

**Post-Construction Monitoring Studies for the  
Timber Road Wind Farm  
Paulding County, Ohio**

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**Draft Report  
August 1 – October 15, 2020**



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**January 29, 2021**



## **EXECUTIVE SUMMARY**

Paulding Wind Farm II LLC, Paulding Wind Farm III LLC, and Paulding Wind Farm IV LLC (collectively Paulding Wind Farm), subsidiaries of EDP Renewables (EDPR), are operating the Timber Road II Wind Farm (TR-II), Timber Road III Wind Farm (TR-III), and Timber Road IV Wind Farm (TR-IV; collectively Timber Road Wind Farm; TRWF) in Paulding County, Ohio. The three phases of TRWF achieved commercial operation in different years. TR-II became fully operational in 2012, and consists of 55, 1.8-megawatt (MW) Vestas V100 wind turbines. TR-III became fully operational in 2017, and consists of 48, 2.1 MW Gamesa G114 wind turbines. TR-IV became fully operational in 2020, and consists of 24, 4.2 MW Vestas V150 wind turbines and seven, 3.6 MW Vestas V136 wind turbines. This report details the post-construction fatality monitoring studies conducted in accordance with the TRWF Habitat Conservation Plan (HCP) and Incidental Take Permit (ITP; TE68782D-0) for Indiana bats and northern long-eared bats. The TRWF ITP was issued on May 8, 2020.

All turbines are within the migratory range of Indiana bat and northern-long eared bat. The HCP did not identify any turbines as having summer risk to Indiana bats and/ or northern long-eared bats. During the spring migration period (April 1 – May 15), TRWF feathered turbine blades when wind speeds were below 6.9 meters per second (m/s; 22.6 feet per second [ft/s]), on nights when temperatures were above 10° Celsius (50° Fahrenheit) at all turbines to avoid impacts to migrating Indiana and northern long-eared bats, as per the Technical Assistance Letter USFWS-approved avoidance strategy. Due to the timing of ITP issuance at the end of the spring migration period, no ITP compliance monitoring was completed for the spring migration period. During the fall migration period (August 1 – October 15), TRWF feathered turbine blades when wind speeds were below 5.0 meters per second (16.4 feet per second), on nights when temperatures were above 10° Celsius (C; 50° Fahrenheit [F]) at all turbines to minimize impacts to migrating Indiana and northern long-eared bats, as per the HCP.

Western EcoSystems Technology, Inc. completed a post-construction monitoring study designed to achieve a 25% probability of detecting a single bat carcass (*g* of 0.25) during the fall migration period (August 1 – October 15, 2020). Since it was the first year of commercial operation of TR-IV, the post-construction monitoring study was also designed to fulfill Ohio Department of Natural Resources (ODNR) Option B monitoring requirements. Technicians searched 98 turbines as road and pad plots to a distance of 100-meters (m; 328-feet [ft]) from the turbine once a week and five turbines as cleared plots with a 90-m (295-ft) radius daily. Dog-handler teams searched 21 turbines as 70-m (230-ft) radius uncleared soy plots and ten turbines as 90-m (295-ft) radius cleared plots every three days. Searcher efficiency and carcass persistence trials were also conducted to correct for detection and scavenger bias.

One Indiana bat was recorded at TRWF on October 13, 2020. No northern long-eared bats were found at TRWF. The most commonly found bat species were silver-haired bat (41.9%), eastern red bat (35.3%), hoary bat (11.9%), and big brown bat (10.2%). Eight hundred and sixty-five bats were found during the study. Species composition recorded at TRWF was similar to previous

studies at the Project and other wind facilities in Ohio. One hundred thirty-three bird carcasses were recorded; no federally or state-listed birds were found.

The estimated annual take rates for the monitoring period (August 1 – October 15, 2020) were 8.10 Indiana bat fatalities and 2.70 northern long-eared bat fatalities per year. The probability that the estimated annual take rate was greater than the expected take rate was 0.261 for Indiana bat and 0.336 for northern long-eared bat. The cumulative take estimates for TRWF were six Indiana bat fatalities and one northern long-eared bat fatality. Together, these estimates indicate that no adaptive management actions are necessary at this time.

## **STUDY PARTICIPANTS**

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## **REPORT REFERENCE**

Matteson, A., D. Riser-Espinoza, G. DiDonato, A. Tredennick, and K. DuBridge. 2020 Post-Construction Monitoring Studies for the Timber Road Wind Farm, Paulding County, Ohio, Draft Report: August 1 – October 15, 2020. Prepared for EDP Renewables (EDPR), Houston, Texas. Prepared by Western EcoSystems Technology, Inc. (WEST). Bloomington, Indiana. January 29, 2021

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## **INTRODUCTION**

Paulding Wind Farm II LLC, Paulding Wind Farm III LLC, and Paulding Wind Farm IV LLC (collectively Paulding Wind Farm), subsidiaries of EDP Renewables (EDPR), are operating the Timber Road II Wind Farm (TR-II), Timber Road III Wind Farm (TR-III), and Timber Road IV Wind Farm (TR-IV; collectively Timber Road Wind Farm; TRWF or Project) in Paulding County, Ohio. The three phases of TRWF achieved commercial operation in different years. TR-II became fully operational in 2012, and consists of 55, 1.8-megawatt (MW) Vestas V100 wind turbines. TR-III became fully operational in 2017, and consists of 48, 2.1 MW Gamesa G114 wind turbines. TR-IV became fully operational in 2020, and consists of 24, 4.2 MW Vestas V150 wind turbines and seven, 3.6 MW Vestas V136 wind turbines. This report details the post-construction fatality monitoring studies conducted in accordance with the TRWF Habitat Conservation Plan (HCP) and Incidental Take Permit (ITP; TE68782D-0) for Indiana bats (*Myotis sodalis*) and northern long-eared bat (*M. septentrionalis*). The TRWF ITP was issued on May 8, 2020.

During the spring migration period (April 1 – May 15), TRWF feathered turbine blades when wind speeds were below 6.9 meters per second (m/s; 22.6 feet per second [ft/s]), on nights when temperatures were above 10° Celsius (50° Fahrenheit) at all turbines to avoid impacts to migrating Indiana and northern long-eared bats during the fall migration period, as per the Technical Assistance Letter USFWS-approved avoidance strategy. Due to the timing of ITP issuance at the end of the spring migration period, no ITP compliance monitoring was completed for the spring migration period. During the fall migration period (August 1 – October 15), TRWF feathered turbine blades when wind speeds were below 5.0 meters per second (16.4 feet per second), on nights when temperatures were above 10° Celsius (C; 50° Fahrenheit [F]) at all turbines to minimize impacts to migrating Indiana and northern long-eared bats, as per the HCP.

Western EcoSystems Technology, Inc. (WEST) completed a post-construction monitoring study designed to achieve a 25% probability of detecting a single bat carcass (*g* of 0.25) during the fall migration period (August 1 – October 15, 2020). Since it was the first year of commercial operation of TR-IV, the post-construction monitoring study was also designed to fulfill Ohio Department of Natural Resources (ODNR) Option B monitoring requirements (ODNR 2011). A separate report will be provided to fulfill Option B reporting requirements.

## **STUDY AREA**

According to the 2011 National Land Cover Dataset (NLCD; NLCD 2016), the primary land cover type within 100 meters (m; 328 feet [ft]) of the turbines (i.e., within the Permit Area) is cultivated crops, which covers 99.7% of the Permit Area, followed by developed-open space, which makes up 0.1%, and patches of deciduous forest, which makes up 0.1% (Table 1; Figure 1).

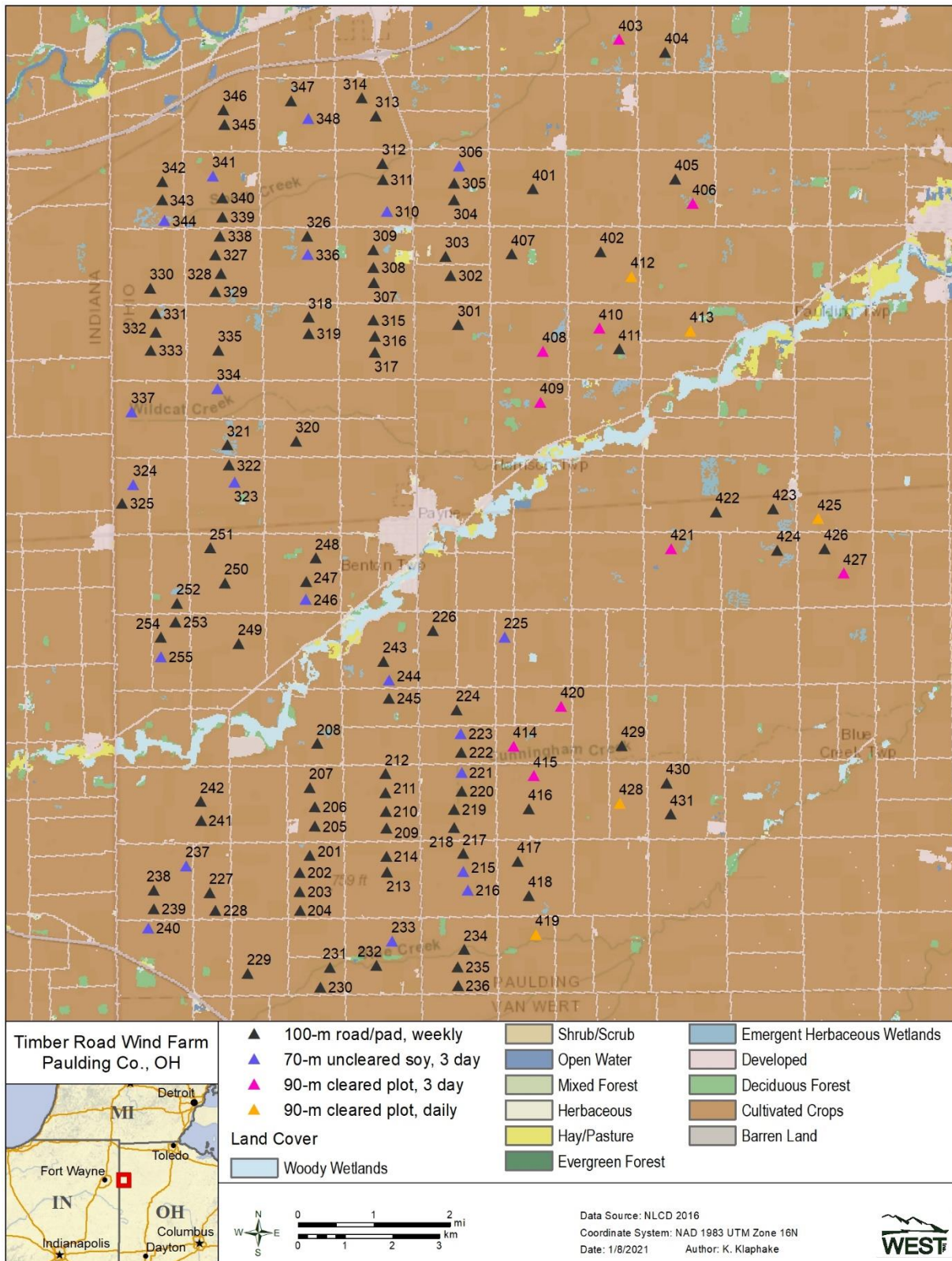


Figure 1. Turbine locations by search type and surrounding land cover at the Timber Road Wind Farm in Paulding County, Ohio.

**Table 1. National Land Cover Database land cover types and percent composition within the Timber Road Wind Farm Permit Area, Paulding County, Ohio within the.**

<b>Habitat</b>	<b>Hectares</b>	<b>Acres</b>	<b>% Composition</b>
Cultivated Crops	425.5	1051.5	99.7
Developed, Open Space	0.6	1.5	0.1
Deciduous Forest	0.6	1.4	0.1
<b>Total</b>	<b>362.5</b>	<b>895.9</b>	<b>100</b>

Data from National Land Cover Database (2016).

## **METHODS**

The ITP was issued on May 8, 2020, at the end of the spring migration season, and post-construction monitoring began on August 1, 2020, at the start of the fall migration season. The HCP did not identify any turbines as having summer risk to Indiana bats and/ or northern long-eared bats so no monitoring for ITP compliance is required during summer. WEST used Project-specific data from previous post-construction monitoring studies to design a study plan that targeted a stand-alone *g* of 0.25 in the fall season. WEST submitted a study plan to the US Fish and Wildlife Service (USFWS) on June 29, 2020 and received approval on July 29, 2020 (Keith Lott, USFWS, pers. comm., July 29, 2020). The main objective of post-construction monitoring was to estimate Indiana bat and northern long-eared bat take that occurred as a result of collision with operating turbines in order to evaluate compliance with the ITP; however, all bat and bird carcasses observed were recorded, per the HCP.

### **Standardized Carcass Searches**

Technicians and dog-handler teams conducted standardized carcass searches from August 1 – October 15, 2020. All personnel were trained to follow the TRWF search protocol, including proper handling and reporting of carcasses. A technician searched the gravel road and pad areas (road and pad plots) at 98 turbines to a distance of 100-meters (m; 328-feet [ft]) from the turbine once per week, and five turbines as cleared plots every day, where crops were regularly mowed within a 90-m (295-ft). Dog-handler teams searched ten turbines as 90-m (295-ft) radius cleared plots every three days, and 21 turbines as uncleared soy plots (uncleared plot) with a 70-m (230-ft) radius every three days (Figure 1, Table 2, Table 3).

### *Human Searchers*

The technicians walked transects spaced five m (16 ft) apart at a rate of approximately 45–60 m per minute (m/min; 148–197 ft/min) on all gravel road and pad areas within 100-m of the turbine, and mowed areas within 90-m radius on five of the cleared plots. The technicians scanned the area for fatalities on both sides of the transects out to approximately 2.5 m (8.2 ft) to ensure full visual coverage of each search area.

**Table 2. Number of turbines searched by plot type, plot size, search interval, and wind farm phase at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Plot Type	Plot Size (m)	Number of Turbines	Search Interval	Dog Aided Search	Wind Farm Phase
Road/pad	100	44	weekly	no	TR-II
Road/pad	100	38	weekly	no	TR-III
Road/pad	100	16	weekly	no	TR-IV
Cleared plot	90	5	daily	no	TR-IV
Cleared plot	90	10	every three days	yes	TR-IV
Uncleared plot	70	11	every three days	yes	TR-II
Uncleared plot	70	10	every three days	yes	TR-III
<b>Total road/pad</b>	<b>100</b>	<b>98</b>	<b>weekly</b>	<b>no</b>	<b>-</b>
<b>Total cleared plots</b>	<b>90</b>	<b>5</b>	<b>daily</b>	<b>no</b>	<b>-</b>
<b>Total cleared plots</b>	<b>90</b>	<b>10</b>	<b>every three days</b>	<b>yes</b>	<b>-</b>
<b>Total uncleared plots</b>	<b>70</b>	<b>21</b>	<b>every three days</b>	<b>yes</b>	<b>-</b>

m = meters.

**Table 3 Turbines by search treatment type at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Weekly 100-m Road/Pad			Daily 90-m Cleared Plot	3-day 90-m Cleared Plot	3-day 70-m Uncleared Plot			
TR-II	TR-III	TR-IV	TR-IV	TR-IV	TR-II	TR-III		
201	228	301	322	401	412	403	215	306
202	229	302	325	402	413	406	216	310
203	230	303	326	404	419	408	221	323
204	231	304	327	405	425	409	223	324
205	232	305	328	407	428*	410	225	334
206	234	307	329	411		414	233	336
207	235	308	330	416		415	237	337
208	236	309	331	417		420	240	341
209	238	311	332	418		421	244	344
210	239	312	333	422		427	246	348
211	241	313	335	423			255	
212	242	314	338	424				
213	243	315	339	426				
214	245	316	340	429				
217	247	317	342	430				
218	248	318	343	431				
219	249	319	345					
220	250	320	346					
222	251	321	347					
224	252							
226	253							
227	254							

\* A turbine malfunction occurred at Turbine 428 on September 4, 2020; this turbine remained inoperable for the remainder of the study period.

### *Dog-handler Teams*

Detection dogs were considered candidates for carcass searches if they met temperament, basic obedience, ability to detect bird and/or bat carcasses requirements. Temperament characteristics that are sought after are high-energy dogs, with a high food or toy drive, and eagerness to please their handler. Prior to conducting searches at TRWF, handlers trained their detection dogs on the scent of bat carcasses derived from search and rescue programs and drug detection (Kay 2012, Helfers 2017). Dogs were initially trained on cotton scent swabs that had been rubbed on or stored in a container with bat carcasses and progressed to bat carcasses at increasing distances over a period of three to four weeks. Once the dog met had achieved a passing grade of 80% or higher in a scent recognition test, consisting of ten blind trial lineups using bat carcasses, the dog and handler were evaluated in the field to measure their performance. The detection dog coordinator conducted a two day field evaluation of each dog-handler team; after teams achieved a searcher efficiency of 75% or greater for 30 bats during evaluation trials, they were approved to conduct standardized carcass searches. All detection dogs alerted on bats and birds in the field, and handlers rewarded bat and bird finds in the field to encourage future alerts to bat and bird carcasses. Detection dogs used at TRWF included a Belgian Malinois, a Chocolate Labrador Retriever, and two Border Collies (Figure 2).

Prior to each search, handlers determined the survey start points and the number of transects needed to cover the plot after taking into account wind speed and direction, as well as crop row direction and density (when applicable). Handlers oriented dogs to start searches perpendicular to the wind to maximize scent detection. Both windspeed and crop density can affect scent dispersal across the search area. Transect width varied by plot type to maximize detection and was ranged from 5 – 10 m (16 – 33 ft) apart in uncleared plots, and 10 – 15 m (33 – 49 ft) in cleared plots.



**Figure 2. Photos of detection dogs (top left Keena, Belgian Malinois; top right Hap, Chocolate Labrador Retriever; bottom left Teal, Border Collie; bottom right Splash, Border Collie) that searched at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020**

### *Data Collection*

Carcass searches began after first light, and ended by 1700 hours. For each scheduled search, technicians recorded the date, start and end times, technician name, turbine number, type of search and if any fatalities were found. When a fatality was found, technicians placed a flag near it and continued the search. The technician returned after searching the entire plot to record information for each fatality on a fatality data sheet, including the date and time, species, sex and age (when possible), technician name, turbine number, measured distance from turbine, azimuth from turbine, location of carcass as Universal Transverse Mercator coordinates, habitat surrounding carcass, condition of carcass (i.e., intact, scavenged, dismembered, feather spot [for birds only], injured), and estimated time of death (e.g., less than one day, two days). Digital photographs were taken of each fatality, including any visible injuries, and surrounding habitat. The technician also plotted the location of each fatality on a map of the search area. Carcasses found in non-search areas (e.g., off the graveled area of a road and pad search) were recorded as incidental discoveries and documented following the same protocol for those found during standard searches.

The condition of each carcass found was recorded using the following categories:

- Intact—a carcass that is complete, not badly decomposed, and shows no sign of being fed upon by a predator or scavenger.
- Scavenged—an entire carcass that shows signs of being fed upon by a predator or scavenger, or a portion(s) of a carcass in one location (e.g., wings, skeletal remains, portion of a carcass, etc.), or a carcass that has been heavily infested by insects.
- Dismembered—an entire carcass found in multiple pieces distributed more than 1.0 m (3.3 ft) apart from one another due to scavenging or other reasons.
- Injured—a bat or bird found alive.

For bird carcasses, the following category was also used:

- Feather spot—Ten or more feathers (excluding down), or two or more primary feathers at one location indicating predation or scavenging of a bird carcass.

Bat carcasses were collected under WEST's Federal Native Endangered and Threatened Species Recovery Permit (TE234121-9), and WEST's State Scientific Collection Permit (21-086). Technicians placed all bat carcasses in a re-sealable plastic bag labeled with the unique carcass identification number, turbine number, and date, for storage in a freezer on site. Leather and rubber gloves were used to handle all bat carcasses to eliminate possible transmission of rabies or other diseases. Bird carcasses were recorded, but left in the field and marked with spray paint to ensure they were not recorded multiple times during surveys. Injured bats were not taken to rehabilitation facilities or euthanized; bats were left in place, in accordance with the restrictions of WEST's salvage permit from ODNR due to the SARS-CoV-2 virus.

### *Carcass Identification and Agency Notification*

Identification of bird carcasses were verified by biologists with significant field experience in identification of birds and their feathers. A federally permitted bat biologist (TE19208C-0) identified all bat carcasses via photographs within 24 hours. Tissue samples were collected from heavily scavenged or decomposed carcasses that could not be positively identified were submitted to a USFWS-approved laboratory, Northern Arizona University School of Forestry and Center for Microbial Genetics and Genomics for identification via genetics. The USFWS and the ODNR were notified within 24 hours of positive identification any species listed as endangered or threatened under the ESA, or any state-listed threatened or endangered species. A permitted bat biologist (TE19208C-0) verified the identifications of all bat carcasses in hand at the end of the surveys and delivered the carcasses to the Ohio Department of Natural Resources (ODNR) Division of Wildlife Office in Columbus, Ohio, on November 18, 2020.

### **Bias Trials**

#### *Searcher Efficiency Trials*

The objective of the searcher efficiency trials was to estimate the probability that a carcass was found by searchers. Approximately 15 – 20 bat carcasses per plot type (i.e., road and pad, technician-searched cleared plot, dog-aided searched cleared plot, and uncleared plot) were placed during searcher efficiency trials for a total of 89 carcasses, of which 75 were available at the time when the search occurred. Multiple trials were conducted to measure potential changes in plot conditions on searcher efficiency over time. No more than two bat trial carcasses were placed on a plot to avoid potential over-seeding.

Searcher efficiency trials were conducted in the same areas where carcass searches occurred. Searcher efficiency trials were conducted blindly; technicians conducting carcass searches did not know when trials were conducted or the location of the carcasses. Trial carcasses consisted of eastern red bats (*Lasiurus borealis*), hoary bats (*L. cinereus*), big brown bats (*Eptesicus fuscus*), and silver haired bats (*Lasionycteris noctivagans*) that had previously been found on site (approval received from Erin Hazelton, ODNR Division of Wildlife, pers comm., August 24, 2020).

Each trial bat carcass was discreetly marked with a black zip-tie around the upper forelimb for identification as a study carcass after it is found. Carcasses were dropped from waist-height or higher and allowed to land in a random posture. The number and location of trial carcasses found during the subsequent search were recorded, and the number of trial carcasses available for detection during each search was determined immediately after each trial by the person responsible for distributing the carcasses. Searchers had one chance to locate trial carcasses during the first search after carcass placement. The trial administrator walked in a meandering path and dropped trials for detection dogs the night prior to the next search to allow time for the scent to pool and disperse prior to scheduled searches. Carcasses were checked to confirm availability the day of searches.



### *Carcass Persistence Trials*

The objective of carcass persistence trials was to estimate the length of time (in days) a carcass would persist, or be available for detection, in the field. Carcasses could be removed by scavenging or rendered undetectable by typical farming activities. Fifty-seven bat carcasses were monitored in persistence trials. Trials were conducted across all plot types to incorporate the effects of varying weather and scavenger densities. No more than two trial carcasses were placed on a plot to avoid potential over-seeding.

Technicians conducting carcass searches monitored the trial carcasses over a 30-day period according to the following schedule, as closely as possible. Carcasses were checked daily for the first four days, then on day 7, 10, 14, 20, and 30. Trial carcasses were monitored until they were removed by scavenging or other means, completely decomposed, or at the end of the carcass persistence trial, whichever occurred first. At the end of the 30-day period, any evidence of the carcasses that remained was removed from the search plot. Dogs were used to locate carcass persistence trials on the cleared and uncleared plots searched by dog-handler teams.

### **Search Area Mapping**

Technicians recorded the boundaries of all plots using a Trimble submeter global positioning satellite unit. Unsearchable areas within plot boundaries were also mapped. The boundaries of plots were used to quantify the amount of area searched relative to distance to turbine, and inform the distribution of carcasses around turbines to estimate the number of carcasses that fell outside plot boundaries (unsearched area adjustment) or within unsearchable areas.

### **Statistical Analysis**

#### *Quality Assurance and Quality Control*

Quality assurance and quality control (QA/QC) measures were implemented at all stages of the study, including in the field, during data entry and analysis, and report writing. Following field surveys, technicians were responsible for inspecting data forms for completeness, accuracy, and legibility. Potentially erroneous data were identified using a series of database queries. Irregular codes or data suspected as questionable were discussed with the technician and/or project manager. Errors, omissions, or problems identified in later stages of analysis were traced back to the raw data forms, and appropriate changes were made in all affected steps.

#### *Data Compilation and Storage*

A Microsoft® SQL database was developed to store, organize, and retrieve survey data. Data were keyed into the electronic database using a pre-defined format to facilitate subsequent QA/QC and data analysis. All data forms and electronic data files were retained for reference.

#### *Searcher Efficiency Estimation*

The total number of trial carcasses found and the number of trial carcasses available were used as inputs for each search strata (Single Class Module) in the EoA software. To determine if raw searcher efficiency data should be pooled or subset by strata (i.e., season or plot type) in EoA, searcher efficiency data was first modeled using logistic regression, while accounting for the

detection reduction factor  $k$  (Dalthorp et al.2018). Potential covariates for the logistic regression models included plot type, and due to the different modes of detection by humans (sight) and dogs (scent) separate models were fit for human and dog searcher efficiency. Searcher efficiency on roads and pads (i.e., human searchers) was fit using an intercept-only model. For both sets of models, selection was completed using an information theoretic approach known as AICc, or corrected Akaike Information Criteria (Burnham et al. 2002). The best model was selected as the most parsimonious model within two AICc units of the model with the lowest AICc value. Searcher efficiency values were input into the EoA software according to the model selection results.

The change in searcher efficiency between successive searches was defined by a parameter called the detection reduction factor ( $k$ ) that can range from zero to one. When  $k$  is zero, it implies a carcass that was missed on the first search would never be found on subsequent searches. A  $k$  of one implies searcher efficiency remained constant no matter how many times a carcass was missed. The detection reduction factor was a required parameter for EoA; however, data were not collected to estimate  $k$ . Huso et al. (2017) estimated a value of  $k = 0.67$  for bats, and this value was used to calculate bat fatality estimates using EoA per the HCP.

#### *Carcass Persistence Rate Estimation*

Data collected during carcass persistence trials (CPT) were used to estimate the amount of time, in days, carcasses remained available to be located by the searcher. The average probability a carcass persisted through the search interval (i.e., the time between scheduled searches) was estimated using an interval-censored survival regression with four potential distributions: exponential, log-logistic, lognormal, and Weibull distributions (Kalbfleisch and Prentice 2002, Dalthorp et al. 2018). Potential covariates were fit to all parameters of the candidate distributions; the only covariate considered was plot type (road and pad, cleared plot, and uncleared plot), in addition to intercept-only models for each distribution. The best model was selected as the most parsimonious model within two AICc units of the model with the lowest AICc value.

#### *Area Adjustment*

The search area adjustment accounted for unsearched areas beneath turbines, and was calculated as a probability that ranged from zero to one. The area adjustment was estimated as the product of the searched area around each turbine and a carcass-density distribution. A truncated weighted maximum likelihood (TWL) modeling approach (Khokan et al. 2013) was used to estimate the carcass-density distribution using site-specific fatality locations. The TWL approach uses weight based probability of detection and the proportion of area searched in each 1.0-m annulus around the turbine. Distributions considered were normal, gamma, Gompertz, Rayleigh and Weibull (parameterized according to R Development Core Team [2016] and Thomas [2015]). The proportion of area searched was calculated in a Geographic Information System as the amount of area searched divided by the total area searched at each 1.0-m annulus around the turbine.

#### *Carcasses Excluded from Area Correction Calculations*

Fatalities were excluded from the area correction calculation when the carcass was discovered outside of the spatial and temporal scope of the survey design. For example, carcasses found

outside a designated plot were not included in the analysis because the area adjustment accounts for the carcass by adjusting for unsearched areas. Carcasses found prior to the start of surveys (e.g., a carcass found on a plot in the summer that is not searched until the fall) were also excluded because the carcass occurred outside of the study period. Note that carcasses found on a plot incidentally were included in the analysis if that plot had a scheduled search in the future. If a fatality of a covered species was found outside of the spatial or temporal scope of the survey design it would still be excluded from the area correction estimate, but would be included in the EoA fatality estimate following Dalthorp et al. 2020.

*Indiana Bat and Northern Long-eared Bat Take and Detection Probability Estimates*

Evidence of Absence

EoA was used to estimate cumulative take to-date ( $M^*$ ), mean annual take rate ( $\lambda$ ), and the probability that the estimated take rate ( $\lambda$ ) exceeded the expected take rate ( $\tau$ ) for Indiana bat and northern long-eared bat. Estimates were calculated using the EoA R package (**EoA** version 2.0.7), using the Single Class, Multiple Class, and Multiple Years modules of EoA.

The probability of detection ( $g$ ) was estimated using the bias corrections for searcher efficiency, carcass persistence, and area searched, as well as the assumed seasonality of risk for Indiana bat and northern long-eared bat which per the HCP was 11% in spring and 89% in fall. However, TRWF turbines were operated per the Technical Assistance Letter’s USFWS-approved avoidance strategy for Indiana bat and northern long-eared bat during the spring migratory period. Therefore, there was no spring risk in 2020 and the arrival proportion was collapsed to 100% in fall.

The fall arrival proportion needed further adjustment because of a turbine blade failure at turbine 428 (90-m cleared plot searched daily with human technicians), which altered the risk profile over the fall season because one less turbine was operating to pose risk to bats. This was accounted for by splitting the fall monitoring season into two fall seasons, with the first season, fall 1, occurring prior to the blade failure (August 1 – September 3) and the second season, fall 2, occurring after the blade failure (September 4 – October 15). The fall arrival proportion of 1.0 (100% risk) was rescaled according to the proportion of total days in the fall monitoring period that fell within each sub-season, assuming uniform carcass arrival within the fall season (Table 4).

**Table 4. Rescaled arrival proportions for each season at Timber Road Wind Farm in Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Season</b>	<b>Rescaled Arrival Proportion</b>
Fall 1 (August 1 – September 3)	0.446
Fall 2 (September 4 – October 15)	0.554

To account for the loss of Turbine 428 during the fall 2 season, a new sampling fraction was calculated for each season combination (Fall 1 + Fall 2, Fall 1) based on the operation of turbine 428 in only the Fall 1 season and the operation of all other TRWF turbines in both Fall 1 and Fall 2 seasons (Table 5). The raw risk for these two groups was calculated by adding together the

rescaled arrival proportions (Table 4) for the fall season(s) during which each group of turbines was monitored. Then the sampling fraction weighted risk was calculated by multiplying the overall sampling fraction of each group by the raw risk (Table 5).

**Table 5. Distribution of risk across all possible season combinations at the Timber Road Wind Farm in Paulding County, Ohio, from August 1 – October 15, 2020.**

Seasons Searched	Number of Turbines with Risk	Raw Risk (sum of rescaled arrival proportion for the stratum)	Sampling Fraction	Sampling Fraction Weighted Risk
Fall 1, Fall 2	133	1.00	0.993	0.993
Fall 1	1	0.446	0.007	0.003
<b>Total Sampling Fraction Weighted Risk</b>				<b>0.996</b>

Fall 1 = August 1 – September 3  
 Fall 2 = September 4 – October 15

Finally, re-weighted arrival proportions were calculated for each fall season by dividing the rescaled arrival proportions by the total sampling fraction weighted risk (Table 6). Note that the re-weighted arrival proportion values do not sum to one (Table 6), but the detection probability weights across all search strata do sum to one once sampling fraction is reapplied as described in the next paragraph, based on the total number of turbines at the facility (134 turbines).

**Table 6. Re-weighted arrival proportions for each season at Timber Road Wind Farm in Paulding County, Ohio, from August 1 – October 15, 2020.**

Season	Re-weighted Arrival Proportion
Fall 1 (August 1 – September 3)	0.448
Fall 2 (September 4 – October 15)	0.556

The EoA Single Class module was used to estimate the distribution of detection probability in each search stratum. This resulted in alpha and beta parameters that defined the Beta distribution of detection probability in each stratum. The EoA Multiple Class module was then used to combine detection probability distributions across strata (cleared plots searched by dog-handler teams, cleared plots searched by technicians, uncleared plots, and roads and pads), with weights for each class defined by the sampling fraction, area searched, and re-weighted arrival proportions. Beta distribution parameters were set to  $Ba = 0.01$  and  $Bb = 1000$  for unsearched areas within each stratum. The results from the Multiple Years module ( $Ba$  and  $Bb$  parameters for the detection probability to date) were used to estimate  $M^*$ , mean take rate  $\lambda$  and its 95% CI, and the probability that  $\lambda > \tau$ . Appendix A shows how the compliance metrics were calculated using the EoA Graphical User Interface<sup>1</sup>.

The EoA Multiple Years module requires the input  $\rho$ , which weights the years appropriately.  $\rho$  was set to 1 for 2020 because 2020 was the only monitoring conducted to date under ITP operations.

<sup>1</sup> There may be very minor differences between screen shots and the results in the main text because EoA is a stochastic estimator, leading to slightly different estimates each time the modules are run.

### Adaptive Management Triggers

The estimates from the EoA analysis were used to test two adaptive management triggers: a short-term test of whether the estimated take rate exceeded the expected take rate and a long-term test of whether permitted take had been met (Dalthorp and Huso 2015). Both the short- and long-term triggers were tested individually for Indiana bat and northern long-eared bat.

#### Evidence of Absence Short-term Trigger

The EoA short-term trigger is designed as an early warning signal that the project may be on the path to exceeding permitted take (T) by the end of the permit term. The short-term trigger is designed to trigger an adaptive management response in time to prevent the cumulative take estimate from actuating a response to the long-term trigger test. The short-term trigger tests if the estimated annual take rate ( $\lambda$ ) exceeded the expected take rate ( $\tau = T \div \text{years in permit}$ ) at a confidence level of  $\alpha = 0.1$ , per the HCP. The TRWF short-term trigger is designed to evaluate a rolling window of six years of post-construction monitoring data. If, within any six-year rolling window, the estimated take rate exceeds the expected take rate with 90% confidence, the short-term trigger would be met, indicating that the minimization plan in the HCP may need to be adjusted to ensure that the cumulative take estimate ( $M^*$ ) remains within the permitted limit over the ITP term. Only one year of data was used in this analysis because 2020 was the first year of monitoring under the ITP.

#### Evidence of Absence Long-term Trigger

The EoA long-term trigger is designed to test if the cumulative take to date is equal to or greater than the permitted take (T) under the HCP (i.e., test whether cumulative take has met permitted take). Per the HCP, cumulative take to date ( $M^*$ ) was estimated at a confidence level of  $\alpha = 0.5$  (using the median, or 50<sup>th</sup> credible bound, of the posterior distribution of estimated mortality). If the cumulative take to date at  $\alpha = 0.5$  is less than the total permitted take ( $M^* < T$ ), then the TRWF is in compliance with the ITP. If the cumulative take to date at  $\alpha = 0.5$  is greater than or equal to the total permitted take ( $M^* \geq T$ ), then the take limit has been met and the TRWF must enact avoidance measures.

## **RESULTS**

### **Standardized Carcass Searches**

Ninety-eight turbines were searched weekly as road/pad plots, five turbines were searched every day, and 31 turbines were searched every three days as cleared plots or uncleared plots, for a total of 2,136 searches (Table 7). Fifty searches (less than 3%) were missed due to turbine maintenance, weather constraints, and/or safety hazards. Eight hundred and sixty-five bat carcasses and 133 bird carcasses were found during surveys and incidentally (Appendix A).

**Table 7. Number of searches per plot type at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Season	Plot Type	Search Interval	Number of Searches
Fall (August 1 – October 15)	100-m road/pad	weekly	1,060
	90-m cleared plot	daily	320
	90-m cleared plot	every 3 days	241
	70-m uncleared plot	every 3 days	515
<b>Overall</b>			<b>2,136</b>

m=meter

*Species Composition*

One Indiana bat was recorded at Turbine 225 at TRWF on October 13, 2020 (Figure 2). The Indiana bat was identified by a permitted bat biologist (TE19208C-0) and was reported to USFWS and ODNR on October 14, 2020. The Indiana bat had an estimated time of death of four to seven days prior. The timing of the fatality suggests the bat was a migrant. The lower abdominal region of the carcass was scavenged, preventing assignment of sex to the carcass. An ODNR conservation officer took possession of the carcass on October 15, 2020. No northern long-eared bat carcasses were found during the study.

The most commonly found bat species were silver-haired bat (362 carcasses; 41.85%) and eastern red bat (305 carcasses; 35.26%), followed by hoary bat (103 carcasses; 11.91%) and big brown bat (88 carcasses; 10.17%). Five Seminole bat (*Lasiurus seminolus*; 0.6%), one evening bat (*Nycticeius humeralis*; 0.12%), and one Indiana bat (0.12%) were also found. (Table 8, Appendix A). Over the course of the monitoring period, five heavily scavenged bats (e.g., wing membrane only, bones, or partial carcasses) were sent off for identification via Deoxyribonucleic Acid (DNA) analysis; all were identified as common species, including three eastern red bats, one big brown bat, and one silver-haired bat bat.

**Table 8. Number and percent (%) of bat carcasses by species included and excluded from the area correction found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Species	Included in Area Correction		Outside Search Area*		Outside Study Period*		Total	
	Total	%	Total	%	Total	%	Total	%
silver-haired bat	354	43.07	8	47.06	0	0	362	41.85
eastern red bat	289	35.16	7	41.18	9	34.62	305	35.26
hoary bat	89	10.83	0	0	14	53.85	103	11.91
big brown bat	83	10.10	2	11.76	3	11.54	88	10.17
Seminole bat	5	0.61	0	0	0	0	5	0.58
evening bat	1	0.12	0	0	0	0	1	0.12
Indiana bat	1	0.12	0	0	0	0	1	0.12
<b>Total</b>	<b>822</b>	<b>100</b>	<b>17</b>	<b>100</b>	<b>26</b>	<b>100</b>	<b>865</b>	<b>100</b>

\* Carcasses not included in analysis

One hundred thirty-three birds were recorded, belonging to 37 species or species groups (Table 9; Appendix A). No federally or state-listed threatened or endangered bird species were recorded. Horned lark (*Eremophila alpestris*) were the most commonly found species followed by killdeer

(*Charadrius vociferus*), red-eyed vireo (*Vireo olivaceus*), and golden-crowned kinglet (*Regulus satrapa*; Table 9; Appendix A). Twenty-two birds could not be identified to species, they were found as partial carcasses or feather spots and could not be identified due to heavy decay or lack of identifying characteristics; they were classified as either unidentified passerine, unidentified sparrow, unidentified vireo, or unidentified warbler (Table 9; Appendix A).

**Table 9. Number and percent (%) of bird carcasses by species found at Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Species</b>	<b>Total</b>	<b>%</b>
horned lark	31	23.31
unidentified passerine	14	10.53
killdeer	12	9.02
red-eyed vireo	12	9.02
golden-crowned kinglet	7	5.26
unidentified warbler	5	3.76
red-breasted nuthatch	4	3.01
American goldfinch	3	2.26
American redstart	3	2.26
Blackburnian warbler	3	2.26
brown creeper	3	2.26
northern parula	3	2.26
ruby-throated hummingbird	3	2.26
black-billed cuckoo	2	1.50
European starling	2	1.50
Philadelphia vireo	2	1.50
pine warbler	2	1.50
ruby-crowned kinglet	2	1.50
unidentified vireo	2	1.50
American tree sparrow	1	0.75
bay-breasted warbler	1	0.75
brown-headed cowbird	1	0.75
blue jay	1	0.75
black-throated blue warbler	1	0.75
cedar waxwing	1	0.75
chimney swift	1	0.75
cliff swallow	1	0.75
Cape May warbler	1	0.75
magnolia warbler	1	0.75
mourning dove	1	0.75
Nashville warbler	1	0.75
prothonotary warbler	1	0.75
red-winged blackbird	1	0.75
Tennessee warbler	1	0.75
tree swallow	1	0.75
unidentified sparrow	1	0.75
yellow-breasted chat	1	0.75
<b>Total</b>	<b>133</b>	<b>100</b>

*Carcasses for Area Correction Analysis*

Forty-three of the 865 bats found during the fall monitoring season were excluded from modeling the area correction for EoA; 17 bat carcasses were excluded from analysis because they were

found off plot. Another 26 bats were excluded because their estimated time of death was prior to the start of surveys (Appendix A). No estimates of bird fatalities were calculated, therefore, no bird carcasses were included in analysis.

The majority of bat carcasses were recorded on plots searched by dog handler teams (Table 10, Figure 3).

**Table 10. Species composition by plot type for bat carcasses<sup>1</sup> found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Species	Human Technicians				Dog-Handler Team			
	100-m Road/Pad		90-m Cleared Plot		90-m Cleared Plot		70-m Uncleared Plot	
	# of Carcasses	%	# of Carcasses	%	# of Carcasses	%	# of Carcasses	%
silver-haired bat	48	41.74	44	35.48	148	44.85	115	45.45
eastern red bat	40	34.78	44	35.48	117	35.45	85	33.60
hoary bat	15	13.04	24	19.35	23	6.97	20	7.91
big brown bat	11	9.57	12	9.68	38	11.52	31	12.25
Seminole bat	0	0.00	0	0.00	4	1.21	1	0.40
evening bat	1	0.87	0	0.00	0	0.00	0	0.00
Indiana bat	0	0.00	0	0.00	0	0.00	1	0.40
<b>Total</b>	<b>115</b>	<b>100</b>	<b>124</b>	<b>100</b>	<b>330</b>	<b>100</b>	<b>253</b>	<b>100</b>

<sup>1</sup> This table only includes bat carcasses included in the area correction calculation.

Sums may not equal total values shown due to rounding.

m = meter.



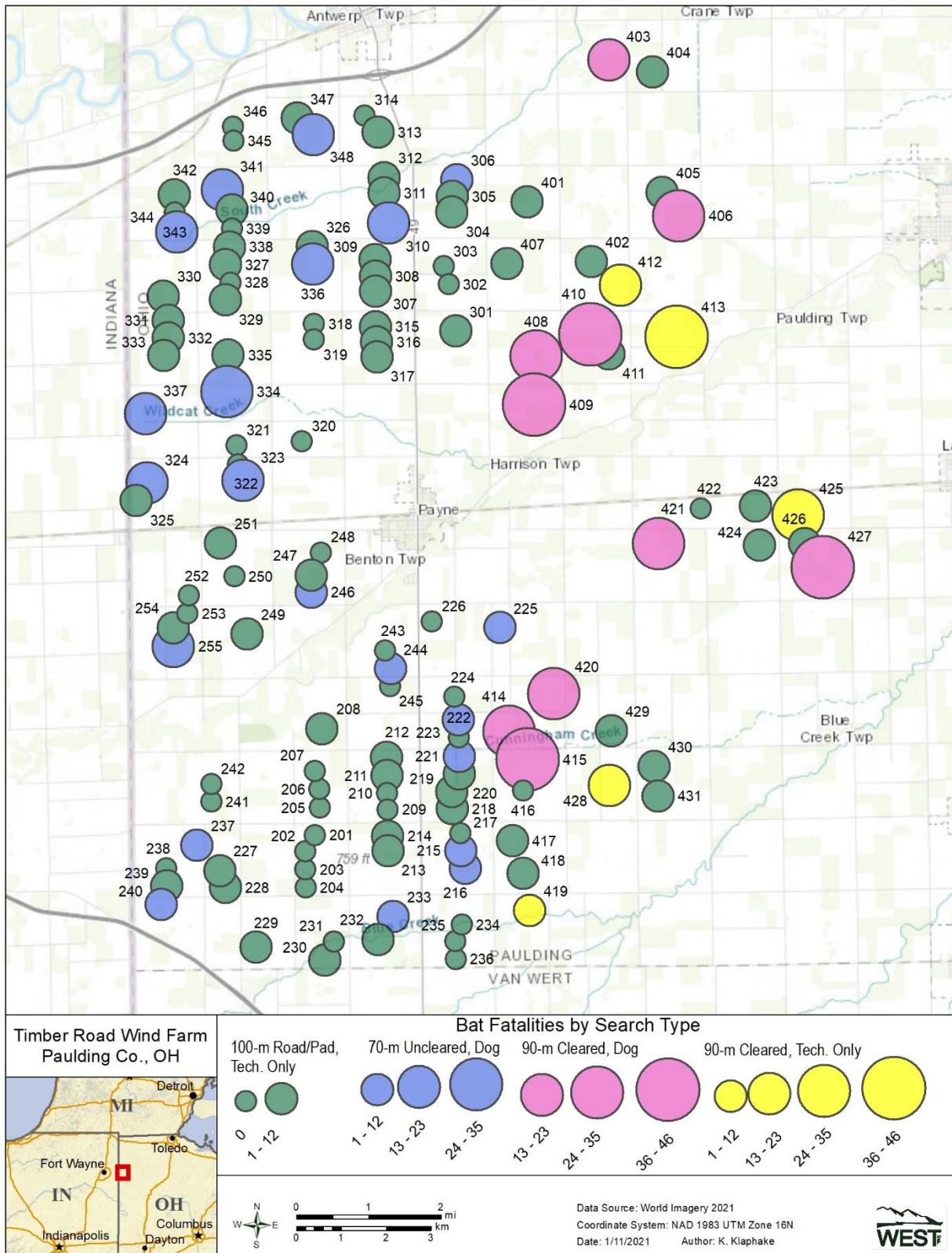
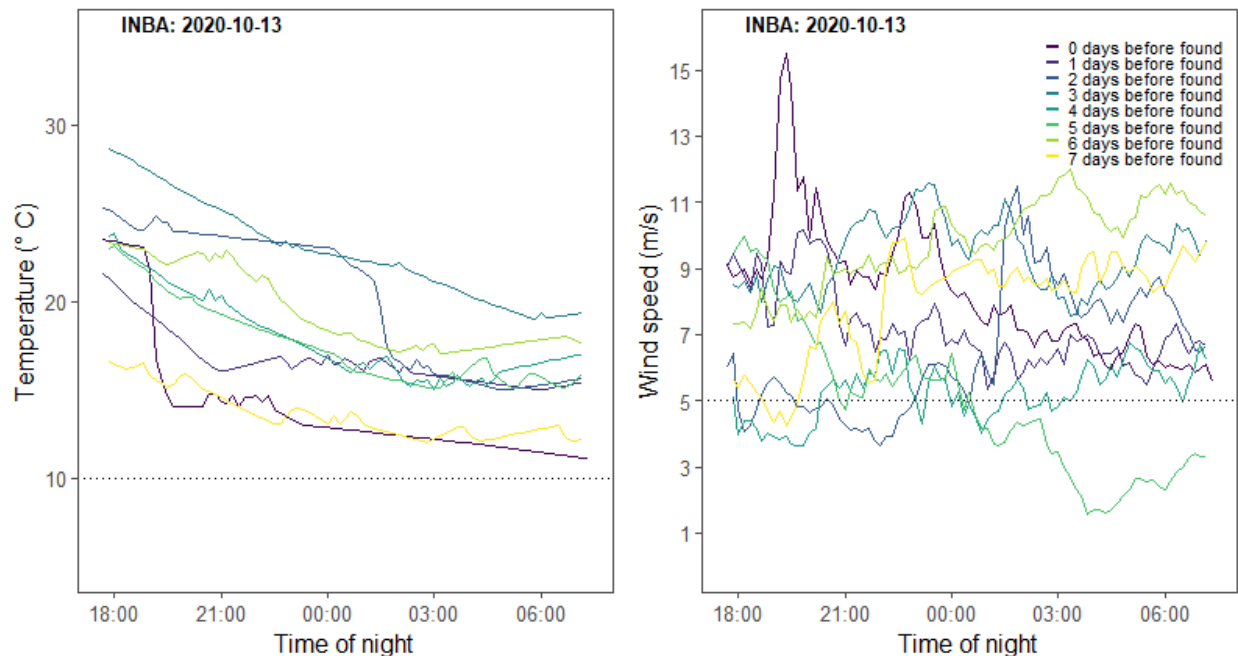


Figure 3. Location of bat carcasses found within search plots, included in the area correction calculation, at the Timber Road Wind Farm, Paulling County, Ohio, from August 1 – October 15, 2020

*Weather Patterns Preceding Myotis Fatalities*

One Indiana bat was found on October 13, 2020. The bat had an estimated time of death four to seven days prior to being found. Wind speed and temperature data from on-site weather stations were plotted for the seven nights before the carcass was found (Figure 4). Wind speeds were generally higher than 5.0 m/s (16.4 ft/s) on the nights preceding the discovery of the Indiana bat, but varied between approximately 2.0–15.5 m/s (6.5–50.9 ft/s). Temperature varied between approximately 12–25°C (54–77°F) on the nights preceding the discovery of the Indiana bat (Figure 4). The Indiana bat was found at turbine 225, this turbine was searched as a 70-m uncleared plot every three days by a dog-handler team (Figure 5).



**Figure 4. Temperature and wind speeds preceding Indiana bat carcass discovery at the Timber Road Wind Farm, Paulding County, Ohio, October 13, 2020.**

Note: INBA denotes Indiana bat. Plots show time series of wind speed and temperature at 10-minute intervals, starting 30 minutes before sunset and ending 30 minutes after sunrise. The horizontal dashed line in the temperature panel displays 10 degrees C. The horizontal dashed line in the wind speed panel displays the curtailment threshold of 5.0 meters per second.

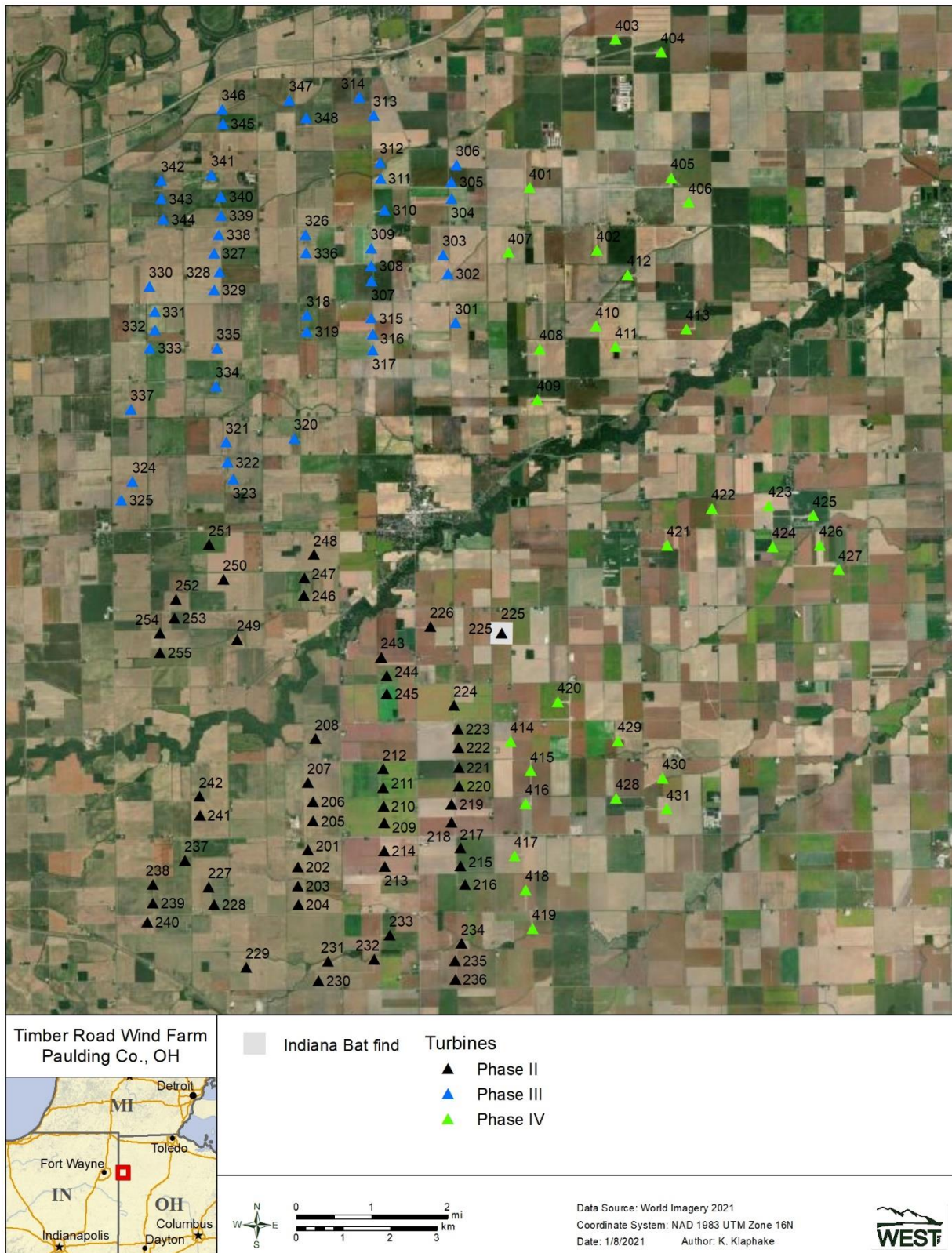


Figure 5. Location of Indiana bat found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.

## Bias Trials

### Searcher Efficiency Trials

Eighty-nine bats were placed for searcher efficiency trials, and 75 were available for search teams to find across all plot types. The majority (92.9%) of carcasses that were not available at the time of the search were carcasses were dropped on cleared plots with a dog aided search (two searcher efficiency trial carcasses) and uncleared plots (11 searcher efficiency trial carcasses). Searcher efficiency trial carcasses were placed on the plots the evening before the search to allow the scent to pool around the carcass. Searcher efficiency rates ranged from 60.0% to 64.7% on human-searched plots, and from 76.2% on uncleared soy plots to 90.9% on cleared plots searched by dog teams (Table 11). Searcher efficiency was modeled using the best-fit logit regression model to determine if searcher efficiency varied by plot type. As described in the methods, initial modeling determined searcher efficiency varied between search types and separate models were fit for human only (cleared plots and road and pad) and dog-handler team data (cleared and uncleared soy plots; Tables 12 and 13). Model selection showed that there was no difference in searcher efficiency between human technician searched cleared plots and road/pad plots, collectively referred to as road and pad/cleared plot, nor was there a difference in searcher efficiency on dog-handler teamcleared plots and uncleared plots, collectively referred to as cleared/uncleared plots (Tables 12 and 13).

**Table 11. Searcher efficiency results for bats at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Plot Type	# Placed	# Available	# Found	% Found	Dog Aided Search
road and pad	17	17	11	64.7	no
cleared	16	15	9	60.0	no
cleared	24	22	20	90.9	yes
uncleared	32	21	16	76.2	yes
<b>Overall road and pad/cleared plot<sup>1</sup></b>	<b>33</b>	<b>32</b>	<b>20</b>	<b>62.5</b>	<b>no</b>
<b>Overall cleared/uncleared plot<sup>2</sup></b>	<b>56</b>	<b>43</b>	<b>36</b>	<b>83.7</b>	<b>yes</b>
<b>Overall</b>	<b>89</b>	<b>75</b>	<b>56</b>	<b>74.4</b>	<b>-</b>

<sup>1</sup>cleared/road and pad because the best model for human searches was the intercept only model.

<sup>2</sup>cleared /uncleared plot because the best model for dog aided searches was the intercept only model

**Table 12. Searcher efficiency models for bats on 100-m road and pads and 90-m cleared plots searched by human technicians at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Covariates	k Value	AICc	Delta AICc
No covariates	0.67	44.47	0*
Plot Search Type	0.67	46.68	2.21

\* Selected model

AICc – corrected Akaike Information Criterion.

**Table 13. Searcher efficiency models for bats on 90-m cleared and 70-m uncleared plots searched by dog-handler teams at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Covariates	k Value	AICc	Delta AICc
No covariates	0.67	40.30	0*
Plot Search Type	0.67	40.76	0.46

\* Selected model

AICc – corrected Akaike Information Criterion.

*Carcass Persistence Trials*

Fifty-two carcasses were placed to estimate carcass persistence. Carcass persistence was modeled using the best-fit logit regression model to determine if carcass persistence varied by plot type. The best fit model for carcass persistence rates was based on plot search type with a Weibull distribution, which suggests bat carcass persistence rates varied by plot type (Table 14). In order from longest to shortest, the estimated median carcass persistence times were 19.3 days on cleared plots, 3.4 days on uncleared soy plots, and 1.7 days on roads and pads (Table 15). The average probability that a carcass persisted through a 7-day search interval was 0.40 (90% CI: 0.25-0.56) on road and pad plots (Table 16). The average probability that a carcass persisted through a 1-day search interval was 0.93 (90% CI: 0.87-0.96) on cleared plots (Table 16). The average probability that a carcass persisted through a 3-day search interval was 0.87 (90% CI: 0.79-0.92) on cleared plots and and 0.67 (90% CI: 0.53-0.80) on uncleared plots (Table 16).

**Table 14. Carcass persistence models with covariates and distributions for bats at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020 (n = 52).**

Location Covariates	Scale Covariates	Distribution	AICc	Delta AICc
PlotSearchType	No Covariates	Weibull	221.32	0*
PlotSearchType	No Covariates	lognormal	222.13	0.81
PlotSearchType	PlotSearchType	Weibull	222.93	1.61
PlotSearchType	No Covariates	loglogistic	223.23	1.91
PlotSearchType	PlotSearchType	lognormal	224.30	2.98
PlotSearchType	PlotSearchType	loglogistic	225.68	4.36
No Covariates	No Covariates	loglogistic	230.06	8.74
No Covariates	No Covariates	lognormal	230.11	8.79
No Covariates	No Covariates	Weibull	230.96	9.64
No Covariates	PlotSearchType	loglogistic	232.14	10.82
No Covariates	PlotSearchType	lognormal	232.23	10.91
PlotSearchType	-	exponential	234.28	12.96
No Covariates	PlotSearchType	Weibull	234.81	13.49
No Covariates	-	exponential	256.91	35.59

\* Selected model

**Table 15. Carcass persistence top model with covariates, distributions, and model parameters for the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Size Class	Plot Search Type	Distribution	Estimated Median Removal Times (days)	Parameter 1	Parameter 2
	road/pad	Weibull*	1.70	shape = 0.586	scale = 3.171
Bat	cleared plot	Weibull*	19.33	shape = 0.586	scale = 36.126
	uncleared plot	Weibull*	3.36	shape = 0.586	scale = 6.271

\* Parameterization follows the base R parameterization for this distribution.

**Table 16. Median carcass persistence probability through the search interval at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Plot Search Type	Search interval (days)	Median Carcass Persistence Probability	90% Confidence Interval
road/pad	7	0.40	0.25–0.56
cleared plot	1	0.93	0.87–0.96
cleared plot	3	0.87	0.79–0.92
uncleared plot	3	0.67	0.53–0.80

### Statistical Analysis

#### Area Correction

The best-fit model for the distribution of bats with respect to distance from turbine base was a normal distribution (Table 17). The TWL area correction for bats in the fall was estimated to be 0.88 for cleared plots, 0.94 for uncleared plots, and 0.16 for roads and pads (Table 18, Figure 6).

Portions of five 90-m cleared plots were regularly unable to be searched due to unsafe plot conditions that arose during site reclamation during portions of the study period. Technicians made their best effort to safely search the full 90-m radius plot when possible. The unsearchable areas were delineated and taken into consideration during the TWL area correction. Turbine 428 had a ditch and property line approximately 45 m to the north of the turbine that was unable to be searched. Turbines 412, 413, 419, and 425 also had unforeseen plowing, associated with the construction and reclamation process, take place within the search areas that caused large areas of unsafe conditions within the plots for portions of time up to the entirety of the study.

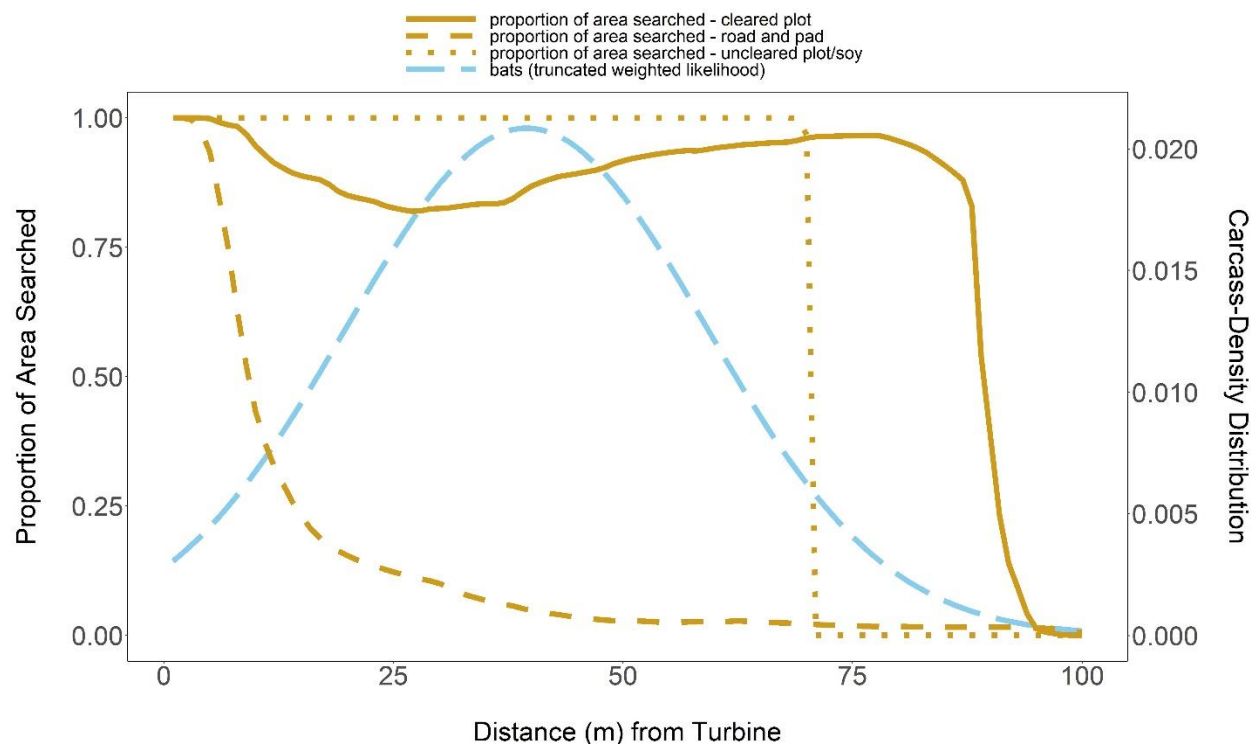
**Table 17. Search area adjustment models for bats from the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Distribution	AICc	Delta AICc
normal	40,867.76	0*
Weibull	41,049.20	181.44
Rayleigh	41,129.02	261.27
Gompertz	41,129.59	261.83
gamma	41,476.57	608.81

\* Selected model

**Table 18. Truncated weighted maximum likelihood search area estimates for the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020 (Bat n = 822).**

Size Class	Search Area Type	Distribution	Parameter 1	Parameter 2	Area Correction
Bat	road/pad	normal	39.50	19.64	0.10
	cleared plot	normal	39.50	19.64	0.88
	uncleared plot	normal	39.50	19.64	0.94



**Figure 6. Density of bat carcasses per area searched at all roads and pads, cleared plots, and uncleared plots at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

*Indiana Bat and Northern Long-eared Bat Take Estimates*

Evidence of Absence Framework

One Indiana bat and zero northern long-eared bat carcasses were found during the study. The overall probability of detection distribution achieved for the 2020 monitoring period had a mean of 0.19 (90% CI: 0.17–0.20). The expected probability of detection value (0.25) is above the 90% confidence interval for the fall monitoring period, indicating that the realized *g* distribution was lower than the target for the fall monitoring effort. The contribution to overall *g* (median weighted detection probability) for each plot type was: 0.020 for road/pad plots, 0.024 for cleared plots searched by human technicians, 0.054 for cleared plots searched by dog-handler teams, and 0.090 for uncleared plots (Appendix C2). Inputs required to run the EoA Single Class module are shown in Table 16. The bias trial results (Tables 12, 13 and 14) were applied to each stratum according to the modeling results. For example, the searcher efficiency modeling results did not indicate a difference between dog-handler teams on cleared and uncleared plots thus the same search efficiency data was applied to those two strata in Table 19. Stratum-specific *g* distribution values and inputs required for the Multiple Class module are described in Tables 20, 21, and Appendix C.

**Table 19. Inputs needed to run Evidence of Absence: Single Class Module for the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Season	Plot Type	Search interval (I)	Number of searches	Searcher Efficiency		Carcass Persistence			Results	
				Carcasses available	Carcasses found	scale (β)	β lower	β upper	Ba	Bb
fall.1	road/pad	7	5	32	20	3.17	1.19	8.47	8.94	24.49
fall.1	cleared	1	31	32	20	36.13	15.47	84.35	45.24	12.08
fall.1	cleared	3	11	43	36	36.13	15.47	84.35	73.70	18.19
fall.1	uncleared	3	11	43	36	6.27	2.40	16.38	23.93	15.91
fall.2	road/pad	7	6	32	20	3.17	1.19	8.47	8.81	23.85
fall.2	cleared	1	32	32	20	36.13	15.47	84.35	46.27	12.32
fall.2	cleared	3	14	43	36	36.13	15.47	84.35	73.12	17.63
fall.2	uncleared	3	14	43	36	6.27	2.40	16.38	23.93	15.80

k was assumed to be 0.67 for all strata. A Weibull distribution with a shape ( $\alpha$ ) = 0.586 was assumed for carcass persistence. Ninety-five percent confidence intervals represent upper and lower ( $\beta$ ). The Ba and Bb columns report the estimated parameters for the Beta distribution describing the probability of detection ( $g$ ) in each search strata. For the Single Class Module, we used spatial coverage ( $a$ ) and temporal coverage ( $v$ ) values set to 1. The detection probability distributions were weighted according to sampling fraction, area adjustment, and temporal coverage (i.e., arrival proportions) when combining across strata in the Multiple Class Module of EoA.

**Table 20. Weights applied to search strata in the Evidence of Absence Multiple Class Module, for the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Season	Plot Type	Area Correction	Re-scaled		Sampling Fraction	Stratum Weight (dwp)	Dog Aided Search
			Arrival Proportions	Arrival Proportions			
fall.1	road/pad	0.10	0.45	0.73	0.03	no	
fall.1	cleared	0.88	0.45	0.04	0.01	no	
fall.1	cleared	0.88	0.45	0.07	0.03	yes	
fall.1	uncleared	0.94	0.45	0.16	0.07	yes	
fall.2	road/pad	0.10	0.56	0.73	0.04	no	
fall.2	cleared plot	0.88	0.56	0.03	0.01	no	
fall.2	cleared plot	0.88	0.56	0.07	0.04	yes	
fall.2	uncleared	0.94	0.56	0.16	0.08	yes	

The weight for each stratum (dwp) is the product of the area correction, arrival weight, and sampling fraction associated with each stratum. Unsearched areas are inputted in the EoA Multiple Class Module with equivalent weights and all dwp must sum to one. See Appendix C1 for full inputs.

**Table 21. Inputs for the Evidence of Absence Multiple Years module and the associated detection probabilities for each year for the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Year	$\rho$	Ba	Bb	$\hat{g}$ (90% CI)
2020	1.00	323.42	1417.48	0.19 (0.17, 0.20)
Overall	–	323.42	1417.48	0.19 (0.17, 0.20)

Note: The “Overall” detection probability distribution parameters and estimate are a weighted average across all monitoring years. Only one year of data has been collected to date, so the overall estimate equals the 2020 estimate.

CI = confidence intervals.



Adaptive Management—Evidence of Absence Short-term Trigger

Mean annual take rate was estimated to be 8.1 (95% CI = 0.58, 25.32) Indiana bats per year and 2.7 (95% CI = <0.01, 13.59) northern long-eared bats per year from August 1 – October 15, 2020 (Table 22). The expected average annual take rate reported in the HCP when all 134 turbines are operational is 10.8 Indiana bats per year and 2.50 northern long-eared bats per year. The short-term trigger assesses the probability that the estimated take rate exceeded the expected take rate,  $\Pr(\lambda > \tau)$ . At a 90% confidence level ( $\alpha = 0.1$ ),  $\Pr(\lambda > \tau)$  must be greater than or equal to 0.90 for the short-term trigger to fire. For Indiana bat,  $\Pr(\lambda > \tau) = 0.261$  and northern long-eared bat,  $\Pr(\lambda > \tau) = 0.336$  (Table 23). Neither probability meets or exceeds 0.90, indicating the short-term trigger was not met and no adaptive management actions are necessary (Table 23; Figure 7).

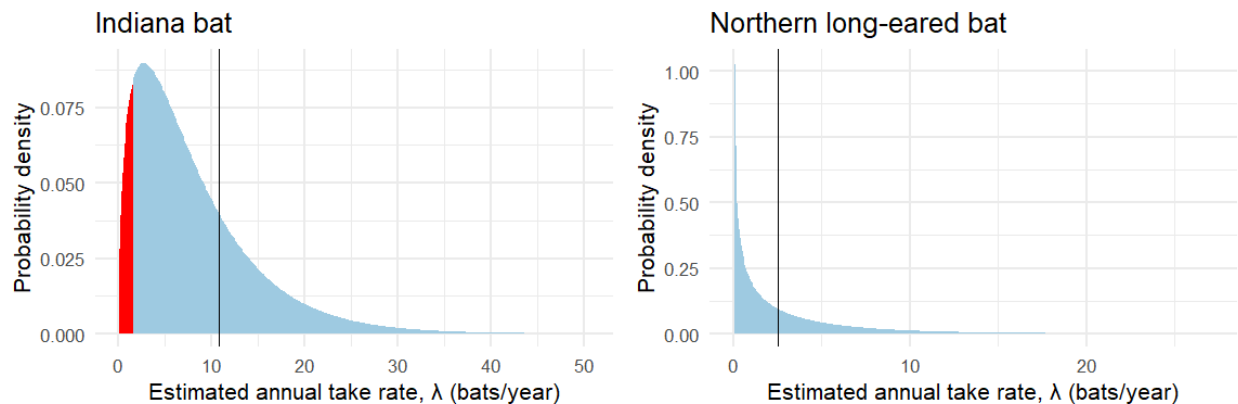
**Table 22. Estimated fatality rate ( $\lambda$ ) using Evidence of Absence for studies conducted at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Species	Mean $\lambda$	95% Confidence Interval
Indiana bat	8.10	0.58, 25.32
northern long-eared bat	2.70	<0.01, 13.59

**Table 23. Probability the estimated take rates exceeded the expected take rates of 10.8 Indiana bats per year and 2.5 northern long-eared bats per year. Probabilities were calculated using Evidence of Absence for studies conducted at Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Species	Expected Take Rate ( $\tau$ )	$\Pr(\lambda > \tau)^*$	Short-term trigger fires at $\alpha = 0.1$ ?
Indiana bat	10.80	0.261	No
Northern long-eared bat	2.50	0.336	No

\*  $\Pr(\lambda > \tau)$  reads, “the probability that  $\lambda$  (the annual take rate) is greater than  $\tau$  (the expected annual take rate based on the total permitted take, used as a threshold for adaptive management).” If this probability is less than 0.90 (e.g.,  $\alpha = 0.1$  for a one-sided test), then no adaptive management is triggered because there is not sufficient evidence that the estimated annual take rate is greater than the expected annual take rate.



**Figure 7. Estimated annual take rate ( $\lambda$ ) bats per year at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Note: The red region of the posterior distributions shows the region of the lower 10% quantile of the distributions (red region may not be visible when the posterior distribution is skewed heavily toward zero). The vertical line marks the expected take rate. The short-term trigger evaluates whether the vertical line falls within or to the left of the red region of the posterior distributions. For both species, the short-term trigger is not met because the vertical line (expected take rate) is not within or to the left of the red regions. In other words, the probability that estimated take rate is greater than the expected take rate does not exceed 90%.

Adaptive Management—Evidence of Absence Long-term Trigger

Cumulative take to-date,  $M^*$  at  $\alpha = 0.5$  (50<sup>th</sup> credible bound), is estimated to be six Indiana bats and one northern long-eared bat (Table 24). These values fall below the total permitted take for each species (276 Indiana bats and 64 northern long-eared bat over the 30-year permit term). The long-term trigger was not met and TRWF is in compliance for both species because  $M^* < T$  for both species. Therefore, an avoidance response is not necessary.

**Table 24. Cumulative take estimate to date using Evidence of Absence for studies conducted at Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

Species	Cumulative take ( $M^*$ )	Permitted take (T)	Long-term trigger fires at $\alpha = 0.5$ ?
Indiana bat (50 <sup>th</sup> credible bound)	6	276	No
northern long-eared bat (50 <sup>th</sup> credible bound)	1	64	No

**DISCUSSION**

The monitoring completed during 2020 provided evidence that minimization measures implemented at the TRWF reduced the take of Indiana bat and northern long-eared bats to a rate that is compatible with ITP compliance over the duration of the permit term. No adaptive management triggers were met for TRWF in 2020. The overall  $g$  achieved for the 2020 monitoring period did not fall within the 90% CI of the target  $g$  for the monitoring period, suggesting the detection probability was lower than anticipated.

The 2020 monitoring effort was developed using values for searcher efficiency, carcass persistence, and area correction from 2019. In 2019, bat carcass persistence was estimated at 15.8 days and did not vary between plot type or season (Fitchman et al. 2020). In 2020, bat carcass persistence varied by plot type, and was estimated to be 1.67 days on road and pads,

3.36 days on uncleared plots, and 19.33 days on cleared plots. The short carcass persistence time on road and pads and uncleared plots led to the estimated  $g$  value being lower than the target  $g$  value. Searcher efficiency rates on road and pads (64.7%) in 2020 was lower than was measured in 2019; however, this had relatively little impact on the estimated CI for  $g$ , due to the smaller search area associated with roads and pads, when compared to other plot types searched in 2020 (low stratum weight value in Table 20). The study plan for 2021 is submitted with this report and incorporates the shorter carcass persistence times and increased evaluation of and training for technicians on road and pad searches to increase detection probabilities.

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**Appendix A. Carcasses found during the 2020 Post-Constuction Monitoring Surveys  
at the Timber Road Wind Farm**

**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
<b>Bat Carcasses</b>							
07/30/2020	big brown bat	53	417	incidental**	100-m road and pad	scavenged	yes
07/30/2020	hoary bat	55	334	incidental	70-m uncleared plot	scavenged	yes
07/31/2020	eastern red bat	27	406	incidental	90-m cleared plot	intact	yes
07/31/2020	hoary bat	23	337	incidental	70-m uncleared plot	intact	no
08/01/2020	big brown bat	4	410	carcass search	90-m cleared plot	intact	yes
08/01/2020	eastern red bat	73	323	carcass search	70-m uncleared plot	unknown	yes
08/01/2020	eastern red bat	29	336	carcass search	70-m uncleared plot	unknown	yes
08/01/2020	hoary bat	17	334	carcass search	70-m uncleared plot	unknown	yes
08/01/2020	hoary bat	43	334	carcass search	70-m uncleared plot	unknown	yes
08/01/2020	hoary bat	52	341	carcass search	70-m uncleared plot	unknown	yes
08/01/2020	hoary bat	62	348	carcass search	70-m uncleared plot	unknown	yes
08/01/2020	hoary bat	87	410	carcass search	90-m cleared plot	scavenged	yes
08/02/2020	eastern red bat	74	427	carcass search	90-m cleared plot	scavenged	yes
08/04/2020	big brown bat	30	243	carcass search	100-m road and pad	scavenged	no
08/04/2020	big brown bat	41	324	carcass search	70-m uncleared plot	unknown	yes
08/04/2020	eastern red bat	4	245	carcass search	100-m road and pad	scavenged	no
08/04/2020	eastern red bat	40	344	carcass search	70-m uncleared plot	unknown	yes
08/04/2020	eastern red bat	35	409	carcass search	90-m cleared plot	intact	yes
08/04/2020	eastern red bat	38	410	carcass search	90-m cleared plot	scavenged	yes
08/04/2020	eastern red bat	80	425	carcass search	90-m cleared plot, daily	scavenged	no
08/04/2020	hoary bat	59	344	carcass search	70-m uncleared plot	unknown	yes
08/04/2020	hoary bat	65	403	carcass search	90-m cleared plot	scavenged	yes
08/04/2020	hoary bat	59	406	carcass search	90-m cleared plot	scavenged	yes
08/04/2020	hoary bat	35	409	carcass search	90-m cleared plot	scavenged	yes
08/04/2020	hoary bat	55	410	carcass search	90-m cleared plot	scavenged	yes
08/05/2020	eastern red bat	32	421	carcass search	90-m cleared plot	scavenged	yes
08/05/2020	hoary bat	15	211	carcass search	100-m road and pad	scavenged	no
08/06/2020	eastern red bat	42	255	carcass search	70-m uncleared plot	scavenged	yes
08/06/2020	eastern red bat	45	309	carcass search	100-m road and pad	dismembered	no
08/06/2020	eastern red bat	67	415	carcass search	90-m cleared plot	intact	yes

**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
08/06/2020	hoary bat	42	309	carcass search	100-m road and pad	dismembered	no
08/06/2020	hoary bat	29	311	carcass search	100-m road and pad	scavenged	no
08/07/2020	eastern red bat	24	334	carcass search	70-m uncleared plot	intact	yes
08/07/2020	hoary bat	26	323	carcass search	70-m uncleared plot	scavenged	yes
08/08/2020	eastern red bat	55	421	carcass search	90-m cleared plot	intact	yes
08/08/2020	hoary bat	40	421	carcass search	90-m cleared plot	intact	yes
08/09/2020	big brown bat	0	423	carcass search	100-m road and pad	intact	no
08/09/2020	eastern red bat	26	417	carcass search	100-m road and pad	intact	no
08/09/2020	eastern red bat	38	428	carcass search	90-m cleared plot, daily	intact	no
08/09/2020	eastern red bat	12	431	carcass search	100-m road and pad	intact	no
08/10/2020	big brown bat	31	408	carcass search	90-m cleared plot	scavenged	yes
08/10/2020	big brown bat	51	413	carcass search	90-m cleared plot, daily	intact	no
08/10/2020	big brown bat	16	419	carcass search	90-m cleared plot, daily	intact	no
08/10/2020	big brown bat	40	428	carcass search	90-m cleared plot, daily	intact	no
08/10/2020	eastern red bat	45	337	carcass search	70-m uncleared plot	scavenged	yes
08/10/2020	eastern red bat	47	408	carcass search	90-m cleared plot	scavenged	yes
08/10/2020	eastern red bat	73	409	carcass search	90-m cleared plot	scavenged	yes
08/10/2020	eastern red bat	24	409	carcass search	90-m cleared plot	intact	yes
08/10/2020	eastern red bat	8	419	carcass search	90-m cleared plot, daily	scavenged	no
08/10/2020	eastern red bat	13	425	carcass search	90-m cleared plot, daily	scavenged	no
08/10/2020	hoary bat	50	310	carcass search	70-m uncleared plot	scavenged	yes
08/10/2020	hoary bat	32	341	carcass search	70-m uncleared plot	intact	yes
08/10/2020	hoary bat	38	406	carcass search	90-m cleared plot	scavenged	yes
08/10/2020	hoary bat	52	409	carcass search	90-m cleared plot	scavenged	yes
08/11/2020	big brown bat	17	414	carcass search	90-m cleared plot	scavenged	yes
08/11/2020	eastern red bat	45	427	carcass search	90-m cleared plot	scavenged	yes
08/11/2020	hoary bat	47	244	carcass search	70-m uncleared plot	intact	yes
08/11/2020	hoary bat	9	415	carcass search	90-m cleared plot	scavenged	yes
08/11/2020	hoary bat	66	427	carcass search	90-m cleared plot	dismembered	yes
08/12/2020	eastern red bat	64	413	carcass search	90-m cleared plot, daily	intact	no
08/12/2020	hoary bat	8	430	incidental	100-m road and pad	intact	no
08/13/2020	big brown bat	45	306	carcass search	70-m uncleared plot	scavenged	yes



**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
08/13/2020	big brown bat	12	307	carcass search	100-m road and pad	scavenged	no
08/13/2020	big brown bat	26	403	carcass search	90-m cleared plot	intact	yes
08/13/2020	big brown bat	31	403	carcass search	90-m cleared plot	intact	yes
08/13/2020	eastern red bat	18	246	carcass search	70-m uncleared plot	scavenged	yes
08/13/2020	eastern red bat	30	304	carcass search	100-m road and pad	intact	no
08/13/2020	eastern red bat	23	307	carcass search	100-m road and pad	scavenged	no
08/13/2020	eastern red bat	9	309	carcass search	100-m road and pad	intact	no
08/13/2020	eastern red bat	15	310	carcass search	70-m uncleared plot	scavenged	yes
08/13/2020	eastern red bat	5	310	carcass search	70-m uncleared plot	intact	yes
08/13/2020	eastern red bat	30	312	carcass search	100-m road and pad	scavenged	no
08/13/2020	eastern red bat	33	313	carcass search	100-m road and pad	scavenged	no
08/13/2020	eastern red bat	17	324	carcass search	70-m uncleared plot	scavenged	yes
08/13/2020	eastern red bat	32	324	carcass search	70-m uncleared plot	scavenged	yes
08/13/2020	eastern red bat	15	348	carcass search	70-m uncleared plot	intact	yes
08/13/2020	eastern red bat	34	406	carcass search	90-m cleared plot	intact	yes
08/13/2020	eastern red bat	15	413	carcass search	90-m cleared plot, daily	intact	no
08/13/2020	eastern red bat	77	420	carcass search	90-m cleared plot	scavenged	yes
08/13/2020	eastern red bat	34	425	carcass search	90-m cleared plot, daily	intact	no
08/13/2020	hoary bat	19	246	carcass search	70-m uncleared plot	intact	yes
08/13/2020	hoary bat	49	246	carcass search	70-m uncleared plot	intact	yes
08/13/2020	hoary bat	1	337	carcass search	70-m uncleared plot	scavenged	yes
08/13/2020	hoary bat	40	337	carcass search	70-m uncleared plot	injured	yes
08/13/2020	hoary bat	43	337	carcass search	70-m uncleared plot	intact	yes
08/13/2020	hoary bat	21	348	carcass search	70-m uncleared plot	intact	yes
08/13/2020	hoary bat	35	348	carcass search	70-m uncleared plot	scavenged	yes
08/14/2020	big brown bat	21	427	carcass search	90-m cleared plot	scavenged	yes
08/14/2020	big brown bat	59	427	carcass search	90-m cleared plot	injured	yes
08/14/2020	eastern red bat	18	215	carcass search	70-m uncleared plot	scavenged	yes
08/14/2020	eastern red bat	52	223	carcass search	70-m uncleared plot	scavenged	yes
08/14/2020	eastern red bat	34	225	carcass search	70-m uncleared plot	injured	yes
08/14/2020	eastern red bat	17	413	carcass search	90-m cleared plot, daily	intact	no
08/14/2020	eastern red bat	75	414	incidental	90-m cleared plot	scavenged	no

**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
08/14/2020	eastern red bat	58	414	carcass search	90-m cleared plot	intact	yes
08/14/2020	eastern red bat	15	415	carcass search	90-m cleared plot	intact	yes
08/14/2020	eastern red bat	31	419	carcass search	90-m cleared plot, daily	scavenged	no
08/14/2020	eastern red bat	7	421	carcass search	90-m cleared plot	intact	yes
08/14/2020	eastern red bat	15	427	carcass search	90-m cleared plot	injured	yes
08/14/2020	eastern red bat	35	427	carcass search	90-m cleared plot	scavenged	yes
08/14/2020	eastern red bat	32	428	carcass search	90-m cleared plot, daily	scavenged	no
08/14/2020	eastern red bat	57	428	carcass search	90-m cleared plot, daily	intact	no
08/14/2020	eastern red bat	42	428	carcass search	90-m cleared plot, daily	intact	no
08/14/2020	eastern red bat	42	428	carcass search	90-m cleared plot, daily	intact	no
08/14/2020	hoary bat	7	413	carcass search	90-m cleared plot, daily	intact	no
08/14/2020	hoary bat	23	414	carcass search	90-m cleared plot	intact	yes
08/14/2020	hoary bat	40	425	carcass search	90-m cleared plot, daily	scavenged	no
08/14/2020	hoary bat	51	427	carcass search	90-m cleared plot	injured	yes
08/15/2020	eastern red bat	18	340	carcass search	100-m road and pad	scavenged	no
08/15/2020	eastern red bat	42	412	carcass search	90-m cleared plot, daily	scavenged	no
08/16/2020	big brown bat	44	324	carcass search	70-m uncleared plot	scavenged	yes
08/16/2020	big brown bat	46	336	carcass search	70-m uncleared plot	scavenged	yes
08/16/2020	big brown bat	50	425	carcass search	90-m cleared plot, daily	scavenged	no
08/16/2020	big brown bat	9	426	carcass search	100-m road and pad	scavenged	no
08/16/2020	big brown bat	24	428	carcass search	90-m cleared plot, daily	intact	no
08/16/2020	eastern red bat	14	334	carcass search	70-m uncleared plot	scavenged	yes
08/16/2020	eastern red bat	62	334	carcass search	70-m uncleared plot	scavenged	yes
08/16/2020	eastern red bat	55	403	carcass search	90-m cleared plot	scavenged	yes
08/16/2020	eastern red bat	30	404	carcass search	100-m road and pad	intact	no
08/16/2020	eastern red bat	68	409	carcass search	90-m cleared plot	feather spot	yes
08/16/2020	eastern red bat	49	420	carcass search	90-m cleared plot	scavenged	yes
08/16/2020	eastern red bat	29	424	carcass search	100-m road and pad	scavenged	no
08/16/2020	eastern red bat	5	426	carcass search	100-m road and pad	scavenged	no
08/16/2020	hoary bat	51	337	carcass search	70-m uncleared plot	scavenged	yes
08/16/2020	hoary bat	40	341	carcass search	70-m uncleared plot	scavenged	yes
08/16/2020	hoary bat	56	410	carcass search	90-m cleared plot	scavenged	yes

**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
08/16/2020	hoary bat	20	423	carcass search	100-m road and pad	intact	no
08/16/2020	unidentified bat	0	336	carcass search	70-m uncleared plot	dismembered	yes
08/17/2020	eastern red bat	56	237	carcass search	70-m uncleared plot	scavenged	yes
08/17/2020	eastern red bat	14	244	carcass search	70-m uncleared plot	scavenged	yes
08/17/2020	eastern red bat	58	415	carcass search	90-m cleared plot	intact	yes
08/17/2020	eastern red bat	29	427	carcass search	90-m cleared plot	scavenged	yes
08/17/2020	eastern red bat	9	427	carcass search	90-m cleared plot	injured	yes
08/17/2020	hoary bat	9	230	carcass search	100-m road and pad	scavenged	no
08/17/2020	hoary bat	42	427	carcass search	90-m cleared plot	unknown	yes
08/17/2020	silver-haired bat	42	427	carcass search	90-m cleared plot	dismembered	yes
08/18/2020	big brown bat	13	412	carcass search	90-m cleared plot, daily	intact	no
08/18/2020	eastern red bat	18	413	carcass search	90-m cleared plot, daily	intact	no
08/18/2020	eastern red bat	59	425	carcass search	90-m cleared plot, daily	intact	no
08/18/2020	eastern red bat	48	425	carcass search	90-m cleared plot, daily	intact	no
08/18/2020	silver-haired bat	20	428	carcass search	90-m cleared plot, daily	intact	no
08/19/2020	big brown bat	36	336	carcass search	70-m uncleared plot	dismembered	yes
08/19/2020	big brown bat	16	425	carcass search	90-m cleared plot, daily	intact	no
08/19/2020	eastern red bat	30	237	carcass search	70-m uncleared plot	injured	yes
08/19/2020	eastern red bat	37	255	carcass search	70-m uncleared plot	scavenged	yes
08/19/2020	eastern red bat	73	348	carcass search**	70-m uncleared plot	scavenged	yes
08/19/2020	eastern red bat	43	406	carcass search	90-m cleared plot	scavenged	yes
08/19/2020	eastern red bat	38	406	carcass search	90-m cleared plot	scavenged	yes
08/19/2020	hoary bat	22	306	carcass search	70-m uncleared plot	dismembered	yes
08/19/2020	hoary bat	52	409	carcass search	90-m cleared plot	intact	yes
08/19/2020	hoary bat	54	409	carcass search	90-m cleared plot	intact	yes
08/19/2020	hoary bat	15	425	carcass search	90-m cleared plot, daily	intact	no
08/19/2020	silver-haired bat	77	425	carcass search	90-m cleared plot, daily	dismembered	no
08/20/2020	big brown bat	37	223	carcass search	70-m uncleared plot	scavenged	yes
08/20/2020	big brown bat	9	312	carcass search	100-m road and pad	scavenged	no
08/20/2020	eastern red bat	35	215	carcass search	70-m uncleared plot	scavenged	yes
08/20/2020	eastern red bat	19	233	carcass search	70-m uncleared plot	injured	yes
08/20/2020	eastern red bat	62	244	carcass search	70-m uncleared plot	dismembered	yes

**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
08/20/2020	eastern red bat	39	305	carcass search	100-m road and pad	scavenged	no
08/20/2020	eastern red bat	26	418	incidental	100-m road and pad	intact	no
08/20/2020	eastern red bat		421	carcass search	90-m cleared plot	unknown	yes
08/20/2020	eastern red bat		427	carcass search	90-m cleared plot	unknown	yes
08/20/2020	silver-haired bat		421	carcass search	90-m cleared plot	unknown	yes
08/22/2020	big brown bat	40	420	carcass search	90-m cleared plot	scavenged	yes
08/22/2020	eastern red bat	47	310	carcass search	70-m uncleared plot	scavenged	yes
08/22/2020	hoary bat	31	410	carcass search	90-m cleared plot	unknown	yes
08/22/2020	silver-haired bat	48	406	carcass search	90-m cleared plot	scavenged	yes
08/23/2020	big brown bat	18	424	carcass search	100-m road and pad	intact	no
08/23/2020	big brown bat	76	427	carcass search	90-m cleared plot	dismembered	yes
08/23/2020	eastern red bat	27	215	carcass search	70-m uncleared plot	intact	yes
08/23/2020	eastern red bat	44	414	carcass search	90-m cleared plot	intact	yes
08/23/2020	eastern red bat	88	421	carcass search	90-m cleared plot	scavenged	yes
08/23/2020	hoary bat	64	427	carcass search	90-m cleared plot	scavenged	yes
08/24/2020	big brown bat	28	412	carcass search	90-m cleared plot, daily	intact	no
08/24/2020	eastern red bat	46	412	carcass search	90-m cleared plot, daily	scavenged	no
08/24/2020	eastern red bat	47	412	carcass search	90-m cleared plot, daily	scavenged	no
08/24/2020	eastern red bat	28	412	carcass search	90-m cleared plot, daily	intact	no
08/24/2020	eastern red bat	21	428	carcass search	90-m cleared plot, daily	intact	no
08/25/2020	big brown bat	0	249	carcass search	100-m road and pad	intact	no
08/25/2020	big brown bat	48	306	carcass search	70-m uncleared plot	scavenged	yes
08/25/2020	big brown bat	49	403	carcass search	90-m cleared plot	intact	yes
08/25/2020	big brown bat	22	413	carcass search	90-m cleared plot, daily	dismembered	no
08/25/2020	big brown bat	45	425	carcass search	90-m cleared plot, daily	scavenged	no
08/25/2020	big brown bat	13	425	carcass search	90-m cleared plot, daily	intact	no
08/25/2020	eastern red bat	5	254	carcass search	100-m road and pad	intact	no
08/25/2020	eastern red bat	35	323	carcass search	70-m uncleared plot	scavenged	yes
08/25/2020	eastern red bat	16	402	incidental**	100-m road and pad	intact	no
08/25/2020	eastern red bat	58	403	carcass search	90-m cleared plot	scavenged	yes
08/25/2020	eastern red bat	46	406	carcass search	90-m cleared plot	intact	yes
08/25/2020	eastern red bat	64	406	carcass search	90-m cleared plot	scavenged	yes

**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
08/25/2020	eastern red bat	24	409	carcass search	90-m cleared plot	injured	yes
08/25/2020	eastern red bat	38	409	carcass search	90-m cleared plot	injured	yes
08/25/2020	eastern red bat	15	410	carcass search	90-m cleared plot	intact	yes
08/25/2020	eastern red bat	17	419	carcass search	90-m cleared plot, daily	scavenged	no
08/25/2020	eastern red bat	18	420	carcass search	90-m cleared plot	injured	yes
08/25/2020	eastern red bat	99	420	carcass search**	90-m cleared plot	scavenged	yes
08/25/2020	eastern red bat	80	425	carcass search	90-m cleared plot, daily	scavenged	no
08/25/2020	hoary bat	42	323	carcass search	70-m uncleared plot	scavenged	yes
08/25/2020	hoary bat	34	408	carcass search	90-m cleared plot	intact	yes
08/25/2020	silver-haired bat	44	408	carcass search	90-m cleared plot	intact	yes
08/25/2020	silver-haired bat	31	410	carcass search	90-m cleared plot	intact	yes
08/26/2020	big brown bat	62	223	carcass search	70-m uncleared plot	injured	yes
08/26/2020	big brown bat		223	carcass search	70-m uncleared plot	unknown	yes
08/26/2020	big brown bat	49	421	carcass search	90-m cleared plot	scavenged	yes
08/26/2020	big brown bat	52	427	carcass search	90-m cleared plot	dismembered	yes
08/26/2020	eastern red bat	5	218	carcass search	100-m road and pad	intact	no
08/26/2020	eastern red bat	46	221	carcass search	70-m uncleared plot	scavenged	yes
08/26/2020	eastern red bat	50	233	carcass search	70-m uncleared plot	dismembered	yes
08/26/2020	eastern red bat	25	244	carcass search	70-m uncleared plot	scavenged	yes
08/26/2020	eastern red bat	25	412	carcass search	90-m cleared plot, daily	scavenged	no
08/26/2020	eastern red bat	72	414	carcass search	90-m cleared plot	scavenged	yes
08/26/2020	eastern red bat	20	415	carcass search	90-m cleared plot	dismembered	yes
08/26/2020	eastern red bat	57	415	carcass search	90-m cleared plot	scavenged	yes
08/26/2020	eastern red bat	69	419	carcass search	90-m cleared plot, daily	scavenged	no
08/26/2020	eastern red bat	35	421	carcass search	90-m cleared plot	intact	yes
08/26/2020	eastern red bat	52	427	carcass search	90-m cleared plot	scavenged	yes
08/26/2020	eastern red bat	50	427	carcass search	90-m cleared plot	intact	yes
08/26/2020	eastern red bat	55	427	carcass search	90-m cleared plot	unknown	yes
08/26/2020	hoary bat	44	414	carcass search	90-m cleared plot	scavenged	yes
08/26/2020	hoary bat	68	421	carcass search	90-m cleared plot	intact	yes
08/26/2020	hoary bat	32	427	carcass search	90-m cleared plot	unknown	yes
08/26/2020	silver-haired bat	15	414	carcass search	90-m cleared plot	scavenged	yes

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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
08/27/2020	eastern red bat	14	413	carcass search	90-m cleared plot, daily	scavenged	no
08/27/2020	eastern red bat	42	413	carcass search	90-m cleared plot, daily	scavenged	no
08/27/2020	eastern red bat	17	428	carcass search	90-m cleared plot, daily	intact	no
08/28/2020	big brown bat	18	324	carcass search	70-m uncleared plot	scavenged	yes
08/28/2020	big brown bat	61	344	carcass search	70-m uncleared plot	scavenged	yes
08/28/2020	big brown bat	67	348	carcass search	70-m uncleared plot	scavenged	yes
08/28/2020	big brown bat	20	413	carcass search	90-m cleared plot, daily	intact	no
08/28/2020	eastern red bat	22	255	carcass search	70-m uncleared plot	intact	yes
08/28/2020	eastern red bat	24	323	carcass search	70-m uncleared plot	intact	yes
08/28/2020	eastern red bat	49	323	carcass search	70-m uncleared plot	intact	yes
08/28/2020	eastern red bat	58	324	carcass search	70-m uncleared plot	scavenged	yes
08/28/2020	eastern red bat	61	334	carcass search	70-m uncleared plot	scavenged	yes
08/28/2020	eastern red bat	24	336	carcass search	70-m uncleared plot	scavenged	yes
08/28/2020	eastern red bat	24	344	carcass search	70-m uncleared plot	scavenged	yes
08/28/2020	eastern red bat	13	348	carcass search	70-m uncleared plot	scavenged	yes
08/28/2020	eastern red bat	46	403	carcass search	90-m cleared plot	injured	yes
08/28/2020	eastern red bat	76	408	carcass search	90-m cleared plot	scavenged	yes
08/28/2020	eastern red bat	43	408	carcass search	90-m cleared plot	scavenged	yes
08/28/2020	eastern red bat	55	409	carcass search	90-m cleared plot	intact	yes
08/28/2020	eastern red bat	40	409	carcass search	90-m cleared plot	intact	yes
08/28/2020	eastern red bat	50	410	carcass search	90-m cleared plot	scavenged	yes
08/28/2020	eastern red bat	15	410	carcass search	90-m cleared plot	scavenged	yes
08/28/2020	eastern red bat	62	410	carcass search	90-m cleared plot	scavenged	yes
08/28/2020	eastern red bat	22	420	carcass search	90-m cleared plot	intact	yes
08/28/2020	eastern red bat	38	425	carcass search	90-m cleared plot, daily	scavenged	no
08/28/2020	hoary bat	30	406	carcass search	90-m cleared plot	scavenged	yes
08/28/2020	hoary bat	45	412	carcass search	90-m cleared plot, daily	scavenged	no
08/28/2020	silver-haired bat	34	336	carcass search	70-m uncleared plot	scavenged	yes
08/29/2020	big brown bat		240	carcass search	70-m uncleared plot	unknown	yes
08/29/2020	big brown bat	9	301	carcass search	100-m road and pad	scavenged	no
08/29/2020	big brown bat	326	315	carcass search**	100-m road and pad	scavenged	no
08/29/2020	big brown bat	22	413	carcass search	90-m cleared plot, daily	intact	no

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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
08/29/2020	eastern red bat	31	240	carcass search	70-m uncleared plot	scavenged	yes
08/29/2020	eastern red bat	36	327	carcass search	100-m road and pad	scavenged	no
08/29/2020	eastern red bat	1	342	carcass search	100-m road and pad	scavenged	no
08/29/2020	eastern red bat	47	342	carcass search	100-m road and pad	scavenged	no
08/29/2020	eastern red bat	64	414	carcass search	90-m cleared plot	scavenged	yes
08/29/2020	eastern red bat	44	415	carcass search	90-m cleared plot	dismembered	yes
08/29/2020	eastern red bat	103	419	carcass search**	90-m cleared plot, daily	scavenged	no
08/29/2020	eastern red bat	18	421	carcass search	90-m cleared plot	intact	yes
08/29/2020	hoary bat	76	414	carcass search	90-m cleared plot	scavenged	yes
08/29/2020	hoary bat	85	415	carcass search	90-m cleared plot	scavenged	yes
08/29/2020	hoary bat	6	421	carcass search	90-m cleared plot	intact	yes
08/30/2020	big brown bat	2	429	carcass search	100-m road and pad	scavenged	no
08/30/2020	eastern red bat	13	412	carcass search	90-m cleared plot, daily	intact	no
08/30/2020	hoary bat	11	425	carcass search	90-m cleared plot, daily	intact	no
08/30/2020	hoary bat	43	428	carcass search	90-m cleared plot, daily	scavenged	no
08/30/2020	silver-haired bat	8	411	carcass search	100-m road and pad	intact	no
08/31/2020	big brown bat	3	310	carcass search	70-m uncleared plot	intact	yes
08/31/2020	big brown bat	90	420	carcass search	90-m cleared plot	scavenged	yes
08/31/2020	big brown bat	0	423	incidental	100-m road and pad	dismembered	no
08/31/2020	big brown bat	0	423	incidental	100-m road and pad	intact	no
08/31/2020	eastern red bat	29	246	carcass search	70-m uncleared plot	intact	yes
08/31/2020	eastern red bat	62	306	carcass search	70-m uncleared plot	intact	yes
08/31/2020	eastern red bat	67	334	carcass search	70-m uncleared plot	scavenged	yes
08/31/2020	eastern red bat	50	336	carcass search	70-m uncleared plot	scavenged	yes
08/31/2020	eastern red bat	18	348	carcass search	70-m uncleared plot	intact	yes
08/31/2020	eastern red bat	79	409	carcass search	90-m cleared plot	scavenged	yes
08/31/2020	eastern red bat	26	409	carcass search	90-m cleared plot	scavenged	yes
08/31/2020	eastern red bat	56	410	carcass search	90-m cleared plot	scavenged	yes
08/31/2020	eastern red bat	88	410	carcass search	90-m cleared plot	scavenged	yes
08/31/2020	eastern red bat	6	419	carcass search	90-m cleared plot, daily	intact	no
08/31/2020	eastern red bat	34	420	carcass search	90-m cleared plot	scavenged	yes
08/31/2020	eastern red bat	43	420	carcass search	90-m cleared plot	intact	yes

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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
08/31/2020	eastern red bat	28	420	carcass search	90-m cleared plot	intact	yes
08/31/2020	hoary bat	45	336	carcass search	70-m uncleared plot	scavenged	yes
08/31/2020	hoary bat	43	341	carcass search	70-m uncleared plot	intact	yes
08/31/2020	hoary bat	50	420	carcass search	90-m cleared plot	intact	yes
08/31/2020	hoary bat	36	420	carcass search	90-m cleared plot	scavenged	yes
08/31/2020	silver-haired bat	45	336	carcass search	70-m uncleared plot	scavenged	yes
08/31/2020	silver-haired bat	55	403	carcass search	90-m cleared plot	intact	yes
08/31/2020	silver-haired bat	43	408	carcass search	90-m cleared plot	intact	yes
08/31/2020	silver-haired bat	76	408	carcass search	90-m cleared plot	intact	yes
08/31/2020	silver-haired bat	30	409	carcass search	90-m cleared plot	intact	yes
08/31/2020	silver-haired bat	69	410	carcass search	90-m cleared plot	scavenged	yes
08/31/2020	silver-haired bat	62	410	carcass search	90-m cleared plot	injured	yes
08/31/2020	silver-haired bat	30	410	carcass search	90-m cleared plot	injured	yes
09/01/2020	big brown bat	18	421	carcass search	90-m cleared plot	unknown	yes
09/01/2020	big brown bat	9	425	carcass search	90-m cleared plot, daily	scavenged	no
09/01/2020	big brown bat	46	427	carcass search	90-m cleared plot	unknown	yes
09/01/2020	eastern red bat	26	221	carcass search	70-m uncleared plot	scavenged	yes
09/01/2020	eastern red bat	56	413	carcass search	90-m cleared plot, daily	scavenged	no
09/01/2020	eastern red bat	13	414	carcass search	90-m cleared plot	scavenged	yes
09/01/2020	eastern red bat	77	415	carcass search	90-m cleared plot	scavenged	yes
09/01/2020	eastern red bat	46	415	carcass search	90-m cleared plot	scavenged	yes
09/01/2020	eastern red bat	64	415	carcass search	90-m cleared plot	scavenged	yes
09/01/2020	eastern red bat	7	415	carcass search	90-m cleared plot	scavenged	yes
09/01/2020	eastern red bat	74	421	carcass search	90-m cleared plot	unknown	yes
09/01/2020	eastern red bat	37	421	carcass search	90-m cleared plot	intact	yes
09/01/2020	eastern red bat	61	427	carcass search	90-m cleared plot	scavenged	yes
09/01/2020	eastern red bat	16	428	carcass search	90-m cleared plot, daily	scavenged	no
09/01/2020	hoary bat	76	414	carcass search	90-m cleared plot	dismembered	yes
09/01/2020	hoary bat	83	414	carcass search	90-m cleared plot	scavenged	yes
09/01/2020	hoary bat	50	415	carcass search	90-m cleared plot	scavenged	yes
09/01/2020	hoary bat	45	421	carcass search	90-m cleared plot	unknown	yes
09/01/2020	silver-haired bat	25	216	carcass search	70-m uncleared plot	injured	yes



**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/01/2020	silver-haired bat	56	223	carcass search	70-m uncleared plot	scavenged	yes
09/01/2020	silver-haired bat	69	240	carcass search	70-m uncleared plot	injured	yes
09/01/2020	silver-haired bat	17	247	carcass search	100-m road and pad	scavenged	no
09/01/2020	silver-haired bat	54	254	carcass search	100-m road and pad	intact	no
09/01/2020	silver-haired bat	19	325	carcass search	100-m road and pad	intact	no
09/01/2020	silver-haired bat	70	412	carcass search	90-m cleared plot, daily	intact	no
09/01/2020	silver-haired bat	40	413	carcass search	90-m cleared plot, daily	scavenged	no
09/01/2020	silver-haired bat	29	413	carcass search	90-m cleared plot, daily	intact	no
09/01/2020	silver-haired bat	42	413	carcass search	90-m cleared plot, daily	intact	no
09/01/2020	silver-haired bat	40	414	carcass search	90-m cleared plot	injured	yes
09/01/2020	silver-haired bat	44	415	carcass search	90-m cleared plot	injured	yes
09/01/2020	silver-haired bat	44	415	carcass search	90-m cleared plot	injured	yes
09/01/2020	silver-haired bat	32	415	carcass search	90-m cleared plot	injured	yes
09/01/2020	silver-haired bat	29	415	carcass search	90-m cleared plot	injured	yes
09/01/2020	silver-haired bat	13	419	carcass search	90-m cleared plot, daily	intact	no
09/01/2020	silver-haired bat	14	419	carcass search	90-m cleared plot, daily	intact	no
09/01/2020	silver-haired bat	27	419	carcass search	90-m cleared plot, daily	intact	no
09/01/2020	silver-haired bat	52	421	carcass search	90-m cleared plot	intact	yes
09/01/2020	silver-haired bat	70	421	carcass search	90-m cleared plot	scavenged	yes
09/01/2020	silver-haired bat	40	427	carcass search	90-m cleared plot	intact	yes
09/01/2020	silver-haired bat	66	427	carcass search	90-m cleared plot	intact	yes
09/01/2020	silver-haired bat	47	427	carcass search	90-m cleared plot	intact	yes
09/01/2020	silver-haired bat	40	427	carcass search	90-m cleared plot	intact	yes
09/01/2020	silver-haired bat	44	427	carcass search	90-m cleared plot	scavenged	yes
09/01/2020	silver-haired bat	47	427	carcass search	90-m cleared plot	intact	yes
09/01/2020	silver-haired bat	53	428	carcass search**	90-m cleared plot, daily	scavenged	no
09/01/2020	silver-haired bat	75	428	carcass search	90-m cleared plot, daily	scavenged	no
09/02/2020	big brown bat	29	413	carcass search	90-m cleared plot, daily	feather spot	no
09/02/2020	big brown bat	35	425	carcass search	90-m cleared plot, daily	scavenged	no
09/02/2020	big brown bat	39	425	carcass search	90-m cleared plot, daily	scavenged	no
09/02/2020	eastern red bat	69	425	carcass search	90-m cleared plot, daily	scavenged	no
09/02/2020	eastern red bat	17	425	carcass search	90-m cleared plot, daily	scavenged	no

**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/02/2020	eastern red bat	56	425	carcass search	90-m cleared plot, daily	scavenged	no
09/02/2020	eastern red bat	27	428	carcass search	90-m cleared plot, daily	intact	no
09/02/2020	hoary bat	60	425	carcass search	90-m cleared plot, daily	intact	no
09/02/2020	silver-haired bat	6	214	carcass search	100-m road and pad	scavenged	no
09/02/2020	silver-haired bat	6	219	carcass search	100-m road and pad	intact	no
09/02/2020	silver-haired bat	35	219	carcass search	100-m road and pad	intact	no
09/02/2020	silver-haired bat	29	413	carcass search	90-m cleared plot, daily	intact	no
09/02/2020	silver-haired bat	13	419	carcass search	90-m cleared plot, daily	intact	no
09/02/2020	silver-haired bat	26	425	carcass search	90-m cleared plot, daily	injured	no
09/02/2020	silver-haired bat	40	428	carcass search	90-m cleared plot, daily	intact	no
09/02/2020	silver-haired bat	17	428	carcass search	90-m cleared plot, daily	intact	no
09/02/2020	silver-haired bat	17	428	carcass search	90-m cleared plot, daily	intact	no
09/03/2020	big brown bat	52	310	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	big brown bat	34	310	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	big brown bat	37	310	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	big brown bat	6	313	carcass search	100-m road and pad	intact	no
09/03/2020	big brown bat	66	406	carcass search	90-m cleared plot	intact	yes
09/03/2020	eastern red bat	52	255	carcass search	70-m uncleared plot	feather spot	yes
09/03/2020	eastern red bat	9	309	carcass search	100-m road and pad	intact	no
09/03/2020	eastern red bat	46	310	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	eastern red bat	53	310	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	eastern red bat	51	313	carcass search	100-m road and pad	intact	no
09/03/2020	eastern red bat	15	316	carcass search	100-m road and pad	scavenged	no
09/03/2020	eastern red bat	48	317	carcass search	100-m road and pad	scavenged	no
09/03/2020	eastern red bat	30	323	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	eastern red bat	11	324	carcass search	70-m uncleared plot	dismembered	yes
09/03/2020	eastern red bat	38	324	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	eastern red bat	64	334	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	eastern red bat	41	336	carcass search	70-m uncleared plot	intact	yes
09/03/2020	eastern red bat	20	336	carcass search	70-m uncleared plot	intact	yes
09/03/2020	eastern red bat	52	336	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	eastern red bat	56	336	carcass search	70-m uncleared plot	feather spot	yes

**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/03/2020	eastern red bat	44	344	carcass search	70-m uncleared plot	dismembered	yes
09/03/2020	eastern red bat	26	406	carcass search	90-m cleared plot	intact	yes
09/03/2020	eastern red bat	69	408	carcass search	90-m cleared plot	scavenged	yes
09/03/2020	eastern red bat	52	409	carcass search	90-m cleared plot	scavenged	yes
09/03/2020	eastern red bat	86	410	carcass search	90-m cleared plot	dismembered	yes
09/03/2020	eastern red bat	16	410	carcass search	90-m cleared plot	scavenged	yes
09/03/2020	eastern red bat	60	413	carcass search	90-m cleared plot, daily	scavenged	no
09/03/2020	eastern red bat	14	420	carcass search	90-m cleared plot	injured	yes
09/03/2020	eastern red bat	89	420	carcass search	90-m cleared plot	scavenged	yes
09/03/2020	hoary bat	43	323	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	hoary bat	32	344	carcass search	70-m uncleared plot	intact	yes
09/03/2020	silver-haired bat	20	304	carcass search	100-m road and pad	intact	no
09/03/2020	silver-haired bat	7	304	carcass search	100-m road and pad	scavenged	no
09/03/2020	silver-haired bat	29	306	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	silver-haired bat	15	309	carcass search	100-m road and pad	intact	no
09/03/2020	silver-haired bat	23	310	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	silver-haired bat	26	311	carcass search	100-m road and pad	intact	no
09/03/2020	silver-haired bat	47	313	carcass search	100-m road and pad	intact	no
09/03/2020	silver-haired bat	12	313	carcass search	100-m road and pad	intact	no
09/03/2020	silver-haired bat	11	315	carcass search	100-m road and pad	scavenged	no
09/03/2020	silver-haired bat	10	315	carcass search	100-m road and pad	scavenged	no
09/03/2020	silver-haired bat	11	317	carcass search	100-m road and pad	scavenged	no
09/03/2020	silver-haired bat	5	323	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	silver-haired bat	18	323	carcass search	70-m uncleared plot	injured	yes
09/03/2020	silver-haired bat	25	324	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	silver-haired bat	10	324	carcass search	70-m uncleared plot	injured	yes
09/03/2020	silver-haired bat	25	324	carcass search	70-m uncleared plot	unknown	yes
09/03/2020	silver-haired bat	35	324	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	silver-haired bat	18	324	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	silver-haired bat	38	334	carcass search	70-m uncleared plot	intact	yes
09/03/2020	silver-haired bat	55	334	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	silver-haired bat	30	334	carcass search	70-m uncleared plot	intact	yes

**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/03/2020	silver-haired bat	48	334	carcass search	70-m uncleared plot	dismembered	yes
09/03/2020	silver-haired bat	34	334	carcass search	70-m uncleared plot	intact	yes
09/03/2020	silver-haired bat	38	336	carcass search	70-m uncleared plot	intact	yes
09/03/2020	silver-haired bat	44	337	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	silver-haired bat	47	337	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	silver-haired bat	55	337	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	silver-haired bat	64	337	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	silver-haired bat	41	344	carcass search	70-m uncleared plot	scavenged	yes
09/03/2020	silver-haired bat	37	403	carcass search	90-m cleared plot	intact	yes
09/03/2020	silver-haired bat	46	403	carcass search	90-m cleared plot	scavenged	yes
09/03/2020	silver-haired bat	55	406	carcass search	90-m cleared plot	scavenged	yes
09/03/2020	silver-haired bat	39	406	carcass search	90-m cleared plot	scavenged	yes
09/03/2020	silver-haired bat	53	406	carcass search	90-m cleared plot	intact	yes
09/03/2020	silver-haired bat	29	406	carcass search	90-m cleared plot	intact	yes
09/03/2020	silver-haired bat	31	406	carcass search	90-m cleared plot	intact	yes
09/03/2020	silver-haired bat	50	406	carcass search	90-m cleared plot	intact	yes
09/03/2020	silver-haired bat	54	406	carcass search	90-m cleared plot	intact	yes
09/03/2020	silver-haired bat	10	409	carcass search	90-m cleared plot	injured	yes
09/03/2020	silver-haired bat	42	409	carcass search	90-m cleared plot	scavenged	yes
09/03/2020	silver-haired bat	24	410	carcass search	90-m cleared plot	scavenged	yes
09/03/2020	silver-haired bat	55	410	carcass search	90-m cleared plot	intact	yes
09/03/2020	silver-haired bat	32	410	carcass search	90-m cleared plot	scavenged	yes
09/03/2020	silver-haired bat	36	410	carcass search	90-m cleared plot	intact	yes
09/03/2020	silver-haired bat	14	410	carcass search	90-m cleared plot	scavenged	yes
09/03/2020	silver-haired bat	2	410	carcass search	90-m cleared plot	scavenged	yes
09/03/2020	silver-haired bat	28	410	carcass search	90-m cleared plot	intact	yes
09/03/2020	silver-haired bat	35	410	carcass search	90-m cleared plot	intact	yes
09/03/2020	silver-haired bat	31	410	carcass search	90-m cleared plot	scavenged	yes
09/03/2020	silver-haired bat	22	410	carcass search	90-m cleared plot	intact	yes
09/03/2020	silver-haired bat	20	410	carcass search	90-m cleared plot	intact	yes
09/03/2020	silver-haired bat	59	413	carcass search	90-m cleared plot, daily	scavenged	no
09/03/2020	silver-haired bat	80	420	carcass search	90-m cleared plot	injured	yes

**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/03/2020	silver-haired bat	42	420	carcass search	90-m cleared plot	injured	yes
09/03/2020	silver-haired bat	22	420	carcass search	90-m cleared plot	scavenged	yes
09/03/2020	silver-haired bat	27	420	carcass search	90-m cleared plot	dismembered	yes
09/03/2020	silver-haired bat	60	420	carcass search	90-m cleared plot	scavenged	yes
09/04/2020	big brown bat	59	333	carcass search	100-m road and pad	scavenged	no
09/04/2020	big brown bat	42	413	carcass search	90-m cleared plot, daily	scavenged	no
09/04/2020	big brown bat	56	413	carcass search	90-m cleared plot, daily	intact	no
09/04/2020	big brown bat	29	421	carcass search	90-m cleared plot	scavenged	yes
09/04/2020	big brown bat	60	425	carcass search	90-m cleared plot, daily	intact	no
09/04/2020	eastern red bat	42	216	carcass search	70-m uncleared plot	scavenged	yes
09/04/2020	eastern red bat	55	225	carcass search	70-m uncleared plot	scavenged	yes
09/04/2020	eastern red bat	30	415	carcass search	90-m cleared plot	scavenged	yes
09/04/2020	eastern red bat	20	415	carcass search	90-m cleared plot	intact	yes
09/04/2020	eastern red bat	44	421	carcass search	90-m cleared plot	injured	yes
09/04/2020	eastern red bat	62	427	carcass search	90-m cleared plot	scavenged	yes
09/04/2020	hoary bat	28	342	carcass search	100-m road and pad	intact	no
09/04/2020	hoary bat	28	415	carcass search	90-m cleared plot	intact	yes
09/04/2020	silver-haired bat	20	216	carcass search	70-m uncleared plot	scavenged	yes
09/04/2020	silver-haired bat	45	221	carcass search	70-m uncleared plot	scavenged	yes
09/04/2020	silver-haired bat	34	223	carcass search	70-m uncleared plot	scavenged	yes
09/04/2020	silver-haired bat	28	225	carcass search	70-m uncleared plot	scavenged	yes
09/04/2020	silver-haired bat	49	233	carcass search	70-m uncleared plot	intact	yes
09/04/2020	silver-haired bat	29	233	carcass search	70-m uncleared plot	intact	yes
09/04/2020	silver-haired bat	30	233	carcass search	70-m uncleared plot	intact	yes
09/04/2020	silver-haired bat	5	237	carcass search	70-m uncleared plot	intact	yes
09/04/2020	silver-haired bat	15	237	carcass search	70-m uncleared plot	intact	yes
09/04/2020	silver-haired bat	27	240	carcass search	70-m uncleared plot	scavenged	yes
09/04/2020	silver-haired bat	22	330	carcass search	100-m road and pad	scavenged	no
09/04/2020	silver-haired bat	7	330	carcass search	100-m road and pad	scavenged	no
09/04/2020	silver-haired bat	16	332	carcass search	100-m road and pad	scavenged	no
09/04/2020	silver-haired bat	13	333	carcass search	100-m road and pad	intact	no
09/04/2020	silver-haired bat	24	340	carcass search	100-m road and pad	intact	no

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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/04/2020	silver-haired bat	36	345	carcass search**	100-m road and pad	scavenged	no
09/04/2020	silver-haired bat	2	347	carcass search	100-m road and pad	scavenged	no
09/04/2020	silver-haired bat	32	415	carcass search	90-m cleared plot	intact	yes
09/04/2020	silver-haired bat	31	415	carcass search	90-m cleared plot	intact	yes
09/04/2020	silver-haired bat	65	415	carcass search	90-m cleared plot	scavenged	yes
09/04/2020	silver-haired bat	25	415	carcass search	90-m cleared plot	intact	yes
09/04/2020	silver-haired bat	31	421	carcass search	90-m cleared plot	scavenged	yes
09/04/2020	silver-haired bat	1	421	carcass search	90-m cleared plot	scavenged	yes
09/04/2020	silver-haired bat	58	421	carcass search	90-m cleared plot	scavenged	yes
09/04/2020	silver-haired bat	49	427	carcass search	90-m cleared plot	unknown	yes
09/04/2020	silver-haired bat	18	427	carcass search	90-m cleared plot	scavenged	yes
09/05/2020	big brown bat	6	307	carcass search	100-m road and pad	scavenged	no
09/05/2020	big brown bat	40	413	carcass search	90-m cleared plot, daily	scavenged	no
09/05/2020	eastern red bat	74	425	carcass search	90-m cleared plot, daily	scavenged	no
09/06/2020	big brown bat	26	324	carcass search	70-m uncleared plot	scavenged	yes
09/06/2020	big brown bat	47	408	carcass search	90-m cleared plot	scavenged	yes
09/06/2020	big brown bat	59	408	carcass search	90-m cleared plot	injured	yes
09/06/2020	big brown bat	33	409	carcass search	90-m cleared plot	intact	yes
09/06/2020	eastern red bat	55	323	carcass search	70-m uncleared plot	intact	yes
09/06/2020	eastern red bat	8	344	carcass search	70-m uncleared plot	intact	yes
09/06/2020	eastern red bat	21	406	carcass search	90-m cleared plot	scavenged	yes
09/06/2020	eastern red bat	67	408	carcass search	90-m cleared plot	unknown	yes
09/06/2020	eastern red bat	38	410	carcass search	90-m cleared plot	intact	yes
09/06/2020	eastern red bat	68	410	carcass search	90-m cleared plot	scavenged	yes
09/06/2020	eastern red bat	37	411	carcass search	100-m road and pad	intact	no
09/06/2020	eastern red bat	6	411	carcass search	100-m road and pad	intact	no
09/06/2020	eastern red bat	89	413	carcass search	90-m cleared plot, daily	scavenged	no
09/06/2020	hoary bat	41	337	carcass search	70-m uncleared plot	scavenged	yes
09/06/2020	hoary bat	38	401	carcass search	100-m road and pad	dismembered	no
09/06/2020	Seminole bat	32	415	incidental	90-m cleared plot	intact	no
09/06/2020	silver-haired bat	30	255	carcass search	70-m uncleared plot	scavenged	yes
09/06/2020	silver-haired bat	34	255	carcass search	70-m uncleared plot	scavenged	yes

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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/06/2020	silver-haired bat	24	310	carcass search	70-m uncleared plot	scavenged	yes
09/06/2020	silver-haired bat	21	337	carcass search	70-m uncleared plot	scavenged	yes
09/06/2020	silver-haired bat	62	337	carcass search	70-m uncleared plot	scavenged	yes
09/06/2020	silver-haired bat	46	341	carcass search	70-m uncleared plot	scavenged	yes
09/06/2020	silver-haired bat	55	341	carcass search	70-m uncleared plot	scavenged	yes
09/06/2020	silver-haired bat	33	403	carcass search	90-m cleared plot	injured	yes
09/06/2020	silver-haired bat	15	404	carcass search	100-m road and pad	intact	no
09/06/2020	silver-haired bat	26	404	carcass search	100-m road and pad	intact	no
09/06/2020	silver-haired bat	20	406	carcass search	90-m cleared plot	scavenged	yes
09/06/2020	silver-haired bat	54	407	carcass search	100-m road and pad	intact	no
09/06/2020	silver-haired bat	35	408	carcass search	90-m cleared plot	injured	yes
09/06/2020	silver-haired bat	72	413	carcass search	90-m cleared plot, daily	scavenged	no
09/06/2020	silver-haired bat	60	413	carcass search	90-m cleared plot, daily	scavenged	no
09/06/2020	silver-haired bat	104	420	carcass search**	90-m cleared plot	intact	yes
09/06/2020	silver-haired bat	58	420	carcass search	90-m cleared plot	intact	yes
09/06/2020	silver-haired bat	42	422	carcass search**	100-m road and pad	scavenged	no
09/06/2020	silver-haired bat	12	431	carcass search	100-m road and pad	scavenged	no
09/07/2020	eastern red bat	34	415	carcass search	90-m cleared plot	scavenged	yes
09/07/2020	silver-haired bat	86	412	carcass search	90-m cleared plot, daily	intact	no
09/07/2020	silver-haired bat	55	415	carcass search	90-m cleared plot	intact	yes
09/07/2020	silver-haired bat	52	415	carcass search	90-m cleared plot	intact	yes
09/07/2020	silver-haired bat	74	421	carcass search	90-m cleared plot	intact	yes
09/07/2020	silver-haired bat	58	421	carcass search	90-m cleared plot	intact	yes
09/07/2020	silver-haired bat	52	421	carcass search	90-m cleared plot	intact	yes
09/08/2020	eastern red bat	91	208	carcass search	100-m road and pad	scavenged	no
09/08/2020	eastern red bat	37	254	carcass search	100-m road and pad	scavenged	no
09/08/2020	eastern red bat	46	414	carcass search	90-m cleared plot	scavenged	yes
09/08/2020	eastern red bat	1	427	carcass search	90-m cleared plot	intact	yes
09/08/2020	silver-haired bat	47	254	carcass search	100-m road and pad	scavenged	no
09/08/2020	silver-haired bat	50	413	carcass search	90-m cleared plot, daily	scavenged	no
09/08/2020	silver-haired bat	43	414	carcass search	90-m cleared plot	scavenged	yes
09/08/2020	silver-haired bat	49	414	carcass search	90-m cleared plot	scavenged	yes

**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/09/2020	big brown bat	7	409	carcass search	90-m cleared plot	scavenged	yes
09/09/2020	big brown bat	58	420	carcass search	90-m cleared plot	scavenged	yes
09/09/2020	eastern red bat	17	246	carcass search	70-m uncleared plot	scavenged	yes
09/09/2020	eastern red bat	52	246	carcass search	70-m uncleared plot	dismembered	yes
09/09/2020	eastern red bat	62	337	carcass search	70-m uncleared plot	unknown	yes
09/09/2020	eastern red bat	67	341	carcass search	70-m uncleared plot	scavenged	yes
09/09/2020	eastern red bat	47	403	carcass search	90-m cleared plot	intact	yes
09/09/2020	eastern red bat	23	410	carcass search	90-m cleared plot	dismembered	yes
09/09/2020	eastern red bat	8	420	carcass search	90-m cleared plot	intact	yes
09/09/2020	eastern red bat	65	420	carcass search	90-m cleared plot	intact	yes
09/09/2020	hoary bat	2	324	carcass search	70-m uncleared plot	intact	yes
09/09/2020	hoary bat	56	425	carcass search	90-m cleared plot, daily	scavenged	no
09/09/2020	silver-haired bat	20	306	carcass search	70-m uncleared plot	intact	yes
09/09/2020	silver-haired bat	44	341	carcass search	70-m uncleared plot	scavenged	yes
09/09/2020	silver-haired bat	42	344	carcass search	70-m uncleared plot	scavenged	yes
09/09/2020	silver-haired bat	67	406	carcass search	90-m cleared plot	scavenged	yes
09/09/2020	silver-haired bat	60	408	carcass search	90-m cleared plot	intact	yes
09/09/2020	silver-haired bat	14	409	carcass search	90-m cleared plot	scavenged	yes
09/09/2020	silver-haired bat	28	410	carcass search	90-m cleared plot	dismembered	yes
09/09/2020	silver-haired bat	61	410	carcass search	90-m cleared plot	dismembered	yes
09/09/2020	silver-haired bat	88	413	carcass search	90-m cleared plot, daily	scavenged	no
09/09/2020	silver-haired bat	80	425	carcass search	90-m cleared plot, daily	scavenged	no
09/10/2020	big brown bat	28	413	carcass search	90-m cleared plot, daily	intact	no
09/10/2020	eastern red bat	28	317	carcass search	100-m road and pad	dismembered	no
09/10/2020	eastern red bat	23	421	carcass search	90-m cleared plot	intact	yes
09/10/2020	hoary bat	50	309	carcass search	100-m road and pad	scavenged	no
09/10/2020	hoary bat	26	427	carcass search	90-m cleared plot	intact	yes
09/10/2020	silver-haired bat	53	216	carcass search	70-m uncleared plot	injured	yes
09/10/2020	silver-haired bat	7	301	carcass search	100-m road and pad	intact	no
09/10/2020	silver-haired bat	1	301	carcass search	100-m road and pad	intact	no
09/10/2020	silver-haired bat	29	414	carcass search	90-m cleared plot	scavenged	yes
09/10/2020	silver-haired bat	58	427	carcass search	90-m cleared plot	scavenged	yes



**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/11/2020	big brown bat	40	330	carcass search	100-m road and pad	intact	no
09/11/2020	hoary bat	82	419	carcass search	90-m cleared plot, daily	intact	no
09/11/2020	hoary bat	46	425	carcass search	90-m cleared plot, daily	intact	no
09/11/2020	silver-haired bat	53	331	carcass search	100-m road and pad	intact	no
09/11/2020	silver-haired bat	57	413	carcass search	90-m cleared plot, daily	intact	no
09/11/2020	unidentified bat	78	425	carcass search	90-m cleared plot, daily	dismembered	no
09/12/2020	big brown bat	23	348	carcass search	70-m uncleared plot	scavenged	yes
09/12/2020	big brown bat	27	409	carcass search	90-m cleared plot	injured	yes
09/12/2020	big brown bat	50	413	carcass search	90-m cleared plot, daily	intact	no
09/12/2020	big brown bat	83	420	carcass search	90-m cleared plot	scavenged	yes
09/12/2020	eastern red bat	27	246	carcass search	70-m uncleared plot	scavenged	yes
09/12/2020	eastern red bat	21	246	carcass search	70-m uncleared plot	injured	yes
09/12/2020	eastern red bat	14	255	carcass search	70-m uncleared plot	scavenged	yes
09/12/2020	eastern red bat	29	310	carcass search	70-m uncleared plot	scavenged	yes
09/12/2020	eastern red bat	63	324	carcass search	70-m uncleared plot	injured	yes
09/12/2020	eastern red bat	53	324	carcass search	70-m uncleared plot	scavenged	yes
09/12/2020	eastern red bat	24	334	carcass search	70-m uncleared plot	scavenged	yes
09/12/2020	eastern red bat	57	408	carcass search	90-m cleared plot	intact	yes
09/12/2020	eastern red bat	48	409	carcass search	90-m cleared plot	injured	yes
09/12/2020	eastern red bat	43	409	carcass search	90-m cleared plot	injured	yes
09/12/2020	eastern red bat	42	412	carcass search	90-m cleared plot, daily	scavenged	no
09/12/2020	hoary bat	36	323	carcass search	70-m uncleared plot	injured	yes
09/12/2020	hoary bat	65	324	carcass search	70-m uncleared plot	scavenged	yes
09/12/2020	hoary bat	53	408	carcass search	90-m cleared plot	intact	yes
09/12/2020	hoary bat	51	410	carcass search	90-m cleared plot	intact	yes
09/12/2020	hoary bat	1	413	carcass search	90-m cleared plot, daily	scavenged	no
09/12/2020	hoary bat	39	420	carcass search	90-m cleared plot	injured	yes
09/12/2020	silver-haired bat	54	324	carcass search	70-m uncleared plot	scavenged	yes
09/12/2020	silver-haired bat	70	334	carcass search	70-m uncleared plot	scavenged	yes
09/12/2020	silver-haired bat	15	334	carcass search	70-m uncleared plot	intact	yes
09/12/2020	silver-haired bat	45	344	carcass search	70-m uncleared plot	intact	yes
09/12/2020	silver-haired bat	61	403	carcass search	90-m cleared plot	intact	yes

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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/12/2020	silver-haired bat	55	403	carcass search	90-m cleared plot	dismembered	yes
09/12/2020	silver-haired bat	43	408	carcass search	90-m cleared plot	intact	yes
09/12/2020	silver-haired bat	16	409	carcass search	90-m cleared plot	injured	yes
09/12/2020	silver-haired bat	56	409	carcass search	90-m cleared plot	injured	yes
09/12/2020	silver-haired bat	64	410	carcass search	90-m cleared plot	intact	yes
09/12/2020	silver-haired bat	64	410	carcass search	90-m cleared plot	intact	yes
09/12/2020	silver-haired bat	55	420	carcass search	90-m cleared plot	injured	yes
09/13/2020	big brown bat	8	411	carcass search	100-m road and pad	intact	no
09/13/2020	eastern red bat	52	223	carcass search	70-m uncleared plot	scavenged	yes
09/13/2020	eastern red bat	49	225	carcass search	70-m uncleared plot	injured	yes
09/13/2020	eastern red bat	2	405	carcass search	100-m road and pad	intact	no
09/13/2020	eastern red bat	17	414	carcass search	90-m cleared plot	intact	yes
09/13/2020	eastern red bat	73	415	carcass search	90-m cleared plot	intact	yes
09/13/2020	eastern red bat	14	418	carcass search	100-m road and pad	scavenged	no
09/13/2020	hoary bat	41	402	carcass search	100-m road and pad	dismembered	no
09/13/2020	hoary bat	21	427	carcass search	90-m cleared plot	unknown	yes
09/13/2020	silver-haired bat	2	411	carcass search	100-m road and pad	intact	no
09/13/2020	silver-haired bat	45	413	carcass search	90-m cleared plot, daily	intact	no
09/13/2020	silver-haired bat	59	415	carcass search	90-m cleared plot	intact	yes
09/13/2020	silver-haired bat	52	415	carcass search	90-m cleared plot	scavenged	yes
09/13/2020	silver-haired bat	24	421	carcass search	90-m cleared plot	scavenged	yes
09/13/2020	silver-haired bat	11	424	carcass search	100-m road and pad	intact	no
09/13/2020	silver-haired bat	48	427	carcass search	90-m cleared plot	scavenged	yes
09/13/2020	silver-haired bat	64	430	carcass search**	100-m road and pad	scavenged	no
09/14/2020	eastern red bat	15	331	incidental	100-m road and pad	intact	no
09/14/2020	eastern red bat	45	413	carcass search	90-m cleared plot, daily	intact	no
09/14/2020	hoary bat	16	232	carcass search	100-m road and pad	scavenged	no
09/14/2020	silver-haired bat	16	228	carcass search	100-m road and pad	scavenged	no
09/14/2020	silver-haired bat	33	230	carcass search**	100-m road and pad	scavenged	no
09/14/2020	silver-haired bat	48	413	carcass search	90-m cleared plot, daily	dismembered	no
09/14/2020	silver-haired bat	50	413	carcass search	90-m cleared plot, daily	intact	no
09/14/2020	silver-haired bat	48	425	carcass search	90-m cleared plot, daily	intact	no

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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/14/2020	silver-haired bat	31	425	carcass search	90-m cleared plot, daily	intact	no
09/14/2020	silver-haired bat	83	425	carcass search	90-m cleared plot, daily	injured	no
09/15/2020	eastern red bat	25	246	carcass search	70-m uncleared plot	intact	yes
09/15/2020	eastern red bat	71	334	carcass search**	70-m uncleared plot	scavenged	yes
09/15/2020	eastern red bat	46	334	carcass search	70-m uncleared plot	intact	yes
09/15/2020	eastern red bat	74	403	carcass search	90-m cleared plot	scavenged	yes
09/15/2020	eastern red bat	82	406	carcass search	90-m cleared plot	dismembered	yes
09/15/2020	eastern red bat	17	406	carcass search	90-m cleared plot	intact	yes
09/15/2020	eastern red bat	35	409	carcass search	90-m cleared plot	intact	yes
09/15/2020	eastern red bat	70	420	carcass search	90-m cleared plot	intact	yes
09/15/2020	hoary bat	14	310	carcass search	70-m uncleared plot	scavenged	yes
09/15/2020	hoary bat	32	409	carcass search	90-m cleared plot	intact	yes
09/15/2020	silver-haired bat	40	255	carcass search	70-m uncleared plot	intact	yes
09/15/2020	silver-haired bat	28	310	carcass search	70-m uncleared plot	scavenged	yes
09/15/2020	silver-haired bat	43	323	carcass search	70-m uncleared plot	intact	yes
09/15/2020	silver-haired bat	34	324	carcass search	70-m uncleared plot	intact	yes
09/15/2020	silver-haired bat	64	334	carcass search	70-m uncleared plot	intact	yes
09/15/2020	silver-haired bat	22	334	carcass search	70-m uncleared plot	intact	yes
09/15/2020	silver-haired bat	32	334	carcass search	70-m uncleared plot	intact	yes
09/15/2020	silver-haired bat	18	337	carcass search	70-m uncleared plot	intact	yes
09/15/2020	silver-haired bat	28	341	carcass search	70-m uncleared plot	injured	yes
09/15/2020	silver-haired bat	25	344	carcass search	70-m uncleared plot	scavenged	yes
09/15/2020	silver-haired bat	49	408	carcass search	90-m cleared plot	injured	yes
09/15/2020	silver-haired bat	78	408	carcass search	90-m cleared plot	injured	yes
09/15/2020	silver-haired bat	50	409	carcass search	90-m cleared plot	intact	yes
09/15/2020	silver-haired bat	67	420	carcass search	90-m cleared plot	intact	yes
09/15/2020	silver-haired bat	67	420	carcass search	90-m cleared plot	intact	yes
09/15/2020	silver-haired bat	52	420	carcass search	90-m cleared plot	scavenged	yes
09/16/2020	eastern red bat	4	211	carcass search	100-m road and pad	intact	no
09/16/2020	eastern red bat	8	213	carcass search	100-m road and pad	dismembered	no
09/16/2020	eastern red bat	2	220	carcass search	100-m road and pad	scavenged	no
09/16/2020	eastern red bat	68	427	carcass search	90-m cleared plot	scavenged	yes

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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/16/2020	eastern red bat	38	427	carcass search	90-m cleared plot	intact	yes
09/16/2020	eastern red bat	27	427	carcass search	90-m cleared plot	intact	yes
09/16/2020	eastern red bat	31	427	carcass search	90-m cleared plot	intact	yes
09/16/2020	hoary bat	60	215	carcass search	70-m uncleared plot	scavenged	yes
09/16/2020	Seminole bat	52	415	carcass search	90-m cleared plot	scavenged	yes
09/16/2020	silver-haired bat	14	212	carcass search	100-m road and pad	intact	no
09/16/2020	silver-haired bat	25	233	carcass search	70-m uncleared plot	scavenged	yes
09/16/2020	silver-haired bat	40	414	carcass search	90-m cleared plot	intact	yes
09/16/2020	silver-haired bat	27	415	carcass search	90-m cleared plot	scavenged	yes
09/16/2020	silver-haired bat	58	425	carcass search	90-m cleared plot, daily	dismembered	no
09/16/2020	silver-haired bat	55	427	carcass search	90-m cleared plot	scavenged	yes
09/17/2020	eastern red bat	77	421	carcass search	90-m cleared plot	scavenged	yes
09/17/2020	silver-haired bat	64	225	carcass search	70-m uncleared plot	intact	yes
09/17/2020	silver-haired bat	61	225	carcass search	70-m uncleared plot	scavenged	yes
09/17/2020	silver-haired bat	48	309	carcass search	100-m road and pad	dismembered	no
09/17/2020	silver-haired bat	22	412	carcass search	90-m cleared plot, daily	dismembered	no
09/17/2020	silver-haired bat	38	421	carcass search	90-m cleared plot	scavenged	yes
09/18/2020	big brown bat	38	306	carcass search	70-m uncleared plot	scavenged	yes
09/18/2020	big brown bat	18	323	carcass search	70-m uncleared plot	scavenged	yes
09/18/2020	big brown bat	60	425	carcass search	90-m cleared plot, daily	intact	no
09/18/2020	eastern red bat	48	310	carcass search	70-m uncleared plot	scavenged	yes
09/18/2020	eastern red bat	50	323	carcass search	70-m uncleared plot	scavenged	yes
09/18/2020	eastern red bat	10	326	carcass search	100-m road and pad	scavenged	no
09/18/2020	eastern red bat	86	408	carcass search	90-m cleared plot	intact	yes
09/18/2020	eastern red bat	76	409	carcass search	90-m cleared plot	scavenged	yes
09/18/2020	eastern red bat	79	410	incidental	90-m cleared plot	scavenged	yes
09/18/2020	hoary bat	36	324	carcass search	70-m uncleared plot	scavenged	yes
09/18/2020	silver-haired bat	28	306	carcass search	70-m uncleared plot	scavenged	yes
09/18/2020	silver-haired bat	46	323	carcass search	70-m uncleared plot	scavenged	yes
09/18/2020	silver-haired bat	55	324	carcass search	70-m uncleared plot	feather spot	yes
09/18/2020	silver-haired bat	58	324	carcass search	70-m uncleared plot	scavenged	yes
09/18/2020	silver-haired bat	35	329	carcass search	100-m road and pad	intact	no

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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/18/2020	silver-haired bat	32	329	carcass search	100-m road and pad	intact	no
09/18/2020	silver-haired bat	29	329	carcass search	100-m road and pad	intact	no
09/18/2020	silver-haired bat	56	341	carcass search	70-m uncleared plot	scavenged	yes
09/18/2020	silver-haired bat	94	408	carcass search**	90-m cleared plot	intact	yes
09/18/2020	silver-haired bat	76	408	carcass search	90-m cleared plot	intact	yes
09/18/2020	silver-haired bat	65	408	carcass search	90-m cleared plot	intact	yes
09/18/2020	silver-haired bat	76	409	carcass search	90-m cleared plot	scavenged	yes
09/18/2020	silver-haired bat	64	409	carcass search	90-m cleared plot	intact	yes
09/18/2020	silver-haired bat	31	420	carcass search	90-m cleared plot	intact	yes
09/19/2020	eastern red bat	27	216	carcass search	70-m uncleared plot	scavenged	yes
09/19/2020	eastern red bat	85	414	carcass search	90-m cleared plot	scavenged	yes
09/19/2020	silver-haired bat	34	221	carcass search	70-m uncleared plot	scavenged	yes
09/19/2020	silver-haired bat	7	406	carcass search	90-m cleared plot	intact	yes
09/19/2020	silver-haired bat	31	427	carcass search	90-m cleared plot	dismembered	yes
09/19/2020	silver-haired bat	78	427	carcass search	90-m cleared plot	intact	yes
09/21/2020	hoary bat	19	255	carcass search	70-m uncleared plot	scavenged	yes
09/21/2020	hoary bat	47	334	carcass search	70-m uncleared plot	intact	yes
09/21/2020	Seminole bat	44	336	carcass search	70-m uncleared plot	intact	yes
09/21/2020	silver-haired bat	58	310	carcass search	70-m uncleared plot	scavenged	yes
09/22/2020	eastern red bat	52	225	carcass search	70-m uncleared plot	scavenged	yes
09/22/2020	eastern red bat	74	412	carcass search	90-m cleared plot, daily	scavenged	no
09/22/2020	eastern red bat	19	415	carcass search	90-m cleared plot	injured	yes
09/22/2020	hoary bat	29	251	carcass search	100-m road and pad	intact	no
09/22/2020	silver-haired bat	65	427	carcass search	90-m cleared plot	scavenged	yes
09/22/2020	silver-haired bat	86	427	carcass search	90-m cleared plot	scavenged	yes
09/24/2020	eastern red bat	62	348	carcass search	70-m uncleared plot	scavenged	yes
09/24/2020	eastern red bat	27	348	carcass search	70-m uncleared plot	scavenged	yes
09/24/2020	silver-haired bat	16	246	carcass search	70-m uncleared plot	intact	yes
09/24/2020	silver-haired bat	41	255	carcass search	70-m uncleared plot	intact	yes
09/24/2020	silver-haired bat	11	310	carcass search	70-m uncleared plot	injured	yes
09/24/2020	silver-haired bat	49	337	carcass search	70-m uncleared plot	intact	yes
09/24/2020	silver-haired bat	23	337	carcass search	70-m uncleared plot	intact	yes

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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/24/2020	silver-haired bat	56	341	carcass search	70-m uncleared plot	injured	yes
09/24/2020	silver-haired bat	17	344	carcass search	70-m uncleared plot	intact	yes
09/24/2020	silver-haired bat	33	344	carcass search	70-m uncleared plot	intact	yes
09/24/2020	silver-haired bat	63	348	carcass search	70-m uncleared plot	scavenged	yes
09/24/2020	silver-haired bat	5	408	carcass search	90-m cleared plot	injured	yes
09/24/2020	silver-haired bat	23	413	carcass search	90-m cleared plot, daily	intact	no
09/24/2020	silver-haired bat	25	413	carcass search	90-m cleared plot, daily	intact	no
09/24/2020	silver-haired bat	10	413	carcass search	90-m cleared plot, daily	intact	no
09/24/2020	silver-haired bat	50	413	carcass search	90-m cleared plot, daily	intact	no
09/24/2020	silver-haired bat	64	425	carcass search	90-m cleared plot, daily	intact	no
09/25/2020	silver-haired bat	35	233	carcass search	70-m uncleared plot	scavenged	yes
09/25/2020	silver-haired bat	51	240	carcass search	70-m uncleared plot	intact	yes
09/25/2020	silver-haired bat	56	240	carcass search	70-m uncleared plot	intact	yes
09/25/2020	silver-haired bat	38	335	carcass search	100-m road and pad	intact	no
09/25/2020	silver-haired bat	57	336	carcass search	70-m uncleared plot	scavenged	yes
09/25/2020	silver-haired bat	45	338	carcass search	100-m road and pad	scavenged	no
09/25/2020	silver-haired bat	79	414	carcass search	90-m cleared plot	scavenged	yes
09/25/2020	silver-haired bat	31	414	carcass search	90-m cleared plot	scavenged	yes
09/26/2020	silver-haired bat	14	412	carcass search	90-m cleared plot, daily	intact	no
09/26/2020	silver-haired bat	2	413	carcass search	90-m cleared plot, daily	intact	no
09/27/2020	eastern red bat	48	323	carcass search	70-m uncleared plot	scavenged	yes
09/27/2020	eastern red bat	6	334	carcass search	70-m uncleared plot	injured	yes
09/27/2020	eastern red bat	7	423	carcass search	100-m road and pad	intact	no
09/27/2020	hoary bat	50	323	carcass search	70-m uncleared plot	scavenged	yes
09/27/2020	hoary bat	31	323	carcass search	70-m uncleared plot	scavenged	yes
09/27/2020	silver-haired bat	19	255	carcass search	70-m uncleared plot	intact	yes
09/27/2020	silver-haired bat	77	255	carcass search**	70-m uncleared plot	intact	yes
09/27/2020	silver-haired bat	47	323	carcass search	70-m uncleared plot	scavenged	yes
09/27/2020	silver-haired bat	63	334	carcass search	70-m uncleared plot	scavenged	yes
09/27/2020	silver-haired bat	67	334	carcass search	70-m uncleared plot	scavenged	yes
09/27/2020	silver-haired bat	59	334	carcass search	70-m uncleared plot	scavenged	yes
09/27/2020	silver-haired bat	24	337	carcass search	70-m uncleared plot	dismembered	yes

**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/27/2020	silver-haired bat	30	348	carcass search	70-m uncleared plot	intact	yes
09/27/2020	silver-haired bat	28	348	carcass search	70-m uncleared plot	intact	yes
09/27/2020	silver-haired bat	9	404	carcass search	100-m road and pad	intact	no
09/27/2020	silver-haired bat	27	408	carcass search	90-m cleared plot	intact	yes
09/27/2020	silver-haired bat	49	409	carcass search	90-m cleared plot	intact	yes
09/27/2020	silver-haired bat	43	410	carcass search	90-m cleared plot	scavenged	yes
09/27/2020	silver-haired bat	50	413	carcass search	90-m cleared plot, daily	scavenged	no
09/27/2020	silver-haired bat	34	413	carcass search	90-m cleared plot, daily	intact	no
09/27/2020	silver-haired bat	30	417	carcass search	100-m road and pad	scavenged	no
09/27/2020	silver-haired bat	5	418	carcass search	100-m road and pad	intact	no
09/27/2020	silver-haired bat	10	419	carcass search	90-m cleared plot, daily	dismembered	no
09/27/2020	silver-haired bat	59	420	carcass search	90-m cleared plot	intact	yes
09/28/2020	hoary bat	71	412	carcass search	90-m cleared plot, daily	scavenged	no
09/28/2020	silver-haired bat	6	229	carcass search	100-m road and pad	unknown	no
09/28/2020	silver-haired bat	31	233	carcass search	70-m uncleared plot	scavenged	yes
09/28/2020	silver-haired bat	44	239	carcass search	100-m road and pad	intact	no
09/28/2020	silver-haired bat	42	240	carcass search	70-m uncleared plot	scavenged	yes
09/28/2020	silver-haired bat	33	413	carcass search	90-m cleared plot, daily	intact	no
09/28/2020	silver-haired bat	63	415	carcass search	90-m cleared plot	intact	yes
09/28/2020	silver-haired bat	31	415	carcass search	90-m cleared plot	intact	yes
09/28/2020	silver-haired bat	27	421	carcass search	90-m cleared plot	dismembered	yes
09/29/2020	silver-haired bat	6	325	carcass search	100-m road and pad	scavenged	no
09/29/2020	silver-haired bat	55	403	incidental	90-m cleared plot	scavenged	no
09/29/2020	silver-haired bat	8	410	incidental	90-m cleared plot	intact	no
09/30/2020	silver-haired bat	11	310	carcass search	70-m uncleared plot	scavenged	yes
09/30/2020	silver-haired bat	59	324	carcass search	70-m uncleared plot	scavenged	yes
09/30/2020	silver-haired bat	49	336	carcass search	70-m uncleared plot	intact	yes
09/30/2020	silver-haired bat	52	341	carcass search	70-m uncleared plot	dismembered	yes
09/30/2020	silver-haired bat	52	344	carcass search	70-m uncleared plot	dismembered	yes
09/30/2020	silver-haired bat	44	344	carcass search	70-m uncleared plot	scavenged	yes
09/30/2020	silver-haired bat	43	406	carcass search	90-m cleared plot	intact	yes
09/30/2020	silver-haired bat	36	406	carcass search	90-m cleared plot	intact	yes

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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/30/2020	silver-haired bat	44	406	carcass search	90-m cleared plot	intact	yes
09/30/2020	silver-haired bat	18	406	carcass search	90-m cleared plot	intact	yes
09/30/2020	silver-haired bat	44	408	carcass search	90-m cleared plot	intact	yes
09/30/2020	silver-haired bat	16	408	carcass search	90-m cleared plot	intact	yes
09/30/2020	silver-haired bat	13	409	carcass search	90-m cleared plot	injured	yes
09/30/2020	silver-haired bat	14	410	carcass search	90-m cleared plot	intact	yes
10/01/2020	eastern red bat	76	221	carcass search**	70-m uncleared plot	scavenged	yes
10/01/2020	eastern red bat	73	221	carcass search**	70-m uncleared plot	dismembered	yes
10/01/2020	silver-haired bat	31	221	carcass search	70-m uncleared plot	scavenged	yes
10/01/2020	silver-haired bat		237	carcass search	70-m uncleared plot	unknown	yes
10/01/2020	silver-haired bat	37	421	carcass search	90-m cleared plot	scavenged	yes
10/02/2020	eastern red bat	83	342	carcass search	100-m road and pad	dismembered	no
10/02/2020	silver-haired bat	11	329	carcass search	100-m road and pad	scavenged	no
10/02/2020	silver-haired bat	14	415	carcass search	90-m cleared plot	injured	yes
10/03/2020	eastern red bat	39	308	carcass search	100-m road and pad	intact	no
10/03/2020	eastern red bat	62	408	carcass search	90-m cleared plot	scavenged	yes
10/03/2020	silver-haired bat	34	255	carcass search	70-m uncleared plot	intact	yes
10/03/2020	silver-haired bat	62	336	carcass search	70-m uncleared plot	scavenged	yes
10/03/2020	silver-haired bat	39	403	carcass search	90-m cleared plot	injured	yes
10/03/2020	silver-haired bat	45	409	carcass search	90-m cleared plot	intact	yes
10/04/2020	silver-haired bat	9	420	carcass search	90-m cleared plot	intact	yes
10/05/2020	eastern red bat	44	227	carcass search	100-m road and pad	intact	no
10/06/2020	eastern red bat	6	249	carcass search	100-m road and pad	intact	no
10/06/2020	eastern red bat	50	410	carcass search	90-m cleared plot	scavenged	yes
10/06/2020	silver-haired bat	23	310	carcass search	70-m uncleared plot	scavenged	yes
10/06/2020	silver-haired bat	40	323	carcass search	70-m uncleared plot	scavenged	yes
10/06/2020	silver-haired bat	47	348	carcass search	70-m uncleared plot	intact	yes
10/06/2020	silver-haired bat	47	408	carcass search	90-m cleared plot	intact	yes
10/06/2020	silver-haired bat	53	409	carcass search	90-m cleared plot	scavenged	yes
10/06/2020	silver-haired bat	35	420	carcass search	90-m cleared plot	intact	yes
10/07/2020	eastern red bat	20	221	carcass search	70-m uncleared plot	scavenged	yes
10/07/2020	silver-haired bat	39	414	carcass search	90-m cleared plot	scavenged	yes



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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
10/07/2020	silver-haired bat	67	415	carcass search	90-m cleared plot	injured	yes
10/07/2020	silver-haired bat	56	427	carcass search	90-m cleared plot	intact	yes
10/08/2020	eastern red bat	58	336	carcass search	70-m uncleared plot	intact	yes
10/08/2020	hoary bat	27	304	carcass search	100-m road and pad	intact	no
10/08/2020	silver-haired bat	35	223	carcass search	70-m uncleared plot	dismembered	yes
10/08/2020	silver-haired bat	70	412	carcass search	90-m cleared plot, daily	intact	no
10/09/2020	eastern red bat	61	310	carcass search	70-m uncleared plot	scavenged	yes
10/09/2020	eastern red bat	59	413	carcass search	90-m cleared plot, daily	intact	no
10/09/2020	hoary bat	41	408	carcass search	90-m cleared plot	scavenged	yes
10/09/2020	Seminole bat	30	409	carcass search	90-m cleared plot	injured	yes
10/09/2020	Seminole bat	30	409	carcass search	90-m cleared plot	injured	yes
10/09/2020	silver-haired bat	50	323	carcass search	70-m uncleared plot	injured	yes
10/09/2020	silver-haired bat	16	329	carcass search	100-m road and pad	scavenged	no
10/09/2020	silver-haired bat	40	334	carcass search	70-m uncleared plot	scavenged	yes
10/10/2020	evening bat	25	342	carcass search	100-m road and pad	scavenged	no
10/12/2020	big brown bat	70	420	carcass search	90-m cleared plot	scavenged	yes
10/12/2020	eastern red bat	58	229	carcass search	100-m road and pad	scavenged	no
10/12/2020	eastern red bat	70	341	carcass search	70-m uncleared plot	scavenged	yes
10/12/2020	eastern red bat	36	410	carcass search	90-m cleared plot	intact	yes
10/12/2020	eastern red bat	43	420	carcass search	90-m cleared plot	scavenged	yes
10/12/2020	hoary bat	17	424	carcass search	100-m road and pad	intact	no
10/12/2020	silver-haired bat	50	246	carcass search	70-m uncleared plot	intact	yes
10/12/2020	silver-haired bat	40	334	carcass search	70-m uncleared plot	dismembered	yes
10/12/2020	silver-haired bat	45	344	carcass search	70-m uncleared plot	dismembered	yes
10/12/2020	silver-haired bat	7	409	carcass search	90-m cleared plot	intact	yes
10/13/2020	eastern red bat	83	415	carcass search	90-m cleared plot	intact	yes
10/13/2020	Indiana bat	17	225	carcass search	70-m uncleared plot	scavenged	yes
10/13/2020	silver-haired bat	35	223	carcass search	70-m uncleared plot	scavenged	yes
10/13/2020	silver-haired bat	67	240	carcass search	70-m uncleared plot	scavenged	yes
10/13/2020	silver-haired bat	34	415	carcass search	90-m cleared plot	intact	yes
10/13/2020	silver-haired bat	50	427	carcass search	90-m cleared plot	injured	yes
10/15/2020	eastern red bat	53	255	carcass search	70-m uncleared plot	intact	yes

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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
10/15/2020	eastern red bat	35	341	carcass search	70-m uncleared plot	intact	yes
10/15/2020	silver-haired bat	52	408	carcass search	90-m cleared plot	intact	yes
10/15/2020	silver-haired bat	18	409	carcass search	90-m cleared plot	intact	yes
<b>Bird Carcasses</b>							
08/01/2020	European starling	57	421	carcass search	90-m cleared plot	intact	yes
08/02/2020	mourning dove	73	419	carcass search	90-m cleared plot, daily	feather spot	no
08/03/2020	black-billed cuckoo	55	203	carcass search	100-m road and pad	scavenged	no
08/03/2020	killdeer	64	419	carcass search	90-m cleared plot, daily	feather spot	no
08/05/2020	unidentified passerine	71	420	carcass search	90-m cleared plot	feather spot	yes
08/05/2020	unidentified passerine	41	421	carcass search	90-m cleared plot	scavenged	yes
08/07/2020	red-winged blackbird	12	337	carcass search	70-m uncleared plot	scavenged	yes
08/07/2020	horned lark	26	345	carcass search	100-m road and pad	intact	no
08/07/2020	killdeer	68	427	carcass search	90-m cleared plot	dismembered	yes
08/09/2020	killdeer	39	419	carcass search**	90-m cleared plot, daily	scavenged	no
08/13/2020	killdeer	47	410	carcass search	90-m cleared plot	dismembered	yes
08/14/2020	killdeer	28	221	carcass search	70-m uncleared plot	intact	yes
08/16/2020	horned lark	83	403	carcass search	90-m cleared plot	intact	yes
08/16/2020	horned lark		408	carcass search	90-m cleared plot	unknown	yes
08/16/2020	horned lark	29	408	carcass search	90-m cleared plot	scavenged	yes
08/16/2020	horned lark		408	carcass search	90-m cleared plot	unknown	yes
08/16/2020	black-billed cuckoo	46	410	carcass search	90-m cleared plot	intact	yes
08/16/2020	horned lark	14	419	carcass search	90-m cleared plot, daily	scavenged	no
08/19/2020	horned lark	2	210	carcass search	100-m road and pad	dismembered	no
08/19/2020	horned lark	64	403	carcass search	90-m cleared plot	scavenged	yes
08/19/2020	American goldfinch	49	412	carcass search	90-m cleared plot, daily	intact	no
08/20/2020	horned lark	11	318	carcass search	100-m road and pad	intact	no
08/20/2020	horned lark	19	414	carcass search	90-m cleared plot	scavenged	yes
08/22/2020	unidentified passerine	67	403	carcass search	90-m cleared plot	dismembered	yes
08/22/2020	killdeer	86	419	carcass search	90-m cleared plot, daily	feather spot	no
08/25/2020	cedar waxwing	36	247	carcass search	100-m road and pad	scavenged	no
08/25/2020	chimney swift	73	403	carcass search	90-m cleared plot	dismembered	yes
08/26/2020	unidentified passerine	61	421	carcass search	90-m cleared plot	dismembered	yes

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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
08/27/2020	killdeer	55	425	carcass search	90-m cleared plot, daily	scavenged	no
08/28/2020	horned lark	29	410	carcass search	90-m cleared plot	scavenged	yes
08/31/2020	ruby-throated hummingbird	1	203	carcass search	100-m road and pad	dismembered	no
08/31/2020	unidentified passerine	37	409	carcass search	90-m cleared plot	dismembered	yes
08/31/2020	killdeer	92	420	carcass search**	90-m cleared plot	feather spot	yes
09/03/2020	American tree sparrow	46	334	carcass search	70-m uncleared plot	intact	yes
09/03/2020	horned lark	13	334	carcass search	70-m uncleared plot	scavenged	yes
09/06/2020	horned lark	21	334	carcass search	70-m uncleared plot	feather spot	yes
09/06/2020	red-breasted nuthatch	52	405	carcass search	100-m road and pad	intact	no
09/06/2020	ruby-throated hummingbird	84	413	carcass search	90-m cleared plot, daily	dismembered	no
09/09/2020	killdeer	30	341	carcass search	70-m uncleared plot	feather spot	yes
09/09/2020	killdeer	41	410	carcass search	90-m cleared plot	feather spot	yes
09/10/2020	horned lark	36	425	carcass search**	90-m cleared plot, daily	intact	no
09/11/2020	horned lark	23	330	carcass search	100-m road and pad	dismembered	no
09/12/2020	cliff swallow	59	334	carcass search	70-m uncleared plot	scavenged	yes
09/12/2020	black-throated blue warbler	46	336	carcass search	70-m uncleared plot	feather spot	yes
09/12/2020	killdeer	44	420	carcass search	90-m cleared plot	dismembered	yes
09/13/2020	red-eyed vireo	40	415	carcass search	90-m cleared plot	intact	yes
09/13/2020	red-eyed vireo	82	415	carcass search	90-m cleared plot	scavenged	yes
09/13/2020	magnolia warbler	39	419	carcass search	90-m cleared plot, daily	intact	no
09/13/2020	American redstart	31	427	carcass search	90-m cleared plot	injured	yes
09/14/2020	American redstart	70	425	carcass search	90-m cleared plot, daily	intact	no
09/15/2020	Philadelphia vireo	61	403	carcass search	90-m cleared plot	scavenged	yes
09/15/2020	horned lark	13	412	carcass search	90-m cleared plot, daily	intact	no
09/15/2020	unidentified passerine	30	412	carcass search**	90-m cleared plot, daily	scavenged	no
09/15/2020	horned lark	55	420	carcass search	90-m cleared plot	scavenged	yes
09/15/2020	Blackburnian warbler	70	425	carcass search	90-m cleared plot, daily	scavenged	no
09/15/2020	Nashville warbler	70	425	carcass search	90-m cleared plot, daily	scavenged	no
09/16/2020	red-eyed vireo	22	415	carcass search	90-m cleared plot	scavenged	yes
09/16/2020	killdeer	68	425	carcass search	90-m cleared plot, daily	feather spot	no
09/16/2020	red-eyed vireo	36	427	carcass search	90-m cleared plot	scavenged	yes
09/17/2020	Philadelphia vireo	18	421	carcass search	90-m cleared plot	intact	yes

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<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/17/2020	red-eyed vireo	31	421	carcass search	90-m cleared plot	scavenged	yes
09/17/2020	horned lark	85	425	carcass search	90-m cleared plot, daily	feather spot	no
09/18/2020	horned lark	14	303	carcass search	100-m road and pad	dismembered	no
09/18/2020	horned lark	69	409	carcass search	90-m cleared plot	scavenged	yes
09/18/2020	Cape May warbler	12	412	carcass search	90-m cleared plot, daily	intact	no
09/19/2020	unidentified vireo	65	344	carcass search	70-m uncleared plot	scavenged	yes
09/19/2020	Tennessee warbler	78	425	carcass search	90-m cleared plot, daily	scavenged	no
09/20/2020	American redstart	31	413	carcass search	90-m cleared plot, daily	scavenged	no
09/21/2020	unidentified warbler	16	310	carcass search	70-m uncleared plot	dismembered	yes
09/21/2020	red-eyed vireo	24	323	carcass search	70-m uncleared plot	scavenged	yes
09/21/2020	red-eyed vireo	68	336	carcass search	70-m uncleared plot	intact	yes
09/21/2020	red-breasted nuthatch	59	406	carcass search	90-m cleared plot	intact	yes
09/22/2020	red-breasted nuthatch	65	412	carcass search	90-m cleared plot, daily	scavenged	no
09/22/2020	red-eyed vireo	75	415	carcass search	90-m cleared plot	scavenged	yes
09/22/2020	pine warbler	53	421	carcass search	90-m cleared plot	scavenged	yes
09/22/2020	red-eyed vireo	52	427	carcass search	90-m cleared plot	scavenged	yes
09/23/2020	American goldfinch	81	425	carcass search	90-m cleared plot, daily	dismembered	no
09/23/2020	northern parula	74	425	carcass search	90-m cleared plot, daily	intact	no
09/24/2020	horned lark	4	312	carcass search	100-m road and pad	dismembered	no
09/24/2020	unidentified passerine	24	323	carcass search	70-m uncleared plot	feather spot	yes
09/24/2020	unidentified warbler	50	403	carcass search	90-m cleared plot	scavenged	yes
09/24/2020	horned lark	33	413	carcass search	90-m cleared plot, daily	intact	no
09/25/2020	prothonotary warbler	11	233	carcass search	70-m uncleared plot	scavenged	yes
09/25/2020	red-eyed vireo	79	427	carcass search	90-m cleared plot	feather spot	yes
09/26/2020	brown-headed cowbird	52	413	carcass search	90-m cleared plot, daily	intact	no
09/27/2020	Blackburnian warbler	21	404	carcass search	100-m road and pad	intact	no
09/27/2020	horned lark	32	410	carcass search	90-m cleared plot	injured	yes
09/27/2020	northern parula	77	410	carcass search	90-m cleared plot	scavenged	yes
09/27/2020	American goldfinch	5	422	incidental**	90-m cleared plot	intact	no
09/29/2020	horned lark	4	320	carcass search	100-m road and pad	intact	no
09/29/2020	pine warbler	47	403	incidental	90-m cleared plot	intact	no
09/29/2020	red-eyed vireo	65	427	incidental	90-m cleared plot	intact	no

**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
09/30/2020	bay-breasted warbler	24	217	carcass search	100-m road and pad	scavenged	no
09/30/2020	unidentified passerine	72	341	carcass search**	70-m uncleared plot	feather spot	yes
09/30/2020	horned lark	44	344	carcass search	70-m uncleared plot	intact	yes
09/30/2020	northern parula	73	409	carcass search	90-m cleared plot	injured	yes
10/01/2020	unidentified vireo	52	225	carcass search	70-m uncleared plot	scavenged	yes
10/01/2020	European starling	38	312	carcass search	100-m road and pad	dismembered	no
10/01/2020	horned lark	4	312	carcass search	100-m road and pad	scavenged	no
10/03/2020	unidentified passerine	62	403	carcass search	90-m cleared plot	dismembered	yes
10/04/2020	unidentified warbler	50	421	carcass search	90-m cleared plot	scavenged	yes
10/05/2020	tree swallow	29	413	carcass search	90-m cleared plot, daily	intact	no
10/05/2020	horned lark	81	425	carcass search	90-m cleared plot, daily	dismembered	no
10/06/2020	golden-crowned kinglet	57	337	carcass search	70-m uncleared plot	injured	yes
10/06/2020	red-eyed vireo	72	419	carcass search	90-m cleared plot, daily	scavenged	no
10/06/2020	yellow-breasted chat	65	419	carcass search	90-m cleared plot, daily	intact	no
10/07/2020	Blackburnian warbler	131	411	carcass search**	100-m road and pad	scavenged	no
10/07/2020	horned lark	50	414	carcass search	90-m cleared plot	scavenged	yes
10/07/2020	ruby-throated hummingbird	47	415	carcass search	90-m cleared plot	scavenged	yes
10/07/2020	unidentified passerine	9	427	carcass search	90-m cleared plot	dismembered	yes
10/07/2020	unidentified passerine	7	427	carcass search	90-m cleared plot	dismembered	yes
10/09/2020	golden-crowned kinglet	24	332	carcass search	100-m road and pad	intact	no
10/09/2020	ruby-crowned kinglet	70	409	carcass search	90-m cleared plot	scavenged	yes
10/11/2020	golden-crowned kinglet	71	425	carcass search	90-m cleared plot, daily	intact	no
10/11/2020	brown creeper	95	431	carcass search	100-m road and pad	intact	no
10/12/2020	blue jay	83	207	carcass search**	100-m road and pad	intact	no
10/12/2020	unidentified sparrow	20	324	carcass search	70-m uncleared plot	scavenged	yes
10/12/2020	horned lark	42	348	carcass search	70-m uncleared plot	injured	yes
10/12/2020	unidentified passerine	58	406	carcass search	90-m cleared plot	dismembered	yes
10/12/2020	brown creeper	53	409	carcass search	90-m cleared plot	intact	yes
10/12/2020	unidentified passerine	85	410	carcass search	90-m cleared plot	dismembered	yes
10/12/2020	unidentified warbler	77	420	carcass search	90-m cleared plot	scavenged	yes
10/12/2020	golden-crowned kinglet	49	425	carcass search	90-m cleared plot, daily	intact	no
10/12/2020	ruby-crowned kinglet	40	425	carcass search**	90-m cleared plot, daily	intact	no

**Appendix A. Carcasses found at the Timber Road Wind Farm, Paulding County, Ohio, from August 1 – October 15, 2020.**

<b>Found Date</b>	<b>Common Name</b>	<b>Distance from Turbine (m)</b>	<b>Search Location</b>	<b>Search Type</b>	<b>Search Area Type</b>	<b>Physical Condition</b>	<b>Dog Aided Search</b>
10/13/2020	red-breasted nuthatch	70	247	carcass search	100-m road and pad	intact	no
10/13/2020	horned lark	34	320	carcass search	100-m road and pad	scavenged	no
10/13/2020	horned lark	59	414	incidental	90-m cleared plot	dismembered	yes
10/14/2020	golden-crowned kinglet	65	412	carcass search	90-m cleared plot, daily	scavenged	no
10/14/2020	golden-crowned kinglet	64	413	carcass search	90-m cleared plot, daily	intact	no
10/14/2020	brown creeper	61	425	carcass search	90-m cleared plot, daily	intact	no
10/15/2020	golden-crowned kinglet	7	329	carcass search	100-m road and pad	scavenged	no
10/15/2020	unidentified passerine	47	420	carcass search	90-m cleared plot	scavenged	yes
10/15/2020	unidentified warbler	68	420	carcass search	90-m cleared plot	dismembered	yes

\*\* Carcass was found outside the search area  
m = meters

## **Appendix B. Additional Information for the Evidence of Absence Analysis**

EoA, v2.0.7 - Multiple Class Module

Edit Help

Options

Overall

Estimate total mortality (M)

Credibility level (1 -  $\alpha$ )

One-sided CI (M\*)

Two-sided CI

Individual classes

Calculate g parameters from monitoring data

Enter g parameters manually

Actions

Add class Calculate Clear Close

Class	dwp	X	Ba	Bb	$\hat{g}$	95% CI
unsearched	0.681	0	---	---	0	[0, 0]
road/pad::none::searched	0.0336	0	8.94	24.49	0.2674	[0.134, 0.427]
road/pad::none::searched	0.0147	0	45.24	12.08	0.7893	[0.676, 0.884]
road/pad::dog::searched	0.0295	0	73.7	18.19	0.802	[0.715, 0.876]
road/pad::uncleared::dog::searched	0.066	0	23.93	15.91	0.6007	[0.447, 0.745]
road/pad::none::searched	0.0418	0	8.81	23.85	0.2697	[0.135, 0.432]
road/pad::none::searched	0.0147	0	46.27	12.32	0.7897	[0.678, 0.883]
road/pad::dog::searched	0.0367	0	73.12	17.63	0.8057	[0.719, 0.88]
road/pad::uncleared::dog::searched	0.082	0	23.93	15.91	0.6023	[0.448, 0.747]

Estimated detection probability (g) for multiple classes

Results for full site

Detection probability

Estimated  $g = 0.186$ , 95% CI = [0.168, 0.204]

Fitted beta distribution parameters for estimated  $g$ :  $Ba = 323.5065$ ,  $Bb = 1418.2458$

Mortality

Test of assumed relative weights ( $\rho$ )

Class	Assumed	Fitted (95% CI)
unsearched	0.681	NA
fall.1::road/pad::none::searched	0.034	[0.001, 0.239]
fall.1::cleared::none::searched	0.015	[0.000, 0.130]
fall.1::cleared::dog::searched	0.029	[0.000, 0.147]
fall.1::uncleared::dog::searched	0.066	[0.000, 0.171]
fall.2::road/pad::none::searched	0.042	[0.001, 0.236]
fall.2::cleared::none::searched	0.015	[0.000, 0.122]
fall.2::cleared::dog::searched	0.037	[0.000, 0.137]
fall.2::uncleared::dog::searched	0.082	[0.000, 0.168]

$p = 1$  for likelihood ratio test of  $H_0$ : assumed  $\rho = \text{true } \rho$

Appendix B1. Inputs and outputs from the Evidence of Absence Graphical User Interface Multiple Class Module for Indiana bat and northern long-eared bat. Inputs are based on values reported in the main text.



EoA, v2.0.7 - Multiple Years Module

Edit Help

Past monitoring and operations data

Year	$\rho$	X	Ba	Bb	$\hat{g}$	95% CI
2020	1	1	323.42	1417.48	0.1858	[0.168, 0.204]

Options

Fatalities

Estimate M    Credibility level (1 -  $\alpha$ )

Total mortality     One-sided CI (M\*)  
 Two-sided CI

Project parameters

Total years in project   
Mortality threshold (T)

Track past mortality

Projection of future mortality and estimates

Future monitoring and operations

g and  $\rho$  unchanged from most recent year  
 g and  $\rho$  constant, different from most recent year  
g  95% CI:    $\rho$    
 g and  $\rho$  vary among future years

Average Rate

Estimate average annual fatality rate ( $\lambda$ )

Annual rate threshold ( $\tau$ )   
 Credibility level for CI (1 -  $\alpha$ )   
 Short-term rate ( $\lambda > \tau$ )    Term:   $\alpha$    
 Reversion test ( $\lambda < \rho \tau$ )     $\rho$    $\alpha$

Actions

---

Mortality over 1 years

Summary statistics for total mortality through 1 years

-----

Results

M\* = 6 for 1 -  $\alpha$  = 0.5, i.e., P(M ≤ 6) ≥ 50%

Estimated overall detection probability: g = 0.186, 95% CI = [0.168, 0.204]  
Ba = 323.42, Bb = 1417.5

Estimated baseline fatality rate: lambda = 8.103, 95% CI = [0.581, 25.3]

Appendix B2. Inputs and outputs from the Evidence of Absence Graphical User Interface Multiple Years module for the M\* calculation for Indiana bat.

EoA, v2.0.7 - Multiple Years Module

Edit Help

Past monitoring and operations data

Year	$\rho$	X	Ba	Bb	$\hat{g}$	95% CI
2020	1	1	323.42	1417.48	0.1858	[0.168, 0.204]

Options

Fatalities

Estimate M Credibility level (1 -  $\alpha$ )

Total mortality  One-sided CI (M\*)

Two-sided CI

Project parameters

Total years in project

Mortality threshold (T)

Track past mortality

Projection of future mortality and estimates

Future monitoring and operations

g and  $\rho$  unchanged from most recent year

g and  $\rho$  constant, different from most recent year

g  95% CI:    $\rho$

g and  $\rho$  vary among future years

Average Rate

Estimate average annual fatality rate ( $\lambda$ )

Annual rate threshold ( $\tau$ )

Credibility level for CI (1 -  $\alpha$ )

Short-term rate ( $\lambda > \tau$ ) Term:   $\alpha$

Reversion test ( $\lambda < \rho \tau$ )  $\rho$    $\alpha$

Actions

---

Short-term Trigger

Short-term trigger: Test of average fatality rate (lambda) over 1 years

Years: 2020 - 2020

=====

Results

Estimated overall detection probability: g = 0.186, 95% CI = [0.168, 0.204]

Ba = 323.42, Bb = 1417.5

Estimated annual fatality rate over the past 1 years: lambda = 8.103, 95% CI = [0.581, 25.3]

P(lambda > 10.8) = 0.2614

Compliance: Cannot infer lambda > 10.8 with 90% credibility

Appendix B3. Inputs and outputs from the Evidence of Absence Graphical User Interface Multiple Years module for the short-term trigger test for Indiana bat.

EoA, v2.0.7 - Multiple Years Module

Edit Help

Past monitoring and operations data

Year	$\rho$	X	Ba	Bb	$\hat{g}$	95% CI
2020	1	0	323.42	1417.48	0.1858	[0.168, 0.204]

**Options**

**Fatalities**

Estimate M    Credibility level (1 -  $\alpha$ )

Total mortality     One-sided CI (M\*)  
 Two-sided CI

**Project parameters**

Total years in project   
Mortality threshold (T)

Track past mortality

Projection of future mortality and estimates

Future monitoring and operations

g and p unchanged from most recent year  
 g and p constant, different from most recent year  
g  95% CI:    $\rho$    
 g and p vary among future years

**Average Rate**

Estimate average annual fatality rate ( $\lambda$ )

Annual rate threshold ( $\tau$ )   
 Credibility level for CI (1 -  $\alpha$ )   
 Short-term rate ( $\lambda > \tau$ )    Term:   $\alpha$    
 Reversion test ( $\lambda < \rho \tau$ )     $\rho$    $\alpha$

**Actions**

---

Mortality over 1 years

Summary statistics for total mortality through 1 years

-----

Results

M\* = 1 for 1 -  $\alpha$  = 0.5, i.e., P(M ≤ 1) ≥ 50%

Estimated overall detection probability: g = 0.186, 95% CI = [0.168, 0.204]  
Ba = 323.42, Bb = 1417.5

Estimated baseline fatality rate: lambda = 2.701, 95% CI = [0.00267, 13.6]

Appendix B4. Inputs and outputs from the Evidence of Absence Graphical User Interface Multiple Years module for the M\* calculation for northern long-eared bat.

EoA, v2.0.7 - Multiple Years Module

Edit Help

Past monitoring and operations data

Year	p	X	Ba	Bb	ĝ	95% CI
2020	1	0	323.42	1417.44	0.1858	[0.168, 0.204]

Options

Fatalities

Estimate M Credibility level (1 -  $\alpha$ )

Total mortality  One-sided CI (M\*)

Two-sided CI

Project parameters

Total years in project

Mortality threshold (T)

Track past mortality

Projection of future mortality and estimates

Future monitoring and operations

g and p unchanged from most recent year

g and p constant, different from most recent year

g  95% CI:   p

g and p vary among future years

Average Rate

Estimate average annual fatality rate ( $\lambda$ )

Annual rate threshold ( $\tau$ )

Credibility level for CI (1 -  $\alpha$ )

Short-term rate ( $\lambda > \tau$ ) Term:   $\alpha$

Reversion test ( $\lambda < \rho \tau$ )  $\rho$    $\alpha$

Actions

---

Short-term Trigger

Short-term trigger: Test of average fatality rate ( $\lambda$ ) over 1 years

Years: 2020 - 2020

=====

Results

Estimated overall detection probability:  $g = 0.186$ , 95% CI = [0.168, 0.204]

Ba = 323.42, Bb = 1417.5

Estimated annual fatality rate over the past 1 years:  $\lambda = 2.701$ , 95% CI = [0.00267, 13.6]

$P(\lambda > 2.5) = 0.3357$

Compliance: Cannot infer  $\lambda > 2.5$  with 90% credibility

Appendix B5. Inputs and outputs from the Evidence of Absence Graphical User Interface Multiple Years module for the short-term trigger test for northern long-eared bat.

## **Appendix C. Evidence of Absence Multiple Class Module Inputs**

**Appendix C1. Evidence of Absence Inputs for the Multiple Class Module for Data Collected at the Timber Road Wind Farm, from August 1 – October 15, 2020.**

<b>Class</b>	<b>X*</b>	<b>dwp</b>	<b>Ba**</b>	<b>Bb</b>
unsearched	0	0.68094	—	—
fall.1::road/pad::none::searched	0	0.03362	8.94	24.49
fall.1::cleared::none::searched	0	0.01475	45.24	12.08
fall.1::cleared::dog::searched	0	0.02951	73.7	18.19
fall.1::uncleared::dog::searched	0	0.06603	23.93	15.91
fall.2::road/pad::none::searched	0	0.04178	8.81	23.85
fall.2::cleared::none::searched	0	0.01467	46.27	12.32
fall.2::cleared::dog::searched	0	0.03666	73.12	17.63
fall.2::uncleared::dog::searched	0	0.08204	23.93	15.8

\*Carcass counts are not included in the Multiple Class Module because it is used to combine detection probability distributions. Carcass counts are used in the Multiple Years Module to calculate ITP compliance metrics.

X = number of carcasses (all zero because carcass finds are included only in the Multiple Years Module); dwp = stratum weight; Ba = first parameter for Beta distribution; Bb = second parameter for Beta distribution.

\*\*The Ba and Bb parameters are indicated as “—” to match the EoA Graphical User Interface inputs for unsearched area. The values of Ba = 0.01 and Bb = 1000 reported in the main text generate similar results, a detection probability of approximately 0.

**Appendix C2. Evidence of Absence Stratum-Specific Detection Probabilities for Data Collected at Timber Road Wind Farm, August 1 – October 15, 2020.**

<b>Class</b>	<b>Median Detection Probability for Searched Time and Area</b>	<b>Median Weighted Detection Probability (Contribution to Overall g)</b>
fall.1::road/pad::none::searched	0.263	0.009
fall.1::cleared::none::searched	0.793	0.012
fall.1::cleared plot::dog::searched	0.804	0.024
fall.1::uncleared::dog::searched	0.602	0.040
fall.2::road/pad::none::searched	0.265	0.011
fall.2::cleared plot::none::searched	0.793	0.012
fall.2::cleared plot::dog::searched	0.808	0.030
fall.2::uncleared::dog::searched	0.604	0.050