

**2016 Bat Mist-netting Survey for the  
North Deuel Wind Energy Project  
Deuel County, South Dakota**

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**Final Report  
July 22 – August 15, 2016**



**Prepared for:**

**Deuel Wind Energy LLC**

One South Wacker Drive, Suite 1800  
Chicago, Illinois 60606

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**Prepared by:**

**Kristen Chodachek, Rebecca Schmitt, and Cara Meinke**

Western EcoSystems Technology, Inc.  
4007 State Street, Suite 109  
Bismarck, North Dakota 58503

**November 4, 2016**



## STUDY PARTICIPANTS

### Western EcoSystems Technology, Inc.

Kristen Chodachek	Project Manager
Rebecca Schmitt	Report Writer
Cara Meinke	Senior Review
Sofia Agudelo	Ecologist/Peer Review
Ben Hale	Bat Biologist/Peer Review
Larisa Bishop-Boros	Bat Biologist Review
Eve Amour	Technical editor
Terri Thorn	GIS Analyst

### Jackson Group

Kathryn Cunningham	Permitted Bat Biologist
Rex Medlin	Permitted Bat Biologist

## REPORT REFERENCE

Chodachek, K., R. Schmitt, and C. Meinke. 2016. 2016 Bat Mist-netting Survey for the North Deuel County Wind Energy Project, Deuel County, South Dakota. Draft Report: July 22 – August 15, 2016. Prepared for Deuel Wind Energy LLC, Chicago, Illinois. Prepared by Western EcoSystems Technology, Inc. (WEST), Bismarck, North Dakota. 6 pages + appendices.

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## I. INTRODUCTION

In accordance with Condition K of Federal Permits TE102292-11, TE48049B-0, and TE14820-3 (Appendices A and B), Western EcoSystems Technology, Inc. (WEST) is providing the following mist-netting study report for the North Deuel County Wind Energy Project (Project) in Deuel County, South Dakota. Mist-netting was conducted in accordance with the study plan approved by the U.S. Fish and Wildlife Service (USFWS) on July 18, 2016 (WEST 2016). The mist-netting study was conducted from July 22 – August 15, 2016.

Figure 1 shows the USFWS-approved mist-net sites and capture locations for the Project relative to potential northern long-eared bat (*Myotis septentrionalis*) summer habitat based on the 2011 National Land Cover Data (Homer et al. 2015). The approved study plan meets guidelines for threatened or endangered bat presence/absence surveys (WEST 2016).

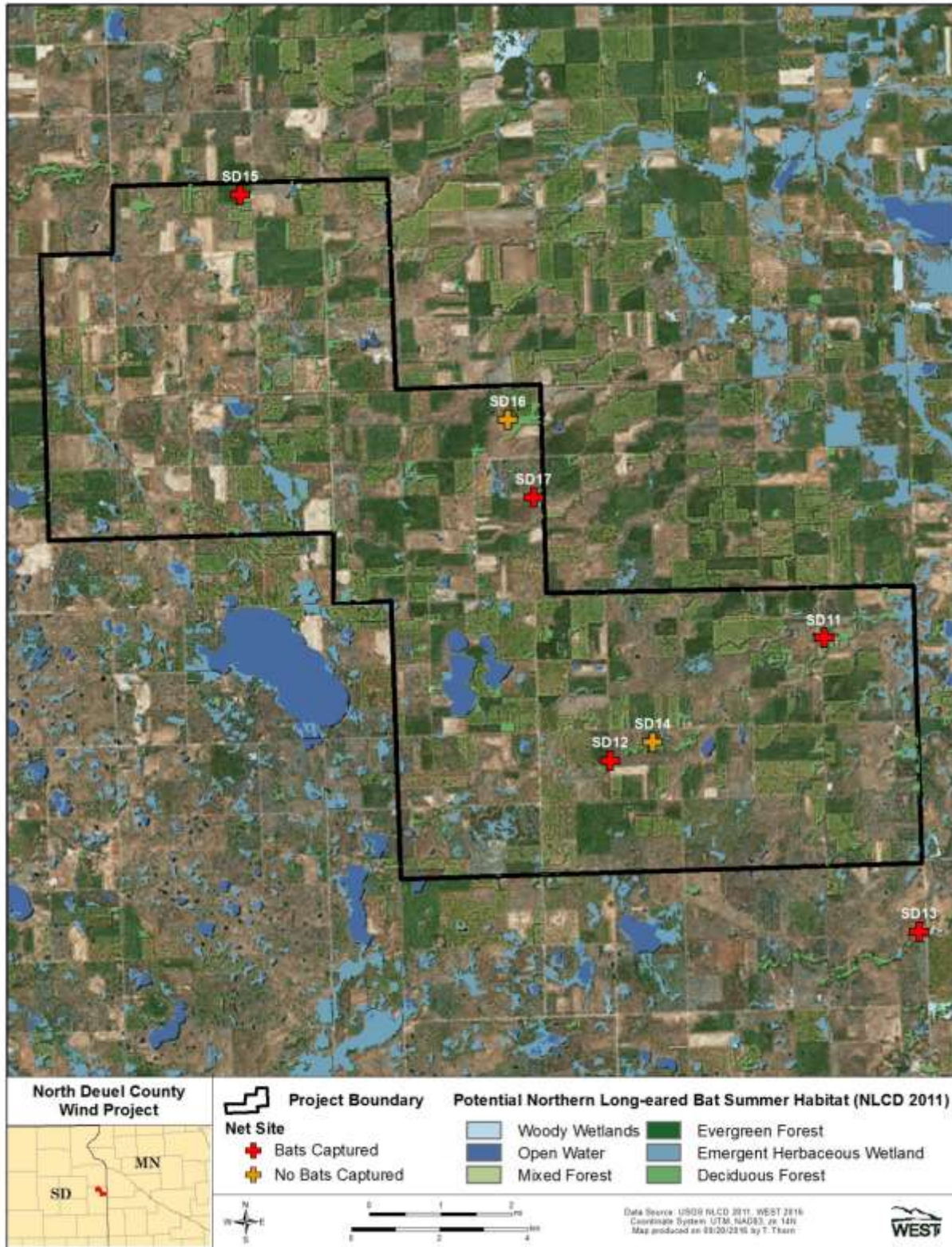


Figure 1. U.S. Fish and Wildlife Service-approved mist-net sites and capture locations for the North Deuel County Wind Energy Project, Deuel County, South Dakota, July 22, 2016 – August 15, 2016.

## **II. REQUIRED INFORMATION**

1. Table 1 provides the date, time, geographic location (North American Datum 1983, Universal Transverse Mercator Zone 14 North), species, age, sex, weight, band number, reproductive condition, and whether the bat was tracked using telemetry for all bats encountered.

**Table 1. Date, time, geographic location, species, age, sex, weight, band number, reproductive condition, and telemetry tracking data for mist-netting surveys conducted at the North Deuel County Wind Energy Project, Deuel County, South Dakota, from July 22, 2016 – August 15, 2016.**

Date	Time	Geographic Location <sup>1</sup>	Species <sup>2</sup>	Age <sup>3</sup>	Sex <sup>4</sup>	Weight (ounces)	Band Number <sup>5</sup>	Reproductive Condition <sup>6</sup>	Tracked using Telemetry <sup>7</sup>
8/4/2016	23:06	SD11, 699206, 4972697	EPFU	A	F	0.63	N/A	NR	N
8/5/2016	01:56	SD11, 699206, 4972697	LABO	A	F	0.53	N/A	NR	N
8/6/2016	22:50	SD12, 694340, 4969914	LABO	A	M	0.35	N/A	SC	N
8/6/2016	22:30	SD12, 694330, 4969988	LABO	A	M	0.35	N/A	SC	N
8/7/2016	00:05	SD12, 694330, 4969988	LACI	A	M	0.71	N/A	SC	N
8/7/2016	22:15	SD12, 694330, 4969988	LABO	-	-	-	N/A	-	N
8/7/2016	01:05	SD13, 701350, 4966168	EPFU	A	F	0.74	N/A	NR	N
8/7/2016	00:50	SD13, 701423, 4965946	LABO	-	M	0.37	N/A	NR	N
8/8/2016	23:10	SD13, 701350, 4966168	EPFU	A	F	0.81	N/A	PL	N
8/8/2016	21:53	SD13, 701417, 4965948	LABO	A	M	0.35	N/A	NR	N
8/9/2016	00:01	SD13, 701417, 4965948	LABO	A	F	0.53	N/A	NR	N
8/10/2016	00:04	SD15, 685956, 4982694	LABO	A	-	-	N/A	-	N
8/15/2016	00:45	SD17, 692572, 4975854	EPFU	A	F	0.71	N/A	PL	N

<sup>1</sup> Geographic location in UTM using North American Datum (NAD) 83, Zone 14

<sup>2</sup> EPFU=big brown bat, LABO=eastern red bat, LACI=hoary bat

<sup>3</sup> A=adult, J=juvenile, - = no data collected

<sup>4</sup> F=female, M=male; - = no data collected

<sup>5</sup> N/A = not banded

<sup>6</sup> For females: NR = non-reproductive, P = pregnant, NOP = not obviously pregnant, L= lactating, PL = post-lactating. For males: NR = non-reproductive, SC = scrotal; - = no data collected

<sup>7</sup> Y = yes; N = no

2. Locations surveyed where no bats were encountered include the following:
  - a. Site SD14 (see “No Bat Captures” in Figure 1). Topography was rolling hills; habitat was unused cropland and grassland with forest. Nets were placed along a shelterbelt edge, in a forest shelterbelt corridor, and across a stream.
  - b. Site SD16 (see “No Bat Captures” in Figure 1). Topography was flat; habitat was agriculture with forest shelterbelt. Nets were placed along a forest shelterbelt edge and in forest shelterbelt corridors.
3. No bats were banded (Table 1).
4. Information on injuries and/or mortalities and disposition of specimens is provided below:
  - a. No bats were injured or killed during mist netting. No bats appeared to have been injured prior to being caught.
5. No northern long-eared bats were netted. Therefore, no telemetry was conducted and no roost trees or bat colonies were located.
6. There are no separate reports and/or publications from work conducted under the authority of Federal Permits TE102292-11, TE48049B-0, and TE148282-3 (Appendices A and B).
7. & 8. Completed data collection forms, as found in the USFWS *2016 Range-Wide Indiana Bat Summer Survey Guidelines* (USFWS Guidelines; Appendix B; USFWS 2016), cited in Condition M of Federal Permits TE102292-11, TE48049B-0, and TE148282-3 included in Appendix B. Data have been submitted for all bats captured and include the data requested in the species-specific data form provided by the USFWS (i.e., Indiana Bat Survey and Banding Data forms and the data collection forms found in the USFWS Guidelines [USFWS 2016] cited in Condition M of Federal Permits TE102292-11, TE48049B-0, and TE148282-3; Appendix B). No photographs of federally listed species are provided as none were captured.
8. See 7 & 8 above.
9. Copies of all site-specific authorization letters required under Condition M.8 of Federal Permits TE102292-11, TE48049B-0, and TE148282-3 are provided in Appendix A.



### **III. LITERATURE CITED**

- Homer, C. G., J. A. Dewitz, L. Yang, S. Jin, P. Danielson, G. Xian, J. Coulston, N. D. Herold, J. D. Wickham, and K. Megown. 2015. Completion of the 2011 National Land Cover Database for the Conterminous United States-Representing a Decade of Land Cover Change Information. *Photogrammetric Engineering and Remote Sensing* 81(5): 345-354. Available online from: <http://www.mrlc.gov/nlcd2011.php>
- US Fish and Wildlife Service (USFWS). 2016. 2016 Rangewide Indiana Bat Summer Survey Guidelines. Updated April 11, 2016. Available online at: <http://www.fws.gov/midwest/endangered/mammals/inba/surveys/pdf/2016IndianaBatSummerSurveyGuidelines11April2016.pdf>
- US Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI). 2014. NWI Data Mapper. Updated May 1, 2014. Fort Snelling, Minnesota. Wetlands Mapper: <http://www.fws.gov/wetlands/Data/Mapper.html>
- Western EcoSystems Technology, Inc. (WEST). 2016. Bat Mist-netting Work Plan for the Deuel County Wind Energy Project. Deuel County, South Dakota. Prepared for Deuel Wind Energy LLC, Chicago, Illinois. Prepared by Western EcoSystems Technology, Inc. (WEST), Bismarck, North Dakota. July 8, 2016.

**Appendix A. Copies of All Site-Specific Authorization Letters Required under Condition F  
of Federal Permit Numbers TE102292-11, TE48049B-0, TE148282-3**



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Ecological Services  
420 South Garfield Avenue, Suite 400  
Pierre, South Dakota 57501-5408



June 29, 2016

Mr. Jeremy Jackson  
dba Jackson Environmental Consulting Services  
1586 Boonesborough Road  
Richmond, KY 40475

Dear Mr. Jackson,

This letter provides your site specific authorization per condition F of Federal Endangered Species Permit No. TE102292-10. Under this condition you are to notify the U.S. Fish and Wildlife Service (Service) Field Supervisor for the state in which activities are proposed to occur at least 15 days prior to conducting any activities.

The information required under condition F was provided to the Service in an attachment to an email message dated June 28, 2016. In summary, surveys for the northern long-eared bat (*Myotis septentrionalis*) will be conducted for the Jackson Group at a proposed wind farm site in Deuel County, South Dakota and will include emergence surveys, mist-netting, handling to collect physiological measurements, banding, transmitter attachment to designated individuals, hair collection, and release. Activities will take place between approximately May 15, 2016 and August 15, 2016. All activities will take place as part of ongoing studies for a proposed wind farm. All survey activities should conform to the conditions of your Service permit TE102292-10. Dan Cox and Rex Medlin are also authorized under this permit to conduct activities.

Please report your data from this survey to the USFWS South Dakota Field Office utilizing the 2016 Bat Reporting spreadsheets for Region 6, to fulfill condition M of your permit. The spreadsheet and instructions can be found on the Service's website <http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>.

As stated in your permit, your concurrence letter must be carried with this permit to authorize site-specific activities. If you have any questions, please feel free to call Charlene Bessken at 605-224-8693.

Sincerely,

Scott V. Larson  
Field Supervisor



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Ecological Services  
420 South Garfield Avenue, Suite 400  
Pierre, South Dakota 57501-5408



June 29, 2016

Ms. Kathryn Cunningham  
305 Lindenhurst Drive Apt 3102  
Lexinton, KY 40509

Dear Ms. Cunningham,

This letter provides your site specific authorization per condition F of Federal Endangered Species Permit No. TE48049B-0. Under this condition you are to notify the U.S. Fish and Wildlife Service (Service) Field Supervisor for the state in which activities are proposed to occur at least 15 days prior to conducting any activities.

The information required under condition F was provided to the Service in an attachment to an email message dated June 28, 2016. In summary, surveys for the northern long-eared bat (*Myotis septentrionalis*) will be conducted for the Jackson Group at a proposed wind farm site in Deuel County, South Dakota and will include emergence surveys, mist-netting, handling to collect physiological measurements, banding, transmitter attachment to designated individuals, hair collection, and release. Activities will take place between approximately May 15, 2016 and August 15, 2016. All activities will take place as part of ongoing studies for a proposed wind farm. All survey activities should conform to the conditions of your Service permit TE48049B-0.

Please report your data from this survey to the USFWS South Dakota Field Office utilizing the 2016 Bat Reporting spreadsheets for Region 6, to fulfill condition M of your permit. The spreadsheet and instructions can be found on the Service's website <http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>.

As stated in your permit, your concurrence letter must be carried with this permit to authorize site-specific activities. If you have any questions, please feel free to call Charlene Bessen at 605-224-8693.

Sincerely,

Scott V. Larson  
Field Supervisor



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Ecological Services  
420 South Garfield Avenue, Suite 400  
Pierre, South Dakota 57501-5408



June 29, 2016

Mr. Jack D. Wilhide  
DBA Jackson Group  
3945 Simpson Lane  
Richmond, KY 40475

Dear Mr. Wilhide,

This letter provides your site specific authorization per condition F of Federal Endangered Species Permit No. TE14828-3. Under this condition you are to notify the U.S. Fish and Wildlife Service (Service) Field Supervisor for the state in which activities are proposed to occur at least 15 days prior to conducting any activities.

The information required under condition F was provided to the Service in an attachment to an email message dated June 28, 2016. In summary, surveys for the northern long-eared bat (*Myotis septentrionalis*) will be conducted for the Jackson Group at a proposed wind farm site in Deuel County, South Dakota and will include emergence surveys, mist-netting, handling to collect physiological measurements, banding, transmitter attachment to designated individuals, hair collection, and release. Activities will take place between approximately May 15, 2016 and August 15, 2016. All activities will take place as part of ongoing studies for a proposed wind farm. All survey activities should conform to the conditions of your Service permit TE14828-3.

Please report your data from this survey to the USFWS South Dakota Field Office utilizing the 2016 Bat Reporting spreadsheets for Region 6, to fulfill condition M of your permit. The spreadsheet and instructions can be found on the Service's website <http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>.

As stated in your permit, your concurrence letter must be carried with this permit to authorize site-specific activities. If you have any questions, please feel free to call Charlene Bessken at 605-224-8693.

Sincerely,

Scott V. Larson  
Field Supervisor

**Appendix B. Copy of State Permit Number 60 and Federal Permit Numbers TE102292-11,  
TE48049B-0, and TE148282-3**



# 2016 FREE SCIENTIFIC COLLECTOR'S PERMIT

State of South Dakota  
Department of Game, Fish, and Parks

To Whom It May Concern

License Number 60

This Permit Authorizes:

Jeremy Jackson, Rex Medlin, JD Wilhide, Kathryn Cunningham, and Jonathan Hootman  
NAME

3945 Simpson Lane  
ADDRESS

Richmond KY 40475  
CITY STATE ZIP

Collecting for (Institution or Association):

Jackson Environmental Consulting Services  
NAME

3945 Simpson Lane  
ADDRESS

Richmond KY 40475  
CITY STATE ZIP

To take, possess, transport, collect, or study for scientific purposes the following wild animals in such manner and under such conditions set forth below:

COMMON NAME & SPECIES	NUMBER	VICINITY OF COLLECTION
1. <u>Northern long-eared bat (<i>Myotis septentrionalis</i>)</u>	As needed	Deuel County, SD
2. <u>Other non-target SD bat species</u>		

\*\* FOR ANY MONITORED SPECIES, PLEASE LIST SPECIFIC COLLECTION LOCATION(S).

Prior to collecting any bat species, permittees MUST contact the Natural Heritage Program (605-773-4229).

**DISPOSITION OF SPECIMENS AND/OR SPECIAL CONDITIONS:** Permittees may sample for the aforementioned species using mist nets and harp traps. Non-target bat species will be measured and released within 15 minutes of capture. Captured Northern Long-eared Bats may be held up to 30 minutes to attach radio-transmitters and forearm bands. Permittees will follow the USFWS White Nose Syndrome decontamination protocol and SD Game, Fish and Parks Bat Sampling and Collection Protocol Guidelines for all capture efforts. Northern long-eared bat collection, handling, and tagging activities are as authorized under permittees' Federal Endangered Sp. Recovery Permits TE102292-11, TE148282-3, TE48049B-0, and TE56430B-0.

**NOTICE:** A copy of this permit must be carried when exercising its authority. Collecting that may be authorized under this permit does not relieve the permit holder from compliance with any Federal law or regulation. \*\*\*\*\* The taking of any federal or state threatened or endangered species is prohibited, unless specifically authorized by a state or federal permit. Please inform this office (605-773-4345) if you incidentally take any of these species. \*\*\*\*\* The permit holder MUST notify the local Conservation Officer prior to engaging in any collections. The enclosed collection report forms must be submitted to the Department of Game, Fish, and Parks, 523 E. Capitol-Foss Bldg., Pierre, SD 57501 no later than January 31, 2017. This permit is granted under the provisions of SDCL 41-6-32. Permit will expire on the 31st day of December for the year issued, unless a specific collection period is specified.

Dated at Pierre, South Dakota this 27<sup>th</sup> day of June, 2016.

By Casey Heimerl  
South Dakota Department of Game, Fish, and Parks



DEPARTMENT OF THE INTERIOR  
 U.S. FISH & WILDLIFE SERVICE  
 Ecological Services Permit Office  
 1875 Century Boulevard  
 Atlanta, GA 30345  
 permitsR4ES@fws.gov

**FEDERAL FISH AND WILDLIFE PERMIT**

1. PERMITTEE

JEREMY LYNN JACKSON  
 dba JACKSON ENVIRONMENTAL CONSULTING SERVICES  
 1586 BOONESBOROUGH ROAD  
 RICHMOND, KY 40475  
 U.S.A.

2. AUTHORITY-STATUTES  
 16 USC 1539(a)

REGULATIONS  
 50 CFR 17.22

50 CFR 13

3. NUMBER **TE102292-11** AMENDMENT

4. RENEWABLE  
 YES  
 NO

5. MAY COPY  
 YES  
 NO

6. EFFECTIVE  
 06/02/2016

7. EXPIRES  
 03/03/2018

8. NAME AND TITLE OF PRINCIPAL OFFICER: *(If it is a business)*

9. TYPE OF PERMIT  
 NATIVE ENDANGERED SP. RECOVERY - E WILDLIFE

10. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED

Location: Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, West Virginia, Wisconsin, and Wyoming.

11. CONDITIONS AND AUTHORIZATIONS

A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #2 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY, OR RENEWAL, OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.

B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL, TRIBAL, OR OTHER FEDERAL LAW.

C. VALID FOR USE BY PERMITTEE NAMED ABOVE.

C. 1. In addition to the permittee, the following individuals are authorized to conduct activities as authorized by this permit: Dan Cox, Jason Damm, and Rex Medlin.

Trained assistants not named on this permit may work on permitted bat activities under the direct and on-site supervision of the individuals named above. However, trained assistants may not work independently at a site. Trained assistants are individuals who are considered qualified by the permitted biologist(s) to select sampling sites, deploy sampling equipment and nets, and handle bats in the field.

At least one named permittee must remain present at each mist-net or harp trap site while it is being operated.

D. Acceptance of this permit serves as evidence that the permittee understands and agrees to abide by the terms of this permit and all sections of title 50 Code of Federal Regulations, parts 13 and 17, pertinent to issued permits. Section 11 of the Endangered Species Act of 1973, as amended, provides for civil and criminal penalties for failure to comply with permit conditions.

ADDITIONAL CONDITIONS AND AUTHORIZATIONS ALSO APPLY

12. REPORTING REQUIREMENTS

Annual reports due by January 31 following each year this permit is in effect

ISSUED BY

TITLE

CHIEF, DIVISION OF ENVIRONMENTAL REVIEW

DATE

06/02/2016



E. Permittee is authorized to take (enter hibernacula or maternity roost caves, salvage dead bats, capture with mist nets or harp traps, handle, identify, collect hair samples, band, radio-tag, light-tag, and wing-punch) Indiana bats (*Myotis sodalis*), gray bats (*Myotis grisescens*), northern long-eared bats (*Myotis septentrionalis*), and Virginia big-eared bats (*Corynorhinus townsendii virginianus*) as described in permittee's while conducting presence/absence surveys, studies to document habitat use, and population monitoring, as described in permittee's applications and as conditioned below.

F. The permitted activities described above require prior, site-specific approval from the USFWS Field Supervisor in the State(s) where the project will occur. Permittee shall notify the USFWS Field Supervisor for the State in which activities are proposed to occur at least 15 days prior to conducting any activities. Contact information is in Condition P, below. Your request for this site-specific approval must be in writing and must indicate:

F.1. The purpose and a description of the activities proposed (e.g., surveys, radio telemetry studies, etc.).

F.2. Location of proposed activities, including project site (legal description and lat/long), county, and state.

F.3. Dates when the project is proposed to take place.

F.4. You may proceed with activities only upon receipt of written concurrence from the applicable USFWS Field Supervisor. *Your concurrence letter must be carried with this permit to authorize site-specific activities.*

G. Permittee shall adhere to the following conditions involving capture and handling of bats:

G.1. Federally listed bats may be captured (e.g., mist-nets and harp traps) following the protocol(s) provided by the USFWS, when available. Permittees must contact the USFWS FO in the State(s) in which activities are proposed to ensure correct protocol(s) are used. For example, the current Range-wide Indiana Bat Summer Survey Guidelines are available at:

<http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>. The monitoring interval for mist nets is once every 10 minutes. Harp traps must be continually monitored.

G.2. Captured bats may be held for a maximum of 30 minutes, unless injured. If an exception is required to this prohibition, permittee must receive prior written approval from the USFWS Field Supervisor for the state in which the activities are proposed to occur.

G.3. Permittees shall carry out non-intrusive measurements on all captured bats. Data shall be recorded for all bats captured and include, but not be limited to, the data requested in any automated or species specific data form provided by the USFWS (e.g., USFWS Bat Reporting Form available at:

<http://www.fws.gov/midwest/Endangered/mammals/inba/inbasummersurveyguidance.html>). Handling should be limited to the maximum extent practicable and should cease immediately at signs of undue stress (e.g., bat becoming unresponsive, etc.). Bats that appear stressed from handling should be placed in a dark, quiet location away from activity where it can safely fly away after recovery, and should be checked to ensure successful recovery before leaving the study site. Photographs of the identifying characteristics for each individual federally listed species captured are encouraged. The permittee may be requested to provide individual photographs after submittal of annual reporting data.

G.4. If bands are applied, they must be lipped metal bands having a unique identifier. Bands should be applied to the forearm of captured bats prior to release. No more than one band per bat may be used. Position the band on the wing so that when the bat is hanging upside down, the band numbers are right-side up. A single band should be placed on the right forearm of each male and the left forearm of each female bat.

G.5. Radio transmitters may be applied during spring, summer, and fall roosting and migration periods via

nontoxic skin bond adhesive. The total weight of the transmitter may not exceed 5% of the bat's body weight and the total weight of the package (transmitter and adhesive) may not exceed 6% of the bat's body weight. The lightest package (both transmitter and adhesive) capable of accomplishing the required task should be used, especially with pregnant females and newly volant juveniles. Bats carrying transmitters must be monitored daily for at least five days, or until the transmitter falls off, whichever occurs first. \* When conducting mist-netting within the white-nose syndrome (WNS) zone of the range of the northern long-eared bat in support of proposed tree removal activities, permittee is expected to radio-tag and track female northern long-eared bats in an attempt to locate roost trees and/or hibernacula, unless otherwise directed by the appropriate Field Office identified in Condition P. Specifics on the number of females that are expected to be tracked will be determined in coordination with the appropriate Field Office, as specified in Condition F (above).

G.6. No capture activities shall occur within 20 meters of a known or potential summer or winter roost site, either natural or artificial, of a federally listed bat. If an exception is required to this prohibition, permittee must receive prior written approval from the USFWS Field Supervisor for the State in which the activities are proposed to occur.

G.7. Permittee may collect dorsal hair samples and wing biopsy tissue samples from captured bats for scientific study. Hair samples shall be obtained via clipping fur from between scapula from females and juvenile males. The clipped area is the same area frequently clipped for radio transmitter attachment. Wing tissue samples may be taken using a new, sterile biopsy punch (2mm) for each endangered bat sampled. No more than two samples, one from each wing, may be obtained per individual. All boards and equipment used to obtain samples must be disinfected according to the protocol cited in Condition G.9.

G.8. Cyalume light tags may be affixed to the back of unmarked bats during summer roosting period via non-toxic skin bond adhesive to aid in identification of individuals for echolocation recordings. Light tags shall not be affixed to bats carrying radio transmitters. Light tag cannot exceed 2 cm in length or 0.15 g in weight. The light tag must be resistant to tooth puncture and sealed to prevent bats from ingesting cyalume compound. Any light tag that has the potential to expose bats to the cyalume compound is prohibited; the compound is known to be toxic to bats.

G.9. Equipment used to capture and handle bats shall be cleaned and decontaminated, including personal gear such as boots and gloves, using products cited in decontamination guidelines and in compliance with label directions. The most recent decontamination guidance is found on the web at: <http://whitenoisesyndrome.org/>.

G.10. Caves, mines, or other suitable hibernation sites may be quietly searched in a manner that minimizes disturbance by utilizing the minimum number of people and time required to complete the survey. Surveys of known hibernacula conducted during the winter hibernation season shall follow the guidelines established in the recovery plans for each federally listed bat species with regards to how often a site may be visited and other species-specific requirements related to entering hibernaculum (for example, for Indiana bats, winter surveys should not be repeated more often than once every other year in any given hibernaculum; for gray bats, winter surveys should not be repeated more often than once every three years in any given hibernaculum), unless authorized by the appropriate Service Recovery Lead identified in Condition O (below).

Under no circumstances should multiple trips to the hibernation area occur within the same year without written approval of the USFWS Field Supervisor for the state in which activities are proposed.

Bats may be handled during winter surveys in order to collect band information and confirm the identification of listed species. When possible, bands should be read without touching the bat. Banded bats should only be handled if easily accessible and removal of the bat does not disturb a large number of additional bats and is unlikely to result in injury to the bat. Detailed photographs should be taken to document the presence of listed species in previously undocumented hibernaculum. Where hibernacula area and safety conditions allow,

individuals entering hibernacula are recommended to utilize night vision goggles or red-filtered light and to remain in the site no more than 90 minutes to complete the work.

G.11. Surveys of gray bat and Virginia big-eared bat maternity roosts and their other known summer roost sites shall be conducted by observing the bats with night vision equipment and/or infrared light sources (e.g., thermal infrared) as they emerge from their roosts to avoid any possible disturbance to these bats. At previously undocumented sites for these species, the accepted method to determine if they are present is to carefully and slowly enter the potential roost site to check for evidence of presence/use, such as visual observation of bats, significant quantities or a strong smell of guano, or the audible sounds produced by bats roosting at the site. As soon as any evidence is obtained that the roost site is being used by a federally listed bat species, survey team members shall immediately exit the roost site and make further observations from outside the entrance to the roost. All further observations shall be made from the entrance during the evening emergence.

H. Upon determination that endangered bats are present, permittee shall notify the following offices immediately (not to exceed 1 business day): the appropriate USFWS Regional Office (Condition N), and the USFWS Field Office within the geographic location of study areas (Condition P).

I. Permittee must carry a copy of this permit at all times when conducting the authorized activities. NOTE: This permit is limited to the above activities and identified species.

J. Issuance of this permit does not constitute permission to conduct these activities on National Wildlife Refuges or any other public or private lands; such permission must be obtained separately from the appropriate landowner or land manager before beginning these authorized activities. This permit, neither directly nor by implication, grants the right of trespass.

K. The Service anticipates that no federally listed bats will be injured or killed as a result of permitted activities. In the event that any accidental injury or mortality occurs, all activities must cease and the injury or mortality reported immediately (not to exceed 1 business day) to the Southeast Regional Office listed in condition N.3. and to the Lead Recovery Biologist for the species (Condition O). The USFWS will work with the permittee to determine the cause of injury or mortality and whether such could be avoided should activities be allowed to proceed. Dead or moribund bats may be retained for further study only with the written permission of the USFWS. Any bats that are not authorized for retention are to be chilled and promptly transferred to the USFWS for potential necropsy and/or for scientific or educational purposes.

Upon locating a dead, injured, or sick bat, or any other threatened or endangered species, under circumstances not addressed in this authorization, initial notification must be made immediately (not to exceed 1 business day) to the appropriate Regional Office identified in Condition N, below, including a description of the circumstances, location information, and photo documentation. Notification should also be made at the same time to the appropriate USFWS Field Office identified in Condition P, below. Care should be taken in handling sick, injured, or dead specimens to ensure effective treatment or to preserve biological materials for later analysis. In conjunction with the care of sick or injured threatened or endangered species, and the preservation of biological materials from a dead animal, the permittee should take responsible steps to ensure that the site is not unnecessarily disturbed. Prior to collecting the specimen(s), you must photograph the specimen(s) to document the conditions in which they were found. You may preserve the specimen(s) by freezing them or other suitable method to allow scientific study. Disposition of collected specimen(s) shall be determined by the USFWS Field Office.

L. This permit is non-transferable.

M. Reports are due on January 31 following each year this permit is in effect. At a minimum, your report shall include:

- M.1. The date, time, geographic locations (including datum and projection information).
- M.2. All locations surveyed (regardless of whether federally listed bats were captured/observed).
- M.3. Band numbers of all bats banded and all bats recovered/observed.
- M.4. Information on any injuries and/or mortalities and disposition of specimens.
- M.5. Location and characteristics of roost trees and bat colonies.
- M.6. Copies of any separate reports and/or publications resulting from work conducted under the authority of this permit.
- M.7. Data shall be submitted for all bats captured and include, but not be limited to, the data requested in any automated or species-specific data form provided by the USFWS (e.g., USFWS Bat Reporting Form available at: <http://www.fws.gov/midwest/Endangered/mammals/inba/inbasummersurveyguidance.html>). Photographs of the identifying characteristics for each individual federally listed species captured are encouraged. The permittee may be requested to provide individual photographs after submittal of annual reporting data.
- M.8. Copies of all site specific authorization letters required under Condition F.

IF NO ACTIVITIES OCCURRED OVER THE COURSE OF THE YEAR, INDICATION OF SUCH SHALL BE SUBMITTED AS AN ANNUAL REPORT.

N. Copies of your reports shall be sent to the offices listed below. When possible, electronic copies shall be submitted in lieu of hard copies in MS Word, Portable Document Format, Rich Text Format, or other file format that is compatible with the receiving office.

N. Copies of your reports shall be sent to the offices listed below. When possible, electronic copies shall be submitted in lieu of hard copies in MS Word, Portable Document Format, Rich Text Format, or other file format that is compatible with the receiving office.

N.1.  
Regional Recovery Permits Coordinator  
U.S. Fish and Wildlife Service - Southwest Region (Region 2)  
500 Gold Ave., SW  
P.O. Box 1306  
Albuquerque, New Mexico 87103-1306  
(505/248-6665; fax 505/248-6788)  
[permitsR2ES@fws.gov](mailto:permitsR2ES@fws.gov)

N.2.  
Regional Recovery Permits Coordinator  
U.S. Fish and Wildlife Service - Midwest Region (Region 3)  
Ecological Services - Endangered Species  
5600 American Blvd. W., Suite 990  
Bloomington, Minnesota 55437-1458  
(612/713-5343; fax 612/713-5292)  
[permitsR3ES@fws.gov](mailto:permitsR3ES@fws.gov)

N.3.  
Regional Recovery Permits Coordinator  
U.S. Fish and Wildlife Service - Southeast Region (Region 4)  
1875 Century Boulevard, Ecological Services  
Atlanta, Georgia 30345-3301  
(404/679-7101; fax 404/679-7081)  
[permitsR4ES@fws.gov](mailto:permitsR4ES@fws.gov)

N.4.  
Regional Recovery Permits Coordinator  
U.S. Fish and Wildlife Service - Northeast Region (Region 5)  
Endangered Species Division  
300 Westgate Center Drive  
Hadley, Massachusetts 01035-9589  
(703/358-2402; fax 413/253-8482)  
[permitsR5ES@fws.gov](mailto:permitsR5ES@fws.gov) <<mailto:permitsR5ES@fws.gov>>

N.5.  
Regional Recovery Permits Coordinator & Assistant Regional Recovery Coordinator  
U.S. Fish and Wildlife Service - Mountain-Prairie Region (Region 6)  
Endangered Species Permits Office  
Denver Federal Center, P.O. Box 25486  
Denver, Colorado 80225-0489  
(303/236-4212; fax 303/236-0027)  
[permitsR6ES@fws.gov](mailto:permitsR6ES@fws.gov)

O. Additionally, based on the species, reports and publications shall be submitted to the following:

O.1. For activities/studies involving Indiana Bats:

Lori Pruitt, Recovery Lead  
U.S. Fish and Wildlife Service  
Indiana Ecological Services Field Office  
620 S. Walker Street  
Bloomington, Indiana 47403-2121  
(812/334-4261 x1213; fax 812/334-4273)

O.2. For activities/studies involving Gray Bats:

Shauna Marquardt, Recovery Lead  
U.S. Fish and Wildlife Service  
Missouri Ecological Services Field Office  
101 Park De Ville Drive, Suite A  
Columbia, Missouri 65203  
(573/234-2132 x174; fax 573/234-2181)

O.3. For activities/studies involving Northern Long-eared Bats:

Jill Utrup, Recovery Lead  
U.S. Fish and Wildlife Service  
Twin Cities Ecological Services Field Office



4104 American Blvd. E  
Bloomington, Minnesota 55425  
(612/725-3548 x207; fax 612/725-3609)

O.4. For Studies involving Virginia Big-eared Bats:

Barbara Douglas  
U.S. Fish and Wildlife Service  
West Virginia Ecological Services Field Office  
694 Beverly Pike  
Elkins, West Virginia 26241  
(304/636-6586 x19; fax 304/636-7824)

P. Additionally, based on geographic area, reports and publications shall be submitted to the following:

P.1. For studies conducted in Alabama:

Field Supervisor  
Alabama Ecological Services Field Office  
1208-B Main Street  
Daphne, Alabama 36526-4419  
(251) 441-5181

P.2. For studies conducted in Arkansas:

Field Supervisor  
Arkansas Field Office  
110 South Amity Road  
Suite 300  
Conway, Arkansas 72032-8975  
(501) 513-4470

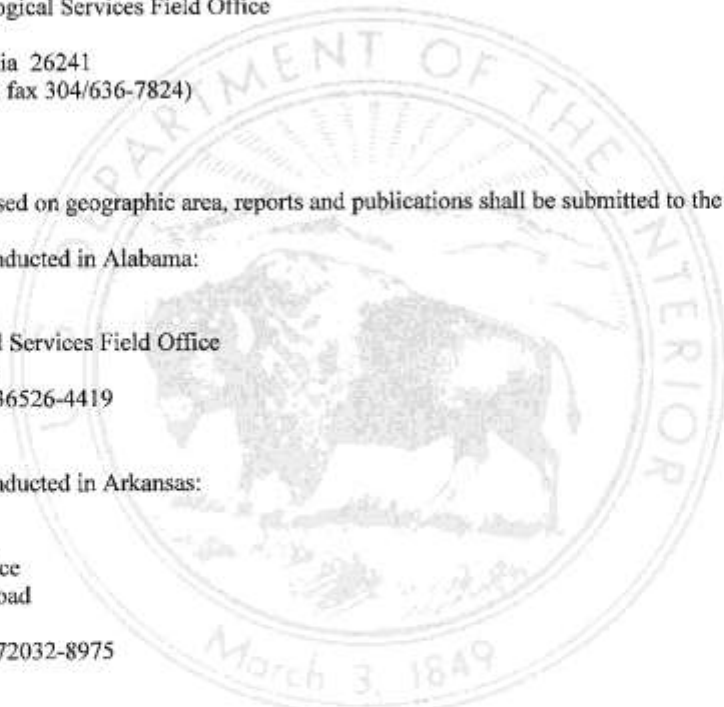
P.3. For studies conducted in Connecticut, Massachusetts, New Hampshire, Rhode Island and Vermont:

Field Supervisor  
New England Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301  
(603) 223-2541

P.4. For studies conducted in Delaware:

Field Supervisor  
Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401  
(410) 573-4573

P.5. For studies conducted in North Florida:



Field Supervisor  
North Florida Ecological Services Office  
7915 Baymeadows Way  
Suite 200  
Jacksonville, FL 32256-7517  
(904) 731-3336

P.6. For studies conducted in Georgia:

Field Supervisor  
Georgia Field Office  
105 Westpark Drive, Suite D  
Athens, GA 30606-3175  
(706) 613-9493; fax 706/613-6059

P.7. For studies conducted in Illinois:

P.7.a.  
Kristen Lundh  
Endangered Species Coordinator for Illinois/Iowa  
U.S. Fish and Wildlife Service  
Ecological Services Field Office  
1511 47<sup>th</sup> Ave.  
Moline, Illinois 61265  
(309/757-5800, x215; fax 309/757-5807)

P.7.b.  
Joe Kath  
Endangered Species Coordinator  
Illinois Department of Natural Resources  
Division of Natural Heritage  
One Natural Resource Way  
Springfield, Illinois 62702-1271  
(217/785-8764; fax 217/785-2438)

P.8. For studies conducted in Indiana:

P.8.a.  
Lori Pruitt  
Endangered Species Coordinator for Indiana  
U.S. Fish and Wildlife Service  
Ecological Services Field Office  
620 S. Walker Street  
Bloomington, Indiana 47403-2121  
(812/334-4261 x1213; fax 812/334-4273)

P.8.b.  
Scott Johnson  
Indiana Department of Natural Resources  
5596 East State Road 46



Bloomington, Indiana 47401  
(812/334-1137, ext. 3400)

P.9. For studies conducted in Iowa:

P.9.a.

Kristen Lundh  
Endangered Species Coordinator for Illinois/Iowa  
U.S. Fish and Wildlife Service  
Ecological Services Field Office  
1511 47<sup>th</sup> Ave.  
Moline, Illinois 61265  
(309/757-5800, x215; fax 309/757-5807)

P.9.b.

Kelly Poole  
Endangered Species Coordinator  
Iowa Department of Natural Resources  
Parks, Recreation, and Preserves  
Wallace State Office Building  
East 9th and Grand Avenue  
Des Moines, Iowa 50319-0034  
(515/281-8524)

P.10. For studies conducted in Kansas:

Field Supervisor  
Kansas Field Office  
2609 Anderson Avenue  
Manhattan, Kansas 68502  
785/539-3474; fax 785/539-8567

P.11. For studies conducted in Kentucky:

Field Supervisor  
Frankfort Field Office  
J C Watts Federal Bldg., Rm 265  
330 West Broadway  
Frankfort, KY 40601-8670  
(502) 695-0468

P.12. For studies conducted in Louisiana:

Field Supervisor  
Louisiana Ecological Services  
646 Cajundome Blvd., Suite 400  
Lafayette, La. 70506  
Phone 337.291.3100  
Fax 337.291.3139

P. 13. For studies conducted in Maine:





Field Supervisors  
Maine Field Office  
U.S. Fish and Wildlife Service  
17 Godfrey Drive, Suite 2  
Orono, ME 04473  
Phone: 207-866-3344

P.15. For studies conducted in Michigan:

P.15.a.  
Barbara Hosler  
Endangered Species Coordinator for Michigan  
U.S. Fish and Wildlife Service  
2651 Coolidge Road  
East Lansing, Michigan 48823  
(517/351-6326; fax 517/351-1443)

P.15.b.  
Dan Kennedy  
Endangered Species Coordinator  
Michigan Department of Natural Resources  
Wildlife Division  
P.O. Box 30444  
Lansing, Michigan 48909-7444  
(517) 284-6194; fax 517/373-6705

P.16. For studies conducted in Minnesota:

P.16.a.  
Phil Delphey  
Endangered Species Coordinator  
U.S. Fish and Wildlife Service  
Ecological Services Field Office  
4101 American Blvd. E.  
Bloomington, Minnesota 55425  
(952/252-0092 x206; fax 952/646-2873)

P.16.b.  
Richard Baker  
Endangered Species Coordinator  
Minnesota Department of Natural Resources  
Division of Ecological and Water Resources  
500 Lafayette Road, Box 25  
St. Paul, Minnesota 55155  
(651/259-5073)

<mailto:Owen.Boyle@wisconsin.gov>

P.17. For studies conducted in Mississippi:

Field Supervisor  
Mississippi Field Office

6578 Dogwood View Pkwy, Ste A  
Jackson, MS 39213-7856  
(601) 321-1122

P.18. For studies conducted in Missouri:

P.18.a.  
Field Supervisor  
U.S. Fish and Wildlife Service  
Missouri Ecological Services Field Office  
101 Park DeVille Drive, Suite A  
Columbia, Missouri 65203-2132  
(573/234-2132; fax 573/234-2181)

P.18.b.  
Scientific Collecting Permit Coordinator  
Missouri Department of Conservation  
Endangered Species and Natural History Division  
2901 W. Truman Blvd., P.O. Box 180  
Jefferson City, Missouri 65102-0180  
(573/522-4115 ext. 3322; fax 573/751-4864)

P.19. For studies conducted in Montana:

Project Leader  
585 Shepard Way  
Helena, Montana 59601  
Telephone: 406-449-5225  
Fax: 406-449-5339

P.20. For studies conducted in Nebraska:

Assistant Field Supervisor  
9325 South Alda Road  
Wood River, NE 68883  
Fax:(308) 384-8835  
Phone: (308) 382-6468

P. 21. For studies conducted in New Hampshire.

See P.3. (above)

P.22. For studies conducted in New Jersey:

Field Supervisor  
New Jersey Field Office  
927 N. Main Street, Building D  
Pleasantville, NJ 08232-1454  
(609) 646-9310

P.23. For studies conducted in New York:



Field Supervisor  
New York Field Office  
3817 Luker Road  
Cortland, NY 13045  
(607) 753-9334

P.24. For studies conducted in North Carolina:

Field Supervisor  
Asheville Field Office  
160 Zillicoa Street  
Asheville, NC 28801-1082  
(828) 258-3939

P.25. For studies conducted in North Dakota:

North Dakota Field Office  
3425 Miriam Avenue  
Bismarck, North Dakota 58501-7926  
Phone: (701) 250-4481  
Fax: (701) 355-8513

P.26. For studies conducted in Ohio:

P.26.a.  
Endangered Species Coordinator for Ohio  
U.S. Fish and Wildlife Service  
Ohio Ecological Services Field Office  
4625 Morse Road, Suite 104  
Columbus, Ohio 43230  
(614/416-8993, x22; fax 614/416-8994)

P.26.b.  
Endangered Species Coordinator  
Ohio Department of Natural Resources  
Division of Wildlife  
2045 Morse Road, Building G  
Columbus, Ohio 43229-6693  
(614-265-6329; fax 614/262-1143)

P.27. For studies conducted in Oklahoma:

P.27.a.  
Field Supervisor  
Oklahoma Field Office  
U.S. Fish and Wildlife Service  
9014 E. 21<sup>st</sup> St.  
Tulsa, Oklahoma 74129-1428  
(918) 382-4501



P.27.b.  
Todd Fagin  
Oklahoma Natural Heritage Inventory  
111 E. Chesapeake St.  
Norman, OK 73019  
405 325-4700 (Direct Line)  
405 325-4042 (Oklahoma Biological Survey main office)  
405 325-7702 (Fax)  
[tfagin@ou.edu](mailto:tfagin@ou.edu) <<mailto:tfagin@ou.edu>>

P.27.c.  
Oklahoma Department of Wildlife Conservation  
Wildlife Division  
1801 N. Lincoln Blvd.  
Oklahoma City, Oklahoma 73105  
405/990-7259; fax 405/521-4706

P.28. For studies conducted in Pennsylvania:

Field Supervisor  
Pennsylvania Field Office  
315 So. Allen Street, Suite 322  
State College, PA 16801-4850  
(814) 234-4090

P.29. For studies conducted in Rhode Island:

See P.3. (above)

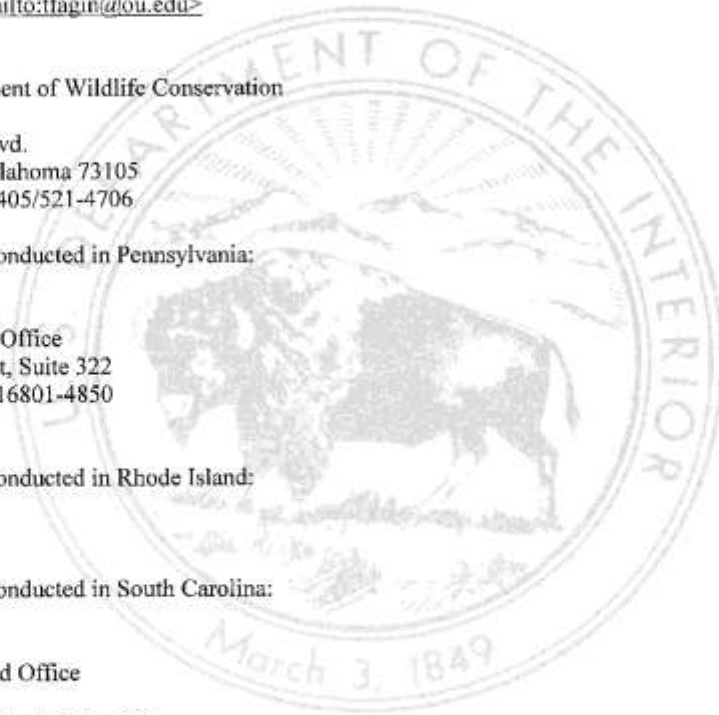
P.30. For studies conducted in South Carolina:

P.30.a.  
South Carolina Field Office  
Field Supervisor  
176 Croghan Spur Road, Suite 200  
Charleston, SC 29407-7558  
(843) 727-4707 x227

P.30.b.  
Mary Bunch  
Biologist/Preserve Manager  
South Carolina Department of Natural Resources  
311 Natural Resources Drive  
Clemson, SC 29631  
(864) 654-6738 x15  
Fax: (864) 654-9168

P.31. For studies conducted in South Dakota:

South Dakota Ecological Services Field Office  
420 S. Garfield Avenue,



Suite 400  
Pierre, SD 57501-5408  
Phone (605) 224-8693  
FAX 605-224-9974

P.32. For studies conducted in Tennessee:

P.32.a.  
Field Supervisor  
Cookeville Field Office  
U.S. Fish and Wildlife Service  
446 Neal Street  
Cookeville, TN 38501-4027  
(931) 528-6481

P.32.b.  
Josh Campbell  
Wildlife Diversity Coordinator, Region II  
Tennessee Wildlife Resources Agency  
P.O. Box 41489  
Nashville, TN 37204  
(615) 781-6626  
[Josh.Campbell@tn.gov](mailto:Josh.Campbell@tn.gov) <<mailto:Josh.Campbell@tn.gov>>

P.33. For studies conducted in Texas:

Regional Recovery Permits Coordinator  
U.S. Fish and Wildlife Service - Southwest Region (Region 2)  
500 Gold Ave., SW  
P.O. Box 1306  
Albuquerque, New Mexico 87103-1306  
(505/248-6665; fax 505/248-6788)

P.34. For studies conducted in Vermont:

See P.3. (above)

P.35. For studies conducted in Virginia:

Field Supervisor  
Virginia Field Office  
6669 Short Lane  
Gloucester, VA 23061  
(804) 693-6694

P.36. For studies conducted in West Virginia:

Field Supervisor  
West Virginia Field Office  
694 Beverly Pike  
Elkins, WV 26241

(304) 636-6586

P.37. For studies conducted in Wisconsin:

P.37.a.

Phil Delphey

Endangered Species Coordinator

U.S. Fish and Wildlife Service

Ecological Services Field Office

4101 American Blvd. E.

Bloomington, Minnesota 55425

(952/252-0092 x206; fax 952/646-2873)

P.37.b.

Owen Boyle

Wisconsin Department of Natural Resources

P.O. Box 7921

Madison, Wisconsin 53707-7921

(608/266-5244; fax 608/266-2925)

P. 38. For studies conducted in Wyoming:

Ecological Services Wyoming Field Office

5353 Yellowstone Road, Suite 308A

Cheyenne, Wyoming 82009

Tel: (307) 772-2374

Fax: (307)772-2358

END



DEPARTMENT OF THE INTERIOR  
No Block# 6 address detected

FEDERAL FISH AND WILDLIFE PERMIT

1 PERMITTEE

KATHRYN ANN CUNNINGHAM  
305 LINDENHURST DRIVE APT 3102  
LEXINGTON, KY 40509  
U.S.A.

2 AUTHORITY-STATUTES  
16 USC 1539(a)  
16 USC 1533(d)

REGULATIONS  
50 CFR 17.22  
50 CFR 17.32

50 CFR 17

3 NUMBER  
TE480498-0

4 RENEWABLE  
 YES  
 NO

5 MAY COPY  
 YES  
 NO

6 EFFECTIVE  
02/24/2015

7 EXPIRES  
02/24/2018

8 NAME AND TITLE OF PRINCIPAL OFFICER (If not a Federal)

9 TYPE OF PERMIT  
NATIVE ENDANGERED & THREATENED SP. RECOVERY - E & T  
WILDLIFE

10 LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED  
See below

11 CONDITIONS AND AUTHORIZATIONS

A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 17, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #2 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY OR RENEWAL OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.

B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBEYANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL, TRIBAL, OR OTHER FEDERAL LAW.

C. VALID FOR USE BY PERMITTEE NAMED ABOVE.

Sec. 10 cont.

Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, West Virginia, Wisconsin, Wyoming

11. C. 1. The following individuals are authorized to conduct activities as authorized by this permit: Kathryn A. Cunningham

Trained assistants not named on this permit may work on permitted bat activities under the direct and on-site supervision of the individual named above. However, trained assistants may not work independently at a site. Trained assistants are individuals who are considered qualified by the permittee to select sampling sites, deploy sampling equipment and nets, and handle bats in the field. The permittee must remain present at each mist-net site while it is being operated.

ADDITIONAL CONDITIONS AND AUTHORIZATIONS ALSO APPLY

12 REPORTING REQUIREMENTS

Annual reports due by January 31 following each year this permit is in effect

SIGNED BY

TITLE

CHIEF, DIVISION OF ENVIRONMENTAL REVIEW

DATE

02/24/2015

TE480498-0

Roxanna Hinzman

Page: 1 of 14

Chief, Division of Environmental Review

D. Acceptance of this permit serves as evidence that the permittee understands and agrees to abide by the terms of this permit and all sections of title 50 Code of Federal Regulations, parts 13 and 17, pertinent to issued permits. Section 11 of the Endangered Species Act of 1973, as amended, provides for civil and criminal penalties for failure to comply with permit conditions.

E. Permittee is authorized to take (enter hibernacula, capture with mist nets or harp traps, handle, identify, band, radio-tag, salvage) Indiana bats (*Myotis sodalis*) and Northern long-eared bats (*Myotis septentrionalis*) for presence/absence surveys and monitoring, as described in permittee's September 4, 2013, application and as conditioned below.

F. Activities at the following locations require written site-specific approval from the USFWS Field Supervisor in the State(s) where the project will occur (as outlined in Condition G):

F.1. Locations within Region 2 of the USFWS: Oklahoma

F.2. Locations within Region 3 of the USFWS: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin

F.3. Locations within Region 4 of the USEWS: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee

F.4. Locations within Region 5 of the USFWS: Connecticut, Delaware, Maryland, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia and West Virginia

F.5. Locations within Region 6 of the USFWS: Kansas, Montana, Nebraska, North Dakota, South Dakota, Wyoming

G. Permittee shall notify the USFWS Field Supervisor for the State in which activities are proposed to occur at least 15 days prior to conducting any activities. Contact information is in Condition P., below. Your request for this site-specific approval must be in writing and must indicate:

G.1. The purpose and a description of the activities proposed (e.g., surveys, radio telemetry studies, etc.).

G.2. Location of proposed activities, including project site (legal description and lat/long), county, and state.

G.3. Dates when the project is proposed to take place.

G.4. You may proceed with activities only upon receipt of written concurrence from the applicable USFWS Field Supervisor. *Your concurrence letter must be carried with this permit to authorize site-specific activities.*

H. Permittee shall adhere to the following conditions involving capture and handling of bats:

H.1. Federally listed bats may be captured (e.g., mist-nets and harp traps) following the protocol(s) provided by the USFWS, when available. Permittees must contact the USFWS FO in the State(s) in which activities are proposed to ensure correct protocol(s) are used. For example, the current Range-wide Indiana Bat Summer Survey Guidelines are available at: <http://www.fws.gov/midwest/endangered/mammals/inha/inbasummersurveyguidance.html>. The monitoring interval for mist nets is once every 10 minutes. Harp traps must be continually monitored.

H.2. Captured bats may be held for a maximum of 30 minutes, unless injured. If an exception is required to this prohibition, permittee must receive prior written approval from the USFWS Field Supervisor for the state in which the activities are proposed to occur.



H.3. Permittees shall carry out non-intrusive measurements on all captured bats. Data shall be recorded for all bats captured and include, but not be limited to, the data requested in any automated or species specific data form provided by the USFWS (e.g., INDIANA BAT SURVEY AND BANDING DATA form). Handling should be limited to the maximum extent practicable and should cease immediately at signs of undue stress (e.g., bat becoming unresponsive, etc.). Bats that appear stressed from handling should be placed in a dark, quiet location away from activity where it can safely fly away after recovery, and should be checked to ensure successful recovery before leaving the study site. Photographs of the identifying characteristics for each individual federally listed species captured are encouraged. The permittee may be requested to provide individual photographs after submittal of annual reporting data.

H.4. If bands are applied, they must be lipped metal bands having a unique identifier. Bands should be applied to the forearm of captured bats prior to release. No more than one band per bat may be used. Position the band on the wing so that when the bat is hanging upside down the band numbers are right-side up. A single band should be placed on the right forearm of each male and the left forearm of each female bat.

H.5. Radio transmitters may be applied during spring, summer, and fall roosting and migration periods via nontoxic skin bond adhesive. The total weight of the transmitter may not exceed 5% of the bat's body weight and the total weight of the package (transmitter and adhesive) may not exceed 6% of the bat's body weight. The lightest package (both transmitter and adhesive) capable of accomplishing the required task should be used, especially with pregnant females and newly volant juveniles. Bats carrying transmitters must be monitored daily for at least five days or until the transmitter falls off, whichever occurs first.

H.6. No capture activities shall occur within 20 meters of a known or potential summer or winter roost site, either natural or artificial, of a federally listed bat. If an exception is required to this prohibition, permittee must receive prior written approval from the USFWS Field Supervisor for the State in which the activities are proposed to occur.

H.7. Equipment used to capture and handle bats shall be cleaned and decontaminated, including personal gear such as boots and gloves, using products cited in decontamination guidelines and in compliance with label directions. The most recent decontamination guidance is found on the web at: <http://whitenosesyndrome.org/>

H.8. Caves, mines, or other suitable hibernation sites may be quietly searched in a manner that minimizes disturbance by utilizing the minimum number of people and time required to complete the survey. Surveys of known hibernacula conducted during the winter hibernation season shall follow the guidelines established in the recovery plans for each federally listed bat species with regards to how often a site may be visited and other species-specific requirements related to entering hibernaculum (for example, for Indiana bats, winter surveys should not be repeated more often than once every other year in any given hibernaculum), unless authorized by the appropriate Service Recovery Lead identified in Condition O (below).

Under no circumstances should multiple trips to the hibernation area occur within the same year without written approval of the USFWS Field Supervisor for the state in which activities are proposed.

Bats may be handled during winter surveys in order to collect band information and confirm the identification of listed species. When possible, bands should be read without touching the bat. Banded bats should only be handled if easily accessible and removal of the bat does not disturb a large number of additional bats and is unlikely to result in injury to the bat. Detailed photographs should be taken to document the presence of listed species in previously undocumented hibernaculum. Where hibernacula area and safety conditions allow, individuals entering hibernacula are recommended to utilize night vision goggles or red-filtered light and to remain in the site no more than 90 minutes to complete the work.

I. Upon determination that endangered bats are present, permittee shall notify the following offices immediately

(not to exceed 1 business day): the appropriate USFWS Regional Office (Condition N.), and the USFWS Field Office within the geographic location of study areas (Condition O.).

J. Permittee must carry a copy of this permit at all times when conducting the authorized activities. NOTE: This permit is limited to the above activities and identified species.

K. Issuance of this permit does not constitute permission to conduct these activities on National Wildlife Refuges or any other public or private lands; such permission must be obtained separately from the appropriate landowner or land manager before beginning these authorized activities. This permit, neither directly nor by implication, grants the right of trespass.

L. Accidental injury or mortality may not exceed one specimen. In the event that any accidental injury or mortality occurs, all activities must cease and the injury or mortality reported immediately (not to exceed 1 business day) to the applicable office listed in condition N. and to the Lead Recovery Biologist for the species (condition O). The USFWS will work with the permittee to determine the cause of injury or mortality and whether such could be avoided should activities be allowed to proceed. Dead or moribund bats may be retained for further study only with the written permission of the USFWS. Any bats that are not authorized for retention are to be chilled and promptly transferred to the USFWS for potential necropsy and/or for scientific or educational purposes.

Upon locating a dead, injured, or sick bat, or any other threatened or endangered species, under circumstances not addressed in this authorization, initial notification must be made immediately (not to exceed 1 business day) to the appropriate USFWS Office identified in condition N., below, including a description of the circumstances, location information, and photo documentation. Notification should also be made at the same time to the appropriate USFWS Field Office identified in condition P., below. Care should be taken in handling sick, injured, or dead specimens to ensure effective treatment or to preserve biological materials for later analysis. In conjunction with the care of sick or injured threatened or endangered species, and the preservation of biological materials from a dead animal, the permittee should take responsible steps to ensure that the site is not unnecessarily disturbed. Prior to collecting the specimen(s), you must photograph the specimen(s) to document the conditions in which they were found. You may preserve the specimen(s) by freezing them or other suitable method to allow scientific study. Disposition of collected specimen(s) shall be determined by the USFWS Field Office.

M. Reports are due on January 31 following each year this permit is in effect. At a minimum, your report shall include:

M.1. The date, time, geographic locations (including datum and projection information).

M.2. All locations surveyed (regardless of whether federally listed bats were captured/observed).

M.3. Band numbers of all bats banded and all bats recovered/observed.

M.4. Information on any injuries and/or mortalities and disposition of specimens.

M.5. Location and characteristics of roost trees and bat colonies.

M.6. Copies of any separate reports and/or publications resulting from work conducted under the authority of this permit.

M.7. Data shall be submitted for all bats captured and include, but not be limited to, the data requested in any automated or species-specific data form provided by the USFWS (e.g., INDIANA BAT SURVEY AND BANDING DATA forms, the data collection forms found in the current Rangewide Indiana Bat Summer Survey

Guidelines cited in Condition H.1., or other species-specific forms). Photographs of the identifying characteristics for each individual federally listed species captured are encouraged. The permittee may be requested to provide individual photographs after submittal of annual reporting data.

M.8. Copies of all site specific authorization letters required under Condition G.

If no activities occurred over the course of the year, indication of such shall be submitted as an annual report.

N. Copies of your reports shall be sent to the offices listed below. When possible, electronic copies shall be submitted in lieu of hard copies in MS Word, Portable Document Format, Rich Text Format, or other file format that is compatible with the receiving office.

N.1.

Regional Recovery Permits Coordinator  
U.S. Fish and Wildlife Service - Southwest Region (Region 2)  
500 Gold Ave., SW  
P.O. Box 1306  
Albuquerque, New Mexico 87103-1306  
(505/248-6665; fax 505/248-6788)  
[permitsR2ES@fws.gov](mailto:permitsR2ES@fws.gov)

N.2.

Regional Recovery Permits Coordinator  
U.S. Fish and Wildlife Service - Midwest Region (Region 3)  
Ecological Services - Endangered Species  
5600 American Blvd. W., Suite 990  
Bloomington, Minnesota 55437-1458  
(612/713-5343; fax 612/713-5292)  
[permitsR3ES@fws.gov](mailto:permitsR3ES@fws.gov)

N.3.

Regional Recovery Permits Coordinator  
U.S. Fish and Wildlife Service - Southeast Region (Region 4)  
1875 Century Boulevard, Suite 200  
Atlanta, Georgia 30345-3301  
(404/679-7101; fax 404/679-7081)  
[permitsR4ES@fws.gov](mailto:permitsR4ES@fws.gov)

N.4.

Regional Recovery Permits Coordinator  
U.S. Fish and Wildlife Service - Northeast Region (Region 5)  
Endangered Species Division  
300 Westgate Center Drive  
Hadley, Massachusetts 01035-9589  
(703/358-2402; fax 413/253-8482)  
[permitsR5ES@fws.gov](mailto:permitsR5ES@fws.gov) <<mailto:permitsR5ES@fws.gov>>

N.5.

Regional Recovery Permits Coordinator & Assistant Regional Recovery Coordinator  
U.S. Fish and Wildlife Service - Mountain-Prairie Region (Region 6)  
Endangered Species Permits Office  
Denver Federal Center, P.O. Box 25486

Denver, Colorado 80225-0489  
(303/236-4212; fax 303/236-0027)  
permitsR6ES@fws.gov

O. Additionally, based on species, reports and publications shall be submitted to the following:

O.1. For Studies involving Indiana Bats:

Lori Pruitt, Recovery Lead  
U.S. Fish and Wildlife Service  
Indiana Ecological Services Field Office  
620 S. Walker Street  
Bloomington, Indiana 47403-2121  
(812/334-4261 x1213; fax 812/334-4273)

O.2. For Studies involving Northern Long-eared Bats:

Jill Utrup, Recovery Lead  
U.S. Fish and Wildlife Service  
Twin Cities Ecological Services Field Office  
4104 American Blvd. E  
Bloomington, Minnesota 55425  
(612/725-3548 x207; fax 612/725-3609)

P. Additionally, based on geographic area, reports and publications shall be submitted to the following:

P.1. For studies conducted in Alabama:

Field Supervisor  
Alabama Ecological Services Field Office  
1208-B Main Street  
Daphne, Alabama 36526-4419  
(251) 441-5181

P.2. For studies conducted in Arkansas:

Field Supervisor  
Arkansas Field Office  
110 South Amity Road  
Suite 300  
Conway, Arkansas 72032-8975  
(501) 513-4470

P.3. For studies conducted in Connecticut, Massachusetts, New Hampshire, Rhode Island and Vermont:

Field Supervisor  
New England Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301  
(603) 223-2541

P.4. For studies conducted in Delaware and Maryland:

Field Supervisor  
Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401  
(410) 573-4573

P.5. For studies conducted in North Florida:

Field Supervisor  
North Florida Ecological Services Office  
7915 Baymeadows Way  
Suite 200  
Jacksonville, FL 32256-7517  
(904) 731-3336

P.6. For studies conducted in Georgia:

Field Supervisor  
Georgia Field Office  
105 Westpark Drive, Suite D  
Athens, GA 30606-3175  
(706) 613-9493; fax 706/613-6059

P.7. For studies conducted in Illinois:

P.7.a.  
Kristen Lundh  
Endangered Species Coordinator for Illinois/Iowa  
U.S. Fish and Wildlife Service  
Ecological Services Field Office  
1511 47<sup>th</sup> Ave.  
Moline, Illinois 61265  
(309/757-5800, x215; fax 309/757-5807)

P.7.b.  
Joe Kath  
Endangered Species Coordinator  
Illinois Department of Natural Resources  
Division of Natural Heritage  
One Natural Resource Way  
Springfield, Illinois 62702-1271  
(217/785-8764; fax 217/785-2438)

P.8. For studies conducted in Indiana:

P.8.a.  
Lori Pruitt  
Endangered Species Coordinator for Indiana  
U.S. Fish and Wildlife Service  
Ecological Services Field Office  
620 S. Walker Street



Bloomington, Indiana 47403-2121  
(812/334-4261 x1213; fax 812/334-4273)

P.8.b.  
Scott Johnson  
Indiana Department of Natural Resources  
5596 East State Road 46  
Bloomington, Indiana 47401  
(812/334-1137, ext. 3400)

P.9. For studies conducted in Iowa:

P.9.a.  
Kristen Lundh  
Endangered Species Coordinator for Illinois/Iowa  
U.S. Fish and Wildlife Service  
Ecological Services Field Office  
1511 47<sup>th</sup> Ave.  
Moline, Illinois 61265  
(309/757-5800, x215; fax 309/757-5807)

P.9.b.  
Kelly Poole  
Endangered Species Coordinator  
Iowa Department of Natural Resources  
Parks, Recreation, and Preserves  
Wallace State Office Building  
East 9th and Grand Avenue  
Des Moines, Iowa 50319-0034  
(515/281-8524)

P.10. For studies conducted in Kansas:

Field Supervisor  
Kansas Field Office  
2609 Anderson Avenue  
Manhattan, Kansas 68502  
785/539-3474; fax 785/539-8567

P.11. For studies conducted in Kentucky:

Field Supervisor  
Frankfort Field Office  
J C Watts Federal Bldg., Rm 265  
330 West Broadway  
Frankfort, KY 40601-8670  
(502) 695-0468

P.12. For studies conducted in Louisiana:

Field Supervisor  
Louisiana Ecological Services



646 Cajundome Blvd., Suite 400  
Lafayette, La. 70506  
Phone 337.291.3100  
Fax 337.291.3139

P. 13. For studies conducted in Maine:

Field Supervisors  
Maine Field Office  
U.S. Fish and Wildlife Service  
17 Godfrey Drive, Suite 2  
Orono, ME 04473  
Phone: 207-866-3344

P.14. For studies conducted in Maryland:

Field Supervisor  
Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401  
(410) 573-4573

P.15. For studies conducted in Michigan:

P.15.a.  
Barbara Hosler  
Endangered Species Coordinator for Michigan  
U.S. Fish and Wildlife Service  
2651 Coolidge Road  
East Lansing, Michigan 48823  
(517/351-6326; fax 517/351-1443)

P.15.b.  
Dan Kennedy  
Endangered Species Coordinator  
Michigan Department of Natural Resources  
Wildlife Division  
P.O. Box 30444  
Lansing, Michigan 48909-7444  
(517) 284-6194; fax 517/373-6705

P.16. For studies conducted in Minnesota and Wisconsin:

P.16.a.  
Phil Delphey  
Endangered Species Coordinator for Minnesota and Wisconsin  
U.S. Fish and Wildlife Service  
Ecological Services Field Office  
4101 American Blvd E.  
Bloomington, Minnesota 55425  
(612/725-3548 x2206; fax 612/725-3609)





P.16.b.

Owen Boyle  
Wisconsin Department of Natural Resources  
101 S. Webster Street  
Madison, Wisconsin 53707-7921  
(608/266-5244)  
[Owen.Boyle@wisconsin.gov](mailto:Owen.Boyle@wisconsin.gov) <<mailto:Owen.Boyle@wisconsin.gov>>

P.16.c.

Richard Baker  
Minnesota Endangered Species Coordinator  
Division of Ecological and Water Resources  
Minnesota Department of Natural Resources  
500 Lafayette Rd., Box 25  
St. Paul, MN 55155  
Phone: 651/259-5073  
[richard.baker@state.mn.us](mailto:richard.baker@state.mn.us) <<mailto:richard.baker@dnr.state.mn.us>>

P.17. For studies conducted in Mississippi:

Field Supervisor  
Mississippi Field Office  
6578 Dogwood View Pkwy Ste A  
Jackson, MS 39213-7856  
(601) 321-1122

P.18. For studies conducted in Missouri:

P.18.a.  
Field Supervisor  
U.S. Fish and Wildlife Service  
Missouri Ecological Services Field Office  
101 Park DeVillie Drive, Suite A  
Columbia, Missouri 65203-2132  
(573/234-2132; fax 573/234-2181)

P.18.b.  
Scientific Collecting Permit Coordinator  
Missouri Department of Conservation  
Endangered Species and Natural History Division  
2901 W. Truman Blvd., P.O. Box 180  
Jefferson City, Missouri 65102-0180  
(573/522-4115 ext. 3322; fax 573/751-4864)

P.19. For studies conducted in Montana:

Project Leader  
585 Shepard Way  
Helena, Montana 59601  
Telephone: 406-449-5225  
Fax: 406-449-5339





P.20. For studies conducted in Nebraska:

Assistant Field Supervisor  
9325 South Alda Road  
Wood River, NE 68883  
Fax:(308) 384-8835  
Phone: (308) 382-6468

P.21. For studies conducted in New Jersey:

Field Supervisor  
New Jersey Field Office  
927 N. Main Street, Building D  
Pleasantville, NJ 08232-1454  
(609) 646-9310

P.22. For studies conducted in New York:

Field Supervisor  
New York Field Office  
3817 Luker Road  
Cortland, NY 13045  
(607) 753-9334

P.23. For studies conducted in North Carolina:

Field Supervisor  
Asheville Field Office  
160 Zillicoa Street  
Asheville, NC 28801-1082  
(828) 258-3939

P.24. For studies conducted in North Dakota:

North Dakota Field Office  
3425 Miriam Avenue  
Bismarck, North Dakota 58501-7926  
Phone: (701) 250-4481  
Fax: (701) 355-8513

P.25. For studies conducted in Ohio:

P.25.a.  
Endangered Species Coordinator for Ohio  
U.S. Fish and Wildlife Service  
Ohio Ecological Services Field Office  
4625 Morse Road, Suite 104  
Columbus, Ohio 43230  
(614/416-8993, x22; fax 614/416-8994)

P.25.b.  
Endangered Species Coordinator



Ohio Department of Natural Resources  
Division of Wildlife  
2045 Morse Road, Building G  
Columbus, Ohio 43229-6693  
(614-265-6329; fax 614/262-1143)

P.26. For studies conducted in Oklahoma:

P.26.a.  
Field Supervisor  
Oklahoma Field Office  
U.S. Fish and Wildlife Service  
9014 E. 21<sup>st</sup> St.  
Tulsa, Oklahoma 74129-1428  
(918) 382-4501

P.26.b.  
Todd Fagin  
Oklahoma Natural Heritage Inventory  
111 E. Chesapeake St.  
Norman, OK 73019  
405 325-4700 (Direct Line)  
405 325-4042 (Oklahoma Biological Survey main office)  
405 325-7702 (Fax)  
[tfagin@ou.edu](mailto:tfagin@ou.edu) <<mailto:tfagin@ou.edu>>

P.26.c.  
Oklahoma Department of Wildlife Conservation  
Wildlife Division  
1801 N. Lincoln Blvd.  
Oklahoma City, Oklahoma 73105  
405/990-7259; fax 405/521-4706

P.27. For studies conducted in Pennsylvania:

Field Supervisor  
Pennsylvania Field Office  
315 So. Allen Street, Suite 322  
State College, PA 16801-4850  
(814) 234-4090

P.28. For studies conducted in South Carolina:

P. 28.a.  
South Carolina Field Office  
Thomas McCoy, Acting Field Supervisor  
176 Croghan Spur Road, Suite 200  
Charleston, SC 29407-7558  
(843) 727-4707 x227

P. 28.b.  
Mary Bunch



Biologist/Preserve Manager  
South Carolina Department of Natural Resources  
311 Natural Resources Drive  
Clemson, SC 29631  
(864) 654-6738 x15  
Fax: (864) 654-9168

P.29. For studies conducted in South Dakota:

South Dakota Ecological Services Field Office  
420 S. Garfield Avenue,  
Suite 400  
Pierre, SD 57501-5408  
Phone (605) 224-8693  
FAX 605-224-9974

P.30. For studies conducted in Tennessee:

P. 30 a.  
Field Supervisor  
Cookeville Field Office  
U.S. Fish and Wildlife Service  
446 Neal Street  
Cookeville, TN 38501-4027  
(931) 528-6481

P. 30.b.  
Brian Flock  
Bat Coordinator  
Tennessee Wildlife Resources Agency  
P.O. Box 40747  
Nashville, TN 37204  
(615) 781-6569

P. 31. For studies conducted in Texas:

Regional Recovery Permits Coordinator  
U.S. Fish and Wildlife Service - Southwest Region (Region 2)  
500 Gold Ave., SW  
P.O. Box 1306  
Albuquerque, New Mexico 87103-1306  
(505/248-6665; fax 505/248-6788)

P.32. For studies conducted in Virginia:

Field Supervisor  
Virginia Field Office  
6669 Short Lane  
Gloucester, VA 23061  
(804) 693-6694

P.33. For studies conducted in West Virginia:



Field Supervisor  
West Virginia Field Office  
694 Beverly Pike  
Elkins, WV 26241  
(304) 636-6586

P. 34. For studies conducted in Wyoming:

Ecological Services Wyoming Field Office  
5353 Yellowstone Road, Suite 308A  
Cheyenne, Wyoming 82009  
Tel: (307) 772-2374  
Fax: (307)772-2358





DEPARTMENT OF THE INTERIOR  
 U.S. FISH & WILDLIFE SERVICE  
 Endangered Species Permit Office  
 1875 Century Boulevard, Suite 200  
 Atlanta, GA 30345  
 permitsR4ES@fws.gov

**FEDERAL FISH AND WILDLIFE PERMIT**

**1. PERMITTEE**

JACK (J.D.) D. WILHIDE  
 dba JACKSON GROUP  
 3945 SIMPLSON LANE  
 RICHMOND, KY 40475  
 U.S.A.

**2. AUTHORITY-STATUTES**  
 16 USC 1539(a)  
 16 USC 1539(d)

**REGULATIONS**  
 50 CFR 17.22  
 50 CFR 17.32  
  
 50 CFR 13

**3. NUMBER**  
**TE148282-3**                      **AMENDMENT**

<b>4. RENEWABLE</b>	<b>5. MAY COPY</b>
<input checked="" type="checkbox"/> YES	<input checked="" type="checkbox"/> YES
<input type="checkbox"/> NO	<input type="checkbox"/> NO

<b>6. EFFECTIVE</b> 02/18/2016	<b>7. EXPIRES</b> 02/28/2021
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**8. NAME AND TITLE OF PRINCIPAL OFFICER** *(If not business)*

**9. TYPE OF PERMIT**  
 NATIVE ENDANGERED & THREATENED SP. RECOVERY - E & T  
 WILDLIFE

**10. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED**

Location: Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Illinois, Iowa, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Virginia, Vermont, West Virginia, Wisconsin, and Wyoming

**11. CONDITIONS AND AUTHORIZATIONS:**

A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #1 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY, OR RENEWAL, OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.

B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL, TRIBAL, OR OTHER FEDERAL LAW.

C. VALID FOR USE BY PERMITTEE NAMED ABOVE.

C. Continued: the following individuals are authorized to conduct activities as authorized by this permit: Mr. Jack (J.D.) Wilhide.

Trained assistants not named on this permit may work on permitted bat activities under the direct and on-site supervision of the individuals named above. However, trained assistants may not work independently at a site. Trained assistants are individuals who are considered qualified by the permitted biologist(s) to select sampling sites, deploy sampling equipment and nets, and handle bats in the field.

D. Acceptance of this permit serves as evidence that the permittee understands and agrees to abide by the terms of this permit and all sections of title 50 Code of Federal Regulations, parts 13 and 17, pertinent to issued permits. Section 11 of the Endangered Species Act of 1973, as amended, provides for civil and criminal penalties for failure to comply with permit conditions.

E. Permittee is authorized to conduct the following take activities to gray bats (*Myotis grisescens*), Indiana bats (*Myotis sodalis*), northern long-eared bats (*Myotis septentrionalis*), Ozark big-eared bats (*Corynorhinus*

ADDITIONAL CONDITIONS AND AUTHORIZATIONS ALSO APPLY

**12. REPORTING REQUIREMENTS**

Annual reports are due January 31 following each year the permit is effective.

ISSUED BY

TITLE  
 CHIEF, DIVISION OF ENVIRONMENTAL REVIEW

DATE  
 02/18/2016

*townsendii ingens*), Virginia big-eared bat (*Coryrhinus townsendii virginianus*): capture with mist nets, capture with harp traps, handle, measure, identify, band, attach radio-transmitters, wing-punch, light-tag, and enter hibernacula and summer roosts while conducting presence/absence surveys, studies to document habitat use, and population monitoring, as conditioned below.

F. The permitted activities described above require prior, site-specific approval from the USFWS Field Supervisor in the State(s) where the project will occur. Permittee shall notify the USFWS Field Supervisor for the State in which activities are proposed to occur at least 15 days prior to conducting any activities. Contact information is in Condition P., below. Your request for this site-specific approval must be in writing and must indicate:

F.1. The purpose and a description of the activities proposed (e.g., surveys, radio telemetry studies, etc.).

F.2. Location of proposed activities, including project site (legal description and lat/long), county, and state.

F.3. Dates when the project is proposed to take place.

F.4. You may proceed with activities only upon receipt of written concurrence from the applicable USFWS Field Supervisor. *Your concurrence letter must be carried with this permit to authorize site-specific activities.*

G. Permittee shall adhere to the following conditions involving capture and handling of bats:

G.1. Federally listed bats may be captured (e.g., mist-nets and harp traps) following the protocol(s) provided by the USFWS, when available. Permittees must contact the USFWS FO in the State(s) in which activities are proposed to ensure correct protocol(s) are used. For example, the current Range-wide Indiana Bat Summer Survey Guidelines are available at:

<http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>. The monitoring interval for mist nets is once every 10 minutes. Harp traps must be continually monitored.

G.2. Captured bats may be held for a maximum of 30 minutes, unless injured. If an exception is required to this prohibition, permittee must receive prior written approval from the USFWS Field Supervisor for the state in which the activities are proposed to occur.

G.3. Permittees shall carry out non-intrusive measurements on all captured bats. Data shall be recorded for all bats captured and include, but not be limited to, the data requested in any automated or species specific data form provided by the USFWS (e.g., INDIANA BAT SURVEY AND BANDING DATA form). Handling should be limited to the maximum extent practicable and should cease immediately at signs of undue stress (e.g., bat becoming unresponsive, etc.). Bats that appear stressed from handling should be placed in a dark, quiet location away from activity where it can safely fly away after recovery, and should be checked to ensure successful recovery before leaving the study site. Photographs of the identifying characteristics for each individual federally listed species captured are encouraged. The permittee may be requested to provide individual photographs after submittal of annual reporting data.

G.4. If bands are applied; they must be lipped metal bands having a unique identifier. Bands should be applied to the forearm of captured bats prior to release. No more than one band per bat may be used. Position the band on the wing so that when the bat is hanging upside down, the band numbers are right-side up. A single band should be placed on the right forearm of each male and the left forearm of each female bat.

G.5. Radio transmitters may be applied during spring, summer, and fall roosting and migration periods via nontoxic skin bond adhesive. The total weight of the transmitter may not exceed 5% of the bat's body weight and the total weight of the package (transmitter and adhesive) may not exceed 6% of the bat's body weight. The lightest package (both transmitter and adhesive) capable of accomplishing the required task should be used,



especially with pregnant females and newly volant juveniles. Bats carrying transmitters must be monitored daily for at least five days, or until the transmitter falls off, whichever occurs first.

G.6. No capture activities shall occur within 20 meters of a known or potential summer or winter roost site, either natural or artificial, of a federally listed bat. If an exception is required to this prohibition, permittee must receive prior written approval from the USFWS Field Supervisor for the State in which the activities are proposed to occur.

G.7. Equipment used to capture and handle bats shall be cleaned and decontaminated, including personal gear such as boots and gloves, using products cited in decontamination guidelines and in compliance with label directions. The most recent decontamination guidance is found on the web at: <http://whitenosesyndrome.org/>

G.8. Caves, mines, or other suitable hibernation sites may be quietly searched in a manner that minimizes disturbance by utilizing the minimum number of people and time required to complete the survey. Surveys of known hibernacula conducted during the winter hibernation season shall follow the guidelines established in the recovery plans for each federally listed bat species with regards to how often a site may be visited and other species-specific requirements related to entering hibernaculum (for example, for Indiana bats, winter surveys should not be repeated more often than once every other year in any given hibernaculum), unless authorized by the appropriate Service Recovery Lead identified in Condition O (below).

Under no circumstances should multiple trips to the hibernation area occur within the same year without written approval of the USFWS Field Supervisor for the state in which activities are proposed.

Bats may be handled during winter surveys in order to collect band information and confirm the identification of listed species. When possible, bands should be read without touching the bat. Banded bats should only be handled if easily accessible and removal of the bat does not disturb a large number of additional bats and is unlikely to result in injury to the bat. Detailed photographs should be taken to document the presence of listed species in previously undocumented hibernaculum. Where hibernacula area and safety conditions allow, individuals entering hibernacula are recommended to utilize night vision goggles or red-filtered light and to remain in the site no more than 90 minutes to complete the work.

G.9. Surveys of gray bat maternity roosts and their other known summer roost sites shall be conducted by observing the bats with night vision equipment and/or infrared light sources (e.g., thermal infrared) as they emerge from their roosts to avoid any possible disturbance to these bats. At previously undocumented sites for these species, the accepted method to determine if they are present is to carefully and slowly enter the potential roost site to check for evidence of presence/use, such as visual observation of bats, significant quantities or a strong smell of guano, or the audible sounds produced by bats roosting at the site. As soon as any evidence is obtained that the roost site is being used by a federally listed bat species, survey team members shall immediately exit the roost site and make further observations from outside the entrance to the roost. All further observations shall be made from the entrance during the evening emergence.

H. Upon determination that endangered bats are present, permittee shall notify the following offices immediately (not to exceed 1 business day): the appropriate USFWS Regional Office (Condition N.), and the USFWS Field Office within the geographic location of study areas (Condition P.).

I. Permittee must carry a copy of this permit at all times when conducting the authorized activities. NOTE: This permit is limited to the above activities and identified species.

J. Issuance of this permit does not constitute permission to conduct these activities on National Wildlife Refuges or any other public or private lands; such permission must be obtained separately from the appropriate landowner or land manager before beginning these authorized activities. This permit, neither directly nor by implication,



grants the right of trespass.

K. The Service anticipates that no federally listed bats will be injured or killed as a result of permitted activities. In the event that any accidental injury or mortality occurs, all activities must cease and the injury or mortality reported immediately (not to exceed 1 business day) to the applicable office listed in condition N. and to the Lead Recovery Biologist for the species (Condition O). The USFWS will work with the permittee to determine the cause of injury or mortality and whether such could be avoided should activities be allowed to proceed. Dead or moribund bats may be retained for further study only with the written permission of the USFWS. Any bats that are not authorized for retention are to be chilled and promptly transferred to the USFWS for potential necropsy and/or for scientific or educational purposes.

Upon locating a dead, injured, or sick bat, or any other threatened or endangered species, under circumstances not addressed in this authorization, initial notification must be made immediately (not to exceed 1 business day) to the appropriate USFWS Office identified in Condition N., below, including a description of the circumstances, location information, and photo documentation. Notification should also be made at the same time to the appropriate USFWS Field Office identified in Condition P., below. Care should be taken in handling sick, injured, or dead specimens to ensure effective treatment or to preserve biological materials for later analysis. In conjunction with the care of sick or injured threatened or endangered species, and the preservation of biological materials from a dead animal, the permittee should take responsible steps to ensure that the site is not unnecessarily disturbed. Prior to collecting the specimen(s), you must photograph the specimen(s) to document the conditions in which they were found. You may preserve the specimen(s) by freezing them or other suitable method to allow scientific study. Disposition of collected specimen(s) shall be determined by the USFWS Field Office.

L. This permit is non-transferable.

M. Reports are due on January 31 following each year this permit is in effect. At a minimum, your report shall include:

M.1. The date, time, geographic locations (including datum and projection information).

M.2. All locations surveyed (regardless of whether federally listed bats were captured/observed).

M.3. Band numbers of all bats banded and all bats recovered/observed.

M.4. Information on any injuries and/or mortalities and disposition of specimens.

M.5. Location and characteristics of roost trees and bat colonies.

M.6. Copies of any separate reports and/or publications resulting from work conducted under the authority of this permit.

M.7. Data shall be submitted for all bats captured and include, but not be limited to, the data requested in any automated or species-specific data form provided by the USFWS (e.g., INDIANA BAT SURVEY AND BANDING DATA forms, the data collection forms found in the current Rangelwide Indiana Bat Summer Survey Guidelines cited in Condition H.1., or other species-specific forms). Photographs of the identifying characteristics for each individual federally listed species captured are encouraged. The permittee may be requested to provide individual photographs after submittal of annual reporting data.

M.8. Copies of all site specific authorization letters required under Condition F.

IF NO ACTIVITIES OCCURRED OVER THE COURSE OF THE YEAR, INDICATION OF SUCH SHALL BE SUBMITTED AS AN ANNUAL REPORT.

N. Copies of your reports shall be sent to the offices listed below. When possible, electronic copies shall be submitted in lieu of hard copies in MS Word, Portable Document Format, Rich Text Format, or other file format that is compatible with the receiving office.

N.1.

Regional Recovery Permits Coordinator  
U.S. Fish and Wildlife Service - Midwest Region (Region 3)  
Ecological Services - Endangered Species  
5600 American Blvd. W., Suite 990  
Bloomington, Minnesota 55437-1458  
(612/713-5343; fax 612/713-5292)  
[permitsR3ES@fws.gov](mailto:permitsR3ES@fws.gov)

N.2.

Regional Recovery Permits Coordinator  
U.S. Fish and Wildlife Service - Southeast Region (Region 4)  
1875 Century Boulevard, Suite 200  
Atlanta, Georgia 30345-3301  
(404/679-7097; fax 404/679-7081)  
[permitsR4ES@fws.gov](mailto:permitsR4ES@fws.gov)

N.3.

Regional Recovery Permits Coordinator  
U.S. Fish and Wildlife Service - Northeast Region (Region 5)  
Endangered Species Division  
300 Westgate Center Drive  
Hadley, Massachusetts 01035-9589  
(703/358-2402; fax 413/253-8482)  
[permitsR5ES@fws.gov](mailto:permitsR5ES@fws.gov) <<mailto:permitsR5ES@fws.gov>>

N.4.

Regional Recovery Permits Coordinator & Assistant Regional Recovery Coordinator  
U.S. Fish and Wildlife Service - Mountain-Prairie Region (Region 6)  
Endangered Species Permits Office  
Denver Federal Center, P.O. Box 25486  
Denver, Colorado 80225-0489  
(303/236-4212; fax 303/236-0027)  
[permitsR6ES@fws.gov](mailto:permitsR6ES@fws.gov)

O. Additionally, based on the species, reports and publications shall be submitted to the following:

O.1. For activities/studies involving Indiana Bats:

Lori Pruitt, Recovery Lead  
U.S. Fish and Wildlife Service  
Indiana Ecological Services Field Office  
620 S. Walker Street  
Bloomington, Indiana 47403-2121

(812/334-4261 x1213; fax 812/334-4273)

O.2. For activities/studies involving Gray Bats:

Shauna Marquardt, Recovery Lead  
U.S. Fish and Wildlife Service  
Missouri Ecological Services Field Office  
101 Park De Ville Drive, Suite A  
Columbia, Missouri 65203  
(573/234-2132 x174; fax 573/234-2181)

O.3. For activities/studies involving Northern Long-eared Bats:

Jill Utrup, Recovery Lead  
U.S. Fish and Wildlife Service  
Twin Cities Ecological Services Field Office  
4104 American Blvd. E  
Bloomington, Minnesota 55425  
(612/725-3548 x207; fax 612/725-3609)

O.4. For activities/studies involving Ozark Big-eared Bats:

Richard Stark, Recovery Lead  
Oklahoma Field Office  
U.S. Fish and Wildlife Service  
9014 E. 21<sup>st</sup> St.  
Tulsa, Oklahoma 74129-1428  
(918) 382-4501

O.5. For activities/studies involving Virginia Big-eared Bats:

Barbara Douglas, Recovery Lead  
U.S. Fish and Wildlife Service  
West Virginia Field Office  
694 Beverly Pike  
Elkins, WV 26241  
(304) 636-6586

P. Additionally, based on geographic area, reports and publications shall be submitted to the following:

P.1. For studies conducted in Alabama:

Field Supervisor  
Alabama Ecological Services Field Office  
1208-B Main Street  
Daphne, Alabama 36526-4419  
(251) 441-5181

P.2. For studies conducted in Arkansas:

Field Supervisor  
Arkansas Field Office

110 South Amity Road  
Suite 300  
Conway, Arkansas 72032-8975  
(501) 513-4470

P.3. For studies conducted in Connecticut, Massachusetts, New Hampshire, Rhode Island and Vermont:

Field Supervisor  
New England Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301  
(603) 223-2541

P.4. For studies conducted in Delaware, District of Columbia, and Maryland:

Field Supervisor  
Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401  
(410) 573-4573

P.5. For studies conducted in North Florida:

Field Supervisor  
North Florida Ecological Services Office  
7915 Baymeadows Way  
Suite 200  
Jacksonville, FL 32256-7517  
(904) 731-3336

P.6. For studies conducted in Georgia:

Field Supervisor  
Georgia Field Office  
105 Westpark Drive, Suite D  
Athens, GA 30606-3175  
(706) 613-9493; fax 706/613-6059

P.7. For studies conducted in Illinois:

P.7.a.  
Kristen Lundh  
Endangered Species Coordinator for Illinois/Iowa  
U.S. Fish and Wildlife Service  
Ecological Services Field Office  
1511 47<sup>th</sup> Ave.  
Moline, Illinois 61265  
(309/757-5800, x215; fax 309/757-5807)

P.7.b.  
Joe Kath

Endangered Species Coordinator  
Illinois Department of Natural Resources  
Division of Natural Heritage  
One Natural Resource Way  
Springfield, Illinois 62702-1271  
(217/785-8764; fax 217/785-2438)

P.8. For studies conducted in Indiana:

P.8.a.  
Lori Pruitt  
Endangered Species Coordinator for Indiana  
U.S. Fish and Wildlife Service  
Ecological Services Field Office  
620 S. Walker Street  
Bloomington, Indiana 47403-2121  
(812/334-4261 x1213; fax 812/334-4273)

P.8.b.  
Scott Johnson  
Indiana Department of Natural Resources  
5596 East State Road 46  
Bloomington, Indiana 47401  
(812/334-1137, ext. 3400)

P.9. For studies conducted in Iowa:

Kelly Poole  
Endangered Species Coordinator  
Iowa Department of Natural Resources  
Parks, Recreation, and Preserves  
Wallace State Office Building  
East 9th and Grand Avenue  
Des Moines, Iowa 50319-0034  
(515/281-8524)

p.10. For studies conducted in Kansas

Field Supervisor  
Kansas Field Office  
2609 Anderson Avenue  
Manhattan, Kansas 66502

P.11. For studies conducted in Kentucky:

Field Supervisor  
Frankfort Field Office  
J C Watts Federal Bldg., Rm 265  
330 West Broadway  
Frankfort, KY 40601-8670

(502) 695-0468

P.12. For studies conducted in Michigan:

P.12.a.

Barbara Hosler  
Endangered Species Coordinator for Michigan  
U.S. Fish and Wildlife Service  
2651 Coolidge Road  
East Lansing, Michigan 48823  
(517/351-6326; fax 517/351-1443)

P.12.b.

Dan Kennedy  
Endangered Species Coordinator  
Michigan Department of Natural Resources  
Wildlife Division  
P.O. Box 30444  
Lansing, Michigan 48909-7444  
(517) 284-6194; fax 517/373-6705

P.13. For studies conducted in Minnesota and Wisconsin:

P.13.a.

Phil Delphey  
Endangered Species Coordinator for Minnesota and Wisconsin  
U.S. Fish and Wildlife Service  
Ecological Services Field Office  
4101 American Blvd E.  
Bloomington, Minnesota 55425  
(612/725-3548 x2206; fax 612/725-3609)

P.13.b.

Owen Boyle  
Wisconsin Department of Natural Resources  
101 S. Webster Street  
Madison, Wisconsin 53707-7921  
(608/266-5244)  
[Owen.Boyle@wisconsin.gov](mailto:Owen.Boyle@wisconsin.gov) <<mailto:Owen.Boyle@wisconsin.gov>>

P.13.c.

Richard Baker  
Minnesota Endangered Species Coordinator  
Division of Ecological and Water Resources  
Minnesota Department of Natural Resources  
500 Lafayette Rd., Box 25  
St. Paul, MN 55155  
Phone: 651/259-5073  
[richard.baker@state.mn.us](mailto:richard.baker@state.mn.us) <<mailto:richard.baker@dnr.state.mn.us>>

P.14. For studies conducted in Mississippi:

Field Supervisor  
Mississippi Field Office  
6578 Dogwood View Pkwy, Ste A  
Jackson, MS 39213-7856  
(601) 321-1122

P.15. For studies conducted in Missouri:

P.15.a.  
Field Supervisor  
U.S. Fish and Wildlife Service  
Missouri Ecological Services Field Office  
101 Park DeVillie Drive, Suite A  
Columbia, Missouri 65203-2132  
(573/234-2132; fax 573/234-2181)

P.15.b.  
Scientific Collecting Permit Coordinator  
Missouri Department of Conservation  
Endangered Species and Natural History Division  
2901 W. Truman Blvd., P.O. Box 180  
Jefferson City, Missouri 65102-0180  
(573/522-4115 ext. 3322; fax 573/751-4864)

p.16. For studies conducted in Montana

Field Supervisor  
Montana Field Office  
585 Shepard Way, Suite 1  
Helena, Montana 59601

P.17. For studies conducted in New Jersey:

Field Supervisor  
New Jersey Field Office  
927 N. Main Street, Building D  
Pleasantville, NJ 08232-1454  
(609) 646-9310

P.18. For studies conducted in New York:

Field Supervisor  
New York Field Office  
3817 Luker Road  
Cortland, NY 13045  
(607) 753-9334

P.19. For studies conducted in North Carolina:

Field Supervisor



Asheville Field Office  
160 Zillicoa Street  
Asheville, NC 28801-1082  
(828) 258-3939

p.20. For studies conducted in North Dakota:

Field Supervisor  
North Dakota Field Office  
3425 Miriam Avenue  
Bismarck, North Dakota 58501

P.21. For studies conducted in Ohio:

P.21.a.  
Endangered Species Coordinator for Ohio  
U.S. Fish and Wildlife Service  
Ohio Ecological Services Field Office  
4625 Morse Road, Suite 104  
Columbus, Ohio 43230  
(614/416-8993, x22; fax 614/416-8994)

P.21.b.  
Endangered Species Coordinator  
Ohio Department of Natural Resources  
Division of Wildlife  
2045 Morse Road, Building G  
Columbus, Ohio 43229-6693  
(614-265-6329; fax 614/262-1143)

P.22. For studies conducted in Oklahoma:

P.22.a.  
Field Supervisor  
Oklahoma Field Office  
U.S. Fish and Wildlife Service  
9014 E. 21<sup>st</sup> St.  
Tulsa, Oklahoma 74129-1428  
(918) 382-4501

P.22.b.  
Todd Fagin  
Oklahoma Natural Heritage Inventory  
111 E. Chesapeake St.  
Norman, OK 73019  
405 325-4700 (Direct Line)  
405 325-4042 (Oklahoma Biological Survey main office)  
405 325-7702 (Fax)  
[tfagin@ou.edu](mailto:tfagin@ou.edu) <<mailto:tfagin@ou.edu>>

P.22.c.

Oklahoma Department of Wildlife Conservation  
Wildlife Division  
1801 N. Lincoln Blvd.  
Oklahoma City, Oklahoma 73105  
405/990-7259; fax 405/521-4706

P.23. For studies conducted in Pennsylvania:

Field Supervisor  
Pennsylvania Field Office  
315 So. Allen Street, Suite 322  
State College, PA 16801-4850  
(814) 234-4090

P.24. For studies conducted in South Carolina:

P.24.a.  
South Carolina Field Office  
Thomas McCoy, Field Supervisor  
176 Croghan Spur Road, Suite 200  
Charleston, SC 29407-7558  
(843) 727-4707 x227

P.24.b.  
Mary Bunch  
Biologist/Preserve Manager  
South Carolina Department of Natural Resources  
311 Natural Resources Drive  
Clemson, SC 29631  
(864) 654-6738 x15  
Fax: (864) 654-9168

p.25.. For studies conducted in South Dakota

Field Supervisor  
South Dakota Field Office  
420 South Garfield Avenue, Suite 400  
Pierre, South Dakota 57501

P.26. For studies conducted in Tennessee:

P.26 a.  
Field Supervisor  
Cookeville Field Office  
U.S. Fish and Wildlife Service  
446 Neal Street  
Cookeville, TN 38501-4027  
(931) 528-6481

P.26.b.  
Brian Flock  
Bat Coordinator  
Tennessee Wildlife Resources Agency  
P.O. Box 40747  
Nashville, TN 37204  
(615) 781-6569

P.27. For studies conducted in Virginia:

Field Supervisor  
Virginia Field Office  
6669 Short Lane  
Gloucester, VA 23061  
(804) 693-6694

P.28. For studies conducted in West Virginia:

Field Supervisor  
West Virginia Field Office  
694 Beverly Pike  
Elkins, WV 26241  
(304) 636-6586

p.29. For studies conducted in Wyoming


Field Supervisor  
Wyoming Field Office  
5353 Yellowstone Road, Suite 308A  
Cheyenne, Wyoming 82009

**END**

## **Appendix C. Completed Data Forms**

**Deuel County Wind Energy Net Site Data Sheet**

Site No.: SD11	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0105	Date: 08/03/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

<p align="center">Net Site Diagram: DeuelCountyWindEnergy_Wsdndc0105_NetSiteDiagram_1470465411999.png</p> 		<p align="center"><b>Dominant Vegetation</b></p> <p>1 Fraxinus pennsylvanica</p>			
		<p align="center"><b>Net(s) or Acoustic Unit(s) by Habitat</b></p>			
<b>Net</b>	<b>Habitat</b>	<b>Latitude</b>	<b>Longitude</b>		
A	Corridor	44.8797785485141	-96.4782235158813		
B	Corridor	44.8796864819199	-96.4785565941987		
C	Stream	44.8798824222838	-96.4779565572949		
D	Stream	44.8798333630896	-96.4777396164681		
E	Corridor	44.8801105795846	-96.4779785928284		
		<p align="center"><b>No. of Poles X Net length</b></p>			
A	6	X	5.2	=	31.2
B	9	X	5.2	=	46.8
C	4	X	5.2	=	20.8
D	6	X	5.2	=	31.2
E	9	X	5.2	=	46.8

**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: SD11	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0105	Date: 08/03/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set								
															08/03/2016	Waxing Crescent	2.4	07:12	21:12	06:19	20:46								
															Time	Temp	Sky	Wind	# Bats										
															21:37	78°F	Partly Cloudy	Calm (0 mph)	0										
															22:11	76°F	Partly Cloudy	Light wind (1-3 mph)	0										
															23:05	76°F	Clear	Light breeze (4-7 mph)	0										
Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):																													
#	Net Name	N	W	Compass	Net Photos																								
#	Acoustic Unit Serial #				Brand																								
Start Time																End Time													
20:45																01:45													

Site Photos: 115.png,115.png,115.png,115.png,123.png,123.png,123.png

**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: SD11	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0105	Date: 08/04/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note
1	08/04/2016 23:06	Big brown bat	A	F	Non-reproductive	45	18	C ✓	1m		0		113.png	

Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
08/04/2016	Waxing Crescent	5.1	08:15	21:45	06:20	20:45

Time	Temp	Sky	Wind	# Bats
20:56	68°F	Clear	Light wind (1-3 mph)	0
22:42	65°F	Clear	Light breeze (4-7 mph)	0
23:30	64°F	Clear	Light wind (1-3 mph)	1

**Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):**

#	Net Name	N	W	Compass	Net Photos
A	A	44.879783 6439809	-96.478663 0882912	34.2849578 857422	113.png
B	C	44.879838 4376713	-96.477764 7210445	64.9522933 959961	119.png
C	D	44.879848 3098344	-96.477880 8598374	279.310333 251953	120.png
D	E	44.879959 2985391	-96.477485 4633358	171.587875 366211	121.png

#	Acoustic Unit Serial #	Brand

Start Time	End Time
20:45	01:45

Site Photos: 115.png,115.png,115.png,115.png,123.png,123.png,123.png



**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: SD11	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0105	Date: 08/05/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set			
1	08/05/2016 01:56	Eastern red bat	A	F	Non-reproductive	40	15	C	1m		0		122.png		08/05/2016	Waxing Crescent	10.6	09:17	22:15	06:21	20:44			
															<b>Time</b>					<b>Temp</b>	<b>Sky</b>	<b>Wind</b>		<b># Bats</b>
															00:21	62°F	Clear	Light wind (1-3 mph)		0				
															01:21	61°F	Clear	Light wind (1-3 mph)		0				
															20:18	72°F	Clear	Calm (0 mph)		0				
															21:41	72°F	Clear	Calm (0 mph)		0				
															22:20	65°F	Clear	Calm (0 mph)		0				
															23:26	63°F	Clear	Calm (0 mph)		0				
															<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>									
															#	Net Name	N	W	Compass	Net Photos				
															A	B	44.879780 5421472	-96.478794 4872831	347.897583 007812	122.png				
#	<b>Acoustic Unit Serial #</b>			<b>Brand</b>																				
<b>Start Time</b>					<b>End Time</b>																			
20:45					01:45																			

Site Photos: 115.png,115.png,115.png,115.png,123.png,123.png,123.png

**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: SD11	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0105	Date: 08/06/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set															
															<b>Time</b>					<b>Temp</b>	<b>Sky</b>	<b>Wind</b>		<b># Bats</b>												
															00:04					61°F	Clear	Calm (0 mph)		0												
															01:23					58°F	Clear	Calm (0 mph)		0												
															<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>																					
															<b>#</b>	<b>Net Name</b>		<b>N</b>	<b>W</b>	<b>Compass</b>		<b>Net Photos</b>														
															<b>#</b>	<b>Acoustic Unit Serial #</b>																	<b>Brand</b>			
																									<b>Start Time</b>					<b>End Time</b>						
																									20:45					01:45						

Site Photos: 115.png,115.png,115.png,115.png,123.png,123.png,123.png

**Deule County Wind Farm Net Site Data Sheet**

Site No.: 6	Project Name: Deule County Wind Farm	Site Name: SD-12	Date: 08/06/2016
County: Deuel	State: South Dakota	Company: Jackson Group	Surveyors: Kat Cunningham
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.: WSDNDC0081	Permits: TE48049B-0

<p align="center">Net Site Diagram: DeuleCountyWindFarm_SD12_NetSiteDiagram_1471855024796.png</p>		<p align="center"><b>Dominant Vegetation</b></p> <p>1 Ulnus sp.</p> <p>2 Acer negundo</p>																									
<p align="center"><b>Net(s) or Acoustic Unit(s) by Habitat</b></p> <table border="1"> <thead> <tr> <th>Net</th> <th>Habitat</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Edge</td> <td>44.856823</td> <td>-96.540485</td> </tr> <tr> <td>B</td> <td>Stream</td> <td>44.856375</td> <td>-96.540342</td> </tr> <tr> <td>C</td> <td>Edge</td> <td>44.856148</td> <td>-96.540385</td> </tr> </tbody> </table>				Net	Habitat	Latitude	Longitude	A	Edge	44.856823	-96.540485	B	Stream	44.856375	-96.540342	C	Edge	44.856148	-96.540385								
Net	Habitat	Latitude	Longitude																								
A	Edge	44.856823	-96.540485																								
B	Stream	44.856375	-96.540342																								
C	Edge	44.856148	-96.540385																								
<p align="center"><b>No. of Poles X Net length</b></p> <table border="1"> <thead> <tr> <th>Net</th> <th>No. of Poles</th> <th>X</th> <th>Net length</th> <th>=</th> <th>Total Length</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>9</td> <td>X</td> <td>5.2</td> <td>=</td> <td>46.8</td> </tr> <tr> <td>B</td> <td>12</td> <td>X</td> <td>5.2</td> <td>=</td> <td>62.4</td> </tr> <tr> <td>C</td> <td>9</td> <td>X</td> <td>5.2</td> <td>=</td> <td>46.8</td> </tr> </tbody> </table>				Net	No. of Poles	X	Net length	=	Total Length	A	9	X	5.2	=	46.8	B	12	X	5.2	=	62.4	C	9	X	5.2	=	46.8
Net	No. of Poles	X	Net length	=	Total Length																						
A	9	X	5.2	=	46.8																						
B	12	X	5.2	=	62.4																						
C	9	X	5.2	=	46.8																						

**Deule County Wind Farm Bat Capture Data Sheet**

Site No.: 6	Project Name: Deule County Wind Farm	Site Name: SD-12	Date: 08/06/2016
County: Deuel	State: South Dakota	Company: Jackson Group	Surveyors: Kat Cunningham
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.: WSDNDC0081	Permits: TE48049B-0

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
															08/06/2016	Waxing Crescent	15.6	10:15	20:42	06:17	20:43
1	08/06/2016 22:50	LABO	A	M	Testes descended	35.5	10	C	2.5m		0										
2	08/06/2016 22:30	LABO	A	M	Testes descended	35	10	A	2.5m		0										
															Time	Temp	Sky	Wind	# Bats		
															21:00	22°C	Clear	Calm (0 mph)			
															22:00	19°C	Clear	Calm (0 mph)	0		
															23:00	18°C	Clear	Calm (0 mph)	2		
															Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):						
#	Net Name	N	W	Compass	Net Photos																
															#	Acoustic Unit Serial #			Brand		
															Start Time		End Time				
															20:45		01:45				
Site Photos:																					

**Deule County Wind Farm Bat Capture Data Sheet**

Site No.: 6	Project Name: Deule County Wind Farm	Site Name: SD-12	Date: 08/07/2016
County: Deuel	State: South Dakota	Company: Jackson Group	Surveyors: Kat Cunningham
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.: WSDNDC0081	Permits: TE48049B-0

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set			
															Time	Temp	Sky	Wind	# Bats					
1	08/07/2016 00:05	LACI	A	M	Testes descended	50	20	A	5m		0													
2	08/07/2016 22:15	LABO	N/A	N/A	Unknown			A	4m					Escaped										
															<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>									
															#	Net Name	N	W	Compass	Net Photos				
															#	Acoustic Unit Serial #			Brand					
															<b>Start Time</b>					<b>End Time</b>				
															20:45					01:45				

Site Photos:

**Deule County Wind Farm Bat Capture Data Sheet**

Site No.: 6	Project Name: Deule County Wind Farm	Site Name: SD-12	Date: 08/06/2016
County: Deuel	State: South Dakota	Company: Jackson Group	Surveyors: Kat Cunningham
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.: WSDNDC0081	Permits: TE48049B-0

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
															<b>Time</b>	<b>Temp</b>	<b>Sky</b>	<b>Wind</b>	<b># Bats</b>		
															00:00	17°C	Clear	Calm (0 mph)	1		
															01:00	16°C	Clear	Calm (0 mph)	2		
															21:00	23°C	Clear	Calm (0 mph)	0		
															22:00	21°C	Clear	Light wind (1-3 mph)	0		
															23:00	20°C	Clear	Light wind (1-3 mph)	0		
#	Net Name	N	W	Compass	Net Photos																
#	Acoustic Unit Serial #			Brand																	
															<b>Start Time</b>		<b>End Time</b>				
															20:45		01:45				

Site Photos:

**Deule County Wind Farm Bat Capture Data Sheet**

Site No.: 6	Project Name: Deule County Wind Farm	Site Name: SD-12	Date: 08/09/2016
County: Deuel	State: South Dakota	Company: Jackson Group	Surveyors: Kat Cunningham
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.: WSDNDC0081	Permits: TE48049B-0

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/ Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Il luminat ion(%)	Moon Rise	Moon Set	Sun Rise	Sun Set																		
															<b>Time</b>					<b>Temp</b>					<b>Sky</b>					<b>Wind</b>					<b># Bats</b>				
															00:00					19°C					Clear					Light breeze (4-7 mph)					0				
															01:00					18°C					Clear					Light breeze (4-7 mph)					0				
															<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>																								
															<b>#</b>		<b>Net Name</b>				<b>N</b>		<b>W</b>		<b>Compass</b>				<b>Net Photos</b>										
															<b>#</b>		<b>Acoustic Unit Serial #</b>										<b>Brand</b>												
															<b>Start Time</b>											<b>End Time</b>													
															20:45											01:45													

Site Photos:



Deuel County Wind Energy Net Site Data Sheet

Site No.: Sd13	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0073	Date: 08/06/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

<p>Net Site Diagram: DeuelCountyWindEnergy_Wsdndc0073_NetSiteDiagram_1470557535580.png</p>		<p><b>Dominant Vegetation</b></p> <p>1 Populus deltoides</p> <p>2 Acer negundo</p>			
<p><b>Net(s) or Acoustic Unit(s) by Habitat</b></p>					
<b>Net</b>	<b>Habitat</b>	<b>Latitude</b>	<b>Longitude</b>		
A	Stream	44.8691921721089	-96.4304969899253		
B	Stream	44.8202035250559	-96.4525617287461		
C	Corridor	44.8200931634312	-96.4531283743456		
<p><b>No. of Poles X Net length</b></p>					
A	4	X	5.2	=	20.8
B	6	X	5.2	=	31.2
C	9	X	5.2	=	46.8

**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: Sd13	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0073	Date: 08/06/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set															
															08/06/2016	Waxing Crescent	17.7	10:18	22:44	06:22	20:44															
															Time	Temp	Sky	Wind	# Bats																	
															21:01	68°F	Clear	Calm (0 mph)	0																	
															22:07	66°F	Clear	Calm (0 mph)	0																	
															23:15	65°F	Clear	Light wind (1-3 mph)	0																	
															Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):																					
															#	Net Name	N	W	Compass	Net Photos																
															#	Acoustic Unit Serial #				Brand																
															Start Time											End Time										
															20:45											01:45										

Site Photos: 130.png,130.png,130.png,130.png

**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: Sd13	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0073	Date: 08/07/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
1	08/07/2016 01:05	Big brown bat	A	F	Non-reproductive	45	21	B	1m		0		120.png		08/07/2016	Waxing Crescent	24.4	11:17	23:12	06:23	20:41
2	08/07/2016 00:50	Eastern red bat		M	Non-reproductive	35	10.5		2.5m		0		119.png								

Time	Temp	Sky	Wind	# Bats
00:11	63°F	Clear	Light breeze (4-7 mph)	0
01:12	63°F	Clear	Light wind (1-3 mph)	0
20:39	71°C	Clear	Calm (0 mph)	0
21:37	69°F	Clear	Calm (0 mph)	0
22:23	68°F	Clear	Calm (0 mph)	0
23:08	66°F	Clear	Calm (0 mph)	0

**Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):**

#	Net Name	N	W	Compass	Net Photos
A	B	44.820519 1875294	-96.453237 0586847	358.486206 054687	128.png
B	A	44.818520 733771	-96.452482 461293	234.713211 05957	129.png
C	C	44.819620 2315756	-96.454423 9459815	10.0118494 033814	134.png

#	Acoustic Unit Serial #	Brand

Start Time	End Time
20:45	01:45

Site Photos: 130.png,130.png,130.png,130.png

**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: Sd13	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0073	Date: 08/08/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note
1	08/08/2016 23:10	Big brown bat	A	F	Post-lactating	45	23	B	1m		0		129.png	
2	08/08/2016 21:53	Eastern red bat	A	M	Non-reproductive	38	10	A	1m		0		121.png	

Date	Moon Phase	Moon illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
08/08/2016	Waxing Crescent	34.4	12:15	23:41	06:24	20:40

Time	Temp	Sky	Wind	# Bats
00:19	64°F	Clear	Light breeze (4-7 mph)	0
01:16	63°F	Clear	Light breeze (4-7 mph)	0
20:51	72°F	Clear	Calm (0 mph)	0
22:04	69°F	Clear	Calm (0 mph)	1

Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):					
#	Net Name	N	W	Compass	Net Photos
#	Acoustic Unit Serial #			Brand	

Start Time	End Time
20:45	01:45

Site Photos: 130.png,130.png,130.png,130.png

**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: Sd13	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0073	Date: 08/09/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set	
1	08/09/2016 00:01	Eastern red bat	A	F	Non-reproductive	41	15	A ✓	1m		0		128.png									
															<b>Time</b>	<b>Temp</b>	<b>Sky</b>	<b>Wind</b>		<b># Bats</b>		
															00:06	68°F	Clear	Light breeze (4-7 mph)		1		
															<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>							
															<b>#</b>	<b>Net Name</b>	<b>N</b>	<b>W</b>	<b>Compass</b>	<b>Net Photos</b>		
															<b>#</b>	<b>Acoustic Unit Serial #</b>				<b>Brand</b>		
															<b>Start Time</b>				<b>End Time</b>			
															20:45				01:45			

Site Photos: 130.png,130.png,130.png,130.png

**Deule County Wind Farm Net Site Data Sheet**

Site No.: 7	Project Name: Deule County Wind Farm	Site Name: SD-14	Date: 08/09/2016
County: Deuel	State: South Dakota	Company: Jackson Group	Surveyors: Kat Cunningham
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.: WSDNDC0081	Permits: TE48049B-0

<p align="center"><b>Net Site Diagram: DeuleCountyWindFarm_SD14_NetSiteDiagram_1471856898974.png</b></p>		<p align="center"><b>Dominant Vegetation</b></p> <p>1 Ulnus sp.</p> <p>2 Acer negundo</p>																			
<p align="center"><b>Net(s) or Acoustic Unit(s) by Habitat</b></p> <table border="1"> <thead> <tr> <th>Net</th> <th>Habitat</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Edge</td> <td>44.859494</td> <td>-96.528616</td> </tr> <tr> <td>B</td> <td>Corridor</td> <td>44.859562</td> <td>-96.527988</td> </tr> <tr> <td>C</td> <td>Stream</td> <td>44.859254</td> <td>-96.528438</td> </tr> </tbody> </table>				Net	Habitat	Latitude	Longitude	A	Edge	44.859494	-96.528616	B	Corridor	44.859562	-96.527988	C	Stream	44.859254	-96.528438		
Net	Habitat	Latitude	Longitude																		
A	Edge	44.859494	-96.528616																		
B	Corridor	44.859562	-96.527988																		
C	Stream	44.859254	-96.528438																		
<p align="center"><b>No. of Poles X Net length</b></p> <table border="1"> <tbody> <tr> <td>A</td> <td>12</td> <td>X</td> <td>5.2</td> <td>=</td> <td>62.4</td> </tr> <tr> <td>B</td> <td>9</td> <td>X</td> <td>5.2</td> <td>=</td> <td>46.8</td> </tr> <tr> <td>C</td> <td>6</td> <td>X</td> <td>5.2</td> <td>=</td> <td>31.2</td> </tr> </tbody> </table>				A	12	X	5.2	=	62.4	B	9	X	5.2	=	46.8	C	6	X	5.2	=	31.2
A	12	X	5.2	=	62.4																
B	9	X	5.2	=	46.8																
C	6	X	5.2	=	31.2																

**Deule County Wind Farm Bat Capture Data Sheet**

Site No.: 7	Project Name: Deule County Wind Farm	Site Name: SD-14	Date: 08/09/2016
County: Deuel	State: South Dakota	Company: Jackson Group	Surveyors: Kat Cunningham
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.: WSDNDC0081	Permits: TE48049B-0

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
															08/09/2016	Waxing Crescent	40.7	13:12		06:20	20:39
															<b>Time</b>	<b>Temp</b>	<b>Sky</b>	<b>Wind</b>	<b># Bats</b>		
															21:00	27°C	Clear	Light wind (1-3 mph)	0		
															22:00	26°C	Clear	Light wind (1-3 mph)	0		
															23:00	24°C	Clear	Calm (0 mph)	0		
															<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>						
															<b>#</b>	<b>Net Name</b>	<b>N</b>	<b>W</b>	<b>Compass</b>	<b>Net Photos</b>	
															<b>#</b>	<b>Acoustic Unit Serial #</b>			<b>Brand</b>		
															<b>Start Time</b>		<b>End Time</b>				
															20:35		01:35				

Site Photos:



**Deule County Wind Farm Bat Capture Data Sheet**

Site No.: 7		Project Name: Deule County Wind Farm			Site Name: SD-14			Date: 08/10/2016		
County: Deuel		State: South Dakota			Company: Jackson Group			Surveyors: Kat Cunningham		
KM Block No.:		Approx. Mile Post (XXX.X):			Tract No.: WSDNDC0081			Permits: TE48049B-0		

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
															08/10/2016	First Quarter	50.0	14:10	12:07	06:22	20:37
		Time		Temp		Sky		Wind		# Bats											
		00:00		23°C		Clear		Calm (0 mph)		0											
		01:00		22°C		Clear		Light wind (1-3 mph)		0											
		21:00		21°C		Cloudy or Overcast		Gentle breeze (8-12 mph)		0											
		22:00		21°C		Drizzle or Light Rain		Gentle breeze (8-12 mph)		0											
		01:29		21°C		Thunderstorm		Gentle breeze (8-12 mph)		0											
Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):																					
		#	Net Name	N	W	Compass	Net Photos														
		#	Acoustic Unit Serial #			Brand															
										Start Time		End Time									
										20:35		01:35									
Site Photos:																					

**Deule County Wind Farm Bat Capture Data Sheet**

Site No.: 7	Project Name: Deule County Wind Farm	Site Name: SD-14	Date: 08/11/2016
County: Deuel	State: South Dakota	Company: Jackson Group	Surveyors: Kat Cunningham
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.: WSDNDC0081	Permits: TE48049B-0

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
															08/11/2016	Waxing Gibbous	59.2	15:07	12:39	06:23	20:36
															<b>Time</b>	<b>Temp</b>	<b>Sky</b>	<b>Wind</b>	<b># Bats</b>		
															21:00	25°C	Partly Cloudy	Light breeze (4-7 mph)	0		
															22:00	24°C	Cloudy or Overcast	Light breeze (4-7 mph)	0		
															23:00	23°C	Cloudy or Overcast	Light breeze (4-7 mph)	0		
															<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>						
															<b>#</b>	<b>Net Name</b>	<b>N</b>	<b>W</b>	<b>Compass</b>	<b>Net Photos</b>	
															<b>#</b>	<b>Acoustic Unit Serial #</b>			<b>Brand</b>		
															<b>Start Time</b>		<b>End Time</b>				
															20:35		01:35				

Site Photos: \_\_\_\_\_

**Deule County Wind Farm Bat Capture Data Sheet**

Site No.: 7	Project Name: Deule County Wind Farm	Site Name: SD-14	Date: 08/12/2016
County: Deuel	State: South Dakota	Company: Jackson Group	Surveyors: Kat Cunningham
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.: WSDNDC0081	Permits: TE48049B-0

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note																																																																									
<table border="1"> <tr> <td>08/12/2016</td> <td>Waxing Gibbous</td> <td>68.0</td> <td>16:03</td> <td>01:14</td> <td>06:24</td> <td>20:34</td> </tr> <tr> <td><b>Time</b></td> <td><b>Temp</b></td> <td colspan="2"><b>Sky</b></td> <td><b>Wind</b></td> <td><b># Bats</b></td> </tr> <tr> <td>00:00</td> <td>23°C</td> <td colspan="2">Cloudy or Overcast</td> <td>Light breeze (4-7 mph)</td> <td>0</td> </tr> <tr> <td>01:00</td> <td>22°C</td> <td colspan="2">Cloudy or Overcast</td> <td>Light breeze (4-7 mph)</td> <td>0</td> </tr> <tr> <td>21:00</td> <td>21°C</td> <td colspan="2">Clear</td> <td>Calm (0 mph)</td> <td>0</td> </tr> <tr> <td>22:00</td> <td>20°C</td> <td colspan="2">Clear</td> <td>Calm (0 mph)</td> <td>0</td> </tr> <tr> <td>23:00</td> <td>19°C</td> <td colspan="2">Clear</td> <td>Calm (0 mph)</td> <td>0</td> </tr> <tr> <td colspan="6"><b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b></td> </tr> <tr> <td><b>#</b></td> <td><b>Net Name</b></td> <td><b>N</b></td> <td><b>W</b></td> <td><b>Compass</b></td> <td><b>Net Photos</b></td> </tr> <tr> <td><b>#</b></td> <td colspan="3"><b>Acoustic Unit Serial #</b></td> <td colspan="2"><b>Brand</b></td> </tr> <tr> <td colspan="4"><b>Start Time</b></td> <td colspan="2"><b>End Time</b></td> </tr> <tr> <td colspan="4">20:35</td> <td colspan="2">01:35</td> </tr> </table>															08/12/2016	Waxing Gibbous	68.0	16:03	01:14	06:24	20:34	<b>Time</b>	<b>Temp</b>	<b>Sky</b>		<b>Wind</b>	<b># Bats</b>	00:00	23°C	Cloudy or Overcast		Light breeze (4-7 mph)	0	01:00	22°C	Cloudy or Overcast		Light breeze (4-7 mph)	0	21:00	21°C	Clear		Calm (0 mph)	0	22:00	20°C	Clear		Calm (0 mph)	0	23:00	19°C	Clear		Calm (0 mph)	0	<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>						<b>#</b>	<b>Net Name</b>	<b>N</b>	<b>W</b>	<b>Compass</b>	<b>Net Photos</b>	<b>#</b>	<b>Acoustic Unit Serial #</b>			<b>Brand</b>		<b>Start Time</b>				<b>End Time</b>		20:35				01:35	
08/12/2016	Waxing Gibbous	68.0	16:03	01:14	06:24	20:34																																																																																	
<b>Time</b>	<b>Temp</b>	<b>Sky</b>		<b>Wind</b>	<b># Bats</b>																																																																																		
00:00	23°C	Cloudy or Overcast		Light breeze (4-7 mph)	0																																																																																		
01:00	22°C	Cloudy or Overcast		Light breeze (4-7 mph)	0																																																																																		
21:00	21°C	Clear		Calm (0 mph)	0																																																																																		
22:00	20°C	Clear		Calm (0 mph)	0																																																																																		
23:00	19°C	Clear		Calm (0 mph)	0																																																																																		
<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>																																																																																							
<b>#</b>	<b>Net Name</b>	<b>N</b>	<b>W</b>	<b>Compass</b>	<b>Net Photos</b>																																																																																		
<b>#</b>	<b>Acoustic Unit Serial #</b>			<b>Brand</b>																																																																																			
<b>Start Time</b>				<b>End Time</b>																																																																																			
20:35				01:35																																																																																			

Site Photos:

**Deule County Wind Farm Bat Capture Data Sheet**

Site No.: 7	Project Name: Deule County Wind Farm	Site Name: SD-14	Date: 08/13/2016
County: Deuel	State: South Dakota	Company: Jackson Group	Surveyors: Kat Cunningham
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.: WSDNDC0081	Permits: TE48049B-0

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
															<b>Time</b>	<b>Temp</b>	<b>Sky</b>	<b>Wind</b>	<b># Bats</b>		
															00:00	18°C	Clear	Calm (0 mph)	0		
															01:00	17°C	Clear	Calm (0 mph)	0		
															<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>						
															<b>#</b>	<b>Net Name</b>	<b>N</b>	<b>W</b>	<b>Compass</b>	<b>Net Photos</b>	
<b>#</b>	<b>Acoustic Unit Serial #</b>			<b>Brand</b>																	
<b>Start Time</b>				<b>End Time</b>																	
20:35				01:35																	

Site Photos:

Deuel County Wind Energy Net Site Data Sheet

Site No.: Sd15	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0064	Date: 08/09/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

Net Site Diagram: DeuelCountyWindEnergy_Wsdndc0064_NetSiteDiagram_1470809339842.png		Dominant Vegetation			
<p>Hand-drawn site diagram showing a tree line with points A and B, a square structure, and a north arrow. The number 478 is written near the structure.</p>		1 Fraxinus pennsylvanica			
		2 Ulmus rubra			
		3 Pinus spp.			
		Net(s) or Acoustic Unit(s) by Habitat			
Net	Habitat	Latitude	Longitude		
A	Corridor	44.9736189580145	-96.641444351848		
B	Corridor	44.9735122640105	-96.6418694426274		
C	Corridor	44.9734447058709	-96.6416346655196		
No. of Poles X Net length					
A	4	X	5.2	=	20.8
B	6	X	5.2	=	31.2
C	4	X	5.2	=	20.8

**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: Sd15	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0064	Date: 08/09/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note							
															Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
															08/09/2016	Waxing Crescent	43.2	23:13		06:26	20:38
															Time	Temp	Sky	Wind	# Bats		
															21:19	79°F	Cloudy or Overcast	Light wind (1-3 mph)	0		
															22:06	79°F	Partly Cloudy	Light breeze (4-7 mph)	0		
															23:06	76°F	Partly Cloudy	Light wind (1-3 mph)	0		
															23:40	75°F	Few Clouds	Calm (0 mph)	0		
															Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):						
															#	Net Name	N	W	Compass	Net Photos	
															A	A	44.973912 2484298	-96.641747 4859363	86.6764907 836914	135.png	
B	B	44.973503 2301384	-96.641892 59548	134.597259 521484	136.png																
C	C	44.973336 0282287	-96.641706 2482961	80.2540054 321289	137.png																
#	Acoustic Unit Serial #			Brand																	
Start Time				End Time																	
20:30				01:30																	

Site Photos: 138.png,138.png,138.png,138.png

**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: Sd15	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0064	Date: 08/10/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination (%)	Moon Rise	Moon Set	Sun Rise	Sun Set
1	08/10/2016 00:04	Eastern red bat	A	N/A	Unknown			C	1m				134.png	Escaped from net	08/10/2016	Waxing Gibbous	53	00:11	14:10	06:27	20:37
															Time	Temp	Sky	Wind	# Bats		
															00:06	74°F	Clear	Light wind (1-3 mph)	1		
															01:03	74°F	Clear	Light wind (1-3 mph)	0		
															21:02	76°F	Partly Cloudy	Light wind (1-3 mph)	0		
															22:15	74°F	Cloudy or Overcast	Light wind (1-3 mph)	0		
															23:29	75°F	Drizzle or Light Rain	Light wind (1-3 mph)	0		
															<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>						
#	Net Name	N	W	Compass	Net Photos																
#	Acoustic Unit Serial #			Brand																	
Start Time				End Time																	
20:30				01:30																	

Site Photos: 138.png,138.png,138.png,138.png



**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: Sd15	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0064	Date: 08/11/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
															08/11/2016	Waxing Gibbous	66.5	00:43	15:06	06:44	20:29
															<b>Time</b>	<b>Temp</b>	<b>Sky</b>		<b>Wind</b>	<b># Bats</b>	
															20:26	77°F	Cloudy or Overcast		Calm (0 mph)	0	
															21:16	77°F	Cloudy or Overcast		Calm (0 mph)	0	
															22:08	72°F	Cloudy or Overcast		Calm (0 mph)	0	
															23:15	73°F	Cloudy or Overcast		Calm (0 mph)	0	
															<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>						
															<b>#</b>	<b>Net Name</b>	<b>N</b>	<b>W</b>	<b>Compass</b>	<b>Net Photos</b>	
															<b>#</b>	<b>Acoustic Unit Serial #</b>				<b>Brand</b>	
															<b>Start Time</b>				<b>End Time</b>		
															20:30				01:30		

Site Photos: 138.png,138.png,138.png,138.png

**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: Sd15	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0064	Date: 08/12/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set								
															08/12/2016	Waxing Gibbous	71.8	01:20	16:02	06:20	20:34								
															Time	Temp	Sky	Wind	# Bats										
															20:44	71°F	Clear	Light wind (1-3 mph)	0										
															21:18	70°F	Clear	Light wind (1-3 mph)	0										
															Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):														
															#	Net Name	N	W	Compass	Net Photos									
															#	Acoustic Unit Serial #			Brand										
															Start Time		End Time												
															20:30	01:30													

Site Photos: 138.png,138.png,138.png,138.png

**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: Sd15	Project Name: Deuel County Wind Energy	Site Name: Wsdndc0064	Date: 08/13/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
															<b>Time</b>	<b>Temp</b>	<b>Sky</b>	<b>Wind</b>	<b># Bats</b>		
															00:41	64°F	Clear	Calm (0 mph)	0		
															01:03	64°F	Clear	Calm (0 mph)	0		
															<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>						
															<b>#</b>	<b>Net Name</b>	<b>N</b>	<b>W</b>	<b>Compass</b>	<b>Net Photos</b>	
<b>#</b>	<b>Acoustic Unit Serial #</b>			<b>Brand</b>																	
<b>Start Time</b>				<b>End Time</b>																	
20:30				01:30																	

Site Photos: 138.png,138.png,138.png,138.png

Deule County Wind Farm Net Site Data Sheet

Site No.: 8	Project Name: Deule County Wind Farm	Site Name: SD-16	Date: 08/13/2016
County: Deuel	State: South Dakota	Company: Jackson Group	Surveyors: Kat Cunningham
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.: WSDNDC0130	Permits: TE48049B-0

Net Site Diagram: DeuleCountyWindFarm_SD16_NetSiteDiagram_1471859385497.png		Dominant Vegetation				
		1 Ulmus sp.				
		2 Acer negundo				
		Net(s) or Acoustic Unit(s) by Habitat				
		Net	Habitat	Latitude	Longitude	
		A	Corridor	44.926402	-98.566996	
B	Corridor	44.926491	-96.565759			
C	Corridor	44.928071	-96.559724			
D	Edge	44.927168	-96.560194			
E	Edge	44.926566	-96.567516			
No. of Poles X Net length						
A	6	X	5.2	=	31.2	
B	6	X	5.2	=	31.2	
C	9	X	5.2	=	46.8	
D	12	X	5.2	=	62.4	

**Deule County Wind Farm Bat Capture Data Sheet**

Site No.: 8	Project Name: Deule County Wind Farm	Site Name: SD-16	Date: 08/13/2016
County: Deuel	State: South Dakota	Company: Jackson Group	Surveyors: Kat Cunningham
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.: WSDNDC0130	Permits: TE48049B-0

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
															08/13/2016	Waxing Gibbous	77.3	16:57	01:55	06:25	20:33
															<b>Time</b>	<b>Temp</b>	<b>Sky</b>	<b>Wind</b>	<b># Bats</b>		
															21:00	21°C	Clear	Light wind (1-3 mph)	0		
															22:00	19°C	Few Clouds	Calm (0 mph)	0		
															23:00	18°C	Few Clouds	Light wind (1-3 mph)	0		
															<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>						
															<b>#</b>	<b>Net Name</b>	<b>N</b>	<b>W</b>	<b>Compass</b>	<b>Net Photos</b>	
															<b>#</b>	<b>Acoustic Unit Serial #</b>			<b>Brand</b>		
															<b>Start Time</b>		<b>End Time</b>				
															20:30		01:30				

Site Photos:

**Deule County Wind Farm Bat Capture Data Sheet**

Site No.: 8	Project Name: Deule County Wind Farm	Site Name: SD-16	Date: 08/14/2016
County: Deuel	State: South Dakota	Company: Jackson Group	Surveyors: Kat Cunningham
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.: WSDNDC0130	Permits: TE48049B-0

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
															08/14/2016	Waxing Gibbous	85.5	17:48	02:41	06:26	20:31
																<b>Time</b>	<b>Temp</b>	<b>Sky</b>	<b>Wind</b>	<b># Bats</b>	
																00:00	17°C	Few Clouds	Light wind (1-3 mph)	0	
																01:00	17°C	Few Clouds	Light wind (1-3 mph)	0	
																21:00	21°C	Few Clouds	Light wind (1-3 mph)	0	
																22:00	20°C	Few Clouds	Light wind (1-3 mph)	0	
																23:00	18°C	Clear	Calm (0 mph)	0	
																<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>					
																<b>#</b>	<b>Net Name</b>	<b>N</b>	<b>W</b>	<b>Compass</b>	<b>Net Photos</b>
																<b>#</b>	<b>Acoustic Unit Serial #</b>			<b>Brand</b>	
																<b>Start Time</b>		<b>End Time</b>			
																20:30		01:30			

Site Photos:

**Deule County Wind Farm Bat Capture Data Sheet**

Site No.: 8	Project Name: Deule County Wind Farm	Site Name: SD-16	Date: 08/15/2016
County: Deuel	State: South Dakota	Company: Jackson Group	Surveyors: Kat Cunningham
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.: WSDNDC0130	Permits: TE48049B-0

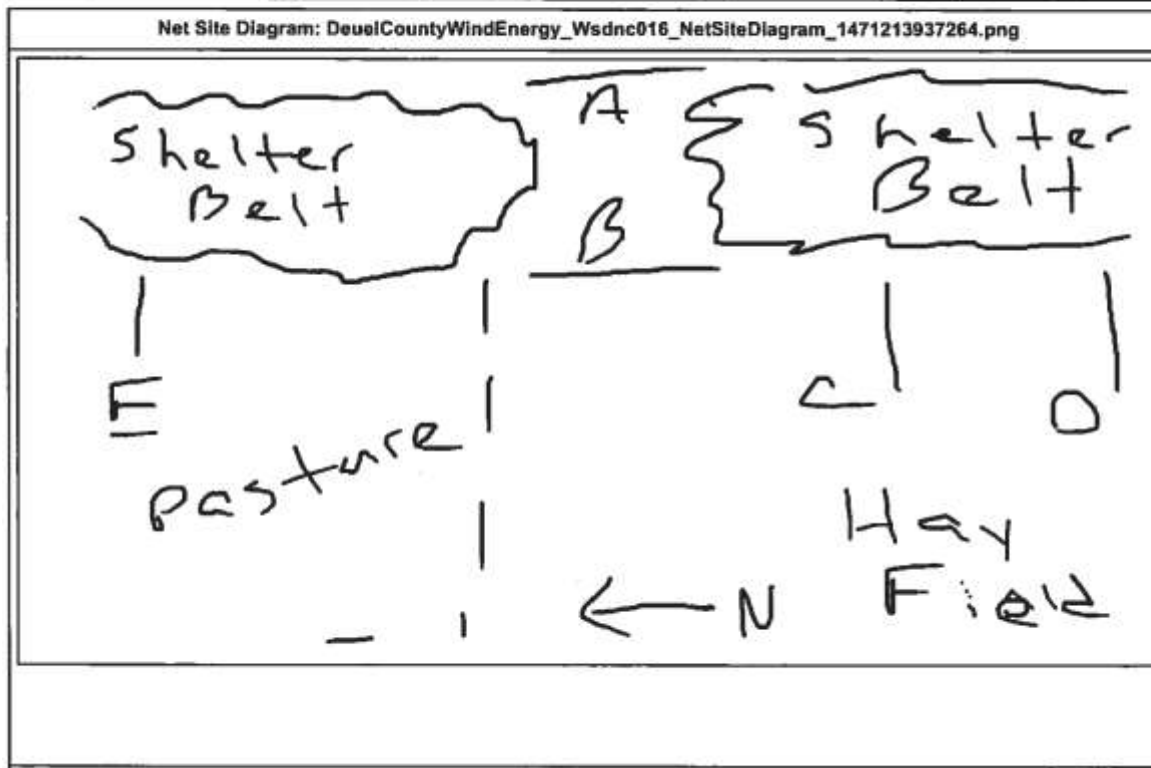
#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illuminat ion(%)	Moon Rise	Moon Set	Sun Rise	Sun Set	
															Time	Temp	Sky	Wind	# Bats			
															00:00	18°C	Clear	Light wind (1-3 mph)	0			
															01:00	17°C	Few Clouds	Light wind (1-3 mph)	0			
															<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>							
															#	Net Name	N	W	Compass	Net Photos		
															#	Acoustic Unit Serial #				Brand		
															Start Time				End Time			
															20:30				01:30			

Site Photos:



Deuel County Wind Energy Net Site Data Sheet

Site No.: Sd17	Project Name: Deuel County Wind Energy	Site Name: Wsdnc016	Date: 08/13/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:



Dominant Vegetation			
1 Fraxinus pennsylvanica			
2 Acer negundo			
Net(s) or Acoustic Unit(s) by Habitat			
Net	Habitat	Latitude	Longitude
A	Corridor	44.9105640454636	-96.5604032111322
B	Corridor	44.9108285783277	-96.5594562237119
C	Edge	44.9106898578302	-96.5594779328411
D	Edge	44.9104627501638	-96.5602929891055
E	Edge	44.9099604227067	-96.5603044723128
No. of Poles X Net length			
A	6	X	5.2 = 31.2
B	6	X	5.2 = 31.2
C	6	X	5.2 = 31.2
D	12	X	5.2 = 62.4
E	9	X	5.2 = 46.8

**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: Sd17	Project Name: Deuel County Wind Energy	Site Name: Wsdnc016	Date: 08/13/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/ Hair	Wing Score	Band # Type	Bat Photos	Note

Date	Moon Phase	Moon Illuminat ion(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
08/13/2016	Waxing Gibbous	80.4	02:01	16:56	06:30	20:40
Time	Temp	Sky	Wind	# Bats		
21:44	68°F	Clear	Light wind (1-3 mph)	0		
23:34	64°F	Clear	Light wind (1-3 mph)	0		
22:35	63°C	Clear	Calm (0 mph)	0		
Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):						
#	Net Name	N	W	Compass	Net Photos	
A	A	44.910584 5392169	-96.560412 0959496	354.267547 607422	147.png	
B	B	44.910700 7962139	-96.559552 6155984	142.029556 274414	148.png	
C	C	44.910426 0793374	-96.560325 5108898	108.176673 88916	149.png	
D	D	44.910056 4374075	-96.560486 6948878	75.0750427 246094	150.png	
E	E	44.910715 4226349	-96.560356 8592077	268.780914 306641	151.png	
#	Acoustic Unit Serial #			Brand		
Start Time				End Time		
20:30				01:30		

Site Photos: 143.png,143.png,143.png,143.png

**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: Sd17	Project Name: Deuel County Wind Energy	Site Name: Wsdnc016	Date: 08/14/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/ Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set
															08/14/2016	Waxing Gibbous	85.1	02:47	17:47	06:31	20:31
															<b>Time</b>	<b>Temp</b>	<b>Sky</b>	<b>Wind</b>	<b># Bats</b>		
															00:05	63°F	Clear	Light wind (1-3 mph)	0		
															01:05	63°F	Clear	Calm (0 mph)	0		
															21:00	19°C	Few Clouds	Light wind (1-3 mph)	0		
															22:01	19°C	Few Clouds	Light wind (1-3 mph)	0		
															23:00	19°C	Few Clouds	Calm (0 mph)	0		
															<b>Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):</b>						
															<b>#</b>	<b>Net Name</b>	<b>N</b>	<b>W</b>	<b>Compass</b>	<b>Net Photos</b>	
															<b>#</b>	<b>Acoustic Unit Serial #</b>			<b>Brand</b>		
															<b>Start Time</b>			<b>End Time</b>			
															20:30			01:30			

Site Photos: 143.png,143.png,143.png,143.png

**Deuel County Wind Energy Bat Capture Data Sheet**

Site No.: Sd17	Project Name: Deuel County Wind Energy	Site Name: Wdnc016	Date: 08/15/2016
County: Deuel	State: South Dakota	Company:	Surveyors: Rex Medlin
KM Block No.:	Approx. Mile Post (XXX.X):	Tract No.:	Permits:

#	Time	Species	Age	Sex	Repro. Cond.	RFA (mm)	Mass (g)	Net Name	Net Height	Guano/Hair	Wing Score	Band # Type	Bat Photos	Note	Date	Moon Phase	Moon Illumination(%)	Moon Rise	Moon Set	Sun Rise	Sun Set	
															Time	Temp	Sky	Wind	# Bats			
1	08/15/2016 00:45	Big brown bat	A	F	Post-lactating	48	20	D ✓	3m		0		135.png									
															Time	Temp	Sky	Wind	# Bats			
															00:00	19°C	Cloudy or Overcast	Light wind (1-3 mph)	0			
															00:54	19°C	Cloudy or Overcast	Light breeze (4-7 mph)	0			
															Net(s) and/or Acoustic Unit(s) Lat/Long (DD.dddd):							
															#	Net Name	N	W	Compass	Net Photos		
															#	Acoustic Unit Serial #			Brand			
															Start Time		End Time					
															20:30		01:30					

Site Photos: 143.png,143.png,143.png,143.png