Yes
Big brown bat	*Eptesicus fuscus*	20220801_BBBA_103_1	103	FP	08/01/22	11.6	200	16T 465823 4478685	I	47.0	J	M	Yes
Big brown bat	*Eptesicus fuscus*	20220801_BBBA_103_2	103	FP	08/01/22	32.0	151	16T 465842 4478669	I	46.1	A	U	Yes
Big brown bat	*Eptesicus fuscus*	20220801_BBBA_105_1	105	FP	08/01/22	52.9	143	16T 467295 4477169	I	48.7	J	F	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_109_1	109	FP	08/01/22	24.3	330	16T 458552 4479622	I	40.5	A	F	Yes
Big brown bat	*Eptesicus fuscus*	20220801_BBBA_123_1	123	FP	08/01/22	45.4	191	16T 465688 4482149	I	41.9	J	U	Yes
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_124_1	124	FP	08/01/22	28.0	70	16T 466557 4481804	I	56.0	U	U	Yes
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_137_1	137	FP	08/01/22	15.1	287	16T 462892 4483059	I	55.5	J	F	Yes

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Big brown bat	*Eptesicus fuscus*	20220801_BBBA_140_1	140	FP	08/01/22	23.1	212	16T 467378 4482951	I	47.3	U	U	Yes
Eastern red bat	*Lasiurus borealis*	20220801_ERBA_140_1	140	FP	08/01/22	46.0	14	16T 467402 4483015	I	36.5	A	M	Yes
Hoary bat	*Lasiurus cinereus*	20220801_HOBA_140_1	140	FP	08/01/22	51.4	52	16T 467431 4483002	I	50.6	J	M	Yes
Big brown bat	*Eptesicus fuscus*	20220801_BBBA_143_1	143	RP	08/01/22	14.6	276	16T 462847 4475992	I	47.0	J	M	Yes
Eastern red bat	*Lasiurus borealis*	20220802_ERBA_039_1	39	RP	08/02/22	10.2	24	16T 462750 4467306	I	39.4	A	F	Yes
Hoary bat	*Lasiurus cinereus*	20220802_HOBA_058_1	58	RP	08/02/22	4.5	16	16T 464941 4468761	I	49.3	J	M	Yes
Hoary bat	*Lasiurus cinereus*	20220802_HOBA_058_2	58	RP	08/02/22	11.7	183	16T 464939 4468745	I	48.2	J	M	Yes
Eastern red bat	*Lasiurus borealis*	20220809_ERBA_011_2	11	RP	08/09/22	NA	NA	NA	NA	38.0	A	M	Yes
Eastern red bat	*Lasiurus borealis*	20220815_ERBA_050_1	50	RP	08/15/22	8.7	26	16T 460099 4469826	I	39.5	U	F	Yes
Eastern red bat	*Lasiurus borealis*	20220818_ERBA_018_1	18	RP	08/18/22	9.1	252	16T 466164 4463425	P	37.5	J	M	Yes
Big brown bat	*Eptesicus fuscus*	20220820_BBBA_033_1	33	RP	08/20/22	7.9	342	16T 464561 4464786	D	NA	U	U	Yes
Eastern red bat	*Lasiurus borealis*	20220821_ERBA_071_1	71	RP	08/21/22	7.8	18	16T 464956 4472362	I	38.6	A	M	Yes
Big brown bat	*Eptesicus fuscus*	20220822_BBBA_112_1	112	RP	08/22/22	24.0	175	16T 460495 4480058	I	45.3	A	U	Yes
Eastern red bat	*Lasiurus borealis*	20220827_ERBA_109_1	109	FP	08/27/22	64.3	285	16T 458502 4479618	I	39.5	A	F	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_053_2	53	RP	08/31/22	5.0	99	16T 461070 4469827	I	41.0	J	F	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220831_SHBA_070_1	70	FP	08/31/22	49.1	87	16T 464409 4472491	I	38.8	J	M	Yes
Big brown bat	*Eptesicus fuscus*	20220901_BBBA_031_1	31	RP	09/01/22	36.1	355	16T 464097 4465736	I	46.1	U	M	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_083_1	83	RP	09/01/22	8.9	159	16T 461191 4475458	P	40.8	J	U	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_125_1	125	FP	09/01/22	54.7	89	16T 467554 4481450	I	42.3	U	M	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220901_SHBA_125_2	125	FP	09/01/22	59.9	66	16T 467554 4481474	I	41.9	J	F	Yes

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Hoary bat	*Lasiurus cinereus*	20220902_HOBA_065_1	65	RP	09/02/22	9.2	320	16T 465303 4470479	I	54.8	A	U	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220902_SHBA_109_2	109	FP	09/02/22	67.2	70	16T 458627 4479624	I	41.9	U	U	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220903_SHBA_024_1	24	RP	09/03/22	32.7	186	16T 460803 4465343	I	41.3	U	U	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220903_SHBA_106_1	106	RP	09/03/22	4.4	91	16T 456838 4481149	P	37.3	U	U	Yes
Eastern red bat	*Lasiurus borealis*	20220905_ERBA_060_1	60	RP	09/05/22	24.8	173	16T 466934 4468448	I	39.6	J	F	Yes
Eastern red bat	*Lasiurus borealis*	20220906_ERBA_096_1	96	FP	09/06/22	59.0	271	16T 458942 4478476	I	37.6	A	M	Yes
Eastern red bat	*Lasiurus borealis*	20220907_ERBA_037_1	37	RP	09/07/22	48.8	179	16T 462157 4466586	P	36.9	A	F	Yes
Eastern red bat	*Lasiurus borealis*	20220907_ERBA_048_1	48	FP	09/07/22	54.7	200	16T 459205 4470610	I	39.0	A	F	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220907_SHBA_081_1	81	RP	09/07/22	45.8	275	16T 460432 4476012	I	41.7	A	U	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220912_SHBA_001_1	1	FP	09/12/22	65.2	93	16T 458900 4462307	I	40.9	J	M	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220913_SHBA_087_1	87	RP	09/13/22	13.7	208	16T 466163 4475324	I	41.8	J	M	Yes
Big brown bat	*Eptesicus fuscus*	20220919_BBBA_051_1	51	FP	09/19/22	16.2	360	16T 460613 4469846	P	45.4	A	U	Yes
Eastern red bat	*Lasiurus borealis*	20220919_ERBA_051_1	51	FP	09/19/22	9.2	360	16T 460613 4469839	I	36.9	A	M	Yes
Big brown bat	*Eptesicus fuscus*	20220919_BBBA_125_1	125	FP	09/19/22	59.7	69	16T 467555 4481471	I	49.0	U	U	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220921_SHBA_138_1	138	FP	09/21/22	80.8	332	16T 465713 4483613	I	41.4	U	M	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_070_1	70	FP	09/22/22	57.0	91	16T 464416 4472487	D	NA	U	U	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220922_SHBA_071_1	71	RP	09/22/22	106.2	142	16T 465019 4472271	I	42.1	U	M	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_001_1	1	FP	09/23/22	50.3	86	16T 458885 4462314	I	40.2	U	F	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220923_SHBA_003_1	3	FP	09/23/22	52.8	181	16T 460050 4461503	I	40.2	A	M	Yes

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Condition[b]	Forearm Length (mm)	Age[c]	Sex[d]	Incidental Find?
Silver-haired bat	*Lasiurus noctivagans*	20220923_SHBA_086_1	86	FP	09/23/22	61.9	241	16T 465723 4475315	P	39.3	U	U	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20220925_SHBA_011_1	11	RP	09/25/22	89.4	178	16T 462779 4461506	I	40.9	U	F	Yes
Eastern red bat	*Lasiurus borealis*	20220928_ERBA_144_1	144	RP	09/28/22	6.3	276	16T 463467 4485088	I	37.7	U	M	Yes
Eastern red bat	*Lasiurus borealis*	20220930_ERBA_136_1	136	FP	09/30/22	58.6	139	16T 462642 4483314	I	36.0	U	M	Yes
Eastern red bat	*Lasiurus borealis*	20221002_ERBA_105_1	105	FP	10/02/22	53.5	259	16T 467211 4477201	I	41.9	U	F	Yes
Silver-haired bat	*Lasionycteris noctivagans*	20221007_SHBA_004_1	4	FP	10/07/22	57.5	154	16T 460680 4461014	D	42.6	U	U	Yes
Evening bat	*Nycticeius humeralis*	20221024_EVBA_011_1	11	RP	10/24/22	10.2	181	16T 462775 4461586	I	39.6	U	F	Yes

[a] Plot Type: FP = cleared full plot; RP = road and pad plot.

[b] Condition: I = Intact; P = Partial; D = Dismembered; F = Fur spot; A = Alive.

[c] Age: A = Adult; J = Juvenile; U = Unknown.

[d] Sex: M = Male; F = Female; U = Unknown.

NA (Not Applicable) indicates data not recorded.

APPENDIX B-2

LIST OF AVIAN FATALITIES LOCATED DURING POST-CONSTRUCTION MONITORING SURVEYS AT JORDAN CREEK WIND ENERGY CENTER

List of Avian Fatalities Located during Fall Post-construction Monitoring Surveys at Jordan Creek Wind Energy Center

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Incidental Find?[b]
Unknown Bird Sp.	*Aves* sp.	20220802_XXBI_114_1	114	FP	8/2/22	40.9	26	16T 461749 4478392	No
Purple Martin	*Progne subis*	20220803_PUMA_016_1	16	FP	8/3/22	19.7	17	16T 465295 4463712	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220803_CLSW_051_1	51	FP	8/3/22	37.5	158	16T 460627 4469795	No
Tree Swallow	*Tachycineta bicolor*	20220803_TRES_056_1	56	FP	8/3/22	19.8	83	16T 463819 4469146	No
Horned Lark	*Eremophila alpestris*	20220803_HOLA_096_1	96	FP	8/3/22	24.7	301	16T 458980 4478488	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220803_CLSW_136_1	136	FP	8/3/22	5.6	157	16T 462606 4483352	No
Unknown Bird Sp.	*Aves* sp.	20220805_XXBI_096_1	96	FP	8/5/22	13.3	257	16T 458988 4478472	No
Brown-headed Cowbird	*Molothrus ater*	20220805_BHCO_110_1	110	FP	8/5/22	22.5	213	16T 458981 4479576	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220805_CLSW_130_1	130	FP	8/5/22	28.2	266	16T 459683 4482164	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220806_CLSW_051_1	51	FP	8/6/22	35.7	40	16T 460636 4469857	No
Tree Swallow	*Tachycineta bicolor*	20220806_TRES_051_1	51	FP	8/6/22	41.1	315	16T 460584 4469859	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220806_CLSW_104_1	104	FP	8/6/22	51.9	25	16T 467545 4478694	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220806_CLSW_140_1	140	FP	8/6/22	28.1	29	16T 467404 4482995	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220807_CLSW_048_1	48	FP	8/7/22	21.7	253	16T 459203 4470655	No
Purple Martin	*Progne subis*	20220807_PUMA_130_1	130	FP	8/7/22	16.3	337	16T 459705 4482181	No
Brown-headed Cowbird	*Molothrus ater*	20220810_BHCO_005_1	5	FP	8/10/22	2.1	120	16T 461153 4461086	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220810_CLSW_033_1	33	RP	8/10/22	39.6	185	16T 464560 4464739	No
Killdeer	*Charadrius vociferus*	20220811_KILL_048_1	48	FP	8/11/22	34.4	85	16T 459258 4470664	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220811_CLSW_105_1	105	FP	8/11/22	20.6	142	16T 467276 4477195	No
Unknown Passerine	*Passeriformes* sp.	20220812_XXPA_086_1	86	FP	8/12/22	6.9	200	16T 465775 4475338	No
Killdeer	*Charadrius vociferus*	20220812_KILL_105_1	105	FP	8/12/22	59.6	324	16T 467229 4477260	No
Tree Swallow	*Tachycineta bicolor*	20220812_TRES_140_1	140	FP	8/12/22	22.5	106	16T 467412 4482964	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220813_CLSW_084_1	84	FP	8/13/22	22.3	71	16T 461874 4476406	No
Horned Lark	*Eremophila alpestris*	20220814_HOLA_003_1	3	FP	8/14/22	57.2	209	16T 460023 4461506	No
Horned Lark	*Eremophila alpestris*	20220814_HOLA_041_1	41	FP	8/14/22	17.4	145	16T 464415 4466765	No
Tree Swallow	*Tachycineta bicolor*	20220815_TRES_003_1	3	FP	8/15/22	35.2	205	16T 460036 4461524	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220815_CLSW_136_1	136	FP	8/15/22	26.4	245	16T 462580 4483346	No
Tree Swallow	*Tachycineta bicolor*	20220815_TRES_136_1	136	FP	8/15/22	59.9	140	16T 462642 4483311	No
Tree Swallow	*Tachycineta bicolor*	20220816_TRES_003_1	3	FP	8/16/22	14.8	60	16T 460064 4461563	No
European Starling	*Sturnus vulgaris*	20220816_EUST_056_1	56	FP	8/16/22	25.1	13	16T 463805 4469168	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220816_CLSW_103_1	103	FP	8/16/22	46.5	307	16T 465790 4478724	No
Killdeer	*Charadrius vociferus*	20220818_KILL_111_1	111	FP	8/18/22	42.5	140	16T 459465 4479556	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Incidental Find?[b]
Purple Martin	*Progne subis*	20220818_PUMA_136_1	136	FP	8/18/22	38.0	246	16T 462569 4483342	No
Purple Martin	*Progne subis*	20220819_PUMA_048_1	48	FP	8/19/22	40.7	244	16T 459187 4470644	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220821_CLSW_005_1	5	FP	8/21/22	21.1	18	16T 461158 4461107	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220821_CLSW_005_2	5	FP	8/21/22	53.3	221	16T 461116 4461047	No
Killdeer	*Charadrius vociferus*	20220821_KILL_055_1	55	FP	8/21/22	32.8	114	16T 463388 4469137	No
Horned Lark	*Eremophila alpestris*	20220821_HOLA_110_1	110	FP	8/21/22	12.1	223	16T 458985 4479586	No
Purple Martin	*Progne subis*	20220822_PUMA_048_1	48	FP	8/22/22	39.7	74	16T 459262 4470672	No
Horned Lark	*Eremophila alpestris*	20220822_HOLA_114_1	114	FP	8/22/22	39.1	57	16T 461289 4479854	No
Tree Swallow	*Tachycineta bicolor*	20220822_TRES_140_1	140	FP	8/22/22	7.0	340	16T 467388 4482977	No
Purple Martin	*Progne subis*	20220823_PUMA_026_1	26	FP	8/23/22	41.7	229	16T 461646 4465044	No
Bay-breasted Warbler	*Setophaga castanea*	20220823_BBWA_070_1	70	FP	8/23/22	17.9	72	16T 464376 4472494	No
Cape May Warbler	*Setophaga tigrina*	20220823_CMWA_078_1	78	FP	8/23/22	14.6	40	16T 459102 4475828	No
Horned Lark	*Eremophila alpestris*	20220823_HOLA_113_1	113	FP	8/23/22	46.8	54	16T 460962 4480085	No
Horned Lark	*Eremophila alpestris*	20220824_HOLA_096_1	96	FP	8/24/22	47.6	59	16T 459042 4478499	No
Horned Lark	*Eremophila alpestris*	20220824_HOLA_105_1	105	FP	8/24/22	63.3	231	16T 467214 4477172	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220825_CLSW_025_1	25	FP	8/25/22	33.1	198	16T 461329 4465251	No
Killdeer	*Charadrius vociferus*	20220825_KILL_073_1	73	FP	8/25/22	44.7	8	16T 467320 4473056	No
Horned Lark	*Eremophila alpestris*	20220825_HOLA_086_1	86	FP	8/25/22	47.7	155	16T 465797 4475301	No
Unknown small bird	*Aves* sp. *(small)*	20220825_XXSB_140_1	140	FP	8/25/22	19.4	244	16T 467373 4482962	No
Horned Lark	*Eremophila alpestris*	20220826_HOLA_113_1	113	FP	8/26/22	41.9	68	16T 460963 4480073	No
Killdeer	*Charadrius vociferus*	20220827_KILL_078_1	78	FP	8/27/22	26.5	47	16T 459112 4475835	No
Horned Lark	*Eremophila alpestris*	20220827_HOLA_113_1	113	FP	8/27/22	18.7	246	16T 460907 4480050	No
Tree Swallow	*Tachycineta bicolor*	20220828_TRES_030_1	30	FP	8/28/22	49.2	318	16T 463487 4465738	No
Unknown Passerine	*Passeriformes* sp.	20220828_XXPA_136_1	136	FP	8/28/22	31.5	196	16T 462595 4483327	No
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	20220829_RBGR_110_1	110	FP	8/29/22	6.4	263	16T 458987 4479594	No
Mourning Dove	*Zenaida macroura*	20220830_MODO_013_1	13	RP	8/30/22	55.1	87	16T 463566 4462255	No
Blackburnian Warbler	*Setophaga fusca*	20220830_BLBW_124_1	124	FP	8/30/22	27.6	17	16T 466539 4481821	No
Unknown small bird	*Aves* sp. *(small)*	20220902_XXSB_094_1	94	FP	9/2/22	48.1	357	16T 457237 4478540	No
Horned Lark	*Eremophila alpestris*	20220905_HOLA_089_1	89	FP	9/5/22	6.9	214	16T 466856 4476269	No
Killdeer	*Charadrius vociferus*	20220905_KILL_125_1	125	FP	9/5/22	17.8	50	16T 467513 4481461	No
Red-tailed Hawk	*Buteo jamaicensis*	20220905_RTHA_140_1	140	FP	9/5/22	11.4	267	16T 467379 4482970	No
Golden-winged Warbler	*Vermivora chrysoptera*	20220906_GWWA_109_1	109	FP	9/6/22	37.2	301	16T 458532 4479620	No
Red-eyed Vireo	*Vireo olivaceus*	20220908_REVI_002_1	2	RP	9/8/22	27.5	271	16T 459761 4461871	No
Tree Swallow	*Tachycineta bicolor*	20220909_TRES_109_1	109	FP	9/9/22	31.1	196	16T 458555 4479571	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Incidental Find?[b]
Tennessee Warbler	*Oreothlypis peregrina*	20220909_TEWA_136_1	136	FP	9/9/22	43.5	290	16T 462563 4483372	No
Horned Lark	*Eremophila alpestris*	20220910_HOLA_124_1	124	FP	9/10/22	60.4	233	16T 466482 4481759	No
Killdeer	*Charadrius vociferus*	20220911_KILL_048_1	48	FP	9/11/22	53.5	291	16T 459174 4470681	No
Unknown small bird	*Aves* sp. *(small)*	20220912_XXSB_100_1	100	FP	9/12/22	6.0	224	16T 464109 4477335	No
Cliff Swallow	*Petrochelidon pyrrhonota*	20220912_CLSW_104_1	104	FP	9/12/22	39.3	303	16T 467490 4478669	No
Tennessee Warbler	*Oreothlypis peregrina*	20220913_TEWA_032_1	32	RP	9/13/22	3.2	71	16T 464551 4465447	No
Horned Lark	*Eremophila alpestris*	20220913_HOLA_115_1	115	FP	9/13/22	49.6	268	16T 461650 4479864	No
Philadelphia Vireo	*Vireo philadelphicus*	20220915_PHVI_115_1	115	FP	9/15/22	23.6	272	16T 461676 4479866	No
Killdeer	*Charadrius vociferus*	20220915_KILL_124_1	124	FP	9/15/22	29.6	97	16T 466560 4481791	No
Killdeer	*Charadrius vociferus*	20220915_KILL_140_1	140	FP	9/15/22	42.7	334	16T 467372 4483009	No
Blue-gray Gnatcatcher	*Polioptila caerulea*	20220916_BGGN_030_1	30	FP	9/16/22	27.7	31	16T 463534 4465725	No
Killdeer	*Charadrius vociferus*	20220917_KILL_140_1	140	FP	9/17/22	36.6	87	16T 467427 4482972	No
Yellow-billed Cuckoo	*Coccyzus americanus*	20220918_YBCU_048_1	48	FP	9/18/22	61.1	38	16T 459262 4470709	No
Brown-headed Cowbird	*Molothrus ater*	20220919_BHCO_025_1	25	FP	9/19/22	28.1	29	16T 461353 4465307	No
Brown-headed Cowbird	*Molothrus ater*	20220919_BHCO_025_2	25	FP	9/19/22	49.7	87	16T 461389 4465285	No
Brown-headed Cowbird	*Molothrus ater*	20220919_BHCO_026_1	26	FP	9/19/22	52.8	206	16T 461654 4465024	No
Brown-headed Cowbird	*Molothrus ater*	20220919_BHCO_026_2	26	FP	9/19/22	38.5	194	16T 461668 4465034	No
Golden-winged Warbler	*Vermivora chrysoptera*	20220919_GWWA_048_1	48	FP	9/19/22	55.7	132	16T 459265 4470624	No
Killdeer	*Charadrius vociferus*	20220919_KILL_125_1	125	FP	9/19/22	30.2	100	16T 467529 4481444	No
Philadelphia Vireo	*Vireo philadelphicus*	20220919_PHVI_138_1	138	FP	9/19/22	46.7	98	16T 465797 4483535	No
Gray Catbird	*Dumetella carolinensis*	20220920_GRCA_046_1	46	FP	9/20/22	27.2	304	16T 459152 4471445	No
Black-throated Green Warbler	*Setophaga virens*	20220920_BTNW_056_1	56	FP	9/20/22	31.0	332	16T 463785 4469171	No
Northern Parula	*Setophaga americana*	20220920_NOPA_108_1	108	RP	9/20/22	20.3	279	16T 458506 4480222	No
Tennessee Warbler	*Oreothlypis peregrina*	20220921_TEWA_084_1	84	FP	9/21/22	52.7	217	16T 461821 4476357	No
Philadelphia Vireo	*Vireo philadelphicus*	20220922_PHVI_084_1	84	FP	9/22/22	43.9	136	16T 461883 4476367	No
Black-and-white Warbler	*Mniotilta varia*	20220922_BAWW_106_1	106	RP	9/22/22	59.3	184	16T 456829 4481090	No
Red-eyed Vireo	*Vireo olivaceus*	20220922_REVI_139_1	139	RP	9/22/22	78.5	103	16T 467064 4482975	No
Horned Lark	*Eremophila alpestris*	20220923_HOLA_111_1	111	FP	9/23/22	58.6	297	16T 459386 4479616	No
Ruby-throated Hummingbird	*Archilochus colubris*	20220925_RTHU_004_1	4	FP	9/25/22	17.3	112	16T 460671 4461059	No
Unknown Blackbird	*Icteridae* sp.	20220926_XXBL_025_1	25	FP	9/26/22	42.0	254	16T 461299 4465271	No
Red-eyed Vireo	*Vireo olivaceus*	20220926_REVI_046_1	46	FP	9/26/22	48.2	137	16T 459207 4471394	No
Golden-crowned Kinglet	*Regulus satrapa*	20220926_GCKI_049_1	49	RP	9/26/22	32.4	185	16T 459206 4469834	No
Osprey	*Pandion haliaetus*	20220927_OSPR_094_1	94	FP	9/27/22	43.6	241	16T 457201 4478471	No
Yellow-billed Cuckoo	*Coccyzus americanus*	20220928_YBCU_074_1	74	FP	9/28/22	44.2	357	16T 465296 4473823	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Incidental Find?[b]
Magnolia Warbler	*Setophaga magnolia*	20220928_MAWA_094_1	94	FP	9/28/22	12.6	129	16T 457249 4478484	No
Golden-crowned Kinglet	*Regulus satrapa*	20220928_GCKI_115_1	115	FP	9/28/22	30.6	47	16T 461722 4479886	No
Red-eyed Vireo	*Vireo olivaceus*	20221001_REVI_104_1	104	FP	10/1/22	29.8	191	16T 467517 4478618	No
Killdeer	*Charadrius vociferus*	20221001_KILL_123_1	123	FP	10/1/22	47.8	174	16T 465701 4482146	No
Golden-crowned Kinglet	*Regulus satrapa*	20221002_GCKI_033_1	33	RP	10/2/22	17.5	181	16T 464563 4464761	No
Red-eyed Vireo	*Vireo olivaceus*	20221002_REVI_111_1	111	FP	10/2/22	37.9	328	16T 459418 4479621	No
Blackburnian Warbler	*Setophaga fusca*	20221002_BLBW_136_1	136	FP	10/2/22	37.1	123	16T 462635 4483337	No
Golden-crowned Kinglet	*Regulus satrapa*	20221003_GCKI_017_1	17	RP	10/3/22	38.5	232	16T 465737 4463666	No
Golden-crowned Kinglet	*Regulus satrapa*	20221003_GCKI_054_1	54	RP	10/3/22	16.7	188	16T 463874 4466795	No
Golden-crowned Kinglet	*Regulus satrapa*	20221003_GCKI_056_1	56	FP	10/3/22	39.4	269	16T 463760 4469143	No
Blackpoll Warbler	*Setophaga striata*	20221003_BLPW_068_1	68	FP	10/3/22	37.8	281	16T 463403 4472368	No
Ovenbird	*Seiurus aurocapilla*	20221003_OVEN_073_1	73	FP	10/3/22	37.2	134	16T 467340 4472986	No
Golden-crowned Kinglet	*Regulus satrapa*	20221003_GCKI_077_1	77	RP	10/3/22	5.8	12	16T 458771 4476134	No
Ruby-crowned Kinglet	*Regulus calendula*	20221003_RCKI_102_1	102	FP	10/3/22	20.5	233	16T 464986 4477266	No
Horned Lark	*Eremophila alpestris*	20221003_HOLA_124_1	124	FP	10/3/22	48.8	65	16T 466575 4481815	No
Yellow-rumped Warbler	*Setophaga coronata*	20221003_YRWA_138_1	138	FP	10/3/22	49.2	294	16T 465706 4483562	No
Golden-crowned Kinglet	*Regulus satrapa*	20221004_GCKI_054_1	54	RP	10/4/22	63.1	234	16T 463825 4466775	No
Killdeer	*Charadrius vociferus*	20221004_KILL_124_1	124	FP	10/4/22	60.0	219	16T 466493 4481748	No
Red-breasted Nuthatch	*Sitta canadensis*	20221004_RBNU_125_1	125	FP	10/4/22	38.3	307	16T 467469 4481473	No
Black-throated Blue Warbler	*Setophaga caerulescens*	20221004_BTBW_145_1	145	RP	10/4/22	39.4	271	16T 463817 4484967	No
Golden-crowned Kinglet	*Regulus satrapa*	20221005_GCKI_068_1	68	FP	10/5/22	44.1	265	16T 463396 4472357	No
Golden-crowned Kinglet	*Regulus satrapa*	20221005_GCKI_094_1	94	FP	10/5/22	39.6	196	16T 457228 4478454	No
Golden-crowned Kinglet	*Regulus satrapa*	20221005_GCKI_103_1	103	FP	10/5/22	48.3	150	16T 465851 4478654	No
Golden-crowned Kinglet	*Regulus satrapa*	20221006_GCKI_066_1	66	RP	10/6/22	55.7	270	16T 465054 4470920	No
Golden-crowned Kinglet	*Regulus satrapa*	20221006_GCKI_109_1	109	FP	10/6/22	60.0	219	16T 466493 4481748	No
Brown-headed Cowbird	*Molothrus ater*	20221007_BHCO_003_2	3	FP	10/7/22	36.9	194	16T 460042 4461520	No
Brown-headed Cowbird	*Molothrus ater*	20221007_BHCO_003_1	3	FP	10/7/22	53.0	238	16T 460006 4461528	No
Ruby-crowned Kinglet	*Regulus calendula*	20221008_RCKI_016_1	16	FP	10/8/22	46.6	172	16T 465295 4463647	No
Horned Grebe	*Podiceps auritus*	20221008_HOGR_127_1	127	RP	10/8/22	30.5	181	16T 458216 4482258	No
Golden-crowned Kinglet	*Regulus satrapa*	20221009_GCKI_074_1	74	FP	10/9/22	47.5	221	16T 465267 4473743	No
Brown Creeper	*Certhia americana*	20221009_BRCR_110_1	110	FP	10/9/22	36.4	163	16T 459004 4479560	No
Brown-headed Cowbird	*Molothrus ater*	20221009_BHCO_130_1	130	FP	10/9/22	32.0	51	16T 459736 4482186	No
Ruby-crowned Kinglet	*Regulus calendula*	20221009_RCKI_130_1	130	FP	10/9/22	21.2	48	16T 459727 4482180	No
Golden-crowned Kinglet	*Regulus satrapa*	20221010_GCKI_089_1	89	FP	10/10/22	49.5	139	16T 466892 4476237	No

Common Name	Scientific Name	Carcass ID	Turbine No.	Plot Type[a]	Date	Distance from Turbine (m)	Bearing from Turbine (degrees)	Coordinates (UTM)	Incidental Find?[b]
Brown-headed Cowbird	*Molothrus ater*	20221010_BHCO_145_1	145	RP	10/10/22	7.1	208	16T 463853 4484960	No
Swamp Sparrow	*Melospiza georgiana*	20221011_SWSP_114_1	114	FP	10/11/22	43.1	76	16T 461298 4479843	No
Ruby-crowned Kinglet	*Regulus calendula*	20221012_RCKI_051_1	51	FP	10/12/22	45.1	161	16T 460627 4469787	No
Yellow-rumped Warbler	*Setophaga coronata*	20221014_YRWA_136_1	136	FP	10/14/22	64.5	221	16T 462561 4483309	No
Killdeer	*Charadrius vociferus*	20221014_KILL_137_1	137	FP	10/14/22	54.9	210	16T 462879 4483007	No
Killdeer	*Charadrius vociferus*	20220801_KILL_078_1	78	FP	8/1/22	6.9	176	16T 459093 4475810	Yes
Golden-crowned Kinglet	*Regulus satrapa*	20220801_GCKI_096_1	96	FP	8/1/22	27.0	2	16T 459002 4478502	Yes
Unknown Bird Sp.	*Aves* sp.	20220801_XXBI_096_1	96	FP	8/1/22	37.6	287	16T 458965 4478486	Yes
Horned Lark	*Eremophila alpestris*	20220823_HOLA_070_1	70	FP	8/23/22	63.8	308	16T 464309 4472528	Yes
Killdeer	*Charadrius vociferus*	20220908_KILL_005_1	5	FP	9/8/22	11.6	232	16T 461142 4461080	Yes
Tennessee Warbler	*Oreothlypis peregrina*	20220918_TEWA_128_1	128	RP	9/18/22	64.1	356	16T 458660 4482327	Yes
Yellow-billed Cuckoo	*Coccyzus americanus*	20220919_YBCU_026_1	26	FP	9/19/22	53.5	70	16T 461728 4465089	Yes
Black-throated Green Warbler	*Setophaga virens*	20220920_BTNW_105_1	105	FP	9/20/22	66.5	269	16T 467197 4477210	Yes
Ruby-crowned Kinglet	*Regulus calendula*	20221001_RCKI_037_1	37	RP	10/1/22	26.0	188	16T 462153 4466609	Yes
Golden-crowned Kinglet	*Regulus satrapa*	20221003_GCKI_099_1	99	RP	10/3/22	24.9	306	16T 462026 4478043	Yes
Turkey Vulture	*Catharte aura*	20221006_TUVU_011_1	11	RP	10/6/22	43.0	284	16T 462734 4461606	Yes
Golden-crowned Kinglet	*Regulus satrapa*	20221011_GCKI_083_1	83	RP	10/11/22	39.3	96	16T 461227 4475462	Yes
Tennessee Warbler	*Oreothlypis peregrina*	20221013_TEWA_065_1	65	RP	10/13/22	90.9	179	16T 465310 4470381	Yes

[a] Plot Type: FP = cleared full plot; RP = road and pad plot

[b] For avian species, non-incidental finds are those that were located within the search plot during standardized surveys. However, avian species were not included in fatality estimate analysis.

APPENDIX C

EOA OUTPUTS FOR TAKE ESTIMATES OF COVERED SPECIES

Summary statistics for multiple class estimate [Indiana bat]

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Input: Detection probability, by search class

Search coverage = 0.3119

Class	DWP	X	Ba	Bb	ghat	95% CI
unsearched	0.688	0	---	---	0	[0, 0]
Full Plots	0.268	5	68.74	9.608	0.877	[0.797, 0.940]
Road/Pad Plots	0.044	0	32.24	5.931	0.845	[0.716, 0.940]

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Results for full site

Detection probability

Estimated g = 0.272, 95% CI = [0.252, 0.292]

Fitted beta distribution parameters for estimated g: Ba = 519.3037, Bb = 1388.4086

Mortality

50% CI for M = [14, 23]

Estimated annual fatality rate: lambda = 20.2, 95% CI = [7, 40.47]

Test of assumed relative weights (rho)

Class	Assumed	Fitted (95% CI)
unsearched	0.688	NA
Full Plots	0.268	[0.187, 0.312]
Road/Pad Plots	0.044	[0.000, 0.123]

p = 0.22619 for likelihood ratio test of H0: assumed rho = true rho

Mortality rates (lambda) by class

Class	Median	IQR	95% CI
unsearched	---	---	---
Full Plots	5.90	[4.32, 7.83]	[2.17, 12.58]
Road/Pad Plots	0.27	[0.06, 0.79]	[0.00, 3.00]

Posterior distribution of M

m	p(M = m)	p(M > m)
0	0.0000	1.0000
1	0.0000	1.0000
2	0.0000	1.0000
3	0.0000	1.0000
4	0.0000	1.0000
5	0.0008	0.9992
6	0.0031	0.9961
7	0.0074	0.9887
8	0.0134	0.9753
9	0.0208	0.9545
10	0.0287	0.9258
11	0.0365	0.8893
12	0.0436	0.8457
13	0.0496	0.7961
14	0.0541	0.7420
15	0.0571	0.6849
16	0.0585	0.6264

17	0.0586	0.5678
18	0.0574	0.5104
19	0.0552	0.4552
20	0.0523	0.4029
21	0.0488	0.3542
22	0.0449	0.3093
23	0.0409	0.2684
24	0.0369	0.2315
25	0.0329	0.1986
26	0.0291	0.1695
27	0.0256	0.1439
28	0.0223	0.1217
29	0.0193	0.1024
30	0.0166	0.0857
31	0.0142	0.0715
32	0.0121	0.0594
33	0.0103	0.0492
34	0.0086	0.0405
35	0.0073	0.0333
36	0.0061	0.0272
37	0.0051	0.0222
38	0.0042	0.0180
39	0.0035	0.0145
40	0.0029	0.0116
41	0.0024	0.0093
42	0.0019	0.0073
43	0.0016	0.0058
44	0.0013	0.0045
45	0.0010	0.0034
46	0.0009	0.0026
47	0.0007	0.0019
48	0.0006	0.0013
49	0.0004	0.0009
50	0.0004	0.0005
51	0.0003	0.0002
52	0.0002	0.0000

Summary statistics for multiple class estimate [northern long-eared bat]

Input: Detection probability, by search class
Search coverage = 0.3119

Class	DWP	X	Ba	Bb	ghat	95% CI
unsearched	0.688	0	---	---	0	[0, 0]
Full Plots	0.268	0	68.74	9.608	0.877	[0.797, 0.940]
Road/Pad Plots	0.044	0	32.24	5.931	0.845	[0.716, 0.940]

Results for full site

Detection probability
Estimated g = 0.272, 95% CI = [0.252, 0.292]
Fitted beta distribution parameters for estimated g: Ba = 519.3037, Bb = 1388.4086

Mortality
50% CI for M = [0, 0]
Estimated annual fatality rate: lambda = 1.84, 95% CI = [0.00181, 9.253]

Test of assumed relative weights (rho)

Class	Assumed	Fitted (95% CI)
unsearched	0.688	NA
Full Plots	0.268	[0.002, 0.311]
Road/Pad Plots	0.044	[0.001, 0.310]

p = 1 for likelihood ratio test of H0: assumed rho = true rho

Mortality rates (lambda) by class

Class	Median	IQR	95% CI
unsearched	---	---	---
Full Plots	0.26	[0.06, 0.76]	[0.00, 2.87]
Road/Pad Plots	0.27	[0.06, 0.79]	[0.00, 3.00]

Posterior distribution of M

m	p(M = m)	p(M > m)
0	0.5632	0.4368
1	0.1698	0.2670
2	0.0948	0.1722
3	0.0582	0.1140
4	0.0373	0.0766
5	0.0246	0.0521
6	0.0165	0.0356
7	0.0112	0.0244
8	0.0076	0.0168
9	0.0053	0.0115
10	0.0037	0.0078
11	0.0025	0.0053
12	0.0018	0.0035
13	0.0013	0.0023
14	0.0009	0.0014
15	0.0006	0.0008
16	0.0004	0.0003

17 0.0003 0.0000

Summary statistics for Indiana bat mortality estimates through 1 years

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Results

M* = 19 for 1 - a = 0.5, i.e., P(M <= 19) >= 50%
Estimated overall detection probability: g = 0.272, 95% CI = [0.252, 0.292]
Ba = 519.3, Bb = 1388.4
Estimated baseline fatality rate (for rho = 1): lambda = 20.25, 95% CI = [7, 40.5]

Cumulative Mortality Estimates

				mean			
Year	X	g	M*	median	95% CI	lambda	95% CI
2022 fall	5	0.272	19	19	[9, 37]	20.25	[7.001, 40.47]

Annual Mortality Estimates

				mean			
Year	X	g	M*	median	95% CI	lambda	95% CI
2022 fall	5	0.272	19	19	[9, 37]	20.2500	[7.0010, 40.4700]

Test of assumed relative weights (rho) and potential bias

	Fitted rho
Assumed rho	95% CI
1	[1.000, 1.000]

p = 0 for likelihood ratio test of H0: assumed rho = true rho
Quick test of relative bias: 1

==========

Input

Year (or period)	rho	X	Ba	Bb	ghat	95% CI
2022 fall	1.000	5	519.3	1388	0.272	[0.252, 0.292]

Summary statistics for northern long-eared bat mortality estimates through 1 years

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Results

M* = 0 for 1 - a = 0.5, i.e., P(M <= 0) >= 50%
Estimated overall detection probability: g = 0.272, 95% CI = [0.252, 0.292]
Ba = 519.3, Bb = 1388.4
Estimated baseline fatality rate (for rho = 1): lambda = 1.84, 95% CI = [0.00181, 9.25]

Cumulative Mortality Estimates

Year	X	g	M*	mean median	95% CI	lambda	95% CI
2022 fall	0	0.272	0	0	[0, 6]	1.84	[0.00181, 9.253]

Annual Mortality Estimates

Year	X	g	M*	mean median	95% CI	lambda	95% CI
2022 fall	0	0.272	0	0	[0, 6]	1.8400	[0.0018, 9.2530]

Test of assumed relative weights (rho) and potential bias

Assumed rho	Fitted rho 95% CI
1	[1.000, 1.000]

p = 1 for likelihood ratio test of H0: assumed rho = true rho
Quick test of relative bias: 1

==========

Input

Year (or period)	rho	X	Ba	Bb	ghat	95% CI
2022 fall	1.000	0	519.3	1388	0.272	[0.252, 0.292]