219 Meyersdale to Old Salisbury Rd

Draft Environmental Impact Statement

Volume 2 – Appendix Y (Part C)

October 2024

U.S. 6219, Section 050

Transportation Improvement Project

Meyersdale, PA to Old Salisbury Road, MD

pennsylvania DEPARTMENT OF TRANSPORTATION

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

U.S. Department of Transportation Federal Highway Administration

FHWA-PA-EIS-24-01-D

Draft Environmental Impact Statement

U.S. 6219, Section 050 Transportation Improvement Project

Meyersdale, PA to Old Salisbury Road, MD

APPENDIX Y (Part C): Biological Assessment

FALL BAT HARP TRAPPING AND ACOUSTIC SURVEYS

U.S. Route 219 Improvements Project, S.R. 6219, Section 020
Somerset County, Pennsylvania, September 30 – October 2, 2013

Site 1 - Portal

Bat Conservation and Management, Inc.
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Fall Bat Harp Trapping & Acoustic Surveys
U.S. 219 Improvements Project
S.R. 6219, Section 020
Somerset County, PA

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October 2013

Introduction

The U.S. 219 Improvements Project, S.R. 6219, Section 020 is located between Somerset and Meyersdale, PA in Somerset County. The project concerns the construction of approximately 10 miles (16 km) of new highway. Surveys conducted by Skelly and Loy in 2012 within the project area found two bat hibernacula.

A Pennsylvania Natural Diversity Inventory (PNDI) letter from the Pennsylvania Game Commission (PGC) dated January 10, 2013 to the Pennsylvania Department of Transportation (PennDOT) required that certain measures be taken by PennDOT to avoid and minimize impacts of the project to the Pennsylvania state threatened eastern small-footed myotis (*Myotis leibii*). One of the measures to be taken required that the two hibernacula identified in 2012 be surveyed during fall swarming for each year of construction (estimated to occur for 5 years; from 2013-2017) and for at least one year post-construction (estimated to occur in 2018) following the PGC trapping protocol. These efforts have become ever more important as the deadly White-nosed syndrome (WNS) fungus continues to have severe effects on remaining populations of Pennsylvania's hibernating bat species. Therefore this annual monitoring has the potential to provide important population surveillance data for the management of these at-risk animals.

This report summarizes the results of the first year of fall swarming trapping surveys as required in the January 10, 2013 PNDI letter from the PGC. The surveys were conducted utilizing harp trapping, thermal image video recording, and acoustic survey methods. Results confirm that this site remains a vital over-wintering habitat resource for several Pennsylvania bat species.

Methods

Capture Survey

Surveys were conducted from 30 September – 2 October 2013 at two locations (Table 1 and Figures 1 and 2). Both locations were surveyed for three nights with one harp trap, and an acoustic bat detector (Table 1). In addition, bat activity was observed using a thermal imaging video camera for one night at Site 1. Capture and acoustic surveys began 30 minutes prior to sunset and continued for a minimum of five hours. The survey night was considered valid if the temperature remained above 50°F (10°C) for the first two hours of sampling and did not fall below 35°F (1.6°C) by midnight and if a minimum of three hours of the survey were free of heavy rain, thunderstorms, and/or high winds.

Harp trapping involved placing frames threaded with two vertical layers of monofilament line at the portal entrance. Bats attempting to pass through the trap were captured either by colliding with the lines or by entering the space between the frames. Once their forward flight momentum is reduced by contact with the lines, they flutter down into a catch bag where they are held until physically removal for identification. This method of sampling is designed for use at roosts where the potential for catching large numbers of bats during a short time is likely and is more appropriate than mist-netting, which requires that each individual bat be carefully untangled (Tuttle 1974). Two harp trap sizes (Bat Conservation and Management, Inc., Carlisle, PA) were used for this project, a small trap measuring 3 feet square (1 meter square) and a large trap measuring 6 feet x 7 feet (1.8 x 2.1 meters). The harp traps were placed to best cover the entrances of each hibernacula, and then the remaining space surrounding the traps was obstructed using bird netting to maintain natural airflow in and out of the sites, while funneling the bats into the trap. The harp traps were checked a minimum of every 30 minutes for captured bats.

Photographs were taken at each survey site (Appendix A) and the weather conditions during sampling, and general habitat information were recorded (Appendix B). Each captured bat was identified to species and then metrics including sex, age, and reproductive status were determined (Appendix B). Age classification was determined by degree of ossification of the epiphyseal plates of the finger bones (Brunet-Rossinni and Wilkinson 2009). The reproductive condition of females was noted by inspection of the mammary glands and of males by the inspecting for spermatozoa in the epididymis (Racey 2009).

Acoustic Survey

Surveying for bats can be a labor-intensive process, especially when harp traps are used to physically capture individuals to confirm species identification. In recent years, the collection of acoustic recordings of ultrasonic bat echolocation calls has been determined to be an effective, and efficient way to document many bat species, without the disturbance caused by physical capture efforts (Ahlén and Baagoe 1999; Biscardi et al. 2004; Duchamp et al. 2006; and Gannon and Sherwin 2004). Many bat species are easy to distinguish amongst based on their echolocation call types alone (Barclay 1999). And, in areas with depauperate *Myotis* species fauna, documentation of *Myotis* species bats is often more efficient using acoustic recording rather than deploying physical capture methods (Ford et al. 2011).

A Pettersson D500X bat detector (Pettersson Elektronik, Uppsala, Sweden) was placed within 23 feet (7 meters) of each portal entrance. Detector microphones were placed 6.5 feet (2 meters) or higher above the ground and orientated towards the largest volume of airspace directly in front of the entrance for each site surveyed. Each detector was stationary and programmed to record for at least five hours, beginning at ½ hour before local sunset. Recorded echolocation calls were post-processed using SonoBat call analysis software (SonoBat, Arcata, CA). This process attributed meta-data from the survey effort to each recording, while preserving the date-time stamp when each recording was made forming a permanent record of each echolocation call recorded during the inventory. Recorded bat passes were tallied for each mine portal in one-hour increments beginning at ½ hour before sunset and continuing for five hours.

Unlike capture surveys, results from acoustic surveys indicate *indices* of bat activity, not *absolute numbers of individuals* present on the landscape. For example, when results report 40 "bat passes" at a site, it does not mean that there were 40 individual bats echolocating over the microphones. There could have been a single bat making 40 passes throughout the night, or 40 individuals each making a single pass, or anything in between. But when results are compared from site to site at a parcel, or from night to night, or between parcels, relative activities can be determined, especially when total monitoring time is consistent between sites, or accounted for with an appropriate multiplier.

Nevertheless, acoustics provide an efficient survey tool for assessing a three-dimensional area of habitat, as in this survey. The obvious advantage of acoustic monitoring is that bats that may not be captured using harp traps, that cover a two-dimensional space, may be recorded acoustically. But, because the D500x detectors system is extremely sensitive and may record bats even some distance behind the microphone, interloping species will be recorded during acoustic surveys at entrances that are not necessarily entering or exiting the site. And, due to fundamental differences in hardware among manufacturers, it is virtually impossible to compare results of surveys unless temporal, spatial, and/or hardware variations are accounted for from night to night and/or site to site.

All acoustic recordings collected were also analyzed using the SonoBat automatic classifier (North-northeast version) allowing species classifications to be determined by the computer, along with metrics to assign confidence to the decisions. It should be noted that any automated classification software can render inaccurate results in many situations especially when recording bats performing behaviors that result in: inspection calls (e.g., approach phase), attack calls (e.g. acquisition or feeding-buzz), social calls or directives between species and among individuals, and call variations due to multiple individual bats in the same airspace. Moreover, the use of stationary microphones to record mobile bats on

the wing often results in poor, out of range recordings that are picked up by microphones on a tangent or off-axis to the best volume of microphone detection. Therefore, all recordings are manually reviewed to attempt to identify if any of these situations existed and classifications for those recordings were amended or eliminated from consideration when reporting species results.

During the manual vetting process, each recording was verified to probable species or species group, based on the results from the automated classification and the visual inspection of the spectrogram (i.e., the call frequency and intensity vs. time display) associated with the entire call sequence. John Chenger performed all manual vetting of the recordings collected during this effort. He has over 20-years of experience with collecting and analyzing bat echolocation calls from North American bat species, and over 7-years of experience using SonoBat software for these types of analyses.

When recordings were confidently assigned to species (defined for the purposes of this survey as having ≥ 5 fully-formed, high-quality call pulses in a sequence that received a discriminant probability classification to species of ≥ 0.95) recordings were labeled with a four-character species identification code, comprised of the first two letters of the genus and species designation for each bat (e.g., for *Eptesicus fuscus*, the species code is EPFU).

But, because bats exhibit considerable plasticity in their vocalizations, and there can be considerable overlap in call parameters among species, this can potentially result in a recording from one species exhibiting parameters that match the expected parameter space of another species. When this occurs, it results in an ambiguous classification between one or more species. For example, *Myotis lucifugus* and *Myotis sodalis* have largely overlapping data-spaces for the vast-majority of their call parameters and only rarely will produce dis-ambiguous call types. When these species ***did not*** produce sufficiently dis-ambiguous call types, the classification was considered to be indeterminate and identified as LUSO, indicating a dis-ambiguous *Myotis lucifugus/Myotis sodalis*. In fact, many *Myotis* species will produce call types that can completely share data-space with each other, and no confident consensus can be made between them. In this situation, the recording will be simply identified as MYUN for "*Myotis* species unknown." Finally, many times a recording will contain a "fragmentary" sequence of bat echolocation pulses, either as the bat moves in and out of the volume of detection for the microphone, or as it speeds by the microphone, and fewer than 5 fully formed call pulses are recorded. In these instances, it is clear that a bat was present, but not enough content is available in the recording to render a species determination. For these cases, the recording was identified as either LFUK to indicate a bat of unknown species below ~35 kHz (e.g., *Eptesicus fuscus*, big brown bat; *Lasionycteris noctivagans*, silver-haired bat; or *Lasiurus cinereus*, hoary bat), and similarly HFUK indicates an unknown bat species above ~35 kHz (e.g., *Lasiurus borealis*, eastern red bat;

Myotis leibii, eastern small-footed myotis, *M. lucifugus*, little brown myotis; *M. septentrionalis*, northern myotis*; M. sodalis*, Indiana myotis; or *Perimyotis subflavus*, tri-colored bat).

Visual Recording Survey

A final survey method was deployed during this project specifically to identify bats actually using the site entrances while creating the least amount of disturbance at the site. Because bats have body temperatures approaching 100°F (37°C) and if they fly into or out of the AMLFs where the air temperature is significantly cooler, thermal imaging video can easily identify any bats actively using the sites (Gillam et al. 2010 and Hirstov et al. 2010). Thus thermal imaging video recording is an ideal survey tool for this application. It also brings a fourth inventory and monitoring method to the survey, thus helping to eliminate bias inherent in just a single capture method (Larsen et al. 2007) and significantly increase the chances of documenting occupancy, especially during a short survey window as in this project.

During this project, thermal infrared video was collected simultaneously with acoustic recordings while also conducting the physical capture efforts on the first capture night at Site 1 Portal. A FLIR/Indigo Systems thermal infrared camera (FLIR Systems Inc., Wilsonville, OR) was positioned so the field of view covered the approach to the mine feature. All video was manually observed determine bat activity and behavior in real time. These visual observations were supplementing, not in lieu of, other bat activity assessment methods.

Results

Capture Survey Results

Harp traps were set in the entrances of each of two (2) hibernation sites for a period of three (3) nights each. Trapping began ½ hour before sundown and lasted for five (5) hours each night for a total of 15-trap hours per site, and 30-trap hours total for the entire survey period. A total of 26 bats of 2 species were captured during this survey effort: 1 northern myotis (*Myotis septentrionalis*), and 25 tri-colored bats (*Perimyotis subflavus*; Table 3). Of the 26 bats, 42% (n=11) were female and 58% (n=15) were male (Table 3). All of the captured bats were non-reproductive adults with the exception of 1 juvenile female and 1 scrotal male (Table 4). Overall, the captured bats were non-reproductive adults with the exception of one scrotal male and one juvenile female.

Site 1, the main Portal had the most captures (75% of the bats captured during this survey), with both species (*Myotis septentrionalis* and *Perimyotis subflavus*) and 20 individuals (1.73 bats per trap-hour). Site 4, the airshaft, had just 1 species (*P. subflavus*) and 6 individuals (0.4 bats per trap-hour). Previous capture efforts at these two sites in 2012 returned greater species diversity (5 species) and captures per trap-hour (2-4 bats per trap-hour), perhaps due to a longer survey period (15-nights, over 30-days) and/or less WNS affects in 2012 at these sites. Weather conditions in 2013 remained within PGC trapping parameters found in Protocol for Assessing Bat Use of Potential Hibernacula 9/10/12 throughout the 3-day survey period. Results of the 2012 and 2013 capture surveys are summarized in Table 5 of this report.

Acoustic Survey Results

Bat detectors were deployed near the entrances of each of two (2) hibernation sites for a period of three (3) nights each. Monitoring began ½ hour before sundown and lasted for eight (8) hours on nights 1 and 2, and five (6) hours on night 3 for a total of 22-detector hours at each site and 44-detector hours for the entire survey period. A total of 197 bat passes from four (4) confidently identified species, and three (3) ambiguous species-guilds were recorded. Species with confidently identified recordings included: *Eptesicus fuscus*, big brown bat (0.5%); *Lasionycteris noctivagans*, silver-haired bat (1%); *Myotis leibii*, eastern small-footed myotis (1%), and *Perimyotis subflavus*, tri-colored bat (23%). Additionally, ambiguous call-sequences were recorded for high-frequency species (13%) and low-frequency species (11%) and bat passes that could not be identified to any species or guild (50.5%).

Site 1, the main portal, had the most activity with 155 bat passes (79% of the activity recorded during this survey), with the greatest amount of species diversity. This site had an average of approximately 7 bat passes per hour for the 22 survey hours and averaged 50 bat passes per night. This site also returned two confident recordings from the Pennsylvania state threatened species, *Myotis leibii*, the eastern small-footed bat. Site 4, the airshaft had less activity and less species diversity. There was an average of just 2 bat passes per hour for the 22 survey hours, and 14 bat passes per night for the three survey nights at this site. A complete summary of the confidently identified species at each site is noted in Table 1 and hourly activity summaries for each survey night at each site is noted in Table 2 of this report.

Acoustic activity at the two sites investigated during this survey is consistent with activity around hibernacula at this time of year. More recordings were collected in the later hours of monitoring than during the earlier hours of monitoring, which is typical, as bats tend to arrive at hibernacula after 2230h during the fall swarming period. The bulk of the species identified during the acoustic survey are species known to use underground rock

resources as over-wintering habitat. The scant recordings from *Lasionycteris noctivagans*, a "tree bat" only rarely associated with overwintering in rocky habitats, likely represent either interloping individuals, or curious individuals checking out the site as they are occasionally known to do.

Visual Recording Results

A number of visual observations of bats entering or exiting portals were witnessed during this survey on 9/30/13 at Site 1 Portal, and is noted in Table 1. This is further evidence that bats are actively using the feature surveyed during this project, and that conclusions from the acoustic results are correct. Bat activity near these sites represents occupancy of the site and not incidental interlopers. Recording conditions outside both sites are ideal for capturing evidence of bat use, with a large field of view through which relatively warm bats are easy to distinguish from the relatively cold background of the hibernacula entrances, with little interference from rocks, vegetation, or other structures that will return disruptive heat-signatures.

Overall, the results of this 2013 bat-detection survey indicate that these previously identified hibernation sites remain important over-wintering habitat for several Pennsylvania bat species, including *Myotis septentrionalis*, and *Perimyotis subflavus*, two species which have been hit hardest by WNS affects, with the former currently under petition by the U.S. Fish and Wildlife Service (FWS) for endangered species listing. Additionally, confirmed acoustic records from the Pennsylvania state threatened species *Myotis leibii* at the Site 1 portal further strengthen recommendations for continued protection and management of this site for bat habitat. As per PGC protocols, recommendations for the installation of bat-friendly gates at one or both of these sites are warranted. Additional mitigation involving the alteration, stabilization, and management of the entrances to these sites may be required, though comments on procedures or protocols for these activities are beyond the scope of the information collected during this survey and will require additional site investigation and study.

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Figures

Figure 1. Survey location: Site 1 Portal, Somerset County, PA

Figure 2. Survey location: Site 4 Airshaft, Somerset County, PA

Tables

Table 1. Survey site coordinates, monitoring results, and habitat descriptions.

NAD 27 datum	Latitude/ Longitude	Survey Method(s)	Physical Captures	Acoustic Activity*	Identified Bat Calls*	Visual Observations	Remarks
Site 1 Portal	39° 52' 21.1'' 79° 02' 56.2''	1– 3' Harp Trap, 1– D500x, 1– Thermal Camera	1– MYSE 19- PESU	155	(1) EPFU (1) LANO (2) MYLE 32 (PESU)	240 minutes; ~1 to 2 bats intermittently between 2000-2330	11'w x 4'h portal located ~50' below road with knee deep stream and strong breeze emerging. Large ceiling collapse 100' inside portal. Trap hung in entrance drip line surrounded by plastic netting. D500x placed 30' from entrance with external mic 2.5m above ground orientated into open space approaching portal.
Site 4 Shaft	39° 53' 31.0'' 79° 02' 20.4''	1– 6' Harp Trap, 1– D500x	6- PESU	42	(1) LANO (13) PESU	n/a	Airshaft located on forested slope ~150' from gravel driveway in large tract of open forest. Shaft inside a small brick building drops ~30' to horizontal tunnel. Detector placed ~1.5m above ground, 3m from building, with mic pointed into open space approaching shaft.

Abbreviations used in this table: **EPFU** = *Eptesicus fuscus* (big brown bat), **LANO** = *Lasionycteris noctivagans* (silver-haired bat), **MYLE** = *Myotis leibii* (eastern small-footed myotis), **PESU** = *Perimyotis subflavus* (tri-colored bat).

* Acoustic Activity identified only recordings identified as "bat calls," with a "bat call" described as any recording containing at least one obvious bat echolocation pulse. Identified Bat Calls include all recordings expertly (manually) vetted and attributed to species or species guild. It does not indicate absolute number of bats. Acoustic data represent 44 hours of recording conducted over 3 nights beginning 30 minutes before sunset at the two sites.

Table 2. Acoustic summary with hourly breakdowns of activity at survey sites.

SITE	Survey Date: 30 September							Survey Date: 1 October							Survey Date: 2 October						AVE. bat passes	TOTAL bat passes
	1st hr	2nd hr	3rd hr	4th hr	5th hr	6th hr	7/8th hr	1st hr	2nd hr	3rd hr	4th hr	5th hr	6th hr	7/8th hr	1st hr	2nd hr	3rd hr	4th hr	5th hr	6th hr		
Site 1	0	6	15	19	14	4	0	3	7	40	20	0	3	0	1	1	6	14	0	2	**7.1/hr.**	**155**
Site 1 Totals	**58**							**73**							**24**						**51.7/night**	
Site 4	0	0	4	20	1	0	0	0	1	0	1	6	0	2	0	1	0	0	3	3	**1.9/hr.**	**42**
Site 4 Totals	**25**							**10**							**7**						**14/night**	
GRAND TOTAL																					**4.5/hr.**	**197**

Totals represent total number of bat passes per hour/per survey night; averages represent total number of bat passes per hour/night for the monitoring period. Grand total represents the total number of bat passes from all sites with an average number of bat passes per hour for all 44-hours of monitoring.

Table 3. Bat capture totals

	Myotis septentrionalis				*Perimyotis subflavus*				TOTALS				SITE TOTALS
	Female		Male		Female		Male		Female		Male		
	Ad	Juv	Ad	Juv	Ad	Juv	Ad	Juv	Ad	Juv	Ad	Juv	
Site 1	1	-	0	-	7	1	11	-	9	-	11	-	**20**
Site 4	0	-	0	-	2	-	4	-	2	-	4	-	**6**
Totals	**1**	**-**	**0**	**-**	**9**	**1**	**15**	**-**	**11**	**-**	**15**	**-**	**26**
	1				**25**				**26**				

Scientific names used in this table: *Myotis septentrionalis* (northern myotis), *Perimyotis subflavus* (tri-colored bat).
Abbreviations used in this table: Ad = adult; Juv = juvenile.

Table 4. Reproductive condition of captured bats

	MYOSEP			PERSUB			TOTALS		
	Female	Male		Female	Male		Female	Male	
	NR	SCR	NR	NR	SCR	NR	NR	SCR	NR
Site 1	1	0	0	8	0	11	9	0	11
Site 4	0	0	0	2	1	3	2	1	3
Totals	1	0	0	10	1	14	11	1	14
	1			25			26		

Abbreviations used in this table: **MYOSEP** = *Myotis septentrionalis*; **PERSUB** = *Perimyotis subflavus*;
F = female, **M** = male, **NR** = non-reproductive, **SCR** = scrotal.

Table 5. Annual Capture Summary Comparison

		EPTFUS	MYOLEI	MYOLUC	MYOSEP	PERSUB	TOTALS	EFFICIENCY
2012	Site1	7	2	100	69	333	511	32.5
	Site2	-	-	26	59	225	311	19.4
2012 Totals		7	2	126	128	558	822	26
2013	Site1	-	-	-	1	19	20	6.7
	Site2	-	-	-	-	6	6	2
2013Totals		-	-	-	1	25	26	4.3

Abbreviations used in this table: **EPTFUS =** *Eptesicus fuscus,* **MYOLEI** = *Myotis leibii,* **MYOLUC =** *Myotis lucifugus,*
MYOSEP = *Myotis septentrionalis*; **PERSUB** = *Perimyotis subflavus*;
Efficiency numbers are calculated as: bats captured per valid survey night

Appendix A

Representative Mist Net Site Photographs

Site 1 – Portal

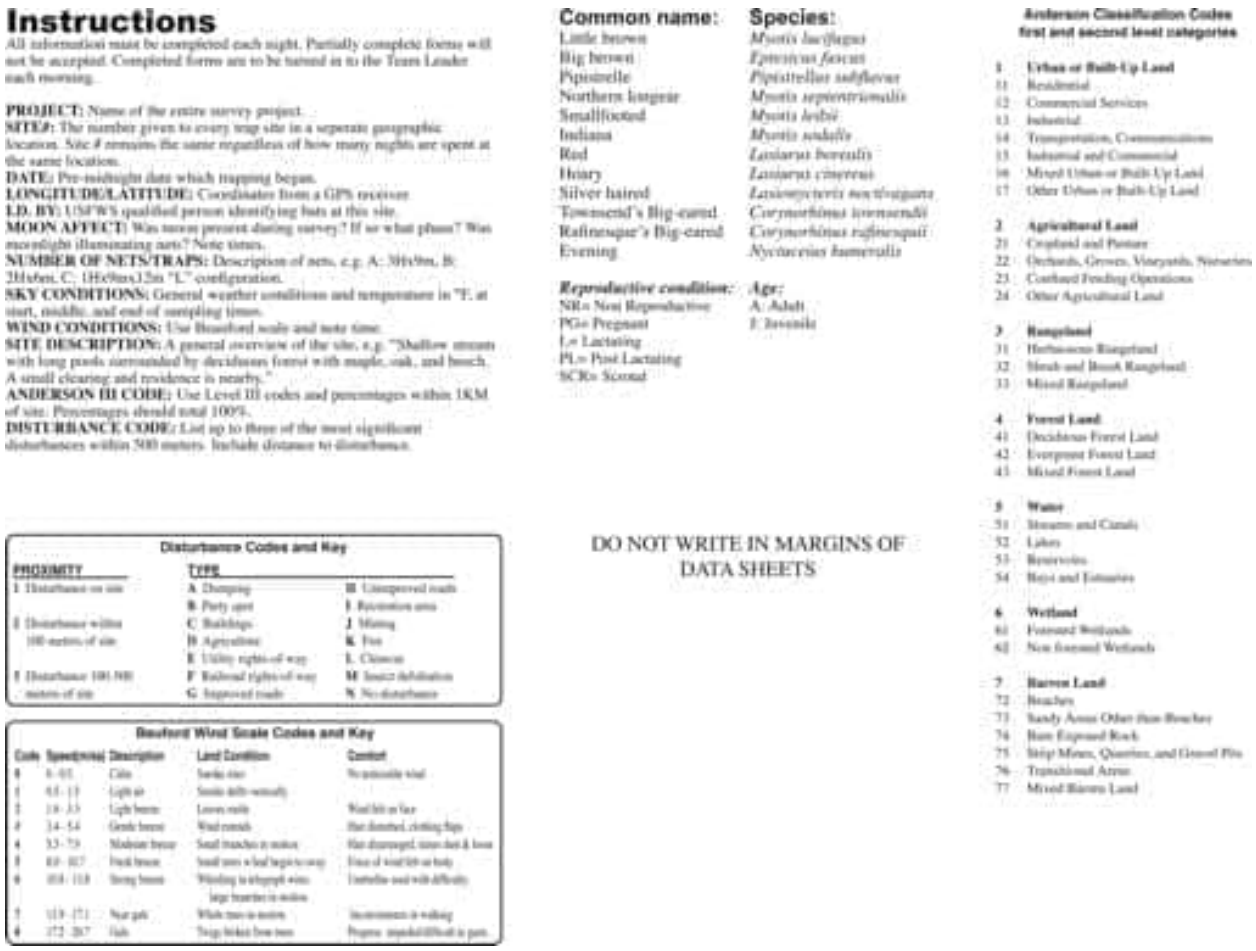
Landscape photo showing 3’ harp trap and acoustic detector (above)
Cropped photo showing 3’ harp trap (below)

Site 4 – Airshaft

Landscape photo showing 6’ harp trap and acoustic detector (above)
Cropped photo showing 6’ harp trap (below)

Appendix B

Site Survey Data Sheets



Instructions

All information must be completed each night. Partially complete forms will not be accepted. Completed forms are to be turned in to the Team Leader each morning.

PROJECT: Name of the entire survey project.
SITE#: The number given to every trap site in a seperate geographic location. Site # remains the same regardless of how many nights are spent at the same location.
DATE: Pre-midnight date which trapping began.
LONGITUDE/LATITUDE: Coordinates from a GPS receiver.
I.D. BY: USFWS qualified person identifying bats at this site.
MOON AFFECT: Was moon present during survey? If so what phase? Was moonlight illuminating nets? Note times.
NUMBER OF NETS/TRAPS: Description of nets, e.g. A: 30x9m, B: 2Hx6m, C: 1Hx9mx12m "L" configuration.
SKY CONDITIONS: General weather conditions and temperature in °F, at start, middle, and end of sampling times.
WIND CONDITIONS: Use Beauford scale and note time.
SITE DESCRIPTION: A general overview of the site, e.g. "Shallow streams with long pools surrounded by deciduous forest with maple, oak, and beech. A small clearing and residence is nearby."
ANDERSON III CODE: Use Level III codes and percentages within 1KM of site. Percentages should total 100%.
DISTURBANCE CODE: List up to three of the most significant disturbances within 500 meters. Include distance to disturbance.

Common name: / **Species:**

Common name:	Species:
Little brown	*Myotis lucifugus*
Big brown	*Eptesicus fuscus*
Pipistrelle	*Pipistrellus subflavus*
Northern longear	*Myotis septentrionalis*
Smallfooted	*Myotis leibii*
Indiana	*Myotis sodalis*
Red	*Lasiurus borealis*
Hoary	*Lasiurus cinereus*
Silver haired	*Lasionycteris noctivagans*
Townsend's Big-eared	*Corynorhinus townsendii*
Rafinesque's Big-eared	*Corynorhinus rafinesquii*
Evening	*Nycticeius humeralis*

Reproductive condition:
NR= Non Reproductive
PG= Pregnant
L= Lactating
PL= Post Lactating
SCR= Scrotal

Age:
A: Adult
J: Juvenile

Anderson Classification Codes first and second level categories

1 **Urban or Built-Up Land**
11 Residential
12 Commercial Services
13 Industrial
14 Transportation, Communications
15 Industrial and Commercial
16 Mixed Urban or Built-Up Land
17 Other Urban or Built-Up Land

2 **Agricultural Land**
21 Cropland and Pasture
22 Orchards, Groves, Vineyards, Nurseries
23 Confined Feeding Operations
24 Other Agricultural Land

3 **Rangeland**
31 Herbaceous Rangeland
32 Shrub and Brush Rangeland
33 Mixed Rangeland

4 **Forest Land**
41 Deciduous Forest Land
42 Evergreen Forest Land
43 Mixed Forest Land

5 **Water**
51 Streams and Canals
52 Lakes
53 Reservoirs
54 Bays and Estuaries

6 **Wetland**
61 Forested Wetlands
62 Non-forested Wetlands

7 **Barren Land**
72 Beaches
73 Sandy Areas Other than Beaches
74 Bare Exposed Rock
75 Strip Mines, Quarries, and Gravel Pits
76 Transitional Areas
77 Mixed Barren Land

Disturbance Codes and Key

PROXIMITY	TYPE	
1 Disturbance on site	A Dumping	H Unimproved roads
	B Party spot	I Recreation area
2 Disturbance within 100 meters of site	C Buildings	J Mining
	D Agriculture	K Fire
	E Utility rights-of-way	L Clearcut
3 Disturbance 100-500 meters of site	F Railroad rights-of-way	M Insect defoliation
	G Improved roads	N No disturbance

Beauford Wind Scale Codes and Key

Code	Speed(mi/hr)	Description	Land Condition	Comfort
0	1-03	Calm	Smoke rises	No noticeable wind
1	03-13	Light air	Smoke drifts somewhat	
2	13-23	Light breeze	Leaves rustle	Wind felt on face
3	24-54	Gentle breeze	Wind extends	Hair disturbed, clothing flaps
4	33-73	Moderate breeze	Small branches in motion	Hair disarranged, raises dust & loose
5	83-107	Fresh breeze	Small trees w/leaf begin to sway	Force of wind felt on body
6	108-118	Strong breeze	Whistling in telegraph wires; large branches in motion	Umbrellas used with difficulty
7	119-171	Near gale	Whole trees in motion	Inconvenience in walking
8	172-207	Gale	Twigs broken from trees	Progress impeded/difficult to gain

DO NOT WRITE IN MARGINS OF DATA SHEETS

Note: The pipistrelle is now designated as the tri-colored bat (*Perimyotis subflavus*).

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. Survey Date: 9-30-13 2. Company Name: Bat Conservation & Management

3. Bat Identifier: S Chenault 4. Assistants: C. Eggleston, J. Sinclair

5. Site Name and/or Number: SR 6219 Section 020 Site 1

6. Site is (circle one): hibernacula site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe: —

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with streams): —

8. County: Somerset 9. 7.5' Quad: Meyersdale

10. Was site GPS'd (required)? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 ° 52 ' 21.1 " N Longitude: 79 ° 02 ' 56.2 " W

Datum (circle one): (NAD83) (Preferred), NAD83, WGS84, Other: —

12. Ownership and Access: (Who owns site or controls access? Give name and address): Contact Penn DOT District 9-0 Environmental Manager, Tom Kocum (814) 696-7224

13. Time (military) & Temperature: Start Time 1920 h Stop Time 2335 h Total Minutes 315

Start Temp. 15.2 °C End Temp. 13.1 °C (must be > 10°C for summer netting)

14. General Weather (circle one): (Clear), Partly Cloudy, Mostly Cloudy, Cloudy, Drizzle, Intermittent Rain, (suspend netting during periods of rain): Steady Rain, Thunderstorms, Snow, Other: —

15. General Wind Conditions (circle one): (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying)

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m²)
1	Harp Trap	1	1m x 1.2m	Inside Opening of Right Side	1.2 m²

Total Capture Area: 1.2 sq. m

FORM F-7000 ACT | COMMONWEALTH OF PENNSYLVANIA | Page 1 of 2

Pennsylvania Game Commission

(Site Survey Record – Continued) **Site Name/No.:** SR 6219 Section 020 Site 1 **Date:** 9-30-13

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species)*
[illegible]

18. Was reproductive status checked? (YES) / NO *(If "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	2	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus	7					7		3		3	10
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:** (1) *Myotis sodalis*, (2) *Myotis leibii*, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 10

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for hibernacula surveys. [illegible]*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 1830	Start Time: 1931	Start Time: 2031	Start Time: 2131	Start Time: 2231
End Time: 1930	End Time: 2030	End Time: 2130	End Time: 2230	End Time: 2330
Tallies: 1	Tallies: 6	Tallies: 12	Tallies: 19	Tallies: 4

20. REMARKS:
13°C AT 10[illegible]

FORM P-7000-N-T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. Survey Date: 10/1/13 **2. Company Name:** Bat Conservation + Management

3. Bat Identifier: Todd Sponseller **4. Assistants:** R. Sgrilletti, Z. Lanfranco, D. Davis

5. Site Name and/or Number: SR6219 Section 020 Site 1

6. Site is (circle one): (hibernation site) summer habitat

7a. If hibernation site circle one: limestone mine, (coal mine) limestone cave, sandstone cave, RR tunnel,

other structure, describe - ____

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream): —

8. County: Somerset **9. 7.5' Quad:** Myersdale

10. Was site GPS'd (required)? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude 39° 52' 01.1"N, Longitude 79° 02' 56.2"W

Datum (circle one): (NAD27) (Preferred), NAD83, WGS84, Other ____

12. Ownership and Access: *(Who owns site or controls access? Give name and address)* Contact Penn DOT District 9-0 Environmental Manager, Tom Yocum (814) 696-7224.

13. Time (military) **& Temperature:** Start Time 1830 h Stop Time 2335 h Total Minutes: 305

Start Temp. 16.1 °C End Temp. 10.4 °C *[illegible]*

14. General Weather *(circle one; [illegible])* (Clear) Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain;
Steady Rain; Thunderstorms; Snow; Other ____

15. General Wind Conditions *(circle one)* (Calm) Breezy (Leaves Rustling), Windy (Trees Swaying)

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m²)
1	Nets	2	12m x 2.6m	[illegible]	[illegible] sq m
1	Harp Trap	1	1m x 1.2m	Inside drift on right side	1.2 m²

Total Capture Area 1.2 sq m

Form F: [illegible] COMMONWEALTH OF PENNSYLVANIA Pennsylvania Game Commission Page 2 of 2

(Site Survey Record – Continued) **Site Name/No.:** SR 6219 Section 020 Site 1 **Date:** 10/1/13

17. Describe habitat 150 m around site: (topography and vegetation including dominant tree species)
Horizontal abandoned mine entrance 50' below road with stream emerging. Knee deep water outflow and strong breeze. Entrance is 8' wide x 4' high, but debris mound restricts entrance. Red oak, black birch, Aspen, hemlock, [illegible]

18. Was reproductive status checked? (YES) / NO (If "NO" only enter numbers in **Total** columns)

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Example: Species name	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis	1					1					1
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus	1					1		6		6	7
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											
										Grand Total	8

Reproductive Status: NR = nonreproductive, PG = pregnant, L = lactating, PL = post lactating, SCR = scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: [illegible]

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 1830	Start Time: 1931	Start Time: 2031	Start Time: 2131	Start Time: 2231
End Time: 1930	End Time: 2030	End Time: 2130	End Time: 2230	End Time: 2330
Tallies: 3	Tallies: 7	Tallies: 40	Tallies: 80	Tallies: 0

20. REMARKS:

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. Survey Date: 10/2/13 **2. Company Name:** Bat Conservation + Management

3. Bat Identifier: Todd Sicander **4. Assistants:** C. Escalante

5. Site Name and/or Number: SR6219 Section 020 Site 1

6. Site is (circle one): (hibernation site) summer habitat

7a. If hibernation site circle one: limestone mine, (coal mine), limestone cave, sandstone cave, RR tunnel,

other structure, describe - ____________

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream): —

8. County: Somerset **9. 7.5' Quad:** Myersdale

10. Was site GPS'd (required)? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude 39 ° 52 ' 26.1 "N, Longitude 79 ° 02 ' 56.2 "W

Datum (circle one): (NAD27) (Preferred), NAD83, WGS84, Other —

12. Ownership and Access: (Who owns site or controls access? Give name and address): Contact Penn DOT District 9-0 Environmental Manager, Tom Yocum (814) 696-7224

13. Time (military) **& Temperature:** Start Time 1825 h Stop Time 2330 h Total Minutes 305

Start Temp 18.3 °C End Temp 12.0 °C [illegible]

14. General Weather (circle one): (Clear) Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; [illegible]

Steady Rain; Thunderstorms; Snow; Other ____________

15. General Wind Conditions (circle one): (Calm) Breezy (Leaves Rustling), Windy (Trees Swaying)

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m²)
1	Nets	4	[illegible]	[illegible]	[illegible]
1	Harp Trap	1	1m x 1.2m	Entrance dropping on right side	1.2m²

Total Capture Area: 1.2 sq. m

(Site Survey Record - Continued)　**Site Name/No.:** SR6219 Section020 Site1　**Date:** 10/2/13

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species)*
Horizontal abandoned mine entrance 50' below road with stream emerging. [illegible] deep water at flow and stony [illegible]. Entrance is 4' wide [illegible] high, but debris [illegible] restricts entrance. Red oak, black birch, aspen, [illegible]

18. Was reproductive status checked? (YES) NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females: NR	PG	L	PL	No. Juv. Fem.	Total No. Fem.	Number of Adult Males: SCR	NR	No. Juv. Male	Total No. Males	Species Totals
Example Entry	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus								2		2	2
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other - specify:											
Other - specify:											
										Grand Total	2

Reproductive Status: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *[illegible]*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 1830	Start Time: 1931	Start Time: 2031	Start Time: 2131	Start Time: 2231
End Time: 1930	End Time: 2030	End Time: 2130	End Time: 2230	End Time: 2330
Tallies: 1	Tallies: 1	Tallies: 6	Tallies: 14	Tallies: 0

20. REMARKS:

FORM P-70008-N/T
12/99
Section I

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. Survey Date: 09/30/13 2. Company Name: Bat Conservation + Management

3. Bat Identifier: Doug Roybuck 4. Assistants: ______
(Responsible Recorder)

5. Site Name and/or Number: SR6 219 Section 020 Site 4

6. Site is (circle one): (hibernation site) summer habitat

7a. If hibernation site circle one: limestone mine, (coal mine), limestone cave, sandstone cave, RR tunnel,
other structure, describe: Abandoned air shaft

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

8. County: Somerset 9. 7.5' Quad: Murdock

10. Was site GPS'd (required)? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude 39 . 53 . 31.0 N, Longitude 79 . 02 . 20.4 W

Datum (circle one): (NAD27 (preferred)), NAD83, WGS84, Other: –

12. Ownership and Access: (Who owns site or controls access? Give name and address.) Contact Penn DOT District 9-0 Environmental Manager, Tom Yocum (814) 696-7224

13. Time (military) & Temperature: Start Time 1830 h Stop Time 2330 h Total Minutes 300
Start Temp. 14.2 °C End Temp. ~12.7 °C (must use ≥10°C for summer netting)

14. General Weather (circle one): (Clear) Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain;
(suspend netting during periods of rain) Steady Rain; Thunderstorms; Snow; Other: ______

15. General Wind Conditions (circle one): (Calm) Breezy (Leaves Rustling); Windy (Trees Swaying)

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m²)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	Harp Trap	1	1.8m x 1.8m	placed at air shaft entrance	3.2 sq m

Total Capture Area 3.2 sq m

(Site Survey Record - Continued) **Site Name/No.:** SR6219 Section 020 Site 4 **Date:** 09/30/13

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Site is on a forested slope about 40 meters downhill from a gravel driveway. Dominant trees are pine, red maple, black cherry, white oak, red oak. Air shaft drops about 30 feet to horizontal tunnel.

18. Was reproductive status checked? (YES) NO *(If "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Example Bats	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus						*1	1	*1	*1	3	4
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											
Reproductive Status: NR = nonreproductive, PG = pregnant, L = lactating, PL = post lactating, SCR = scrotal/epididymis swollen. ***Complete Measurement and Capture Data Form for all: (1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.**											Grand Total: 4

19. BAT DETECTORS & OTHER MONITORING DEVICES: *(Tallies of bat passes / hour. One to 3 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 3 hours when only monitoring with bat detectors; night vision or infrared device (when bats can not be trapped/netted). Describe procedure & equipment used in remarks.)*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 1830	Start Time: 1931	Start Time: 2031	Start Time: 2131	Start Time: 2231
End Time: 1930	End Time: 2030	End Time: 2130	End Time: 2230	End Time: 2330
Tallies: 2	Tallies: 0	Tallies: 4	Tallies: 82	Tallies: 2

20. REMARKS:
[illegible]

FORM P-76008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. Survey Date: 10/01/13 2. Company Name: Bat Conservation + Management

3. Bat Identifier: Doug Poybuck 4. Assistants: ______
(Responsible Recorder)

5. Site Name and/or Number: SR6219 Section 020 Site 4

6. Site is (circle one): (hibernation site) summer habitat

7a. If hibernation site circle one: limestone mine, (coal mine), limestone cave, sandstone cave, RR tunnel,
other structure, describe - Abandoned Air Shaft

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

______

8. County: Somerset 9. 7.5' Quad: Murdock

10. Was site GPS'd (required)? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude 39 - 53 - 31.0 N, Longitude 79 - 02 - 29.4 W

Datum (circle one): (NAD27 (Preferred)) NAD83, WGS84, Other: —

12. Ownership and Access: (Who owns site or controls access? Give name and address.) Contact PennDOT District 9-0 Environmental Manager, Tom Yocum, (814) 696-7224

13. Time (military) & Temperature: Start Time 1830 h Stop Time 2330 h Total Minutes 300

Start Temp 16.6 °C End Temp 13.3 °C (must stay ≥10°C for summer netting)

14. General Weather (circle one): (Clear), Partly Cloudy, Mostly Cloudy, Cloudy, Drizzle, Intermittent Rain,
(required at start during periods of rain)
Steady Rain, Thunderstorms, Snow, Other: ______

15. General Wind Conditions (circle one): (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying)

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m²)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	Harp Trap	1	1.8m x 1.8m	Placed at air shaft entrance	3.2 sq m

Total Capture Area: 3.2 sq m

(Site Survey Record - Continued) **Site Name/No.:** SR6219-Site4 **Date:** 10/01/13

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Site is on a forested slope about 40 meters downslope from a gravel driveway. Dominant trees red pine, red maple, black cherry, white oak, red oak. Air shaft drops about 25 ft to horizontal tunnel.

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in Total column)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
[illegible]	[illegible]		[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus								1		1	1
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other - specify:											
Other - specify:											

Reproductive Status: NR = nonreproductive, PG = pregnant, L = lactating, PL = post lactating, SCR = scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:** (1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *[illegible]*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 1830	Start Time: 1931	Start Time: 2031	Start Time: 2131	Start Time: 2231
End Time: 1930	End Time: 2030	End Time: 2130	End Time: 2230	End Time: 2330
Tallies: 1	Tallies: 1	Tallies: 0	Tallies: 1	Tallies: 6

20. REMARKS:
1845 - Mouse out near mine entrance (~15 m away)

FORM F-70008-N/T
12/09
Section 1

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 10/02/13 **2. Company Name:** Bat Conservation + Management

3. Bat Identifier: Doug Repleak **4. Assistants:** ____________

5. Site Name and/or Number: SR6219 Section 020 Site 4

6. Site is (circle one): (hibernation site) summer habitat

7a. If hibernation site circle one: limestone mine, (coal mine), limestone cave, sandstone cave, RR tunnel, other structure; describe: Abandoned air shaft

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

____

8. County: Somerset **9. 7.5' Quad:** Murdock

10. Was site GPS'd (required)? (YES) – NO

11. Geographic Coordinates (D-M-S): Latitude: 39 – 53 – 31 °N, Longitude: 77 – 02 – 34 °W

Datum (circle one): (NAD27 (Preferred)), NAD83, WGS84, Other: —

12. Ownership and Access: (Who owns site or controls access? Give name and address) Contact Penn Dot District 9-0 Environmental Manager, Tom Yoaster, (814) 696-7224

13. Time (military) **& Temperature:** Start Time 1830 h Stop Time 2330 h Total Minutes: 300

Start Temp 18.8 °C End Temp 11.7 °C (must stay ≥10°C for summer netting)

14. General Weather (circle one): (Clear), Partly Cloudy, Mostly Cloudy, Cloudy, Drizzle, Intermittent Rain, Steady Rain, Thunderstorms, Snow, Other: ____________
(suspend netting during periods of rain)

15. General Wind Conditions (circle one): (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying)

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m²)
1	Net	1	2m x 3 feet	Stacked until dead	22.5 sq. m
1	Harp Trap	1	1.8m x 1.8m	Placed at air shaft entry	3.2 sq m

Total Capture Area: 3.2 sq m sq. m

(Site Survey Record - Continued) Site Name/No.: SR6219-SH4 Date: 10/02/13

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Site is on a forested slope about 150 meters downhill from a gravel driveway. Dominant trees red pine, red maple, black cherry, white oak, red oak. Air shaft drops about 30 ft to horizontal tunnel.

18. Was reproductive status checked? (YES) / NO *(If "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus	1					1					1
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other - specify											
Other - specify											

Reproductive Status: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen.

*Complete Measurement and Capture Data Form for all: (1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 1

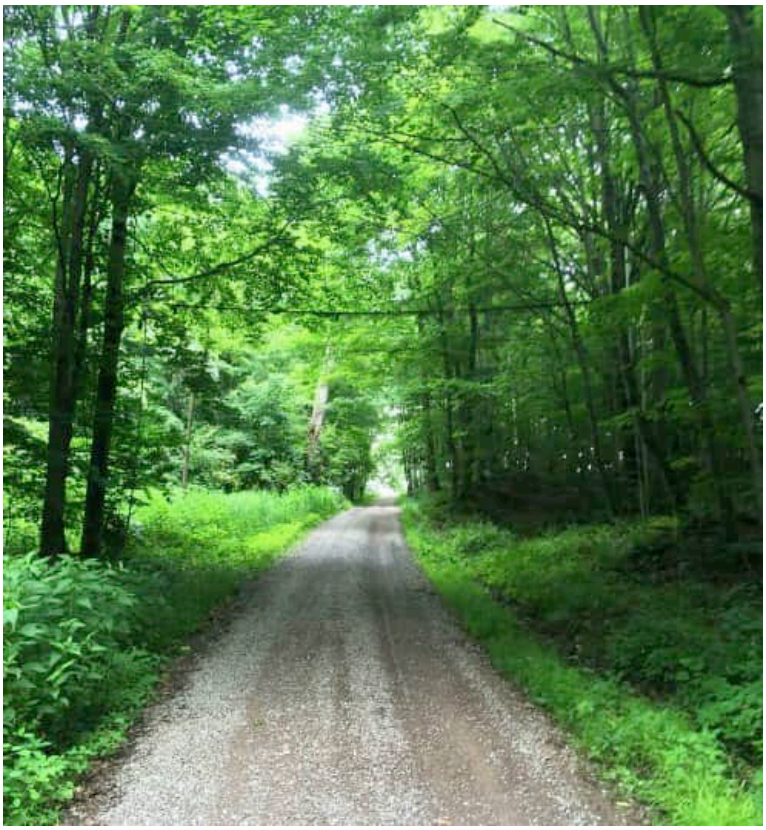
19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 12:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 1830	Start Time: 1931	Start Time: 2031	Start Time: 2131	Start Time: 2231
End Time: 1930	End Time: 2030	End Time: 2130	End Time: 2230	End Time: 2330
Tallies: 0	Tallies: 2	Tallies: 0	Tallies: 0	Tallies: 3

20. REMARKS:

2014 ROUTE 219
MEYERSDALE TO I-68
SUMMER BAT SURVEY

Garrett County, MD and Somerset County, PA
17 July – 5 August 2014



CAPTURE SITE MD01

Bat Conservation and Management, Inc.
Carlisle, Pennsylvania

2014 Route 219
Meyersdale to I-68
Summer Bat Survey

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Executive Summary

Introduction

The Federal Highway Administration (FHA), Pennsylvania Department of Transportation (PennDOT) and the Maryland State Highway Administration (MDSHA) initiated preliminary engineering and environmental studies for U.S. 219 Meyersdale to I-68 (PennDOT Project: SR 6219, Section 019). Bat Conservation and Management, Inc. (BCM) of Carlisle, Pennsylvania was commissioned to conduct a survey of summer bat species within the U.S. 219 Meyersdale to I-68 project area for the purpose of determining potential impact of this development to any threatened and endangered (T&E) bat species. The survey was conducted between 16 July and 5 August 2014.

Objective

The objective of this study was to provide an inventory of summer bat species present and any T&E species occurring within the vicinity of the project area. The 2014 Route 219 Summer Project sites were surveyed using physical capture methods, followed by radio telemetry to determine day-roost locations and characteristics for the T&E species of interest (e.g., eastern small-footed myotis, *Myotis leibii*; northern long-eared myotis, *M. septentrionalis*; and/or Indiana myotis, *M. sodalis*). The survey was performed using capture and telemetry protocols set by the U.S. Fish and Wildlife Service (USFWS) and Pennsylvania Game Commission (PGC). In accordance with the original project plan and scope of work, no acoustic survey methods were applied on this project.

Outcome

During this survey, thirty (30) sites were inventoried within Pennsylvania and Maryland; with twenty-one (21) sites located in the former and nine (9) sites located in the latter. From these sites a total of 127 bats representing five (5) species were captured. This included 82 big brown bats (*Eptesicus fuscus),* 40 Eastern red bats (*Lasiurus borealis),* one (1) little brown myotis (*Myotis lucifugus),* two (2) Northern long-eared myotis (*M. septentrionalis),* and two (2) Eastern small-footed myotis (*M. leibii)*. Of these species, the two (2) Northern long-eared and two (2) eastern small-footed myotis were targeted for additional surveying using radio-tracking, as they are proposed for federal endangered species listing and considered to be a state-sensitive species, respectively. Both eastern small-footed myotis were captured in PA and tracked to man-made structures.

Methods

Project Area

The U.S. 219 Meyersdale to I-68 Project is a linear project approximately 13 kilometers (8) mi.) in length stretching from the southern end of the Meyersdale Bypass in Somerset County, Pennsylvania to Interstate 68 (I-68) in Garrett County, Maryland. This project is located in the Allegheny Mountain Section of Pennsylvania's physiographic Ridge and Valley Provinces and located in the Ridge and Valley section of the Great Appalachian Valley (Figure 1). The study area is U.S. 219 Meyersdale to I-68 and includes parts of Elk Lick and Summit Townships in Somerset County, Pennsylvania and the northeastern corner of Garrett County, Maryland (Figures 2 and 3). The project involves the consideration of a four-lane limited access facility from the Meyersdale Bypass, a four-lane limited access facility in Somerset County, PA to I-68, another four-lane limited access facility located in Garrett County, MD. The proposed route extension has been assessed as a key improvement project in both states as well regionally and nationally. Currently, two sections of U.S. 219, one north and one south of Meyersdale, remain as two-lane facilities. This proposed project, along with PennDOT's U.S. 219 project north of Meyersdale, would complete a four-lane, limited access highway from I-68 to the Pennsylvania Turnpike (I-76) and areas to the north, providing improved levels of service, safety, system linkage and efficient access to the region in order to improve economic development potential.

Survey Locations

Survey sites were selected by BCM using aerial photographs including the proposed project alternatives and buffer zone. A total of thirty (30) mist net survey sites were identified, placed at intervals of one (1) site for every one (1) km of habitat along the proposed U.S. 219 road extension project area (Figures 2 and 3). These sites were sampled during the nights of 16 July through 5 August 2014. Sites were divided between Pennsylvania and Maryland, with twenty-one (21) sites located on the Pennsylvania portion of U.S. 219 Section 019, and nine (9) sites located in Garrett County, Maryland. In general, more sites were selected in Pennsylvania given the greater project area in that state.

Survey Protocol: Capture

Mist net surveys followed the protocols described in the USFWS Range-wide Indiana Bat Summer Survey Guidelines[1] and the Standard Minimum Effort Requirements for Qualified Indiana Bat Surveyor Netting within the Commonwealth of Pennsylvania for Environmental Review Projects[2], issued by the Pennsylvania Game Commission (PGC). Based on these guidelines the required minimum level of effort for a linear project is six (6) net-nights per kilometer of suitable summer

habitat. A net-night is defined as any configuration of mist net lengths and heights between two poles set up for one (1) nights. To meet the capture objectives for this survey, at least three net-sets were deployed at each of the thirty (30) survey sites for two calendar nights. This provided an acceptable minimum effort of at least 180 net-nights during the 2014 survey.

At each survey site, each net-set was checked every 10-minutes, never exceeding 15-minutes between net checks. Survey sites did not contain more nets than could be managed by a single "qualified Indiana bat surveyor" (QIBS). Mist netting did not exceed three (3) consecutive nights at a single survey location. Each night, nets were opened at sundown and continued for at least five (5) hours for a minimum sampling period of 300-minutes each night. All sites were sampled using traditional mist netting techniques.[3] The mist nets used for this survey are manufactured by Avinet, Inc. (Dryden, NY; 38mm mesh-nylon, reduced bag, 50/2, 38mm mesh, 2.6m high, 4 shelves).

Nets are placed over existing roads, trails, and streams in an effort to catch bats that utilized these features as flight corridors to move through the habitat between roosts and foraging areas. At each survey-site, nets are set according to the local microhabitat structure, and are deployed to completely span the entire height of the available flyway. "Single-high" nets consist of one 2.6 meter high net strung between two poles. "Double-high" nets consist of two 2.6 meter high nets strung between two poles. "Triple-high" nets consist of three 2.6-meter high nets stacked between two poles. The net lengths utilized are also determined by the physical characteristics of the site and deployed to span the width of the flyway. Nets range in length between 6 and 18 meters.

Meta-data was collected to fully describe individual capture sites and included photographs (Appendix A), global positioning satellite (GPS) coordinates, nightly weather conditions during sampling, and general information regarding habitat and surrounding area. Because adverse weather conditions can affect capture success, survey effort were suspended or even repeated when any of the following weather conditions were present throughout all or most of a sampling period: (1) temperatures below 50ºF (10ºC), (2) precipitation, including rain and/or heavy for, persisting for more than 30 minutes or that continues intermittently during the survey period, and (3) sustained winds greater than 9mph (4mps), i.e., "3" on the Beaufort wind scale.

Data were collected on all captured bats including species, sex, age, and reproductive condition. Species age was determined by using the Epiphyseal-diaphyseal Fusion method which "by trans-illuminating the wing of an individual using a headlight, a researcher can visualize the cartilaginous zone of the long phalanges . . . As the bat continues to grow, the epiphyseal plates eventually close until they are no longer visible to the unaided eye."[4] The presence of reproductive

female and/or juvenile bats of any sex indicates maternity use of the area in which they were captured. The reproductive condition of females was noted by abdominal palpation and inspection of mammary glands[5].

Survey Protocol: Radio-tracking

Radio tracking conducted during this survey followed USFWS and PGC protocols. The northern long-eared myotis (*Myotis septentrionalis*) is currently being considered for federal endangered species listing, and the eastern small-footed bat (*M. leibii*) is considered a "species of special concern" in Pennsylvania, therefore both were "species of interest" and targeted for additional survey methods, using radio-tracking to locate and quantify the day roosts and estimation of roost-population size by conducting nightly emergence counts. All species of interest were outfitted with radio transmitters and tracked to their respective day roosts following the night of capture, and for each subsequent night until the transmitter was no longer active or the bat was undetectable in the area. Data collected for each day roost identified included location, type of roost, description (e.g., height, tree species, percentage of exfoliating bark present, and canopy cover surrounding roost), surrounding habitat, and photographs. Nightly emergence counts at all identified roosts provided estimates of roost-population sizes (Table 5, Appendix C).

Radio tracking techniques and analysis follow accepted methods designed for bats[6]. Captured bats identified for radio-telemetry were examined for sex, age, reproductive status, white-nose syndrome (WNS) wing score, and were photographed prior to release (photos appear in Appendix C). A transmitter (Model LB-2, Holohil, Canada) was attached to the back of each bat using a medical grade temporary adhesive (PERMA-TYPE). The transmitters have a rated battery life of approximately 10 days and weighed between 0.36 and 0.52 grams. Transmitter weight did not exceed 10% of the bat's body weight, in accordance with USFWS 2014 protocols.

For tracking purposes, captured bats were released near the site of capture within 2-hours and tracked by obtaining bearings using radio telemetry receivers, 3-element Yagi-type antennas, and GPS receivers in conjunction with laptop computers. Initial tracking and triangulation was conducted with the use of a vehicle. Once triangulation was performed, tracking continued on foot using Field Marshall 1000 172kHz portable receivers with an attached 3-element antenna until the roost was identified. Once located, emergence counts were performed on all roosts, providing permission was granted to access the corresponding property.

Survey Protocol: Roost Emergence Counts

Once located, emergence counts are conducted on all roost locations, providing permission is granted to access the property containing the located roost. Emergence counts are conducted according to standard procedures for cavity dwelling, temperate bat species[7]. One or more observers will be stationed at each roost at least one hour prior to sundown to count emerging bats. The specific size and configuration of the roost exit(s) and or field(s) of view at each site will determine the number of observers required to survey each roost. Counts are conducted by direct observation as bats leave the roost and are backlit by the twilight sky. If necessary, special night-vision, infrared imaging, or thermal scopes will be used to count bats emerging after dark when they can no longer be observed directly. Data from roost counts is collected each night a radio-tagged bat is present at the roost to assess total population size and any daily fluctuations in numbers of bats present.

Results

Sampling Effort: Capture

The net-night level of effort totaled one hundred eighty-nine (189) net-nights. The capture data for each mist net location is summarized in Tables 1 and 2, including site names, date, and level of effort. Site-specific net configurations are described on the Form P-70008-N/T data sheets reprinted in Appendix B. In the case of an adverse weather event (i.e., temperatures falling below 10°C, precipitation, and/or strong winds, persisting throughout all or most of the nightly sampling period), netting was either delayed or suspended until conditions improved, allowing a valid survey night.

Species Occupancy: Capture

A total of one hundred twenty-seven (127) individual bats of five (5) species were captured during the survey period for this project (Table 3). This included eighty-two (82) big brown bats (*Eptesicus fuscus),* forty (40) eastern red bats (*Lasiurus borealis*), two (2) eastern small-footed myotis (*Myotis leibii*), one (1) little brown myotis (*M. lucifugus*), and two (2) northern long-eared myotis (*M. septentrionalis*). A site-by-site occupancy summary is presented in Table 2 of this report.

Females represented approximately 48% (n = 61) of the captured bats. Of the sixty-one (61) female bats that were assessed for reproductive condition, forty-two (42) or 68.8% were reproductive; zero (0) were pregnant, five (5) were lactating, and thirty-seven (37) were post-lactating (Table 4). The remaining fifteen (15) female bats were non-reproductive, exhibiting no obvious characteristics indicating that they had been either pregnant or lactating this season. A summary of the site-level population dynamics is presented in Table 3 of this report. The site-specific, species-specific reproductive results are also summarized in Table 4.

Sampling Effort: Radio-tracking

With the exception of the two eastern small-footed myotis, all radio-tagged bats were tracked to their day roosts. Emergence counts were unable to be conducted on the two (2) eastern small-footed myotis due to lack of landowner permission and day roosts were estimated via triangulation. For the remaining two northern long-eared myotis, emergence counts were performed at each day roost identified. One of the northern long eared myotis was captured in MD, and tracked to two different tree roosts, The other was captured in PA and tracked to three unique tree roosts. Tracking continued as long as each transmitter functioned and was not shed by the bat. The location of all identified and estimated day roosts can be seen in Figure 2, along with the proposed project alternatives. Emergence counts were performed for a minimum of four (4)

nights at each roost. All bats observed emerging from roost were counted to obtain a roost population estimate. These data are recorded in Table 5.

Species Occupancy: Radio-tracking

A total of four bats (4) were fitted with transmitters and tracked to a total of seven (7) different day roost locations. No federally endangered or threatened species were captured, however two (2) state-threatened eastern small-footed myotis were captured including one post-lactating female at Site PA10 and one male at Site PA07 (Table 5). Both bats were outfitted with transmitters and radio tracked in order to locate their respective day roosts. However, land access was denied by both landowners and prevented accurate roost identification and follow-up emergence counts. In the event of land access restrictions where emergence counts were unable to be performed, roost locations were estimated via triangulation. The female from Site PA10 was assumed to be roosting in a large barn with a dark roof, however permission was not granted to further assess the barn to confirm presence and perform emergence counts. The male small footed myotis was tracked to a large separate barn with a metal roof, though emergence counts were unable to be performed due to restricted access by landowner.

Two (2) northern long-eared myotis, proposed for endangered species listing by the USFWS, were among the radio-tagged bats. These were identified as 2014Rt219.3 and 2014Rt219.4. Both were post-lactating females and led trackers to multiple roost locations. 2014Rt219.3 was tracked to a single roost on two consecutive days before shedding the transmitter on the third day (Table 5). 2014Rt219.4 was tracked to three (3) different roosts and emergence counts were done for a total of eight (8) days at these roosts, after which the transmitter was no longer detected.

Weather Data

Weather data was recorded each night of netting. The average high and low temperatures for the survey period was 16.8°C and 14.7°C respectively. Additional detailed information including any weather events and cloud cover is included in Appendix B on Forms P-70008-N/T and are organized by site number. Unless otherwise noted, overall weather was nominal for the entire survey period.

Discussion and Conclusions

The results of the 2014 Route 219 Meyersdale to I-68 Summer Bat Survey performed between July 16th and August 5th of 2014 indicated moderate diversity of bat species within the project area. No day roosts were found to be directly on the project impact area. However, distances from identified roosts to the project impact area ranged from 0.12 kilometers to 0.76 kilometers (Table 5). No endangered Indiana bats were found to be present, however results did confirm occupancy of the state threatened Small-footed bat (*Myotis leibii*), as well as the Northern Long-eared myotis (*Myotis septentrionalis*), a current species of interest and a candidate for potential listing under the Federal Endangered Species Act. Though not currently subject to formal federal listing, the USF&WS has published recommendations for the conservation and management of the Northern Long-eared myotis[8] by restricting tree-clearing to times when bats are not utilizing forest resources for roosting or rearing young. Hibernation may begin as early as September and last until April. Therefore, tree clearing can take place any time from late fall to early spring without affecting resident long-eared bats. The Eastern small-footed bats captured and radio-tracked during this project were found to be roosting inside man-made buildings, which is not a widely reported roost preference for this species but is known to occur in two other unrelated locations in Pennsylvania.

Literature Cited

[1] U.S. Fish and Wildlife Service. 2014. Range-wide Indiana bat Summer Survey Guidelines (January 2014). 41 pages.

[2] Pennsylvania Game Commission . . .

[3] Kunz, T.H. and S. Parsons (Eds.) 2009. *Ecological and Behavioral Methods for the Study of Bats*. (Second Edition) The Johns Hopkins University Press, Baltimore, 901 pages.

[4] Brunet-Rossinni, A.K. and G.S. Wilkinson. 2009. *Methods of age estimation and the study of senescence in bats*. In: Kunz, T.H. and S. Parsons (Eds.). 2009. *Ecological and Behavioral Methods for the Study of Bats*. (Second Edition) The Johns Hopkins University Press, Baltimore, 901 pages.

[5] Racey, P.A. 2009. *Reproductive assessment in bats*. In: Kunz, T.H. and S. Parsons (Eds.) 2009. *Ecological and Behavioral Methods for the Study of Bats*. (Second Edition) The Johns Hopkins University Press, Baltimore, 901 pages.

[6] Amelon, S.K., D.C.Dalton, J.J. Millspaugh and S. Wolf. 2009. "Radiotelemetry techniques and analysis." In: Kunz, T.H. (Ed.) 2009. *Ecological and Behavioral Methods for the Study of Bats*. (2nd Edition) Smithsonian Institution Press, Washington, 920 pages.

[7] Kunz, T.H. (Ed.) 2009. *Ecological and Behavioral Methods for the Study of Bats*. (2nd Edition) Smithsonian Institution Press, Washington, 920 pages.

[8] U.S. Fish and Wildlife Service. 2013. *Northern long-eared bat,* Myotis septentrionalis. Fact Sheet. 2 pages.

Figures

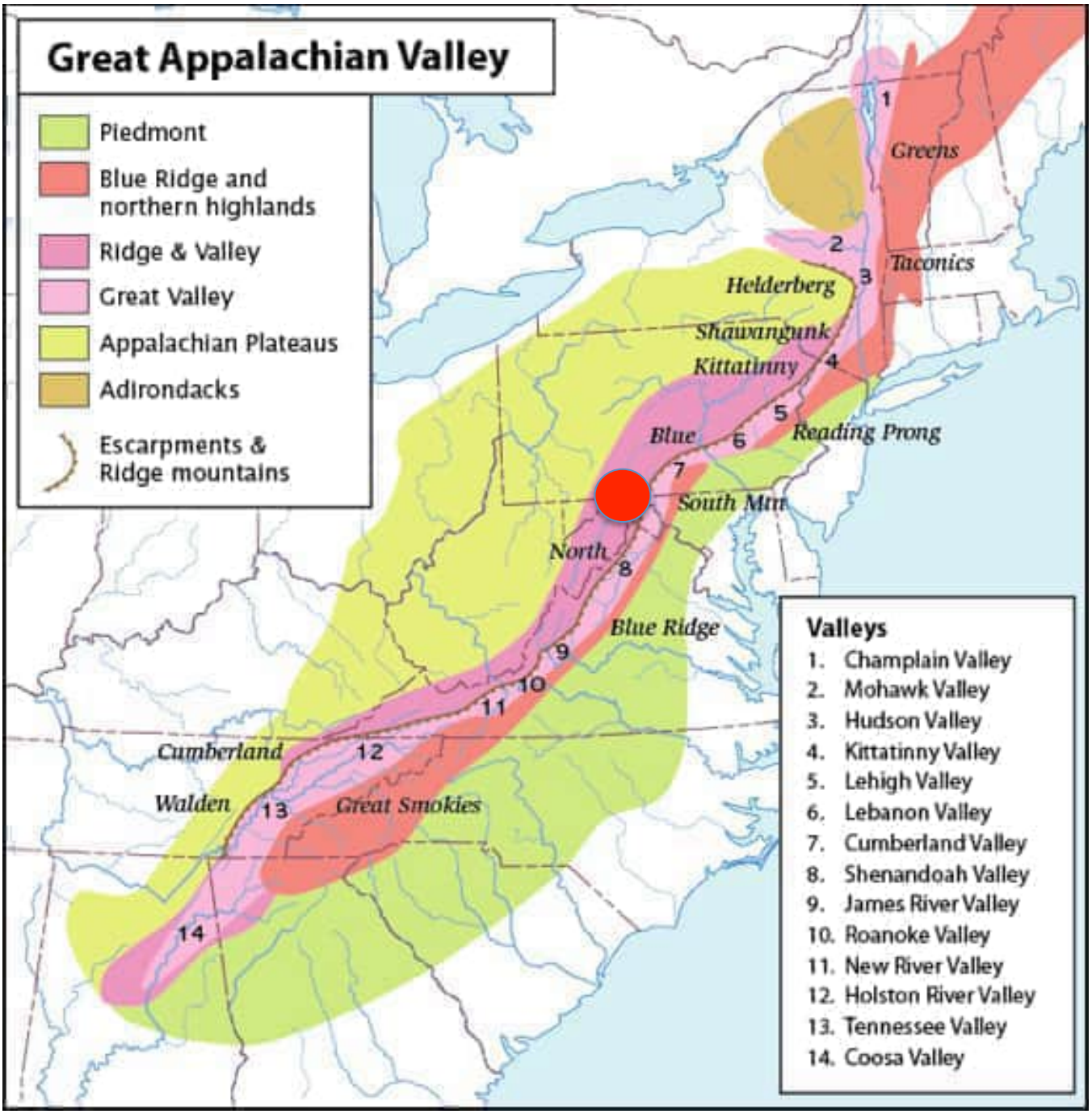

Figure 1. Route 219 Summer Project, Somerset County, Pennsylvania and Garrett County, Maryland

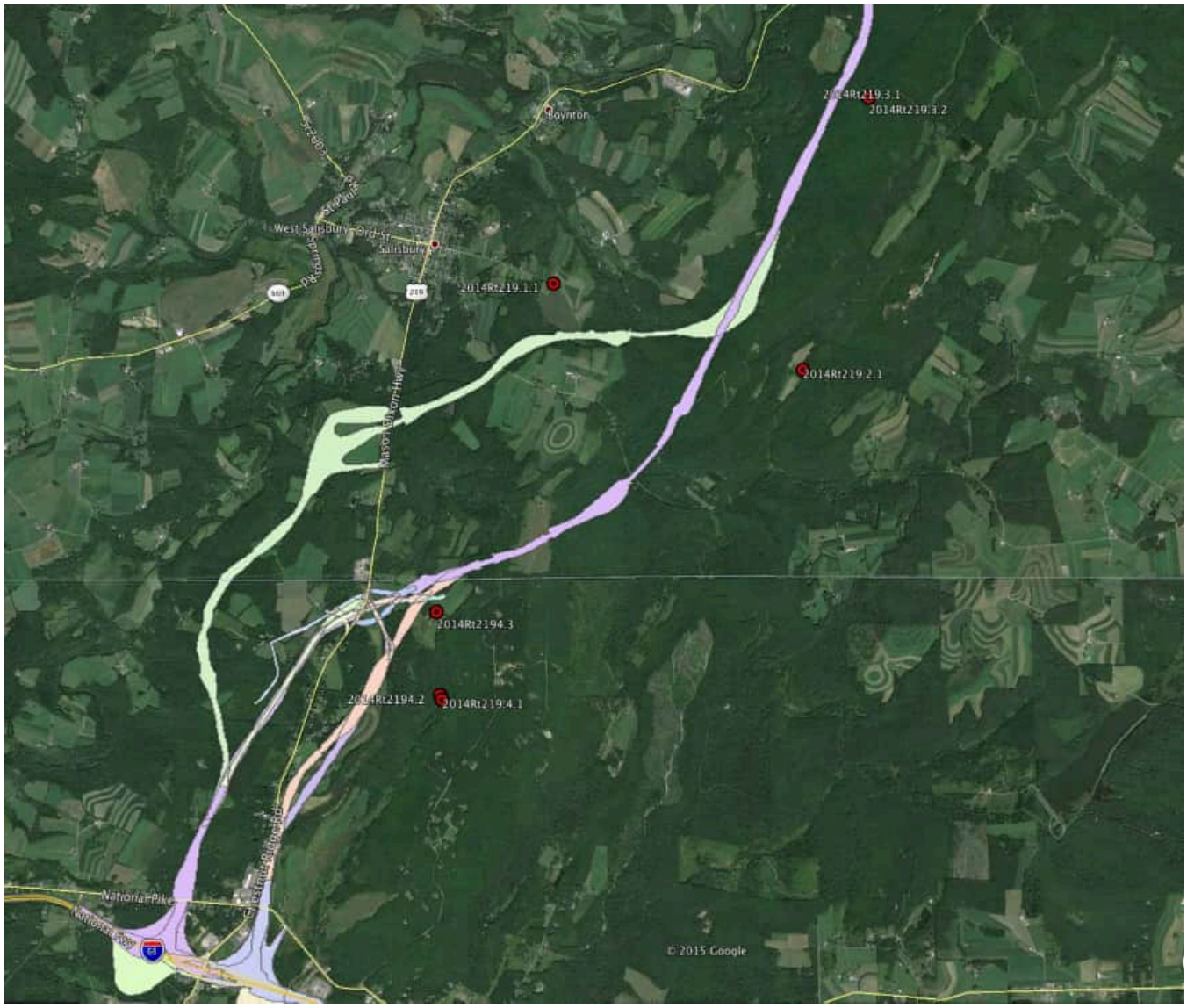

Figure 2. Roost locations with proposed project alternatives

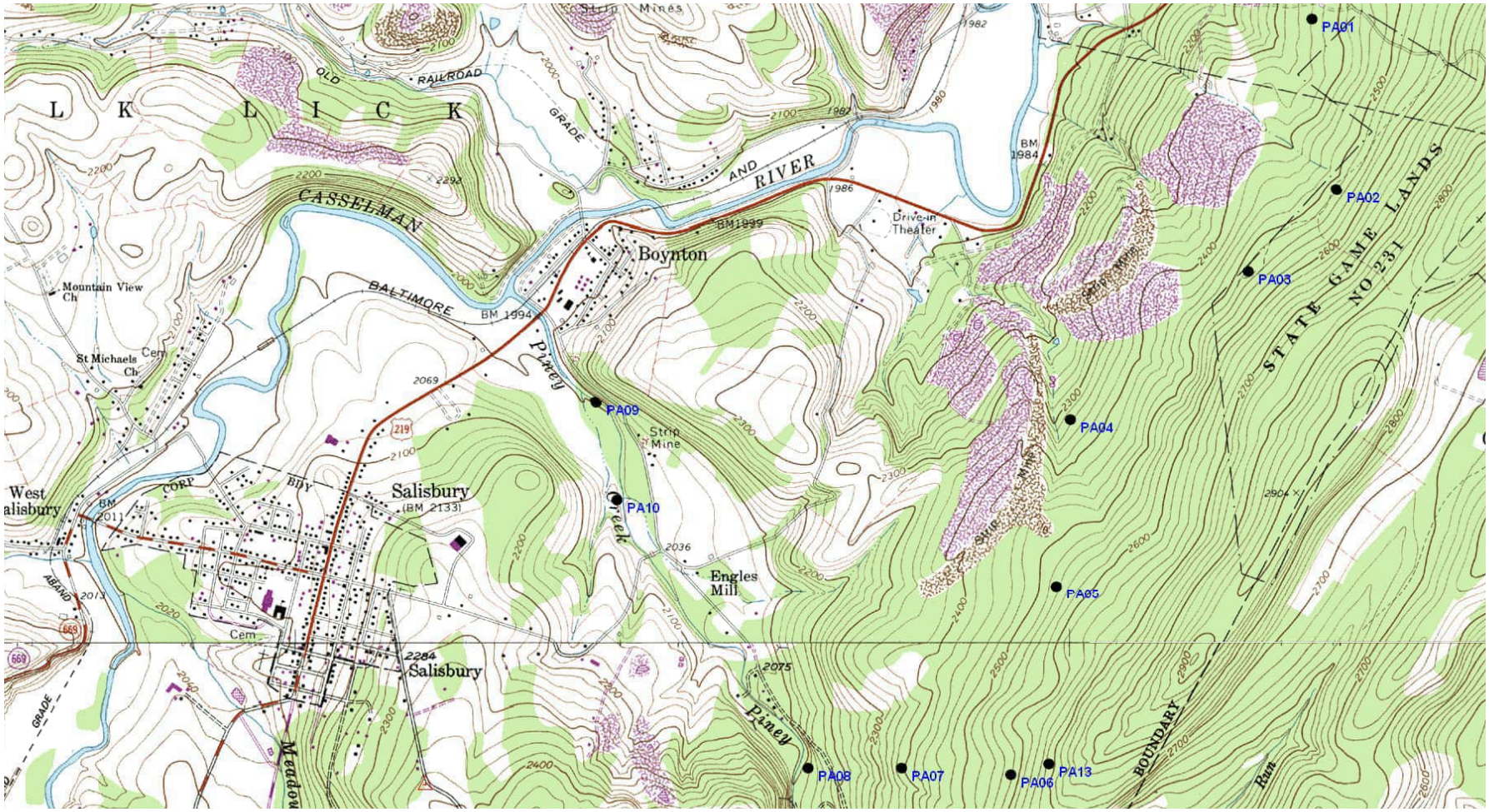

Figure 3. Route 219 Project, Survey Sites PA01 through PA10 and PA13

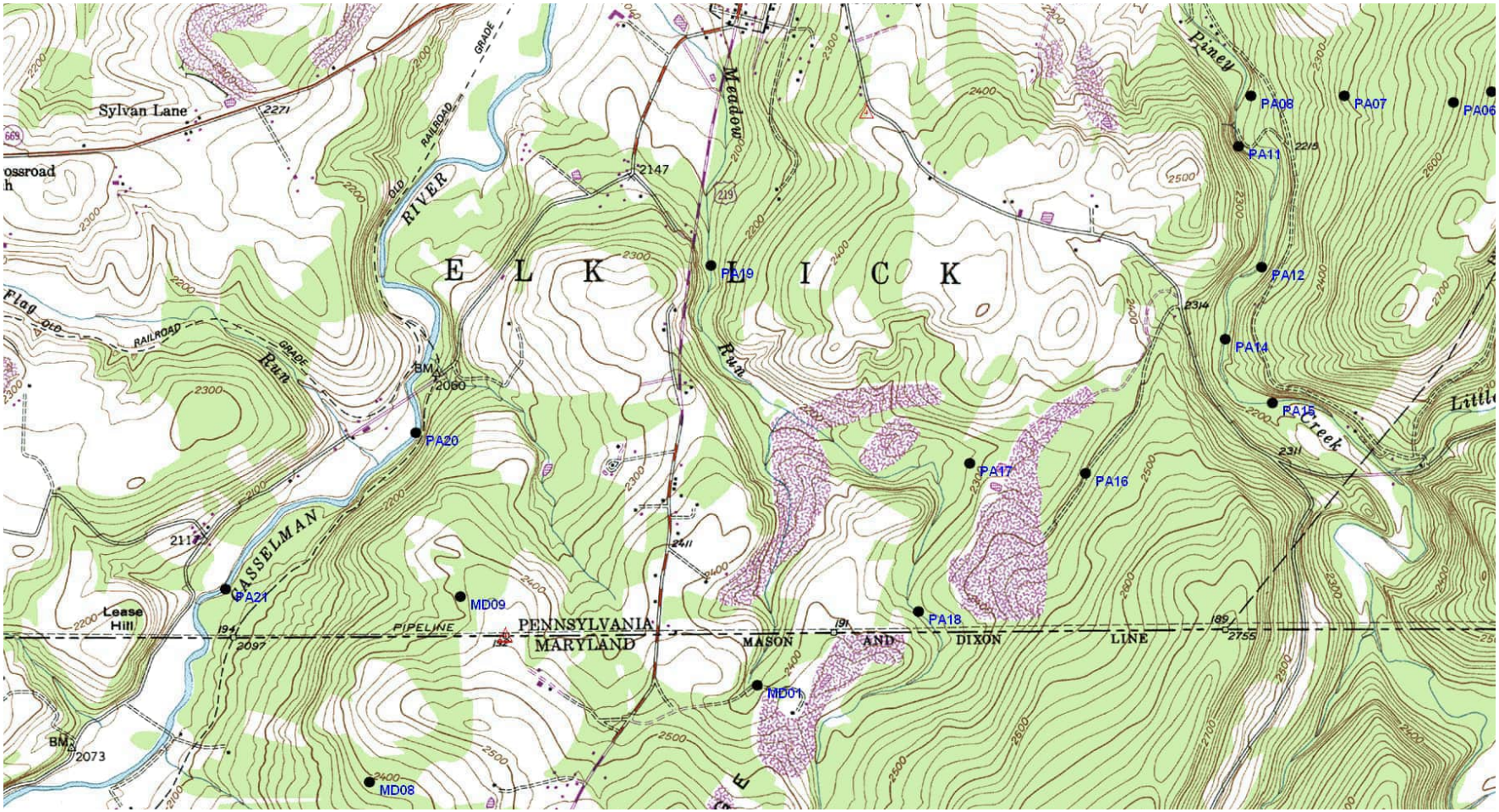

Figure 4. Route 219 Project, Survey Sites PA06 - PA08, PA11 – PA12, PA14 – 21, MD01, and MD08 – MD09

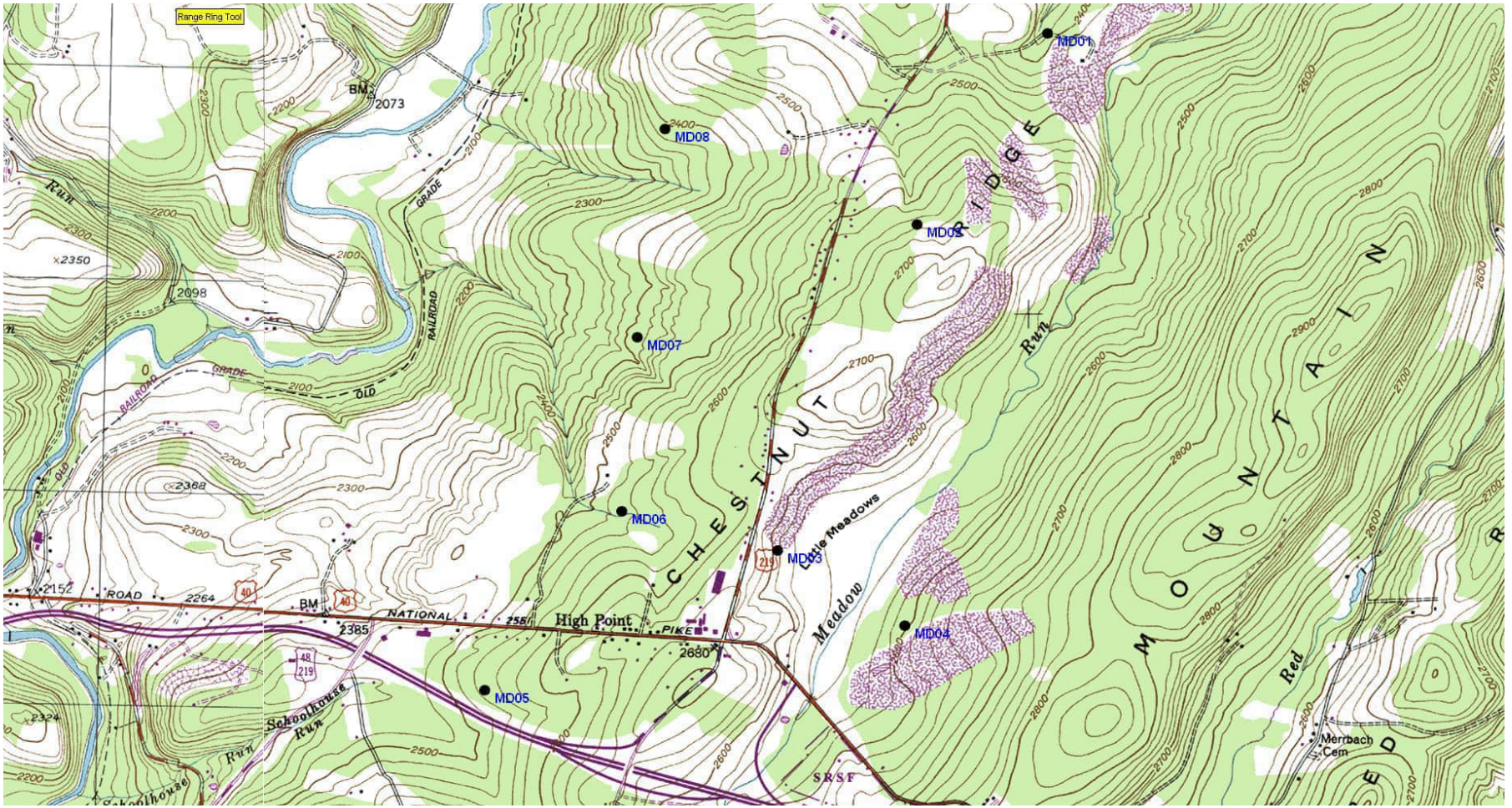

Figure 5. Route 219 Project, Survey Sites MD01 – MD08

Tables

Table 1. Project Summary Table

Site ID	Survey Methods	(#)Physical Captures	Site ID	Survey Methods	(#)Physical Captures
MD01	1- 6m Triple-High Mist Net 1- 12m Triple-High Mist Net 1- 6m Single-High Mist Net	(4) EPFU (1) LABO	**PA07**	1- 6m Triple-High Mist Net 1- 9m Triple-High Mist Net 1- 6m Single-High Mist Net	(3) EPFU (3) LABO (1) MYLE
MD02	2- 12m Triple-High Mist Net 1- 9m Single-High Mist Net	(1) EPFU (1) MYSE	**PA08**	1- 9m Triple-High Mist Net 1- 12m Triple-High Mist Net 1- 6m Single-High Mist Net	(0)
MD03	1- 6m Triple-High Mist Net 1- 18m Triple-High Mist Net 1- 2.6m Single-High Mist Net	(1) EPFU (3) LABO	**PA09**	2- 12m Triple-High Mist Net 1- 9m Single-High Mist Net	(1) EPFU
MD04	1- 6m Triple-High Mist Net 1- 9m Triple-High Mist Net 1- 9m Single-High Mist Net	(0)	**PA10**	2- 12m Triple-High Mist Net 1- 6m Single-High Mist Net	(1) MYLE
MD05	1- 6m Triple-High Mist Net 1- 9m Triple-High Mist Net 1- 9m Single-High Mist Net	(5) EPFU (7) LABO	**PA11**	1- 9m Triple-High Mist Net 1- 12m Triple-High Mist Net 1- 12m Single-High Mist Net	(2) LABO
MD06	2- 6m Triple-High Mist Net 1- 6m Single-High Mist Net	(1) LABO	**PA12**	1- 9m Triple-High Mist Net 1- 18m Triple-High Mist Net 1- 6m Single-High Mist Net	(4) EPFU (1) LABO
MD07	2- 9m Triple-High Mist Net 1- 9m Single-High Mist Net	(1) EPFU (6) LABO	**PA13**	2- 6m Triple-High Mist Net 1- 6m Single-High Mist Net	(12) EPFU (1) LABO
MD08	1- 9m Triple-High Mist Net 1- 12m Triple-High Mist Net 1- 6m Single-High Mist Net	(2) EPFU (1) LABO	**PA14**	2- 12m Triple-High Mist Net 1- 6m Single-High Mist Net	(1) LABO (1) MYLU
MD09	2- 18m Triple-High Mist Net 1- 6m Single-High Mist Net	(14) EPFU (2) LABO	**PA15**	2- 12m Triple-High Mist Net 1- 6m Single-High Mist Net	(0)
PA01	2- 6m Triple-High Mist Net 1- 6m Single-High Mist Net	(0)	**PA16**	1- 6m Triple-High Mist Net 1- 9m Triple-High Mist Net 1- 6m Single-High Mist Net	(0)
PA02	2- 6m Triple-High Mist Net 1- 6m Single-High Mist Net	(12) EPFU (2) LABO	**PA17**	2- 9m Triple-High Mist Net 1- 6m Single-High Mist Net	(3) LABO
PA03	2- 6m Triple-High Mist Net 1- 6m Single-High Mist Net	(1) MYSE	**PA18**	1- 6m Triple-High Mist Net 1- 9m Triple-High Mist Net 1- 6m Single-High Mist Net	(0)
PA04	2- 6m Triple-High Mist Net 1- 12m Single-High Mist Net	(0)	**PA19**	2- 6m Triple-High Mist Net 1- 9m Single-High Mist Net	(1) LABO
PA05	2- 6m Triple-High Mist Net 1- 6m Single-High Mist Net	(5) EPFU	**PA20**	1- 12m Triple-High Mist Net 1- 18m Triple-High Mist Net 1- 12m Single-High Mist Net	(8) EPFU (5) LABO
PA06	2- 6m Triple-High Mist Net 1- 2.6m Single-High Mist Net	(6) EPFU	**PA21**	1- 6m Triple-High Mist Net 1- 12m Triple-High Mist Net 1- 12m Single-High Mist Net	(3) EPFU

Abbreviations used in this table: **EPFU** = *Eptesicus fuscus* (big brown bat), **LABO** = *Lasiurus borealis* (eastern red bat), **MYLE** = *Myotis leibii* (eastern small-footed myotis), **MYLU** = *M. lucifugus* (little brown myotis), **MYSE** = *M. septentrionalis* (northern long-eared myotis).

Table 2. Site-by-site Level of Effort

Survey Site ID	Survey Site Lat / Long (dms)	Survey Dates	Survey Method	Capture Effort*	TOTALS
MD01	39° 43' 12.63" / 79° 04' 56.00"	31 July- 1 Aug	CAPTURE	3	6
MD02	39° 42' 43.50" / 79° 05' 21.70"	4-5 Aug	CAPTURE	3	6
MD03	39° 41' 53.70" / 79° 05' 49.30"	4-5 Aug	CAPTURE	3	6
MD04	39° 41' 42.30" / 79° 05' 24.10"	4-5 Aug	CAPTURE	3	6
MD05	39° 41' 32.50" / 79° 06' 46.80"	2-3 Aug	CAPTURE	3	6
MD06	39° 41' 59.90" / 79° 06' 20.00"	2-3 Aug	CAPTURE	3	6
MD07	39° 42' 26.33" / 79° 06' 16.90"	2-3 Aug	CAPTURE	3	6
MD08	39° 42' 58.08" / 79° 06' 11.47"	31 July- 1 Aug	CAPTURE	3	6
MD09	39° 43' 25.95" / 79° 05' 53.55"	31 July- 1 Aug	CAPTURE	3	6
PA01	39° 46' 33.64" / 79° 01' 42.84"	25-26 & 28 Jul	CAPTURE	3	9
PA02	39° 46' 08.08" / 79° 01' 38.17"	25-26 & 28 Jul	CAPTURE	3	9
PA03	39° 45' 55.76" / 79° 01' 55.27"	25-26 & 28 Jul	CAPTURE	3	9
PA04	39° 45' 33.50" / 79° 02' 29.70"	23-24 July	CAPTURE	3	6
PA05	39° 45' 08.49" / 79° 02' 32.38"	23-24 July	CAPTURE	3	6
PA06	39° 44' 40.05" / 79° 02' 41.19"	23-24 July	CAPTURE	3	6
PA07	39° 44' 41.00" / 79° 03' 02.30"	21-22 July	CAPTURE	3	6
PA08	39° 44' 41.00" / 79° 03' 20.50"	19-20 July	CAPTURE	3	6
PA09	39° 45' 36.15" / 79° 04' 01.70"	21-22 July	CAPTURE	3	6
PA10	39° 45' 21.50" / 79° 03' 57.50"	21-22 July	CAPTURE	3	6
PA11	39° 44' 33.50" / 79° 03' 22.80"	19-20 July	CAPTURE	3	6
PA12	39° 44' 15.30" / 79° 03' 18.40"	21-22 July	CAPTURE	3	6
PA13	39° 44' 41.70" / 79° 02' 33.90"	23-24 July	CAPTURE	3	6
PA14	39° 44' 04.57" / 79° 03' 25.44"	19-20 July	CAPTURE	3	6
PA15	39° 43' 54.90" / 79° 03' 16.30"	19-20 July	CAPTURE	3	6
PA16	39° 43' 44.44" / 79° 03' 52.51"	29-30 July	CAPTURE	3	6
PA17	39° 43' 45.90" / 79° 04' 14.92"	29-30 July	CAPTURE	3	6
PA18	39° 43' 23.70" / 79° 04' 24.90"	29-30 July	CAPTURE	3	6
PA19	39° 44' 15.55" / 79° 05' 05.01"	16 & 18 July	CAPTURE	3	6
PA20	39° 43' 50.48" / 79° 06' 02.42"	17-18 July	CAPTURE	3	6
PA21	39° 43' 26.98" / 79° 06' 39.23"	17-18 July	CAPTURE	3	6
30	TOTALS	63	1	90	189

** *Capture Effort is presented by Net-night where one net night is one net deployed for one night; minimum acceptable capture effort is three nets deployed each night for two nights or 6 Net-nights per survey site. Totals represent number of net-nights deployed for number of survey dates deployed, i.e., 4 net-nights for two survey-dates = total survey effort of 8 nights.*

Table 3. Site-level Population Dynamics of Captured Bats

Species/		MD	MD	MD	MD	MD	MD	MD	MD	MD	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	Totals			
Sex		1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	M	F	U	TOT
EPFU	*M*	3	1	-	-	1	-	-	1	6	-	7	-	-	3	-	1	-	1	-	-	1	1	-	-	-	-	-	-	3	1	30			
	F	1	-	1	-	4	-	1	1	7	-	5	-	-	2	5	2	-	-	-	-	3	10	-	-	-	-	-	-	5	2		49		82
	U	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-			3	
LABO	*M*	-	-	2	-	2	-	1	1	1	-	2	-	-	-	-	1	-	-	-	1	1	-	-	-	-	2	-	1	3	-	18			
	F	-	-	1	-	3	-	1	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	1	-	-	1	-		9		40
	U	1	-	-	-	2	1	4	-	1	-	-	-	-	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	1	-			13	
MYLE	*M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1			
	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-		1		2
	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			0	
MYLU	*M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1			
	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		0		1
	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			0	
MYSE	*M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
	F	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		2		2
	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			0	
TOTALS		5	2	4	0	12	1	7	3	16	0	14	1	0	5	6	7	0	1	1	2	5	13	2	0	0	3	0	1	13	3	50	61	16	127

Abbreviations used in this table: **EPFU** = *Eptesicus fuscus* (big brown bat), **LABO** = *Lasiurus borealis* (eastern red bat), **MYLE** = *Myotis leibii* (eastern small-footed myotis), **MYLU** = *M. lucifugus* (little brown myotis), **MYSE** = *M. septentrionalis* (northern long-eared myotis), **M** = male, **F** = female, **U** = unknowns, and **TOT** = totals.

Table 4. Reproductive condition of captured female bats

Species/ Reprod. Condition		MD 1	MD 2	MD 3	MD 4	MD 5	MD 6	MD 7	MD 8	MD 9	PA 1	PA 2	PA 3	PA 4	PA 5	PA 6	PA 7	PA 8	PA 9	PA 10	PA 11	PA 12	PA 13	PA 14	PA 15	PA 16	PA 17	PA 18	PA 19	PA 20	PA 21	Totals	
																																R	% R
EPFU	*P*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	71%
	L	-	-	-	-	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	PL	1	-	-	-	4	-	1	1	4	-	4	-	-	1	2	2	-	-	-	-	2	3	-	-	-	-	-	-	5	-		
	NR	-	-	1	-	-	-	-	-	1	-	1	-	-	1	-	-	-	-	-	-	1	7	-	-	-	-	-	-	-	2		
LABO	*P*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	44%
	L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	PL	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1	-		
	NR	-	-	1	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-		
MYLE	*P*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	100%
	L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	PL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-		
	NR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
MYSE	*P*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	100%
	L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	PL	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	NR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
TOTALS		**1**	**1**	**2**	**0**	**7**	**0**	**2**	**1**	**7**	**0**	**5**	**1**	**0**	**2**	**5**	**4**	**0**	**0**	**1**	**0**	**3**	**10**	**0**	**0**	**0**	**1**	**0**	**0**	**6**	**2**	**42**	**86%**

Abbreviations used in this table: **P** = pregnant, **L** = lactating, **PL** = post-lactating, **NR** = non-reproductive, and **R** = Reproductive

Table 5. Radio-tracking summary

BAT ID (species)	Capture Site	Sex (M/F)	Day Roost ID[1]	Location (Lat /Long, dms)	Roost Description	Days Used (Date roost used)	Distance from Impact Area (ROW)	Emergence Count (Date)	Remarks
2014Rt219.1 (MYLE)	PA10	M	2014Rt219.1EST	39Y 44' 58.50" 79Y 04' 04.40"	Large wood barn with metal roof.	2 (22 and 23 July)	0.5 km	No Count[2]	Bat captured at site PA10 on 21 July 2014. [2]Land owner denied access to land and barn. Roost location estimated using telemetry. No emergence counts conducted.
2014Rt219.2 (MYLE)	PA10	F	2014Rt219.2.1	39Y 44' 28.00" 79Y 02' 16.00"	Large barn with dark roof.	1 (24 July)	0.76 km	No Count[3]	Bat captured at site PA10 on 22 July 2014. [3]Land owner historically hostile. Deferred to the PGC for any further interactions on the roost property. No emergence counts conducted.
2014Rt219.3 (MYSE)	PA03	F	2014Rt219.3.1	39Y 45' 57.73" 79Y 01' 47.35"	Dying red maple	1 (27 July)[4]	0.28 km	1 (27 July) 0 (29 July)	Bat captured at site PA03 on 26 July 2014. [4]Bat shed transmitter on 28 July.
			2014Rt219.3.2	39Y 45' 57.50" 79Y 01' 47.50"	Dead red maple	1 (28 July)[5]	0.28 km	1 (29 July) 1 (30 July)	[5]Bat shed transmitter on 28 July.
2014Rt219.4 (MYSE)	MD02	M	2014Rt219.4.1	39Y 42' 43.10" 79Y 04' 44.50"	Live honey locust	4 (5 – 8 Aug)	0.6 km	1 (5 Aug) 4 (6 Aug) 4 (7 Aug) 3 (8 Aug)	Bat captured at site MD02 on 4 August 2014.
			2014Rt219.4.2	39Y 42' 44.50" 79Y 04' 45.30"	Dying honey locust	1 (9 Aug)	0.57 km	4 (9 Aug) 0 (16 Aug)	Transmitter may have failed or was shed. Bat last detected on 10 August 2014.
			2014Rt219.4.3	39Y 43' 10.60" 79Y 04' 47.50"	Large wood barn with metal roof.	1 (10 Aug)	0.12 km	0 (16 Aug)	Transmitter not detected after 10 August 2014.

[1] Roost ID is composed of the project name (Rt219 = Route 219), bat species, unique letter indicating individual bat being tracked, and distinct day roost number.

Appendix A

Representative Survey Site Photographs

Figure 1. Site MD01. Forested un-improved road. Dominant species include sugar maple and beech.

Figure 2. Site MD02. Forested jeep trail. Dominant species include sugar maple and red oak.

Figure 3. Site MD03. Hedged trail. Dominant species include ash, sugar maple, and yellow birch.

Figure 4. Site MD04. Forested ATV trail. Dominant species include red maple, yellow birch, honey locust, and hickory.

Figure 5. Site MD05. Forested jeep trail. Dominant species include red maple and white oak.

Figure 6. Site MD06. Forested jeep trail. Dominant species include sugar maple, oak, and yellow birch.

Figure 7. Site MD07. Forested dirt road. Dominant species include red maple, striped maple, and chestnut oak.

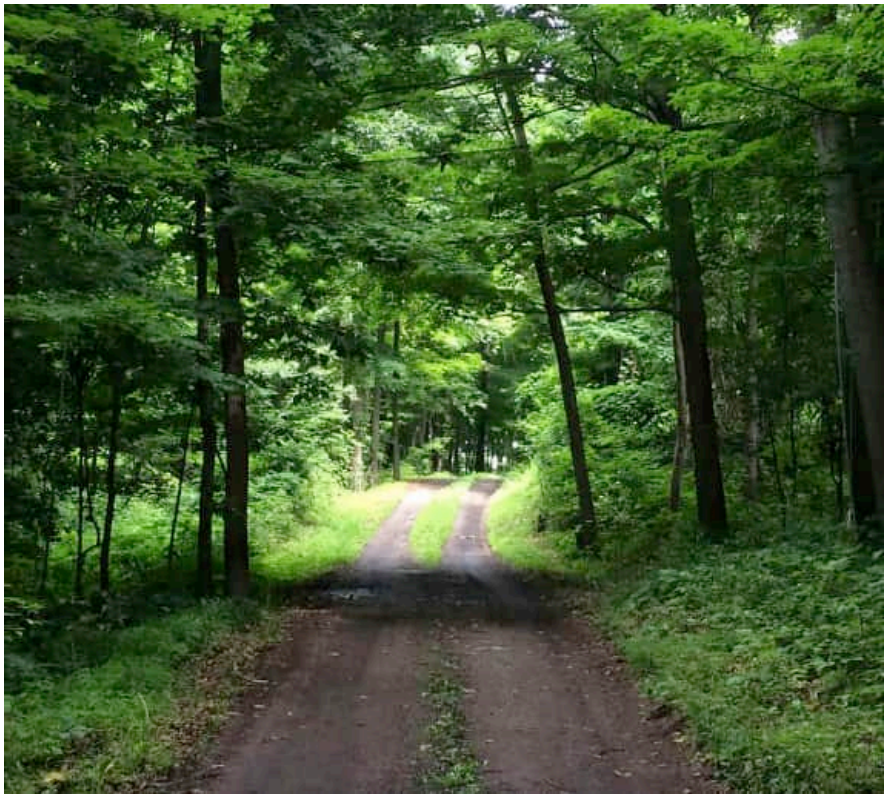

Figure 8. Site MD08. Forested driveway. Dominant species include red maple and red oak.

Figure 9. Site MD09. Forested grass road. Dominant species American beech and red maple.

Figure 10. Site PA01. Forested stream. Dominant species include white pine, red maple, and green ash.

Figure 11. Site PA02. Forested road. Dominant species include chestnut oak, red oak, yellow birch, and cherry.

Figure 12. Site PA03. Forested jeep trail. Dominant species include mixed red maple, yellow birch, and sassafras.

Figure 13. Site PA04. Forested jeep trail. Dominant species include red maple and chestnut oak.

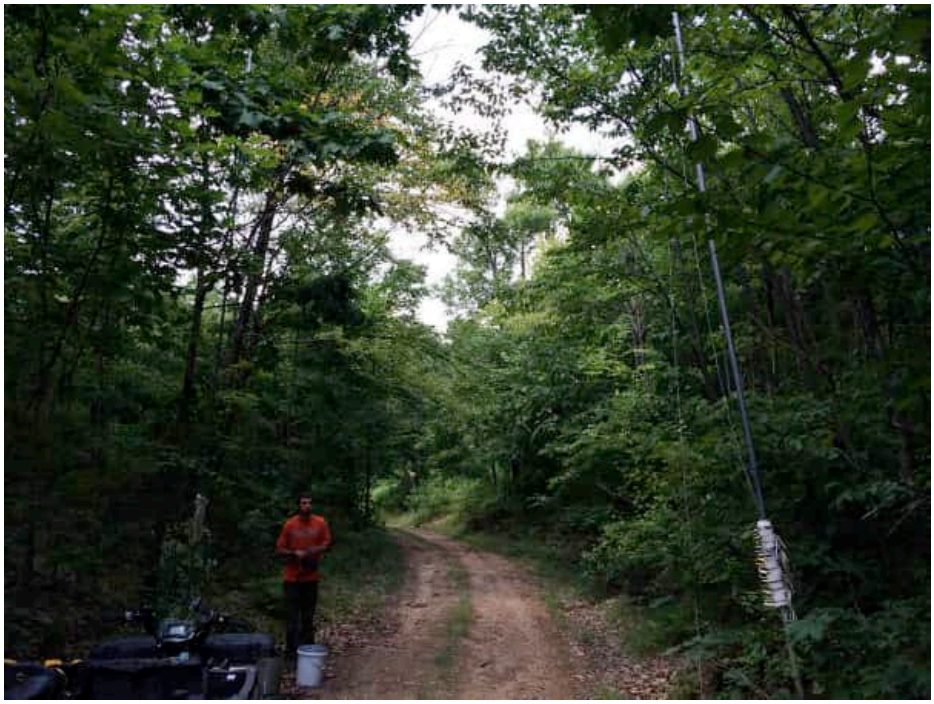

Figure 14. Site PA05. Forested trail. Dominant species include cherry, red maple and chestnut oak.

Figure 15. Site PA06. Forested ATV trail. Dominant species include cherry and birch.

Figure 16. Site PA07. Forested trail. Dominant species include hemlock, red maple, and cherry.

Figure 17. Site PA08. Forested trail. Dominant species include red maple, hemlock, and yellow birch.

Figure 18. Site PA09. Forested stream. Dominant species include hemlock and sugar maple.

Figure 19. Site PA10. Forested jeep trail. Dominant species include hemlock, red maple, sugar maple, and red oak.

Figure 20. Site PA11. Forested stream. Dominant species include hemlock and red maple.

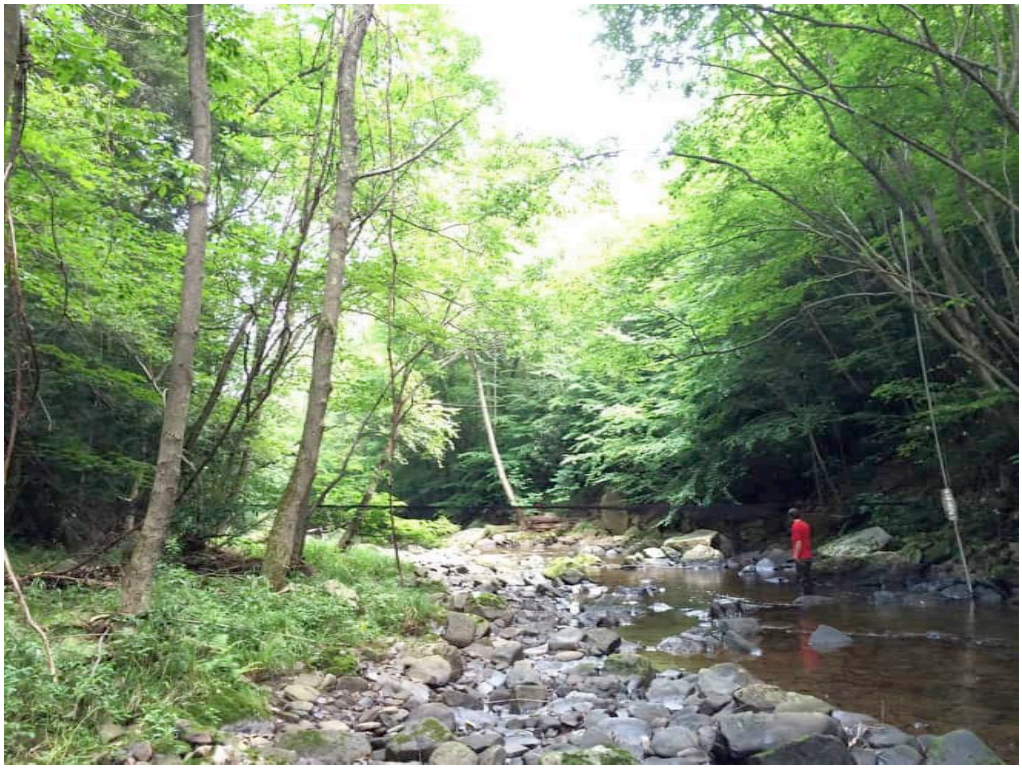

Figure 21. Site PA12. Forested stream. Dominant species include hemlock and birch.

Figure 22. Site PA13. Forested jeep trail. Dominant species include yellow birch and sassafras.

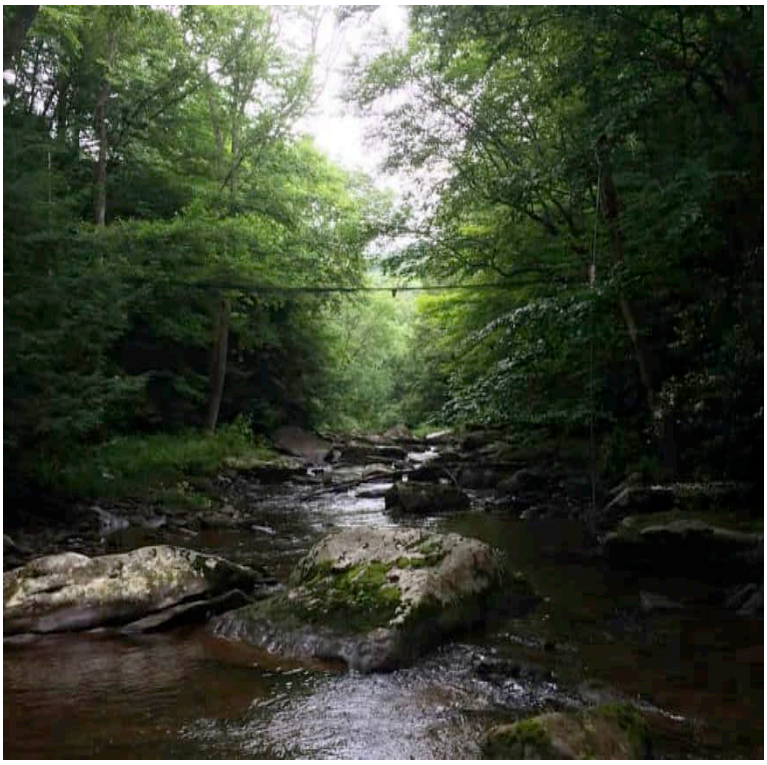

Figure 23. Site PA14. Forested stream. Dominant species include yellow birch and ash.

Figure 24. Site PA15. Forested stream. Dominant species include hemlock, yellow birch, American beech, red maple, and sugar maple.

Figure 25. Site PA16. Forested dirt road. Dominant species include red maple, red oak, hemlock, and yellow birch.

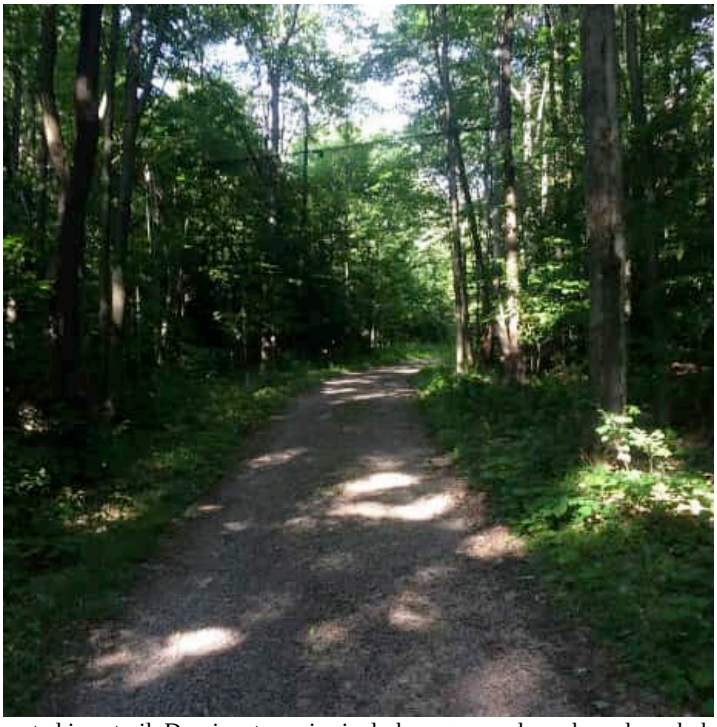

Figure 26. Site PA17. Forested jeep trail. Dominant species include sugar maple, red maple, oak, hemlock, and yellow birch.

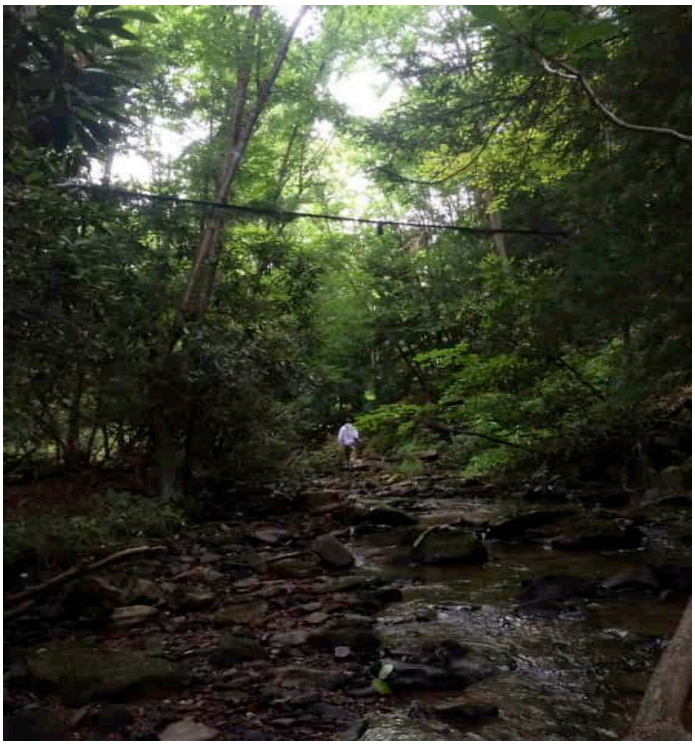

Figure 27. Site PA18. Forested stream. Dominant species include eastern hemlock and yellow birch.

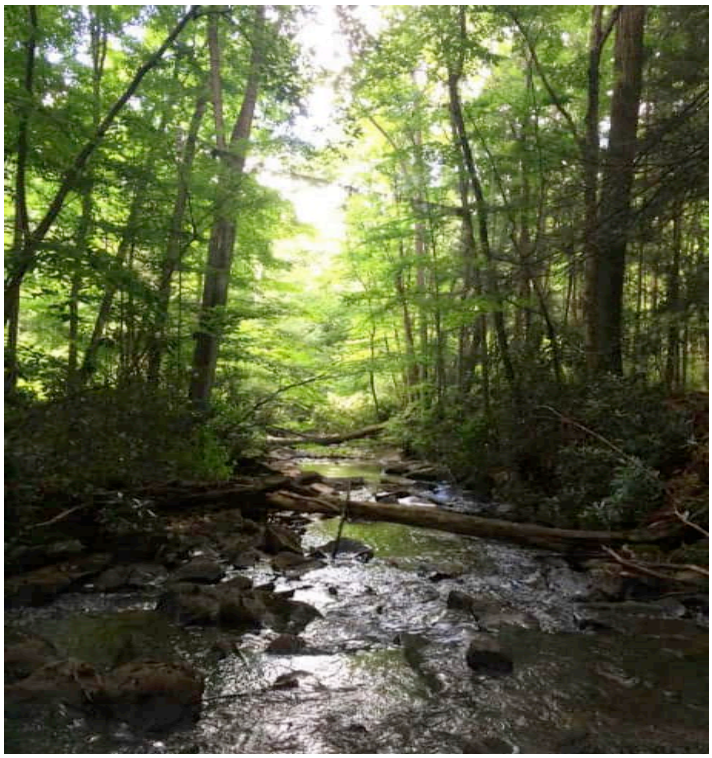

Figure 28. Site PA19. Forested stream. Dominant species include hemlock, red maple, yellow birch and American beech.

Figure 29. Site PA20. Forested stream. Dominant species include sugar maple, red maple, American beech, and hemlock.

Figure 30. Site PA21. Forested stream. Dominant species include sugar maple, hemlock, beech, and birch.

Appendix B

Survey Site Data Sheets

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 1 Aug 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan & Hartz

5. Site Name and/or Number: 2014R1219Some – MD01

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested unimproved road and stream

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '- 12.63 "N, Longitude: 79 °- 04 '- 56.00 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 17.4 °C End Temp. 15.0 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m
2	Nets	3	12m x 2.6m	Stacked over trail	93.6 sq. m
3	Net	1	6m x 2.6m	over stream	15.6 sq. m

Total Capture Area: 156 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Somer – MD01 **Date:** 1 Aug 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Triffle highs are set over an unimproved road within a sugar maple, and beach dominated forest. The single high is set over a stream.

18. Was reproductive status checked? (YES) / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				*1		1	*1			1	2
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 2

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 31 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz

5. Site Name and/or Number: 2014 Rt 219 Somer-MD01

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested unimproved road and stream

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-43 '-12.63 "N, Longitude: 79 °-4 '-56.00 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 16.1 °C End Temp. 12.5 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, (Breezy (Leaves Rustling)), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6mx2.6m	Stacked over trail	46.8sq.m
2	Nets	3	12mx26m	Stacked over trail	93.6sq.m
3	Net	1	6mx2.6m	Over stream	15.6sq.m

Total Capture Area: 156 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 R+219 Somer_MD01 **Date:** 31 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Tripple highs are set over an unimproved road within a sugar maple and beech dominated forest. The single high is set over a stream.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus							** 2			2	2
Perimyotis subflavus											
Lasiurus borealis											1 *
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 3

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
* Lasiurus borealis escaped from net

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8-04-2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** ———

5. Site Name and/or Number: 2014 Rt219 Summer MD02

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - _____.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested jeep trail

8. County: Garrett **9. 7.5' Quad.:** Abilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 42 '- 43.5"N, Longitude: 79 °- 5 '- 21.7"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2040 h Stop Time 0140 h Total Minutes: 300

Start Temp. 18.3 °C End Temp. 16.3 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	1	9m x 2.6m	stacked over trail	23.4
2	Nets	3	12m x 2.6m	stacked over trail	93.6
3	Nets	3	12m x 2.6m	stacked over trail	93.6

Total Capture Area: 210.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R+219Summer_MD02 **Date:** 8-04-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Deciduous forest close to residential homes. Dominant tree species are sugar maple and red oak. Shellbark hickory and black cherry also present. Understory is open and covered with ferns.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis				1		1					1
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8-05-2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** ———

5. Site Name and/or Number: 2014 Rt 219 Summer MD02

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel,

other structure, describe -_____.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested jeep trail

8. County: Garrett **9. 7.5' Quad.:** Abilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 42 '-43.5"N, Longitude: 29 °- 5 '-21.7"W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2040 h Stop Time 0140 h Total Minutes: 300

Start Temp. 18.5 °C End Temp. 15.5 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy;) Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	1	9m×2.6m	stacked over trail	23.4
2	Nets	3	12m×2.6m	stacked over trail	93.6
3	Nets	3	12m×2.6m	stacked over trail	93.6

Total Capture Area: 210.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt219 Summer MOO2 **Date:** 8-05-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Deciduous forest close to residential homes. Dominant tree species are sugar maple and red oak. Shellbark hickory and black cherry are also present. Understory is open and covered with ferns.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus							1			1	1
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:

FORM P-70008-N/T
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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 4 Aug 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sirander **4. Assistants:** Duncan Schantz, Brandon McClung

5. Site Name and/or Number: 2014 Rt 219 Summer – MD 03

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe -_____.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
hedged trail

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 41 '- 53.7 "N, Longitude: 79 °- 05 '- 49.3 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110, (717)540 6040

13. Time *(military)* **& Temperature:** Start Time 2105 h Stop Time 0205 h Total Minutes: 300

Start Temp. 14.7 °C End Temp. 11.7 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm); Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	18mx2.6m	Stacked over trail	140.4sq.m
2	Net	1	2.5mx2.6m	over trail	6.5sq.m
3	Nets	3	6mx2.6m	Stacked over trail	46.8sq.m

Total Capture Area: 193.7 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R+219 Summer – MD03 **Date:** 4 Aug 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a jeep trail with forested outcrops dominated by ash, sugar maple, and yellow birch. Trails open up into hayfields.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis									1	1	1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 1

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 5 Aug 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz, Brandon McClung

5. Site Name and/or Number: 2014 Rt 219 Summer MD03

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe -_____.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

hedged trail

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-41 '-53.7"N, Longitude: 79 °-05 '-49.3"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 3 Capital Drive, Suite 400 Harrisburg, PA 17110 (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2055 h Stop Time 0155 h Total Minutes: 300

Start Temp. 16.2 °C End Temp. 12.8 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	18m x 2.6m	Stacked over trail	140.4 sq. m
2	Net	1	2.5m x 2.6m	over trail	6.5 sq. m
3	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m

Total Capture Area: 193.7 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Summer – MD03 **Date:** 5 Aug 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over a jeep trail with forested outcrops dominated by ash, sugar maple, and yellow birch. Trails open up into hayfields.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus					1*	1					1
Perimyotis subflavus											
Lasiurus borealis					1*	1		1*		1	2
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 3

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8/4/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / MD04

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested ATV trail

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-41 '-42.3 "N, Longitude: 79 °-05 '-24.1 "W

Datum *(circle one)*: (NAD27 (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 16.8 °C End Temp. 13.8 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm); Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9 x 2.6	Stacked over ATV trail	70.2
2	Nets	3	6 x 2.6	Stacked over ATV trail	46.8
3	Nets	1	9 x 2.6	Over ATV trail	23.4

Total Capture Area: 140.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** MD04 **Date:** 8/4/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over ATV trails running through a mature mix deciduous forest. The forest is surrounded by reclaimed hay fields. Dominant tree species include Red Maple, Yellow Birch, Honey locust and Hickory.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8/5/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / MD04

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested ATV trail

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-41 '-42.3 "N, Longitude: 79 °-05 '-24.1 "W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 17.6 °C End Temp. 13.1 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9 x 2.6	Stacked over ATV trail	70.2
2	Nets	3	6 x 2.6	Stacked over ATV trail	46.8
3	Nets	1	9 x 2.6	Over ATV trail	23.4

Total Capture Area: 140.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** MD04 **Date:** 8/5/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over ATV trails running through a mature mix deciduous forest. The forest is surrounded by reclaimed hay fields. Dominant tree species include Red Maple, Yellow Birch, Honey Locus, and Hickory.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

B+ T S

ND

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8-02-2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014R+219 Summer MD05

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe -_____.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested jeep trail

8. County: Garrett **9. 7.5' Quad.:** Abilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 41 '- 32.5 "N, Longitude: 79 °- 6 '- 46.8 "W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2025 h Stop Time 0135 h Total Minutes: 310

Start Temp. 19.5 °C End Temp. 16.9 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9m x 2.6m	stacked over trail	70.2
2	Nets	3	6m x 2.6m	stacked over trail	46.8
3	Nets	1	9m x 2.6m	stacked over trail	23.4

Total Capture Area: 140.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Summer MP05 **Date:** 8-02-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Deciduous forest adjacent to busy highway. Dominant tree species are red maple and white oak. Secondary species are American Beech and Mockernut Hickory.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				**2		2			*1	1	3
Perimyotis subflavus											
Lasiurus borealis				*1		1	**2			2	**5 (2 escaped)
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 8

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

* Nets opened at 2025 because bats observed flying and it was dark under the dense tree canopy.
* 2 red bats escaped while net was being lowered.

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8-03-2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014R+219 Summer MOO5

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe -_____.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested jeep trail

8. County: Garrett **9. 7.5' Quad.:** Ashton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 41 '- 37.5 "N, Longitude: 79 °- 6 '- 46.8 "W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2035 h Stop Time 0135 h Total Minutes: 300

Start Temp. 17.4 °C End Temp. 15.7 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	9m x 2.6m	stacked over trail	70.2
2	Nets	3	6m x 2.6m	stacked over trail	46.8
3	Nets	1	9m x 2.6m	stacked over trail	23.4

Total Capture Area: 140.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R+219 Summer 0005 **Date:** 8-03-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Deciduous forest adjacent to busy highway. Dominant tree species are red maple and white oak. Secondary species are American Beech and Mockernut hickory.

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				2		2					2
Perimyotis subflavus											
Lasiurus borealis					2	2					2
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 4

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
* First bat observed flying at 2035; first bat captured at 2037

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 2 Aug 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sirander **4. Assistants:** Duncan Schanz

5. Site Name and/or Number: 2014 Rt 219 Somes – MD 06

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested jeep trail

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-41 '-59.9 "N, Longitude: 79 °-06 '-20.0"W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110, (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 18.2 °C End Temp. 16.9 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Net	1	6m x 2.6m	Stacked along stream	15.6 sq.m
2	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq.m
3	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq.m

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R1219 Some5 – MD06 **Date:** 2 Aug 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Single high net is placed along a stream. All nets are placed over a jeep trail with a sugar maple, oak, and yellow birch dominated forest.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											1 *
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
2055 – 2110 passing sprinkle
0055 – 0105 passing intermittent rain

* Lasiurus borealis escaped from net

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 3 Aug 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz

5. Site Name and/or Number: 2014 Rt 219 Somer - MD 06

6. Site is (circle one): hibernation site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested jeep trail

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-41 '-59.9 "N, Longitude: 79 °-06 '-20.0 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 16.5 °C End Temp. 15.5 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Net	1	6m x 2.6m	along stream	15.6 sq. m
2	Nets	3	6m x 2.6m	stacked over trail	46.8 sq. m
3	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Somer – HD06 **Date:** 3 Aug 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Single high net is placed along a stream. All nets are placed over a ;eep trail within a sugar maple, oak and yellow birch dominated forest.

18. Was reproductive status checked? **YES** / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 7

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8/2/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014RT.219SUMMER/MD07

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - NA.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested dirt road

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 42 '- 26.3"N, Longitude: 79 °- 06 '- 16.9"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; contact Deborah Hoover, McCormick Taylor, 5 Capitol Drive, Harrisburg, PA 171 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 17.7 °C End Temp. 16.7 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm); Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9x2.6	stacked over dirt road	70.2
2	Nets	3	9x2.6	stacked over dirt road	70.2
3	Nets	1	9x2.6	over dirt road	23.4

Total Capture Area: 163.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** MD07 **Date:** 8/2/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets were placed over a dirt road running through a mature deciduous forest. Dominant tree species were Red Maple, Stripped Maple, and Chestnut Oak. Subdominant tree species were Hickory, Red Oak, White Oak, and Yellow-Birch.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				1		1					1
Perimyotis subflavus											
Lasiurus borealis					1	1		1		1	////// 6
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 7

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
- ☆ 2140 bat escaped net
- ☆ 2235 bat escaped net
- ☆ 2235 bat escaped net
- ☆ 2240 bat escaped net

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8/3/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / MD07

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested dirt road

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 42 '- 26.33"N, Longitude: 79 °- 06 '- 16.9 "W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 15.7 °C End Temp. 14.8 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9x 2.6	Stacked over dirt road	70.2
2	Nets	3	9x2.6	Stacked over dirt road	70.2
3	Nets	1	9x2.6	Over dirt road	23.4

Total Capture Area: 163.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** MD07 **Date:** 8/3/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets were placed over a dirt road running through a mature deciduous forest. Dominant tree species were Red Maple, Stripped Maple, Chestnut Oak. Subdominant tree species were Hickory, Red Oak, White Oak, and Yellow Birch.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/31/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman, Brandon McClung

5. Site Name and/or Number: 2014 Rt. 219 Summer / MD08

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested driveway

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 42 '- 58.08"N, Longitude: 79 °- 06 '- 11.47 "W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private : Contact Deborah Hoover, McCormick Taylor, 5 Capitol Drive, Suite 400, Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 16.0 °C End Temp. 13.8 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	9 x 2.6	Stacked over driveway	70.2
2	Nets	3	12 x 2.6	Stacked over driveway	93.6
3	Nets	1	6 x 2.6	Over driveway	15.6

Total Capture Area: 179.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** MD09 **Date:** 7/31/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a stone driveway within a mature mix deciduous forest. Dominant tree species are Red Maple and Red Oak. The subdominant species in the area are White Oak, Hickory, Cherry, and Chestnut Oak

18. Was reproductive status checked? (YES) NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus							1			1	1
Perimyotis subflavus											
Lasiurus borealis								1		1	1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 2

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8/1/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman, Brandon McClung

5. Site Name and/or Number: 2014 Rt. 219 Summer / MD08

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested driveway

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-42 '-58.08"N, Longitude: 79 °- 06 '- 11.47"W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capitol Drive, Suite 400, Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2145 h Stop Time 0145 h Total Minutes: 300

Start Temp. 17.6 °C End Temp. 15.3 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	9 x 2.6	Stacked over driveway	70.2
2	Nets	3	12 x 2.6	Stacked over driveway	93.6
3	Nets	1	6 x 2.6	Over driveway	15.6

Total Capture Area: 179.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** MD08 **Date:** 8/1/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over a stone driveway within a mature mix deciduous forest. Dominant tree species are Red maple and Red oak. The subdominant species in the area are White Oak, Hickory, Cherry, and Chestnut Oak.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				1		1					1
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 1

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7-31-2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** —

5. Site Name and/or Number: 2014Rt219 Summer_MD09

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested grass road and trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '-25.95"N, Longitude: 79 °- 5 '-53.55"W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 15.8 °C End Temp. 13.2 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm); Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	18m x 2.6m	stacked over road	140.4
2	Nets	3	18m x 2.6m	stacked over road	140.4
3	Nets	1	6m x 2.6m	stacked over trail	15.6

Total Capture Area: 296.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R+219Summer_MD09 **Date:** 7-31-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

The habitat consists of croplands and forests. The dominant tree species are American beech and red maple. Understory is sparse.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus			*1	*1	*1	3	**3		**2	5	8
Perimyotis subflavus											
Lasiurus borealis							*1			1	⊙2
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 10

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

- Bats observed flying high in the sky at 2050
- 1 Lasiurus borealis escaped while net being lowered

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8-01-2014 **2. Company Name:** Bat Conservation & Management, Inc

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** —

5. Site Name and/or Number: 2014 R+219 Summer MD09

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested grass road and trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '-25.95"N, Longitude: 79 °- 5 '-53.55"W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 16.9 °C End Temp. 14.3 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy;) Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	18m x 2.6m	stacked over road	140.4
2	Nets	3	18m x 2.6m	stacked over road	140.4
3	Nets	1	6m x 2.6m	stacked over trail	15.6

Total Capture Area: 296.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014RT219Summer_MD09 **Date:** 8-01-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
The habitat consists of croplands and forests. The dominant tree species are American Beech and Red Maple. Understory is sparse.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus			* 1	** 3		4			* 1	1	° 6
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

- one escaped big brown

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 6

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/25/2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014 ROUTE 219 Summer PA 1

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested jeep trail leading to pond

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 46 '- 33.64"N, Longitude: 79 °- 01 '- 42.84"W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 17.0 °C End Temp. 16.0 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy;) Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m×2.6m	stacked over trail	46.8
2	Nets	3	6m×2.6m	stacked over trail	46.8
3	Nets	1	6m×2.6m	stacked over trail	15.6

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Route 219 Summer PA1 **Date:** 7-25-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Habitat consists of a mixed deciduous forest. Dominant tree species include white pine, red maple, and green ash. The jeep trail connects a paved road to a forest clearing with pond.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Bats

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. Survey Date: 7/26/2014 **2. Company Name:** Bat Conservation and Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** ———

5. Site Name and/or Number: 2014 Route 219 summer PA1 #1

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested jeep trail leading to pond

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 46 '- 33.64"N, Longitude: 79 °- 01 '- 47.84"W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2130 h Stop Time 0000 h Total Minutes: 150

Start Temp. 17.3 °C End Temp. 16.4 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; (Thunderstorms); Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, (Breezy) (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	stacked over trail	46.8
2	Nets	3	6m x 2.6m	stacked over trail	46.8
3	Nets	1	6m x 2.6m	stacked over trail	15.6

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R+219Summer_PA1 **Date:** 7-26-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Habitat consists of a mixed deciduous forest. Dominant tree species include white pine, red maple, and green ash. The jeep trail connects a paved road to a forest clearing with pond.

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in Total columns)*

N/A

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO Bats captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen. **Grand Total**

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

* Nets opened late because of storm
- Storm hit and nets closed at 0000 hrs (rain out)

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. **Survey Date:** 7-28-2014 2. **Company Name:** Bat Conservation & Management, Inc.

3. **Bat Identifier:** (Responsible Recorder) Risa Wright 4. **Assistants:** ———

5. **Site Name and/or Number:** 2014RT219Summer_PA1

6. **Site is (circle one):** hibernation site (summer habitat)

7a. **If hibernation site circle one:** limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

Forested jeep trail leading to pond

8. **County:** Somerset 9. **7.5' Quad.:** Meyersdale

10. **Was site GPS'd (required) ?** (YES) - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 °- 46 '-33.64"N, Longitude: 79 °- 01 '-42.84"W

Datum *(circle one)*: (**NAD27**) (Preferred), NAD83, WGS84, Other:_____

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Heaver, McCormick Taylor, 3 Capital Drive, Suite 400 Harrisburg, PA 17110

13. **Time** *(military)* **& Temperature:** Start Time 2125 h Stop Time 0225 h Total Minutes: 300

Start Temp. 13.1 °C End Temp. 10.8 °C *(must stay ≥10°C for summer netting)*

14. **General Weather** *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____. *(suspend netting during periods of rain)*

15. **General Wind Conditions** *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	stacked over trail	46.8
2	Nets	3	6m x 2.6m	Stacked over trail	46.8
3	Nets	1	6m x 2.6m	stacked over trail	15.6

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R1219Summer_PA01 **Date:** 7-28-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Habitat consists of a mixed deciduous forest. Dominant tree species include white pine, red maple, green ash. The jeep trail connects a paved road to a forest clearing with pond.

18. Was reproductive status checked? **YES / NO** *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Bats captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
Opening delayed due to rain

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/25/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: Todd Sinander (Responsible Recorder) **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA02

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Road

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-46 '-8.08"N, Longitude: 79 °-01 '-38.17"W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Public:
PA State Game Lands, 231 Southwest Regional Office, 4820 Route 711, Bolivar, PA (724)238-9523

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 16.2 °C End Temp. 15.5 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy;) Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	6 x 2.6	Stacked over road	46.8
2	Nets	3	6 x 2.6	Stacked over road	46.8
3	Nets	1	6 x 2.6	Over trail	15.6

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA 02 **Date:** 7/25/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets were placed over a stone road and over an atv trail. Roads ran through a mixed young forest. Dominant species include Chestnut Oak, Red Oak, Yellow Birch, and Cherry.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus	1			3		4	3	3		6	10
Perimyotis subflavus											
Lasiurus borealis							1			1	1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 11

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/26/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman, Brandon McClung

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA02

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Road

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 46 '- 8.08"N, Longitude: 79 °- 01 '- 38.17"W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Public:
PA State Game Lands, 231 Southwest Regional Office, 4820 Route 711, Bolivar, PA (724) 238-9523

13. Time *(military)* **& Temperature:** Start Time 2130 h Stop Time 0000 h Total Minutes: 150

Start Temp. 16.4 °C End Temp. 15.9 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; *(suspend netting during periods of rain)* Steady Rain; (Thunderstorms); Snow; Other:.

15. General Wind Conditions *(circle one)*: Calm, (Breezy (Leaves Rustling)), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	6x 2.6	Stacked over road	46.8
2	Nets	3	6x 2.6	Stacked over road	46.8
3	Nets	1	6x 2.6	over trail	15.6

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA02 **Date:** 7/26/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets were placed over a stone road and over an atv trail. Roads ran through a mixed young forest. Dominant species include Chestnut Oak, Red Oak, Yellow Birch, and Cherry.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				1		1	1			1	2
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 2

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

* Nets opened at 2130 after rainstorm.
Nets closed at 0000 due to rain

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/28/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman, Brandon McClung

5. Site Name and/or Number: 2014 Rt. 219 Summer/PA 02

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Road

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 46 '- 8.08"N, Longitude: 79 °- 01 '- 38.1 "W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Public: PA State Game Lands, 231 Southwest Regional Office, 4820 Route 711, Bolivar, PA (724) 238-9523

13. Time *(military)* **& Temperature:** Start Time 2130 h Stop Time 0230 h Total Minutes: 300

Start Temp. 12.6 °C End Temp. 10.3 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; (Mostly Cloudy); Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, (Breezy (Leaves Rustling),) Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6 x 2.6	Stacked over trail	46.8
2	Nets	3	6 x 2.6	Stacked over trail	46.8
3	Nets	1	6 x 2.6	Over trail	15.6

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA02 **Date:** 7/28/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets were placed over a stone road and over an atv trail. Roads ran through a mixed young forest. Dominant species include Chestnut Oak, Red Oak, Yellow Birch, and Cherry.

18. Was reproductive status checked? ~~YES~~ / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis								1			1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

* Nets opened at 2130 after rain.

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 25 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sanders **4. Assistants:** Duncan Sharr

5. Site Name and/or Number: 2014 Rt 219 Somer - PA03

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested jeep trail

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '- 55.76 "N, Longitude: 79 °- 01 '- 55.27 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Public: PA State Game Lands 231. Southwest Regional Office, 4820 Route 711, Bolivar PA. (724) 238-9523.

13. Time *(military)* **& Temperature:** Start Time 2055 h Stop Time 0155 h Total Minutes: 300
Start Temp. 17.6 °C End Temp. 16.9 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m
2	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m
3	Net	1	6m x 2.6m	over trail	15.6 sq. m

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Somer-PA 03 **Date:** 25 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a jeep trail within a mixed red maple, yellow birch, and sassafras dominated deciduous forest.

18. Was reproductive status checked? (YES) / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen. **Grand Total**

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 26 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schanz

5. Site Name and/or Number: 2014 Rt 219 Somer- PA03

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested jeep trail

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-45 '-55.76 "N, Longitude: 79 °-01 '-55.27 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Public: PA State Game Lands 231. Southwest regional office, 4820 Route 711, Bolivar, PA. (724) 238-9523

13. Time *(military)* **& Temperature:** Start Time 2130 h Stop Time 0000 h Total Minutes: 150

Start Temp. 17.2 °C End Temp. 16.8 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, (Breezy (Leaves Rustling)), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m
2	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m
3	Net	1	6m x 2.6m	over trail	15.6 sq. m

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt219 Somer- PA03 **Date:** 26 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a jeep trail within a mixed red maple, yellow birch, and sassafras dominated deciduous forest.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis				1		1					1
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

Nets opened at 2130 after a rainstorm. Nets closed at 0000 due to rain.

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 28 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz

5. Site Name and/or Number: 2014 Rt 219 Somer PA03

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested jeep trail

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-45 '-55.76"N, Longitude: 79 °-01 '-55.27"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Public: PA State Game Lands 231. Southwest regional office, 4820 Route 711, Bolivar, PA. (724) 238-9523

13. Time *(military)* **& Temperature:** Start Time 2125 h Stop Time 0225 h Total Minutes: 300

Start Temp. 12.7 °C End Temp. 10.8 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, (Breezy (Leaves Rustling)), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6mx2.6m	Stacked over trail	46.8sq.m
2	Nets	3	6mx2.6m	Stacked over trail	46.8sq.m
3	Nets	1	6mx2.6m	over trail	15.6sq.m

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Somer_PA03 **Date:** 28 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a deep trail within a mixed red maple, yellow birch, and sassafras dominated deciduous forest.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
Nets opened at 2125 after rain subsided
light drizzle for roughly 1st hour of netting

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/23/14 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014PA219Summer - PA04

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - —.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested jeep trail.

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '- 33.5 "N, Longitude: 79 °- 02 '- 29.7 "W

Datum *(circle one)*: (NAD27 (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private! Contact Deborah Hoover, McCormick Taylor, 5 Capitol Drive, Suite 400, Harrisburg PA (717) 540-6040.

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 20.8 °C End Temp. 16.7 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other: —.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: Calm, (Breezy (Leaves Rustling)), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	stacked over trail	46.8 sqm
2	Nets	3	6m x 2.6m	stacked over trail	46.8 sqm
3	Net	1	9m x 2.6m	over trail	23.4 sqm

Total Capture Area: 117.0 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA04 **Date:** 7/23/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Upland mature deciduous forest on a northwest facing slope.
Dominant tree species are red maple & chestnut oak.

18. Was reproductive status checked? (YES) / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No bats Captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/24/14 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Brenton McClung

5. Site Name and/or Number: 2014 Bat 2019 Summer - PA04

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - —.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Jeep Trail.

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '- 33.5 "N, Longitude: 79 °- 02 '- 29.7 "W

Datum *(circle one)*: (**NAD27**) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private : Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg PA (717) 540-6646

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 14.9 °C End Temp. 11.8 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; (Mostly Cloudy); Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other: —.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over trail	46.8 Sq m
2	Nets	3	6m x 2.6m	Stacked over trail	46.8 Sq m
3	Nets	1	9m x 2.6m	over trail	23.4 Sq m

Total Capture Area: 117.0 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA04 **Date:** 7/24/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Upland mature deciduous forest on a northwest facing slope.
Dominant tree species are chestnut oak and red maple

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Bats

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total: 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/23/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinanders **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA05

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested Trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '- 08.49 "N, Longitude: 79 °- 02 '- 32.38 "W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 21.9 °C End Temp. 17.6 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; (Drizzle;) Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	1	6 x 2.6	Over trail	15.6
2	Nets	3	6 x 2.6	Stacked over trail	46.8
3	Nets	3	6 x 2.6	Stacked over trail	46.8

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA05 **Date:** 7/23/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a Forested atv trail/dirt road. Surrounding vegetation is mixed young forest with heavy under growth. Dominant tree species includes Cherry, Red Maple, and Chestnut OAK.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus	*					1		*	**	3	4
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 4

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/24/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA05

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '- 08.49"N, Longitude: 79 °- 02 '- 32.38"W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes:

Start Temp. 13.4 °C End Temp. 10.1 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear), Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	1	6 x 2.6	Over trail	15.6
2	Nets	3	6 x 2.6	Stacked over trail	46.8
3	Nets	3	6 x 2.6	Stacked over trail	46.8

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA05 **Date:** 7/24/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over a forested atv trail/dirt road. Surrounding vegetation is mixed young forest with heavy under growth. Dominant tree species includes Cherry, Red Maple, and Chestnut Oak.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				1		1					1
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/23/2014 **2. Company Name:** BAT CONSERVATION & MANAGEMENT

3. Bat Identifier: (Responsible Recorder) JOHN CHYNOWETH **4. Assistants:** BRYAN BUTLER

5. Site Name and/or Number: 2014 RT 219 SUMMER 1, PA-6

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

OVERGROWN ATV TRAIL IN DENSE DECIDUOUS FOREST / * VERY NARROW

8. County: SOMERSET **9. 7.5' Quad.:** AVILTON

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 40.05"N, Longitude: 79 °- 02 '- 41.19"W

Datum *(circle one)*: (NAD27 (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 O: 717-540-6046

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 18 °C End Temp. 15 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; (Drizzle;) Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	NET	3	6m x 2.6m	STACKED OVER TRAIL	46.8 sq. m.
2	NETS	1	2.6 x 2.6 m	STACKED OVER TRAIL	6.76 sq m
3	NETS	3	6m x 2.6 m	STACKED OVER TRAIL	46.8 sqm

Total Capture Area: 100.36 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA-6 **Date:** 7/23/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
NARROW ATV PATH / CORRIDOR ON MOUNTAINSIDE SURROUNDED BY DENSE FOREST ON BOTH SIDES. DOMINANT SPECIES INCLUDE BIRCH & CHERRY

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus			**	**		4					4
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 4

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/24/2014 **2. Company Name:** BAT CONSERVATION & MANAGEMENT

3. Bat Identifier: (Responsible Recorder) TODD SINANOSA **4. Assistants:** BRYAN BUTLER

5. Site Name and/or Number: 2014 RT. 219 SUMMER / PA-6

6. Site is (circle one): hibernation site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

OVERGROWN ATV TRAIL IN DENSE DECIDUOUS FOREST & VERY NARROW

8. County: SOMERSET **9. 7.5' Quad.:** AVILTON

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 40.05"N, Longitude: 79 °- 02 '- 41.19"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 20:45 h Stop Time 0145 h Total Minutes: 300

Start Temp. 16 °C End Temp. 12 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: Calm, Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	NETS	3	6m x 2.6m	STACKED OVER TRAIL	46.8
2	NETS	1	2.6 x 2.6m	STACKED OVER TRAIL	6.76
3	NETS	3	6m + 2.6m	STACKED OVER TRAIL	46.8

Total Capture Area: 100.36 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA-6 **Date:** 7/24/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Narrow ATV trail/corridor on mountainside surrounded by dense forest on both sides. Dominant species include Birch and Cherry

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				1		1					1
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

FORM P-70008-N/T
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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/21/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA07

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 41.0 "N, Longitude: 79 °- 03 '- 02.3 "W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 20.3 °C End Temp. 18.7 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm); Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over trail	46.8
2	Nets	1	6m x 2.6m	Over trail	15.6
3	Nets	3	9m x 2.6m	Stacked over trail	70.2

Total Capture Area: 132.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA07 **Date:** 7/21/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed on a forested trail which is located on a steep incline. The forest consist of mix mature species. The dominant tree species include Hemlock, Red Maple, Cherry.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				** 2		2					2
Perimyotis subflavus											
Lasiurus borealis				* 1		1					1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 3

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/22/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer/PA07

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 41.0 "N, Longitude: 79 °- 03 '- 02.3 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)*

Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110
O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 20.6 °C End Temp. 18.8 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear), Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over trail	46.8
2	Nets	1	6m x 2.6m	Over trail	15.6
3	Nets	3	9m x 2.6m	Stacked over trail	70.2

Total Capture Area: 132.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA07 **Date:** 7/22/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed on a forested trail which is located on a steep incline. The forests consist of mix mature species. The dominant tree species include Hemlock, Red Maple, and cherry.

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii								* 1			1
Myotis sodalis											
Eptesicus fuscus							* 1				1
Perimyotis subflavus											
Lasiurus borealis				* 1					* 1		2
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 4

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. Survey Date: 7/19/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / Pa 08

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 41.0 "N, Longitude: 79 °- 03 '- 20.5 "W

Datum *(circle one)*: (NAD27 (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 17.2 °C End Temp. 15.0 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; (Drizzle); Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12m x 2.6m	Stacked over trail	93.6
2	Nets	3	9m x 2.6m	Stacked over trail	70.2
3	Nets	1	6m x 2.6m	Over trail	15.6

Total Capture Area: 179.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA08 **Date:** 7/19/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a trail running through a mature forest. Dominant species are Red Maple, Hemlock, and Yellow Birch. Trail ends at Piney Run which is running perpendicular to the nets.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/20/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA08

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 41.0"N, Longitude: 79 °- 03 '- 20.5"W

Datum *(circle one)*: (NAD27 (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 18.6 °C End Temp. 17.1 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy;) Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12m x 2.6m	Stacked over trail	93.6
2	Nets	3	9m x 2.6m	Stacked over trail	70.2
3	Nets	1	6m x 2.6m	Over trail	15.6

Total Capture Area: 179.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA08 **Date:** 7/20/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a trail running through a mature forest. Dominant species are Red Maple, Hemlock, and Yellow Birch. Trail ends at Piney Run which is running perpendicular to the nets

18. Was reproductive status checked? (YES) **NO** *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 21 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz

5. Site Name and/or Number: 2014 Rt 219 Somer – PA09 Night 1

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested stream

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '- 36.15 "N, Longitude: 79 °- 4 '- 1.70 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 717 540 6040

13. Time *(military)* **& Temperature:** Start Time 2105 h Stop Time 0205 h Total Minutes: 300

Start Temp. 20.9 °C End Temp. 20.2 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq.m
1	Nets	3	12m x 2.6m	Stacked over stream	93.6 sq.m
2	Nets	3	12m x 2.6m	Stacked over stream	93.6 sq.m
3	Net	1	9m x 2.6m	over stream	23.4 sq.m

Total Capture Area: 210.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Somer - Photo Night 1 **Date:** 21 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a stream within a mixed forest dominated by hemlock and sugar maple. Rhododendron dominates the understory

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus								1		1	1
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 22 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz

5. Site Name and/or Number: 2014 AT 219 Somer- PA 09 Night 2

6. Site is (circle one): hibernation site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested stream

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '-36.5 "N, Longitude: 79 °- 04 '-1.70 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg PA 17110 717 540 6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 22.1 °C End Temp. 18.6 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12mx2.6m	Stacked over stream	93.6 sq.m
2	Nets	3	12mx2.6m	Stacked over stream	93.6 sq.m
3	Net	1	9mx2.6m	over stream	23.4 sq.m

Total Capture Area: 210.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 RI 219 Sonar – PA09 Night 2 **Date:** 22 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a stream within a mixed forest dominated by hemlock and sugar maple. Rhododendron dominates the understory.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total ( )

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/21/14 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014 RT219 Summer - PA10

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested jeep trail running parallel to stream.

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '- 21.5 "N, Longitude: 79 °- 03 '- 57.5 "W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Dr. Suite 400, Harrisburg PA 17110, (717) 540-2040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 21.2 °C End Temp. 18.1 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm); Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Net	1	6m x 2.6m	over trail	15.6 sq m
2	Nets	3	12m x 2.6m	stacked over trail	93.6 sq m
3	Nets	3	12m x 2.6m	stacked over trail	93.6 sq m

Total Capture Area: 202.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014RE2195summer - PA10 **Date:** 7/21/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Low land mature mixed forest patch following a stream with agricultural/pasture land on either side of the forest patch. Dominant tree species are hemlock, red + sugar maple, red oak.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii				1		1					1
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/22/14 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) Todd Simander **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014R+219 Summer - PA10

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested jeep trail running parallel to stream.

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-45 '-21.5 "N, Longitude: 79 °-03 '-57.5 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capitol Dr. Suite 400, Harrisburg PA 17110 (717)540-6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 21.1 °C End Temp. 18.2 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Net	1	6m x 2.6m	Over trail	15.6 sq m
2	Nets	3	12m x 2.6m	stacked over trail	93.6 sq m
3	Nets	3	12m x 2.6m	stacked over trail	93.6 sq m

Total Capture Area: 202.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014Rt219Summer-PA10 **Date:** 7/22/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Low land mature mixed forest patch following a stream with agricultural/pasture land on either side of the forest patch. Dominant tree species are hemlock, red & sugar maple, red oak.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen. | **Grand Total**

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/9/14 **2. Company Name:** BAT CONSERVATION & MANAGEMENT

3. Bat Identifier: (Responsible Recorder) JOHN CHENGER **4. Assistants:** BRYAN BUTLER

5. Site Name and/or Number: 2014 RT. 219 SUMMER / PA-11

6. Site is (circle one): hibernation site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

FORESTED STREAM

8. County: SOMERSET **9. 7.5' Quad.:** AVILTON

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 ° - 44 ' - 33.5 "N, Longitude: 79 ° - 03 ' - 22.8 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: contact Deborah Hoover, McCamich Taylor, 5 Capitol Dr. Suite 400, Harrisburg PA 17110 (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 17.2 °C End Temp. 15 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	NETS	3	12m x 2.6m	STACKED OVER STREAM	93.6
2	NETS	3	9m x 2.6m	STACKED OVER TRAIL	70.2
3	NETS	1	12m x 2.6m	STACKED OVER TRAIL	31.2

Total Capture Area: 195 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA-11 **Date:** 7/19/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
MODERATELY FORESTED AREA OFF OF UNDEVELOPED ROAD ALONG STREAM. DOMINANT TREE SPECIES INCLUDE HEMLOCK AND RED MAPLE.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											1 *
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:
* ONE REDBAT; ESCAPED NET BEFORE LOADING

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/20/14 **2. Company Name:** BAT CONSERVATION & MANAGEMENT

3. Bat Identifier: (Responsible Recorder) JOHN CHENGER **4. Assistants:** BRYAN BUTLER

5. Site Name and/or Number: 2014 AT. 219 SUMMER / PA-11

6. Site is (circle one): hibernation site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

FORESTED STREAM

8. County: SOMERSET **9. 7.5' Quad.:** AVILTON

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 33.5"N, Longitude: 79 °- 03 '- 22.8"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)*

Deborah Hoover, McCamick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110
Or 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 18.6 °C End Temp. 17.1 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: Calm, Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	NETS	3	12m x 2.6m	STACKED OVER STREAM	93.6
2	NETS	3	9m x 2.6m	STACKED OVER TRAIL	70.2
3	NETS	1	12m x 2.6m	OVER STREAM	31.2

Total Capture Area: 195.0 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA-11 **Date:** 7/20/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
MODERATELY FORESTED AREA OFF OF UNDEVELOPED ROAD ALONG STREAM. DOMINANT TREE SPP. INCLUDE HEMLOCK AND RED MAPLE

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis							1			1	1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 1

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/21/2014 **2. Company Name:** BAT CONSERVATION & MANAGEMENT

3. Bat Identifier: (Responsible Recorder) JOHN CHENGER **4. Assistants:** BRYAN BUTLER

5. Site Name and/or Number: 2014 RT 219 SUMMER - PA-12

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

FORESTED STREAM - PARALLEL TO ATV TRAIL

8. County: SOMERSET **9. 7.5' Quad.:** AVILTON

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 15.3 "N, Longitude: 79 °- 03 '- 18.4 "W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* DEBORAH HOOVER, MCCORMICK TAYLOR, 5 CAPITAL DRIVE, SUITE 400, HARRISBURG PA 17110: 717.540.6041

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 2200 h Total Minutes: 300

Start Temp. 22 °C End Temp. 18.7 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy;) Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	NETS	3	9m x 2.6m	STACKED OVER TRAIL	70.2
2	NETS	3	18m x 2.6m	STACKED OVER STREAM	140.4
3	NETS	1	6m x 2.6	STACKED OVER TRAIL	15.6

Total Capture Area: 226.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA-12 **Date:** 7/21/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

DENSELY FORESTED AREA ALONG STREAM THAT RUNS PARALLEL TO OLD ATV TRAIL. STEEP EMBANKMENT LEADING DOWN TO STREAM. DOMINANT TREE SPP. INCLUDE HEMLOCK, BIRCH

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus						2					2
Perimyotis subflavus											
Lasiurus borealis										1	1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 3

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/22/2014 **2. Company Name:** BAT CONSERVATION & MANAGEMENT

3. Bat Identifier: (Responsible Recorder) JOHN CHENGER **4. Assistants:** BRYAN BUTLER

5. Site Name and/or Number: 2014 RT 219 - SOMMER - PA-12

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

FORESTED STREAM PARALLEL TO ATV TRAIL

8. County: SOMERSET **9. 7.5' Quad.:** AVILTON

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 15.3"N, Longitude: 79 °- 03 '- 18.4"W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* DEBORAH HOOVER, McCORMICK TAYLOR, 5 CAPITAL DRIVE, SUITE 400, HARRISBURG PA 17110; 717.540.6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0250 h Total Minutes: 300

Start Temp. 23 °C End Temp. 19 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	NETS	3	9m x 2.6m	STACKED OVER TRAIL	70.2
2	NETS	3	18m x 2.6m	STACKED OVER STREAM	140.4
3	NETS	1	6m x 2.6	STACKED OVER TRAIL	15.6

Total Capture Area: 226.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA-12 **Date:** 7/21/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

DENSELY FORESTED AREA ALONG STREAM THAT RUNS PARALLEL TO OLD ATV TRAIL. STEEP EMBANKMENT LEADING DOWN TO STREAM. DOMINANT TREE SPP. INCLUDE HEMLOCK + BIRCH

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				*		1	*			1	2
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 2

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 23 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Duncan Shane

5. Site Name and/or Number: 2014 Rt 219 Somer - PA13 : Night 1

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested Jeep trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-44 '-41.7"N, Longitude: 79 °-02 '-33.9"W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 717 540 6040

13. Time *(military)* **& Temperature:** Start Time 2110 h Stop Time 0210 h Total Minutes: 300

Start Temp. 19.2 °C End Temp. 15.8 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, (Breezy (Leaves Rustling)), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6mx2.6m	Stacked over trail	15.6sq.m
2	Nets	3	6mx2.6m	Stacked over trail	46.8sq.m
3	Net	1	6mx26m	over trail	46.8sq.m

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 R1219 Somer PA 13 Mist **Date:** 23 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed across a jeep trail within a young mixed forest dominated by yellow-birch, and sassafras. Less dominant trees include red maple, oak and hemlock.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus		** 6		** 2		8			* 1	1	10 *
Perimyotis subflavus											
Lasiurus borealis											1 *
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 11

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
Intermittent rain from 2140-2200
Intermittent rain from 2215-2220
Light drizzle 2250-2300
* Eptesicus fuscus escaped from net
* Lasiurus borealis escaped from net

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 24 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz

5. Site Name and/or Number: 2014 RL219 Somer_PA13 Night 2

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested ; esp trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-44 '-41.7 "N, Longitude: 79 °-02 '-33.9 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 7175406040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 13.3 °C End Temp. 11.5 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	6mx2.6m	Stacked over trail	15.6sq.m
2	Nets	3	6mx2.6m	Stacked over trail	46.8sq.m
3	Net	1	6mx2.6m	Over trail	46.8sq.m

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt219Somer–PAB Night 2 **Date:** 24 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed across a deep trail within a young mixed forest dominated by yellow birch and sassafras. Less dominant trees include red maple, oak and hemlock

18. Was reproductive status checked? **YES** / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				1	1	2					2
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 2

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 19Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schanz

5. Site Name and/or Number: 2014 Rt 219 Summer – PA14

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested Stream

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-44 '-4.57 "N, Longitude: 79 °-3 '-25.44 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)*
Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110, 717 540 6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 15.9 °C End Temp. 15.4 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; (Mostly Cloudy); Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12mx2.6m	Stacked over stream	93.6sq.m
2	Nets	3	12mx2.6m	Stacked over stream	93.6sq.m
3	Net	1	6mx2.6m	over trail	15.6sq.m

Total Capture Area: 202.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 RF219 Summer_PA 14 **Date:** 19 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Tripple highs are set over a forested stream. Single high is set over an ATV trail running parallel to stream. The forest is dominated by hemlock followed by yellow birch and ash.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											1 *
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
* Lasiurus borealis escaped from net

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 20 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schanz

5. Site Name and/or Number: 2014 At 219 Summit_ PA 14

6. Site is (circle one): hibernation site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested stream

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-44 '-4.57 "N, Longitude: 79 °-3 '-25.44 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)*
Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110, 717 540 6046

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 18.3 °C End Temp. 17.5 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12mx2.6m	Stacked over stream	93.6 sq.m
2	Nets	3	12mx2.6m	stacked over stream	93.6sq.m
3	Net	1	6mx2.6m	over trail	15.6 sq.m

Total Capture Area: 202.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Summer - PA 14 **Date:** 20 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Site is in a mixed forest dominated by hemlock, followed by yellow birch and ash. Tripple highs are set over a stream. Single high is set on an ATV trail which runs pasallel to the stream.

18. Was reproductive status checked? (YES) NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus									1	1	1
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 1

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/19/14 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014 Rt 219 Summer - PA 15

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Stream

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '-54.9"N, Longitude: 79 °- 3 '-16.3 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private:
Contact Deborah Hoover, McCormick Taylor, 5 Capital Dr., Suite 400, Harrisburg PA 17110. (717) 540-1040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 17.2 °C End Temp. 15.4 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12m x 2.6m	stacked over stream	93.6m
2	Nets	3	12m x 2.6m	stacked over stream	93.6m
3	Nets	1	6m x 2.6m	stacked over stream	15.6m

Total Capture Area: 202.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt219 Summer-PA15 **Date:** 7/19/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Stream valley with mature mixed forest consisting of hemlock, yellow birch, American beech, red & sugar maple.

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No captures

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/20/14 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014 Rt 219 Summer - PA15

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Stream

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '- 54.9 "N, Longitude: 79 °- 3 '- 16.3 "W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCamic Taylor, 8 Capitol Dr, Suite 400, Harrisburg PA, 17110, (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 18.2 °C End Temp. 16.9 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy;) Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12m x 2.6m	stacked over stream	93.6 m
2	Nets	3	12m x 2.6m	stacked over stream	93.6 m
3	Nets	1	6m x 2.6m	over stream	15.6 m

Total Capture Area: 202.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 RB219 Summer PA15 **Date:** 7/20/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Stream valley with mature mixed forest consisting of hemlock, yellow birch, American beech, red & sugar maple.

18. Was reproductive status checked? (YES) / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Captures

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/29/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman, Brandon McClung

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA 16

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested dirt road

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-43 '-44.44"N, Longitude: 79 °-03 '-52.51"W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private : Contact Deborah Hoover, McCormick Taylor c, 5 Capital Drive, Suite 400, Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0150 h Total Minutes: 300

Start Temp. 11.0 °C End Temp. 10.0 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: ~~Clear~~; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6x 2.6	Stacked over road	46.8
2	Nets	1	6x2.6	Over trail	15.6
3	Nets	3	9x2.6	Stacked over road	70.2

Total Capture Area: 132.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA 116 **Date:** 7/29/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are place over a dirt road. Single high net is placed over an ATV trail running parallel to dirt road. Both roads are surrounded by a mature mixed forest. Dominant tree species are Red Maple, Red Oak, Hemlock, and Yellow Birch.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/30/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman, Brandon McClung

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA116

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested dirt road

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-43 '-44.44 "N, Longitude: 79 °-03 '-52.51 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McConnicle Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 12.4 °C End Temp. 11.1 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; (Drizzle); Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	6 x 2.6	Stacked over road	46.8
2	Nets	1	6 x 2.6	Over trail	15.6
3	Nets	3	9 x 2.6	Stacked over road	70.2

Total Capture Area: 132.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA 116 **Date:** 7/30/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over a dirt road. Single high net is placed over an ATV trail running parallel to dirt road. Both roads are surrounded by a mature mix forest. Dominant tree species are Red Maple, Red Oak, Hemlock, and Yellow Birch

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 29 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schanz

5. Site Name and/or Number: 2014R1219Somer_PA17

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested jeep trail

8. County: Somesset **9. 7.5' Quad.:** Avilon

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-43 '-45.90"N, Longitude: 79 °-04 '-14.92 "W

Datum *(circle one)*: (NAD27 (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2055 h Stop Time 0155 h Total Minutes: 300

Start Temp. 11.0 °C End Temp. 10.0 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9m x 2.6m	Stacked over trail	70.2 sq.m
2	Nets	3	9 mx2.6m	Stacked over trail	70.2 sq.m
3	Net	1	6mx2.6m	Over trail	15.6 sq.m

Total Capture Area: 156 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt219 Somer – PA17 **Date:** 29 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a jeep trail within a Sugar maple, red maple, oak, hemlock, and yellow birch dominated forest.

18. Was reproductive status checked? **YES** / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis							* 1	* 1		2	2
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 2

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/30/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schanz

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA17

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Jeep trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '- 45.9 "N, Longitude: 79 °- 04 '- 14.92 "W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2055 h Stop Time 0155 h Total Minutes: 300

Start Temp. 13.1 °C End Temp. 11.1 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9x2.6	Stacked over trail	70.2
2	Nets	3	9x2.6	Stacked over trail	70.2
3	Nets	1	6x2.6	Over trail	15.6

Total Capture Area: 156 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA 17 **Date:** 7/30/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over a jeep trail within a Sugar Maple, Red Maple, Oak, Hemlock, and Yellow Birch dominated Forest

18. Was reproductive status checked? (YES) / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis	1					1					1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 1

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7-29-2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** ———

5. Site Name and/or Number: 2014 Rt 219 Summer PA 18

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested stream

8. County: Somerset **9. 7.5' Quad.:** Abilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '-23.7 "N, Longitude: 79 °- 4 '-24.9 "W

Datum *(circle one)*: (**NAD27**) (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 10.9 °C End Temp. 10.0 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	stacked over stream	46.8
2	Nets	3	9m x 2.6m	stacked over stream	70.2
3	Nets	1	6m x 2.6m	stacked over stream	15.6

Total Capture Area: 132.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt219 Summer, PA **Date:** 7-29-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Forested stream running through valley. Forest is a mixed deciduous forest with dominant tree species being Eastern Hemlock yellow birch. The dominant understory species are Rosebay Rhododendron and witch-hazel

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Bats Captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7-30-2014 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** ———

5. Site Name and/or Number: 2014 Rt219 Summer PA18

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested Stream

8. County: Somerset **9. 7.5' Quad.:** Ability

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '-23.7 "N, Longitude: 79 °- 4 '-24.9 "W

Datum *(circle one)*: (**NAD27**) (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 12.7 °C End Temp. 10.1 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear;) Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	stacked over stream	46.8
2	Nets	3	9m x 2.6m	stacked over stream	70.2
3	Nets	1	6m x 2.6m	stacked over stream	15.6

Total Capture Area: 132.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014Rt219Summer PA18 **Date:** 7-30-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Forested stream running through valley, Forest is a mixed deciduous forest with dominant tree species being Eastern Hemlock and Yellow Birch. The dominant understory species are Rosebay Rhododendron and witch-hai

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Bats Captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/16/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer - PA19

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested Stream

8. County: Sommerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '-15.55"N, Longitude: 79 °- 5 '-5.01 "W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; contact Deborah Hoover McCormick Taylor 5 Capital Drive, Suite 400 Harrisburg, Pa 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 20:50 h Stop Time 01:50 h Total Minutes: 300

Start Temp. 14.0 °C End Temp. 11.7 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy;) Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over stream	46.8
2	Nets	3	6m x 2.6m	Stacked over stream	46.8
3	Nets	1	9m x 2.6m	over stream	23.4

Total Capture Area: 117 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PH 19 **Date:** 7/16/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Stream running through mix mature forest. Dominant tree species include hemlock, yellow birch, american beech, and red maple. Improved road running parallel to stream esitmated 100 meters away.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis								1			1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/18/14 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Bryan Butler

5. Site Name and/or Number: 2014 RT. 29 Summer - PA19

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested Stream

8. County: Somerset **9. 7.5' Quad.:** Aviltown

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 1555 "N, Longitude: 79 °- 5 '- 5.01 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private : contact Deborah Hoover McCormick Taylor 5 Capital Drive, Suite 400 Harrisburg, Pa 17110 O: 717 - 540 - 6040

13. Time *(military)* **& Temperature:** Start Time 20:45 h Stop Time 0145 h Total Minutes: 300

Start Temp. 18 °C End Temp. 16 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); (Drizzle); Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	NETS	3	6m x 2.6m	Stacked Over Stream	46.8
2	NETS	3	6m x 2.6m	Stacked over Stream	46.8
3	NETS	1	9m x 2.6m	Over Stream	23.4

Total Capture Area: 117 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA 19 **Date:** 7/18/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
STREAM RUNNING THROUGH MIXED MATURE FOREST; DOMINANT TREE SP. INCLUDE HEMLOCK, YELLOW BIRCH, AMERICAN BEECH, AND RED MAPLE. IMPROVED RD. RUNNING PARALLEL TO STREAM. EST. ~100m AWAY

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/17/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinanders **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA 20

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested Stream

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '- 50.48"N, Longitude: 79 °- 06 '- 2.42"W

Datum *(circle one)*: (**NAD27**) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private : contact Deborah Hoover McCormick Taylor 5 Capital Drive, Suite 400 Harrisburg, Pa 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 20:50 h Stop Time 0150 h Total Minutes: 300

Start Temp. 13.4 °C End Temp. 10.5 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear;) Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12m x 2.6m	Stacked over stream	93.6
2	Nets	1	12m x 2.6m	Over stream	31.2
3	Nets	3	18m x 2.6m	Stacked over stream	140.4

Total Capture Area: 265.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** Pa 20 **Date:** 7/17/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Casselman River running through mature forest. River runs perpendicular to improved road and parallel to small open field. Forest contains dominant Sugar Maples, Red Maples, American Beech, and Hemlock.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				:: 4		4		* 1	* 1	2	6
Perimyotis subflavus											
Lasiurus borealis				* 1		1		** 2		2	4 *
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 10

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

* 1 Escaped from netset 1 (5m) at 2222.

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/18/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinonders **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA20

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Stream

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '- 50.48"N, Longitude: 79 °- 06 '- 2.42"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private : Contact Deborah Hoover McCormick Taylor 5 Capital Drive, Suite 400 Harrisburg, Pa 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 17.3 °C End Temp. 15.3 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; (Mostly Cloudy); Cloudy; (Drizzle); Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12m x 2.6m	Stacked over stream	93.6
2	Nets	1	12m x 2.6m	Over stream	31.2
3	Nets	3	18m x 2.6m	Stacked over stream	140.4

Total Capture Area: 265.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA 20 **Date:** 7/18/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Casselman River running through mature forest. River runs perpendicular to improved road and parallel to small open field. Forest contains dominant Sugar Maples, Red Males, American Beech, and Hemlock.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus						1				1	2
Perimyotis subflavus											
Lasiurus borealis										1	1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 3

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 17 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz, Brandon McClung

5. Site Name and/or Number: 2014 Rt 219 Sumer — PA21

6. Site is (circle one): hibernation site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel,

other structure, describe -_____.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested stream

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '- 26.98"N, Longitude: 79 °- 06 '- 39.23"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover McCormick Taylor 5 Capital Drive, Suite 400 Harrisburg, Pa 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2105 h Stop Time 0205 h Total Minutes: 300

Start Temp. 14.0 °C End Temp. 10.5 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: Calm, Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	18m x 2.6m	Stacked over stream	140.4 sq. m
2	Net	1	6m x 2.6m	over stream	15.6 sq. m
3	Nets	3	12m x 2.6m	Stacked over stream	93.6 sq. m

Total Capture Area: 249.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 at 219 Sonas PA21 **Date:** 17 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a shallow wide trout stream. One side of the trout stream is forested and the other has a ledge row of trees between the stream and a cornfield. Dominant trees are sugar maple, hemlock, beech, and birch.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

(Site Survey Record – Continued) **Site Name/No.:** 2014 rt 219 Somer — PA21 **Date:** 18 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a shallow wide trout stream. One side of the stream is forested and the other has a hedgerow of trees between the stream and a cornfield. Dominant trees are sugar maple, hemlock, beech and birch.

18. Was reproductive status checked? **YES** / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus	1				1	2			1	1	3
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 3

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
Drizzle starting at 2150 which became a steady light drizzle

(Site Survey Record – Continued) **Site Name/No.:** 2014 rt 219 Somer — PA21 **Date:** 18 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a shallow wide trout stream. One side of the stream is forested and the other has a hedgerow of trees between the stream and a cornfield. Dominant trees are sugar maple, hemlock, beech and birch.

18. Was reproductive status checked? **YES** / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus	* 1				* 1	2			* 1	1	3
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 3

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
Drizzle starting at 2150 which became a steady light drizzle

Appendix C
Radio Tracked Bats

Bat Voucher Photographs
Bat Measurement and Capture Data Forms
Day Roost Data Sheets
Day Roost Voucher Photographs
Bat Emergence Forms

Bat: 2014Rt219.1

Figure 1. 2014Rt219.1. Adult, post-lactating female eastern small-footed bat (*Myotis leibii*) captured at Site PA10. Voucher photograph of face mask.

Figure 2. 2014Rt219.1. Adult, post-lactating female eastern small-footed bat (*Myotis leibii*) captured at Site PA10. Voucher photograph of keeled calcar.

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

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Bat Measurement and Capture Data Form

(Complete for all (1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA)

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:
2014Rt219Summer PA10	7/21/14	3	Todd Smander	1

Height in meters captured above ground surface: 1 m

Species	Sex	Age	Repro. Condition	Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)
Myotis leibii	F	A	PL	5.4	8mm	5mm	31	7mm		NO	—	—	—	—	172.862

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
2240	(Yes) / No	0	Bat Name: 2014Rt219,1	PR: 0.60 - 12 days

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:
2014Rt219 - PA07	7/22/14	1	John Chenger	1

Height in meters captured above ground surface: m

Species	Sex	Age	Repro. Condition	Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)
Myotis Leibii	M	A	NR	3.4	11	7	30	7		NO	—	—	—	—	172.591

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
0145	(Yes) / No	0	Bat Name: 2014Rt219,2	

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:

Height in meters captured above ground surface: m

Species	Sex	Age	Repro. Condition	Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
	Yes / No			

*Capture Number = number in sequence by site.

PGC Form:
WD-DR-02/13
Section 4

PA GAME COMMISSION
Wildlife Diversity Section
Day Roost Data Sheet

1-
Landowner: **Name:** Saundra Banker **Address:** 761 Eagles Mill Road
Phone: — Salisbury, PA

2-BAT INFO
Dates on Roost: 7/22/14 7/23/14 * **Day Roost Number:** 2014PA19 1.1
(Date = Date bat was on roost; Roost No.= Bat # & numbered roost, in sequence, for that bat ~ 241PGC-01)

Surveyors: Brian Butler **Type:** Tree - (Building) - Rock - Other Barn*
(Describe rock and other roost structures)

Bat Species: Myotis Lucifugus **Band No.:** — **Transmitter Frequency:** 172.862

Ht.(m) bat is roosting off ground: Unk Was Bat Emergence Form Completed? **YES - (NO)**

Comments: *(Where is bat roosting? Under bark? If building-describe)*

*Using telemetry, bat was estimated to be in a large wooden barn with metal roof.

3-LOCATION

County: Somerset **Quadrangle:** Ayllton

Latitude: 39° 44' 57" (DMS) **Elevation (ft.):** 1912

Longitude: 79° 04" 01" (DMS) **%Slope:** 9% **Slope Aspect (0-360):** 61°

Datum: (Nad27 (prefered)) NAD83 / WGS84 (circle one)

4-Roost INFORMATION *(If other than tree, indicate rock, rock cliff, house, barn etc. for species)*

Species: N/A **DBH (cm):** N/A Is Tree Alive? **YES - NO** *(CIRCLE)*

Height: (%UP _____ + %DOWN _____) X Dist.(m) to tree _____ = N/A m *(For Trees)*

1st Branch Ht. *(%UP _____ + %DOWN _____) X Dist.(m) to tree _____* = N/A *m (For Trees)*

Estimate % Canopy Cover Around Roost: 0%

Is suitable roost area exposed to direct sunlight? **(YES) - NO** *(circle one)*
If so - estimate # of hours of exposure to direct sun: 13 hrs
Azimuth of Exposure (which way does exposed part of roost face): — *(1-360)*

For Trees:
Exfoliating Bark? **YES - NO** **Estimate % of tree with Exfoliating Bark:** N/A %

Cavities? **YES - NO If yes - Describe:** N/A

5-SURROUNDING HABITAT
Distance (m) to Water: 480 m **Water Type:** Stream

Understory Species: N/A

Overstory Species: N/A

6-Comments *(Comment on Overstory Species, Habitat Composition and non-tree roosts. Use back if needed)*

Talked with Dave (did not give last name) who said he owned the barn. He was not willing to let us on his property and was generally hostile to any survey activity. *Property owner hostile did not pass by barn on road to check if bat was still there past second day (7/23/14)

Bat: 2014Rt219.2

Figure 3. 2014Rt219.2. Adult, non-reproductive male eastern small-footed bat (*Myotis leibii*) captured at Site PA07. Voucher photograph of face mask.

Figure 4. 2014Rt219.2. Adult, non-reproductive male eastern small-footed bat (*Myotis leibii*) captured at Site PA07. Voucher photograph of keeled calcar.

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

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Bat Measurement and Capture Data Form

(Complete for all (1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA)

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:
2014Rt219Summer PA10	7/21/14	3	Todd Sinander	1

Height in meters captured above ground surface: 1 m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)
Myotis leibii	F	A	PL	5.4	8mm	5mm	31	7mm		NO	—	—	—	—	172.862

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
2240	(Yes) / No	0	Bat Name: 2014Rt219,1	PR: 0.60 - 12 days

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:
2014Rt219 - PA07	7/22/14	1	John Chenger	1

Height in meters captured above ground surface: m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)
Myotis Leibii	M	A	NR	3.4	11	7	30	7		NO	—	—	—	—	172.591

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
0145	(Yes) / No	0	Bat Name: 2014Rt219,2	

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:

Height in meters captured above ground surface: m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
	Yes / No			

*Capture Number = number in sequence by site.

PGC Form:
WD-DR-02/13
Section 4

PA GAME COMMISSION
Wildlife Diversity Section
Day Roost Data Sheet

1-
Landowner: **Name:** Guy Wayne Harblestey* **Address:** —

Phone: — —

2-BAT INFO
Dates on Roost: 7/24/14 **Day Roost Number:** 2014Rt219.2.1
(Date = Date bat was on roost; Roost No.= Bat # & numbered roost, in sequence, for that bat – 241PGC-01)

Surveyors: John Chenger, Bryan Buttler **Type:** Tree - (Building) - Rock - Other_____
(Describe rock and other roost structures)

Bat Species: Myotis leibii **Band No.:** — **Transmitter Frequency:** 172.591

Ht.(m) bat is roosting off ground: Unk. Was Bat Emergence Form Completed? **YES - NO**

Comments: *(Where is bat roosting? Under bark? If building-describe)*

In a large barn with black roof.

3-LOCATION

County: Somerset **Quadrangle:** Avilton

Latitude: 39° 44' 28" (DMS) **Elevation (ft.):** 2576

Longitude: 79° 02' 16" (DMS) **%Slope:** 11% **Slope Aspect (0-360):** 170°

Datum: (Nad27 (prefered)) NAD83 / WGS84 (circle one)

4-Roost INFORMATION *(If other than tree, indicate rock, rock cliff, house, barn etc. for species)*

Species: N/A **DBH (cm):** — Is Tree Alive? **YES - NO** *(CIRCLE)*

Height: (%UP _____ + %DOWN _____) X Dist.(m) to tree_____ = N/A m *(For Trees)*

1st Branch Ht. *(%UP _____ + %DOWN _____) X Dist.(m) to tree_____ = N/A m (For Trees)*

Estimate % Canopy Cover Around Roost: 0

Is suitable roost area exposed to direct sunlight? **YES - NO** *(circle one)*
If so - estimate # of hours of exposure to direct sun: 13 hrs
Azimuth of Exposure (which way does exposed part of roost face): Unk *(1-360)*

For Trees:
Exfoliating Bark? **YES - NO** **Estimate % of tree with Exfoliating Bark:** N/A %

Cavities? **YES - NO** **If yes - Describe:** N/A

5-SURROUNDING HABITAT
Distance (m) to Water: 80m **Water Type:** Creek

Understory Species: N/A

Overstory Species: N/A

6-Comments *(Comment on Overstory Species, Habitat Composition and non-tree roosts. Use back if needed)*

* Land owner is also the owner of Salisbury Mine. Mr Harblestey has not allowed access to the mine to be surveyed by PGC in the past. This land owner is considered to be hostile. In addition, there is no public access to this area.

Figure 5. 2014Rt219.3. Adult, post-lactating female northern long-eared myotis (*Myotis septentrionalis*) captured at Site PA03. Voucher photograph of face and tragus.

Figure 6. 2014Rt219.3. Adult, post-lactating female northern long-eared myotis (*Myotis septentrionalis*) captured at Site PA03. Voucher photograph of keeled calcar.

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

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Bat Measurement and Capture Data Form

(Complete for all (1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA)

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:
2014Rt.219Summer PA03	7/26/14	3	Todd Sirander	1

Height in meters captured above ground surface: 1 m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)
Myotis Septentrionalis	F	A	PL	6.6	19mm	10mm	36mm	6mm		NO	N/A	N/A	N/A	N/A	172.239

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:
2250	(Yes) / No	0	Remarks: BAT NAME: 2014Rt.219.3 Pulse Rate = 0.6

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:

Height in meters captured above ground surface: m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:
	Yes / No		Remarks:

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:

Height in meters captured above ground surface: m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:
	Yes / No		Remarks:

*Capture Number = number in sequence by site.

PGC Form:
WD-DR-02/13
Section 4

PA GAME COMMISSION
Wildlife Diversity Section
Day Roost Data Sheet

1-
Landowner: **Name:** PA Game Commission **Address:** PA State Game Lands 231
Southwest Regional Office
4820 Route 711
Bolivar, PA
Phone: 724-238-9523

2-BAT INFO
Dates on Roost: 7/27/2014 **Day Roost Number:** 2014RT219.3.1
(Date = Date bat was on roost; Roost No.= Bat # & numbered roost, in sequence, for that bat ~ 241PGC-01)

Surveyors: Risa Wright; Jacob Eshelman **Type:** (Tree) - Building - Rock - Other
(Describe rock and other roost structures)
Bat Species: Myotis septentrionalis **Band No.:** — **Transmitter Frequency:** 172.239

Ht.(m) bat is roosting off ground: 10.56m Was Bat Emergence Form Completed? **YES - NO**
Comments: *(Where is bat roosting? Under bark? If building-describe)*
Bat appears to be roosting under bark or in a tree cavity. It appears to be in the top dead portion of a red maple. The bottom 3/4 of tree is alive

3-LOCATION

County: Somerset **Quadrangle:** Meyersdale

Latitude: 39° 45' 57.73" (DMS) **Elevation (ft.):** 2621

Longitude: 79° 01' 47.35" (DMS) **%Slope:** 21% **Slope Aspect (0-360):** 320°

Datum: (Nad27 (prefered)) NAD83 / WGS84 (circle one)

4-Roost INFORMATION *(If other than tree, indicate rock, rock cliff, house, barn etc. for species)*

Species: Acer rubrum (Red Maple) **DBH (cm):** 8.7 Is Tree Alive? (YES) - NO *(CIRCLE)*

Height: (%UP — + %DOWN —) X Dist.(m) to tree — = 21.56 m *(For Trees)*

1st Branch Ht. *(%UP — + %DOWN —) X Dist.(m) to tree — =* 4.79 *m (For Trees)*

Estimate % Canopy Cover Around Roost: 75%

Is suitable roost area exposed to direct sunlight? (YES) - NO *(circle one)*
If so - estimate # of hours of exposure to direct sun: 2 hrs
Azimuth of Exposure (which way does exposed part of roost face): 190 *(1-360)*

For Trees:
Exfoliating Bark? (YES) - NO **Estimate % of tree with Exfoliating Bark:** 15 %

Cavities? **YES -** (NO) **If yes - Describe:** (none visible)

5-SURROUNDING HABITAT

Distance (m) to Water: 908 m **Water Type:** creek

Understory Species: Yellow Birch, Sassafras

Overstory Species: Red Maple, Red Oak, Yellow Birch

6-Comments *(Comment on Overstory Species, Habitat Composition and non-tree roosts. Use back if needed)*
Roost tree is in dense forest.

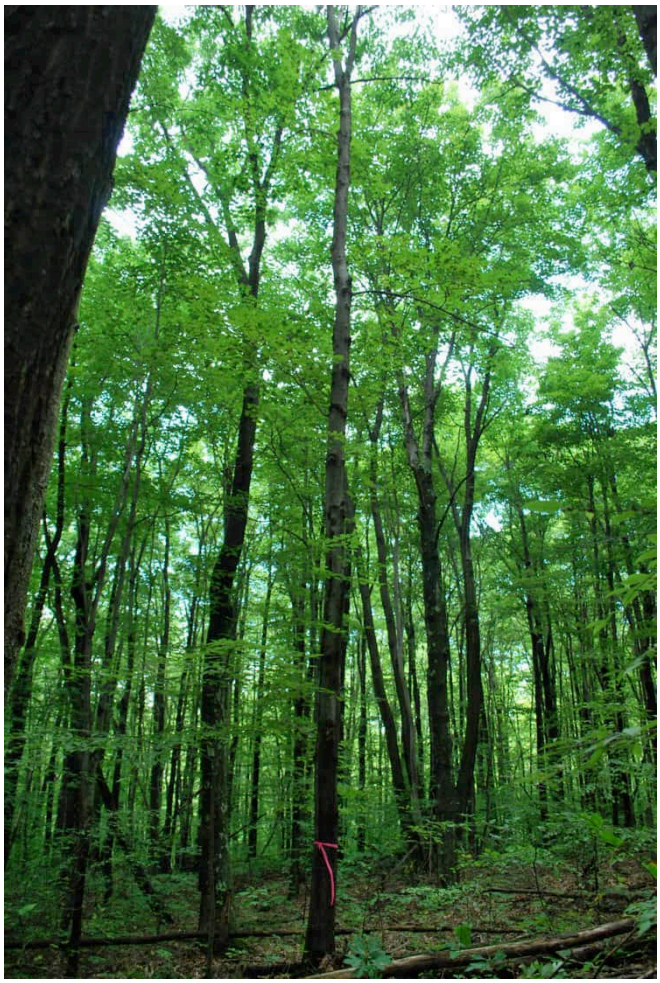

Figure 7 (Above left). Roost tree 2014Rt219.3.1. Upper portion of roost tree. Figure 8 (Above right). Roost tree 2014Rt219.3.1. Lower portion of roost tree.

PGC Form:
WD-EM-05/02
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014Rt219.3.1 **DATE:** 7/27/14

ROOST TYPE: Building (Tree) Other: _____

Surveyors: Todd Sinander, Jacob Eshelman

Transmittered Bat Band No.: — **Transmitter Frequency:** 172.239

Weather **Temperature:** 65.5 °F

Sky Condition Code: 2 **Wind Scale Code:** 0

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? **YES - NO** Bat Detector Used? **YES - NO**

Telemety Equipment Present? **YES - NO**

Time Surveyors arrived at Roost : 2045 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: 2054

Time Transmittered Bat Emerged: — * **And Azimuth Last Detected:** —

Time Last Bat Seen Emerging: 2054 **Total Emergence Count:** 1

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

*Surveyors left roost at 2230. Bat was still in roost. At dusk could clearly hear signs that bat was moving in roost. By 2230 movement had stopped.

PGC Form:
WD-EM-02/13
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014RT219.3.1 **DATE:** 7/29/2014

ROOST TYPE: Building - (Tree) - Rock - Other _____

Surveyors: Edward Ramirez

Transmittered Bat Band No.: N/A **Transmitter Frequency:** N/A

Weather **Temperature:** 52.2 *F (11.1°C)

Sky Condition Code: 1 **Wind Scale Code:** 1

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? **YES - (NO)** Bat Detector Used? **YES - (NO)**

Telemety Equipment Present? **YES - (NO)**

Time Surveyors arrived at Roost : 20:30 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: —

Time Transmittered Bat Emerged: — **And Azimuth Last Detected:** —

Time Last Bat Seen Emerging: — **Total Emergence Count:** 0

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

PGC Form:
WD-DR-02/13
Section 4

PA GAME COMMISSION
Wildlife Diversity Section
Day Roost Data Sheet

1-
Landowner: **Name:** PA Game Commission **Address:** PA State Game Lands 231 Southwest Regional Office

Phone: 724-238-9523 4820 Route 711 Bolivar, PA

2-BAT INFO
Dates on Roost: 7/28/14 **Day Roost Number:** 2014Rt.219,3.2
(Date = Date bat was on roost; Roost No.= Bat # & numbered roost, in sequence, for that bat ~ 241PGC-01)

Surveyors: Todd Sinander, Jacob Estelmon **Type:** (Tree) - Building - Rock - Other
(Describe rock and other roost structures)

Bat Species: Myotis Septentrionalis **Band No.:** N/A **Transmitter Frequency:** 172.

Ht.(m) bat is roosting off ground: 6m Was Bat Emergence Form Completed? **YES - NO**

Comments: *(Where is bat roosting? Under bark? If building-describe)*

Bat is in a crevis/cavity in a small red maple snag that branches off of a live red maple from the ground.

3-LOCATION

County: Somerset **Quadrangle:** Meyersdale

Latitude: 39° 45' 57.5" (DMS) **Elevation (ft.):** 2621

Longitude: 79° 01' 47.5" (DMS) **%Slope:** 21% **Slope Aspect (0-360):** 320°

Datum: (Nad27 (prefered)) NAD83 / WGS84 (circle one)

4-Roost INFORMATION *(If other than tree, indicate rock, rock cliff, house, barn etc. for species)*

Species: Red Maple **DBH (cm):** 13.3 Is Tree Alive? **YES - NO** *(CIRCLE)*

Height: (%UP .38 + %DOWN .12) X **Dist.(m) to tree** 20 = 10 m *(For Trees)*

1st Branch Ht. *(%UP .18 + %DOWN .12) X Dist.(m) to tree* 20 = 6 m *(For Trees)*

Estimate % Canopy Cover Around Roost: 80%

Is suitable roost area exposed to direct sunlight? **YES - NO** *(circle one)*
If so - estimate # of hours of exposure to direct sun: 1-2 hrs
Azimuth of Exposure (which way does exposed part of roost face): 100 *(1-360)*

For Trees:
Exfoliating Bark? (YES) - NO **Estimate % of tree with Exfoliating Bark:** 10 %

Cavities? (YES) - NO **If yes - Describe:** Two foot long slit facing south

5-SURROUNDING HABITAT

Distance (m) to Water: 908m **Water Type:** Creek

Understory Species: Yellow birch, Sassafras

Overstory Species: Red Maple, Red Oak, Yellow birch

6-Comments *(Comment on Overstory Species, Habitat Composition and non-tree roosts. Use back if needed)*

Tree is in mature deciduos forest.

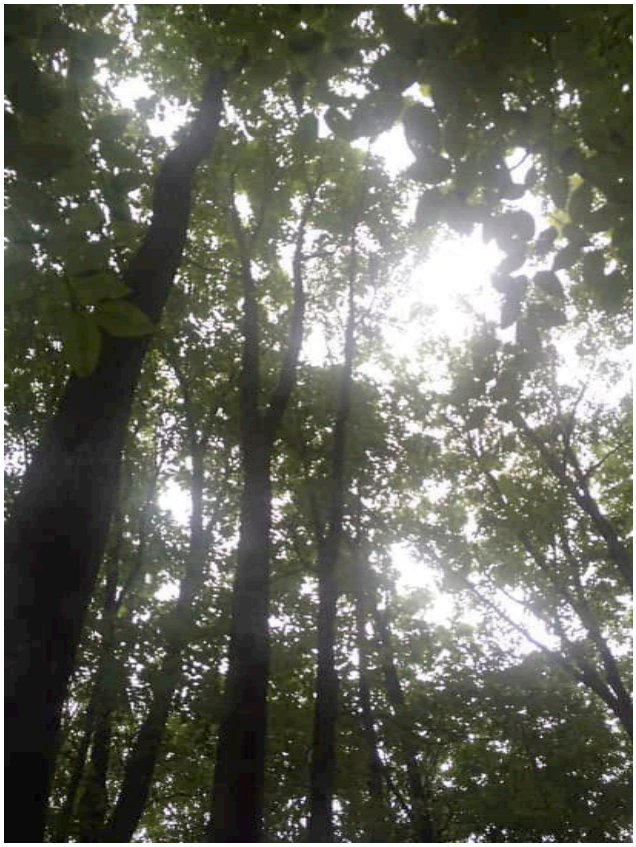

Figure 9 (Above left). Roost tree 2014Rt219.3.2. Upper portion of roost tree. Figure 10 (Above right). Roost tree 2014Rt219.3.2. Lower portion of roost tree.

PGC Form:
WD-EM-02/13
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014 Rt 219.3.2 **DATE:** 29 July 2014

ROOST TYPE: Building - (Tree) - Rock - Other _____

Surveyors: Brandon McClung

_____

Transmittered Bat Band No.: _____ **Transmitter Frequency:** _____

Weather **Temperature:** 52.2 ***F** (11.1 °C)

Sky Condition Code: 01 **Wind Scale Code:** 01

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? **YES - NO** Bat Detector Used? **YES - NO**

Telemety Equipment Present? **YES - NO**

Time Surveyors arrived at Roost : 2030 ***(use 24 hour clock for times)***

X **Time First Bat Seen Flying:** 2114

Time Transmittered Bat Emerged: * **And Azimuth Last Detected:** *

X **Time Last Bat Seen Emerging:** 2114 **Total Emergence Count:** 01

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

* Transmittered bat shed transmitter

PGC Form:
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Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014 Rt. 219 3:2 **DATE:** 07/30/14

ROOST TYPE: Building - Tree - Rock - Other _____

Surveyors: Brandon McCloy

Transmittered Bat Band No.: — **Transmitter Frequency:** —

Weather **Temperature:** 54.6 ***F** 12.6 °C

Sky Condition Code: 5 **Wind Scale Code:** 01

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? **YES - NO** Bat Detector Used? **YES - NO**

Telemety Equipment Present? **YES - NO**

Time Surveyors arrived at Roost : 2025 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: 2104

Time Transmittered Bat Emerged: * **And Azimuth Last Detected:** *

Time Last Bat Seen Emerging: 2104 **Total Emergence Count:** 01

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

* Bat had dropped transmitter prior to Emergence

Figure 11. 2014Rt219.4. Adult, post-lactating female northern long-eared myotis (*Myotis septentrionalis*) captured at Site MD02. Voucher photograph of face and tragus.

Figure 12. 2014Rt219.4. Adult, post-lactating female northern long-eared myotis (*Myotis septentrionalis*) captured at Site MD02. Voucher photograph of keeled calcar.

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12/09
Section 3

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

Page# 1 of 1

Bat Measurement and Capture Data Form

(Complete for all (1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA)

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:
2014R+219Summer_MD02	8-04-2014	1	Risa Wright	1

Height in meters captured above ground surface:	Body Measurements (grams and millimeters)						Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.)					Transmitter Attached? If so:
1 m												Frequency (mHz)
Species	Sex	Age	Repro. Condition	Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot	Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	
Myotis septentrionalis	F	A	PL	7.0	15	9	36	10	—	—	—	—	—	172.172

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	
2354	(Yes) / No	0	Remarks: Name: 2014R+219.4	pulse 0.42

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:

Height in meters captured above ground surface:	Body Measurements (grams and millimeters)						Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.)					Transmitter Attached? If so:
m												Frequency (mHz)
Species	Sex	Age	Repro. Condition	Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot	Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:
	Yes / No		Remarks:

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:

Height in meters captured above ground surface:	Body Measurements (grams and millimeters)						Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.)					Transmitter Attached? If so:
m												Frequency (mHz)
Species	Sex	Age	Repro. Condition	Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot	Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:
	Yes / No		Remarks:

*Capture Number = number in sequence by site.

PGC Form:
WD-DR-02/13
Section 4

PA GAME COMMISSION
Wildlife Diversity Section
Day Roost Data Sheet

1-
Landowner: **Name:** Sidney Markowitz **Address:** 10800 Pebble Brook Lane
Phone: — Potomac, MD 20854

2-BAT INFO
Dates on Roost: 5 Aug 2014, 6 Aug 2014, 7 Aug 2014, 8 Aug 2014 **Day Roost Number:** 2014R+219.4.1
(Date = Date bat was on roost; Roost No.= Bat # & numbered roost, in sequence, for that bat ~ 241PGC-01)

Surveyors: Duncan Shantz, Todd Shantz, Jacob Eschesman **Type:** (Tree) - Building - Rock - Other
(Describe rock and other roost structures)

Bat Species: Myotis septentrionalis **Band No.:** — **Transmitter Frequency:** 172.172

Ht.(m) bat is roosting off ground: 13 m Was Bat Emergence Form Completed? (YES) - NO

Comments: *(Where is bat roosting? Under bark? If building-describe)*

Difficult to see, possibly under bark

3-LOCATION

County: Garrett **Quadrangle:** Avilton

Latitude: 39° 42' 43.1" (DMS) **Elevation (ft.):** 2495

Longitude: 79° 04' 44.5" (DMS) **%Slope:** 10% **Slope Aspect (0-360):** 72°

Datum: Nad27 (prefered) NAD83 / WGS84 (circle one)

4-Roost INFORMATION *(If other than tree, indicate rock, rock cliff, house, barn etc. for species)*

Species: Honey locust **DBH (cm):** 36 Is Tree Alive? (YES) - NO *(CIRCLE)*

Height: (%UP 138 + %DOWN .22) X Dist.(m) to tree 20 = 32 m *(For Trees)*

1st Branch Ht. (%UP .06 + %DOWN .22) X Dist.(m) to tree 20 = 3.2 m *(For Trees)*

Estimate % Canopy Cover Around Roost: 50%

Is suitable roost area exposed to direct sunlight? (YES) - NO *(circle one)*
If so - estimate # of hours of exposure to direct sun: 2 hours
Azimuth of Exposure (which way does exposed part of roost face): 242 *(1-360)*

For Trees:
Exfoliating Bark? (YES) - NO **Estimate % of tree with Exfoliating Bark:** 15 %

Cavities? YES - (NO) **If yes - Describe:**

5-SURROUNDING HABITAT
Distance (m) to Water: 40m **Water Type:** pond

Understory Species: yellow birch, red maple

Overstory Species: Cherry, Red Maple, Yellow birch, honey locust

6-Comments *(Comment on Overstory Species, Habitat Composition and non-tree roosts. Use back if needed)*

Roost is in a stream lowland between the stream and a pond within mature mixed forest with numerous snags

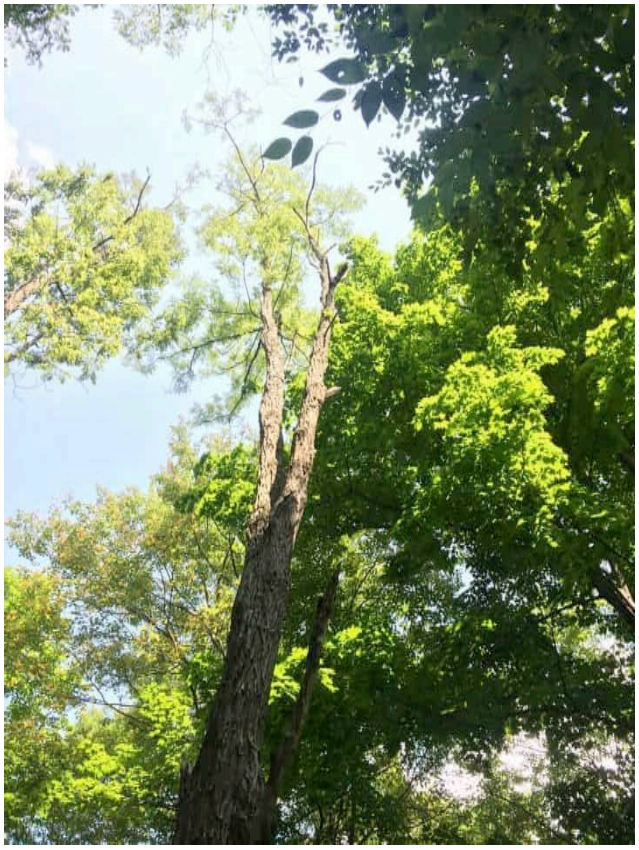

Figure 13 (Above left). Roost tree 2014Rt219.4.1. Upper portion of roost tree. Figure 14 (Above right). Roost tree 2014Rt219.4.1. Lower portion of roost tree.

PGC Form:
WD-EM-05/02
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014rt219.4.1 **DATE:** 5 Aug 2014

ROOST TYPE: Building (Tree) Other: _____

Surveyors: Duncan Schantz

Transmitted Bat Band No.: NA **Transmitter Frequency:** 172.172

Weather **Temperature:** 65.4 *F

Sky Condition Code: 1 **Wind Scale Code:** 0

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? YES - (NO) Bat Detector Used? YES - (NO)

Telemety Equipment Present? (YES) - NO

Time Surveyors arrived at Roost : 2015 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: 2042

Time Transmittered Bat Emerged: 2048 **And Azimuth Last Detected:** 332

Time Last Bat Seen Emerging: 2048 **Total Emergence Count:** 1

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

2047 bat seen flying above roost tree
After transmittered bat left roost two bats were flying above roost tree. After about a minute only one was flying above tree, and continued for 2 or 3 minutes.

PGC Form:
WD-EM-05/02
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014Rt219.4.1 **DATE:** 6 Aug 2014

ROOST TYPE: Building (Tree) Other: _____

Surveyors: Duncan Schantz

Transmittered Bat Band No.: NA **Transmitter Frequency:** 172.172

Weather **Temperature:** 60.1 °F

Sky Condition Code: 0 **Wind Scale Code:** 1

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? YES - (NO) Bat Detector Used? YES - (NO)

Telemety Equipment Present? (YES) - NO

Time Surveyors arrived at Roost : 2025 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: 2034

Time Transmittered Bat Emerged: 2034 **And Azimuth Last Detected:** 44°

Time Last Bat Seen Emerging: 2057 **Total Emergence Count:** 4

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

- Transmittered bat left roost going in the direction 310° and the signal was lost at 44° in about a minutes time.
- Second bat seen fly from roost was at 2040. For the next few minutes a bat (assuming this bat) was seen flying near the top of roost tree.
- 2043 third bat emerged
- 4 bat circled roost tree about 2/3 to the top eventually flying around top of tree for small period of time.
- 2057 fragmented bat silouette with forearm seen clinging to the roost tree near tree crotch. Did not witness bat [illegible] from tree.

PGC Form:
WD-EM-02/13
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014A219.4.1 **DATE:** 7 Aug 2014

ROOST TYPE: Building - (Tree) - Rock - Other _____

Surveyors: Duncan Schantz

Transmittered Bat Band No.: NA **Transmitter Frequency:** 172.172

Weather **Temperature:** 61.7 *F

Sky Condition Code: 0 **Wind Scale Code:** 1

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? YES - (NO) Bat Detector Used? YES - (NO)

Telemety Equipment Present? (YES) - NO

Time Surveyors arrived at Roost : 1940 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: 2034

Time Transmittered Bat Emerged: 2034 **And Azimuth Last Detected:** 250°

Time Last Bat Seen Emerging: 2042 **Total Emergence Count:** 4

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

- First bat emerged at 2034. About ten seconds later transmittered bat emerged.
- 2037 third bat emerged, flew around roost tree roughly 2/3 up for just under a minute then disappeared. About half a minute later a bat was flying near top of roost tree for about two minutes.
- 2045 two owls were calling back and forth. 2047 one flew to a tree about 20 m from roost tree, called a few times with the other and took off again at 2051. Calls sounded to be that of the Barred owl.

PGC Form:
WD-EM-05/02
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014RH219.4.1 **DATE:** 8Aug 14

ROOST TYPE: Building (Tree) Other: _____

Surveyors: Doreen Schanz

Transmitted Bat Band No.: NA **Transmitter Frequency:** 172.172

Weather **Temperature:** 64.9 °F

Sky Condition Code: 0 **Wind Scale Code:** 0

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? YES - (NO) Bat Detector Used? YES - (NO)

Telemety Equipment Present? (YES) - NO

Time Surveyors arrived at Roost : 2005 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: 2034

Time Transmittered Bat Emerged: 2034 **And Azimuth Last Detected:** 270°

Time Last Bat Seen Emerging: 2036 **Total Emergence Count:** 3

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

- 2033 notable signal fluctulation
- 2035 bat seen flying around near top of roost tree briefly (not transmittered bat
- 2040 bat did a few passes between crotch of tree and surveyor, left briefly, came back to same area for a few more passes before flying off.

- Surveyor was sitting at a bearing of 285°, 5m away from roost tree. this position did not allow for the sky to backlight roost but from this position it was observed that all three bats emerged from the crotch of the tree and flew off at a bearing of roughly 270°

PGC Form:
WD-DR-02/13
Section 4

PA GAME COMMISSION
Wildlife Diversity Section
Day Roost Data Sheet

1-
Landowner: **Name:** Sidney Markaite **Address:** 10800 Pebble Brook Lane

Phone: — Potomac, MD 20854

2-BAT INFO
Dates on Roost: 9 Aug 2014, **Day Roost Number:** 2014RT219.4.2
(Date = Date bat was on roost; Roost No.= Bat # & numbered roost, in sequence, for that bat ~ 241PGC-01)

Surveyors: Duncan Schanz **Type:** (Tree) - Building - Rock - Other
(Describe rock and other roost structures)

Bat Species: Myotis septentrionalis **Band No.:** NA **Transmitter Frequency:** 172.172

Ht.(m) bat is roosting off ground: 9m Was Bat Emergence Form Completed? **(YES) - NO**

Comments: *(Where is bat roosting? Under bark? If building-describe)*
Bat appears to be roosting under bark

3-LOCATION

County: Garrett **Quadrangle:** Axilton

Latitude: 39° 42' 44.5" (DMS) **Elevation (ft.):** 2505'

Longitude: 79° 04' 45.3" (DMS) **%Slope:** 20 **Slope Aspect (0-360):** 342°

Datum: (Nad27 (prefered)) NAD83 / WGS84 (circle one)

4-Roost INFORMATION *(If other than tree, indicate rock, rock cliff, house, barn etc. for species)*

Species: Honey locust **DBH (cm):** 37cm Is Tree Alive? **(YES) - NO** *(CIRCLE)*

Height: (%UP 135 + %DOWN .05) X **Dist.(m) to tree** 20m = 28 m *(For Trees)*

1st Branch Ht. (%UP 35 + %DOWN .05) X **Dist.(m) to tree** 20m = 8 m *(For Trees)*

Estimate % Canopy Cover Around Roost: 70%

Is suitable roost area exposed to direct sunlight? **(YES) - NO** *(circle one)*
If so - estimate # of hours of exposure to direct sun: 8
Azimuth of Exposure (which way does exposed part of roost face): 220° *(1-360)*

For Trees:
Exfoliating Bark? **(YES) - NO** **Estimate % of tree with Exfoliating Bark:** 10 %

Cavities? **YES - (NO)** **If yes - Describe:**

5-SURROUNDING HABITAT
Distance (m) to Water: 25m **Water Type:** pond

Understory Species: Red maple, Cherry

Overstory Species: Yellow birch Red maple Honey locust green ash

6-Comments *(Comment on Overstory Species, Habitat Composition and non-tree roosts. Use back if needed)*
Although there is suitable roost area exposed to direct sunlight at the top of the roost tree, there is not direct sunlight on area bat is roosting.

Figure 15 (Above left). Roost tree 2014Rt219.4.2. Upper portion of roost tree. Figure 16 (Above right). Roost tree 2014Rt219.4.2. Lower portion of roost tree. Figure 17 (Bottom). Roost tree 2014Rt219.4.2. Exfoliating bark.

PGC Form:
WD-EM-02/13
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014 Rt 219.4.2 **DATE:** 9 Aug 2014

ROOST TYPE: Building - (Tree) - Rock - Other _____

Surveyors: Duncan Schanz

_____

Transmittered Bat Band No.: NA **Transmitter Frequency:** 172.172

Weather **Temperature:** 69.8 *F

Sky Condition Code: 0 **Wind Scale Code:** 1

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? YES - (NO) Bat Detector Used? YES - (NO)

Telemety Equipment Present? (YES) - NO

Time Surveyors arrived at Roost : 1940 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: 2032

Time Transmittered Bat Emerged: 2032 **And Azimuth Last Detected:** 290°

Time Last Bat Seen Emerging: 2042 **Total Emergence Count:** 4

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

2000 crow landed at the top of the roost tree, crows had been calling a few minutes beforehand. 2003 crow flew off, soon after a flock of crows passed heading 70°.

2032 transmittered bat and another emerged from roost within seconds of each other. Both bats headed out of tree at about 200° then quickly headed to about 40°, one did a small loop before disappearing from sight.

2042 two more bats emerged between 5-10 seconds apart. One did a few low passes including one just above observers head just before flying off.

All four bats emerged from the same spot under bark.

PGC Form:
WD-EM-02/13
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014rt219.4.2 **DATE:** 16 Aug 2014

ROOST TYPE: Building - (Tree) - Rock - Other _____

Surveyors: Duncan Shantz

_____

Transmittered Bat Band No.: NA **Transmitter Frequency:** 172.172

Weather **Temperature:** 60.7 *F

Sky Condition Code: 0 **Wind Scale Code:** 1

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? **YES** - (**NO**) Bat Detector Used? **YES** - (**NO**)

Telemety Equipment Present? **YES** - (**NO**)

Time Surveyors arrived at Roost : 2000 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: NA

Time Transmittered Bat Emerged: NA **And Azimuth Last Detected:** NA

Time Last Bat Seen Emerging: NA **Total Emergence Count:** 0

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

Transmitter may have failed or was shed. Bat last detected on 8/10/14.
No bats seen emerging from tree

2028 bat seen flying around area for about a minute; it flew to roost tree, landed then flew off in same direction it came from.

PGC Form:
WD-DR-02/13
Section 4

PA GAME COMMISSION
Wildlife Diversity Section
Day Roost Data Sheet

1-
Landowner: **Name:** Sidney Markowitz **Address:** 10800 Pebble Brook Lane
Phone: — Potomac, MD 20854

2-BAT INFO
Dates on Roost: 10Aug14 **Day Roost Number:** 2014RJ219,4,3
(Date = Date bat was on roost; Roost No.= Bat # & numbered roost, in sequence, for that bat ~ 241PGC-01)

Surveyors: Duncan Schantz **Type:** Tree - Building - Rock - Other
(Describe rock and other roost structures)
Bat Species: Myotis septentrionalis **Band No.:** NA **Transmitter Frequency:** 172.172

Ht.(m) bat is roosting off ground: 20m Was Bat Emergence Form Completed? YES - NO
Comments: *(Where is bat roosting? Under bark? If building-describe)*
Bat is in a large wood barn with metal roof.

3-LOCATION
County: Garrett **Quadrangle:** Avilton
Latitude: 39°43' 10.6" (DMS) **Elevation (ft.):** 2,459
Longitude: 79° 04' 47.5" (DMS) **%Slope:** 6% **Slope Aspect (0-360):** 7°
Datum: Nad27 (prefered) NAD83 / WGS84 (circle one)

4-Roost INFORMATION *(If other than tree, indicate rock, rock cliff, house, barn etc. for species)*
Species: Barn **DBH (cm):** — Is Tree Alive? YES - NO *(CIRCLE)*
Height: (%UP .35 + %DOWN .00) X Dist.(m) to tree 20m = 27 m *(For Trees)*
1st Branch Ht. (%UP — + %DOWN —) X Dist.(m) to tree — = — m *(For Trees)*
Estimate % Canopy Cover Around Roost: 5%
Is suitable roost area exposed to direct sunlight? YES - NO *(circle one)*
If so - estimate # of hours of exposure to direct sun: full
Azimuth of Exposure (which way does exposed part of roost face): 200° *(1-360)*
For Trees:
Exfoliating Bark? YES - NO **Estimate % of tree with Exfoliating Bark:** — %
Cavities? YES - NO **If yes - Describe:**

5-SURROUNDING HABITAT
Distance (m) to Water: 140m **Water Type:** Stream
Understory Species: Wild apple, green ash, elderberry
Overstory Species: Red maple, green ash

6-Comments *(Comment on Overstory Species, Habitat Composition and non-tree roosts. Use back if needed)*
Bat seemed to be roosting at joint of horizontal support beam.

Figure 18. Roost 2014Rt219.4.3. Large wood barn with metal roof.

PGC Form:
WD-EM-02/13
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014 RT219.4.3 **DATE:** 08/16/2014

ROOST TYPE: (Building) - Tree - Rock - Other _____

Surveyors: Kirk Silas

Transmitted Bat Band No.: NA **Transmitter Frequency:** 172.172

Weather **Temperature:** 59 *F

Sky Condition Code: 0 **Wind Scale Code:** 1

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? YES -(NO) Bat Detector Used? YES -(NO)

Telemety Equipment Present? YES -(NO)

Time Surveyors arrived at Roost : 20:00 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: NA

Time Transmittered Bat Emerged: NA **And Azimuth Last Detected:** NA

Time Last Bat Seen Emerging: NA **Total Emergence Count:** 0

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

Saw one bat flying in open field at 20:40.
Saw one bat flying near barn at 20:45.
Did not see any bats emerge from barn.

2014 RT.219 FALL BAT HARP TRAPPING AND ABANDONED MINE/ROCKY HABITAT ASSESSMENT

U.S. Route 219 Improvements Project, S.R. 6219, Section 019
Somerset County, Pennsylvania and Garrett County, Maryland
October 2 – 12, 2014

Site RH2014-03

Bat Conservation and Management, Inc.
Carlisle, Pennsylvania

220 Old Stonehouse Road, North • telephone: (717) 241-2228 • cell: (814) 442-4246 • www.batmanagement.com

2014 Rt. 219 Fall Bat Harp Trapping & Abandoned Mine/Rocky Habitat Assessment
U.S. 219 Improvements Project
S.R. 6219, Section 019
Somerset County, PA

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Report Prepared by:
Bryan Butler
December 2014

Executive Summary

Introduction

The Route 6219 Improvement Project is located in Garrett County, Maryland and Somerset County, Pennsylvania. The project consists of the construction of approximately 13 kilometers (8 miles) of four-lane limited access highway south from Meyersdale, Pennsylvania bypassing the borough of Salisbury to the east before linking with I-68 south of the Pennsylvania state line (Figure 1). The project is located within the known range of the endangered Indiana bat *(Myotis sodalis)*. The United States Fish and Wildlife Service (USFWS) State College Office requested surveys for potential Indiana bat hibernacula near the project area. In 2005, the entire project area was investigated for the presence of portals (including mine adits, caves, and other openings larger than 6 inches), which are potential entrances to bat hibernacula, and included follow-up harp trapping and acoustic surveys. In 2014, Bat Conservation and Management, Inc. (BCM) of Carlisle, Pennsylvania was commissioned to conduct follow-up investigation and rocky habitat assessment, which included mine feature investigation, as well as harp-trapping surveys within the U.S. 219 Section 019 project area for the purpose of determining potential impact of this project development to any threatened and endangered (T&E) bat species, as well as to provide an inventory of bats species that may be using previously identified hibernacula.

Objective and Work Plan

This report summarizes the results of the follow-up survey to the harp trapping survey and mine feature assessment conducted by Bat Conservation and Management, Inc., in 2005. The 2014 surveys utilized the following survey methods: harp trapping, acoustic recording, mine portal assessment, and rocky habitat survey assessments. Assessments were conducted both on-foot and using desktop analyses of new and previously identified potential habitat.

In 2014, each of the Alternatives Retained for Detailed Study (ARDS) were walked by Environmental Scientists from McCormick Taylor, Inc., and L.R. Kimball, Inc., during their environmental field studies. Surveyors noted rocky habitat that could potentially serve as summer bat habitat. Data on all rocky habitat or additional portals discovered were then turned over to BCM for bat-specific analysis and added to the 2014 re-investigation survey. A total of forty-nine (49) sites were investigated by BCM and evaluated for additional capture and/or acoustic surveys, including fifteen (15) potentially suitable rocky habitat sites for *Myotis leibii,* and thirty-four (34) potential bat hibernacula.

Methods

Survey Protocol: Phase 1-Rocky Habitat Assessment for *Myotis leibii*

The rocky habitat features (RHFs) identified as potential eastern small-footed bat (*Myotis leibii*), or MYLE, roosts were categorized into one of three levels of summer habitat quality: ***Low***, ***Medium***, or ***High***. Additionally, rocky habitats were surveyed for any potential winter hibernacula features. Each category takes into consideration a number of factors associated with small-footed myotis habitat including, but not limited to, size and aspect of the rock formation, number and depth of crevices, and the spatiotemporal extent of solar exposure. Canopy cover determinations were expressed as a percentage with 0% representing no canopy cover and 100% representing full canopy cover, as determined by ocular estimation to the nearest 5%. Habitat disturbance codes were assigned to each potential habitat using the Disturbance Assessment code sheet included in Attachment B.

All habitat sites assessed during this survey were photographed (Appendix B) and descriptions of the potential rocky habitat such as size, aspect, and type of rock were recorded. A summary of the data for each potential rocky habitat investigated is provided in Attachment A. Some habitat that was encountered during this survey was marked as "FRO" or "for the record only." This means that the habitat contained no suitable solar exposure and/or crevice dimensions evaluated on a spatiotemporal scale that were deemed suitable for MYLE summer use.

Low-quality habitat describes rock formations that may be suitable summer roosting habitat for non-reproductive females, bachelor males, and/or other transitory bats moving through the area. This habitat is generally not considered likely to sustain a stable, season-long reproductive (maternity) population, and represents over-dispersed, temporary roosts for opportunistic use, and is therefore not essential to survival of the population or species. Low quality habitats include sites with few small rock formations, few crevices and shallow interstices and high canopy effect (e.g., low solar exposure), such that on a spatiotemporal scale less than 33% of the formation contained adequate roost spaces and/or received 3 hours or less of daily summer solar exposure.

Medium-quality habitat includes rock formations that may be suitable summer roosting habitat when areas of higher quality habitat are not available. Although it is not likely that lactating females would be found in these formations, it cannot be discounted. Sites were categorized as medium quality if there was significant sun exposure (greater than 50% on a spatiotemporal scale) on the rock formations and/or at least 50% of the formation containing crevices and interstices in the rock formations with suitable characteristics to provide roost spaces for bats.

High-quality habitat describes rock formations that are consistent with known summer habitat preferences of eastern small-footed myotis, especially pregnant and lactating females, and has a high potential for use by this demographic. These habitats were characterized by high solar exposure and the availability of multiple crevice roosts within the site (i.e., numerous crevices and/or deep interstices) so that at 67% or more of the available rock habitat had suitable roost spaces ***and*** the habitat site received 6 or more hours of daily summer sun.

Survey Protocol: Phase 1-Hibernacula Survey

For the 2014 hibernacula survey the project area was delineated after reviewing the project's original centerline and buffer using aerial photographs. This preliminary "desktop investigation" was conducted using QGIS software. Map layers that were found to be applicable to the project study area and utilized during this phase included deep mining, industrial mineral, modern and historical permits for oil and gas, as well as pre-1936 Abandoned Mine Land Feature (AMLF) data. These data were reviewed in order to identify any potential abandoned mine land features in the revised project area for a more detailed ground survey. Both "Coal Mine Point Locations" and "Abandoned Mine Land Features" that were found using this method were labeled as "CMPL" and "AMLF" respectively.

The resulting data was combined with the Phase 1 project area survey completed by BCM in 2005 and all potential sites were included in 2014 for on-foot investigation and re-investigation surveys. Survey data was collected from the investigation of abandoned mine features and included portal type, condition, and site surrounding observations. Results are included in the 2014 Abandoned Mine Land Feature Update in Attachment A.

Survey Protocol: Phase 2-Harp Trapping

Surveys were conducted from October 2nd through October 12th, 2014 at five (5) previously identified locations (Table 1). In accordance with Appendix A of the USFWS and Pennsylvania Game Commission's Protocol for Assessing Bat Use of Potential Hibernacula, all locations were surveyed for three nights with one harp trap, and an acoustic bat detector (Table 1). Capture and acoustic surveys began 30 minutes prior to sunset and continued for a minimum of five hours.

Harp trapping involved placing frames threaded with two vertical layers of monofilament line at the portal entrance. Bats attempting to pass through the trap were captured either by colliding with the lines or by entering the space between the frames. Once their forward flight momentum is reduced by contact with the lines, they flutter down into a catch bag where they are held until physically removed for identification. This

method of sampling is designed for use at roosts where the potential for catching large numbers of bats during a short time is likely and is more appropriate than mist-netting, which requires that each individual bat be carefully untangled (Tuttle 1974). Two harp trap sizes (Bat Conservation and Management, Inc., Carlisle, PA) were used for this project, a small trap measuring 3 feet square (1 meter square) and a large trap measuring 6 feet x 7 feet (1.8 x 2.1 meters). The harp traps were placed to best cover the entrances of each hibernacula, and then the remaining space surrounding the traps was obstructed using bird netting to maintain natural airflow in and out of the sites, while funneling the bats into the trap. The harp traps were checked a minimum of every 30 minutes for captured bats.

Meta-data was collected, fully describing individual capture sites and includes photographs (Appendix A), global positioning satellite (GPS) coordinates, nightly weather conditions during sampling, and general information regarding habitat and surrounding area (Appendix C). The survey night was considered valid if the temperature remained above 50°F (10°C) for the first two hours of sampling and did not fall below 35°F (1.6°C) by midnight. In addition to low temperatures, adverse weather conditions can also include precipitation including rain and/or heavy fog that persists for more than 30 minutes or that continues intermittently during the survey period, and sustained winds greater than 9mph (4mps), i.e., "3" on the Beaufort wind scale. Because adverse weather can affect capture success, survey efforts were suspended or repeated when any of these weather conditions were present throughout all or the majority of the sampling period.

Each captured bat was identified to species and metrics including sex, age, and reproductive status were recorded. Age classification was determined by degree of ossification of the epiphyseal plates of the finger bones (Brunet-Rossinni and Wilkinson 2009). The reproductive condition of females was noted by inspection of the mammary glands and of males by the inspecting for spermatozoa in the epididymis (Racey 2009).

Survey Protocol: Phase 2-Acoustic Inventory

Capture surveys for bats can be a labor-intensive process, especially when harp traps are used to physically capture individuals to confirm species identification. Moreover, all survey methods are biased, and some bat species are extremely adept at evading capture methods. In recent years, the collection of acoustic recordings of ultrasonic bat echolocation calls has been determined to be an effective, and efficient way to document many bat species, without the disturbance caused by physical capture efforts (Ahlén and Baagoe 1999; Biscardi et al. 2004; Duchamp et al. 2006; and Gannon and Sherwin 2004). Many bat species are easy to distinguish amongst based on their echolocation call types alone (Barclay 1999). And, in areas with depauperate *Myotis* species fauna, documentation of *Myotis* species bats is often more efficient using acoustic recording rather than deploying

physical capture methods (Ford et al. 2011).

A Pettersson D500x bat detector (Pettersson Elektronik, Uppsala, Sweden) was placed within 15 feet of each portal entrance. Detector microphones were placed 6.5 feet (2 meters) or higher above the ground and orientated towards the largest volume of airspace directly in front of the entrance for each site surveyed. Each detector was stationary and programmed to record for at least five hours, beginning at ½ hour before local sunset. Recorded echolocation calls were post-processed using SonoBat 3.2 call analysis software (SonoBat, Arcata, CA). This process attributed meta-data from the survey effort to each recording, while preserving the date-time stamp when each recording was made forming a permanent record of each echolocation call recorded during the inventory. Recorded bat passes were tallied for each mine portal in one-hour increments beginning at ½ hour before sunset and continuing for at least five hours.

Acoustics provide an efficient survey tool for assessing a three-dimensional area of habitat, as in this survey. The obvious advantage of acoustic monitoring is that bats that may not be captured using harp traps, that cover a two-dimensional space, may be recorded acoustically. But, because the D500x detectors system is extremely sensitive and may record bats from greater distances, as well as at some distance behind the microphone, interloping species will be recorded during acoustic surveys at entrances that are not necessarily entering or exiting the site. Usually these interlopers have louder and lower frequency echolocation calls than the T&E species of interest (e.g., Eptesicus fuscus (EPTFUS), big brown bat; Lasiurus cinereus (LASCIN), hoary bat; and Pipistrellus subflavus (PIPSUB), eastern pipistrelle), and their calls are recorded outside times normally identified as representing exits or entries to roosts (e.g., randomly throughout the night, not at dusk or during the pre-dawn hours). As data was reviewed, attempts were made to quantify the species of interest vs. the interlopers to determine actual bat use at each portal.

All acoustic recordings collected were also analyzed using the SonoBat automatic classifier (North-northeast version) allowing species classifications to be determined by the computer, along with metrics to assign confidence to the decisions. It should be noted that any automated classification software can render inaccurate results in many situations especially when recording bats performing behaviors that result in: inspection calls (e.g., approach phase), attack calls (e.g. acquisition or feeding-buzz), social calls or directives between species and among individuals, and call variations due to multiple individual bats in the same airspace. Moreover, the use of stationary microphones to record mobile bats on the wing can also result in poor, out of range recordings that are picked up by microphones on a tangent or off-axis to the best volume of microphone detection. Therefore, all recordings are manually reviewed to attempt to identify if any of these situations existed

and classifications for those recordings were amended or eliminated from consideration when reporting species results.

During the manual vetting process, each recording was verified to probable species or species group, based on the results from the automated classification and the visual inspection of the spectrogram (i.e., the call frequency and intensity vs. time display) associated with the entire call sequence. John Chenger performed all manual vetting of the recordings collected during this effort. He has over 20-years of experience with collecting and analyzing bat echolocation calls from North American bat species, and over 8-years of experience using SonoBat software for these types of analyses.

When recordings were confidently assigned to species (defined for the purposes of this survey as having ≥ 5 fully-formed, high-quality call pulses in a sequence that received a discriminant probability classification to species of ≥ 0.95) recordings were labeled with a four-character species identification code, comprised of the first two letters of the genus and species designation for each bat (e.g., for *Myotis septentrionalis*, the species code is MYSE).

Results

Phase 1 Outcome: Rocky Habitat Assessment

A total of fifteen (15) new rocky habitat locations were visited during the survey (Table 5-1). Of these fifteen, nine (9) sites were identified as potentially suitable rocky habitat for MYLE with all nine sites marked as Low Quality Habitat containing quantitatively and/or qualitatively minimal roosting resources. The remaining six (6) sites were designated as "FRO" or "for the record only", meaning they contained no suitable solar exposure and/or crevice dimensions evaluated on a spatiotemporal scale that were deemed suitable for MYLE summer use. All habitat site assessments have been updated and descriptions included in this report (Attachment A).

Phase 1 Outcome: Hibernacula Survey

During the 2014 survey at total of thirty-three (35) sites were investigated or re-investigated as potential hibernacula, including the twenty-eight (28) sites that were previously investigated in 2005. The desktop QGIS software analysis revealed a total of two (2) AMLI locations, and four (4) CMPL sites. These were further investigated on foot in order to evaluate them as current potential hibernacula and results of these efforts are recorded in Attachment A.

During the hibernacula investigation one (1) site, "CMPL2014-03-253615" was found connected to a large boulder field beneath deciduous forest canopy and adjacent to agricultural fields. Though no evidence of mine workings was present, the area was further assessed as potential suitable rocky habitat for *Myotis leibii* (Table 5-1).

Also during the hibernacula investigation, a total of (5) sites out of the 35 investigated were selected as potential hibernacula and were sampled by means of harp-trapping and acoustic monitoring for Phase 2 fall trapping. All previously sampled hibernacula from 2005 were selected for fall trapping during this 2014 survey, including sites 2005-01, 2005-19, 2005-27, and 2005-28. The fifth site, "BCM-2014-01", was discovered and selected during this year's hibernacula investigation and included for fall trapping and acoustic monitoring. Complete descriptions of all potential hibernacula site evaluations are provided in Phase One Abandoned Mine Land Feature 2014 Update (Attachment A) and in Table 5-2.

Phase 2 Species Occupancy: Capture Results

The five (5) sites that were identified for capture and acoustic efforts during this survey are summarized in Table 1 of this report. Harp traps were set in the entrances of five (5) individual hibernation sites for a period of three (3) nights each (Table 1). Trapping began ½ hour before sundown and lasted for a minimum of five (5) hours each night for a total of 15-trap hours per site, and 75 trap-hours total for the entire survey period.

A total of two (2) bats, both northern long-eared myotis (*Myotis septentrionalis*) were captured during this survey effort. Both bats were caught at Site 2005-28. Of the 2 bats, 100% (n=2) were male and determined to be reproductive (Tables 2 and 4). Due to the proximity of capture and similarity in recorded measurements, it is possible that the second bat was a recapture. On nights in which no bats were captured, there were no signs of guano seen within the harp trap catch bag.

Phase 2 Species Occupancy: Acoustic Survey Results

Bat detectors were deployed near the entrances of each of the five (5) hibernation sites for a period of three (3) nights each. Monitoring began ½ hour before sundown and lasted for a minimum of eight (8) hours on nights 1 and 2, and 3 for a total of 24-detector hours at each site and 120-detector hours for the entire survey period. A total of two (2) bat passes from one (1) confidently identified species were recorded. Species with confidently identified recordings included only *Myotis septentrionalis* (MYSE), the northern long-eared bat (100%), which is currently under review for federal threatened or endangered species listing. Bat passes from MYSE were recorded at Site 2005-28 in the last three hours of the survey night during the second night of sampling. A complete summary of the confidently identified species at each site is noted in Table 1 and hourly activity summaries for each survey night at each site is noted in Table 3 of this report.

Weather Data

Weather data was recorded each day netting was conducted. Additional information including weather events, wind, and cloud cover is recorded in Appendix C on PGC Forms P-70008-N/T for bat capture data. All forms are organized in the Appendix by site number, in ascending order. In the case of an adverse weather event, netting was either delayed or suspended until protocol permitted continuation of the survey night. Unless otherwise noted, overall weather was nominal for the survey period.

Discussion & Conclusions

Data collected by Bat Conservation and Management, Inc. included mine portal assessment for potential T&E bat species hibernacula, rocky habitat evaluation for *Myotis leibii* summer roosting, harp trapping, and acoustic monitoring to determine T&E species occupancy at potential roosts. Results of this data continues to suggest that the investigated portals presently do not provide habitat suitable for significant numbers of bats of any species, including any federal or state T&E species of interest.

Additionally, overall results of the fall 2014 survey bat-detection survey indicate that these previously identified hibernation sites have experienced a decline in bat activity and/or use when compared to 2005's survey. Variation in fall swarming times as well as the widely recognized decline in Pennsylvania's bat numbers due to the emergent fungal disease White-nose Syndrome (WNS) may be contributing factors to this year's paucity of results.

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Figures

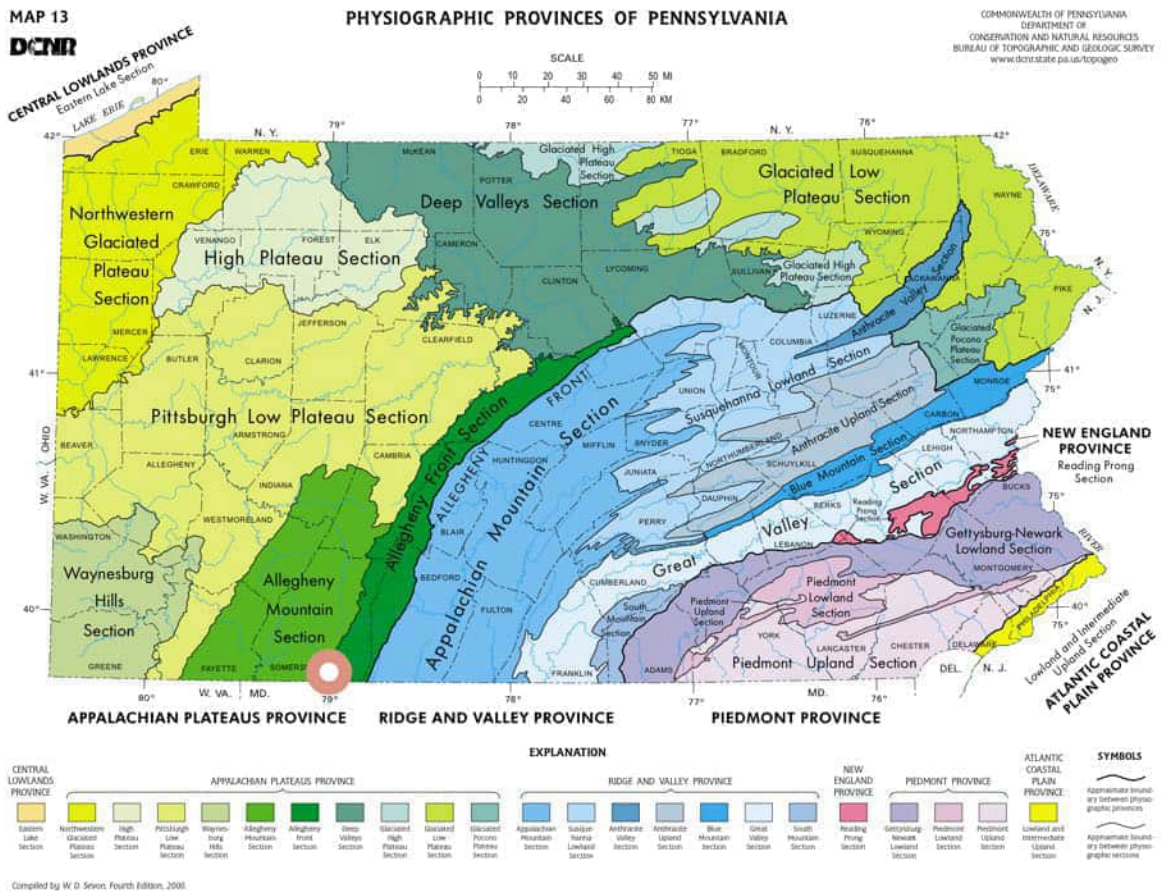
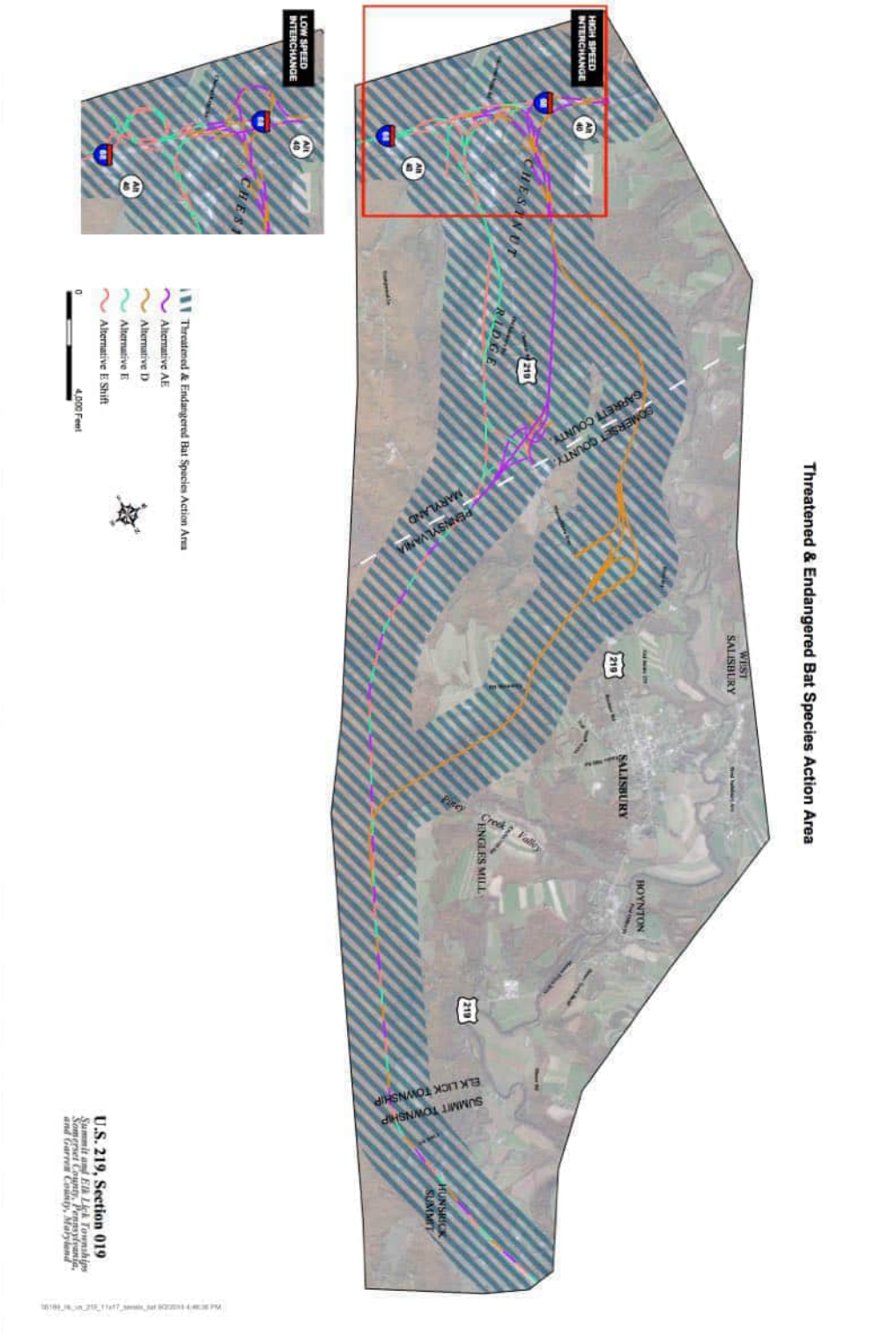


Figure 1. Route 6219 Improvement Project, Somerset County Pennsylvania

Figure 2. Survey location: Site 1 Portal, Somerset County, PA

Figure 3. Survey location: Site 4 Airshaft, Somerset County, PA

Figure 4. Threatened &Endangered Bat Species Action Area



Tables

Table 1. Survey site coordinates, monitoring results, and habitat descriptions.

NAD 27 datum	Latitude/Longitude	Survey Methods	Physical Captures	Acoustic Activity	Identified Bat Calls	Description
Site 2005-01	39° 47' 7.75" 79° 01' 42.46"	1- 6' Harp Trap 1- Pettersson D500x	-	n/a	n/a	Old, partially collapsed mine entrance surrounded by dense decidious forest with small acid mine drainage stream from entrance in center of steep enbankment. Trap placed perpendicular to mine entrance. D500x placed 7' above ground oriented approximately 10' from mine entrance.
Site 2005-19	39° 44' 36.12" 79°03'24.49"	1- 3' Harp Trap 1- Pettersson D500x	-	n/a	n/a	Entrance located ~75' above Piney Creek on a very steep hillside with harp trap positioned parellel to entrance. D500x external mic 6' above ground facing small cave opening located on a steep embankment and 8' from opening.
Site 2005-27	39° 44' 44.61" 79° 03' 20.83"	1- 6' Harp Trap 1- Pettersson D500x	-	n/a	n/a	Entrance located on steep slope, 15 ft. from Piney Creek. D500x mic approximately 6' above ground oriented horizontally facing old mine entrance on east bank of Piney Creek. Positioned on the edge of a depression 10' from entrance.
Site 2005-28	39° 44' 42.61" 79° 03' 19.54"	1- 6' Harp Trap 1- Pettersson D500x	(2) MYSE	2	(2) MYSE	Entrance on steep stream valley slope approximately 75' from Piney Creek. D500x mic positioned 9' above ground facing small collapsed mine portal along Piney Creek.
Site 2014-01	39° 44' 55.36" 79° 03' 17.67"	2- 9m Single High 1- Pettersson D500x	-	n/a	n/a	Small collapse found in forested cow pasture with unimproved road near an open field. D500x detector with external microphone 7' above ground oriented horizontal to ground facing parallel to surrounding trench. Approximately 10' from open hole at trench bottom.

Abbreviations used in this table: **MYSE=** *Myotis septentrionalis* (Northern long-eared myotis). Activity identified only recordings identified as "bat calls," with a "bat call" described as any recording containing at least one obvious bat echolocation pulse. Identified Bat Calls include all recordings expertly (manually) vetted and attributed to species or species guild. It does not indicate absolute number of bats.

Table 2. Bat capture totals

	Myotis septentrionalis				TOTALS				SITE TOTALS
	Female		Male		Female		Male		
	Ad	Juv	Ad	Juv	Ad	Juv	Ad	Juv	
Site 2005-01	-	-	-	-	-	-	-	-	0
Site 2005-19	-	-	-	-	-	-	-	-	0
Site 2005-27	-	-	-	-	-	-	-	-	0
Site 2005-28	-	-	2	-	-	-	2	-	2
Site 2014-01	-	-	-	-	-	-	-	-	0
Totals	0	0	2	0	0	0	0	0	2
	2				2				

Scientific names used in this table*:* *Myotis septentrionalis* (northern long-eared myotis). **Abbreviations used in this table**: Ad = adult; Juv = juvenile.

Table 3. Acoustic summary with hourly breakdowns of activity at survey sites.

SITE	Survey Date	Survey Day: One							Survey Date	Survey Day: Two							Survey Date	Survey Day: Three							AVG. bat passes	TOTAL bat passes
		1st hr	2nd hr	3rd hr	4th hr	5th hr	6th hr	7/8th hr		1st hr	2nd hr	3rd hr	4th hr	5th hr	6th hr	7/8th hr		1st hr	2nd hr	3rd hr	4th hr	5th hr	6th hr	7/8th hr		
Site 2005-01	10/2/14	0	0	0	0	0	0	0	10/9/14	0	0	0	0	0	0	0	*10/10-12/2014	0	0	0	0	0	0	0	0/hr.	0
Site 2005-01 Totals		0								0								0							0/night	
Site 2005-19	10/6/14	0	0	0	0	0	0	0	10/7/14	0	0	0	0	0	0	0	10/8/14	0	0	0	0	0	0	0	0/hr.	0
Site 2005-19 Totals		0								0								0							0/night	
Site 2005-27	10/6/14	0	0	0	0	0	0	0	10/7/14	0	0	0	0	0	0	0	10/8/14	0	0	0	0	0	0	0	0/hr.	0
Site 2005-27 Totals		0								0								0							0/night	
Site 2005-28	10/6/14	0	0	0	0	0	0	0	10/7/14	0	0	0	0	0	1	1	10/8/14	0	0	0	0	0	0	0	.042/hr.	2
Site 2005-28 Totals		0								0								0							0.67/night	
Site 2014-01	10/7/14	0	0	0	0	0	0	0	10/8/14	0	0	0	0	0	0	0	10/9/14	0	0	0	0	0	0	0	0/hr.	0
Site 2014-01 Totals		0								0								0							0/night	

Totals represent total number of bat passes per hour/per survey night; averages represent total number of bat passes per hour/night for the monitoring period. Grand total represents the total number of bat passes from all sites with an average number of bat passes per hour for all 120-hours of monitoring. *Survey day was extended and completed at the alternate date due to inclement weather.

Table 4. Reproductive condition of captured bats

	MYOSEP			TOTALS		
	Female	Male		Female	Male	
	NR	SCR	NR	NR	SCR	NR
Site 2005-01	-	-	-	-	-	-
Site 2005-19	-	-	-	-	-	-
Site 2005-27	-	-	-	-	-	-
Site 2005-28	-	2	-	-	2	-
Site 2014-01	-	-	-	-	-	-
Totals	**0**	**2**	**0**	**0**	**2**	**0**
	2			**2**		

Abbreviations used in this table: **MYOSEP** = *Myotis septentrionalis*;, **NR** = non-reproductive, **SCR** = reproductive/scrotal.

Table 5-1. Summary of Potentially Suitable Rocky Habitat

Hab Site Name	Use Potential	Date	County	Quadrangle	Latitude (NAD27)	Longitude (NAD27)	Geol. Form.	Site Size Longest length(m)	Site Size Avg Width(m)	Habitat Disturbance Code			Comments
CMPL2014-03-25316	FRO	20141009	Somerset	Avilton	39°45'05.48"	79°02'52.47"	Allegheny	230	80	1A	2D	2H	Boulder field in deciduous forest with 100% canopy.
RH2014-01	FRO	20141009	Somerset	Avilton	39°42'51.16"	79°06'19.26"	Allegheny	22	10	1N	-	-	Small open face rock facing north was beside a creek. The rocky habitat had a small over hang, but no crevices.
RH2014-02	FRO	20141007	Garrett	Avilton	39°43'9.03"	79°05'03.50"	Conemaugh	35	10	1E	2H	2D	Majority of rock out crop was covered in organic matter. No crevices were present.
RH2014-03	Low/Med	20141007	Garrett	Avilton	39°42'27.54"	79°05'32.95"	Conemaugh	30	10	1A	2U	2D	Isolated rock piles formed medium crevices along agricultural field. Habitat faces south to southeast with good sun exposure.
RH2014-04	FRO	20141007	Garrett	Avilton	39°42'21.07"	79°05'45.08"	Conemaugh	26	10	1C	2D	2G	Recent tree removal around rocky habitat. Few shallow rock crevices were found. Majority of the crevices were filled with organic matter.
RH2014-05	Low	20141008	Garrett	Avilton	39°41'35.04"	79°07'06.09"	Conemaugh	32	1	1G	1A	2C	Small cliff edge facing highway with tall grass shading crevices in part of the rocky habitat.
RH2014-06	Low	20141008	Garrett	Avilton	39°41'35.59"	79°05'55.05"	Conemaugh	34	8	1A	2C	2G	Southwest orientation with about five hours of sun exposure. Rocky habitat is on edge of deciduous forest.
RH2014-07	Low	20141008	Garrett	Avilton	39°41'28.02"	79°06'21.76"	Conemaugh	100	50	2H	2C	3G	Boulder field in deciduous forest with majority of habitat covered in organic matter.
RH2014-08	Low	20141008	Garrett	Avilton	39°41'20.44"	79°05'56.16"	Conemaugh	80	30	2G	3C	-	Southeast exposure, however majority of the habitat was covered by tree and shrubs.
RH2014-09	Low	20141008	Garrett	Avilton	39°41'17.95"	79°05'56.16"	Conemaugh	25	5	1G	3C	-	Small drainage ditch off Highway 68 with shallow crevices.
RH2014-10	Low/Med	20141008	Garrett	Avilton	39°41'06.77"	79°05'13.44"	Allegheny	400	10	1G	2H	3C	Talus slopes on either side of highway.
RH2014-11	Low	20141009	Somerset	Avilton	39°43'50.00"	79°03'22.00"	Glenshaw	30	8	1E	2G	-	Northeast sun exposure along road. Majority of rock was covered in organic matter.
RH2014-12	FRO	20141009	Somerset	Avilton	39°43'52.00"	79°03'23.00"	Glenshaw	10	5	1E	2G	-	Northeast sun exposure along road. Rocky habitat was over grown with grasses and covered in organic matter.
RH2014-13	FRO	20141009	Somerset	Avilton	39°43'59.00"	79°03'29.00"	Glenshaw	40	10	1E	2G	2A	Northeast sun exposure along road. Rocky habitat was over grown with grasses and covered in organic matter.
RH2014-14	Low/Med	20141009	Somerset	Avilton	39°44'01.00"	79°03'30.00"	Glenshaw	150	15	1E	2G	2A	Northeast sun exposure along road. Some spots contained deep crevices, but majority of the rocky habitat was over grown.

*** Disturbance code descriptions located in Attachment B.**

Hab Site Name	2014 Search?	Phase II?	Date(s) Visited/ Surveyed	Latitude (NAD27)	Longitude (NAD27)	2014 Update Comments
BCM 2005-01	Yes	Yes	2005.08.28 2014.10.02	39°47'07.74"	79°01'42.46"	Old partially collapsed mine entrance surrounded by dense deciduous forest. Small acid mine drainage stream from entrance in center of steep embankment.
BCM 2005-02	Yes	No	20050828 20141002	39°46'46.43"	79°01'53.53"	No mine entrances were found.
BCM 2005-03	No	No	20050828	39°46'38.43"	79°01'54.08"	Determined to be reclaimed.
BCM 2005-04	Yes	No	20050828 20141002	39°46'37.35"	79°02'7.14"	No mine entrances were found.
BCM 2005-05	No	No	20051001	39°46'26.71"	79°02'18.90"	Site not investigated in 2014 due to location falling outside of T&E Buffer Study Area.
BCM 2005-06	No	No	20050828	39°46'40.0"	79°02'20.0"	Site not investigated in 2014 due to location falling outside of T&E Buffer Study Area.
BCM 2005-07	Yes	No	20051001 20141002	39°46'11.82"	79°02'9.13"	Initially marked again during QQIS desktop analysis. No mine entrances or discharge points were found upon investigation
BCM 2005-08	No	No	20051001	39°45'53.63"	79°02'43.40"	Site not investigated in 2014 due to location falling outside of T&E Buffer Study Area.
BCM 2005-09	Yes	No	20051001 20141002	39°45'49.68"	79°02'41.91"	No mine entrances were found.
BCM 2005-10	No	No	20050828	39°45'59.95"	79°03'13.94"	Site not investigated in 2014 due to location falling outside of T&E Buffer Study Area.
BCM 2005-11	No	No	20051001	39°45'53.42"	79°03'12.36"	Site not investigated in 2014 due to location falling outside of T&E Buffer Study Area.
BCM 2005-12	No	No	20051001	39°45'44.20"	79°03'2.12"	Site not investigated in 2014 due to location falling outside of T&E Buffer Study Area.
BCM 2005-13	No	No	20051001	39°45'55.81"	79°03'32.91"	Site not investigated in 2014 due to location falling outside of T&E Buffer Study Area.
BCM 2005-14	No	No	20051001	39°45'48.61"	79°03'37.34"	Site not investigated in 2014 due to location falling outside of T&E Buffer Study Area.
BCM 2005-15	Yes	No	20050828 20141002	39°45'0.11"	79°03'25.74"	No mine entrances were found.
BCM 2005-16	Yes	No	20050828 20141002	39°44'58.94"	79°03'23.70"	No mine entrances were found.
BCM 2005-17	Yes	No	20050828 20141002	39°44'57.37"	79°03'28.40"	No mine entrances were found.
BCM 2005-18	Yes	No	20050828 20141002	39°44'47.95"	79°03'30.37"	No mine entrances were found. Several blind trenches with springs/seeps noted.
BCM 2005-19	Yes	Yes	20050930 20141006	39°44'36.12"	79°03'24.71"	Mine portal. Phase II survey conducted.
BCM 2005-20	Yes	No	20050827 20141002	39°44'13.08"	79°03'40.54"	No mine entrances were found.
BCM 2005-21	Yes	No	20050827 20141002	39°44'12.05"	79°03'39.80"	No mine entrances were found.
BCM 2005-22	Yes	No	20051001 20140722	39°43'28.41"	79°04'9.29"	Site reclaimed.
BCM 2005-23	Yes	No	20051002 20141008	39°43'22.81"	79°06'14.08"	No new entrances were found.
BCM 2005-24	Yes	No	20050828 20140801	39°41'29.39"	79°05'50.16"	No mine features reported.
BCM 2005-25	Yes	No	20050828 20140801	39°41'24.24"	79°05'37.11"	No new features reported.
BCM 2005-26	Yes	No	20050828 20140722	39°41'20.77"	79°05'18.35"	No new features were noted.
BCM 2005-27	Yes	Yes	20050827 20141006	39°44'44.61"	79°03'20.83	Mine portal. Phase II survey conducted.
BCM 2005-28	Yes	Yes	20050827 20141006	39°44'42.62"	79°03'19.55"	Mine portal. Phase II survey conducted.
BCM 2014-01	Yes	Yes	20140926	39°44'55.36"	79°03'17.67"	Mine portal. Phase II survey conducted.
BCM 2014-02	Yes	No	20141002			Site located during re-investigation of 2005-18 and 19. Small slump along old mining road with no airflow. Marked for the record only to minimize site confusion during future surveys.
AMLI 2014-01	Yes	No	20141002			No evidence of mine workings present.
AMLI 2014-02	Yes	No	20141002			No evidence of mine workings present.
CMPL 2014-04-4533	Yes	No	20141009			Acid mine drainage remediation site. No entrances to underground workings found.
CMPL 2014-05-252313	Yes	No	20140724			Strip mine point discharge treatment sites.

Table 5-2. Summary of Potentially Suitable Habitat (AMLI)

Attachment A

Abandoned Mine Land Feature 2014 Update

AMLI 2014-01

The site area was visited on October 02, 2014 and no evidence of mine workings were present except for at the nearby site 2005-01. What might appear to be a mine spoil pile on aerial photos 470 meters northeast of the AMLI 2014-01 is a small pond. Time on site 210 minutes. *John Chenger, Kirk Silas, Bryan Butler*

AMLI 2014-02

The site area was visited on October 02, 2014 and no evidence of mine workings were present except for at the nearby site 2005-01. What might appear to be a mine spoil pile on aerial photos 470 meters northeast of the AMLI 2014-01 is a small pond. Time on site 210 minutes. *John Chenger, Kirk Silas, Bryan Butler*

CMPL 2014-03-253615

The site area was visited on October 9, 2014 and no evidence of mine workings was present. However, the area consisted of a large boulder field adjacent to agricultural fields. This area was surveyed as possible *Myotis leibii* habitat. The habitat was located in a deciduous forest. The area was 230 meters in length and ranged from 45 to 135 meters in width. The habitat consisted of boulders ranging in size from less than 1 meter to 5 meters with shallow and deep crevices. The majority of the habitat was covered with organic matter and 100 percent canopy coverage. Time on site 120 minutes. *Kirk Silas, Bryan Butler*

CMPL 2014-04-4533

The site area was visited on October 9, 2014 and was to be an acid mine drainage remediation site. No entrances to underground workings were discovered. Time on site: 40 minutes. *Jacob Eshelman, Cory Mattas*

CMPL 2014-05-252313 (6 points)

The sites were visited on July 24, 2014 and were found to be strip mine point discharge treatment sites. No entrance to underground workings exist. *John Chenger*

BCM 2005-01

A foot search was conducted for this site on August 28, 2005. An empty shell of a block building is located in the open forest 300' from the road. A small stream flows past this foundation. Following the water upstream leads to an obvious coal mine entrance 6' wide and 3' high. An old mine cart is in front of the mine, more than half buried in the sediment outflow from the drift. A strong draft of wind can be felt emerging from the drift and cold air can be felt over 100' away. A passage can be seen trending east at least 50'. Remnants of a rail line and mine-related foundations are nearby. Total time on site searching: 50 minutes. *John Chenger, Kevin Rhome*

The mine was surveyed on September 17 and 18, 2005 by John Chenger. A 6'x7' harp trap was placed parallel with the entrance dripline, and essentially filled the entrance area flyway. Temperatures under clear skies each night ranged between 68°F and 55°F. Twenty-seven (27) bats were captured including 14 little brown bats *(Myotis lucifugus)*, 7 Northern long-eared *(Myotis septentrionalis)*, and 6 Eastern pipistrelles *(Pipistrellus subflavus)*.

A Pettersson 240x bat detector and an Iriver digital recorder were placed along the stream about 50' from the entrance pointing upwards. The detector was not placed at the entrance because the device would have been overwhelmed with multiple call sequences in each file. On September 17 the detector was active between 10 PM and midnight and recorded 45 call sequences. Files were sorted and 37 were attributed to Eastern pipistrelles and 8 attributed to Northern Long-ear bats. On September 18 the recorder was operating

between 7:00 and midnight. Eighty-five (85) files were generated including 40 attributed to Eastern pipistrelles, 18 to Northern long-ear bats, and 17 little brown bats. Ten files are of some undetermined Myotis species. The detector was monitoring approximately 7 hours averaging about 18 call sequence per hour.

The mine was surveyed on October 2, 9, 10, and 12, 2014 by Bryan Butler, Jacob Eshelman, and Kirk Silas. A 6'x7' harp trap was placed perpendicular with the entrance drip line and plastic was then used to fill the entrance area flyway. Temperatures ranged between 16.1°C and 8.4°C under partly cloudy and cloudy skies. Netting was suspended on 10/10/2014 due to constant rain. No bats were captured and no guano was found in the harp trap catch bag at the end of the nights.

BCM 2005-02

A foot search was conducted for this site on August 28, 2005. The forest immediately behind a mobile home was searched. The homeowner was aware of previous mining activity but did not know of an actual entrance. There are a few old rails from tracks nearby. No entrance or other mining evidence was immediately apparent. Total time on site searching: 35 minutes. John Chenger, Kevin Rhome

The site was visited on October 02, 2014. No mine entrances were found and the site description did not require updating. Time on site: 75 minutes. *John Chenger, Kirk Silas, Bryan Butler*

BCM 2005-03

A foot search was conducted for this site on August 28, 2005. The area of the reported mine has been reclaimed and is presently a meadow containing immature trees. No entrance was apparent. Total time on site searching: 40 minutes. John Chenger, Kevin Rhome

The site was not investigated in 2014 due as BCM has determined it has been reclaimed.

BCM 2005-04

A foot search was conducted on August 28, 2005. An old outbuilding is visible from the road. Just southeast of this structure a 20' deep collapsed trench can be followed 300' southeast through thick hemlocks ending in a blind valley. There are timbers visible in the bottom of the trench, along with old rail remnants. No open portals were found in this area. Time on site searching: 70 minutes. John Chenger, Kevin Rhome

The site was visited on October 02, 2014. No mine entrances were found and the site description did not require updating. Time on site: 60 minutes. *Bryan Butler, Kirk Silas*

BCM 2005-05

A foot search was conducted for this site on October 1, 2005. A fragment of an old rail line and a concrete structure are found at this location. No entrance was apparent. Total time on site searching: 30 minutes. *Kevin Rhome*

The site was not investigated in 2014 due to the site being outside of the T&E Buffer Study Area.

BCM 2005-06

A foot search was conducted for this site on August 28, 2005. The reported mine location is in a small woodlot between a mobile home and a public road. The homeowner was unaware of previous mining activity. No entrance or mining evidence was immediately apparent. Total time on site searching: 40 minutes. *John Chenger, Kevin Rhome*

The site was not investigated in 2014 due to the site being outside of the T&E Buffer Study Area.

BCM 2005-07

A search was conducted on October 1, 2005. This land has been strip mined and reclaimed. Presently the land where an entrance was is now a meadow. No open portals were found in this area. Time on site searching: 30 minutes. *Kevin Rhome*

The site was visited on October 02, 2014 due to an additional GIS point being placed at the site (CMPL2014-01). No mine entrances or discharge points were found and the site description did not require updating. Time on site: 20 minutes. *John Chenger*

BCM 2005-08

A search was conducted on October 1, 2005. Upon entering the forest, spoil piles are evident. Moving past the piles northeast, the land has been strip mined and reclaimed. No open portals were found in this area. Time on site searching: 30 minutes. Kevin Rhome

The site was not investigated in 2014 due to the site being outside of the T&E Buffer Study Area.

BCM 2005-09

A search was conducted on October 1, 2005. On the south side of the road is a collapsed trench/adit containing timber remnants. An old fan house is located in the trench and another related outbuilding foundation is immediately to the west. A small stream emerges from the workings and covers much of the bottom of the trench. A very small 2' wide, 1' high hole can be found under a tree at the east end of the trench. This leads to a very small chamber which was formed by slump action caused by the stream action and does not lead into any workings. No airflow was observed. No open portals were found in this area. Time on site searching: 100 minutes. John Chenger, Kevin Rhome

The site was visited on October 02, 2014. No mine entrances were found and the site description did not require updating. Time on site: 60 minutes. *Kirk Silas, Bryan Butler*

BCM 2005-10

A foot search was conducted on August 28, 2005. A steeply sided, forested blind valley is located at the reported mine location. No open portals were found in this area, although the odd topography suggests past mine use. Time on site searching: 30 minutes. John Chenger, Kevin Rhome

The site was not investigated in 2014 due to the site being outside of the T&E Buffer Study Area.

BCM 2005-11

A search was conducted on October 1, 2005. This location is within an open deciduous forest with relatively high visibility. No open portals were found in this area. Time on site searching: 30 minutes. John Chenger, Kevin Rhome

The site was not investigated in 2014 due to the site being outside of the T&E Buffer Study Area.

BCM 2005-12

A search was conducted on October 1, 2005. The area is located in open deciduous forest. No open portals were found in this area. Time on site searching: 40 minutes. Kevin Rhome

The site was not investigated in 2014 due to the site being outside of the T&E Buffer Study Area.

BCM 2005-13

A search was conducted on October 1, 2005. This location is in open deciduous forest with relatively high visibility. A cornfield is nearby. The mine location was at an intersection of two old roads where an old

clearing has become overgrown with brush. No open portals were found in this area. Time on site searching: 60 minutes. John Chenger

The site was not investigated in 2014 due to the site being outside of the T&E Buffer Study Area.

BCM 2005-14

A search was conducted on October 1, 2005. This location is in open deciduous forest with relatively high visibility. Several cornfields are nearby. The mine location was in open woods with low slope. A number of trees were blown down. No open portals were found in this area. Time on site searching: 60 minutes. John Chenger

The site was not investigated in 2014 due to the site being outside of the T&E Buffer Study Area.

BCM 2005-15

A foot search was conducted on August 28, 2005. This is one reported entrance in a small group of three. A large, obvious spoil pile is immediately encountered east of Piney Run Road within deciduous forest. From the top of the spoil pile, there are a number of adit traces and sinks located within 500 feet to the southeast. There is another parallel level of similar old development traces approximately 75 feet higher in elevation. A few hundred feet northeast of Mine 15 there is small brick foundation next to what appears to have been one of the better entrances but now is merely an old collapsed trench. Just beyond this to the north, the forest gives way to pasture which appears to be a reclaimed strip mine which is not depicted on the USGS Meyersdale/Avilton 7.5 minute topographic map. No open portals were found in this area. Time on site searching: 90 minutes. John Chenger, Kevin Rhome

The site was visited on October 02, 2014. No mine entrances were found and the site description did not require updating. Time on site: 60 minutes. *John Chenger*

BCM 2005-16

A foot search was conducted on August 28, 2005. This is one reported entrance in a small group of three. A large, obvious spoil pile is immediately encountered east of Piney Run Road within deciduous forest. From the top of the spoil pile, there are a number of adit traces and sinks located within 500 feet to the southeast. There is another parallel level of similar old development traces approximately 75 feet higher in elevation. A few hundred feet northeast of Mine 15 there is small foundation next to what appears to be an old collapsed trench. Just beyond this the forest gives way to pasture that appears to be a reclaimed strip mine not depicted on the USGS Meyersdale/Avilton 7.5 minute topographic map. No open portals were found in this area. Time on site searching: 90 minutes. John Chenger, Kevin Rhome

The site was visited on October 02, 2014. No mine entrances were found and the site description did not require updating. Time on site: 60 minutes. *John Chenge*

BCM 2005-17

A foot search was conducted on August 28, 2005. This is one reported entrance in a small group of three. A large, obvious spoil pile is immediately encountered east of Piney Run Road within deciduous forest. From the top of the spoil pile, there are a number of adit traces and sinks located within 500 feet to the southeast. There is another parallel level of similar old development traces approximately 75 feet higher in elevation. A few hundred feet northeast of Mine 15 there is small foundation next to what appears to be an old collapsed trench. Just beyond this the forest gives way to pasture that appears to be a reclaimed strip mine not depicted on the USGS Meyersdale/Avilton 7.5 minute topographic map. No open portals were found in this area. Time on site searching: 90 minutes. John Chenger, Kevin Rhome

The site was visited on October 02, 2014. No mine entrances were found and the site description did not require updating. Time on site: 60 minutes. *John Chenger*

BCM 2005-18

A foot search was conducted on August 28, 2005. This entrance was reportedly located on the west bank of Piney Creek, directly behind several private residences. Homeowners indicated no knowledge of a mine in that location, but instead reported on Mine 19, 27, and 28. The area was searched regardless of the landowner reports and no open portals were found in this area. No evidence of previous mining activity was immediately apparent. Time on site searching: 20 minutes. *Kevin Rhome*

The site was visited on October 02, 2014. No mine entrances were found. Several blind trenches were seen, a few with small springs or seeps emerging. Time on site: 30 minutes. *John Chenger*

BCM 2005-19

A foot search was conducted on September 30, 2005. This entrance is located 75' above the west bank of Piney Creek. Locals also refer to the mine entrance as "panther hole." The drift is on a very steep hillside without old road traces. The entrance is largely collapsed and only a 3' high, 4' wide crawlway remains. The crawl slopes down over rubble and the passage cannot be estimated beyond. No airflow was apparent. No other evidence of previous mining activity was visible. Time on site searching: 120 minutes. *John Chenger, Kevin Rhome*

The mine was surveyed on September 30 and October 1, 2005 by John Chenger and Kevin Rhome. A 6'x7' harp trap was placed parallel with the entrance dripline, and essentially filled the entrance area flyway. Temperatures under clear skies each night ranged between 62°F and 42°F. Four bats were captured including 2 little brown bats, and 2 Eastern pipistrelles.

A Pettersson 240x bat detector and an Iriver digital recorder were placed at the entrance pointing upwards. The detector was placed 20' from the entrance, pointing at the entrance. On September 30 the detector was active between 8 PM and midnight and recorded 3 call sequences attributed to Eastern pipistrelles. On October 1 the recorder was operating between 8:00 and midnight.

Three files were generated attributed to the big brown bat *(Eptesicus fuscus).* The detector was monitoring approximately 8 hours and averaged less than 1 call sequence per hour.

The mine was surveyed on October 6, 7, and 8, 2014 by Bryan Butler, Jacob Eshelman, Cory Mattas and Kirk Silas. A 3'x3' harp trap was placed parallel with the entrance drip line and plastic was used to fill the entrance area flyway. Temperatures under clear and cloudy skies each night ranged between 12.8°C and 9.6°C. Rain events were present during the first two nights of trapping. No bats were captured and no guano was found in the harp trap catch bag at the end of each night.

BCM 2014-02

During the course of reinvestigating 2005-19 and 2005-18 on October 02, 2014, this small slump was found along an old mining road 100' above the west bank of Piney Creek. It appears to be slumped shut and had no airflow. It is listed for-the-record-only (FRO) to minimize confusion during future surveys. *John Chenger*

BCM 2005-20

A foot search was conducted on August 27, 2005. This is one of two entrances reported in relatively open deciduous forest. Coal spoil piles are located north of a gravel road. There is mining evidence in this entire woodlot consisting of at least 7 traces of trenches and 2 entrance drifts that now end in blind valleys. No open portals were found in this area. Time on site searching: 60 minutes. *John Chenger*

The site was visited on October 02, 2014. No mine entrances were found and the site description did not require updating. Time on site: 50 minutes. *Kirk Silas, Bryan Butler*

BCM 2005-21

A foot search was conducted on August 27, 2005. This is one of two entrances reported in relatively open deciduous forest. Coal spoil piles are located north of a gravel road. There is mining evidence in this entire woodlot consisting of at least 7 traces of trenches and 2 entrance drifts that now end in blind valleys. No open portals were found in this area. Time on site searching: 60 minutes. *John Chenger*

The site was visited on October 02, 2014. No mine entrances were found and the site description did not require updating. Time on site: 50 minutes. *Kirk Silas, Bryan Butler*

BCM 2005-22

A search was conducted on October 1, 2005. This land has been strip mined and reclaimed. Presently the land where an entrance was is now a meadow. No open portals were found in this area. Time on site searching: 45 minutes. *John Chenger*

The site was visited on July 22, 2014 and found to be reclaimed. *John Chenger*

BCM 2005-23

A search was conducted on October 2, 2005. This site is located within a few hundred feet of a utility right-of-way. Mining traces include a built up earthen work area leading into a small blind valley. A smaller collapse feature is just inside the treeline on the north side of the right-of-way, downhill of the larger working. No open portals were found in this area. Time on site searching: 90 minutes. *John Chenger, Kevin Rhome*

The site was visited on October 08, 2014. No mine entrances were found and the site description did not require updating. Time on site: 60 minutes. *Jacob Eshelman, Cory, Mattas, Kirk SIlas*

BCM 2005-24

A foot search was conducted for this site on August 28, 2005. The topography has been significantly altered by the construction of an I-68 exit ramp at the location of the reported entrance. No entrance or mining evidence was immediately apparent. Total time on site searching: 35 minutes. *Kevin Rhome*

The site area was visited on August 1 and 8, 2014 by McCormick/Taylor survey crews and did not report mine features. *Dawn Noel*

BCM 2005-25

A foot search was conducted on August 28, 2005. A patch of forest adjacent to a recycling center and US 40 Alternate was searched. From the recycling center, a few small depressions are located near US 40 Alternate in the brush. The slope and forest cover increases to the northeast and no other features are notable. Total time on site searching: 35 minutes. *John Chenger*

The site area was visited on August 1 and 8, 2014 by McCormick/Taylor survey crews and did not report mine features. *Dawn Noel.* The site was visited on July 22, 2014 and no new features were noted. *John Chenger*

BCM 2005-26

A foot search was conducted on August 28, 2005. The area is located in a gently sloping, open deciduous forest littered with small fragments of sandstone. Small, shallow depressions are located 600 feet due west of the reported mine location within sight of a garage. Additional depressions are just northeast of the garage. All depressions are only traces of previous development. No portal was found. Total time on site searching: 90 minutes. *John Chenger, Kevin Rhome*

The site was visited on July 22, 2014 and no new features were noted. *John Chenger*

BCM 2005-27

A foot search was conducted on August 27, 2005. This entrance is located on the east bank of Piney Creek, approximately 15 feet above the stream. The entrance is 12' wide and 5' high. The passage can be seen to extend at least 40' trending northeast. Time on site searching: 60 minutes. *John Chenger*

The mine was surveyed on September 30 and October 1, 2005 by John Chenger and Kevin Rhome. A 6'x7' harp trap was placed parallel with the entrance dripline, and essentially filled the entrance area flyway. Temperatures under clear skies each night ranged between 62°F and 42°F. Two Eastern pipistrelles were captured. A Pettersson 240x bat detector and an Iriver digital recorder were placed on a ledge overlooking the entrance. On September 30 the detector was active between 8:15 PM and 11:30 PM and recorded 2 call sequences attributed to Northern long-eared bats. On October 1 the recorder was operating between 9:30 PM and 11:30 PM. No files were generated containing bat calls on this night. The detector was monitoring approximately 5 hours and averaged less than 1 call sequence per hour.

The mine was surveyed on October 6, 7, and 8, 2014 by Bryan Butler, Jacob Eshelman, Cory Mattas and Kirk Silas. A 6'x7' harp trap was placed parallel with the entrance drip line and plastic was used to fill the entrance area flyway. Temperatures under clear and cloudy skies each night ranged between 12.8°C and 9.6°C. Rain events were present during the first two nights of trapping. No bats were captured and no guano was found in the harp trap catch bag at the end of each night.

BCM 2005-28

A foot search was conducted on August 27, 2005. This entrance is located 75' from the east bank of Piney Creek, approximately 20 feet above the stream. The entrance is 8' wide and 3' high. The passage can be seen to extend at least 40' trending northeast. Cold air can be felt emerging from the entrance. Several bat droppings were found on a large rock under the dripline. Access to the portal was improved by using earth to form a raised platform in front of the entrance. Another entrance may have existed 100' south where a seep emerges from a slump in the hillside. Time on site searching: 60 minutes. *John Chenger*

The mine was surveyed on September 30 and October 1, 2005 by John Chenger and Kevin Rhome. A 3'x4' harp trap was placed perpendicular with the entrance dripline. The mine entrance was then covered with plastic. Temperatures under clear skies each night ranged between 62°F and 42°F. Two Eastern pipistrelles were captured.

A Pettersson 240x bat detector and an Iriver digital recorder were placed on a ledge overlooking the entrance. On September 30 the detector was active between 8:15 PM and 11:30 PM and recorded 2 call sequences attributed to Northern long-eared bats. On October 1 the recorder was operating between 9:15 PM and 11:30 PM. No files were generated containing bat calls on this night. The detector was monitoring approximately 5 hours and averaged less than 1 call sequence per hour.

The mine was surveyed on October 6, 7, and 8, 2014 by Bryan Butler, Jacob Eshelman, Cory Mattas and Kirk Silas. A 6'x7' harp trap was placed parallel with the entrance drip line and plastic was used to fill the entrance area flyway. Temperatures under clear and cloudy skies each night ranged between 12.8°C and 9.6°C. Rain events were present during the first two nights of trapping. Two Myotis septentrionalis were captured on October 6, 2014. No guano was found in the harp trap catch bag at the end of the other nights of trapping.

BCM 2014-01

On September 26, 2014 John Chenger was revisiting a small group of reported entrance locations 2005-15, 2005-16, and 2005-17. An entrance feature was encountered east of this cluster. There is a steep sided trench with a small spring emerging from the hillside just below an open meadow, where a farm lane briefly intersects the forest. There are a few old timbers in the trench. 50' up the trench from where the water emerges is a small 1.5' diameter hole the drops steeply. Water can be heard dripping in the chamber inside. No airflow was observed. Given the extent the trench is collapsed above this hole, the passage may be collapsed. John Chenger

The hole was surveyed on October 7, 8, and 9, 2014 by Bryan Butler, Jacob Eshelman, Cory Mattas and Kirk Silas. Two 9 meter long mist nets were placed diagonally in a "V" formation along the hole. Temperatures ranged between 16.0°C and 10.2°C under cloudy skies. Rain events were present during the first night of trapping. No bats were captured.

RHF 2014-01

A foot search was conducted on October 09, 2014. A small open rock face was surveyed. The area was 22 meters in length and ranged from 8 to 12 meters in width. The habitat consisted of rocks that were less than 1 meter with shallow crevices, covered in organic matter and boulders 5 to 10 meters in size with no crevices. The habitat was located adjacent to a creek and had north facing orientation. No potential activity centers were assigned. Total time on site searching: 60 minutes. *Jacob Eshelman, Cory Mattas.*

RHF 2014-02

A foot search was conducted on October 07, 2014. A small boulder field located under a utility line was surveyed. The area was 35 meters in length and ranged from 8 to 12 meters in width. The majority of rocks were less than 1 meter in size with a few ranging from 1 to 3 meters. The rocks were mostly covered with organic matter with few suitable crevices for bats. No potential activity centers were assigned. Total time on site searching: 60 minutes. *Jacob Eshelman, Cory Mattas, Kirk Silas.*

RHF 2014-03

A foot search was conducted on October 07, 2014 finding isolated rock piles along an agricultural field. Two piles were assigned as potential *Myotis leibii* activity centers. These piles had south the southeast orientation with good sun exposure and medium to deep crevices which would indicate good bat habitat. Total time on site searching: 40 minutes. *Jacob Eshelman, Cory Mattas, Kirk Silas*

RHF 2014-04

A foot search was conducted on October 07, 2014. A small rocky area located adjacent to a house and road was surveyed. The area was 26 meters in length and ranged from 2 to 10 meters in width. The habitat consisted of isolated small rock piles. The majority of rock sizes ranged between 1 to 3 meters. Few shallow crevices were found with the majority of these crevices filled with organic matter. No potential activity centers were assigned. Total time on site searching: 40 minutes. *Jacob Eshelman, Cory Mattas, Kirk Silas*

RHF 2014-05

A foot search was conducted on October 08, 2014. A small rocky cliff located adjacent to a highway was surveyed. The area was 32 meters in length and ranged from 0.5 to 2 meters in width. Few crevices and overhangs were found. Two potential activity centers were assigned with suitable crevices; however the habitat had northeast orientation with tall grasses blocking sun exposure. Total time on site searching: 40 minutes. *Jacob Eshelman, Cory Mattas, Kirk Silas*

RHF 2014-06

A foot search was conducted on October 08, 2014. A small rocky area located adjacent to a mechanic shop and road was surveyed. The habitat was located on the edge of a deciduous forest. The area was 34 meters in length and ranged from 6 to 10 meters in width. The habitat consisted of isolated small rock piles. The majority of the habitat was rock sized between 1 to 3 meters covered with organic matter. Bare rock with shallow crevices was found with southwest orientation with a possible 5 hours of sun exposure. This area was assigned as a potential activity center. Total time on site searching: 50 minutes. *Jacob Eshelman, Cory Mattas, Kirk Silas*

RHF 2014-07

A foot search was conducted on October 08, 2014. A large rocky area located adjacent to a commercial center was surveyed. The habitat was located in a deciduous forest with nearly 100 percent canopy coverage. The area was 100 meters in length and ranged from 20 to 70 meters in width. The habitat consisted of a boulder field with majority of rock sized less than 1 meter to 3 meters. The area was extensively covered with organic matter. One area was assigned as a potential activity center. This area was 20 meters by 6 meters with some open crevices but with little sun exposure. Total time on site searching: 90 minutes. *Jacob Eshelman, Cory Mattas, Kirk Silas*

RHF 2014-08

A foot search was conducted on October 08, 2014. A large rocky area located adjacent a highway was surveyed. The area was 80 meters in length and ranged from 13 to 80 meters in width. The habitat consisted of a rocky hillside with southeast exposure with minimal bare rock. The majority of the habitat was covered with trees and shrubs. One area was designated as a potential activity center due to its available sun and shallow crevices. Total time on site searching: 70 minutes. *Jacob Eshelman, Cory Mattas, Kirk Silas*

RHF 2014-09

A foot search was conducted on October 08, 2014. A small rocky area located adjacent to a highway road was surveyed. The area was 25 meters in length and ranged from 4 to 6 meters in width. The habitat consisted of drainage rocks leading to a storm drain. The rocks were sized less than 1 meter and were bare with no organic matter and no canopy coverage. Shallow crevices were found throughout. The habitat also had southward orientation with long sun exposure. One area in particular had possible deep crevices and was designated a potential activity center. Total time on site searching: 40 minutes. *Jacob Eshelman, Cory Mattas, Kirk Silas*

RHF 2014-10

A foot search was conducted on October 08, 2014. A large rocky area located on either side of the highway was surveyed. The area was 400 meters in length and ranged from 5 to 20 meters in width. The habitat consisted of large talus slopes. The majority of the habitat was fragile shale outcrops with numerous crevices. On the south facing side, a large boulder field with rocks less than 1 meter was located above the shale rock. The boulder rocks contained shallow crevices. Six potential activity centers were assigned with suitable crevices and rock structure. Half the habitat was south facing while the other half was north facing. Total time on site searching: 120 minutes. *Jacob Eshelman, Cory Mattas, Kirk Silas*

RHF 2014-11

A foot search was conducted on October 09, 2014. A small rocky area located adjacent to a road was surveyed. The habitat was located on the edge of a deciduous forest. The area was 30 meters in length and ranged from 5 to 10 meters in width. The habitat consisted of boulders ranging in size from less than 1 meter to 3 meters with shallow and deep crevices. The majority of the habitat was covered with organic matter and had northeast sun exposure. One area was designated as a potential activity center due to its deep crevices and lack of organic matter. Total time on site searching: 40 minutes. *Jacob Eshelman, Cory Mattas*

RHF 2014-12

A foot search was conducted on October 09, 2014. A small rocky area located adjacent to a road was surveyed. The habitat was located on the edge of a deciduous forest. The area was 10 meters in length and ranged from 4 to 6 meters in width. The habitat consisted of boulders ranging in size from less than 1 meter to 3 meters with shallow crevices. The habitat was covered with organic matter, overgrown with grasses and had northeast sun exposure. No potential activity centers were designated. Total time on site searching: 40 minutes. *Jacob Eshelman, Cory Mattas*

RHF 2014-13

A foot search was conducted on October 09, 2014. A small rocky area located adjacent to a road was surveyed. The habitat was located on the edge of a deciduous forest. The area was 40 meters in length and ranged from 6 to 12 meters in width. The habitat consisted of boulders ranging in size from less than 1 meter to 5 meters with shallow crevices. The habitat was covered with organic matter, overgrown with grasses and had northeast sun exposure. No potential activity centers were designated. Total time on site searching: 40 minutes. *Jacob Eshelman, Cory Mattas*

RHF 2014-14

A foot search was conducted on October 09, 2014. A large rocky area located adjacent to a road was surveyed. The habitat was located on the edge of a deciduous forest. The area was 150 meters in length and ranged from 10 to 20 meters in width. The habitat consisted of boulders ranging in size from less than 1 meter to 3 meters with shallow and deep crevices. The habitat was covered with organic matter, overgrown with grasses and had northeast sun exposure. Two potential activity centers were assigned due to their deep crevices and lack of organic matter. Total time on site searching: 40 minutes. *Jacob Eshelman, Cory Mattas*

Attachment B

Habitat Assessment Data Sheet Codes

Table 1. Classification of surface rock habitat.

For small-footed bat habitat deliniations, crevices refer to crevices sized for small-footed bats. *Suitability defined in report text.

HABITAT TYPE	QUALITY OF HABITAT	SIZE OF ROCK	SUITABILITY* FOR ROOSTING
1 talus or boulders	11 bare rock, deep interstices	111 blocks less than 1 meter	1111 high suitability
			1112 moderate suitability
			1113 low suitability
			1114 not suitable for roosting
		112 blocks 1-3 meters	1121 high suitability
			1122 moderate suitability
			1123 low suitability
			1124 not suitable for roosting
		113 blocks 3-5 meters	1131 high suitability
			1132 moderate suitability
			1133 low suitability
			1134 not suitable for roosting
	12 bare rock, shallow interstices	121 blocks less than 1 meter	1211 high suitability
			1212 moderate suitability
			1213 low suitability
			1214 not suitable for roosting
		122 blocks 1-3 meters	1221 high suitability
			1222 moderate suitability
			1223 low suitability
			1224 not suitable for roosting
		123 blocks 3-5 meters	1231 high suitability
			1232 moderate suitability
			1233 low suitability
			1234 not suitable for roosting
	13 rock covered by organic material including humus, leaves, moss, with deep interstices	131 blocks less than 1 meter	1311 high suitability
			1312 moderate suitability
			1313 low suitability
			1314 not suitable for roosting
		132 blocks 1-3 meters	1321 high suitability
			1322 moderate suitability
			1323 low suitability
			1324 not suitable for roosting
		133 blocks 3-5 meters	1331 high suitability
			1332 moderate suitability
			1333 low suitability
			1334 not suitable for roosting
	14 rock covered by organic material including humus, leaves, moss, with shallow interstices	141 blocks less than 1 meter	1411 high suitability
			1412 moderate suitability
			1413 low suitability
			1414 not suitable for roosting
		142 blocks 1-3 meters	1421 high suitability
			1422 moderate suitability
			1423 low suitability
			1424 not suitable for roosting
		143 blocks 3-5 meters	1431 high suitability
			1432 moderate suitability
			1433 low suitability
			1434 not suitable for roosting

2 rock city, large float blocks	21 numerous overhangs, crevices, and "caves"	211 blocks 5-10 meters	2111 high suitability
			2112 moderate suitability
			2113 low suitability
			2114 not suitable for roosting
		212 blocks 10 meters+	2121 high suitability
			2122 moderate suitability
			2123 low suitability
			2124 not suitable for roosting
	22 few or no overhangs, crevices, and "caves"	221 blocks 5-10 meters	2211 high suitability
			2212 moderate suitability
			2213 low suitability
			2214 not suitable for roosting
		222 blocks 10 meters+	2221 high suitability
			2222 moderate suitability
			2223 low suitability
			2224 not suitable for roosting
3 cliffs, rock outcrops	31 numerous overhangs, crevices, and "caves"	311 less than 3 meters high	3111 high suitability
			3112 moderate suitability
			3113 low suitability
			3114 not suitable for roosting
		312 3− meters high	3121 high suitability
			3122 moderate suitability
			3123 low suitability
			3124 not suitable for roosting
	32 few or no overhangs, crevices, and "caves"	321 less than 3 meters high	3211 high suitability
			3212 moderate suitability
			3213 low suitability
			3214 not suitable for roosting
		322 3+ meters high	3221 high suitability
			3222 moderate suitability
			3223 low suitability
			3224 not suitable for roosting
4 cave or mine entrance zone	41 rarely visited, may be gated	411 entrance 0-2 meters	4111 high suitability
			4112 moderate suitability
			4113 low suitability
			4114 not suitable for roosting
		412 entrance 2+ meters	4121 high suitability
			4122 moderate suitability
			4123 low suitability
			4124 not suitable for roosting
	42 occasionally visited	421 entrance 0-2 meters	4211 high suitability
			4212 moderate suitability
			4213 low suitability
			4214 not suitable for roosting
		422 entrance 2+ meters	4221 high suitability
			4222 moderate suitability
			4223 low suitability
			4224 not suitable for roosting
	43 active, heavily visited or commercialized	431 entrance 0-2 meters	4311 high suitability
			4312 moderate suitability
			4313 low suitability
			4314 not suitable for roosting
		432 entrance 2+ meters	4321 high suitability
			4322 moderate suitability
			4323 low suitability
			4324 not suitable for roosting

5 quarry or mine pit	51 highwall with numerous crevices, boulders, etc.	511 less than 3 meters high	5111 high suitability
			5112 moderate suitability
			5113 low suitability
			5114 not suitable for roosting
		512 3+ meters high	5121 high suitability
			5122 moderate suitability
			5123 low suitability
			5124 not suitable for roosting
	52 highwall with few or no crevices, boulders, etc.	521 less than 3 meters high	5211 high suitability
			5212 moderate suitability
			5213 low suitability
			5214 not suitable for roosting
		522 3+ meters high	5221 high suitability
			5222 moderate suitability
			5223 low suitability
			5224 not suitable for roosting
6 other man made rocky habitat such as stone walls, railroad and road cuts, buildings, etc.	61 few or no suitable crevices, overhangs, or other interstices	611 less than 3 meters high	6111 high suitability
			6112 moderate suitability
			6113 low suitability
			6114 not suitable for roosting
		612 3+ meters high	6121 high suitability
			6122 moderate suitability
			6123 low suitability
			6124 not suitable for roosting
	62 numerous suitable crevices, overhangs, or other interstices	621 less than 3 meters high	6211 high suitability
			6212 moderate suitability
			6213 low suitability
			6214 not suitable for roosting
		622 3+ meters high	6221 high suitability
			6222 moderate suitability
			6223 low suitability
			6224 not suitable for roosting
7 No rock habitat present	71 forest	711 bare ground/low ground cover	7114 not suitable for roosting
		712 moderate ground cover	7124 not suitable for roosting
		713 high ground cover	7134 not suitable for roosting
	72 field	721 bare ground/low ground cover	7214 not suitable for roosting
		722 moderate ground cover	7224 not suitable for roosting
		723 high ground cover	7234 not suitable for roosting
	73 other	731 bare ground/low ground cover	7314 not suitable for roosting
		732 moderate ground cover	7324 not suitable for roosting
		733 high ground cover	7334 not suitable for roosting

Appendix A

Representative Harp Trap Site Photographs

Site 2005-19 – Portal

Cropped photo showing 3' harp trap (above)
Landscape photo showing 3' harp trap and acoustic detector (below)

Site 2005-27

Landscape photo showing 6' harp trap (above)
Cropped photo showing acoustic detector facing cave entrance(below)

Site 2005-28

Landscape photo of 6' harp trap in front of entrance with acoustic detector (above)
Landscape photo showing 6' harp trap (below)

Site 2014-01

Landscape photo showing 9-meter single high configuration above sinkhole (above)
Cropped photo showing acoustic detector and single high configuration (below)

Site 2005-01

Photo showing 6’ harp trap stacked parallel to mine entrance (above/below)

Appendix B

Habitat Assessment Photographs

Habitat Site CMPL-2014-03 - FRO

Habitat Site RH2014-01 - FRO

Habitat Site RH2014-02 - FRO

Habitat Site RH2014-03 – Low / Medium Use Potential Hibernacula

Habitat Site RH2014-04 - FRO

Habitat Site RH2014-05 - Low Use Potential Hibernacula

Habitat Site RH2014-06 - Low Use Potential Hibernacula

Habitat Site RH2014-07 - Low Use Potential Hibernacula

Habitat Site RH2014-08 - Low Use Potential Hibernacula

Habitat Site RH2014-09 - Low Use Potential Hibernacula

Habitat Site RH2014-10 - Low/Medium Use Potential Hibernacula

Habitat Site RH2014-11 - Low Use Potential Hibernacula

Habitat Site RH2014-12 - FRO

Habitat Site RH2014-13- FRO

Habitat Site RH2014-14 - Low/Medium Use Potential Hibernacula

Appendix C

Site Survey Data Sheets

Instructions

All information must be completed each night. Partially complete forms will not be accepted. Completed forms are to be turned in to the Team Leader each morning.

PROJECT: Name of the entire survey project.
SITE#: The number given to every trap site in a seperate geographic location. Site # remains the same regardless of how many nights are spent at the same location.
DATE: Pre-midnight date which trapping began.
LONGITUDE/LATITUDE: Coordinates from a GPS receiver.
I.D. BY: USFWS qualified person identifying bats at this site.
MOON AFFECT: Was moon present during survey? If so what phase? Was moonlight illuminating nets? Note times.
NUMBER OF NETS/TRAPS: Description of nets, e.g. A: 3Hx9m, B: 2Hx6m, C: 1Hx9mx12m "L" configuration.
SKY CONDITIONS: General weather conditions and temperature in °F, at start, middle, and end of sampling times.
WIND CONDITIONS: Use Beauford scale and note time.
SITE DESCRIPTION: A general overview of the site, e.g. "Shallow stream with long pools surrounded by deciduous forest with maple, oak, and beech. A small clearing and residence is nearby."
ANDERSON III CODE: Use Level III codes and percentages within 1KM of site. Percentages should total 100%.
DISTURBANCE CODE: List up to three of the most significant disturbances within 500 meters. Include distance to disturbance.

Disturbance Codes and Key

PROXIMITY	TYPE	
1 Disturbance on site	A Dumping	H Unimproved roads
	B Party spot	I Recreation area
2 Disturbance within 100 meters of site	C Buildings	J Mining
	D Agriculture	K Fire
	E Utility rights-of-way	L Clearcut
3 Disturbance 100-500 meters of site	F Railroad rights-of-way	M Insect defoliation
	G Improved roads	N No disturbance

Beuford Wind Scale Codes and Key

Code	Speed(m/sa)	Description	Land Condition	Comfort
0	0 - 0.5	Calm	Smoke rises	No noticeable wind
1	0.5 - 1.5	Light air	Smoke drifts vertically	
2	1.6 - 3.3	Light breeze	Leaves rustle	Wind felt on face
3	3.4 - 5.4	Gentle breeze	Wind extends	Hair disturbed, clothing flaps
4	5.5 - 7.9	Moderate breeze	Small branches in motion	Hair disarranged, raises dust & loose
5	8.0 - 10.7	Fresh breeze	Small trees w/leaf begin to sway	Force of wind felt on body
6	10.8 - 13.8	Strong breeze	Whistling in telegraph wires large branches in motion	Umbrellas used with difficulty
7	13.9 - 17.1	Near gale	Whole trees in motion	Inconvenience in walking
8	17.2 - 20.7	Gale	Twigs broken from trees	Progress impeded/difficult in gusts

Common name:	Species:
Little brown	*Myotis lucifugus*
Big brown	*Eptesicus fuscus*
Pipistrelle	*Pipistrellus subflavus*
Northern longear	*Myotis septentrionalis*
Smallfooted	*Myotis leibii*
Indiana	*Myotis sodalis*
Red	*Lasiurus borealis*
Hoary	*Lasiurus cinereus*
Silver haired	*Lasionycteris noctivagans*
Townsend's Big-eared	*Corynorhinus townsendii*
Rafinesque's Big-eared	*Corynorhinus rafinesquii*
Evening	*Nyctuceius humeralis*

Reproductive condition:
NR= Non Reproductive
PG= Pregnant
L= Lactating
PL= Post Lactating
SCR= Scrotal

Age:
A: Adult
J: Juvenile

DO NOT WRITE IN MARGINS OF DATA SHEETS

Anderson Classification Codes first and second level categories

1	**Urban or Built-Up Land**
11	Residential
12	Commercial Services
13	Industrial
14	Transportation, Communications
15	Industrial and Commercial
16	Mixed Urban or Built-Up Land
17	Other Urban or Built-Up Land
2	**Agricultural Land**
21	Cropland and Pasture
22	Orchards, Groves, Vineyards, Nurseries
23	Confined Feeding Operations
24	Other Agricultural Land
3	**Rangeland**
31	Herbaceous Rangeland
32	Shrub and Brush Rangeland
33	Mixed Rangeland
4	**Forest Land**
41	Deciduous Forest Land
42	Evergreen Forest Land
43	Mixed Forest Land
5	**Water**
51	Streams and Canals
52	Lakes
53	Reservoirs
54	Bays and Estuaries
6	**Wetland**
61	Forested Wetlands
62	Non forested Wetlands
7	**Barren Land**
72	Beaches
73	Sandy Areas Other than Beaches
74	Bare Exposed Rock
75	Strip Mines, Quarries, and Gravel Pits
76	Transitional Areas
77	Mixed Barren Land

Note: The pipistrelle is now designated as the tri-colored bat (*Perimyotis subflavus*).

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. **Survey Date:** 10/02/2014 2. **Company Name:** Bat Conservation & Management, Inc

3. **Bat Identifier:** (Responsible Recorder) KIRK SILAS 4. **Assistants:** JACOB Eshelman

5. **Site Name and/or Number:** 2014 RT 219 Fall 2005-01

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, (coal mine,) limestone cave, sandstone cave, RR tunnel, other structure, describe - Open entrance with stream.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

NA

8. **County:** Somerset 9. **7.5' Quad.:** Meyersdale

10. **Was site GPS'd (required)?** (YES) - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 °- 47 '- 7.75 "N, Longitude: 79 °- 01 '- 52.46 "W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Contact: Private Deborah Hoover, McCormick Taylor, 5 Capitol Dr, Suite 400, Harrisburg, PA 17110, (717) 540-6040

13. **Time** *(military)* **& Temperature:** Start Time 18:30 h Stop Time 00:00 h Total Minutes: 330

15.2 °C at 22:00

Start Temp. 16.1 °C End Temp. 14.3 °C *(must stay ≥10 °C for summer netting)*

14. **General Weather** *(circle one)*: Clear; (Partly Cloudy;) Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:

(suspend netting during periods of rain)

15. **General Wind Conditions** *(circle one)*: Calm. (Breezy (Leaves Rustling).) Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Harp Trap	1	1.8m x 2.1m	In front of entrance	3.78 m²

Total Capture Area: 3.78 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 RT 219 Fall Mine 01 **Date:** 10/02/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Old partially collapsed mine entrance surrounded by dense deciduous forest. Small acid mine drainage stream from entrance in center of steep embankment. Dominant tree species include birch, red oak, chestnut oak.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
~~*Eptesicus fuscus*~~	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No bats were captured.

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:28	Start Time: 19:29	Start Time: 20:30	Start Time: 21:31	Start Time: 22:32
End Time: 19:29	End Time: 20:29	End Time: 21:30	End Time: 22:31	End Time: 23:32
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0

20. REMARKS:
No guano found in harptrap at end of trapping.

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. **Survey Date:** 10/9/2014 2. **Company Name:** Bat Conservation & Management Inc.

3. **Bat Identifier:** (Responsible Recorder) Kirk Silas 4. **Assistants:** Bryan Butler

5. **Site Name and/or Number:** 2014 RT 219 FALL 2005-1

6. **Site is (circle one):** hibernation site summer habitat

7a. **If hibernation site circle one:** limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - Open entrance with stream.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

8. **County:** Somerset 9. **7.5' Quad.:** Meyersdale

10. **Was site GPS'd (required)?** YES - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 °- 47 '- 7.15"N, Longitude: 79 °- 01 '-42.46"W

Datum *(circle one)*: NAD27 (Preferred), NAD83, WGS84, Other:

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Contact: Private

Deborah Horse, McConway Torrey, 5 Capital Dr. Suite 400, Harrisburg PA. 17110 717 540 6040

13. **Time** *(military)* **& Temperature:** Start Time 1820 h Stop Time 2345 h Total Minutes: 325

10.3°C @ 2050

Start Temp. 11.3 °C End Temp. 8.3 °C *(must stay ≥10 °C for summer netting)*

14. **General Weather** *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:
(suspend netting during periods of rain)

15. **General Wind Conditions** *(circle one)*: Calm. Breezy (Leaves Rustling). Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	HARP TRAP	1	1.8m x 2.1m	In Front of Entrance	3.78 m²

Total Capture Area: 3.78 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 PT. 219 FALL Mine 01 **Date:** 10/09/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

OLD PARTIALLY COLLAPSED COAL MINE ENTRANCE SURROUNDED BY DENSE DECIDUOUS FOREST. SMALL ACID MINE DRAINAGE STREAM FROM ENTRANCE IN THE CENTER OF STEEP EMBANKMENT. DOMINANT TREE SPECIES INCLUDE BIRCH, RED OAK, CHESTNUT OAK

18. Was reproductive status checked? (YES) NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:17	Start Time: 19:18	Start Time: 20:19	Start Time: 21:20	Start Time: 22:21
End Time: 19:17	End Time: 20:18	End Time: 21:19	End Time: 22:20	End Time: 23:21
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0

20. REMARKS:

No guano found in hair trap at end of trapping.

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 10/10/2014 **2. Company Name:** Bat Conservation & Management, Inc

3. Bat Identifier: (Responsible Recorder) Kirk Silas **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 RT 219 Fall 2005-01

6. Site is (circle one): (hibernation site) summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - Open entrance with stream.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

NA

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required)? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 47 '- 7.75 "N, Longitude: 79 °- 01 '- 42.46 "W

Datum *(circle one)*: (NAD27 (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Contact: Private

Deborah Hoover, McCormick Taylor, 5 Capital Dr. Suite 400, Harrisburg, PA 17110, (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 1815 h Stop Time 2130 h Total Minutes: 195

Start Temp. 11.1 °C End Temp. 10.5 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; *(suspend netting during periods of rain)* (Steady Rain); Thunderstorms; Snow; Other:.

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Harp Trap	1	1.8m x 2.1m	In front of entrance	3.78 m^2

Total Capture Area: 3.78 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 RT 219 Fall 2005-01 **Date:** 10/10/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Old partially collapsed mine entrance surrounded by dense deciduous forest.
Small acid mine drainage stream from entrance in center of steep embankment.
Dominant tree species include: birch, red oak, chestnut oak

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Epiesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No bats were captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen. Grand Total: 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:16	Start Time: 19:17	Start Time: 20:18	Start Time:	Start Time:
End Time: 19:16	End Time: 20:17	End Time: 21:18	End Time:	End Time:
Tallies: 0	Tallies: 0	Tallies: 0	Tallies:	Tallies:

20. REMARKS:
Temperature at 20:15 was 10.2°C.
Rain event from 19:30 - 21:30.
Suspended trapping due to inclement weather.

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 10/12/2014 **2. Company Name:** Bat Conservation and Management Inc.

3. Bat Identifier: (Responsible Recorder) Kirk Silas **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 RT 219 Full 2005-01

6. Site is (circle one): (hibernation site) summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - Open entrance with stream.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

N/A

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 47 '- 7.75"N, Longitude: 79 °- 01 '- 42.46"W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)*

13. Time *(military)* **& Temperature:** Start Time 1815 h Stop Time 0000 h Total Minutes: 345

Start Temp. 11.0 °C End Temp. 8.4 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Harp Trap	1	1.8m x 2.1m	In front of entrance	3.78 m²

Total Capture Area: 3.78 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014RT219 Fall 2005-01 **Date:** 10/12/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Old partially collapsed mine entrance surrounded by dense deciduous forest, small acid mine drainage stream from entrance in center of steep embankment.

Dominant tree species include: birch, red oak, chestnut oak.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS WERE CAPTURED

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:13	Start Time: 19:14	Start Time: 20:15	Start Time: 21:16	Start Time: 22:17
End Time: 19:13	End Time: 20:14	End Time: 21:15	End Time: 22:16	End Time: 21:17
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0

20. REMARKS:

Temperature was 10.1°C at 20:30.
No guano found in help bag at the end of trapping.

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. **Survey Date:** 10/06/2014 2. **Company Name:** Bat Conservation & Management, Inc

3. **Bat Identifier:** Kirk Silas (Responsible Recorder) 4. **Assistants:** Bryan Butler

5. **Site Name and/or Number:** 2014 RT219 Fall 2005-19

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, (coal mine,) limestone cave, sandstone cave, RR tunnel, other structure, describe - Horizontal Mine Entrance along a rock face.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

8. **County:** Somerset 9. **7.5' Quad.:** Avilton

10. **Was site GPS'd (required)?** (YES) - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 °-44 '-36.12 "N, Longitude: 79 °-03 '-24.49 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Contact: Private Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110, (717) 540-6040.

13. **Time** *(military)* **& Temperature:** Start Time 1820 h Stop Time 0000 h Total Minutes: 340

Start Temp. 11.7 °C End Temp. 9.6 °C *(must stay ≥10 °C for summer netting)*

14. **General Weather** *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy;) Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____. *(suspend netting during periods of rain)*

15. **General Wind Conditions** *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Harp Trap	1	0.9m x 0.9m	Placed parallel at entrance	1.8m²

Total Capture Area: 1.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 RT219 FALL 2005-19 **Date:** 10/16/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Entrance located 75 feet above Piney Creek on a very steep hillside. Dominant trees include: hemlock, yellow birch and rhododendron.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No bats were captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:22	Start Time: 19:23	Start Time: 20:24	Start Time: 21:25	Start Time: 22:26
End Time: 19:22	End Time: 20:23	End Time: 21:24	End Time: 22:25	End Time: 23:26
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0

20. REMARKS: Temp at 20:30 was 10.8°C, Temp at 23:15 was 10.3°C

Rain events from 18:20-18:50, 22:25-22:35, 22:50-23:20 for a total of 70 mins.

No guano was found in harp trap catch bag at end of trapping.

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12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. **Survey Date:** 10/07/2014 2. **Company Name:** Bat Conservation & Management, Inc

3. **Bat Identifier:** Kirk Silas (Responsible Recorder) 4. **Assistants:**

5. **Site Name and/or Number:** 2014 RT 219 Fall 2005-19

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, (coal mine,) limestone cave, sandstone cave. RR tunnel, other structure, describe - Horizontal mine entrance along rock face.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

NA

8. **County:** Somerset 9. **7.5' Quad.:** AILTON

10. **Was site GPS'd (required)?** (YES) - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 °- 44 '-36.12 "N, Longitude: 79 °- 03 '-24.49 "W

Datum *(circle one)*: (NAD27 (Preferred), NAD83, WGS84, Other:

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Contact: Private

Deborah Hoover, McCormick Taylor, 5 Capital Dr., Suite 400, Harrisburg, PA 17110 (717) 540-6040

13. **Time** *(military)* **& Temperature:** Start Time 18:20 h Stop Time 01:00 h Total Minutes: 400

Start Temp. 11.9 °C End Temp. 11.1 °C *(must stay ≥10 °C for summer netting)*

14. **General Weather** *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy;) Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:
(suspend netting during periods of rain)

15. **General Wind Conditions** *(circle one)*: (Calm.) Breezy (Leaves Rustling). Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Harp Trap	1	0.9m X 0.9m	Placed parallel at entrance	1.8m2

Total Capture Area: 1.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 RT 219 Fall 2005-19 **Date:** 10/07/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Entrance located 75 feet above Piney Creek on very steep slope. Dominant trees include: hemlock, yellow birch and rhododendron.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No bats were captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors. night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:20	Start Time: 19:21	Start Time: 20:22	Start Time: 21:23	Start Time: 22:24
End Time: 19:20	End Time: 20:21	End Time: 21:22	End Time: 22:23	End Time: 23:24
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0

20. REMARKS: Temperature was 11.5°C at 21:00.

Rain events from 19:05-19:30 and 20:00-21:15 for a total of 100 mins.

No guano found in harp trap catch bag at end of trapping.

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. **Survey Date:** 10/08/2014 2. **Company Name:** Bat Conservation & Management, Inc.

3. **Bat Identifier:** Kirk Silas (Responsible Recorder) 4. **Assistants:**

5. **Site Name and/or Number:** 2014 RT 219 Fall 2005-19

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, (coal mine,) limestone cave, sandstone cave, RR tunnel, other structure, describe - Horizontal mine entrance along a rock face.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

NA

8. **County:** Somerset 9. **7.5' Quad.:** AVILTON

10. **Was site GPS'd (required)?** (YES) - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 °- 44 '- 36.12 "N, Longitude: 79 °- 03 '- 24.49 "W

Datum *(circle one)*: (NAD27 (Preferred), NAD83, WGS84, Other:

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Contact: Private Deborah Hoover, McCormick Taylor 5 Capital Drive Suite 400 Harrisburg, PA 17110 O: 717-540-6040

13. **Time** *(military)* **& Temperature:** Start Time 1815 h Stop Time 0100 h Total Minutes: 345

Start Temp. 12.8 °C End Temp. 10.7 °C *(must stay ≥10°C for summer netting)*

14. **General Weather** *(circle one)*: (Clear;) Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:
(suspend netting during periods of rain)

15. **General Wind Conditions** *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Harp Trap	1	0.9m x 0.9m	Placed parallel at entrance	1.8m²

Total Capture Area: 1.8 sq. m

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

(Site Survey Record – Continued) **Site Name/No.:** 2014 RT219 Fall 2003-19 **Date:** 10/08/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Entrance located 75 feet above Piney Creek on very steep slope. Dominant trees include: hemlock, yellow birch and rhododendron.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No bats were captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors. night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:19	Start Time: 19:20	Start Time: 20:21	Start Time: 21:22	Start Time: 22:23
End Time: 19:19	End Time: 20:20	End Time: 21:21	End Time: 22:22	End Time: 23:23
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0

20. REMARKS:
Temperature at 20:30 was 10.1°C
No guano was found in harp trap catch bag at end of trapping.

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12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. **Survey Date:** 10-06-14 2. **Company Name:** Bat Conservation and Management Inc.

3. **Bat Identifier:** Kirk Silas (Responsible Recorder) 4. **Assistants:** Cory Mattas

5. **Site Name and/or Number:** 2014 Rt. 219 Fall / 2005-27

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, (coal mine), limestone cave, sandstone cave, RR tunnel, other structure, describe - Old entrance.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

N/A

8. **County:** Somerset 9. **7.5' Quad.:** Avilton

10. **Was site GPS'd (required)?** (YES) - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 °- 44 '-44.61"N, Longitude: 79 °- 03 '-2033"W

Datum *(circle one)*: (NAD27 (Preferred), NAD83, WGS84, Other:

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Contact: Private

Deborah Hoover, McCormick Taylor, 5 Capital Dr, Suite 400, Harrisburg PA 17110 (717) 540-6040

13. **Time** *(military)* **& Temperature:** Start Time 1820 h Stop Time 0000 h Total Minutes: 340

Start Temp. 11.7 °C End Temp. 9.6 °C *(must stay ≥10 °C for summer netting)*

14. **General Weather** *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:
(suspend netting during periods of rain)

15. **General Wind Conditions** *(circle one)*: (Calm) Breezy (Leaves Rustling). Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Harp trap	1	1.8m x 2.1m	Placed at entrance	3.78m²

Total Capture Area: 3.78 sq. m

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt. 219 Fall / 2005-27 **Date:** 10-06-14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Entrance located on steep slope, 15 feet from Piney Creek. Dominant trees include: hemlock, yellow birch, red oak, red maple and rhododendren.

18. Was reproductive status checked? (YES) NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors. night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:22	Start Time: 19:23	Start Time: 20:24	Start Time: 21:25	Start Time: 22:26
End Time: 19:22	End Time: 20:23	End Time: 21:24	End Time: 22:25	End Time: 23:26
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0

20. REMARKS:

Temp at 20:30 was 10.8°C, Temp at 23:15 was 10.3°C

Rain events from 18:20 - 18:50, 22:25 - 22:35, 22:50 - 23:20 for a total of 70 mins.

No guano found in harp trap at end of trapping.

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. **Survey Date:** 10-07-14 2. **Company Name:** Bat Conservation and Management Inc.

3. **Bat Identifier:** Kirk Silas (Responsible Recorder) 4. **Assistants:** Jacob Eschelman

5. **Site Name and/or Number:** 2014 Rt. 219 Fall / 2005 - 27

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, (coal mine), limestone cave, sandstone cave, RR tunnel, other structure, describe - Old entrance.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

N/A

8. **County:** Somerset 9. **7.5' Quad.:** Avilton

10. **Was site GPS'd (required)?** (YES) - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 °- 44 '-44.61 "N, Longitude: 79 °-03 '-20.83"W

Datum *(circle one)*: (NAD27)(Preferred), NAD83, WGS84, Other:

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Contact Private Deborah Hoover, McCormick Taylor, 5 Capital Dr, Suite 400, Harrisburg, PA 17110 (717) 540-6040

13. **Time** *(military)* **& Temperature:** Start Time 1820 h Stop Time 0100 h Total Minutes: 400

Start Temp. 11.9 °C End Temp. 11.1 °C *(must stay ≥10 °C for summer netting)*

14. **General Weather** *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:
(suspend netting during periods of rain)

15. **General Wind Conditions** *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Harp Trap	1	1.8m x 2.1m	Placed at entrance	3.78 m^2

Total Capture Area: 3.78 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt. 219 Fall / 2005-27 **Date:** 10-07-14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Entrance located on steep slope, 15 feet from Piney Creek. Dominant trees include hemlock, yellow birch, red oak, red maple and rhododendren.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No bats were captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:20	Start Time: 19:21	Start Time: 20:22	Start Time: 21:23	Start Time: 22:24
End Time: 19:20	End Time: 20:21	End Time: 21:22	End Time: 22:23	End Time: 23:24
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0

20. REMARKS: Temperature was 11.5°C at 21:00.

Rain events from 19:05-19:30 and 20:00-21:15 for a total of 100 mins.

No guano found in harp trap at end of trapping

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. **Survey Date:** 10-08-14 2. **Company Name:** Bat Conservation and Management Inc.

3. **Bat Identifier:** Kirk Silas (Responsible Recorder) 4. **Assistants:** Cory Mattas

5. **Site Name and/or Number:** 2014 Rt. 219 Fall / 2005-27

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, (coal mine), limestone cave, sandstone cave, RR tunnel, other structure, describe - Old entrance.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

N/A

8. **County:** Somerset 9. **7.5' Quad.:** Avilton

10. **Was site GPS'd (required)?** (YES) - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 °-44 '-44.61"N, Longitude: 79 °-03 '-20.83"W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Contact: Private
Deborah Homer,
McCormick Taylor, 5 Capital Dr, Suite 400, Harrisburg PA 17110 (717) 540-6040

13. **Time** *(military)* **& Temperature:** Start Time 1815 h Stop Time 0100 h Total Minutes: 345

Start Temp. 12.8 °C End Temp. 10.7 °C *(must stay ≥10 °C for summer netting)*

14. **General Weather** *(circle one)*: (Clear), Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. **General Wind Conditions** *(circle one)*: (Calm.) Breezy (Leaves Rustling). Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Harp Trap	1	1.8m x 2.1m	Placed at entrance	3.78 m^2

Total Capture Area: 3.78 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt. 219 Fall/2005-27 **Date:** 10-08-14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Entrance located on steep slope, 15 feet from Piney Creek. Dominant trees include: hemlock, yellow birch, red oak, red maple and rhododendron.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No bats were captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:19	Start Time: 19:20	Start Time: 20:21	Start Time: 21:22	Start Time: 22:23
End Time: 19:19	End Time: 20:20	End Time: 21:21	End Time: 22:22	End Time: 23:23
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0

20. REMARKS:
Temperature at 20:30 was 10.1°C.

No guano found in harptrap catch bag at end of trapping.

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. **Survey Date:** 10/06/2014 2. **Company Name:** Bat Conservation & Management Inc

3. **Bat Identifier:** Kirk Silas (Responsible Recorder) 4. **Assistants:** Jacob Eshelman

5. **Site Name and/or Number:** 2014 RT 219 Fall 2005-28

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, (coal mine,) limestone cave, sandstone cave, RR tunnel, other structure, describe - Old entrance.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

N/A

8. **County:** Somerset 9. **7.5' Quad.:** ANITON

10. **Was site GPS'd (required)?** (YES) - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 °- 44 '-42.61 "N, Longitude: 79 °- 03 '- 19.54 "W

Datum *(circle one)*: (NAD27 (Preferred), NAD83, WGS84, Other:

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Contact: Private

Deborah Hoover, McCormick Taylor, 5 Capital Dr. Suite 400, Harrisburg, PA 17110 (717) 540-6040

13. **Time** *(military)* **& Temperature:** Start Time 18:20 h Stop Time 00:00 h Total Minutes: 340

Start Temp. 11.7 °C End Temp. 9.6 °C *(must stay ≥10°C for summer netting)*

14. **General Weather** *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy;) Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. **General Wind Conditions** *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Harp Trap	1	1.8m x 2.1m	Placed at entrance	3.78 m^2

Total Capture Area: 3.78 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 RT219 FALL 2005-28 **Date:** 10/06/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Entrance found on steep stream valley slope. Dominant trees include: hemlock, yellow birch, red oak, and red maple. Understory of rhododendron. Entrance is located 75 feet from Piney Creek.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis								2		2	2
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 2

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:22	Start Time: 19:23	Start Time: 20:24	Start Time: 21:25	Start Time: 22:26
End Time: 19:22	End Time: 20:23	End Time: 21:24	End Time: 22:25	End Time: 23:26
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 2

20. REMARKS:
Temp at 20:30 was 10.8°C.
Temp at 23:15 was 10.3°C.
Rain events from 18:20 to 18:50
22:25 to 22:35
22:50 to 23:20
Total of 70 minutes of rain.

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. **Survey Date:** 10/07/2014 2. **Company Name:** Bat Conservation & Management Inc

3. **Bat Identifier:** Kirk Silas (Responsible Recorder) 4. **Assistants:** Jacob Eshelman

5. **Site Name and/or Number:** 2014 RT 219 FALL 2005-28

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, (coal mine,) limestone cave, sandstone cave, RR tunnel, other structure, describe - Old entrance.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

8. **County:** Somerset 9. **7.5' Quad.:** AVILTON

10. **Was site GPS'd (required)?** (YES) - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 ° 44 ' 42.61 "N, Longitude: 79 ° 03 ' 19.54 "W

Datum *(circle one)*: (NAD27 (Preferred), NAD83, WGS84, Other:

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Contact: Private
Deborah Hoover, McCormick Taylor, 5 Capitol Dr, Suite 400, Harrisburg, PA 17110 (717) 540-6040

13. **Time** *(military)* **& Temperature:** Start Time 18:20 h Stop Time 01:00 h Total Minutes: 400

Start Temp. 11.9 °C End Temp. 11.1 °C *(must stay ≥10°C for summer netting)*

14. **General Weather** *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy;) Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:
(suspend netting during periods of rain)

15. **General Wind Conditions** *(circle one)*: (Calm.) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Harp Trap	1	1.8m x 2.1m	Placed at entrance	3.78m^2

Total Capture Area: 3.78 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 SR219 FALL 2005-23 **Date:** 10-07-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Entrance found on steep stream valley slope. Dominant trees include: hemlock, yellowbirch, red oak, and red maple. Understory of rhododendron. Entrance located 75 feet from Piney Creek.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No bats were captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:20	Start Time: 19:21	Start Time: 20:22	Start Time: 21:23	Start Time: 22:24
End Time: 19:20	End Time: 20:21	End Time: 21:22	End Time: 22:23	End Time: 23:24
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0

20. REMARKS:
Temperature was 11.5 °C at 21:00.

Rain events from 19:05-19:30, and 20:00-21:15 for a total of 100 mins.

No guano found in harp trap at end of trapping.

FORM P-70008-N/T
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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. **Survey Date:** 10/08/2014 2. **Company Name:** Bat Conservation & Management, Inc

3. **Bat Identifier:** Kirk Sikes (Responsible Recorder) 4. **Assistants:** Jacob Eshelman

5. **Site Name and/or Number:** 2014 AT219 Fall 2005-23

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, (coal mine) limestone cave, sandstone cave, RR tunnel, other structure, describe - Old entrance.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

N/A

8. **County:** Somerset 9. **7.5' Quad.:** AVILTON

10. **Was site GPS'd (required)?** (YES) - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 °- 44 '- 42.61 "N, Longitude: 79 °- 03 '- 19.54 "W

Datum *(circle one)*: (NAD27 (Preferred), NAD83, WGS84, Other:

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Contact: Private (717) 540-6040

Deborah Hoover, McCormick Taylor, 5 Capital Dr. Suite 400, Harrisburg, PA 17110

13. **Time** *(military)* **& Temperature:** Start Time 18:15 h Stop Time 00:00 h Total Minutes: 345

Start Temp. 12.8 °C End Temp. 10.7 °C *(must stay ≥10 °C for summer netting)*

14. **General Weather** *(circle one)*: (Clear;) Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. **General Wind Conditions** *(circle one)*: (Calm.) Breezy (Leaves Rustling). Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Harp Trap	1	1.8m x 2.1m	Placed at entrance	3.78 m^2

Total Capture Area: 3.78 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 RT219 Fall 2005-28 **Date:** 10/08/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Entrance found on steep, stream valley slope. Dominant trees include: hemlock, yellow birch, red oak and red maple. Understory of rhododendron. Entrance is located 75 feet from Piney Creek.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No bats were captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors. night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:19	Start Time: 19:20	Start Time: 20:21	Start Time: 21:22	Start Time: 22:23
End Time: 19:19	End Time: 20:20	End Time: 21:21	End Time: 22:22	End Time: 23:23
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0

20. REMARKS:

Temperature at 20:30 was 10.1°C.

No guano was found in harptrap catch bag at end of trapping.

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. **Survey Date:** 10/02/14 2. **Company Name:** Bat Conservation And Management

3. **Bat Identifier:** Kirk Silas (Responsible Recorder) 4. **Assistants:** Cory Mattas

5. **Site Name and/or Number:** 2014 State Rte 219 Fall BCM 2014-01

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, (coal mine,) limestone cave, sandstone cave, RR tunnel, other structure, describe - small sinkhole opening.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

8. **County:** Somerset 9. **7.5' Quad.:** Avilton

10. **Was site GPS'd (required)?** (YES) - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 °- 44 '- 55.38"N, Longitude: 79 °- 03 '- 17.67"W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Contact: Private Deborah Hopper, McCormick Taylor, 5 Capitol Dr Suite 400, Harrisburg, PA 17110, (717) 540-6040

13. **Time** *(military)* **& Temperature:** Start Time 1820 h Stop Time 0100 h Total Minutes: 300

Start Temp. 16.0 °C End Temp. 11.8 °C *(must stay ≥10 °C for summer netting)*

14. **General Weather** *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; (Intermittent Rain;) Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. **General Wind Conditions** *(circle one)*: (Calm.) Breezy (Leaves Rustling). Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	1	9m x 2.6m	Diagonally over sinkhole in cliff formation	23.4m
2	Nets	1	9m x 2.6m	Diagonally over sinkhole	23.4m

Total Capture Area: 46.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 State Rt 219 Fall BCM 2014-01 **Date:** 10/09/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Forested cow pasture with unimproved road near an open field. Dominant tree species include: hemlock, sweet birch and sugar maple.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No bats were captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:17	Start Time: 19:18	Start Time: 20:19	Start Time: 21:20	Start Time: 22:21
End Time: 19:17	End Time: 20:18	End Time: 21:19	End Time: 22:20	End Time: 23:21
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0

20. REMARKS:
Temperature was 10.4°C at 20:30.
Temperature was 10.0 °C at 22:10.

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. **Survey Date:** 7/08/14 2. **Company Name:** Bat Conservation & Management

3. **Bat Identifier:** (Responsible Recorder) Kirk Silas 4. **Assistants:** Bryan Butler

5. **Site Name and/or Number:** 2014 State Rt. 219 Fall BCM 2014-01

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, (coal mine,) limestone cave, sandstone cave, RR tunnel, other structure, describe - Small sink hole opening.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

8. **County:** Somerset 9. **7.5' Quad.:** Ayllton

10. **Was site GPS'd (required)?** (YES) - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 °- 44 '- 55.36"N, Longitude: 79 °- 03 '- 17.57"W

Datum *(circle one)*: (NAD27 (Preferred), NAD83, WGS84, Other:

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Contact: Private
Deborah Hoover McCormick Taylor, 5 Capital Dr. Suite 400, Harrisburg, PA 17110, (717) 540-6040

13. **Time** *(military)* **& Temperature:** Start Time 1900 h Stop Time 0000 h Total Minutes: 360
11°C @ 2030
11.5°C @ 2200
Start Temp. 13.9 °C End Temp. 11.0 °C *(must stay ≥10 °C for summer netting)*

14. **General Weather** *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:
(suspend netting during periods of rain)

15. **General Wind Conditions** *(circle one)*: Calm. (Breezy (Leaves Rustling). Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	NETS	1	9m x 2.6m	DIAGONALLY TO SINKHOLE	23.4 m
2	NETS	1	9m x 2.6m	"V" Formation DIAGONALLY TO SINKHOLE	23.4 m

Total Capture Area: 468 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2017 STATE RT. 219 FALL BCM 2017-01 **Date:** 10/03/2017

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

FORESTED COW PASTURE WITH UNIMPROVED ROAD NEAR AN OPEN FIELD. DOMINANT SPECIES INCLUDE HEMLOCK, SWEET BIRCH, SUGAR MAPLE

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors. night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:19	Start Time: 19:20	Start Time: 20:21	Start Time: 21:22	Start Time: 22:23
End Time: 19:19	End Time: 20:20	End Time: 21:21	End Time: 22:22	End Time: 23:23
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0

20. REMARKS:

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. **Survey Date:** 10/09/2014 2. **Company Name:** Bat Conservation & Management, Inc

3. **Bat Identifier:** Kirk Silas (Responsible Recorder) 4. **Assistants:** Jacob Eshelman

5. **Site Name and/or Number:** 2014 State Rt 219 Fall BCM 2014-01

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, (coal mine,) limestone cave, sandstone cave, RR tunnel, other structure, describe - Small sinkhole opening.

7b. **If summer habitat, describe area being sampled** (e.g. forested stream or forest clearing with stream):

NA

8. **County:** Somerset 9. **7.5' Quad.:** AVILTON

10. **Was site GPS'd (required)?** (YES) - NO

11. **Geographic Coordinates (D-M-S):** Latitude: 39 °- 44 '-55.36"N, Longitude: 79 °- 03 '- 17.67"W

Datum *(circle one)*: (NAD27 (Preferred), NAD83, WGS84, Other:

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address.)* Contact: Private

Deborah Hoover McCormick Taylor 5 Capital Dr Suite 400, Harrisburg PA 17110, (717) 540-6040

13. **Time** *(military)* **& Temperature:** Start Time 18:15 h Stop Time 00:00 h Total Minutes: 345

Start Temp. 11.3 °C End Temp. 10.2 °C *(must stay ≥10 °C for summer netting)*

14. **General Weather** *(circle one)*: Clear; Partly Cloudy; (Mostly Cloudy;) Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. **General Wind Conditions** *(circle one)*: (Calm.) Breezy (Leaves Rustling). Windy (Trees Swaying).

16. **Capture Setup at Site:**

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Net	1	9m x 2.6m	Diagonally over sinkhole in	23.4 m^2
2	Net	1	9m x 2.6m	"V" formation Diagonally over sinkhole	23.4 m^2

Total Capture Area: 46.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 RT 219 FALL BCM 2014-01 **Date:** 10/07/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Forested row pasture with unimproved road near and open field
Dominant trees overstory: Hemlock, Sweet birch, Sugar maple

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors. night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

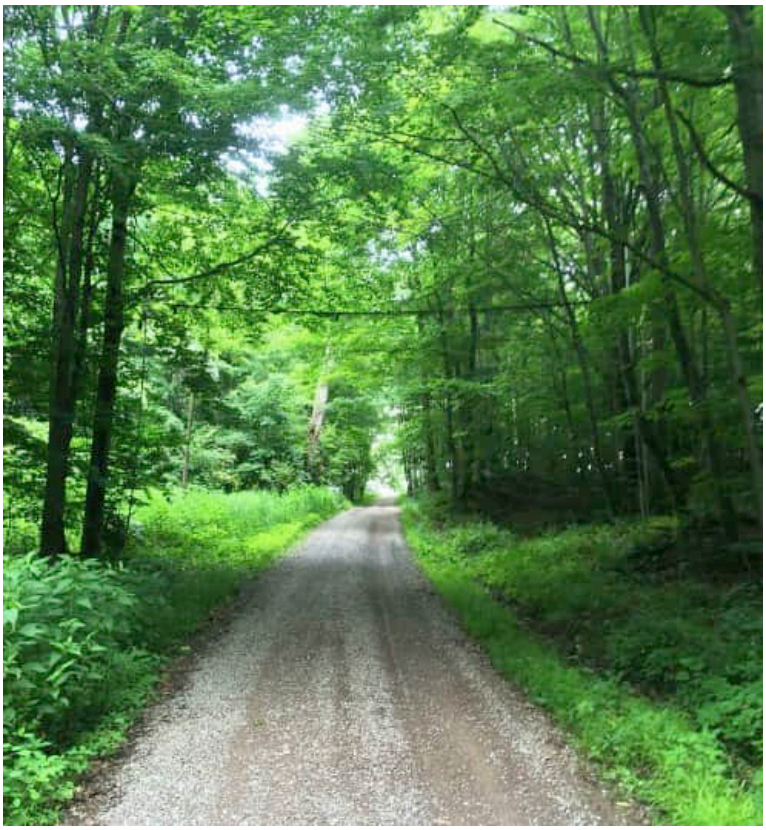
1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time: 18:20	Start Time: 19:21	Start Time: 20:22	Start Time: 21:23	Start Time: 22:24
End Time: 19:20	End Time: 20:21	End Time: 21:22	End Time: 22:23	End Time: 23:24
Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0	Tallies: 0

20. REMARKS:

Nets were closed between 19:05 – 19:30 and 20:00 – 20:15
for a total of 100 minutes due to rain events

2014 ROUTE 219 MEYERSDALE TO I-68 SUMMER BAT SURVEY

Garrett County, MD and Somerset County, PA
17 July – 5 August 2014



CAPTURE SITE MD01

Bat Conservation and Management, Inc.
Carlisle, Pennsylvania

2014 Route 219
Meyersdale to I-68
Summer Bat Survey

Prepared by:

220 Old Stone House Road North, Carlisle, Pennsylvania 17015
Office and Fax: (717) 241-2228
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www.batmanagement.com

Project Principal:
John Chenger
Bat Conservation and Management, Inc.

Surveyors:
Bryan Butler
Jacob Eschelmann
Brandon McClung
Eddie Ramirez
Duncan Schanz
Todd Sinander
Risa Wright
Bat Conservation and Management, Inc.

Photography by:
Todd Sinander

Report Prepared by:
Bryan Butler
Bat Conservation and Management
October 2014

Executive Summary

Introduction

The Federal Highway Administration (FHA), Pennsylvania Department of Transportation (PennDOT) and the Maryland State Highway Administration (MDSHA) initiated preliminary engineering and environmental studies for U.S. 219 Meyersdale to I-68 (PennDOT Project: SR 6219, Section 019). Bat Conservation and Management, Inc. (BCM) of Carlisle, Pennsylvania was commissioned to conduct a survey of summer bat species within the U.S. 219 Meyersdale to I-68 project area for the purpose of determining potential impact of this development to any threatened and endangered (T&E) bat species. The survey was conducted between 16 July and 5 August 2014.

Objective

The objective of this study was to provide an inventory of summer bat species present and any T&E species occurring within the vicinity of the project area. The 2014 Route 219 Summer Project sites were surveyed using physical capture methods, followed by radio telemetry to determine day-roost locations and characteristics for the T&E species of interest (e.g., eastern small-footed myotis, *Myotis leibii*; northern long-eared myotis, *M. septentrionalis*; and/or Indiana myotis, *M. sodalis*). The survey was performed using capture and telemetry protocols set by the U.S. Fish and Wildlife Service (USFWS) and Pennsylvania Game Commission (PGC). In accordance with the original project plan and scope of work, no acoustic survey methods were applied on this project.

Outcome

During this survey, thirty (30) sites were inventoried within Pennsylvania and Maryland; with twenty-one (21) sites located in the former and nine (9) sites located in the latter. From these sites a total of 127 bats representing five (5) species were captured. This included 82 big brown bats (*Eptesicus fuscus),* 40 Eastern red bats (*Lasiurus borealis),* one (1) little brown myotis (*Myotis lucifugus),* two (2) Northern long-eared myotis (*M. septentrionalis),* and two (2) Eastern small-footed myotis (*M. leibii)*. Of these species, the two (2) Northern long-eared and two (2) eastern small-footed myotis were targeted for additional surveying using radio-tracking, as they are proposed for federal endangered species listing and considered to be a state-sensitive species, respectively. Both eastern small-footed myotis were captured in PA and tracked to man-made structures.

Methods

Project Area

The U.S. 219 Meyersdale to I-68 Project is a linear project approximately 13 kilometers (8) mi.) in length stretching from the southern end of the Meyersdale Bypass in Somerset County, Pennsylvania to Interstate 68 (I-68) in Garrett County, Maryland. This project is located in the Allegheny Mountain Section of Pennsylvania's physiographic Ridge and Valley Provinces and located in the Ridge and Valley section of the Great Appalachian Valley (Figure 1). The study area is U.S. 219 Meyersdale to I-68 and includes parts of Elk Lick and Summit Townships in Somerset County, Pennsylvania and the northeastern corner of Garrett County, Maryland (Figures 2 and 3). The project involves the consideration of a four-lane limited access facility from the Meyersdale Bypass, a four-lane limited access facility in Somerset County, PA to I-68, another four-lane limited access facility located in Garrett County, MD. The proposed route extension has been assessed as a key improvement project in both states as well regionally and nationally. Currently, two sections of U.S. 219, one north and one south of Meyersdale, remain as two-lane facilities. This proposed project, along with PennDOT's U.S. 219 project north of Meyersdale, would complete a four-lane, limited access highway from I-68 to the Pennsylvania Turnpike (I-76) and areas to the north, providing improved levels of service, safety, system linkage and efficient access to the region in order to improve economic development potential.

Survey Locations

Survey sites were selected by BCM using aerial photographs including the proposed project alternatives and buffer zone. A total of thirty (30) mist net survey sites were identified, placed at intervals of one (1) site for every one (1) km of habitat along the proposed U.S. 219 road extension project area (Figures 2 and 3). These sites were sampled during the nights of 16 July through 5 August 2014. Sites were divided between Pennsylvania and Maryland, with twenty-one (21) sites located on the Pennsylvania portion of U.S. 219 Section 019, and nine (9) sites located in Garrett County, Maryland. In general, more sites were selected in Pennsylvania given the greater project area in that state.

Survey Protocol: Capture

Mist net surveys followed the protocols described in the USFWS Range-wide Indiana Bat Summer Survey Guidelines[1] and the Standard Minimum Effort Requirements for Qualified Indiana Bat Surveyor Netting within the Commonwealth of Pennsylvania for Environmental Review Projects[2], issued by the Pennsylvania Game Commission (PGC). Based on these guidelines the required minimum level of effort for a linear project is six (6) net-nights per kilometer of suitable summer

habitat. A net-night is defined as any configuration of mist net lengths and heights between two poles set up for one (1) nights. To meet the capture objectives for this survey, at least three net-sets were deployed at each of the thirty (30) survey sites for two calendar nights. This provided an acceptable minimum effort of at least 180 net-nights during the 2014 survey.

At each survey site, each net-set was checked every 10-minutes, never exceeding 15-minutes between net checks. Survey sites did not contain more nets than could be managed by a single "qualified Indiana bat surveyor" (QIBS). Mist netting did not exceed three (3) consecutive nights at a single survey location. Each night, nets were opened at sundown and continued for at least five (5) hours for a minimum sampling period of 300-minutes each night. All sites were sampled using traditional mist netting techniques.[3] The mist nets used for this survey are manufactured by Avinet, Inc. (Dryden, NY; 38mm mesh-nylon, reduced bag, 50/2, 38mm mesh, 2.6m high, 4 shelves).

Nets are placed over existing roads, trails, and streams in an effort to catch bats that utilized these features as flight corridors to move through the habitat between roosts and foraging areas. At each survey-site, nets are set according to the local microhabitat structure, and are deployed to completely span the entire height of the available flyway. "Single-high" nets consist of one 2.6 meter high net strung between two poles. "Double-high" nets consist of two 2.6 meter high nets strung between two poles. "Triple-high" nets consist of three 2.6-meter high nets stacked between two poles. The net lengths utilized are also determined by the physical characteristics of the site and deployed to span the width of the flyway. Nets range in length between 6 and 18 meters.

Meta-data was collected to fully describe individual capture sites and included photographs (Appendix A), global positioning satellite (GPS) coordinates, nightly weather conditions during sampling, and general information regarding habitat and surrounding area. Because adverse weather conditions can affect capture success, survey effort were suspended or even repeated when any of the following weather conditions were present throughout all or most of a sampling period: (1) temperatures below 50ºF (10ºC), (2) precipitation, including rain and/or heavy for, persisting for more than 30 minutes or that continues intermittently during the survey period, and (3) sustained winds greater than 9mph (4mps), i.e., "3" on the Beaufort wind scale.

Data were collected on all captured bats including species, sex, age, and reproductive condition. Species age was determined by using the Epiphyseal-diaphyseal Fusion method which "by trans-illuminating the wing of an individual using a headlight, a researcher can visualize the cartilaginous zone of the long phalanges . . . As the bat continues to grow, the epiphyseal plates eventually close until they are no longer visible to the unaided eye."[4] The presence of reproductive

female and/or juvenile bats of any sex indicates maternity use of the area in which they were captured. The reproductive condition of females was noted by abdominal palpation and inspection of mammary glands[5].

Survey Protocol: Radio-tracking

Radio tracking conducted during this survey followed USFWS and PGC protocols. The northern long-eared myotis (*Myotis septentrionalis*) is currently being considered for federal endangered species listing, and the eastern small-footed bat (*M. leibii*) is considered a "species of special concern" in Pennsylvania, therefore both were "species of interest" and targeted for additional survey methods, using radio-tracking to locate and quantify the day roosts and estimation of roost-population size by conducting nightly emergence counts. All species of interest were outfitted with radio transmitters and tracked to their respective day roosts following the night of capture, and for each subsequent night until the transmitter was no longer active or the bat was undetectable in the area. Data collected for each day roost identified included location, type of roost, description (e.g., height, tree species, percentage of exfoliating bark present, and canopy cover surrounding roost), surrounding habitat, and photographs. Nightly emergence counts at all identified roosts provided estimates of roost-population sizes (Table 5, Appendix C).

Radio tracking techniques and analysis follow accepted methods designed for bats[6]. Captured bats identified for radio-telemetry were examined for sex, age, reproductive status, white-nose syndrome (WNS) wing score, and were photographed prior to release (photos appear in Appendix C). A transmitter (Model LB-2, Holohil, Canada) was attached to the back of each bat using a medical grade temporary adhesive (PERMA-TYPE). The transmitters have a rated battery life of approximately 10 days and weighed between 0.36 and 0.52 grams. Transmitter weight did not exceed 10% of the bat's body weight, in accordance with USFWS 2014 protocols.

For tracking purposes, captured bats were released near the site of capture within 2-hours and tracked by obtaining bearings using radio telemetry receivers, 3-element Yagi-type antennas, and GPS receivers in conjunction with laptop computers. Initial tracking and triangulation was conducted with the use of a vehicle. Once triangulation was performed, tracking continued on foot using Field Marshall 1000 172kHz portable receivers with an attached 3-element antenna until the roost was identified. Once located, emergence counts were performed on all roosts, providing permission was granted to access the corresponding property.

Survey Protocol: Roost Emergence Counts

Once located, emergence counts are conducted on all roost locations, providing permission is granted to access the property containing the located roost. Emergence counts are conducted according to standard procedures for cavity dwelling, temperate bat species[7]. One or more observers will be stationed at each roost at least one hour prior to sundown to count emerging bats. The specific size and configuration of the roost exit(s) and or field(s) of view at each site will determine the number of observers required to survey each roost. Counts are conducted by direct observation as bats leave the roost and are backlit by the twilight sky. If necessary, special night-vision, infrared imaging, or thermal scopes will be used to count bats emerging after dark when they can no longer be observed directly. Data from roost counts is collected each night a radio-tagged bat is present at the roost to assess total population size and any daily fluctuations in numbers of bats present.

Results

Sampling Effort: Capture

The net-night level of effort totaled one hundred eighty-nine (189) net-nights. The capture data for each mist net location is summarized in Tables 1 and 2, including site names, date, and level of effort. Site-specific net configurations are described on the Form P-70008-N/T data sheets reprinted in Appendix B. In the case of an adverse weather event (i.e., temperatures falling below 10°C, precipitation, and/or strong winds, persisting throughout all or most of the nightly sampling period), netting was either delayed or suspended until conditions improved, allowing a valid survey night.

Species Occupancy: Capture

A total of one hundred twenty-seven (127) individual bats of five (5) species were captured during the survey period for this project (Table 3). This included eighty-two (82) big brown bats (*Eptesicus fuscus),* forty (40) eastern red bats (*Lasiurus borealis*), two (2) eastern small-footed myotis (*Myotis leibii*), one (1) little brown myotis (*M. lucifugus*), and two (2) northern long-eared myotis (*M. septentrionalis*). A site-by-site occupancy summary is presented in Table 2 of this report.

Females represented approximately 48% (n = 61) of the captured bats. Of the sixty-one (61) female bats that were assessed for reproductive condition, forty-two (42) or 68.8% were reproductive; zero (0) were pregnant, five (5) were lactating, and thirty-seven (37) were post-lactating (Table 4). The remaining fifteen (15) female bats were non-reproductive, exhibiting no obvious characteristics indicating that they had been either pregnant or lactating this season. A summary of the site-level population dynamics is presented in Table 3 of this report. The site-specific, species-specific reproductive results are also summarized in Table 4.

Sampling Effort: Radio-tracking

With the exception of the two eastern small-footed myotis, all radio-tagged bats were tracked to their day roosts. Emergence counts were unable to be conducted on the two (2) eastern small-footed myotis due to lack of landowner permission and day roosts were estimated via triangulation. For the remaining two northern long-eared myotis, emergence counts were performed at each day roost identified. One of the northern long eared myotis was captured in MD, and tracked to two different tree roosts, The other was captured in PA and tracked to three unique tree roosts. Tracking continued as long as each transmitter functioned and was not shed by the bat. The location of all identified and estimated day roosts can be seen in Figure 2, along with the proposed project alternatives. Emergence counts were performed for a minimum of four (4)

nights at each roost. All bats observed emerging from roost were counted to obtain a roost population estimate. These data are recorded in Table 5.

Species Occupancy: Radio-tracking

A total of four bats (4) were fitted with transmitters and tracked to a total of seven (7) different day roost locations. No federally endangered or threatened species were captured, however two (2) state-threatened eastern small-footed myotis were captured including one post-lactating female at Site PA10 and one male at Site PA07 (Table 5). Both bats were outfitted with transmitters and radio tracked in order to locate their respective day roosts. However, land access was denied by both landowners and prevented accurate roost identification and follow-up emergence counts. In the event of land access restrictions where emergence counts were unable to be performed, roost locations were estimated via triangulation. The female from Site PA10 was assumed to be roosting in a large barn with a dark roof, however permission was not granted to further assess the barn to confirm presence and perform emergence counts. The male small footed myotis was tracked to a large separate barn with a metal roof, though emergence counts were unable to be performed due to restricted access by landowner.

Two (2) northern long-eared myotis, proposed for endangered species listing by the USFWS, were among the radio-tagged bats. These were identified as 2014Rt219.3 and 2014Rt219.4. Both were post-lactating females and led trackers to multiple roost locations. 2014Rt219.3 was tracked to a single roost on two consecutive days before shedding the transmitter on the third day (Table 5). 2014Rt219.4 was tracked to three (3) different roosts and emergence counts were done for a total of eight (8) days at these roosts, after which the transmitter was no longer detected.

Weather Data

Weather data was recorded each night of netting. The average high and low temperatures for the survey period was 16.8°C and 14.7°C respectively. Additional detailed information including any weather events and cloud cover is included in Appendix B on Forms P-70008-N/T and are organized by site number. Unless otherwise noted, overall weather was nominal for the entire survey period.

Discussion and Conclusions

The results of the 2014 Route 219 Meyersdale to I-68 Summer Bat Survey performed between July 16th and August 5th of 2014 indicated moderate diversity of bat species within the project area. No day roosts were found to be directly on the project impact area. However, distances from identified roosts to the project impact area ranged from 0.12 kilometers to 0.76 kilometers (Table 5). No endangered Indiana bats were found to be present, however results did confirm occupancy of the state threatened Small-footed bat (*Myotis leibii*), as well as the Northern Long-eared myotis (*Myotis septentrionalis*), a current species of interest and a candidate for potential listing under the Federal Endangered Species Act. Though not currently subject to formal federal listing, the USF&WS has published recommendations for the conservation and management of the Northern Long-eared myotis[8] by restricting tree-clearing to times when bats are not utilizing forest resources for roosting or rearing young. Hibernation may begin as early as September and last until April. Therefore, tree clearing can take place any time from late fall to early spring without affecting resident long-eared bats. The Eastern small-footed bats captured and radio-tracked during this project were found to be roosting inside man-made buildings, which is not a widely reported roost preference for this species but is known to occur in two other unrelated locations in Pennsylvania.

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Figures

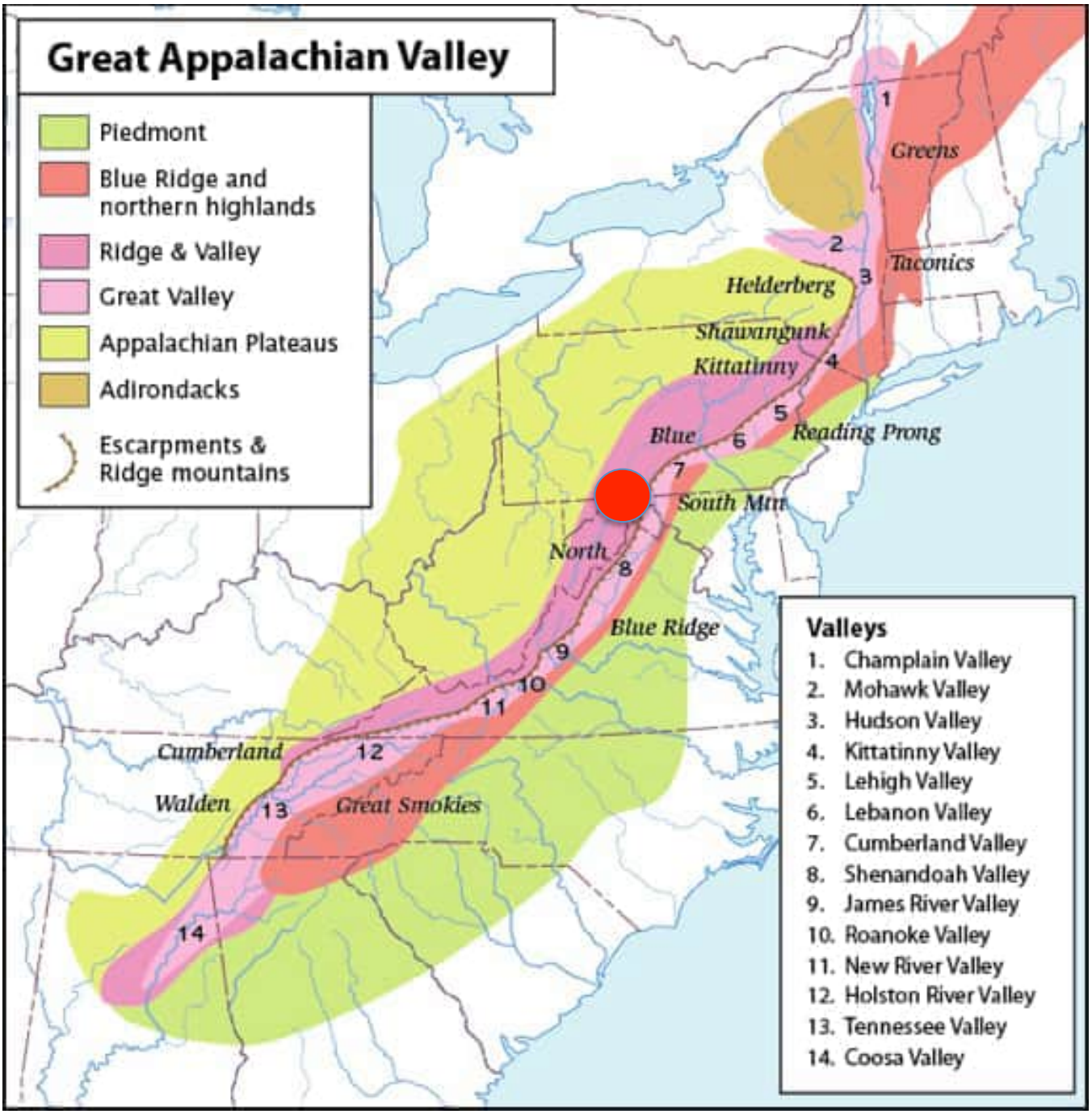

Figure 1. Route 219 Summer Project, Somerset County, Pennsylvania and Garrett County, Maryland

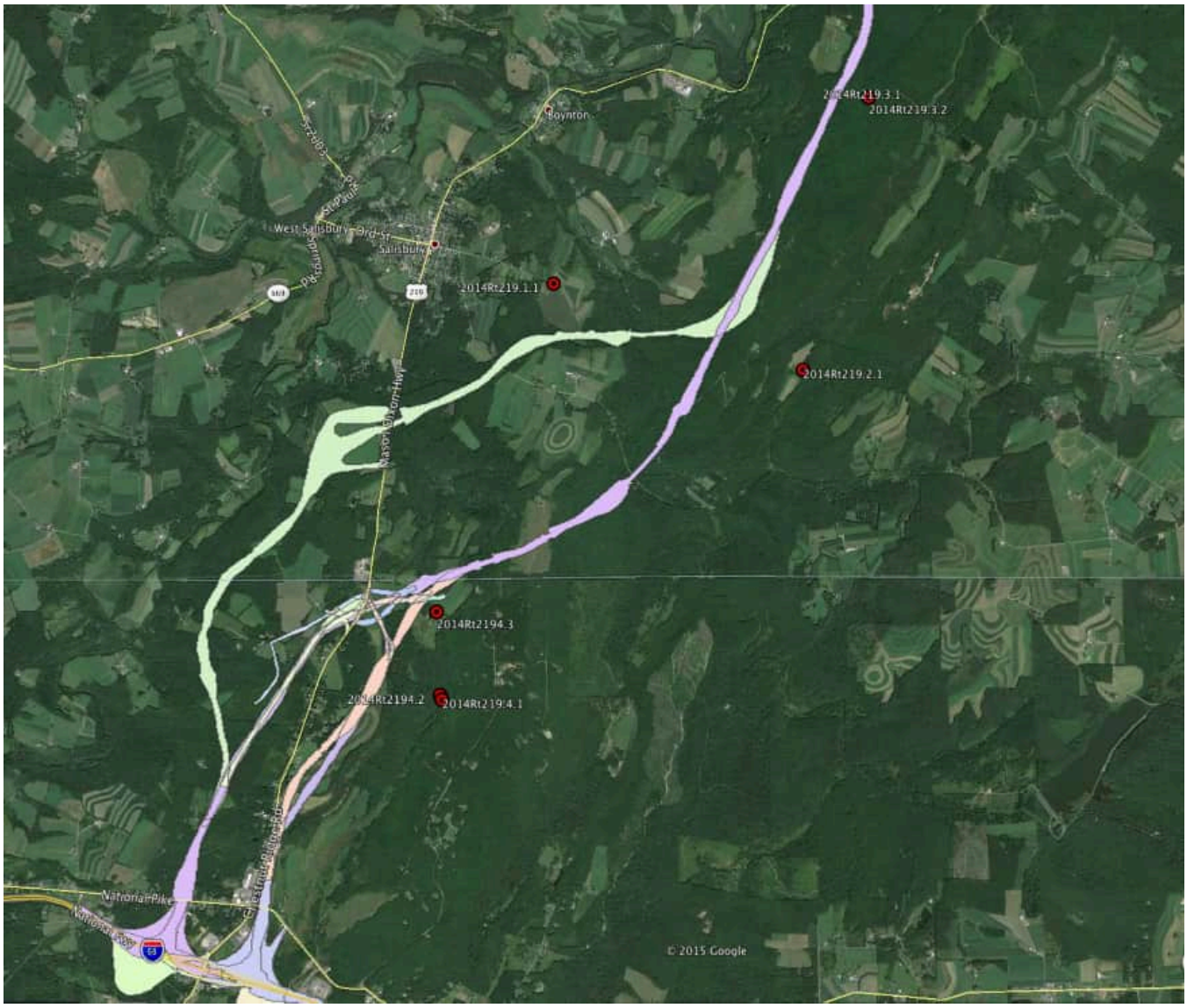

Figure 2. Roost locations with proposed project alternatives

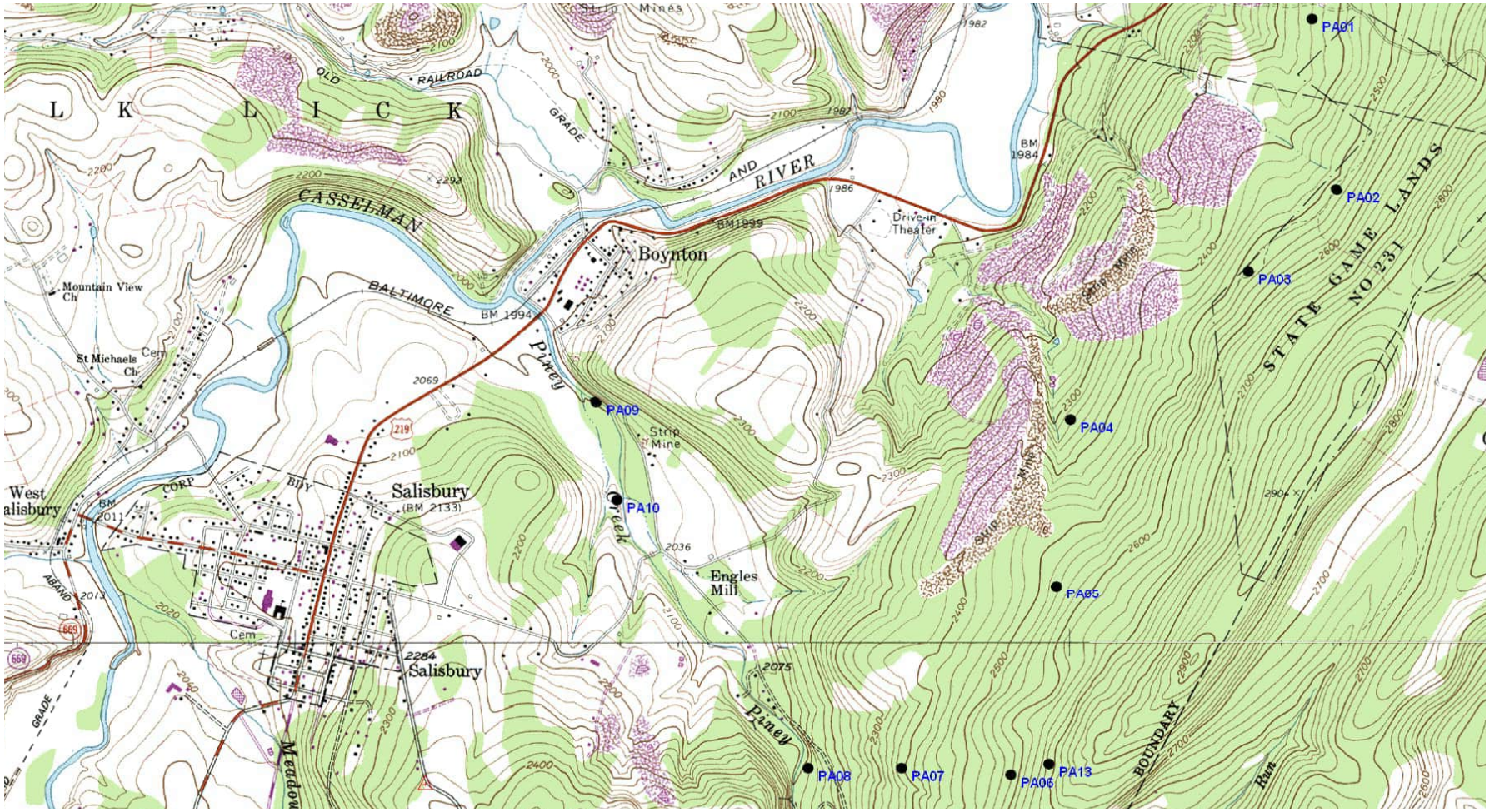

Figure 3. Route 219 Project, Survey Sites PA01 through PA10 and PA13

Figure 4. Route 219 Project, Survey Sites PA06 - PA08, PA11 – PA12, PA14 – 21, MD01, and MD08 – MD09

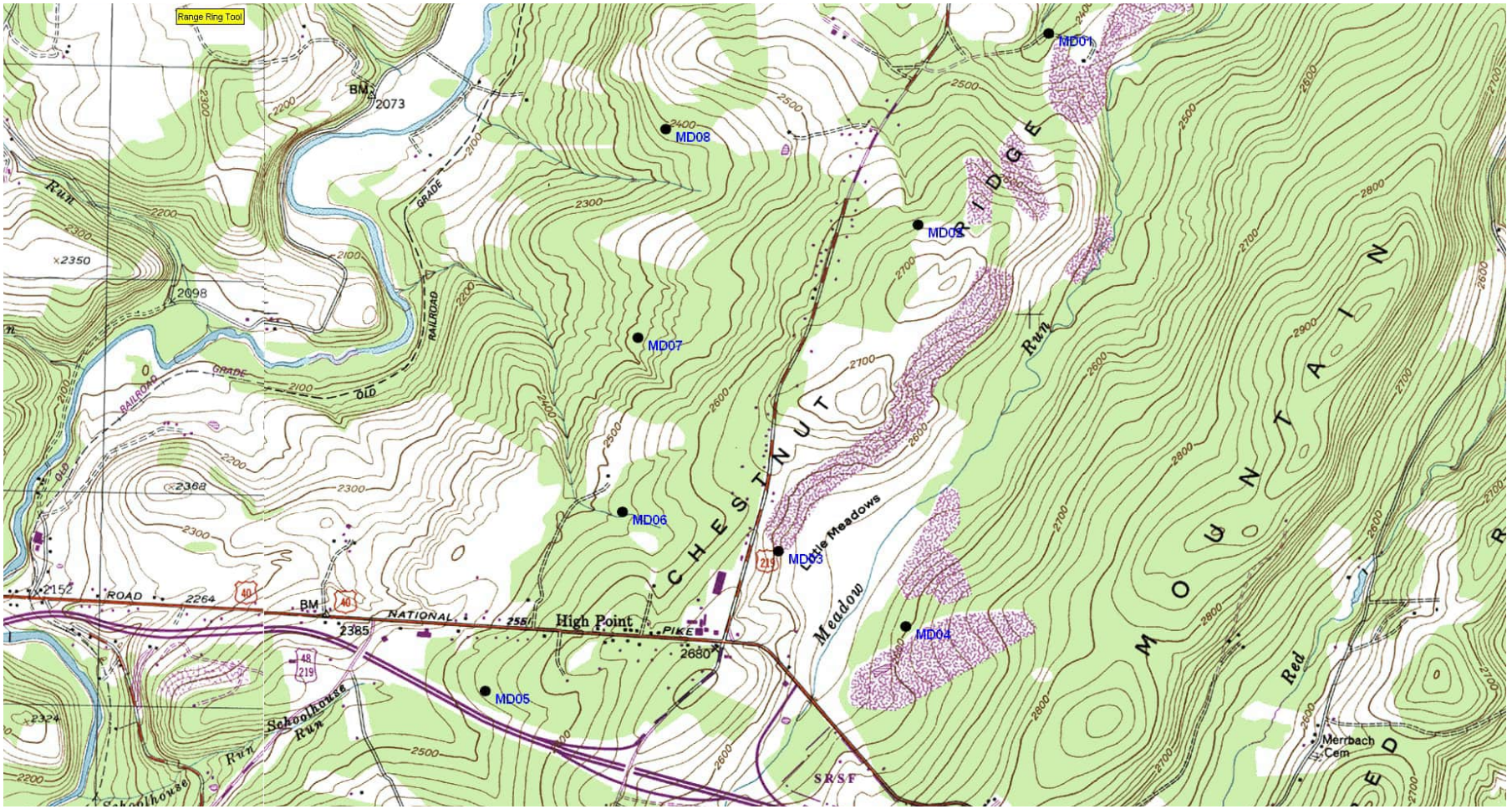

Figure 5. Route 219 Project, Survey Sites MD01 – MD08

Tables

Table 1. Project Summary Table

Site ID	Survey Methods	(#)Physical Captures	Site ID	Survey Methods	(#)Physical Captures
MD01	1- 6m Triple-High Mist Net 1- 12m Triple-High Mist Net 1- 6m Single-High Mist Net	(4) EPFU (1) LABO	**PA07**	1- 6m Triple-High Mist Net 1- 9m Triple-High Mist Net 1- 6m Single-High Mist Net	(3) EPFU (3) LABO (1) MYLE
MD02	2- 12m Triple-High Mist Net 1- 9m Single-High Mist Net	(1) EPFU (1) MYSE	**PA08**	1- 9m Triple-High Mist Net 1- 12m Triple-High Mist Net 1- 6m Single-High Mist Net	(0)
MD03	1- 6m Triple-High Mist Net 1- 18m Triple-High Mist Net 1- 2.6m Single-High Mist Net	(1) EPFU (3) LABO	**PA09**	2- 12m Triple-High Mist Net 1- 9m Single-High Mist Net	(1) EPFU
MD04	1- 6m Triple-High Mist Net 1- 9m Triple-High Mist Net 1- 9m Single-High Mist Net	(0)	**PA10**	2- 12m Triple-High Mist Net 1- 6m Single-High Mist Net	(1) MYLE
MD05	1- 6m Triple-High Mist Net 1- 9m Triple-High Mist Net 1- 9m Single-High Mist Net	(5) EPFU (7) LABO	**PA11**	1- 9m Triple-High Mist Net 1- 12m Triple-High Mist Net 1- 12m Single-High Mist Net	(2) LABO
MD06	2- 6m Triple-High Mist Net 1- 6m Single-High Mist Net	(1) LABO	**PA12**	1- 9m Triple-High Mist Net 1- 18m Triple-High Mist Net 1- 6m Single-High Mist Net	(4) EPFU (1) LABO
MD07	2- 9m Triple-High Mist Net 1- 9m Single-High Mist Net	(1) EPFU (6) LABO	**PA13**	2- 6m Triple-High Mist Net 1- 6m Single-High Mist Net	(12) EPFU (1) LABO
MD08	1- 9m Triple-High Mist Net 1- 12m Triple-High Mist Net 1- 6m Single-High Mist Net	(2) EPFU (1) LABO	**PA14**	2- 12m Triple-High Mist Net 1- 6m Single-High Mist Net	(1) LABO (1) MYLU
MD09	2- 18m Triple-High Mist Net 1- 6m Single-High Mist Net	(14) EPFU (2) LABO	**PA15**	2- 12m Triple-High Mist Net 1- 6m Single-High Mist Net	(0)
PA01	2- 6m Triple-High Mist Net 1- 6m Single-High Mist Net	(0)	**PA16**	1- 6m Triple-High Mist Net 1- 9m Triple-High Mist Net 1- 6m Single-High Mist Net	(0)
PA02	2- 6m Triple-High Mist Net 1- 6m Single-High Mist Net	(12) EPFU (2) LABO	**PA17**	2- 9m Triple-High Mist Net 1- 6m Single-High Mist Net	(3) LABO
PA03	2- 6m Triple-High Mist Net 1- 6m Single-High Mist Net	(1) MYSE	**PA18**	1- 6m Triple-High Mist Net 1- 9m Triple-High Mist Net 1- 6m Single-High Mist Net	(0)
PA04	2- 6m Triple-High Mist Net 1- 12m Single-High Mist Net	(0)	**PA19**	2- 6m Triple-High Mist Net 1- 9m Single-High Mist Net	(1) LABO
PA05	2- 6m Triple-High Mist Net 1- 6m Single-High Mist Net	(5) EPFU	**PA20**	1- 12m Triple-High Mist Net 1- 18m Triple-High Mist Net 1- 12m Single-High Mist Net	(8) EPFU (5) LABO
PA06	2- 6m Triple-High Mist Net 1- 2.6m Single-High Mist Net	(6) EPFU	**PA21**	1- 6m Triple-High Mist Net 1- 12m Triple-High Mist Net 1- 12m Single-High Mist Net	(3) EPFU

Abbreviations used in this table: **EPFU** = *Eptesicus fuscus* (big brown bat), **LABO** = *Lasiurus borealis* (eastern red bat), **MYLE** = *Myotis leibii* (eastern small-footed myotis), **MYLU** = *M. lucifugus* (little brown myotis), **MYSE** = *M. septentrionalis* (northern long-eared myotis).

Table 2. Site-by-site Level of Effort

Survey Site ID	Survey Site Lat / Long (dms)	Survey Dates	Survey Method	Capture Effort*	TOTALS
MD01	39° 43' 12.63" / 79° 04' 56.00"	31 July- 1 Aug	CAPTURE	3	6
MD02	39° 42' 43.50" / 79° 05' 21.70"	4-5 Aug	CAPTURE	3	6
MD03	39° 41' 53.70" / 79° 05' 49.30"	4-5 Aug	CAPTURE	3	6
MD04	39° 41' 42.30" / 79° 05' 24.10"	4-5 Aug	CAPTURE	3	6
MD05	39° 41' 32.50" / 79° 06' 46.80"	2-3 Aug	CAPTURE	3	6
MD06	39° 41' 59.90" / 79° 06' 20.00"	2-3 Aug	CAPTURE	3	6
MD07	39° 42' 26.33" / 79° 06' 16.90"	2-3 Aug	CAPTURE	3	6
MD08	39° 42' 58.08" / 79° 06' 11.47"	31 July- 1 Aug	CAPTURE	3	6
MD09	39° 43' 25.95" / 79° 05' 53.55"	31 July- 1 Aug	CAPTURE	3	6
PA01	39° 46' 33.64" / 79° 01' 42.84"	25-26 & 28 Jul	CAPTURE	3	9
PA02	39° 46' 08.08" / 79° 01' 38.17"	25-26 & 28 Jul	CAPTURE	3	9
PA03	39° 45' 55.76" / 79° 01' 55.27"	25-26 & 28 Jul	CAPTURE	3	9
PA04	39° 45' 33.50" / 79° 02' 29.70"	23-24 July	CAPTURE	3	6
PA05	39° 45' 08.49" / 79° 02' 32.38"	23-24 July	CAPTURE	3	6
PA06	39° 44' 40.05" / 79° 02' 41.19"	23-24 July	CAPTURE	3	6
PA07	39° 44' 41.00" / 79° 03' 02.30"	21-22 July	CAPTURE	3	6
PA08	39° 44' 41.00" / 79° 03' 20.50"	19-20 July	CAPTURE	3	6
PA09	39° 45' 36.15" / 79° 04' 01.70"	21-22 July	CAPTURE	3	6
PA10	39° 45' 21.50" / 79° 03' 57.50"	21-22 July	CAPTURE	3	6
PA11	39° 44' 33.50" / 79° 03' 22.80"	19-20 July	CAPTURE	3	6
PA12	39° 44' 15.30" / 79° 03' 18.40"	21-22 July	CAPTURE	3	6
PA13	39° 44' 41.70" / 79° 02' 33.90"	23-24 July	CAPTURE	3	6
PA14	39° 44' 04.57" / 79° 03' 25.44"	19-20 July	CAPTURE	3	6
PA15	39° 43' 54.90" / 79° 03' 16.30"	19-20 July	CAPTURE	3	6
PA16	39° 43' 44.44" / 79° 03' 52.51"	29-30 July	CAPTURE	3	6
PA17	39° 43' 45.90" / 79° 04' 14.92"	29-30 July	CAPTURE	3	6
PA18	39° 43' 23.70" / 79° 04' 24.90"	29-30 July	CAPTURE	3	6
PA19	39° 44' 15.55" / 79° 05' 05.01"	16 & 18 July	CAPTURE	3	6
PA20	39° 43' 50.48" / 79° 06' 02.42"	17-18 July	CAPTURE	3	6
PA21	39° 43' 26.98" / 79° 06' 39.23"	17-18 July	CAPTURE	3	6
30	TOTALS	63	1	90	189

** *Capture Effort is presented by Net-night where one net night is one net deployed for one night; minimum acceptable capture effort is three nets deployed each night for two nights or 6 Net-nights per survey site. Totals represent number of net-nights deployed for number of survey dates deployed, i.e., 4 net-nights for two survey-dates = total survey effort of 8 nights.*

Table 3. Site-level Population Dynamics of Captured Bats

Species/		MD	MD	MD	MD	MD	MD	MD	MD	MD	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	Totals			
Sex		1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	M	F	U	TOT
EPFU	*M*	3	1	-	-	1	-	-	1	6	-	7	-	-	3	-	1	-	1	-	-	1	1	-	-	-	-	-	-	3	1	30			
	F	1	-	1	-	4	-	1	1	7	-	5	-	-	2	5	2	-	-	-	-	3	10	-	-	-	-	-	-	5	2		49		82
	U	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-			3	
LABO	*M*	-	-	2	-	2	-	1	1	1	-	2	-	-	-	-	1	-	-	-	1	1	-	-	-	-	2	-	1	3	-	18			
	F	-	-	1	-	3	-	1	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	1	-	-	1	-		9		40
	U	1	-	-	-	2	1	4	-	1	-	-	-	-	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	1	-			13	
MYLE	*M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1			
	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-		1		2
	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			0	
MYLU	*M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1			
	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		0		1
	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			0	
MYSE	*M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
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	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			0	
TOTALS		5	2	4	0	12	1	7	3	16	0	14	1	0	5	6	7	0	1	1	2	5	13	2	0	0	3	0	1	13	3	50	61	16	127

Abbreviations used in this table: **EPFU** = *Eptesicus fuscus* (big brown bat), **LABO** = *Lasiurus borealis* (eastern red bat), **MYLE** = *Myotis leibii* (eastern small-footed myotis), **MYLU** = *M. lucifugus* (little brown myotis), **MYSE** = *M. septentrionalis* (northern long-eared myotis), **M** = male, **F** = female, **U** = unknowns, and **TOT** = totals.

Table 4. Reproductive condition of captured female bats

Species/ Reprod. Condition		MD 1	MD 2	MD 3	MD 4	MD 5	MD 6	MD 7	MD 8	MD 9	PA 1	PA 2	PA 3	PA 4	PA 5	PA 6	PA 7	PA 8	PA 9	PA 10	PA 11	PA 12	PA 13	PA 14	PA 15	PA 16	PA 17	PA 18	PA 19	PA 20	PA 21	Totals	
																																R	% R
EPFU	*P*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	71%
	L	-	-	-	-	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	PL	1	-	-	-	4	-	1	1	4	-	4	-	-	1	2	2	-	-	-	-	2	3	-	-	-	-	-	-	5	-		
	NR	-	-	1	-	-	-	-	-	1	-	1	-	-	1	-	-	-	-	-	-	1	7	-	-	-	-	-	-	-	2		
LABO	*P*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	44%
	L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	PL	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1	-		
	NR	-	-	1	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-		
MYLE	*P*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	100%
	L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	PL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-		
	NR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
MYSE	*P*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	100%
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	PL	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	NR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
TOTALS		**1**	**1**	**2**	**0**	**7**	**0**	**2**	**1**	**7**	**0**	**5**	**1**	**0**	**2**	**5**	**4**	**0**	**0**	**1**	**0**	**3**	**10**	**0**	**0**	**0**	**1**	**0**	**0**	**6**	**2**	**42**	**86%**

Abbreviations used in this table: **P** = pregnant, **L** = lactating, **PL** = post-lactating, **NR** = non-reproductive, and **R** = Reproductive

Table 5. Radio-tracking summary

BAT ID (species)	Capture Site	Sex (M/F)	Day Roost ID[1]	Location (Lat /Long, dms)	Roost Description	Days Used (Date roost used)	Distance from Impact Area (ROW)	Emergence Count (Date)	Remarks
2014Rt219.1 (MYLE)	PA10	M	2014Rt219.1EST	39Y 44' 58.50" 79Y 04' 04.40"	Large wood barn with metal roof.	2 (22 and 23 July)	0.5 km	No Count[2]	Bat captured at site PA10 on 21 July 2014. [2]Land owner denied access to land and barn. Roost location estimated using telemetry. No emergence counts conducted.
2014Rt219.2 (MYLE)	PA10	F	2014Rt219.2.1	39Y 44' 28.00" 79Y 02' 16.00"	Large barn with dark roof.	1 (24 July)	0.76 km	No Count[3]	Bat captured at site PA10 on 22 July 2014. [3]Land owner historically hostile. Deferred to the PGC for any further interactions on the roost property. No emergence counts conducted.
2014Rt219.3 (MYSE)	PA03	F	2014Rt219.3.1	39Y 45' 57.73" 79Y 01' 47.35"	Dying red maple	1 (27 July)[4]	0.28 km	1 (27 July) 0 (29 July)	Bat captured at site PA03 on 26 July 2014. [4]Bat shed transmitter on 28 July.
			2014Rt219.3.2	39Y 45' 57.50" 79Y 01' 47.50"	Dead red maple	1 (28 July)[5]	0.28 km	1 (29 July) 1 (30 July)	[5]Bat shed transmitter on 28 July.
2014Rt219.4 (MYSE)	MD02	M	2014Rt219.4.1	39Y 42' 43.10" 79Y 04' 44.50"	Live honey locust	4 (5 – 8 Aug)	0.6 km	1 (5 Aug) 4 (6 Aug) 4 (7 Aug) 3 (8 Aug)	Bat captured at site MD02 on 4 August 2014.
			2014Rt219.4.2	39Y 42' 44.50" 79Y 04' 45.30"	Dying honey locust	1 (9 Aug)	0.57 km	4 (9 Aug) 0 (16 Aug)	Transmitter may have failed or was shed. Bat last detected on 10 August 2014.
			2014Rt219.4.3	39Y 43' 10.60" 79Y 04' 47.50"	Large wood barn with metal roof.	1 (10 Aug)	0.12 km	0 (16 Aug)	Transmitter not detected after 10 August 2014.

[1] Roost ID is composed of the project name (Rt219 = Route 219), bat species, unique letter indicating individual bat being tracked, and distinct day roost number.

Appendix A

Representative Survey Site Photographs

Figure 1. Site MD01. Forested un-improved road. Dominant species include sugar maple and beech.

Figure 2. Site MD02. Forested jeep trail. Dominant species include sugar maple and red oak.

Figure 3. Site MD03. Hedged trail. Dominant species include ash, sugar maple, and yellow birch.

Figure 4. Site MD04. Forested ATV trail. Dominant species include red maple, yellow birch, honey locust, and hickory.

Figure 5. Site MD05. Forested jeep trail. Dominant species include red maple and white oak.

Figure 6. Site MD06. Forested jeep trail. Dominant species include sugar maple, oak, and yellow birch.

Figure 7. Site MD07. Forested dirt road. Dominant species include red maple, striped maple, and chestnut oak.

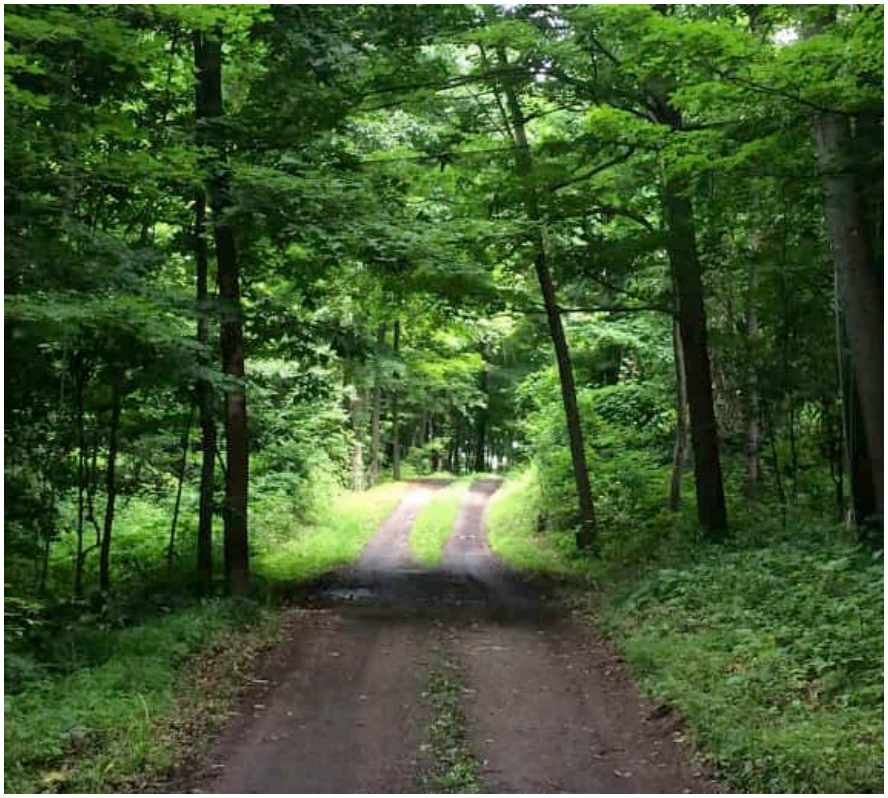

Figure 8. Site MD08. Forested driveway. Dominant species include red maple and red oak.

Figure 9. Site MD09. Forested grass road. Dominant species American beech and red maple.

Figure 10. Site PA01. Forested stream. Dominant species include white pine, red maple, and green ash.

Figure 11. Site PA02. Forested road. Dominant species include chestnut oak, red oak, yellow birch, and cherry.

Figure 12. Site PA03. Forested jeep trail. Dominant species include mixed red maple, yellow birch, and sassafras.

Figure 13. Site PA04. Forested jeep trail. Dominant species include red maple and chestnut oak.

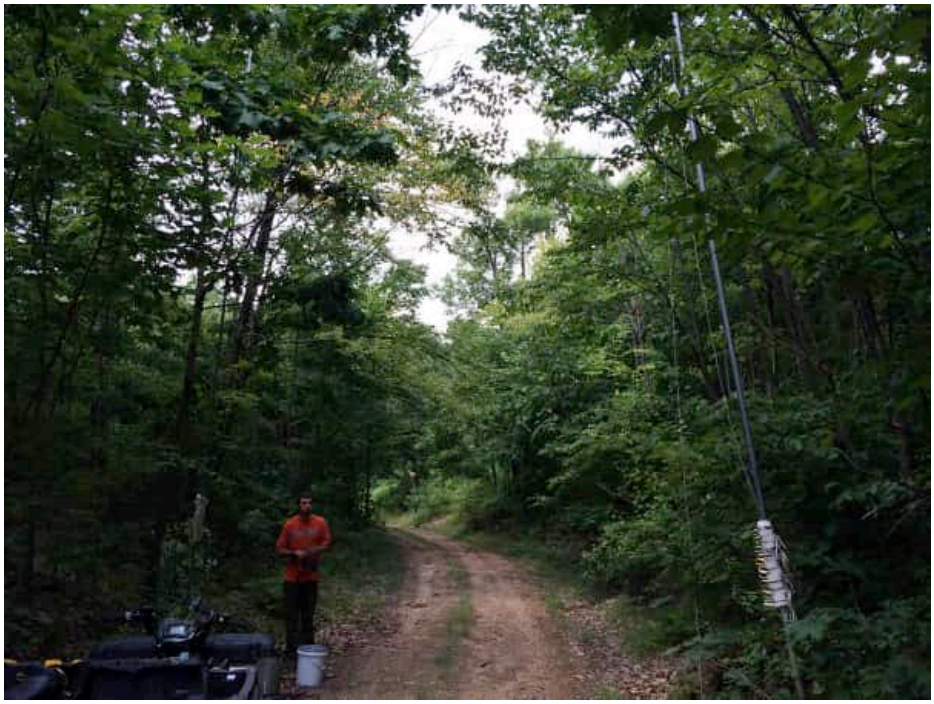

Figure 14. Site PA05. Forested trail. Dominant species include cherry, red maple and chestnut oak.

Figure 15. Site PA06. Forested ATV trail. Dominant species include cherry and birch.

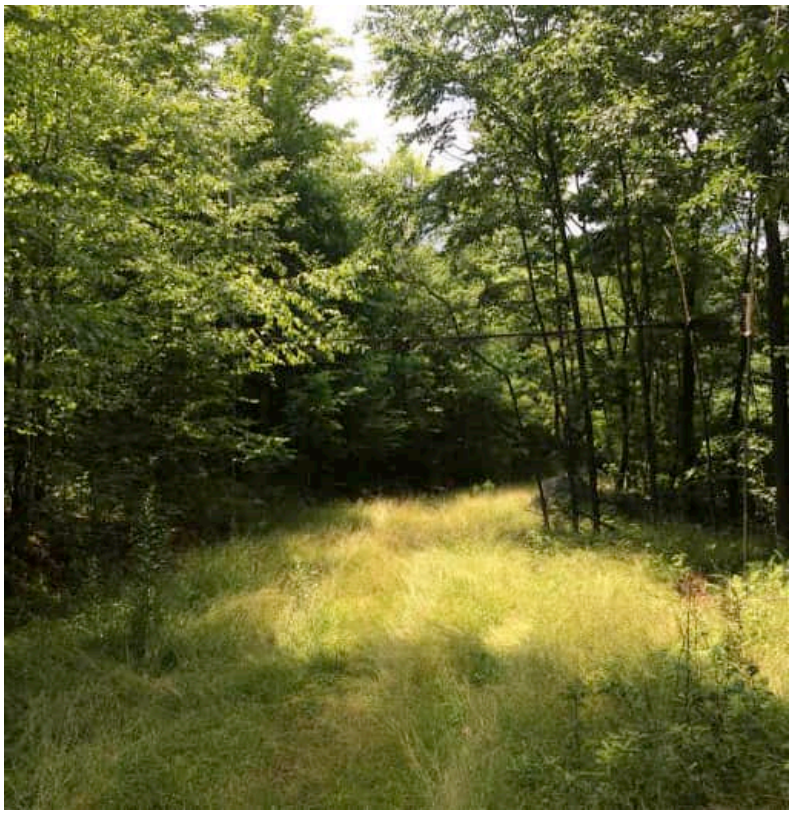

Figure 16. Site PA07. Forested trail. Dominant species include hemlock, red maple, and cherry.

Figure 17. Site PA08. Forested trail. Dominant species include red maple, hemlock, and yellow birch.

Figure 18. Site PA09. Forested stream. Dominant species include hemlock and sugar maple.

Figure 19. Site PA10. Forested jeep trail. Dominant species include hemlock, red maple, sugar maple, and red oak.

Figure 20. Site PA11. Forested stream. Dominant species include hemlock and red maple.

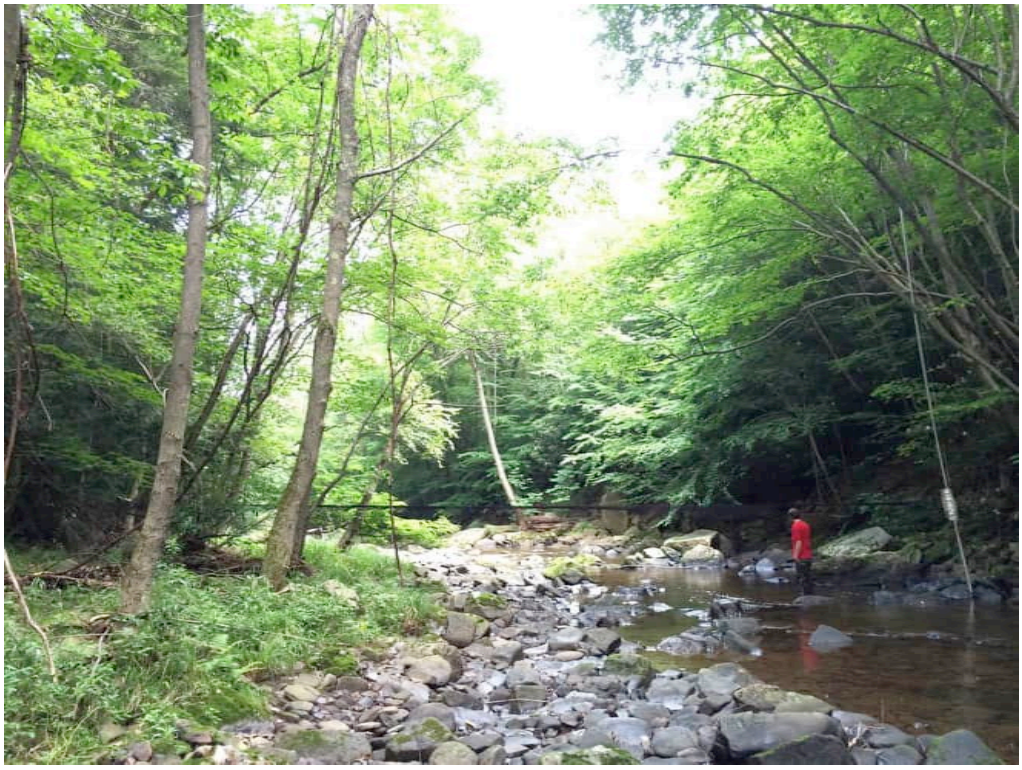

Figure 21. Site PA12. Forested stream. Dominant species include hemlock and birch.

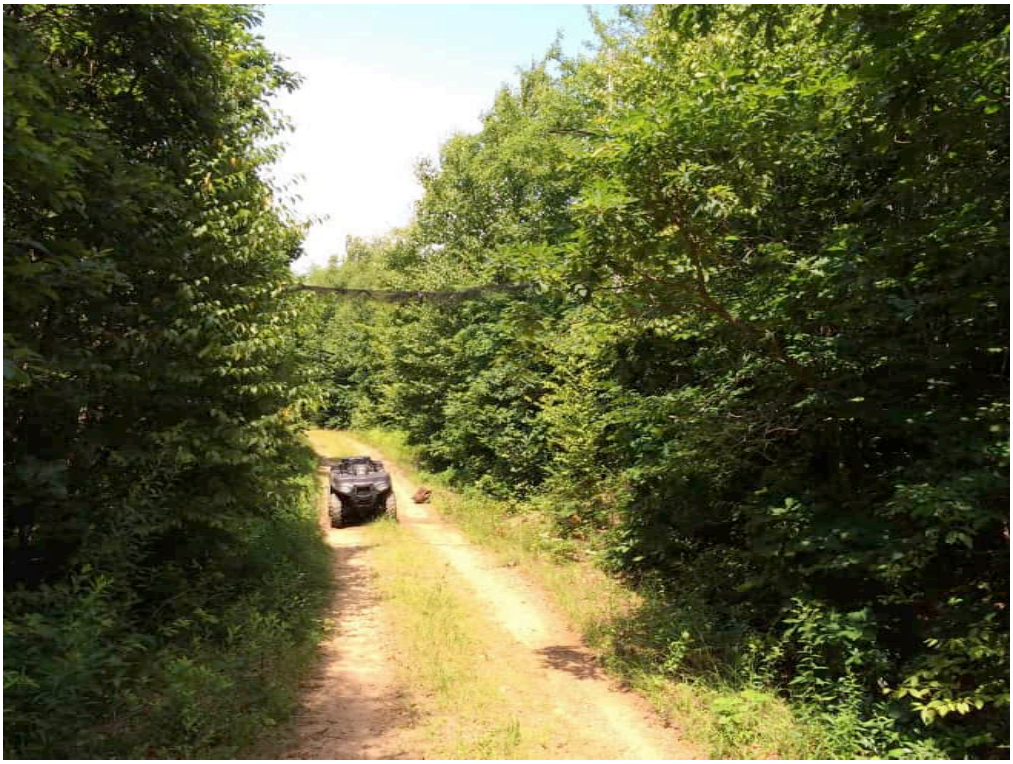

Figure 22. Site PA13. Forested jeep trail. Dominant species include yellow birch and sassafras.

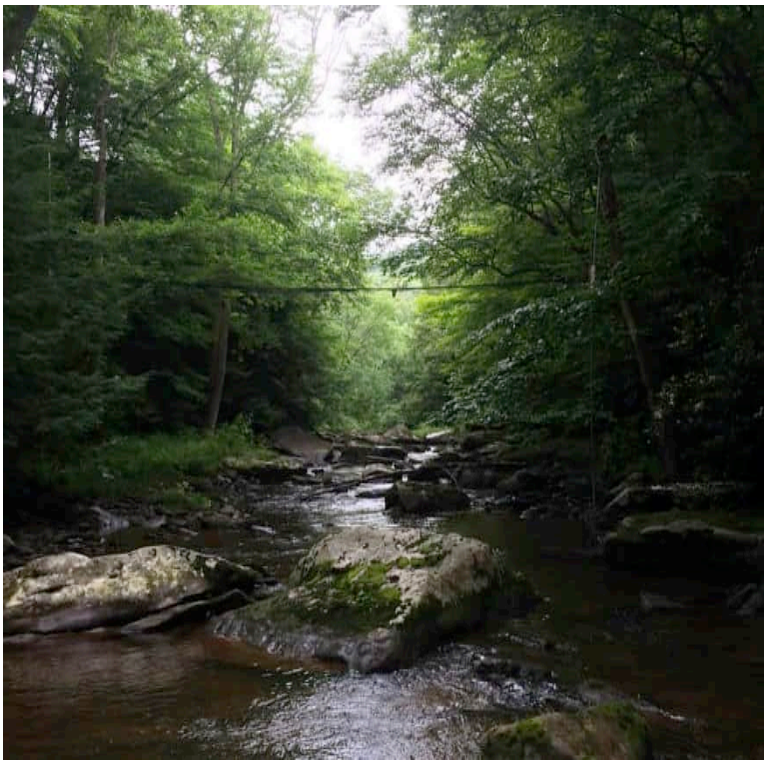

Figure 23. Site PA14. Forested stream. Dominant species include yellow birch and ash.

Figure 24. Site PA15. Forested stream. Dominant species include hemlock, yellow birch, American beech, red maple, and sugar maple.

Figure 25. Site PA16. Forested dirt road. Dominant species include red maple, red oak, hemlock, and yellow birch.

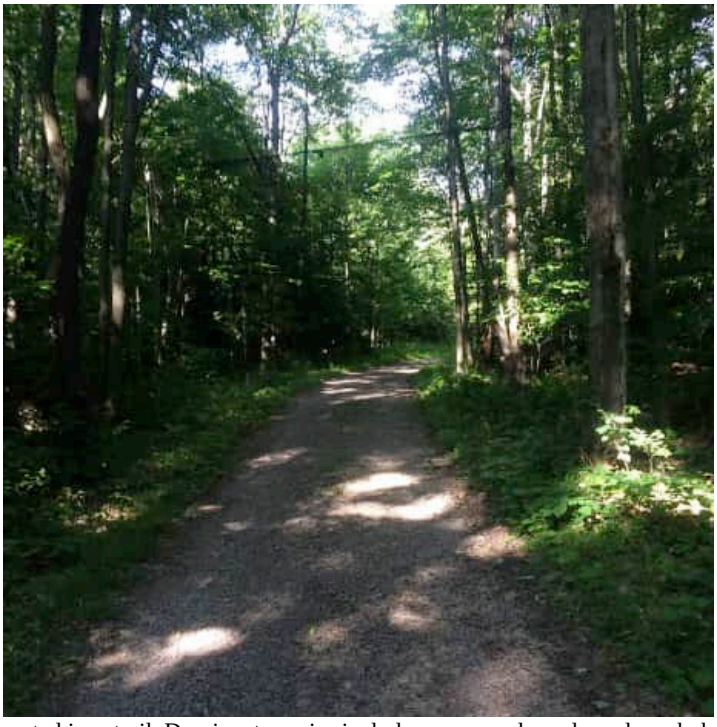

Figure 26. Site PA17. Forested jeep trail. Dominant species include sugar maple, red maple, oak, hemlock, and yellow birch.

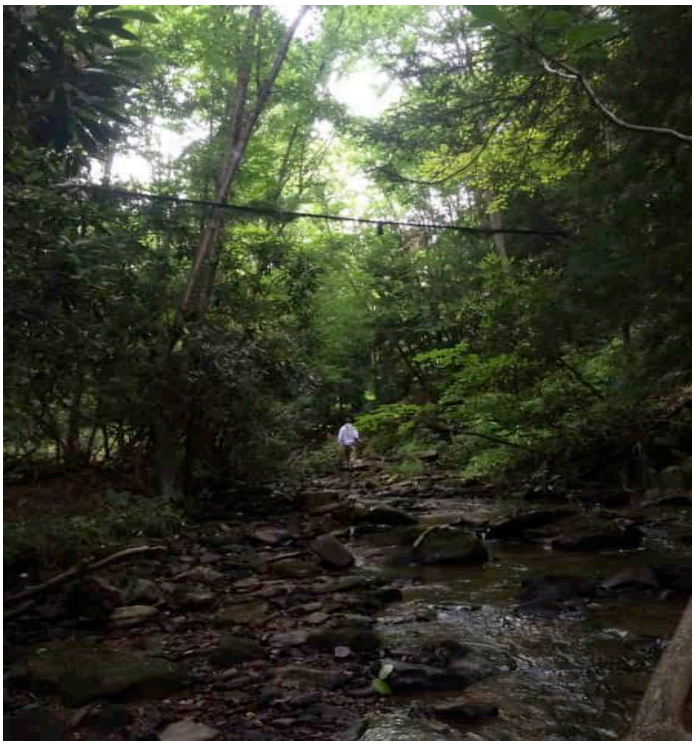

Figure 27. Site PA18. Forested stream. Dominant species include eastern hemlock and yellow birch.

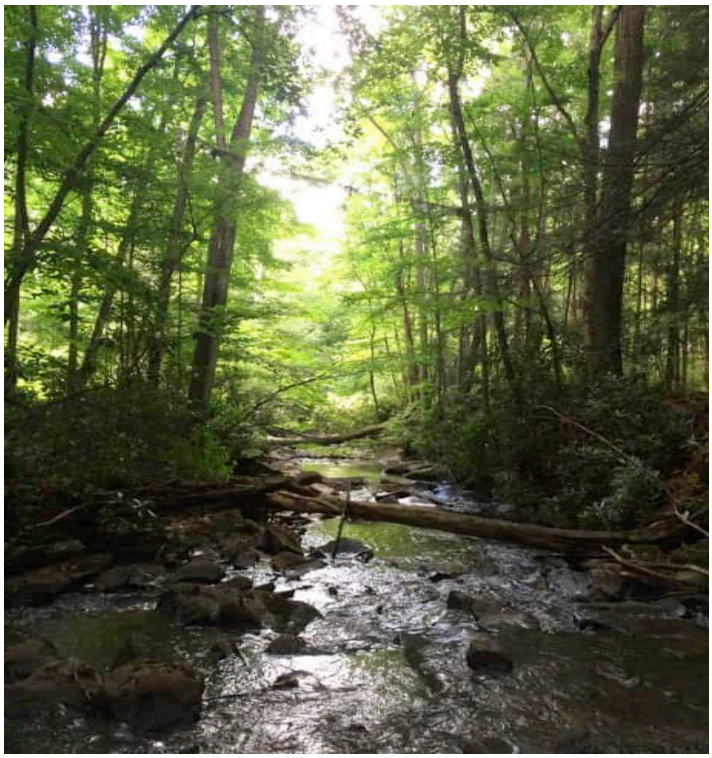

Figure 28. Site PA19. Forested stream. Dominant species include hemlock, red maple, yellow birch and American beech.

Figure 29. Site PA20. Forested stream. Dominant species include sugar maple, red maple, American beech, and hemlock.

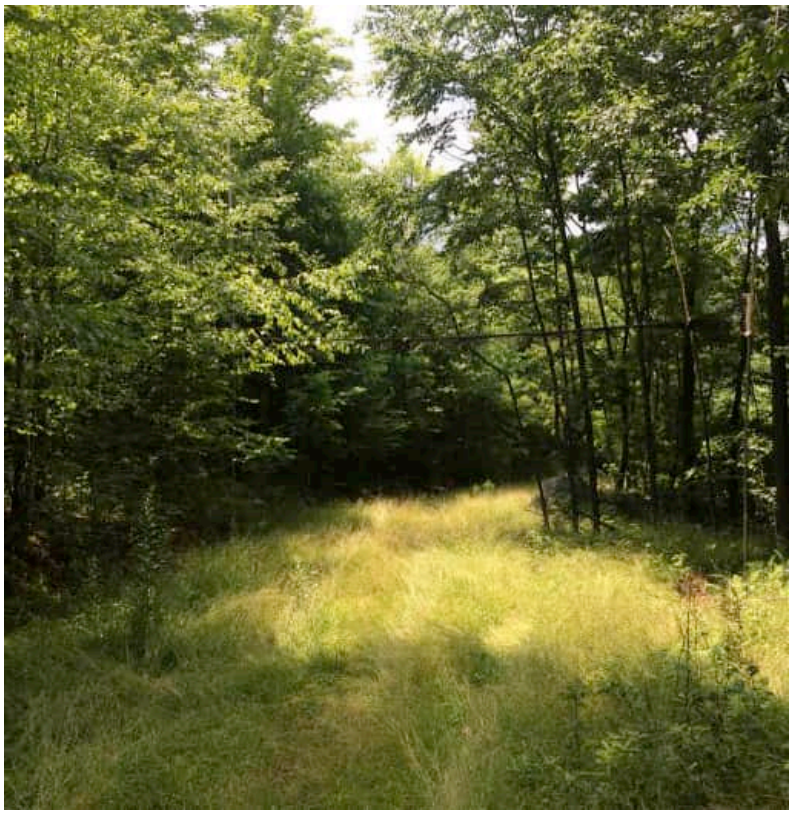

Figure 30. Site PA21. Forested stream. Dominant species include sugar maple, hemlock, beech, and birch.

Appendix B

Survey Site Data Sheets

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. Survey Date: 1 Aug 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan & Lance

5. Site Name and/or Number: 2014RT219Soms – MD01

6. Site is (circle one): hibernation site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested unimproved road and stream

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '- 12.63 "N, Longitude: 79 °- 04 '- 56.00 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 17.4 °C End Temp. 15.0 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: Calm, Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m
2	Nets	3	12m x 2.6m	Stacked over trail	93.6 sq. m
3	Net	1	6m x 2.6m	over stream	15.6 sq. m

Total Capture Area: 156 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Somer – MD01 **Date:** 1 Aug 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Triple highs are set over an unimproved road within a sugar maple, and beach dominated forest. The single high is set over a stream.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				*1		1	*1			1	2
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 2

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 31 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz

5. Site Name and/or Number: 2014 Rt 219 Somer-MD01

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested unimproved road and stream

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-43 '-12.63 "N, Longitude: 79 °-4 '-56.00 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 16.1 °C End Temp. 12.5 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, (Breezy (Leaves Rustling)), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	6mx2.6m	Stacked over trail	46.8sq.m
2	Nets	3	12mx2.6m	Stacked over trail	93.6sq.m
3	Net	1	6mx2.6m	over stream	15.6sq.m

Total Capture Area: 156 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 R+219 Somer_MD01 **Date:** 31 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Tripple highs are set over an unimproved road within a sugar maple and beech dominated forest. The single high is set over a stream.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus							** 2			2	2
Perimyotis subflavus											
Lasiurus borealis											1 *
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 3

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
* Lasiurus borealis escaped from net

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8-04-2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** ———

5. Site Name and/or Number: 2014 Rt219 Summer MD02

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe -_____.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested jeep trail

8. County: Garrett **9. 7.5' Quad.:** Abilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 42 '- 43.5"N, Longitude: 79 °- 5 '- 21.7"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2040 h Stop Time 0140 h Total Minutes: 300

Start Temp. 18.3 °C End Temp. 16.3 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	1	9m x 2.6m	stacked over trail	23.4
2	Nets	3	12m x 2.6m	stacked over trail	93.6
3	Nets	3	12m x 2.6m	stacked over trail	93.6

Total Capture Area: 210.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R+219Summer_MD02 **Date:** 8-04-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Deciduous forest close to residential homes. Dominant tree species are sugar maple and red oak. Shellbark hickory and black cherry also present. Understory is open and covered with ferns.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis				1		1					1
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8-05-2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** ———

5. Site Name and/or Number: 2014 Rt 219 Summer MD02

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel,

other structure, describe -_____.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested jeep trail

8. County: Garrett **9. 7.5' Quad.:** Abilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 42 '-43.5"N, Longitude: 29 °- 5 '-21.7"W

Datum *(circle one)*: (NAD27 (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2040 h Stop Time 0140 h Total Minutes: 300

Start Temp. 18.5 °C End Temp. 15.5 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy;) Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	1	9m×2.6m	stacked over trail	23.4
2	Nets	3	12m×2.6m	stacked over trail	93.6
3	Nets	3	12m×2.6m	stacked over trail	93.6

Total Capture Area: 210.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R1219Summer_M002 **Date:** 8-05-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Deciduous forest close to residential homes. Dominant tree species are sugar maple and red oak. Shellbark hickory and black cherry are also present. Understory is open and covered with ferns.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus							1			1	1
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 1

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 4 Aug 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz, Brandon McClung

5. Site Name and/or Number: 2014 Rt 219 Summer – MD 03

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe -_____.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
hedged trail

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-41 '-53.7 "N, Longitude: 79 °-05 '-49.3 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capitol Drive, Suite 400 Harrisburg, PA 17110, (717)540 6040

13. Time *(military)* **& Temperature:** Start Time 2105 h Stop Time 0205 h Total Minutes: 300

Start Temp. 14.7 °C End Temp. 11.7 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm); Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	18mx2.6m	Stacked over trail	140.4sq.m
2	Net	1	2.5mx2.6m	over trail	6.5sq.m
3	Nets	3	6mx2.6m	Stacked over trail	46.8sq.m

Total Capture Area: 193.7 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R+219 Summer – MD03 **Date:** 4 Aug 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a jeep trail with forested outcrops dominated by ash, sugar maple, and yellow birch. Trails open up into hayfields.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis									1	1	1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 1

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:

FORM P-70008-N/T
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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 5 Aug 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz, Brandon McClung

5. Site Name and/or Number: 2014 Rt 219 Summer MD03

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe -_____.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

hedged trail

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-41 '-53.7"N, Longitude: 79 °-05 '-49.3 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 3 Capital Drive, Suite 400 Harrisburg, PA 17110 (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2055 h Stop Time 0155 h Total Minutes: 300

Start Temp. 16.2 °C End Temp. 12.8 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	18m x 2.6m	Stacked over trail	140.4 sq. m
2	Net	1	2.5m x 2.6m	over trail	6.5 sq. m
3	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m

Total Capture Area: 193.7 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Summer – MD03 **Date:** 5 Aug 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over a jeep trail with forested outcrops dominated by ash, sugar maple, and yellow birch. Trails open up into hayfields.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus					1	1					1
Perimyotis subflavus											
Lasiurus borealis					1	1		1		1	2
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 3

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

FORM P-70008-N/T
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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8/4/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / MD04

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested ATV trail

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-41 '-42.3 "N, Longitude: 79 °-05 '-24.1 "W

Datum *(circle one)*: (NAD27 (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 16.8 °C End Temp. 13.8 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm); Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9 x 2.6	Stacked over ATV trail	70.2
2	Nets	3	6 x 2.6	Stacked over ATV trail	46.8
3	Nets	1	9 x 2.6	Over ATV trail	23.4

Total Capture Area: 140.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** MD04 **Date:** 8/4/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over ATV trails running through a mature mix deciduous forest. The forest is surrounded by reclaimed hay fields. Dominant tree species include Red Maple, Yellow Birch, Honey locust and Hickory.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8/5/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / MD04

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested ATV trail

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-41 '-42.3 "N, Longitude: 79 °-05 '-24.1 "W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 17.6 °C End Temp. 13.1 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9 x 2.6	Stacked over ATV trail	70.2
2	Nets	3	6 x 2.6	Stacked over ATV trail	46.8
3	Nets	1	9 x 2.6	Over ATV trail	23.4

Total Capture Area: 140.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** MD04 **Date:** 8/5/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over ATV trails running through a mature mix deciduous forest. The forest is surrounded by reclaimed hay fields. Dominant tree species include Red Maple, Yellow Birch, Honey Locus, and Hickory.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

B+ T S

ND

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total: 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8-02-2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014R+219 Summer MD05

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe -_____.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested jeep trail

8. County: Garrett **9. 7.5' Quad.:** Abilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 41 '-32.5 "N, Longitude: 79 °- 6 '- 46.8 "W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2025 h Stop Time 0135 h Total Minutes: 310

Start Temp. 19.5 °C End Temp. 16.9 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9m x 2.6m	stacked over trail	70.2
2	Nets	3	6m x 2.6m	stacked over trail	46.8
3	Nets	1	9m x 2.6m	stacked over trail	23.4

Total Capture Area: 140.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Summer MD05 **Date:** 8-02-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Deciduous forest adjacent to busy highway. Dominant tree species are red maple and white oak. Secondary species are American Beech and Mockernut Hickory.

18. Was reproductive status checked? (YES) / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				**2		2			*1	1	3
Perimyotis subflavus											
Lasiurus borealis				*1		1	**2			2	**5 (2 escaped)
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 8

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

* Nets opened at 2025 because bats observed flying and it was dark under the dense tree canopy.
* 2 red bats escaped while net was being lowered.

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8-03-2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014R+219 Summer MOO5

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe -_____.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested jeep trail

8. County: Garrett **9. 7.5' Quad.:** Ahilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 41 '- 37.5 "N, Longitude: 79 °- 6 '- 46.8 "W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2035 h Stop Time 0135 h Total Minutes: 300

Start Temp. 17.4 °C End Temp. 15.7 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	9m x 2.6m	stacked over trail	70.2
2	Nets	3	6m x 2.6m	stacked over trail	46.8
3	Nets	1	9m x 2.6m	stacked over trail	23.4

Total Capture Area: 140.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R+219 Summer n005 **Date:** 8-03-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Deciduous forest adjacent to busy highway. Dominant tree species are red maple and white oak. Secondary species are American Beech and Mockernut hickory.

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				** 2		2					2
Perimyotis subflavus											
Lasiurus borealis					** 2	2					2
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 4

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
* First bat observed flying at 2035; first bat captured at 2037

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Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 2 Aug 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sirander **4. Assistants:** Duncan Schanz

5. Site Name and/or Number: 2014 Rt 219 Somes – MD 06

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested jeep trail

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-41 '-59.9 "N, Longitude: 79 °-06 '-20.0"W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110, (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 18.2 °C End Temp. 16.9 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Net	1	6m x 2.6m	Stacked along stream	15.6 sq.m
2	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq.m
3	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq.m

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R1219 Some5 – MD06 **Date:** 2 Aug 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Single high net is placed along a stream. All nets are placed over a jeep trail with a sugar maple, oak, and yellow birch dominated forest.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											1 *
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 1

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
2055 – 2110 passing sprinkle
0055 – 0105 passing intermittent rain

* Lasiurus borealis escaped from net

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 3 Aug 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz

5. Site Name and/or Number: 2014 Rt 219 Somer - MD 06

6. Site is (circle one): hibernation site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested jeep trail

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-41 '-59.9 "N, Longitude: 79 °-06 '-20.0 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 16.5 °C End Temp. 15.5 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Net	1	6m x 2.6m	along stream	15.6 sq. m
2	Nets	3	6m x 2.6m	stacked over trail	46.8 sq. m
3	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Somer – MD06 **Date:** 3 Aug 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Single high net is placed along a stream. All nets are placed over a ;eep trail within a sugar maple, oak and yellow birch dominated forest.

18. Was reproductive status checked? **YES** / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen. Grand Total

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8/2/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: Todd Sinander (Responsible Recorder) **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014RT.219SUMMER/MD07

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - NA.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested dirt road

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 42 '- 26.3"N, Longitude: 79 °- 06 '- 16.9"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; contact Deborah Hoover, McCormick Taylor, 5 Capitol Drive, Harrisburg, PA 171 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 17.7 °C End Temp. 16.7 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm); Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9x2.6	stacked over dirt road	70.2
2	Nets	3	9x2.6	stacked over dirt road	70.2
3	Nets	1	9x2.6	over dirt road	23.4

Total Capture Area: 163.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** MD07 **Date:** 8/2/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets were placed over a dirt road running through a mature deciduous forest. Dominant tree species were Red Maple, Stripped Maple, and Chestnut Oak. Subdominant tree species were Hickory, Red Oak, White Oak, and Yellow-Birch.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				1		1					1
Perimyotis subflavus											
Lasiurus borealis					1	1		1		1	////// 6
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 7

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
- 2140 bat escaped net
- 2235 bat escaped net
- 2235 bat escaped net
- 2240 bat escaped net

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8/3/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / MD07

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested dirt road

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 42 '- 26.33"N, Longitude: 79 °- 06 '- 16.9 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 15.7 °C End Temp. 14.8 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9x 2.6	Stacked over dirt road	70.2
2	Nets	3	9x2.6	Stacked over dirt road	70.2
3	Nets	1	9x2.6	Over dirt road	23.4

Total Capture Area: 163.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** MD07 **Date:** 8/3/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets were placed over a dirt road running through a mature deciduous forest. Dominant tree species were Red Maple, Stripped Maple, Chestnut Oak. Subdominant tree species were Hickory, Red Oak, White Oak, and Yellow Birch.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/31/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman, Brandon McClung

5. Site Name and/or Number: 2014 Rt. 219 Summer / MD08

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested driveway

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 42 '- 58.08"N, Longitude: 79 °- 06 '- 11.47 "W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capitol Drive, Suite 400, Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 16.0 °C End Temp. 13.8 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	9 x 2.6	Stacked over driveway	70.2
2	Nets	3	12 x 2.6	Stacked over driveway	93.6
3	Nets	1	6 x 2.6	Over driveway	15.6

Total Capture Area: 179.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** MD09 **Date:** 7/31/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a stone driveway within a mature mix deciduous forest. Dominant tree species are Red Maple and Red Oak. The subdominant species in the area are White Oak, Hickory, Cherry, and Chestnut Oak

18. Was reproductive status checked? (YES) NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus							1			1	1
Perimyotis subflavus											
Lasiurus borealis								1		1	1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 2

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8/1/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman, Brandon McClung

5. Site Name and/or Number: 2014 Rt. 219 Summer / MD08

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested driveway

8. County: Garrett **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-42 '-58.08"N, Longitude: 79 °- 06 '- 11.47"W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capitol Drive, Suite 400, Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2145 h Stop Time 0145 h Total Minutes: 300

Start Temp. 17.6 °C End Temp. 15.3 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9 x 2.6	Stacked over driveway	70.2
2	Nets	3	12 x 2.6	Stacked over driveway	93.6
3	Nets	1	6 x 2.6	Over driveway	15.6

Total Capture Area: 179.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** MD08 **Date:** 8/1/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over a stone driveway within a mature mix deciduous forest. Dominant tree species are Red maple and Red oak. The subdominant species in the area are White Oak, Hickory, Cherry, and Chestnut Oak.

18. Was reproductive status checked? (YES) / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				1		1					1
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 1

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7-31-2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** —

5. Site Name and/or Number: 2014Rt219 Summer_MD09

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested grass road and trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '-25.95"N, Longitude: 79 °- 5 '-53.55"W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 15.8 °C End Temp. 13.2 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm); Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	18m x 2.6m	stacked over road	140.4
2	Nets	3	18m x 2.6m	stacked over road	140.4
3	Nets	1	6m x 2.6m	stacked over trail	15.6

Total Capture Area: 296.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R+219summer_MD09 **Date:** 7-31-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

The habitat consists of croplands and forests. The dominant tree species are American beech and red maple. Understory is sparse.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus			*1	*1	*1	3	**3		**2	5	8
Perimyotis subflavus											
Lasiurus borealis							*1			1	⊙2
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 10

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

- Bats observed flying high in the sky at 2050
- 1 Lasiurus borealis escaped while net being lowered

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 8-01-2014 **2. Company Name:** Bat Conservation & Management, Inc

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** —

5. Site Name and/or Number: 2014 R+219 Summer MD09

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested grass road and trail

8. County: Somerset **9. 7.5' Quad.:** Ayilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '-25.95"N, Longitude: 79 °- 5 '-53.55"W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 16.9 °C End Temp. 14.3 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy;) Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	18m x 2.6m	stacked over road	140.4
2	Nets	3	18m x 2.6m	stacked over road	140.4
3	Nets	1	6m x 2.6m	stacked over trail	15.6

Total Capture Area: 296.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014RT219Summer_MD09 **Date:** 8-01-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
The habitat consists of croplands and forests. The dominant tree species are American Beech and Red Maple. Understory is sparse.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus			* 1	** 3		4			* 1	1	° 6
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

- one escaped big brown

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 6

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/25/2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014 ROUTE 219 Summer PA 1

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested jeep trail leading to pond

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 46 '- 33.64"N, Longitude: 79 °- 01 '- 42.84"W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 17.0 °C End Temp. 16.0 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy;) Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m×2.6m	stacked over trail	46.8
2	Nets	3	6m×2.6m	stacked over trail	46.8
3	Nets	1	6m×2.6m	stacked over trail	15.6

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Route 219 Summer PA1 **Date:** 7-25-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Habitat consists of a mixed deciduous forest. Dominant tree species include white pine, red maple, and green ash. The jeep trail connects a paved road to a forest clearing with pond.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Bats

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. Survey Date: 7/26/2014 **2. Company Name:** Bat Conservation and Management, Inc

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** ———

5. Site Name and/or Number: 2014 Route 219 summer PA1

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested jeep trail leading to pond

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 46 '- 33.64"N, Longitude: 79 °- 01 '- 42.84"W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2130 h Stop Time 0000 h Total Minutes: 150

Start Temp. 17.3 °C End Temp. 16.4 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; (Thunderstorms); Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, (Breezy) (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	6m x 2.6m	stacked over trail	46.8
2	Nets	3	6m x 2.6m	stacked over trail	46.8
3	Nets	1	6m x 2.6m	stacked over trail	15.6

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R+219Summer_PA1 **Date:** 7-26-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Habitat consists of a mixed deciduous forest. Dominant tree species include white pine, red maple, and green ash. The jeep trail connects a paved road to a forest clearing with pond.

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in Total columns)*

N/A

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO Bats captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen. **Grand Total**

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

* Nets opened late because of storm
- Storm hit and nets closed at 0000 hrs (rain out)

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7-28-2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** ———

5. Site Name and/or Number: 2014RT219Summer_PA1

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested jeep trail leading to pond

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 46 '-33.64"N, Longitude: 79 °- 01 '-42.84"W

Datum *(circle one)*: (**NAD27**) (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Heaver, McCormick Taylor, 3 Capital Drive, Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2125 h Stop Time 0225 h Total Minutes: 300

Start Temp. 13.1 °C End Temp. 10.8 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	stacked over trail	46.8
2	Nets	3	6m x 2.6m	Stacked over trail	46.8
3	Nets	1	6m x 2.6m	stacked over trail	15.6

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014R1219Summer_PA01 **Date:** 7-28-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Habitat consists of a mixed deciduous forest. Dominant tree species include white pine, red maple, green ash. The jeep trail connects a paved road to a forest clearing with pond.

18. Was reproductive status checked? **YES** / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Bats captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
Opening delayed due to rain

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/25/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: Todd Sinander (Responsible Recorder) **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA02

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Road

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-46 '-8.08"N, Longitude: 79 °-01 '-38.17"W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Public:
PA State Game Lands, 231 Southwest Regional Office, 4820 Route 711, Bolivar, PA (724)238-9523

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 16.2 °C End Temp. 15.5 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy;) Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	6 x 2.6	Stacked over road	46.8
2	Nets	3	6 x 2.6	Stacked over road	46.8
3	Nets	1	6 x 2.6	Over trail	15.6

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA 02 **Date:** 7/25/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets were placed over a stone road and over an atv trail. Roads ran through a mixed young forest. Dominant species include Chestnut Oak, Red Oak, Yellow Birch, and Cherry.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus	1			3		4	3	3		6	10
Perimyotis subflavus											
Lasiurus borealis							1			1	1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 11

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/26/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman, Brandon McClung

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA02

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Road

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 46 '- 8.08"N, Longitude: 79 °- 01 '- 38.17"W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Public:
PA State Game Lands, 231 Southwest Regional Office, 4820 Route 711, Bolivar, PA (724) 238-9523

13. Time *(military)* **& Temperature:** Start Time 2130 h Stop Time 0000 h Total Minutes: 150

Start Temp. 16.4 °C End Temp. 15.9 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; *(suspend netting during periods of rain)* Steady Rain; (Thunderstorms); Snow; Other:.

15. General Wind Conditions *(circle one)*: Calm, (Breezy (Leaves Rustling),) Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	6x 2.6	Stacked over road	46.8
2	Nets	3	6x 2.6	Stacked over road	46.8
3	Nets	1	6x 2.6	over trail	15.6

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA02 **Date:** 7/26/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets were placed over a stone road and over an atv trail. Roads ran through a mixed young forest. Dominant species include Chestnut Oak, Red Oak, Yellow Birch, and Cherry.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				* 1		1	* 1			1	2
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 2

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

* Nets opened at 2130 after rainstorm.
Nets closed at 0000 due to rain

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/28/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman, Brandon McClung

5. Site Name and/or Number: 2014 Rt. 219 Summer/PA 02

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Road

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 46 '- 8.08"N, Longitude: 79 °- 01 '- 38.1 "W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Public: PA State Game Lands, 231 Southwest Regional Office, 4820 Route 711, Bolivar, PA (724) 238-9523

13. Time *(military)* **& Temperature:** Start Time 2130 h Stop Time 0230 h Total Minutes: 300

Start Temp. 12.6 °C End Temp. 10.3 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; (Mostly Cloudy); Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, (Breezy (Leaves Rustling),) Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6 x 2.6	Stacked over trail	46.8
2	Nets	3	6 x 2.6	Stacked over trail	46.8
3	Nets	1	6 x 2.6	Over trail	15.6

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA02 **Date:** 7/28/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets were placed over a stone road and over an atv trail. Roads ran through a mixed young forest. Dominant species include Chestnut Oak, Red Oak, Yellow Birch, and Cherry.

18. Was reproductive status checked? ~~YES~~ / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis								1			1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 1

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

* Nets opened at 2130 after rain.

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 25 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sanders **4. Assistants:** Duncan Shantz

5. Site Name and/or Number: 2014 Rt 219 Somer – PA03

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested jeep trail

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '- 55.76 "N, Longitude: 79 °- 01 '- 55.27 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Public; PA State Game Lands 231. Southwest Regional Office, 4820 Route 711, Bolivar PA. (724) 238-9523.

13. Time *(military)* **& Temperature:** Start Time 2055 h Stop Time 0155 h Total Minutes: 300

Start Temp. 17.6 °C End Temp. 16.8 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m
2	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m
3	Net	1	6m x 2.6m	over trail	15.6 sq. m

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Somer-PA 03 **Date:** 25 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a jeep trail within a mixed red maple, yellow birch, and sassafras dominated deciduous forest.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 26 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schanz

5. Site Name and/or Number: 2014 Rt 219 Somer- PA03

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested jeep trail

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-45 '-55.76 "N, Longitude: 79 °-01 '-55.27 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Public: PA State Game Lands 231. Southwest regional office, 4820 Route 711, Bolivar, PA. (724) 238-9523

13. Time *(military)* **& Temperature:** Start Time 2130 h Stop Time 0000 h Total Minutes: 150

Start Temp. 17.2 °C End Temp. 16.8 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, (Breezy (Leaves Rustling),) Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m
2	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m
3	Net	1	6m x 2.6m	over trail	15.6 sq. m

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt219 Somer- PA03 **Date:** 26 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a jeep trail within a mixed red maple, yellow birch, and sassafras dominated deciduous forest.

18. Was reproductive status checked? (YES) / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis				1		1					1
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

Nets opened at 2130 after a rainstorm. Nets closed at 0000 due to rain.

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 28 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz

5. Site Name and/or Number: 2014 Rt 219 Somer_PA03

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested jeep trail

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-45 '-55.76"N, Longitude: 79 °-01 '-55.27"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Public: PA State Game Lands 231. Southwest regional office, 4820 Route 711, Bolivar, PA. (724) 238-9523

13. Time *(military)* **& Temperature:** Start Time 2125 h Stop Time 0225 h Total Minutes: 300

Start Temp. 12.7 °C End Temp. 10.8 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); (Drizzle); Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: Calm, (Breezy (Leaves Rustling)), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6mx2.6m	Stacked over trail	46.8sq.m
2	Nets	3	6mx2.6m	Stacked over trail	46.8 sq.m
3	Nets	1	6mx2.6m	over trail	15.6sq.m

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Somer_PA03 **Date:** 28 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a deep trail within a mixed red maple, yellow birch, and sassafras dominated deciduous forest.

18. Was reproductive status checked? (YES) / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
Nets opened at 2125 after rain subsided
light drizzle for roughly 1st hour of netting

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/23/14 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014PA219Summer - PA04

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - —.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested jeep trail.

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '- 33.5 "N, Longitude: 79 °- 02 '- 29.7 "W

Datum *(circle one)*: (NAD27 (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private! Contact Deborah Hoover, McCormick Taylor, 5 Capitol Drive, Suite 400, Harrisburg PA (717) 540-6040.

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 20.8 °C End Temp. 16.7 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy;) Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other: —.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: Calm, (Breezy (Leaves Rustling)), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	stacked over trail	46.8 sqm
2	Nets	3	6m x 2.6m	stacked over trail	46.8 sqm
3	Net	1	9m x 2.6m	over trail	23.4 sqm

Total Capture Area: 117.0 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA04 **Date:** 7/23/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Upland mature deciduous forest on a northwest facing slope.
Dominant tree species are red maple & chestnut oak.

18. Was reproductive status checked? (YES) / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No bats Captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/24/14 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Brenton McClung

5. Site Name and/or Number: 2014 Bat 2019 Summer - PA04

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - —.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Jeep Trail.

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '- 33.5 "N, Longitude: 79 °- 02 '- 29.7 "W

Datum *(circle one)*: (**NAD27**) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private : Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg PA (717) 540-6646

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 14.9 °C End Temp. 11.8 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; (Mostly Cloudy); Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other: —.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over trail	46.8 Sqm
2	Nets	3	6m x 2.6m	Stacked over trail	46.8 Sqm
3	Nets	1	9m x 2.6m	over trail	23.4 Sqm

Total Capture Area: 117.0 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA04 **Date:** 7/24/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Upland mature deciduous forest on a northwest facing slope.
Dominant tree species are chestnut oak and red maple

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Bats

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total: 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/23/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinanders **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA05

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested Trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '- 08.49 "N, Longitude: 79 °- 02 '- 32.38 "W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 21.9 °C End Temp. 17.6 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; (Drizzle;) Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	1	6 x 2.6	Over trail	15.6
2	Nets	3	6 x 2.6	Stacked over trail	46.8
3	Nets	3	6 x 2.6	Stacked over trail	46.8

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA05 **Date:** 7/23/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a Forested atv trail/dirt road. Surrounding vegetation is mixed young forest with heavy under growth. Dominant tree species includes Cherry, Red Maple, and Chestnut OAK.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus	*					1		*	**	3	4
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 4

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/24/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA05

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '- 08.49"N, Longitude: 79 °- 02 '- 32.38"W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes:

Start Temp. 13.4 °C End Temp. 10.1 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear), Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	1	6 x 2.6	Over trail	15.6
2	Nets	3	6 x 2.6	Stacked over trail	46.8
3	Nets	3	6 x 2.6	Stacked over trail	46.8

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA05 **Date:** 7/24/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over a forested atv trail/dirt road. Surrounding vegetation is mixed young forest with heavy under growth. Dominant tree species includes Cherry, Red Maple, and Chestnut Oak.

18. Was reproductive status checked? (YES) / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				•		1					1
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/23/2014 **2. Company Name:** BAT CONSERVATION & MANAGEMENT

3. Bat Identifier: (Responsible Recorder) JOHN CHYNOWETH **4. Assistants:** BRYAN BUTLER

5. Site Name and/or Number: 2014 RT 219 SUMMER 1, PA-6

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

OVERGROWN ATV TRAIL IN DENSE DECIDUOUS FOREST / * VERY NARROW

8. County: SOMERSET **9. 7.5' Quad.:** AVILTON

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 40.05"N, Longitude: 79 °- 02 '- 41.19"W

Datum *(circle one)*: (NAD27 (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 O: 717-540-6046

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 18 °C End Temp. 15 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; (Drizzle;) Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	NET	3	6m x 2.6m	STACKED OVER TRAIL	46.8 sq. m.
2	NETS	1	2.6 x 2.6 m	STACKED OVER TRAIL	6.76 sq m
3	NETS	3	6m x 2.6 m	STACKED OVER TRAIL	46.8 sqm

Total Capture Area: 100.36 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA-6 **Date:** 7/23/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
NARROW ATV PATH / CORRIDOR ON MOUNTAINSIDE SURROUNDED BY DENSE FOREST ON BOTH SIDES. DOMINANT SPECIES INCLUDE BIRCH & CHERRY

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus			**	**		4					4
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 4

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/24/2014 **2. Company Name:** BAT CONSERVATION & MANAGEMENT

3. Bat Identifier: (Responsible Recorder) TODD SINANOSA **4. Assistants:** BRYAN BUTLER

5. Site Name and/or Number: 2014 RT. 219 SUMMER / PA-6

6. Site is (circle one): hibernation site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

OVERGROWN ATV TRAIL IN DENSE DECIDUOUS FOREST & VERY NARROW

8. County: SOMERSET **9. 7.5' Quad.:** AVILTON

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 40.05"N, Longitude: 79 °- 02 '- 41.19"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 20:45 h Stop Time 0145 h Total Minutes: 300

Start Temp. 16 °C End Temp. 12 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	NETS	3	6m x 2.6m	STACKED OVER TRAIL	46.8
2	NETS	1	2.6 x 2.6m	STACKED OVER TRAIL	6.76
3	NETS	3	6m + 2.6m	STACKED OVER TRAIL	46.8

Total Capture Area: 100.36 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA-6 **Date:** 7/24/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Narrow ATV trail/corridor on mountainside surrounded by dense forest on both sides. Dominant species include Birch and Cherry

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				1		1					1
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/21/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA07

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 41.0 "N, Longitude: 79 °- 03 '- 02.3 "W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 20.3 °C End Temp. 18.7 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm); Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over trail	46.8
2	Nets	1	6m x 2.6m	Over trail	15.6
3	Nets	3	9m x 2.6m	Stacked over trail	70.2

Total Capture Area: 132.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA07 **Date:** 7/21/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed on a forested trail which is located on a steep incline. The forest consist of mix mature species. The dominant tree species include Hemlock, Red Maple, Cherry.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				** 2		2					2
Perimyotis subflavus											
Lasiurus borealis				* 1		1					1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 3

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/22/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer/PA07

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 41.0 "N, Longitude: 79 °- 03 '- 02.3 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)*

Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110
O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 20.6 °C End Temp. 18.8 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear), Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over trail	46.8
2	Nets	1	6m x 2.6m	Over trail	15.6
3	Nets	3	9m x 2.6m	Stacked over trail	70.2

Total Capture Area: 132.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA07 **Date:** 7/22/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed on a forested trail which is located on a steep incline. The forests consist of mix mature species. The dominant tree species include Hemlock, Red Maple, and cherry.

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii								1			1
Myotis sodalis											
Eptesicus fuscus							1				1
Perimyotis subflavus											
Lasiurus borealis				1					1		2
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 4

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD Page 1 of 2

1. Survey Date: 7/19/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / Pa 08

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 41.0 "N, Longitude: 79 °- 03 '- 20.5 "W

Datum *(circle one)*: (NAD27 (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 17.2 °C End Temp. 15.0 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; (Drizzle); Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12m x 2.6m	Stacked over trail	93.6
2	Nets	3	9m x 2.6m	Stacked over trail	70.2
3	Nets	1	6m x 2.6m	Over trail	15.6

Total Capture Area: 179.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA08 **Date:** 7/19/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over a trail running through a mature forest. Dominant species are Red Maple, Hemlock, and Yellow Birch. Trail ends at Piney Run which is running perpendicular to the nets.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/20/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA08

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 41.0"N, Longitude: 79 °- 03 '- 20.5"W

Datum *(circle one)*: (NAD27 (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 18.6 °C End Temp. 17.1 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy;) Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12m x 2.6m	Stacked over trail	93.6
2	Nets	3	9m x 2.6m	Stacked over trail	70.2
3	Nets	1	6m x 2.6m	Over trail	15.6

Total Capture Area: 179.4 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA08 **Date:** 7/20/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a trail running through a mature forest. Dominant species are Red Maple, Hemlock, and Yellow Birch. Trail ends at Piney Run which is running perpendicular to the nets

18. Was reproductive status checked? (YES) **NO** *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 21 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz

5. Site Name and/or Number: 2014 PA 219 Somer – PA09 Night 1

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested stream

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '- 36.15 "N, Longitude: 79 °- 4 '- 1.70 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 717 540 6040

13. Time *(military)* **& Temperature:** Start Time 2105 h Stop Time 0205 h Total Minutes: 300

Start Temp. 20.9 °C End Temp. 20.2 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq.m
1	Nets	3	12m x 2.6m	Stacked over stream	93.6 sq.m
2	Nets	3	12m x 2.6m	Stacked over stream	93.6 sq.m
3	Net	1	9m x 2.6m	over stream	23.4 sq.m

Total Capture Area: 210.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Somer - Photo Night 1 **Date:** 21 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a stream within a mixed forest dominated by hemlock and sugar maple. Rhododendron dominates the understory

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus								1		1	1
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 22 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz

5. Site Name and/or Number: 2014 AT 219 Somer- PA 09 Night 2

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested stream

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '-36.5 "N, Longitude: 79 °- 04 '-1.70 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg PA 17110 717 540 6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 22.1 °C End Temp. 18.6 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12mx2.6m	Stacked over stream	93.6 sq.m
2	Nets	3	12mx2.6m	Stacked over stream	93.6 sq.m
3	Net	1	9mx2.6m	over stream	23.4 sq.m

Total Capture Area: 210.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Somer – PA09 Night 2 **Date:** 22 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a stream within a mixed forest dominated by hemlock and sugar maple. Rhododendron dominates the understory.

18. Was reproductive status checked? (YES) / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/21/14 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014 RT219 Summer - PA10

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested jeep trail running parallel to stream.

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 45 '- 21.5 "N, Longitude: 79 °- 03 '- 57.5 "W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Dr. Suite 400, Harrisburg PA 17110, (717) 540-2040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 21.2 °C End Temp. 18.1 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm); Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Net	1	6m x 2.6m	over trail	15.6 sq m
2	Nets	3	12m x 2.6m	stacked over trail	93.6 sq m
3	Nets	3	12m x 2.6m	stacked over trail	93.6 sq m

Total Capture Area: 202.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014RE2195summer - PA10 **Date:** 7/21/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Low land mature mixed forest patch following a stream with agricultural/pasture land on either side of the forest patch. Dominant tree species are hemlock, red & sugar maple, red oak.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii				1		1					1
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/22/14 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) Todd Simander **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014R+219 Summer - PA10

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested jeep trail running parallel to stream.

8. County: Somerset **9. 7.5' Quad.:** Meyersdale

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-45 '-21.5 "N, Longitude: 79 °-03 '-57.5 "W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capitol Dr. Suite 400, Harrisburg PA 17110 (717)540-6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 21.1 °C End Temp. 18.2 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Net	1	6m x 2.6m	Over trail	15.6 sq m
2	Nets	3	12m x 2.6m	stacked over trail	93.6 sq m
3	Nets	3	12m x 2.6m	stacked over trail	93.6 sq m

Total Capture Area: 202.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014Rt219Summer-PA10 **Date:** 7/22/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Low land mature mixed forest patch following a stream with agricultural/pasture land on either side of the forest patch. Dominant tree species are hemlock, red & sugar maple, red oak.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in Total columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/9/14 **2. Company Name:** BAT CONSERVATION & MANAGEMENT

3. Bat Identifier: (Responsible Recorder) JOHN CHENGER **4. Assistants:** BRYAN BUTLER

5. Site Name and/or Number: 2014 RT. 219 SUMMER / PA-11

6. Site is (circle one): hibernation site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

FORESTED STREAM

8. County: SOMERSET **9. 7.5' Quad.:** AVILTOWN

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 ° - 44 ' - 33.5 "N, Longitude: 79 ° - 03 ' - 22.8 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: contact Deborah Hoover, McCamich Taylor, 5 Capitol Dr. Suite 400, Harrisburg PA 17110 (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 17.2 °C End Temp. 15 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	NETS	3	12m x 2.6m	STACKED OVER STREAM	93.6
2	NETS	3	9m x 2.6m	STACKED OVER TRAIL	70.2
3	NETS	1	12m x 2.6m	STACKED OVER TRAIL	31.2	

Total Capture Area: 195 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA-11 **Date:** 7/19/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
MODERATELY FORESTED AREA OFF OF UNDEVELOPED ROAD ALONG STREAM. DOMINANT TREE SPECIES INCLUDE HEMLOCK AND RED MAPLE.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											1 *
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
End Time:	End Time:	End Time:	End Time:	End Time:
Tallies:	Tallies:	Tallies:	Tallies:	Tallies:

20. REMARKS:
* ONE REDBAT; ESCAPED NET BEFORE LOWERING

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/20/14 **2. Company Name:** BAT CONSERVATION & MANAGEMENT

3. Bat Identifier: (Responsible Recorder) JOHN CHENGER **4. Assistants:** BRYAN BUTLER

5. Site Name and/or Number: 2014 AT. ZIP SUMMER / PA-11

6. Site is (circle one): hibernation site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

FORESTED STREAM

8. County: SOMERSET **9. 7.5' Quad.:** AVILTON

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 33.5"N, Longitude: 79 °- 03 '- 22.8"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)*

Deborah Hoover, McCamick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110
Or 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 18.6 °C End Temp. 17.1 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	NETS	3	12m x 2.6m	STACKED OVER STREAM	93.6
2	NETS	3	9m x 2.6m	STACKED OVER TRAIL	70.2
3	NETS	1	12m x 2.6m	OVER STREAM	31.2

Total Capture Area: 195.0 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA-11 **Date:** 7/20/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
MODERATELY FORESTED AREA OFF OF UNDEVELOPED ROAD ALONG STREAM. DOMINANT TREE SPP. INCLUDE HEMLOCK AND RED MAPLE

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis							1			1	1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 1

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/21/2014 **2. Company Name:** BAT CONSERVATION & MANAGEMENT

3. Bat Identifier: (Responsible Recorder) JOHN CHENGER **4. Assistants:** BRYAN BUTLER

5. Site Name and/or Number: 2014 RT 219 SUMMER - PA-12

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

FORESTED STREAM . PARALLEL TO ATV TRAIL

8. County: SOMERSET **9. 7.5' Quad.:** AVILTON

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 15.3 "N, Longitude: 79 °- 03 '- 18.4 "W

Datum *(circle one)*: (NAD27) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* DEBORAH HOOVER, MCCORMICK TAYLOR, 5 CAPITAL DRIVE, SUITE 400, HARRISBURG PA 17110: 717.540.6041

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 2200 h Total Minutes: 300

Start Temp. 22 °C End Temp. 18.7 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy;) Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	NETS	3	9m x 2.6m	STACKED OVER TRAIL	70.2
2	NETS	3	18m x 2.6m	STACKED OVER STREAM	140.4
3	NETS	1	6m x 2.6	STACKED OVER TRAIL	15.6

Total Capture Area: 226.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA-12 **Date:** 7/21/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

DENSELY FORESTED AREA ALONG STREAM THAT RUNS PARALLEL TO OLD ATV TRAIL. STEEP EMBANKMENT LEADING DOWN TO STREAM. DOMINANT TREE SPP. INCLUDE HEMLOCK, BIRCH

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus						2					2
Perimyotis subflavus											
Lasiurus borealis										1	1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 3

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/22/2014 **2. Company Name:** BAT CONSERVATION & MANAGEMENT

3. Bat Identifier: (Responsible Recorder) JOHN CHENGER **4. Assistants:** BRYAN BUTLER

5. Site Name and/or Number: 2014 RT 219 - SOMMER - PA-12

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

FORESTED STREAM PARALLEL TO ATV TRAIL

8. County: SOMERSET **9. 7.5' Quad.:** AVILTON

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 15.3"N, Longitude: 79 °- 03 '- 18.4"W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* DEBORAH HOOVER, McCORMICK TAYLOR, 5 CAPITAL DRIVE, SUITE 400, HARRISBURG PA 17110; 717.540.6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0450 h Total Minutes: 300

Start Temp. 23 °C End Temp. 19 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	NETS	3	9m x 2.6m	STACKED OVER TRAIL	70.2
2	NETS	3	18m x 2.6m	STACKED OVER STREAM	140.4
3	NETS	1	6m x 2.6	STACKED OVER TRAIL	15.6

Total Capture Area: 226.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA-12 **Date:** 7/21/2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

DENSELY FORESTED AREA ALONG STREAM THAT RUNS PARALLEL TO OLD ATV TRAIL. STEEP EMBANKMENT LEADING DOWN TO STREAM. DOMINANT TREE SPP. INCLUDE HEMLOCK + BIRCH

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				*		1	*			1	2
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 2

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 23 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Duncan Shane

5. Site Name and/or Number: 2014 Rt 219 Somer - PA13 Night 1

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested Jeep trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 41.7 "N, Longitude: 79 °- 02 '- 33.9 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 717 540 6040

13. Time *(military)* **& Temperature:** Start Time 2110 h Stop Time 0210 h Total Minutes: 300

Start Temp. 19.2 °C End Temp. 15.8 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, (Breezy (Leaves Rustling)), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over trail	15.6 sq. m
2	Nets	3	6m x 2.6m	Stacked over trail	46.8 sq. m
3	Net	1	6m x 26m	over trail	46.8 sq. m

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 R1219 Somer PA 13 Night **Date:** 23 JUL 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed across a jeep trail within a young mixed forest dominated by yellow birch, and sassafras. Less dominant trees include red maple, oak and hemlock.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus		6		2		8			1	1	10 *
Perimyotis subflavus											
Lasiurus borealis											1 *
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 11

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
Intermittent rain from 2140-2200
Intermittent rain from 2215-2220
Light drizzle 2250-2300
* Eptesicus fuscus escaped from net
* Lasiurus borealis escaped from net

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 24 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schantz

5. Site Name and/or Number: 2014 RL219 Somer_PA13 Night 2

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested ; esp trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-44 '-41.7 "N, Longitude: 79 °-02 '-33.9 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 717 540 6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 13.3 °C End Temp. 11.5 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*
1	Nets	3	6mx2.6m	Stacked over trail	15.6sq.m
2	Nets	3	6mx2.6m	Stacked over trail	46.8sq.m
3	Net	1	6mx2.6m	Over trail	46.8sq.m

Total Capture Area: 109.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt219Somer–PAB Night 2 **Date:** 24 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed across a deep trail within a young mixed forest dominated by yellow birch and sassafras. Less dominant trees include red maple, oak and hemlock

18. Was reproductive status checked? **YES** / **NO** *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				1	1	2					2
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 2

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 19Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schanz

5. Site Name and/or Number: 2014 Rt 219 Summer – PA14

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested stream

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-44 '-4.57 "N, Longitude: 79 °-3 '-25.44 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)*
Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110, 717 540 6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 15.9 °C End Temp. 15.4 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; (Mostly Cloudy); Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12mx2.6m	Stacked over stream	93.6sq.m
2	Nets	3	12mx2.6m	Stacked over stream	93.6sq.m
3	Net	1	6mx2.6m	over trail	15.6sq.m

Total Capture Area: 202.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 RT219 Summer_PA 14 **Date:** 19 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Tripple highs are set over a forested stream. Single high is set over an ATV trail running parallel to stream. The forest is dominated by hemlock followed by yellow birch and ash.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											1*
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 1

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
*Lasiurus borealis escaped from net

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 20 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schanz

5. Site Name and/or Number: 2014 AT 219 Summit_PA 14

6. Site is (circle one): hibernation site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested stream

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-44 '-4.57 "N, Longitude: 79 °-3 '-25.44 "W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)*
Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110, 717 540 6040

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300
Start Temp. 18.3 °C End Temp. 17.5 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: Calm, Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12mx2.6m	Stacked over stream	93.6 sq.m
2	Nets	3	12mx2.6m	stacked over stream	93.6sq.m
3	Net	1	6mx2.6m	over trail	15.6 sq.m

Total Capture Area: 202.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt 219 Summer - PA 14 **Date:** 20 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Site is in a mixed forest dominated by hemlock, followed by yellow birch and ash. Tripple highs are set over a stream. Single high is set on an ATV trail which runs pasallel to the stream.

18. Was reproductive status checked? (YES) NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus									1	1	1
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 1

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/19/14 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014 Rt 219 Summer - PA 15

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Stream

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '-54.9"N, Longitude: 79 °- 3 '-16.3 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private!
Contact Deborah Hoover, McCormick Taylor, 5 Capital Dr., Suite 400, Harrisburg PA 17110. (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 17.2 °C End Temp. 15.4 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12m x 2.6m	stacked over stream	93.6m
2	Nets	3	12m x 2.6m	stacked over stream	93.6m
3	Nets	1	6m x 2.6m	stacked over stream	15.6m

Total Capture Area: 202.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt219 Summer-PA15 **Date:** 7/19/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Stream valley with mature mixed forest consisting of hemlock, yellow birch, American beech, red + sugar maple.

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No captures

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/20/14 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Brandon McClung

5. Site Name and/or Number: 2014 Rt 219 Summer - PA15

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Stream

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '- 54.9 "N, Longitude: 79 °- 3 '- 16.3 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCamic Taylor, 8 Capitol Dr, Suite 400, Harrisburg PA, 17110, (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 18.2 °C End Temp. 16.9 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy;) Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12m x 2.6m	stacked over stream	93.6 m
2	Nets	3	12m x 2.6m	stacked over stream	93.6 m
3	Nets	1	6m x 2.6m	over stream	15.6 m

Total Capture Area: 202.8 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 RB219 Summer PA15 **Date:** 7/20/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Stream valley with mature mixed forest consisting of hemlock, yellow birch, American beech, red & sugar maple.

18. Was reproductive status checked? (YES) / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Captures

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/29/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman, Brandon McClung

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA 16

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested dirt road

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-43 '-44.44"N, Longitude: 79 °-03 '-52.51"W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private : Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0150 h Total Minutes: 300

Start Temp. 11.0 °C End Temp. 10.0 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm); Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6x 2.6	Stacked over road	46.8
2	Nets	1	6x2.6	Over trail	15.6
3	Nets	3	9x2.6	Stacked over road	70.2

Total Capture Area: 132.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA 116 **Date:** 7/29/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are place over a dirt road. Single high net is placed over an ATV trail running parallel to dirt road. Both roads are surrounded by a mature mixed forest. Dominant tree species are Red Maple, Red Oak, Hemlock, and Yellow Birch.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/30/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman, Brandon McClung

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA116

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested dirt road

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-43 '-44.44 "N, Longitude: 79 °-03 '-52.51 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2100 h Stop Time 0200 h Total Minutes: 300

Start Temp. 12.4 °C End Temp. 11.1 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; (Drizzle); Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6x2.6	Stacked over road	46.8
2	Nets	1	6x2.6	Over trail	15.6
3	Nets	3	9x2.6	Stacked over road	70.2	

Total Capture Area: 132.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA 16 **Date:** 7/30/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over a dirt road. Single high net is placed over an ATV trail running parallel to dirt road. Both roads are surrounded by a mature mix forest. Dominant tree species are Red Maple, Red Oak, Hemlock, and Yellow Birch

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 29 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schanz

5. Site Name and/or Number: 2014R1219Somer_PA17

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
forested jeep trail

8. County: Somesset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °-43 '-45.90"N, Longitude: 79 °-04 '-14.92 "W

Datum *(circle one)*: (NAD27 (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110 (717) 540-6040

13. Time *(military)* **& Temperature:** Start Time 2055 h Stop Time 0155 h Total Minutes: 300

Start Temp. 11.0 °C End Temp. 10.0 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9m x 2.6m	Stacked over trail	70.2 sq.m
2	Nets	3	9 mx 2.6m	Stacked over trail	70.2 sq.m
3	Net	1	6m x 2.6m	Over trail	15.6 sq.m

Total Capture Area: 156 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt219 Somer – PA17 **Date:** 29 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a jeep trail within a Sugar maple, red maple, oak, hemlock, and yellow birch dominated forest.

18. Was reproductive status checked? **YES** / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis							* 1	* 1		2	2
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 2

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/30/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schanz

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA17

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Jeep trail

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '- 45.9 "N, Longitude: 79 °- 04 '- 14.92 "W

Datum *(circle one)*: (**NAD27** (Preferred)), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400, Harrisburg, PA 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2055 h Stop Time 0155 h Total Minutes: 300

Start Temp. 13.1 °C End Temp. 11.1 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	9x2.6	Stacked over trail	70.2
2	Nets	3	9x2.6	Stacked over trail	70.2
3	Nets	1	6x2.6	Over trail	15.6

Total Capture Area: 156 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA 17 **Date:** 7/30/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Nets are placed over a jeep trail within a Sugar Maple, Red Maple, Oak, Hemlock, and Yellow Birch dominated Forest

18. Was reproductive status checked? (YES) / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis	* 1					1					1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 1

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

FORM P-70008-N/T
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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7-29-2014 **2. Company Name:** Bat Conservation & Management, Inc.

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** ———

5. Site Name and/or Number: 2014 Rt 219 Summer PA 18

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested stream

8. County: Somerset **9. 7.5' Quad.:** Abilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '-23.7 "N, Longitude: 79 °- 4 '-24.9 "W

Datum *(circle one)*: (**NAD27**) (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive, Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2045 h Stop Time 0145 h Total Minutes: 300

Start Temp. 10,9 °C End Temp. 10,0 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	stacked over stream	46.8
2	Nets	3	9m x 2.6m	stacked over stream	70.2
3	Nets	1	6m x 2.6m	stacked over stream	15,6

Total Capture Area: 132.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 Rt219 Summer, PA **Date:** 7-29-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Forested stream running through valley. Forest is a mixed deciduous forest with dominant tree species being Eastern Hemlock yellow birch. The dominant understory species are Rosebay Rhododendron and witch-hazel

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Bats Captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7-30-2014 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) Risa Wright **4. Assistants:** ———

5. Site Name and/or Number: 2014 Rt219 Summer PA18

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested Stream

8. County: Somerset **9. 7.5' Quad.:** Ability

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '-23.7 "N, Longitude: 79 °- 4 '-24.9 "W

Datum *(circle one)*: (**NAD27**) (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover, McCormick Taylor, 5 Capital Drive Suite 400 Harrisburg, PA 17110

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 12.7 °C End Temp. 10.1 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: (Clear;) Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm,) Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	stacked over stream	46.8
2	Nets	3	9m x 2.6m	stacked over stream	70.2
3	Nets	1	6m x 2.6m	stacked over stream	15.6

Total Capture Area: 132.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014Rt219Summer PA18 **Date:** 7-30-2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Forested stream running through valley, Forest is a mixed deciduous forest with dominant tree species being Eastern Hemlock and Yellow Birch. The dominant understory species are Rosebay Rhododendron and witchhai

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Bats Captured

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/16/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer - PA19

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested Stream

8. County: Sommerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '-15.55"N, Longitude: 79 °- 5 '-5.01 "W

Datum *(circle one)*: (**NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private; contact Deborah Hoover McCormick Taylor 5 Capital Drive, Suite 400 Harrisburg, Pa 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 20:50 h Stop Time 01:50 h Total Minutes: 300

Start Temp. 14.0 °C End Temp. 11.7 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy;) Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	6m x 2.6m	Stacked over stream	46.8
2	Nets	3	6m x 2.6m	Stacked over stream	46.8
3	Nets	1	9m x 2.6m	over stream	23.4

Total Capture Area: 117 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PH 19 **Date:** 7/16/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*

Stream running through mix mature forest. Dominant tree species include hemlock, yellow birch, american beech, and red maple. Improved road running parallel to stream esitmated 100 meters away.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis								1			1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 1

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

FORM P-70008-N/T
12/09
Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/18/14 **2. Company Name:** Bat Conservation & Management

3. Bat Identifier: (Responsible Recorder) John Chenger **4. Assistants:** Bryan Butler

5. Site Name and/or Number: 2014 RT. 29 Summer - PA19

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested Stream

8. County: Somerset **9. 7.5' Quad.:** Aviltown

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 44 '- 1555"N, Longitude: 79 °- 5 '- 5.01"W

Datum *(circle one)*: (**NAD27**) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private : contact Deborah Hoover McCormick Taylor 5 Capital Drive, Suite 400 Harrisburg, Pa 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 20:45 h Stop Time 0145 h Total Minutes: 300

Start Temp. 18 °C End Temp. 16 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; (Cloudy); (Drizzle); Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	NETS	3	6m x 2.6m	Stacked Over Stream	46.8
2	NETS	3	6m x 2.6m	Stacked over Stream	46.8
3	NETS	1	9m x 2.6m	Over Stream	23.4

Total Capture Area: 117 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA 19 **Date:** 7/18/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
STREAM RUNNING THROUGH MIXED MATURE FOREST, DOMINANT TREE SP. INCLUDE HEMLOCK, YELLOW BIRCH, AMERICAN BEECH, AND RED MAPLE. IMPROVED RD. RUNNING PARALLEL TO STREAM. EST. ~100m AWAY

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 0

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/17/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinanders **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA 20

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

Forested Stream

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '- 50.48"N, Longitude: 79 °- 06 '- 2.42"W

Datum *(circle one)*: (**NAD27**) (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private : contact Deborah Hoover McCormick Taylor 5 Capital Drive, Suite 400 Harrisburg, Pa 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 20:50 h Stop Time 0150 h Total Minutes: 300

Start Temp. 13.4 °C End Temp. 10.5 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:. *(suspend netting during periods of rain)*

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12m x 2.6m	Stacked over stream	93.6
2	Nets	1	12m x 2.6m	Over stream	31.2
3	Nets	3	18m x 2.6m	Stacked over stream	140.4

Total Capture Area: 265.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** Pa 20 **Date:** 7/17/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Casselman River running through mature forest. River runs perpendicular to improved road and parallel to small open field. Forest contains dominant Sugar Maples, Red Maples, American Beech, and Hemlock.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus				:: 4		4		• 1	• 1	2	6
Perimyotis subflavus											
Lasiurus borealis				• 1		1		•• 2		2	4 *
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 10

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

* 1 Escaped from netset 1 (5m) at 2222.

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 7/18/14 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinonders **4. Assistants:** Jacob Eshelman

5. Site Name and/or Number: 2014 Rt. 219 Summer / PA20

6. Site is (circle one): hibernation site (summer habitat)

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel, other structure, describe - N/A.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):
Forested Stream

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? YES - NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '- 50.48"N, Longitude: 79 °- 06 '- 2.42"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private : Contact Deborah Hoover McCormick Taylor 5 Capital Drive, Suite 400 Harrisburg, Pa 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2050 h Stop Time 0150 h Total Minutes: 300

Start Temp. 17.3 °C End Temp. 15.3 °C *(must stay ≥10°C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; (Mostly Cloudy); Cloudy; (Drizzle); Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: (Calm), Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	12m x 2.6m	Stacked over stream	93.6
2	Nets	1	12m x 2.6m	Over stream	31.2
3	Nets	3	18m x 2.6m	Stacked over stream	140.4

Total Capture Area: 265.2 sq. m

(Site Survey Record – Continued) **Site Name/No.:** PA 20 **Date:** 7/18/14

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Casselman River running through mature forest. River runs perpendicular to improved road and parallel to small open field. Forest contains dominant Sugar Maples, Red Males, American Beech, and Hemlock.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in **Total** columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus						1				1	2
Perimyotis subflavus											
Lasiurus borealis										1	1
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total 3

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

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Section 2

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 17 Jul 2014 **2. Company Name:** Bat Conservation and Management

3. Bat Identifier: (Responsible Recorder) Todd Sinander **4. Assistants:** Duncan Schane, Brandon McClung

5. Site Name and/or Number: 2014 Rt 219 Summer — PA21

6. Site is (circle one): hibernation site summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, sandstone cave, RR tunnel,

other structure, describe -_____.

7b. If summer habitat, describe area being sampled (e.g. forested stream or forest clearing with stream):

forested stream

8. County: Somerset **9. 7.5' Quad.:** Avilton

10. Was site GPS'd (required) ? (YES) NO

11. Geographic Coordinates (D-M-S): Latitude: 39 °- 43 '- 26.98"N, Longitude: 79 °- 06 '- 39.23"W

Datum *(circle one)*: **NAD27** (Preferred), NAD83, WGS84, Other:_____

12. Ownership and Access: *(Who owns site or controls access? Give name and address.)* Private: Contact Deborah Hoover McCormick Taylor 5 Capital Drive, Suite 400 Harrisburg, Pa 17110 O: 717-540-6040

13. Time *(military)* **& Temperature:** Start Time 2105 h Stop Time 0205 h Total Minutes: 300

Start Temp. 14.0 °C End Temp. 10.5 °C *(must stay ≥10 °C for summer netting)*

14. General Weather *(circle one)*: Clear; Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other:_____.
(suspend netting during periods of rain)

15. General Wind Conditions *(circle one)*: Calm, Breezy (Leaves Rustling), Windy (Trees Swaying).

16. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	TOTAL AREA (m)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m
1	Nets	3	18m x 2.6m	Stacked over stream	140.4 sq. m
2	Net	1	6m x 2.6m	over stream	15.6 sq. m
3	Nets	3	12m x 2.6m	Stacked over stream	93.6 sq. m

Total Capture Area: 249.6 sq. m

(Site Survey Record – Continued) **Site Name/No.:** 2014 at 219 Sonas PA21 **Date:** 17 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a shallow wide trout stream. One side of the trout stream is forested and the other has a ledge row of trees between the stream and a cornfield. Dominant trees are sugar maple, hemlock, beech, and birch.

18. Was reproductive status checked? (YES) / NO *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

NO BATS

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 0

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:

(Site Survey Record – Continued) **Site Name/No.:** 2014 rt 219 Somer — PA21 **Date:** 18 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a shallow wide trout stream. One side of the stream is forested and the other has a hedgerow of trees between the stream and a cornfield. Dominant trees are sugar maple, hemlock, beech and birch.

18. Was reproductive status checked? **YES** / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus	1				1	2			1	1	3
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 3

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
Drizzle starting at 2150 which became a steady light drizzle

(Site Survey Record – Continued) **Site Name/No.:** 2014 rt 219 Somer — PA21 **Date:** 18 Jul 2014

17. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species.)*
Nets are placed over a shallow wide trout stream. One side of the stream is forested and the other has a hedgerow of trees between the stream and a cornfield. Dominant trees are sugar maple, hemlock, beech and birch.

18. Was reproductive status checked? **YES** / **NO** *(if "NO" only enter numbers in* **Total** *columns)*

***CAPTURE RESULTS**

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus	1				1	2			1	1	3
Perimyotis subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

Grand Total 3

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. BAT DETECTORS & OTHER MONITORING DEVICES: *Tallies of bat passes / hour. One to 5 hours required for Indiana bat hibernacula surveys. Monitor one hour after 22:00 hrs when trapping/netting hibernacula and 5 hours when only monitoring with bat detectors, night vision or infrared device (when site can not be trapped/netted). Describe procedure & equipment used in remarks.*

1st hour	2nd hour	3rd hour	4th hour	5th hour
Start Time:	**Start Time:**	**Start Time:**	**Start Time:**	**Start Time:**
End Time:	**End Time:**	**End Time:**	**End Time:**	**End Time:**
Tallies:	**Tallies:**	**Tallies:**	**Tallies:**	**Tallies:**

20. REMARKS:
Drizzle starting at 2150 which became a steady light drizzle

Appendix C
Radio Tracked Bats

Bat Voucher Photographs
Bat Measurement and Capture Data Forms
Day Roost Data Sheets
Day Roost Voucher Photographs
Bat Emergence Forms

Bat: 2014Rt219.1

Figure 1. 2014Rt219.1. Adult, post-lactating female eastern small-footed bat (*Myotis leibii*) captured at Site PA10. Voucher photograph of face mask.

Figure 2. 2014Rt219.1. Adult, post-lactating female eastern small-footed bat (*Myotis leibii*) captured at Site PA10. Voucher photograph of keeled calcar.

FORM P-70008-M
12/09
Section 3

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

Page#_____ of _____

Bat Measurement and Capture Data Form

(Complete for all (1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA)

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:
2014Rt219Summer PA10	7/21/14	3	Todd Sinander	1

Height in meters captured above ground surface: 1 m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)
Myotis leibii	F	A	PL	5.4	8mm	5mm	31	7mm		NO	—	—	—	—	172.862

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
2240	(Yes) / No	0	Bat Name: 2014Rt219,1	PR: 0.60 - 12 days

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:
2014Rt219 - PA07	7/22/14	1	John Chenger	1

Height in meters captured above ground surface: _____ m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)
Myotis Leibii	M	A	NR	3.4	11	7	30	7		NO	—	—	—	—	172.591

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
0145	(Yes) / No	0	Bat Name: 2014Rt219,2	

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:

Height in meters captured above ground surface: _____ m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
	Yes / No			

*Capture Number = number in sequence by site.

PGC Form:
WD-DR-02/13
Section 4

PA GAME COMMISSION
Wildlife Diversity Section
Day Roost Data Sheet

1-
Landowner: **Name:** Saundra Banker **Address:** 761 Eagles Mill Road
Phone: — Salisbury, PA

2-BAT INFO
Dates on Roost: 7/22/14 7/23/14 * **Day Roost Number:** 2014PA19 1.1
(Date = Date bat was on roost; Roost No.= Bat # & numbered roost, in sequence, for that bat ~ 241PGC-01)

Surveyors: Brian Butler **Type:** Tree - (Building) - Rock - Other Barn*
(Describe rock and other roost structures)

Bat Species: Myotis Lucifugus **Band No.:** — **Transmitter Frequency:** 172.862

Ht.(m) bat is roosting off ground: Unk Was Bat Emergence Form Completed? **YES - (NO)**

Comments: *(Where is bat roosting? Under bark? If building-describe)*

*Using telemetry, bat was estimated to be in a large wooden barn with metal roof.

3-LOCATION

County: Somerset **Quadrangle:** Addison

Latitude: 39° 44' 57" (DMS) **Elevation (ft.):** 1912

Longitude: 79° 04" 01" (DMS) **%Slope:** 9% **Slope Aspect (0-360):** 61°

Datum: (Nad27 (prefered)) NAD83 / WGS84 (circle one)

4-Roost INFORMATION *(If other than tree, indicate rock, rock cliff, house, barn etc. for species)*

Species: N/A **DBH (cm):** N/A Is Tree Alive? **YES - NO** *(CIRCLE)*

Height: (%UP _____ + %DOWN _____) X Dist.(m) to tree _____ = N/A m *(For Trees)*

1st Branch Ht. *(%UP _____ + %DOWN _____) X Dist.(m) to tree _____* = N/A *m (For Trees)*

Estimate % Canopy Cover Around Roost: 0%

Is suitable roost area exposed to direct sunlight? **(YES) - NO** *(circle one)*
If so - estimate # of hours of exposure to direct sun: 13 hrs
Azimuth of Exposure (which way does exposed part of roost face): — *(1-360)*

For Trees:
Exfoliating Bark? **YES - NO** **Estimate % of tree with Exfoliating Bark:** N/A %

Cavities? **YES - NO If yes - Describe:** N/A

5-SURROUNDING HABITAT
Distance (m) to Water: 480 m **Water Type:** Stream

Understory Species: N/A

Overstory Species: N/A

6-Comments *(Comment on Overstory Species, Habitat Composition and non-tree roosts. Use back if needed)*

Talked with Dave (did not give last name) who said he owned the barn. He was not willing to let us on his property and was generally hostile to any survey activity. *Property owner hostile did not pass by barn on road to check if bat was still there past second day (7/23/14)

Bat: 2014Rt219.2

Figure 3. 2014Rt219.2. Adult, non-reproductive male eastern small-footed bat (*Myotis leibii*) captured at Site PA07. Voucher photograph of face mask.

Figure 4. 2014Rt219.2. Adult, non-reproductive male eastern small-footed bat (*Myotis leibii*) captured at Site PA07. Voucher photograph of keeled calcar.

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Section 3

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

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Bat Measurement and Capture Data Form

(Complete for all (1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA)

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:
2014Rt219Summer PA10	7/21/14	3	Todd Sinander	1

Height in meters captured above ground surface: 1 m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)
Myotis leibii	F	A	PL	5.4	8mm	5mm	31	7mm		NO	—	—	—	—	172.862

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
2240	(Yes) / No	0	Bat Name: 2014Rt219,1	PR: 0.60 - 12 days

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:
2014Rt219 - PA07	7/22/14	1	John Chenger	1

Height in meters captured above ground surface: _____ m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)
Myotis Leibii	M	A	NR	3.4	11	7	30	7		NO	—	—	—	—	172.591

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
0145	(Yes) / No	0	Bat Name: 2014Rt219,2	

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:

Height in meters captured above ground surface: _____ m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
	Yes / No			

*Capture Number = number in sequence by site.

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Section 4

PA GAME COMMISSION
Wildlife Diversity Section
Day Roost Data Sheet

1-
Landowner: **Name:** Guy Wayne Harblestry* **Address:** —

Phone: — —

2-BAT INFO
Dates on Roost: 7/24/14 **Day Roost Number:** 2014Rt219.2.1
(Date = Date bat was on roost; Roost No.= Bat # & numbered roost, in sequence, for that bat – 241PGC-01)

Surveyors: John Chenger, Bryan Buttler **Type:** Tree - (Building) - Rock - Other_____
(Describe rock and other roost structures)

Bat Species: Myotis leibii **Band No.:** — **Transmitter Frequency:** 172.591

Ht.(m) bat is roosting off ground: Unk. Was Bat Emergence Form Completed? **YES - NO**

Comments: *(Where is bat roosting? Under bark? If building-describe)*

In a large barn with black roof.

3-LOCATION

County: Somerset **Quadrangle:** Avilton

Latitude: 39° 44' 28" (DMS) **Elevation (ft.):** 2576

Longitude: 79° 02' 16" (DMS) **%Slope:** 11% **Slope Aspect (0-360):** 170°

Datum: (Nad27 (prefered)) NAD83 / WGS84 (circle one)

4-Roost INFORMATION *(If other than tree, indicate rock, rock cliff, house, barn etc. for species)*

Species: N/A **DBH (cm):** — Is Tree Alive? **YES - NO** *(CIRCLE)*

Height: (%UP _____ + %DOWN _____) X Dist.(m) to tree_____ = N/A m *(For Trees)*

1st Branch Ht. *(%UP _____ + %DOWN _____) X Dist.(m) to tree_____ = N/A m (For Trees)*

Estimate % Canopy Cover Around Roost: 0

Is suitable roost area exposed to direct sunlight? **YES - NO** *(circle one)*
If so - estimate # of hours of exposure to direct sun: 13 hrs
Azimuth of Exposure (which way does exposed part of roost face): Unk *(1-360)*

For Trees:
Exfoliating Bark? **YES - NO** **Estimate % of tree with Exfoliating Bark:** N/A %

Cavities? **YES - NO** **If yes - Describe:** N/A

5-SURROUNDING HABITAT
Distance (m) to Water: 80m **Water Type:** Creek

Understory Species: N/A

Overstory Species: N/A

6-Comments *(Comment on Overstory Species, Habitat Composition and non-tree roosts. Use back if needed)*

* Land owner is also the owner of Salisbury Mine. Mr Hardesty has not allowed access to the mine to be surveyed by PGC in the past. This land owner is considered to be hostile. In addition, there is no public access to this area.

Figure 5. 2014Rt219.3. Adult, post-lactating female northern long-eared myotis (*Myotis septentrionalis*) captured at Site PA03. Voucher photograph of face and tragus.

Figure 6. 2014Rt219.3. Adult, post-lactating female northern long-eared myotis (*Myotis septentrionalis*) captured at Site PA03. Voucher photograph of keeled calcar.

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

Page# 1 of 1

Bat Measurement and Capture Data Form

(Complete for all (1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA)

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:
2014Rt.219Summer PA03	7/26/14	3	Todd Sirander	1

Height in meters captured above ground surface:	Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot	Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)
1 m	Myotis Septentrionalis	F	A	PL	6.6	19mm	10mm	36mm	6mm	NO	N/A	N/A	N/A	N/A	172.239

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
2250	(Yes) / No	0		BAT NAME: 2014Rt.219.3 Pulse Rate = 0.6

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:

Height in meters captured above ground surface:	Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot	Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)
m															

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
	Yes / No			

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:

Height in meters captured above ground surface:	Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot	Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)
m															

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	Remarks:
	Yes / No			

*Capture Number = number in sequence by site.

PGC Form:
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PA GAME COMMISSION
Wildlife Diversity Section
Day Roost Data Sheet

1-
Landowner: **Name:** PA Game Commission **Address:** PA State Game Lands 231
Southwest Regional Office
4820 Route 711
Bolivar, PA
Phone: 724-238-9523

2-BAT INFO
Dates on Roost: 7/27/2014 **Day Roost Number:** 2014RT219.3.1
(Date = Date bat was on roost; Roost No.= Bat # & numbered roost, in sequence, for that bat ~ 241PGC-01)

Surveyors: Risa Wright; Jacob Eshelman **Type:** (Tree) - Building - Rock - Other ____
(Describe rock and other roost structures)

Bat Species: Myotis septentrionalis **Band No.:** ____ **Transmitter Frequency:** 172.239

Ht.(m) bat is roosting off ground: 10.56m Was Bat Emergence Form Completed? **YES - NO**

Comments: *(Where is bat roosting? Under bark? If building-describe)*
Bat appears to be roosting under bark or in a tree cavity. It appears to be in the top dead portion of a red maple. The bottom 3/4 of tree is alive

3-LOCATION

County: Somerset **Quadrangle:** Meyersdale

Latitude: 39° 45' 57.73" (DMS) **Elevation (ft.):** 2621

Longitude: 79° 01' 47.35" (DMS) **%Slope:** 21% **Slope Aspect (0-360):** 320°

Datum: (Nad27 (prefered)) NAD83 / WGS84 (circle one)

4-Roost INFORMATION *(If other than tree, indicate rock, rock cliff, house, barn etc. for species)*

Species: Acer rubrum (Red Maple) **DBH (cm):** 8.7 Is Tree Alive? (**YES**) - **NO** *(CIRCLE)*

Height: (%UP ____ + %DOWN ____) X Dist.(m) to tree ____ = 21.56 m *(For Trees)*

1st Branch Ht. *(%UP ____ + %DOWN ____) X Dist.(m) to tree* ____ = 4.79 *m (For Trees)*

Estimate % Canopy Cover Around Roost: 75%

Is suitable roost area exposed to direct sunlight? (**YES**) - **NO** *(circle one)*
If so - estimate # of hours of exposure to direct sun: 2 hrs
Azimuth of Exposure (which way does exposed part of roost face): 190 *(1-360)*

For Trees:
Exfoliating Bark? (**YES**) - **NO** **Estimate % of tree with Exfoliating Bark:** 15 %

Cavities? **YES -** (**NO**) **If yes - Describe:** (none visible)

5-SURROUNDING HABITAT

Distance (m) to Water: 908 m **Water Type:** creek

Understory Species: Yellow Birch, Sassafras

Overstory Species: Red Maple, Red Oak, Yellow Birch

6-Comments *(Comment on Overstory Species, Habitat Composition and non-tree roosts. Use back if needed)*
Roost tree is in dense forest.

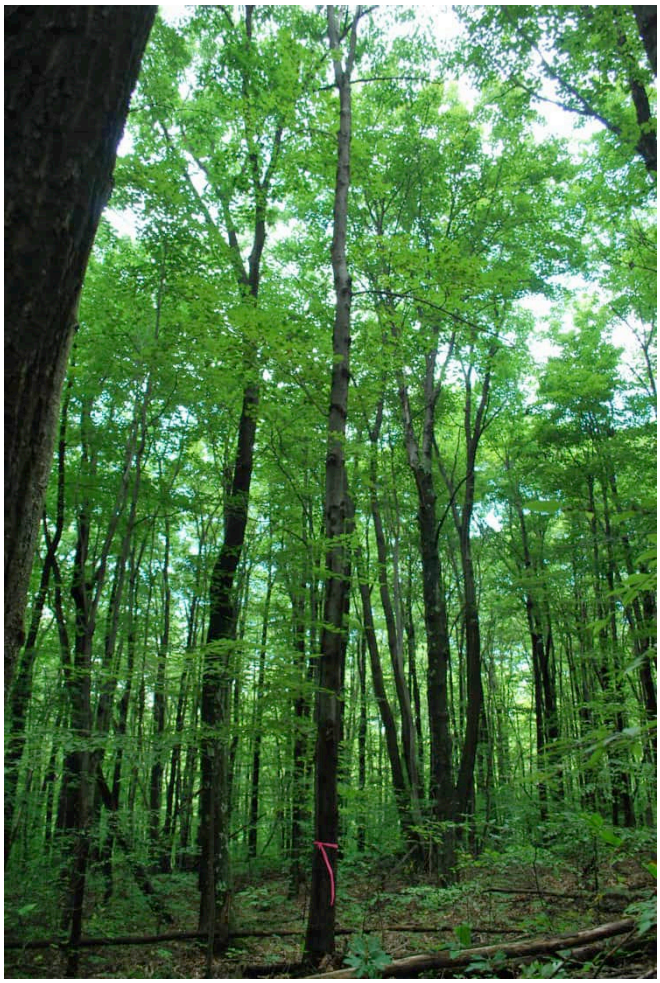

Figure 7 (Above left). Roost tree 2014Rt219.3.1. Upper portion of roost tree. Figure 8 (Above right). Roost tree 2014Rt219.3.1. Lower portion of roost tree.

PGC Form:
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PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014Rt219.3.1 **DATE:** 7/27/14

ROOST TYPE: Building (Tree) Other: _____

Surveyors: Todd Sinander, Jacob Eshelman

Transmittered Bat Band No.: — **Transmitter Frequency:** 172.239

Weather **Temperature:** 65.5 *F

Sky Condition Code: 2 **Wind Scale Code:** 0

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? **YES - NO** Bat Detector Used? **YES - NO**

Telemety Equipment Present? **YES - NO**

Time Surveyors arrived at Roost : 2045 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: 2054

Time Transmittered Bat Emerged: — * **And Azimuth Last Detected:** —

Time Last Bat Seen Emerging: 2054 **Total Emergence Count:** 1

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

*Surveyors left roost at 2230. Bat was still in roost. At dusk could clearly hear signs that bat was moving in roost. By 2230 movement had stopped.

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Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014RT219.3.1 **DATE:** 7/29/2014

ROOST TYPE: Building - (Tree) - Rock - Other _____

Surveyors: Edward Ramirez

Transmittered Bat Band No.: N/A **Transmitter Frequency:** N/A

Weather **Temperature:** 52.2 *F (11.1°C)

Sky Condition Code: 1 **Wind Scale Code:** 1

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? **YES - (NO)** Bat Detector Used? **YES - (NO)**

Telemety Equipment Present? **YES - (NO)**

Time Surveyors arrived at Roost : 20:30 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: —

Time Transmittered Bat Emerged: — **And Azimuth Last Detected:** —

Time Last Bat Seen Emerging: — **Total Emergence Count:** 0

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

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Section 4

PA GAME COMMISSION
Wildlife Diversity Section
Day Roost Data Sheet

1-
Landowner: **Name:** PA Game Commission **Address:** PA State Game Lands 231 Southwest Regional Office

Phone: 724-238-9523 4820 Route 711 Bolivar, PA

2-BAT INFO
Dates on Roost: 7/28/14 **Day Roost Number:** 2014Rt.219,3.2
(Date = Date bat was on roost; Roost No.= Bat # & numbered roost, in sequence, for that bat ~ 241PGC-01)

Surveyors: Todd Sinander, Jacob Estelmon **Type:** (Tree) - Building - Rock - Other_____
(Describe rock and other roost structures)

Bat Species: Myotis Septentrionalis **Band No.:** N/A **Transmitter Frequency:** 172.

Ht.(m) bat is roosting off ground: 6m Was Bat Emergence Form Completed? **YES - NO**

Comments: *(Where is bat roosting? Under bark? If building-describe)*

Bat is in a crevis/cavity in a small red maple snag that branches off of a live red maple from the ground.

3-LOCATION

County: Somerset **Quadrangle:** Meyersdale

Latitude: 39° 45' 57.5" (DMS) **Elevation (ft.):** 2621

Longitude: 79° 01' 47.5" (DMS) **%Slope:** 21% **Slope Aspect (0-360):** 320°

Datum: (Nad27 (prefered)) NAD83 / WGS84 (circle one)

4-Roost INFORMATION *(If other than tree, indicate rock, rock cliff, house, barn etc. for species)*

Species: Red Maple **DBH (cm):** 13.3 Is Tree Alive? **YES - NO** *(CIRCLE)*

Height: (%UP .38 + %DOWN .12) X **Dist.(m) to tree** 20 = 10 **m** *(For Trees)*

1st Branch Ht. *(%UP .18 + %DOWN .12) X Dist.(m) to tree* 20 = 6 *m (For Trees)*

Estimate % Canopy Cover Around Roost: 80%

Is suitable roost area exposed to direct sunlight? **YES - NO** *(circle one)*
If so - estimate # of hours of exposure to direct sun: 1-2 hrs
Azimuth of Exposure (which way does exposed part of roost face): 100 *(1-360)*

For Trees:
Exfoliating Bark? **YES - NO** **Estimate % of tree with Exfoliating Bark:** 10 %

Cavities? **YES - NO** **If yes - Describe:** Two feet long slit facing south

5-SURROUNDING HABITAT

Distance (m) to Water: 908m **Water Type:** Creek

Understory Species: Yellow birch, Sassafras

Overstory Species: Red Maple, Red Oak, Yellow birch

6-Comments *(Comment on Overstory Species, Habitat Composition and non-tree roosts. Use back if needed)*

Tree is in mature deciduos forest.

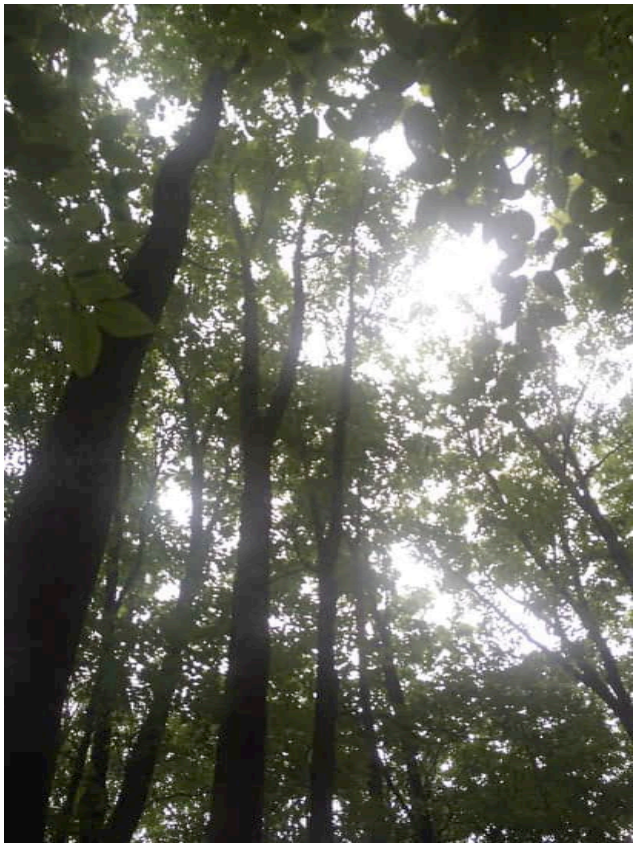

Figure 9 (Above left). Roost tree 2014Rt219.3.2. Upper portion of roost tree. Figure 10 (Above right). Roost tree 2014Rt219.3.2. Lower portion of roost tree.

PGC Form:
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Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014 Pt 19.3.2 **DATE:** 29 July 2014

ROOST TYPE: Building - (Tree) - Rock - Other _____

Surveyors: Brandon McClung

_____

Transmittered Bat Band No.: _____ **Transmitter Frequency:** _____

Weather **Temperature:** 52.2 ***F** (11.1 °C)

Sky Condition Code: 01 **Wind Scale Code:** 01

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? **YES - (NO)** Bat Detector Used? **YES - (NO)**

Telemety Equipment Present? **YES - (NO)**

Time Surveyors arrived at Roost : 2030 ***(use 24 hour clock for times)***

X **Time First Bat Seen Flying:** 2114

Time Transmittered Bat Emerged: * **And Azimuth Last Detected:** *

X **Time Last Bat Seen Emerging:** 2114 **Total Emergence Count:** 01

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

* Transmittered bat shed transmitter

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PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014 Rt. 219 3:2 **DATE:** 07/30/14

ROOST TYPE: Building - (Tree) - Rock - Other _____

Surveyors: Brandon McCloy

_____

Transmitted Bat Band No.: — **Transmitter Frequency:** —

Weather **Temperature:** 54.6 °F 12.6 °C

Sky Condition Code: 5 **Wind Scale Code:** 01

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? **YES - NO** Bat Detector Used? **YES - NO**

Telemety Equipment Present? **YES - NO**

Time Surveyors arrived at Roost : 2025 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: 2104

Time Transmittered Bat Emerged: * **And Azimuth Last Detected:** *

Time Last Bat Seen Emerging: 2104 **Total Emergence Count:** 01

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

* Bat had dropped transmitter prior to Emergence

Figure 11. 2014Rt219.4. Adult, post-lactating female northern long-eared myotis (*Myotis septentrionalis*) captured at Site MD02. Voucher photograph of face and tragus.

Figure 12. 2014Rt219.4. Adult, post-lactating female northern long-eared myotis (*Myotis septentrionalis*) captured at Site MD02. Voucher photograph of keeled calcar.

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COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

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Bat Measurement and Capture Data Form

(Complete for all (1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA)

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:
2014R+219Summer_MD02	8-04-2014	1	Risa Wright	1

Height in meters captured above ground surface: 1 m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)
Myotis septentrionalis	F	A	PL	7.0	15	9	36	10		—	—	—	—	—	172.172

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:	
2354	(Yes) / No	0	Remarks: Name: 2014R+219.4	pulse 0.42

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:

Height in meters captured above ground surface: m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:
	Yes / No		Remarks:

Repro.Condition: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen

Site Name Or Number:	Date:	Set No. Captured In:	Name of Person Identifying the Bat:	*Capture Number:

Height in meters captured above ground surface: m

Species	Sex	Age	Repro. Condition	Body Measurements (grams and millimeters) Wt. (g)	Ear	Tragus	Fore-arm	Hind Foot		Band Information (if banded) (Band Males on bat's RIGHT fa., Females on bat's LEFT fa.) Recapture Yes/No	Band Material	Band Color	Band Inscription	Band on Left/Right	Transmitter Attached? If so: Frequency (mHz)

Time of Capture	Photo Taken	WNS Wing Score	Wing Photo ID:
	Yes / No		Remarks:

*Capture Number = number in sequence by site.

PGC Form:
WD-DR-02/13
Section 4

PA GAME COMMISSION
Wildlife Diversity Section
Day Roost Data Sheet

1-
Landowner: **Name:** Sidney Markowitz **Address:** 10800 Pebble Brook Lane
Phone: — Potomac, MD 20854

2-BAT INFO
Dates on Roost: 5 Aug 2014, 6 Aug 2014, 7 Aug 2014, 8 Aug 2014 **Day Roost Number:** 2014R+219.4.1
(Date = Date bat was on roost; Roost No.= Bat # & numbered roost, in sequence, for that bat ~ 241PGC-01)

Surveyors: Duncan Shantz, Todd Shantz, Jacob Eschesman **Type:** (Tree) - Building - Rock - Other
(Describe rock and other roost structures)

Bat Species: Myotis septentrionalis **Band No.:** — **Transmitter Frequency:** 172.172

Ht.(m) bat is roosting off ground: 13 m Was Bat Emergence Form Completed? (YES) - NO

Comments: *(Where is bat roosting? Under bark? If building-describe)*

Difficult to see, possibly under bark

3-LOCATION

County: Garrett **Quadrangle:** Avilton

Latitude: 39° 42' 43.1" (DMS) **Elevation (ft.):** 2495

Longitude: 79° 04' 44.5" (DMS) **%Slope:** 10% **Slope Aspect (0-360):** 72°

Datum: Nad27 (prefered) NAD83 / WGS84 (circle one)

4-Roost INFORMATION *(If other than tree, indicate rock, rock cliff, house, barn etc. for species)*

Species: Honey locust **DBH (cm):** 36 Is Tree Alive? (YES) - NO *(CIRCLE)*

Height: (%UP 138 + %DOWN .22) X Dist.(m) to tree 20 = 32 m *(For Trees)*

1st Branch Ht. (%UP .06 + %DOWN .22) X Dist.(m) to tree 20 = 3.2 m *(For Trees)*

Estimate % Canopy Cover Around Roost: 50%

Is suitable roost area exposed to direct sunlight? (YES) - NO *(circle one)*
If so - estimate # of hours of exposure to direct sun: 2 hours
Azimuth of Exposure (which way does exposed part of roost face): 242 *(1-360)*

For Trees:
Exfoliating Bark? (YES) - NO **Estimate % of tree with Exfoliating Bark:** 15 %

Cavities? YES - (NO) **If yes - Describe:**

5-SURROUNDING HABITAT
Distance (m) to Water: 40m **Water Type:** pond

Understory Species: yellow birch, red maple

Overstory Species: Cherry, Red Maple, Yellow birch, honey locust

6-Comments *(Comment on Overstory Species, Habitat Composition and non-tree roosts. Use back if needed)*

Roost is in a stream lowland between the stream and a pond within mature mixed forest with numerous snags

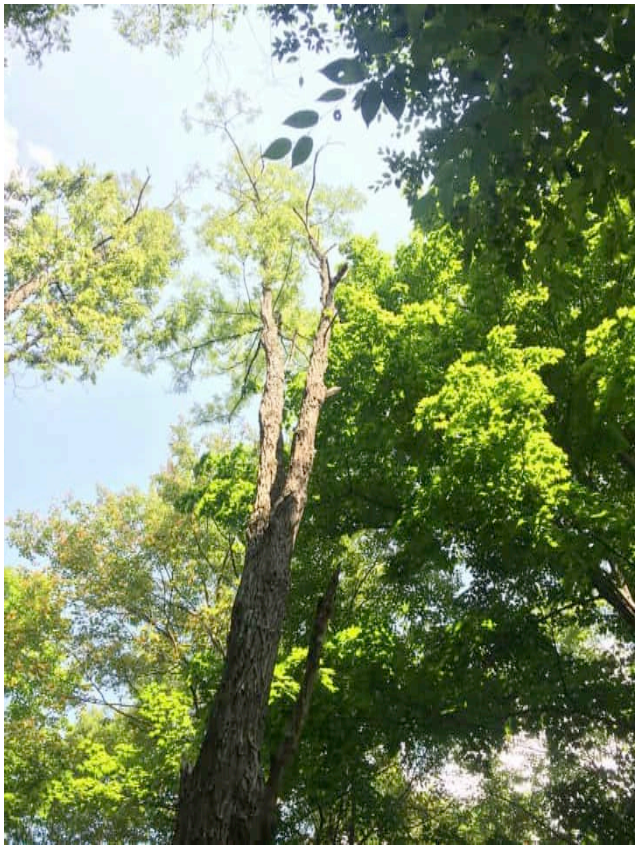

Figure 13 (Above left). Roost tree 2014Rt219.4.1. Upper portion of roost tree. Figure 14 (Above right). Roost tree 2014Rt219.4.1. Lower portion of roost tree.

PGC Form:
WD-EM-05/02
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014rt219.4.1 **DATE:** 5 Aug 2014

ROOST TYPE: Building (Tree) Other: _____

Surveyors: Duncan Schantz

Transmittered Bat Band No.: NA **Transmitter Frequency:** 172.172

Weather **Temperature:** 65.4 *F

Sky Condition Code: 1 **Wind Scale Code:** 0

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? YES - (NO) Bat Detector Used? YES - (NO)

Telemety Equipment Present? (YES) - NO

Time Surveyors arrived at Roost : 2015 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: 2042

Time Transmittered Bat Emerged: 2048 **And Azimuth Last Detected:** 332

Time Last Bat Seen Emerging: 2048 **Total Emergence Count:** 1

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

2047 bat seen flying above roost tree
After transmittered bat left roost two bats were flying above roost tree. After about a minute only one was flying above tree, and continued for 2 or 3 minutes.

PGC Form:
WD-EM-05/02
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014RT219.4.1 **DATE:** 6 Aug 2014

ROOST TYPE: Building (Tree) Other: _____

Surveyors: Duncan Schantz

Transmittered Bat Band No.: NA **Transmitter Frequency:** 172.172

Weather **Temperature:** 60.1 °F

Sky Condition Code: 0 **Wind Scale Code:** 1

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? YES - (NO) Bat Detector Used? YES - (NO)

Telemety Equipment Present? (YES) - NO

Time Surveyors arrived at Roost : 2025 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: 2034

Time Transmittered Bat Emerged: 2034 **And Azimuth Last Detected:** 44°

Time Last Bat Seen Emerging: 2057 **Total Emergence Count:** 4

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

- Transmittered bat left roost going in the direction 310° and the signal was lost at 44° in about a minutes time.
- Second bat seen fly from roost was at 2040. For the next few minutes a bat (assuming this bat) was seen flying near the top of roost tree.
- 2043 third bat emerged
- A bat circled roost tree about 2/3 to the top eventually flying around top of tree for small period of time.
- 2057 fragmented bat silouette with forearm seen clinging to the roost tree near tree crotch. Did not witness bat [illegible] from tree.

PGC Form:
WD-EM-02/13
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014A219.4.1 **DATE:** 7 Aug 2014

ROOST TYPE: Building - (Tree) - Rock - Other _____

Surveyors: Duncan Schantz

_____

Transmittered Bat Band No.: NA **Transmitter Frequency:** 172.172

Weather **Temperature:** 61.7 *F

Sky Condition Code: 0 **Wind Scale Code:** 1

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? YES - (NO) Bat Detector Used? YES - (NO)

Telemety Equipment Present? (YES) - NO

Time Surveyors arrived at Roost : 1940 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: 2034

Time Transmittered Bat Emerged: 2034 **And Azimuth Last Detected:** 250°

Time Last Bat Seen Emerging: 2042 **Total Emergence Count:** 4

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

- First bat emerged at 2034. About ten seconds later transmittered bat emerged.
- 2037 third bat emerged, flew around roost tree roughly 2/3 up for just under a minute then disappeared. About half a minute later a bat was flying near top of roost tree for about two minutes.
- 2045 two owls were calling back and forth. 2047 one flew to a tree about 20 m from roost tree, called a few times with the other and took off again at 2051. Calls sounded to be that of the Barred owl.

PGC Form:
WD-EM-05/02
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014RH219.4.1 **DATE:** 8Aug 14

ROOST TYPE: Building (Tree) Other: _____

Surveyors: Doreen Schanz

Transmitted Bat Band No.: NA **Transmitter Frequency:** 172.172

Weather **Temperature:** 64.9 °F

Sky Condition Code: 0 **Wind Scale Code:** 0

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? YES - (NO) Bat Detector Used? YES - (NO)

Telemety Equipment Present? (YES) - NO

Time Surveyors arrived at Roost : 2005 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: 2034

Time Transmittered Bat Emerged: 2034 **And Azimuth Last Detected:** 270°

Time Last Bat Seen Emerging: 2036 **Total Emergence Count:** 3

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

- 2033 notable signal fluctulation
- 2035 bat seen flying around near top of roost tree briefly (not transmittered bat
- 2040 bat did a few passes between crotch of tree and surveyor, left briefly, came back to same area for a few more passes before flying off.

- Surveyor was sitting at a bearing of 285°, 5m away from roost tree. this position did not allow for the sky to backlight roost but from this position it was observed that all three bats emerged from the crotch of the tree and flew off at a bearing of roughly 270°

PGC Form:
WD-DR-02/13
Section 4

PA GAME COMMISSION
Wildlife Diversity Section
Day Roost Data Sheet

1-
Landowner: **Name:** Sidney Markaite **Address:** 10800 Pebble Brook Lane

Phone: — Potomac, MD 20854

2-BAT INFO
Dates on Roost: 9 Aug 2014, **Day Roost Number:** 2014RT219.4.2
(Date = Date bat was on roost; Roost No.= Bat # & numbered roost, in sequence, for that bat ~ 241PGC-01)

Surveyors: Duncan Schanz **Type:** (Tree) - Building - Rock - Other
(Describe rock and other roost structures)

Bat Species: Myotis septentrionalis **Band No.:** NA **Transmitter Frequency:** 172.172

Ht.(m) bat is roosting off ground: 9m Was Bat Emergence Form Completed? **(YES) - NO**

Comments: *(Where is bat roosting? Under bark? If building-describe)*
Bat appears to be roosting under bark

3-LOCATION

County: Garrett **Quadrangle:** Axilton

Latitude: 39° 42' 44.5" (DMS) **Elevation (ft.):** 2505'

Longitude: 79° 04' 45.3" (DMS) **%Slope:** 20 **Slope Aspect (0-360):** 342°

Datum: (Nad27 (prefered)) NAD83 / WGS84 (circle one)

4-Roost INFORMATION *(If other than tree, indicate rock, rock cliff, house, barn etc. for species)*

Species: Honey locust **DBH (cm):** 37cm Is Tree Alive? **(YES) - NO** *(CIRCLE)*

Height: (%UP 1.35 + %DOWN .05) X Dist.(m) to tree 20m = 28 m *(For Trees)*

1st Branch Ht. (%UP 35 + %DOWN .05) X Dist.(m) to tree 20m = 8 m *(For Trees)*

Estimate % Canopy Cover Around Roost: 70%

Is suitable roost area exposed to direct sunlight? **(YES) - NO** *(circle one)*
If so - estimate # of hours of exposure to direct sun: 8
Azimuth of Exposure (which way does exposed part of roost face): 220° *(1-360)*

For Trees:
Exfoliating Bark? **(YES) - NO** **Estimate % of tree with Exfoliating Bark:** 10 %

Cavities? **YES - (NO)** **If yes - Describe:**

5-SURROUNDING HABITAT
Distance (m) to Water: 25m **Water Type:** pond

Understory Species: Red maple, Cherry

Overstory Species: Yellow birch Red Maple Honey locust green ash

6-Comments *(Comment on Overstory Species, Habitat Composition and non-tree roosts. Use back if needed)*
Although there is suitable roost area exposed to direct sunlight at the top of the roost tree, there is not direct sunlight on area bat is roosting.

Figure 15 (Above left). Roost tree 2014Rt219.4.2. Upper portion of roost tree. Figure 16 (Above right). Roost tree 2014Rt219.4.2. Lower portion of roost tree. Figure 17 (Bottom). Roost tree 2014Rt219.4.2. Exfoliating bark.

PGC Form:
WD-EM-02/13
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014 Rt 219.4.2 **DATE:** 9 Aug 2014

ROOST TYPE: Building - (Tree) - Rock - Other _____

Surveyors: Duncan Schanz

_____

Transmittered Bat Band No.: NA **Transmitter Frequency:** 172.172

Weather **Temperature:** 69.8 *F

Sky Condition Code: 0 **Wind Scale Code:** 1

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? YES - (NO) Bat Detector Used? YES - (NO)

Telemety Equipment Present? (YES) - NO

Time Surveyors arrived at Roost : 1940 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: 2032

Time Transmittered Bat Emerged: 2032 **And Azimuth Last Detected:** 290°

Time Last Bat Seen Emerging: 2042 **Total Emergence Count:** 4

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

2000 crow landed at the top of the roost tree, crows had been calling a few minutes beforehand. 2003 crow flew off, soon after a flock of crows passed heading 70°.

2032 transmittered bat and another emerged from roost within seconds of each other. Both bats headed out of tree at about 200° then quickly headed to about 40°, one did a small loop before disappearing from sight.

2042 two more bats emerged between 5-10 seconds apart. One did a few low passes including one just above observers head just before flying off.

All four bats emerged from the same spot under bark.

PGC Form:
WD-EM-02/13
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014rt219.4.2 **DATE:** 16 Aug 2014

ROOST TYPE: Building - (Tree) - Rock - Other _____

Surveyors: Duncan Shantz

_____

Transmittered Bat Band No.: NA **Transmitter Frequency:** 172.172

Weather **Temperature:** 60.7 *F

Sky Condition Code: 0 **Wind Scale Code:** 1

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? YES - (NO) Bat Detector Used? YES - (NO)

Telemety Equipment Present? YES - (NO)

Time Surveyors arrived at Roost : 2000 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: NA

Time Transmittered Bat Emerged: NA **And Azimuth Last Detected:** NA

Time Last Bat Seen Emerging: NA **Total Emergence Count:** 0

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

Transmitter may have failed or was shed. Bat last detected on 8/10/14.
No bats seen emerging from tree

2028 bat seen flying around area for about a minute; it flew to roost tree, landed then flew off in same direction it came from.

PGC Form:
WD-DR-02/13
Section 4

PA GAME COMMISSION
Wildlife Diversity Section
Day Roost Data Sheet

1-
Landowner: **Name:** Sidney Markowitz **Address:** 10800 Pebble Brook Lane
Phone: — Potomac, MD 20854

2-BAT INFO
Dates on Roost: 10Aug14 **Day Roost Number:** 2014RI219,4,3
(Date = Date bat was on roost; Roost No.= Bat # & numbered roost, in sequence, for that bat ~ 241PGC-01)

Surveyors: Duncan Schanz **Type:** Tree - Building - Rock - Other
(Describe rock and other roost structures)
Bat Species: Myotis septentrionalis **Band No.:** NA **Transmitter Frequency:** 172.172

Ht.(m) bat is roosting off ground: 20m Was Bat Emergence Form Completed? YES - NO
Comments: *(Where is bat roosting? Under bark? If building-describe)*
Bat is in a large wood barn with metal roof.

3-LOCATION
County: Garrett **Quadrangle:** Avilton
Latitude: 39°43' 10.6" (DMS) **Elevation (ft.):** 2,459
Longitude: 79° 04' 47.5" (DMS) **%Slope:** 6% **Slope Aspect (0-360):** 7°
Datum: Nad27 (prefered) NAD83 / WGS84 (circle one)

4-Roost INFORMATION *(If other than tree, indicate rock, rock cliff, house, barn etc. for species)*
Species: Barn **DBH (cm):** — Is Tree Alive? ~~YES - NO~~ *(CIRCLE)*
Height: (%UP .35 + %DOWN .00) X Dist.(m) to tree 20m = 27 m *(For Trees)*
1st Branch Ht. (%UP — + %DOWN —) X Dist.(m) to tree — = — m *(For Trees)*
Estimate % Canopy Cover Around Roost: 5%
Is suitable roost area exposed to direct sunlight? YES - NO *(circle one)*
If so - estimate # of hours of exposure to direct sun: full
Azimuth of Exposure (which way does exposed part of roost face): 200° *(1-360)*
For Trees:
Exfoliating Bark? ~~YES - NO~~ **Estimate % of tree with Exfoliating Bark:** — %
Cavities? ~~YES - NO~~ **If yes - Describe:**

5-SURROUNDING HABITAT
Distance (m) to Water: 140m **Water Type:** Stream
Understory Species: Wild apple, green ash, elderberry
Overstory Species: Red maple, green ash

6-Comments *(Comment on Overstory Species, Habitat Composition and non-tree roosts. Use back if needed)*
Bat seemed to be roosting at joint of horizontal support beam.

Figure 18. Roost 2014Rt219.4.3. Large wood barn with metal roof.

PGC Form:
WD-EM-02/13
Section 4

PA GAME COMMISSION, Wildlife Diversity Section
Bat Emergence Form

*** It is important to keep lights and noise disturbance to a minimum during the emergence period. ***

ROOST NO.: 2014 RT219.4.3 **DATE:** 08/16/2014

ROOST TYPE: (Building) - Tree - Rock - Other _____

Surveyors: Kirk Silas

Transmittered Bat Band No.: NA **Transmitter Frequency:** 172.172

Weather **Temperature:** 59 *F

Sky Condition Code: 0 **Wind Scale Code:** 1

Sky Conditions

Code	
0	Clear or a few clouds
1	Partly cloudy/variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Beaufort Wind Scale

Code	MPH	Indicators
0	<1	Smoke rises vertically
1	1-3 mph	Smoke Drift shows wind direction
2	4 - 7 mph	Wind felt on face/leaves rustle
3	8 - 12 mph	Leaves&sm.twigs in constant motion
4	13 - 18 mph	Raises dust & loose paper
5	19 - 24 mph	Small trees in leave sway

Night Vision Equipment Used? YES - (NO) Bat Detector Used? YES - (NO)

Telemety Equipment Present? YES - (NO)

Time Surveyors arrived at Roost : 20:00 ***(use 24 hour clock for times)***

Time First Bat Seen Flying: NA

Time Transmittered Bat Emerged: NA **And Azimuth Last Detected:** NA

Time Last Bat Seen Emerging: NA **Total Emergence Count:** 0

Comments: *(include other emergence observations, weather, bat behavior, etc.)*

Saw one bat flying in open field at 20:40.
Saw one bat flying near barn at 20:45.
Did not see any bats emerge from barn.

US 6219, SECTION 050 TRANSPORTATION IMPROVEMENT PROJECT MEYERSDALE, PA TO OLD SALISBURY ROAD, MD SUMMER BAT ACOUSTIC SURVEY

Somerset County, Pennsylvania
Garrett County, Maryland
June 3 - August 16, 2022

Prepared by:

BAT Conservation & Management

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Project Principal:
John Chenger

Surveyors:
Todd Sinander and Kacy Lyn Kindred

Qualitative Analysis of Calls:
John Chenger

Report Prepared by:
John Chenger, Todd Sinander and Kacy Lyn Kindred

Executive Summary

The Pennsylvania Department of Transportation (PennDOT) and Maryland State Highway Administration (MDSHA) proposes to construct a new 11.3 km, limited-access section of State Route (SR) 6219, Section 050, from the Borough of Meyersdale, Somerset County, Pennsylvania, to to Old Salisbury Road in Garrett County, Maryland. Three alternatives are under consideration, which total approximately 23 km of linear Project Area (Figure 1). Bat Conservation and Management, Inc. (BCM) was contracted by KCI Technologies, Inc. to conducted an acoustic bat survey within the Project Area to determine the presence or probable absence of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened Northern long-eared bat (*Myotis septentrionalis*). The survey was conducted following the 2022 protocols outlined within the U. S. Fish and Wildlife Service (USFWS) *Range-Wide Indiana Bat Summer Survey Guidelines*. The Project Area was surveyed using passive acoustic monitoring sites from June 3 - August 16, 2022. Forty-six (46) acoustic sites were deployed within potential foraging and roosting habitat in and near the Project Area. A total of 121 successful detector nights were sampled and over 6,500 recordings were analyzed by two leading commercial bat call analysis software programs and a bat call expert in order to determine bat species present at the time of the survey. From the results of this analysis and with the limitations of acoustic monitoring, the determination of probable presence of the Indiana bat and Northern long-eared bat cannot be supported, and absence of the species may be assumed. Qualitative (manual) review of all acoustic recordings classified by the USFWS accepted auto-classifier program (Kaleidoscope Pro) as a *Myotis* species determined that eight recordings had characteristics of both little brown (*Myotis lucifugus*) and Indiana bats, but the quality of these recordings did not reach the threshold where a definitive identification of either species could be distinguished from the other. No files were auto-classified or manually identified as Northern long-eared bat.

We have prepared this survey report for the use of our client's office for planning purposes in accordance with generally accepted bat acoustic monitoring practices and U.S. Fish and Wildlife Service guidelines. No other warranties, either expressed or implied, are made as to the professional services included in this report. This report may be considered void without the electronic attachments originally accompanying this document.

Methods

Acoustic Survey

An acoustic bat presence or probable absence survey was conducted in accordance with the USFWS 2020 *Range-wide Indiana Bat Summer Survey Guidelines* document (USFWS Guidelines). The minimum level of effort for the approximately 23 km of bat habitat in the linear Project Area was 92 valid monitoring nights. A valid night is one monitoring device placed at one location and activated from sundown to sunrise during a night that is within the weather parameters of the USFWS Guidelines. Each monitoring site consisted of one full-spectrum Pettersson acoustic detector, model D500x (Pettersson Elektronik; Uppsala, Sweden) with an external microphone elevated 3-6 m above ground. The detector deployment was staggered between June 3 and August 4, 2022. The deployment length at each site was at least two nights, but may have been longer depending on weather conditions, if technical problems occurred, and other logistics. Deployments ranged from two to twelve survey nights (Table 1, Appendix A). All detectors were removed from sites by August 16, 2022.

The detectors were tested prior to deployment to ensure they were functioning properly. This included testing the microphone and cable by producing ultrasound it should be able to detect. The D500x has an ultrasound decibel meter that confirmed whether or not the mic and mic cable were functioning. This test was repeated just prior to being armed during the deployment of each detector, when each detector was serviced (the batteries and memory cards were replaced), and when the detectors were removed at the end of the survey. The detectors were programmed to record an extended "Log File" that listed the settings, battery voltage, and logged any failures due to low power and/or full memory that may have occurred. Metadata from the survey site was collected, which included all pertinent details about the deployment. The site-specific data was added to each recorded file during data management post-processing (Appendix A).

Aerial photographs were used to place acoustic sites in probable bat flyways and foraging areas within or near the Project Area. Sites were adjusted in the field as needed to accommodate onsite conditions before the detectors were deployed (Table 1, Figure 2). Each detector was equipped with an extension cable and an external directional microphone mounted horizontally on a pole at least 3 m above ground. The detectors were programmed to passively record individual 4-second recordings of echolocation calls in standard .WAV audio format from sunset to sunrise each night. The individual bat recordings usually represent a single "pass" (fly by) from a single bat. However, if multiple bats were flying through the optimal volume of detection during the same 4-second interval, they were recorded in tandem and the bat call analysis software programs may only record the dominant bat present. More details about detector settings, placement, and site metadata can be found on the Acoustic Site Data Sheets (Appendix A).

Acoustic Data Analysis

All files recorded were off-loaded from the detectors and organized by site and by night for analysis. Noise recordings were removed from the dataset, and remaining files with tonal qualities similar to bats were attributed with site specific metadata using the SonoBat30 Data Wizard.

Bat recordings were analyzed using Kaleidoscope Pro (KaPRO), version 5.4.8 (Wildlife Acoustics, Inc., Maynard, MA). Signal parameters for the KaPRO "AutoID for Bats North America 5.4.0" analysis were set at -1 liberal sensitivity and considered all signals between 8 and 120 kHz in frequency, between 2-500 ms in duration, having a maximum inter-syllable gap of 500 ms, and sequences with a minimum of 2 echolocation call pulses. The state classifier used was Pennsylvania and included the following species considered for analysis: big brown bat (*Eptesicus fuscus*), Eastern red bat (*Lasiurus borealis*), evening bat (*Nycticeius humeralis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), Eastern small-footed bat (*Myotis leibii*), little brown bat (*Myotis lucifugus*), Northern long-eared bat (*Myotis septentrionalis*), Indiana bat (*Myotis sodalis*), and tricolored bat (*Perimyotis subflavus*).

Bat echolocation call recordings are made up of discrete "pulses" of sounds. KaPRO uses analysis algorithms to weigh the pulse-level classifications and provide a sequence-level species identification. Auto-classifications can return spurious results especially in the case when multiple bats are recorded in a single call file and/or when the recording consists of any bat activity other than typical search phase calls. Low-probability AutoID results can be generated by the software program, which may lead to false-positive classifications. Low quality recordings, social calls, birds, insects, and anthropogenic sounds all contain some sound data qualities that may overlap with bats in the data space of call measurements. In addition, many bat species calls will converge on the same call types when in certain physical and/or behavioral situations, rendering species identification impossible. Software is expected to occasionally report false positives with the assumption that rare species will be manually reviewed to confirm presence. The Kaleidoscope software is inherently limited by the "zero cross" (ZC) call data it was built with. The ZC workflow intentionally downsamples recording data to a fraction of the original sound content. This downsampling leads to fewer high quality recordings, recordings which lack low amplitude characteristics necessary for critical *Myotis species* identification, more recordings too ambiguous to be classified, and incorrect classifications.

All recordings were also classified in their originally recorded full spectrum form using the software program SonoBat (version 4.4.5, Joe Szewczak, Arcata CA). Full spectrum recordings provide the most sound data available for measurement and analysis. SonoBat output provides a "file-level" species classification (e.g., suggested identification) for every recording considered in the data set. The SonoBat auto-classifier used was Northeastern North America which included the following species considered for analysis: big brown bat (*Eptesicus fuscus*), Eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), Eastern small-footed bat (*Myotis leibii*), little brown bat (*Myotis lucifugus*), Northern long-eared bat (*Myotis septentrionalis*), Indiana bat (*Myotis sodalis*), evening bat (*Nycticeius humeralis*), Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), and tricolored bat (*Perimyotis subflavus*). Auto classification parameters were set to 0.80 and above for acceptable call quality and the sequence decision threshold was set to 0.90 and above for classification decisions.

All recordings auto-classified as a *Myotis* species and representative files of all other species were manually reviewed (qualitative analysis) to confirm or reject the initial software classification. The qualitative analysis was conducted by viewing the full-spectrum echolocation call sequences using the SonoBat30 spectrogram viewer. All recordings were both auto-classified and qualitatively analyzed by a qualified bat biologist (Appendix B).

Weather Data

Nightly temperature, wind, and precipitation data were compiled from the nearest weather station in Salisbury, PA (Highpoint - KPASALIS2) and are archived online (www.wunderground.com). According to USFWS Guidelines, the following weather conditions preclude a valid survey night if they occur in the first five hours of the night: (a) temperatures fall below 10°C; (b) precipitation, including rain and/or fog, that exceeds 30 minutes or continues intermittently; and (c) sustained wind speeds greater than 4 meters/second (3 on Beaufort scale) for 30 minutes or more.

Results

Level of Effort

Forty-six acoustic sites (AM01-AM46) were deployed between June 3 and August 4, 2022. Ten sites were deployed on June 3 (AM25-30, AM11-14), seven on June 8 (AM07-10, AM15-17), ten on June 12 (AM1-6, AM19-22), seven on June 13 (AM23-24, AM34-38), five on June 14 (AM20, AM31-33, AM40), and seven sites were deployed on August 4 (AM39, AM41-46). All detectors programed to start recording on the night of deployment. The sites were deployed for a total of 178 monitoring nights. A total of 48 nights were invalid due to precipitation and 10 were invalid due to technical issues. No survey nights were lost due to low temperatures. A total of 121 valid nights were completed, with all sites monitoring for at least two valid nights each. All sites were removed by August 16. Files recorded during nights determined to be invalid due to weather events or technical issues were included in the species occupancy analysis (Tables 1, Appendix A).

Species Occupancy

Software cannot classify all recordings. Bat call quality is affected by multiple factors such as distance a bat is from the microphone, insect noise, multiple bats recorded at the same time, non-search phase calls (i.e. social or feeding buzzes), and weather. Recordings that included bat calls but did not contain enough high-quality call pulses to meet the parameters for auto-classification to species were categorized as no identification (NOID) by Kaleidoscope PRO.

As per USFWS Guidelines, Kaleidoscope PRO was used to generate the Maximum Likelihood Estimate (MLE) number to determine presence on a site-by-night basis. Results of this analysis indicate five species present: big brown bat (*Eptesicus fuscus*), Eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), tricolored bat (*Perimyotis subflavus*), and little brown bat (*Myotis lucifugus*). The target species, Indiana bat (*Myotis sodalis*) and Northern long-eared bat (*Myotis septentrionalis*), were not present by the MLE analysis at any site on any night (Table 2). The MLE is a statistical probability based on the composition of species detected. Species often mis-identified with each other (i.e. all *Myotis* spp. in the Northeast US) require a higher number of samples in order to return an MLE that indicates presence. Kaleidoscope PRO did classify a low number of recordings as Indiana and Northern long-ear bats, but not enough to become a statistically significant MLE, and were ultimately downgraded to other classifications in the manual review process (below).

Kaleidoscope Pro classified 5,145 files to ten species which included the big brown bat, Eastern red bat, hoary bat, silver-haired bat, evening bat (*Nycticeius humeralis*), tricolored bat, Eastern small-footed bat (*Myotis leibii,*), Northern long-eared bat, Indiana bat, and little brown bat. SonoBat auto-classified 4,387 files to eight species which included the big brown bat, Eastern red bat, hoary bat, silver-haired bat, evening bat, tricolored bat, Indiana bat, and little brown bat. In addition, SonoBat assigned the classification of “Luso” (LUCSOD) to two recordings that were within the characteristic parameters of both the little brown bat and Indiana bat (Table 3, Appendix C: Acoustic Data: Attached Electronic Document). Indiana and little brown bat call repertoires overlap significantly in all measurable call parameters making all but the highest quality, long duration call pulses recordings demonstrably indistinguishable.

All *Myotis* species files and representative non-*Myotis* species files that Kaleidoscope Pro and SonoBat classified were manually vetted (qualitative analysis) to confirm or reject the classification at each site. A manual designation of LUCSOD referred to files that contained some characteristics of both the little brown bat and the Indiana bat but a definitive archetypal example recording of the species was not present. The big brown bat was the dominant species detected and was manually confirmed at most sites throughout the survey area.

Kaleidoscope Pro classified 185 recordings as some type of Myotis species; predominantly little brown bats, with much smaller numbers of Indiana, Northern long-ear, and a few Eastern small-footed bats. The majority of these files did not pass quality thresholds to be confidently classified by the SonoBat software, and when they did, the majority were classified as Eastern red bats (Table 4). All recordings initially classified by Kaleidoscope Pro as some type of Myotis species were manually reviewed. The classification on eight files was downgraded manually to a LUCSOD at sites AM08 (1 file), AM15 (1 file), AM16 (5 files) and AM25 (1file). Three files were manually classified as small-footed bat at sites AM14 (2 files) and AM19 (1 file). No files were manually confirmed as Northern long-eared bat or Indiana which can be considered absent during this survey.

Figures

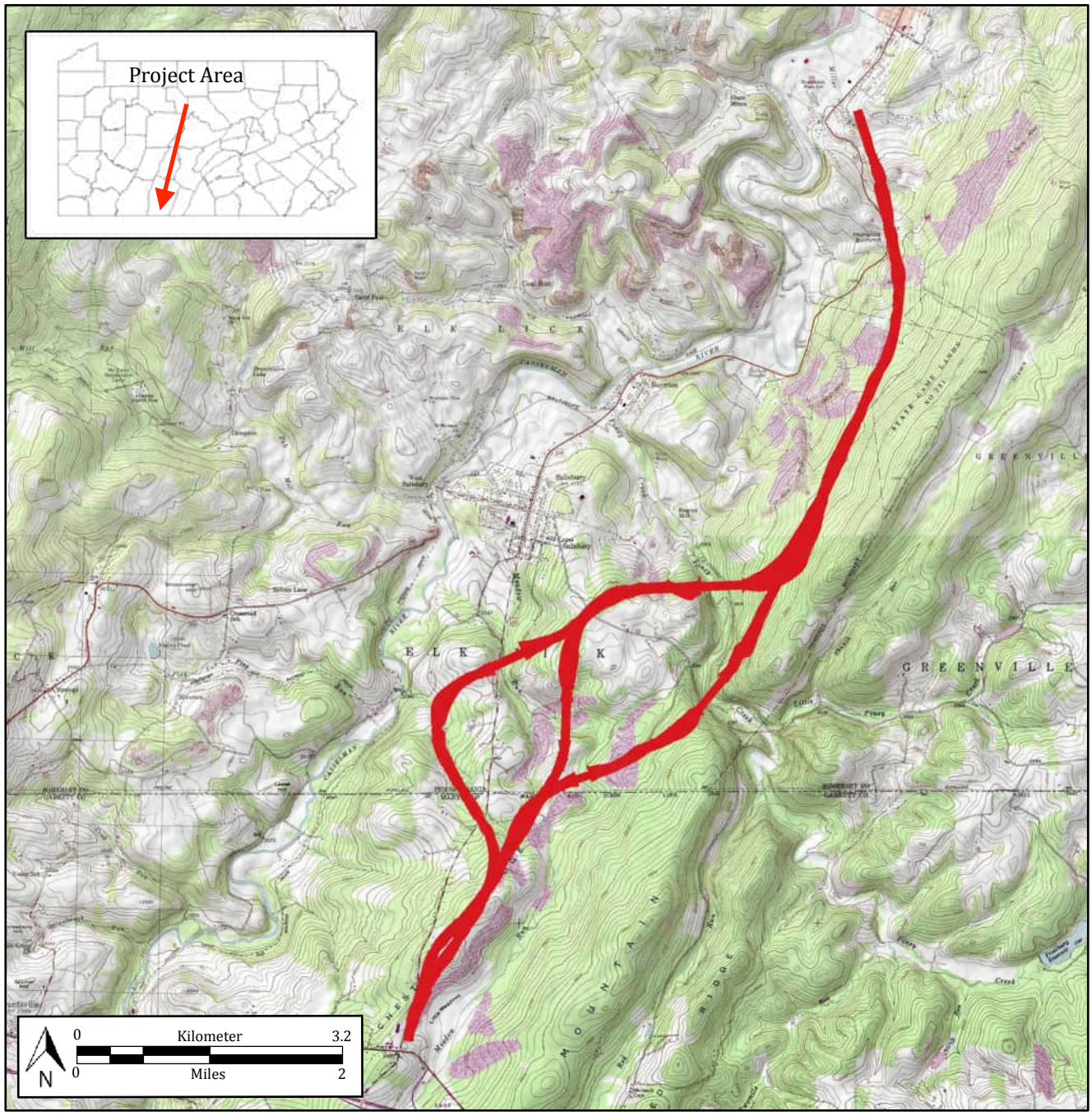


Figure 1. Project Area location

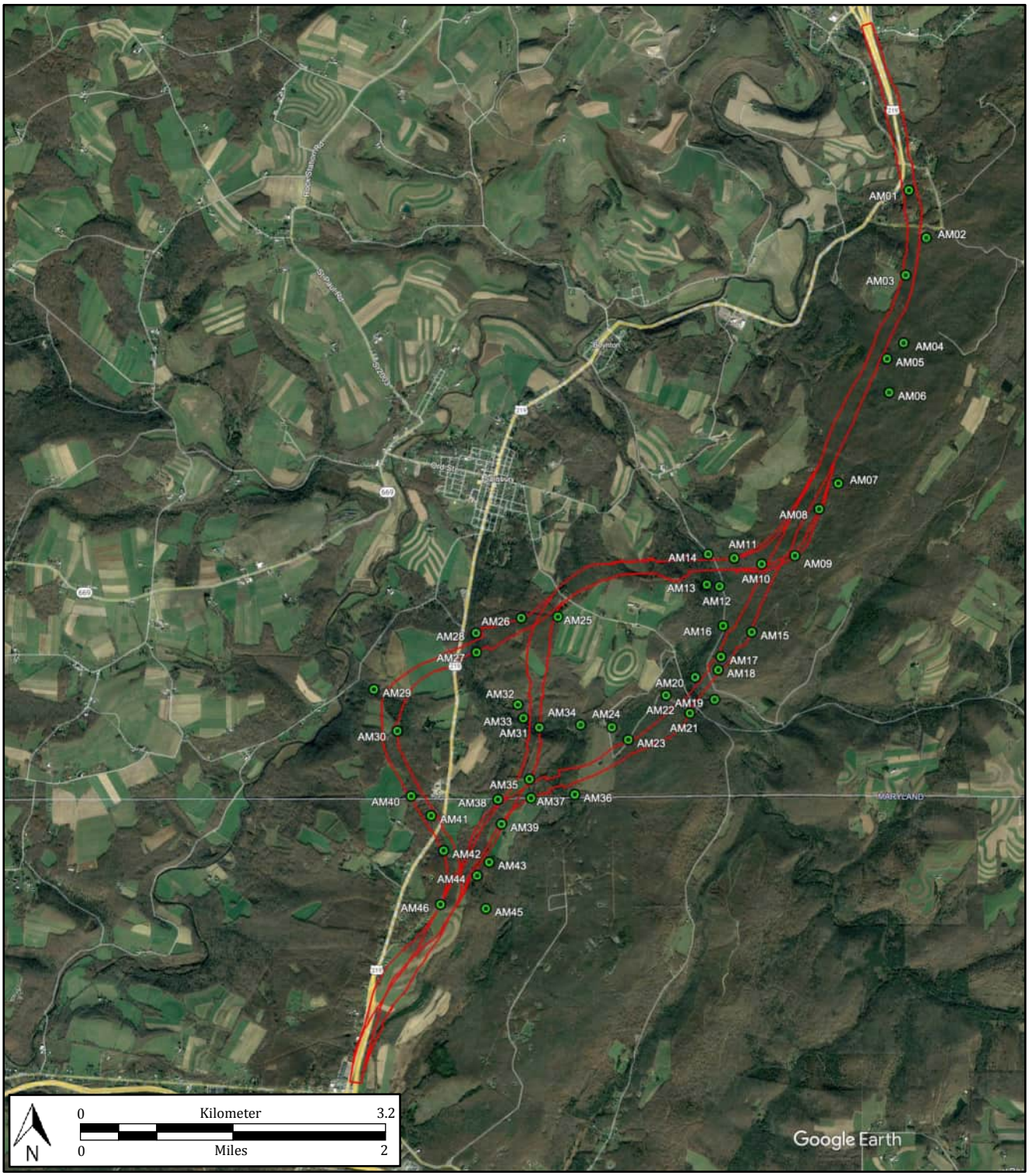


Figure 2. Acoustic monitoring sites in relation to the Project Area and the Pennsylvania-Maryland state line

Tables

Table 1. Acoustic site locations and survey level of effort

Site	Site Location (Lat, Long) WGS84	Nights Deployed	Invalid Nights		Total Valid Nights Completed
			Tech	Weather	
AM01	39.780190°, -79.030486°	2	0	0	2
AM02	39.775690°, -79.028350°	2	0	0	2
AM03	39.772160°, -79.030880°	3	0	0	3
AM04	39.765740°, -79.031145°	3	0	0	3
AM05	39.764247°, -79.033191°	3	0	0	3
AM06	39.761054°, -79.032923°	3	0	0	3
AM07	39.752454°, -79.039174°	5	0	2	2
AM08	39.750022°, -79.041529°	5	0	2	3
AM09	39.745611°, -79.044514°	5	0	2	3
AM10	39.744820°, -79.048590°	5	0	2	3
AM11	39.745380°, -79.051970°	5	0	3	2
AM12	39.742715°, -79.053781°	5	0	3	2
AM13	39.742874°, -79.055329°	5	0	3	2
AM14	39.745756°, -79.055179°	5	0	3	2
AM15	39.738388°, -79.049815°	5	0	2	3
AM16	39.738978°, -79.053338°	6	4	2	2
AM17	39.736046°, -79.053600°	5	0	2	3
AM18	39.734808°, -79.053937°	5	0	2	3
AM19	39.732003°, -79.054386°	2	0	0	2
AM20	39.734110°, -79.056766°	4	0	0	4
AM21	39.730714°, -79.057418°	2	0	0	2
AM22	39.732404°, -79.060350°	2	0	0	2
AM23	39.728200°, -79.064996°	2	0	0	2
AM24	39.729384°, -79.067014°	2	0	0	2
AM25	39.739834°, -79.073646°	5	0	3	2
AM26	39.739720°, -79.078150°	5	0	3	2
AM27	39.736470°, -79.083657°	5	0	3	2
AM28	39.738297°, -79.083714°	5	0	3	2
AM29	39.732950°, -79.096261°	5	0	3	2
AM30	39.729020°, -79.093371°	5	0	3	2
AM31	39.729354°, -79.075938°	2	0	0	2
AM32	39.731518°, -79.078568°	2	0	0	2
AM33	39.730246°, -79.077884°	2	0	0	2
AM34	39.729609°, -79.070852°	2	0	0	2
AM35	39.724469°, -79.077130°	2	0	0	2
AM36	39.723019°, -79.071567°	2	0	0	2
AM37	39.722684°, -79.076944°	2	0	0	2
AM38	39.722546°, -79.081006°	2	0	0	2
AM39	39.720224°, -79.080564°	3	0	0	3
AM40	39.722861°, -79.091668°	2	0	0	2
AM41	39.721010°, -79.089220°	3	0	0	3
AM42	39.717703°, -79.087690°	12	3	1	8
AM43	39.716614°, -79.082083°	3	0	0	3
AM44	39.715343°, -79.083581°	12	3	1	8
AM45	39.712219°, -79.082489°	3	0	0	3
AM46	39.712611°, -79.088066°	3	0	0	3
Total		**178**	**10**	**48**	**121**

Table 2. Maximum Likelihood Estimate (MLE) by site and by night from Kaleidoscope PRO

MLE <0.05 (highlighted in green) suggest presence, according to U.S. Fish and Wildlife Service Range-wide Indiana Bat Survey Guidelines (2022). Neither target species, MYOSOD or MYOSEP, pass this analysis threshold. The MLE analysis does not take any manual review of bat call recordings into account. EPTFUS = *Eptesicus fuscus* (big brown bat), LASBOR = *Lasiurus borealis* (Eastern red bat), LASCIN = *Lasiurus cinereus* (hoary bat), LASNOC = *Lasionycteris noctivagans* (silver-haired bat), MYOLEI = *Myotis leibii* (Eastern small-footed bat), MYOLUC = *Myotis lucifugus* (little brown bat), MYOSEP = *Myotis septentrionalis* (Northern long-eared bat), MYOSOD = *Myotis sodalis* (Indiana bat), NYCMHU = *Nycticeius humeralis* (evening bat), PERSUB = *Perimyotis subflavus* (tricolored bat).

Site	Site and Night MLE	EPTFUS	LASBOR	LASCIN	LASNOC	MYOLEI	MYOLUC	MYOSEP	MYOSOD	NYCHUM	PERSUB
AM01	Site	0	0.412561	1	1	1	1	1	1	0.9040048	1
	20220612	0.0001376	0.4125693	1	1	1	1	1	1	0.9040234	1
	20220613	0	1	1	1	1	1	1	1	1	1
AM02	Site	0	0	1	1	1	0.9810935	1	1	1	0
	20220612	0	0	1	1	1	1	0.7363876	1	1	0
	20220613	0	0.0001184	1	1	1	1	1	1	1	0.0000853
AM03	Site	0	0.8242415	0	1	1	0.5765194	1	1	0.1732799	1
	20220612	0	1	0.0000029	1	1	1	1	1	1	1
	20220613	0	0.5942491	0	1	1	0.5802079	1	1	0.627049	1
	20220614	0.005329	1	0	1	1	1	1	1	0.1526222	1
AM04	Site	0	1	1	1	1	1	1	1	1	1
	20220612	0.0006258	1	1	1	1	1	1	1	1	1
	20220613	0	1	1	1	1	1	1	1	1	1
	20220614	0.0285092	1	1	1	1	1	1	1	1	1
AM05	Site	0.0285092	1	1	1	1	1	1	1	1	1
	20220612	1	1	1	1	1	1	1	1	1	1
	20220613	0.0285092	1	1	1	1	1	1	1	1	1
AM06	Site	0.0000232	1	1	1	1	1	1	1	1	1
	20220612	1	1	1	1	1	1	1	1	1	1
	20220613	0.0001372	1	1	1	1	1	1	1	1	1
	20220614	0.1688468	1	1	1	1	1	1	1	1	1
AM07	Site	0	0.0000003	1	1	1	1	1	0.6222013	0.9589497	1
	20220608	0.0000001	0.3020445	1	1	1	0.8848967	1	0.4409319	0.3497741	0.984422
	20220610	0.2247859	0.0001803	1	0.3763438	1	1	1	1	1	1
	20220611	1	1	1	1	1	0.1241367	1	1	1	1
	20220612	0	0.006401	1	1	1	1	1	1	0.8273742	1
AM08	Site	0.5263837	0.1180101	0.0003502	0.0442765	1	0.2308156	0.5098835	0.7433346	1	1
	20220608	1	1	1	1	1	1	1	1	1	1
	20220609	0.1688352	1	1	1	1	1	1	0.1415167	1	1
	20220610	1	1	0.0009648	0.9564403	1	0.1241367	1	1	1	1
	20220611	1	0.0464386	1	0.0101239	1	0.5920636	0.2877736	1	1	1
	20220612	0.4291918	1	0.0217563	0.3904782	1	1	1	1	0.3906534	1
AM09	Site	0.0001405	0.0318035	0.0015954	0.9998065	1	1	1	1	1	1
	20220608	0.0000178	1	1	1	1	1	1	1	1	1
	20220610	1	0.0318351	0.0134407	0.8400725	1	1	1	1	1	1
	20220611	1	1	1	0.2108455	1	1	1	1	1	1
	20220612	0.6690432	1	0.0003526	1	1	1	1	1	1	1
AM10	Site	0.0000001	0	1	0.9943411	1	0.4261156	1	1	1	1
	20220608	0.223357	1	1	0.3767133	1	1	1	1	1	1
	20220609	0.0285083	1	1	1	1	1	1	1	0.059615	1
	20220610	1	0.0815215	1	1	1	1	1	1	1	1
	20220611	1	0.0053631	1	1	1	0.8429965	1	1	1	0.9131471
	20220612	0.0000031	0.0000115	1	1	1	0.166035	1	1	1	0.9119901
AM11	Site	0	1	1	1	1	0.124203	1	1	1	1
	20220603	0	1	1	1	1	1	1	1	1	1
	20220604	0.0285092	1	1	1	1	1	1	1	1	1
	20220605	0.0000132	1	0.9348729	0.9999752	1	0.124193	1	1	1	1
	20220606	1	1	0.0774158	1	1	1	1	1	1	1
	20220607	1	1	1	1	1	1	1	1	1	1

Table 2. (cont.) Maximum Likelihood Estimate (MLE) by site and by night From Kaleidoscope PRO

Site	Site and Night MLE	EPTFUS	LASBOR	LASCIN	LASNOC	MYOLEI	MYOLUC	MYOSEP	MYOSOD	NYCHUM	PERSUB
AM12	Site	0	1	1	1	1	1	1	1	1	1
	20220603	0	1	1	1	1	1	1	1	1	1
	20220604	1	1	1	1	1	1	1	1	1	1
	20220605	0	1	1	1	1	1	1	1	1	1
	20220606	1	1	1	1	1	1	1	1	1	1
	20220607	0	1	1	1	1	1	1	1	1	1
AM13	Site	1	1	0.000464	1	1	1	1	1	1	1
	20220605	1	1	1	1	1	1	1	1	1	1
	20220606	1	1	0.0774158	1	1	1	1	1	1	1
	20220607	1	1	0.0059932	1	1	1	1	1	1	1
AM14	Site	0	0.0001062	1	1	1	0.1393445	1	1	1	1
	20220603	0.007283	0.170301	0.5614409	1	1	1	1	1	0.8175765	1
	20220604	0.1091732	1	1	0.839709	1	0.0671225	1	1	0.5387108	0.325541
	20220605	0	1	1	1	1	1	1	1	1	1
	20220606	0.0000233	0.1223059	1	1	1	0.0346018	1	1	1	1
	20220607	0.0008223	0.0145064	1	1	1	1	1	1	1	1
AM15	Site	0	0.0006233	0.9952941	0.5727476	1	0.0000059	1	1	1	1
	20220608	0.0008127	1	1	1	1	0.000296	1	0.8962554	1	1
	20220609	0	1	1	1	1	0.0377056	1	1	0.4669645	1
	20220610	1	1	1	0.0093733	1	1	1	1	1	1
	20220611	1	0.0741691	1	0.2193058	1	0.165978	1	1	1	1
	20220612	0.0042286	0.000777	0.6777974	1	1	0.2262504	1	1	1	1
AM16	Site	0	0	1	1	0.8967163	0	1	1	1	1
	20220612	0.0000005	0	1	1	1	0	1	1	1	1
	20220613	0.0001392	0.07836	1	1	0.5034928	0	0.9866348	1	1	1
AM17	Site	1	0.2724093	1	1	1	0.4075593	1	1	1	1
	20220608	1	1	1	1	1	1	1	1	1	1
	20220610	1	1	1	1	1	1	1	1	1	1
	20220612	1	0.2724093	1	1	1	0.4075593	1	1	1	1
AM18	Site	0	0.1695455	1	0.188676	1	0.0441258	1	1	0.9789037	0.9642989
	20220608	0.0014975	0.190824	1	0.1936665	1	1	1	1	1	0.5286506
	20220609	0.3486354	1	1	0.1289381	1	1	1	1	0.3906672	1
	20220610	1	1	0.3777767	0.052198	1	0.1241367	1	1	1	1
	20220611	0.0001759	1	0.6364744	0.2365472	1	0.0063977	1	1	0.4848027	1
	20220612	0	0.1783246	1	1	1	1	1	1	1	1
AM19	Site	0	0.3099609	1	1	0.135254	1	0.3283584	1	1	0
	20220612	0	1	0.7901558	1	0.1340266	1	0.2224317	1	1	0.1623596
	20220613	0	0.2851648	1	1	1	1	1	1	1	0
AM20	Site	1	1	1	1	1	1	1	1	1	1
	20220612	1	1	1	1	1	1	1	1	1	1
AM21	Site	0	1	0.0000034	1	1	1	1	1	1	1
	20220612	0	1	0.0000092	1	1	1	1	1	1	1
	20220613	0	1	0.1158827	1	1	1	1	1	1	1
AM22	Site	0.0000004	1	0	1	0.1694109	0.0000035	1	1	1	1
	20220612	0.0001205	1	0.0000007	1	1	0.0154263	1	1	1	1
	20220613	0.0058022	1	0.0048986	0.6721297	0.1234957	0.0002299	1	1	1	1
AM23	Site	0.0000296	0.0004756	1	0.5922436	1	0.0147715	1	1	0.7021284	1
	20220613	0.0000503	0.0090638	1	0.7968795	1	0.3499105	1	1	1	0.9149837
	20220614	0.4781868	0.0368909	1	0.6128154	1	0.021384	1	0.9952945	0.2304584	1
AM24	Site	0.0018502	0	0.0005916	0.0329293	0.2518225	0.0588652	1	1	1	1
	20220613	0.0010651	0.0000583	0.0623225	0.2786397	0.08046	0.9955624	1	1	1	1
	20220614	0.6886574	0	0.0054895	0.0905576	1	0.0306699	1	1	1	1
AM25	Site	0	0.3651684	1	1	1	1	1	0.1773703	0.963465	0.7100611
	20220603	0	1	1	1	1	1	1	1	1	1
	20220604	0	1	0.9938367	1	1	1	1	0.1546521	1	0.1621894
	20220605	0	1	1	1	1	1	1	1	1	1
	20220606	0	1	1	1	1	1	1	1	0.3906926	1
	20220607	0	0.1783257	1	1	1	1	1	1	1	1

Table 2. (cont.) Maximum Likelihood Estimate (MLE) by site and by night from Kaleidoscope PRO

Site	Site and Night MLE	EPTFUS	LASBOR	LASCIN	LASNOC	MYOLEI	MYOLUC	MYOSEP	MYOSOD	NYCHUM	PERSUB
AM26	Site	0	0.0784702	1	1	1	0.7580524	1	1	1	1
	20220603	0	1	1	1	1	1	1	1	1	1
	20220604	0	1	1	1	1	0.1242113	1	1	1	1
	20220605	0.0000178	1	1	1	1	1	1	1	1	1
	20220606	0.0000007	0.0813748	1	1	1	1	1	1	1	1
	20220607	0.0000001	1	1	1	1	1	1	1	1	1
AM27	Site	0	0	1	1	1	0.3274468	1	1	1	1
	20220603	0	1	1	1	1	1	1	1	1	1
	20220604	0.0050025	0	1	1	1	1	1	1	1	1
	20220605	0.0001372	1	1	1	1	1	1	1	1	1
	20220606	0	1	1	1	1	0.0154284	1	1	1	1
	20220607	0	1	1	1	1	0.1242113	1	1	1	1
AM28	Site	0	0.1785884	1	1	1	0.0062737	1	1	1	1
	20220603	0	1	1	1	1	1	1	1	1	1
	20220604	0.688351	1	1	0.1960262	1	1	1	1	1	1
	20220605	0.0000233	0.0740422	1	1	1	0.1661439	1	1	1	1
	20220606	0.0001864	1	0.7567554	1	1	0.0154271	1	1	1	1
	20220607	0.0000232	1	1	1	1	1	1	1	1	1
AM29	Site	0	1	1	0.8210818	1	0.2593213	1	1	1	0.1839604
	20220603	0.1688468	1	1	1	1	1	1	1	1	1
	20220605	0.1055596	1	1	0.2312144	1	1	1	1	1	0.1617664
	20220606	0.0008128	1	1	1	1	1	1	1	1	1
	20220607	0.0000003	1	1	0.9727153	1	0.1241971	1	1	1	1
AM30	Site	0	0	0	1	1	1	1	1	1	1
	20220603	0	0	0.0000328	0.0040715	1	1	1	1	1	1
	20220604	0	0.0011063	0.002648	1	1	0.8616845	1	1	1	1
	20220605	0	1	0	0.9776679	1	1	1	1	0.15261	1
	20220606	0	0.0289608	0.0792291	1	1	0.8861939	1	1	1	1
	20220607	1	1	1	1	1	1	1	1	1	1
AM31	Site	0	0	0.1559441	1	1	1	1	1	1	1
	20220614	0	0	0.9934736	1	1	1	1	1	1	1
	20220615	0	0.004132	0.0302747	0.9672239	1	1	1	1	1	0.7769195
AM32	Site	0	0.0739675	0	0.4381138	1	1	1	1	0.2599231	1
	20220614	0	0.0814106	0	0.4370927	1	1	1	1	1	1
	20220615	0	0.4830404	0	0.8508265	1	1	1	1	0.1381874	1
AM33	Site	0	0	0.0006446	1	1	0.4256228	1	1	1	1
	20220614	0	0.0066939	0.297498	0.9977263	1	0.171167	1	1	0.9463062	1
	20220615	0	0	0.0018702	1	1	0.984539	1	1	1	0.9467808
AM34	Site	0	0.0299052	1	1	1	0.0000032	1	1	1	1
	20220613	0	0.0326526	1	1	1	0.0278572	1	1	1	1
	20220614	0	0.8166316	1	1	1	0.0000364	1	1	1	1
AM35	Site	0.1693673	0.7588505	1	1	1	0	1	0.7632626	1	1
	20220613	1	1	1	1	1	0.000065	1	0.5312228	1	1
	20220614	0.1696433	0.4112297	1	1	1	0.000079	0.891832	1	1	1
AM36	Site	0.1688468	1	1	1	1	1	1	1	1	1
	20220613	0.1688468	1	1	1	1	1	1	1	1	1
AM37	Site	0	0.0103079	0	0.4878439	0.0690811	1	1	1	1	0.9632768
	20220613	0	0.0639078	0.0065999	0.6048776	0.0669673	1	1	1	1	0.8821452
	20220614	0	0.1783349	0	0.7597639	1	1	1	1	1	1
AM38	Site	0.4348912	0.01182	0.0348544	1	1	0.2658447	1	1	1	1
	20220613	0.2782024	1	0.2766429	1	1	1	1	1	1	1
	20220614	1	0.0118301	0.0807964	1	1	0.2656027	1	1	1	1
AM39	Site	0.0499687	0.2771174	1	0.1418788	1	0.532729	1	1	1	0.5561501
	20220804	0.1688468	1	1	1	1	0.2593194	1	1	1	0.1839784
	20220806	0.1697938	0.1783314	1	0.0814493	1	1	1	1	1	1
AM40	Site	0	0	0	0.0000483	1	1	1	1	1	1
	20220614	0	0.0000001	0	0.0299663	1	1	1	1	0.8985919	1
	20220615	0	0	0	0.0011664	1	1	1	1	1	1

Table 2. (cont.) Maximum Likelihood Estimate (MLE) by site and by night from Kaleidoscope PRO

Site	Site and Night MLE	EPTFUS	LASBOR	LASCIN	LASNOC	MYOLEI	MYOLUC	MYOSEP	MYOSOD	NYCHUM	PERSUB
AM41	Site	0	0.3697267	0.0016734	0.0376325	1	1	0.0866826	1	0.9604135	0.7080031
	20220804	0	1	0.0125701	0.0276083	1	1	0.0814815	1	1	0.1621105
	20220805	0	0.1783344	0.1829332	1	1	1	1	1	1	1
	20220806	0.1095027	1	0.6858253	0.3080313	1	1	1	1	0.3906533	1
AM42	Site	0.0000232	1	1	1	1	0.1242113	1	1	1	1
	20220807	1	1	1	1	1	0.1241367	1	1	1	1
	20220809	0.0000232	1	1	1	1	1	1	1	1	1
AM43	Site	0.0285092	1	1	1	1	1	1	1	1	1
	20220804	0.0285092	1	1	1	1	1	1	1	1	1
AM44	Site	1	1	1	1	1	1	1	1	1	1
	20220807	1	1	1	1	1	1	1	1	1	1
	20220809	1	1	1	1	1	1	1	1	1	1
AM45	Site	0	1	1	1	1	1	1	1	1	1
	20220805	0.1688468	1	1	1	1	1	1	1	1	1
	20220806	0	1	1	1	1	1	1	1	1	1
AM46	Site	0	0.0044687	1	1	1	0.1655223	1	1	1	1
	20220804	0	1	1	1	1	0.0154284	1	1	1	1
	20220805	0	0.0434326	1	1	1	0.6085872	1	1	1	1
	20220806	0	0.0813944	1	1	1	1	1	1	1	1
Project MLE		0	0	0	1	1	0	1	1	1	0.3964184

Table 3. Summary of bat acoustic auto-ID classifications by site

KP = Kaleidoscope Pro v 5.4.8; SB = SonoBat 4.4.5 NE; EPTFUS = *Eptesicus fuscus* (big brown bat), LASBOR = *Lasiurus borealis* (Eastern red bat), LASCIN = *Lasiurus cinereus* (hoary bat), LASNOC = *Lasionycteris noctivagans* (silver-haired bat), MYOLEI = *Myotis leibii* (Eastern small-footed bat), MYOLUC = *Myotis lucifugus* (little brown bat), MYOSEP = *Myotis septentrionalis* (Northern long-eared bat), MYOSOD = *Myotis sodalis* (Indiana bat), NYCMHU = *Nycticeius humeralis* (evening bat), PERSUB = *Perimyotis subflavus* (tricolored bat). LUCSOD = a call classification that is either *Myotis lucifugus* or *Myotis sodalis*. * LUCSOD is not an available option in Kaleidoscope Pro.

Species + Auto ID Program		Files Confidently Auto-Classified Classified to Species by Site												Total	
		AM01	AM02	AM03	AM04	AM05	AM06	AM07	AM08	AM09	AM10	AM11	AM12	KP	SB
EPTFUS	KP	15	508	143	32	2	6	54	3	8	12	48	116	947	—
	SB	14	485	186	31	2	5	52	5	7	10	44	114	—	955
LASBOR	KP	1	27	1				12	2	2	12			57	—
	SB		28	4				9	2	1	3	1		—	48
LASCIN	KP		7	63				1	6	6		3		86	—
	SB			5					1	2			1	—	9
LASNOC	KP		8	6	4			3	7	3	3	3		37	—
	SB		8		1			3	6	2	2	4		—	26
LUCSOD	KP*	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	SB													—	0
MYOLEI	KP													0	—
	SB													—	0
MYOLUC	KP		8	1				2	2		5	1		19	—
	SB													—	0
MYOSEP	KP		1						1					2	—
	SB													—	0
MYOSOD	KP							1	1					2	—
	SB													—	0
NYCHUM	KP	1	16	4				9	1		4			35	—
	SB							3		1	1			—	5
PERSUB	KP		53					1			3			57	—
	SB		44											—	44
Total	KP	17	628	218	36	2	6	83	23	19	39	55	116	1242	1087
	SB	14	565	195	32	2	5	67	14	13	16	49	115		

Table 3 (cont.). Summary of bat acoustic ID by site (AM13 - AM24)

Species + Auto ID Program		Files Confidently Auto-Classified Classified to Species by Site												Total	
		AM13	AM14	AM15	AM16	AM17	AM18	AM19	AM20	AM21	AM22	AM23	AM24	KP	SB
EPTFUS	KP		28	21	14		64	25		95	14	9	10	280	—
	SB		23	21	16		62	23		101	18	9	20	—	293
LASBOR	KP		7	7	26	1	2	2				8	19	72	—
	SB		4	10	37		2				2	5	7	—	67
LASCIN	KP	3	1	2			4	2		27	15		8	62	—
	SB	2		2			2			15	5			—	26
LASNOC	KP		1	8	1		24	2		20	5	4	11	76	—
	SB		1	5			21	4		7	2	1	3	—	44
LUCSOD	KP*	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	SB				1						1			—	2
MYOLEI	KP				1			1			1		1	4	—
	SB													—	0
MYOLUC	KP		5	11	52	1	4				6	8	8	95	—
	SB				1									—	1
MYOSEP	KP				3			1						4	—
	SB													—	0
MYOSOD	KP			1	3							1		5	—
	SB													—	0
NYCHUM	KP		4	2	1		2					9	1	19	—
	SB												2	—	2
PERSUB	KP		1		4		1	16				2	1	25	—
	SB				3			15						—	18
Total	KP	3	47	52	105	2	101	49	0	142	41	41	59	642	453
	SB	2	28	38	58	0	87	42	0	123	28	15	32		

Table 3 (cont.). Summary of bat acoustic ID by Site (AM25 - AM36)

Species + Auto ID Program		Files Confidently Auto-Classified Classified to Species by Site												Total	
		AM25	AM26	AM27	AM28	AM29	AM30	AM31	AM32	AM33	AM34	AM35	AM36	KP	SB
EPTFUS	KP	90	53	76	28	19	796	217	153	83	85	1	1	1602	—
	SB	74	47	75	25	20	918	265	230	111	76	1	1	—	1843
LASBOR	KP	1	2	12	2		20	15	4	18	4	2		80	—
	SB			10	2		12	11	7	15	6	4		—	67
LASCIN	KP	3			1		129	27	74	20				254	—
	SB	7					28	3	18	2				—	58
LASNOC	KP	5	2		2	6	138	37	59	21				270	—
	SB	3	3		1	3	17	1	3	3				—	34
LUCSOD	KP*	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	SB													—	0
MYOLEI	KP													0	—
	SB													—	0
MYOLUC	KP		1	4	4	1	2			7	10	11		40	—
	SB													—	0
MYOSEP	KP											1		1	—
	SB													—	0
MYOSOD	KP	1										3		4	—
	SB			1			1							—	2
NYCHUM	KP	1	1				4	3	6	8	1			24	—
	SB						1	1		1				—	3
PERSUB	KP	1				1		2		4				8	—
	SB					1								—	1
Total	KP	102	59	92	37	27	1089	301	296	161	100	18	1	2283	2008
	SB	84	50	86	28	24	977	281	258	132	82	5	1		

Table 3 (cont.). Summary of bat acoustic ID by site (AM37 - AM46, Project Total)

Species + Auto ID Program		Files Confidently Auto-Classified Classified to Species by Site										Total	
		AM37	AM38	AM39	AM40	AM41	AM42	AM43	AM44	AM45	AM46	KP	SB
EPTFUS	KP	48	1	4	364	38	6	2		38	38	539	—
	SB	82	2	1	575	60	1			24	39	—	784
LASBOR	KP	3	3	1	27	1					4	39	—
	SB	2	1	1	16	1	1				3	—	25
LASCIN	KP	33	2		107	13					1	156	—
	SB	3	1		8	7						—	19
LASNOC	KP	23		4	157	22					3	209	—
	SB	2			9							—	11
LUCSOD	KP*	—	—	—	—	—	—	—	—	—	—	—	—
	SB											—	0
MYOLEI	KP	1										1	—
	SB											—	0
MYOLUC	KP		2	1	2		1				3	9	—
	SB											—	0
MYOSEP	KP					1						1	—
	SB											—	0
MYOSOD	KP											0	—
	SB											—	0
NYCHUM	KP	1			15	1					1	18	—
	SB											—	0
PERSUB	KP	1		1	3	1						6	—
	SB											—	0
Total	KP	110	8	11	675	77	7	2	0	38	50	978	839
	SB	89	4	2	608	68	2	0	0	24	42		
										Project Total		5145	4387

Table 4. Comparison of files classified as *Myotis* by Kaleidoscope Pro with SonoBat and Manual ID

MYOLUC = *Myotis lucifugus* (little brown bat), MYOSOD = *Myotis sodalis* (Indiana bat), MYOSEP = *Myotis septentrionalis* (Northern long-eared bat), MYOLEI = *Myotis leibii* (Eastern small-footed bat), LUCSOD (highlighted green) = a call auto-classification available only in SonoBat that is either *Myotis lucifugus* or *Myotis sodalis*. The LUSOD classification is occasionally used in manual identifications as well. EPTFUS = *Eptesicus fuscus* (big brown bat), LASBOR = *Lasiurus borealis* (Eastern red bat). NOID = File contained low quality bat pulses that did not contain enough information for SonoBat to classify to species. 2BAT = File contained two unidentifiable bats, HIFU = File contained low quality hi-frequency (≥ 35 kHz) bat pulses that did not contain enough information to classify to species. Classifications were attached to file names during the manual ID process.

File Name	Site	Kaleidoscope Pro	SonoBat	Species Manual ID
PAS_RTE219_AM02_D500-20220613_002107-LASBOR.wav	AM02	MYOLUC	NOID	LASBOR
PAS_RTE219_AM02_D500-20220613_002211-LASBOR.wav	AM02	MYOLUC	NOID	LASBOR
PAS_RTE219_AM02_D500-20220613_002356-LASBOR.wav	AM02	MYOLUC	NOID	LASBOR
PAS_RTE219_AM02_D500-20220613_002711-LASBOR.wav	AM02	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM02_D500-20220613_012654-LASBOR.wav	AM02	MYOSEP	NOID	LASBOR
PAS_RTE219_AM02_D500-20220613_014832-LASBOR.wav	AM02	MYOLUC	NOID	LASBOR
PAS_RTE219_AM02_D500-20220613_034127-LASBOR.wav	AM02	MYOLUC	NOID	LASBOR
PAS_RTE219_AM02_D500-20220613_051959-LASBOR.wav	AM02	MYOLUC	NOID	LASBOR
PAS_RTE219_AM02_D500-20220614_012617-LASBOR.wav	AM02	MYOLUC	NOID	LASBOR
PAS_RTE219_AM03_D500-20220614_024923-LASBOR.wav	AM03	MYOLUC	NOID	LASBOR
PAS_RTE219_AM07_D500-20220608_231432-HIFU.wav	AM07	MYOSOD	NOID	HIFU
PAS_RTE219_AM07_D500-20220609_045421-LASBOR.wav	AM07	MYOLUC	NOID	LASBOR
PAS_RTE219_AM07_D500-20220611_233433-LASBOR.wav	AM07	MYOLUC	NOID	LASBOR
PAS_RTE219_AM08_D500-20220610_034239-2BAT.wav	AM08	MYOSOD	NOID	2BAT
PAS_RTE219_AM08_D500-20220611_031333-LUCSOD.wav	AM08	MYOLUC	NOID	LUCSOD
PAS_RTE219_AM08_D500-20220611_224953-LASBOR.wav	AM08	MYOSEP	NOID	LASBOR
PAS_RTE219_AM08_D500-20220611_234435-HIFU.wav	AM08	MYOLUC	NOID	HIFU
PAS_RTE219_AM10_D500-20220612_010647-HIFU.wav	AM10	MYOLUC	NOID	HIFU
PAS_RTE219_AM10_D500-20220613_001500-LASBOR.wav	AM10	MYOLUC	NOID	LASBOR
PAS_RTE219_AM10_D500-20220613_043639-LASBOR.wav	AM10	MYOLUC	NOID	LASBOR
PAS_RTE219_AM10_D500-20220613_043703-LASBOR.wav	AM10	MYOLUC	NOID	LASBOR

Table 4 (cont.). Comparison of files classified as *Myotis* by Kaleidoscope Pro with SonoBat and Manual ID

File Name	Site	Kaleidoscope Pro	SonoBat	Species Manual ID
PAS_RTE219_AM10_D500-20220613_043725-LASBOR.wav	AM10	MYOLUC	NOID	LASBOR
PAS_RTE219_AM11_D500-20220606_024733-LASBOR.wav	AM11	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM14_D500-20220604_210739-LASBOR.wav	AM14	MYOLUC	NOID	LASBOR
PAS_RTE219_AM14_D500-20220604_225108-LASBOR.wav	AM14	MYOLUC	NOID	LASBOR
PAS_RTE219_AM14_D500-20220607_013808-MYOLEI.wav	AM14	MYOLUC	NOID	MYOLEI
PAS_RTE219_AM14_D500-20220607_020044-HIFU.wav	AM14	MYOLUC	NOID	HIFU
PAS_RTE219_AM14_D500-20220607_044935-MYOLEI.wav	AM14	MYOLUC	NOID	MYOLEI
PAS_RTE219_AM15_D500-20220609_015527-LUCSOD.wav	AM15	MYOSOD	NOID	LUCSOD
PAS_RTE219_AM15_D500-20220609_033115-LASBOR.wav	AM15	MYOLUC	NOID	LASBOR
PAS_RTE219_AM15_D500-20220609_035858-LASBOR.wav	AM15	MYOLUC	NOID	LASBOR
PAS_RTE219_AM15_D500-20220609_041719-LASBOR.wav	AM15	MYOLUC	NOID	LASBOR
PAS_RTE219_AM15_D500-20220609_042250-LASBOR.wav	AM15	MYOLUC	NOID	LASBOR
PAS_RTE219_AM15_D500-20220609_213529-LASBOR.wav	AM15	MYOLUC	NOID	LASBOR
PAS_RTE219_AM15_D500-20220610_022350-HIFU.wav	AM15	MYOLUC	NOID	HIFU
PAS_RTE219_AM15_D500-20220611_235606-LASBOR.wav	AM15	MYOLUC	NOID	LASBOR
PAS_RTE219_AM15_D500-20220612_023321-LASBOR.wav	AM15	MYOLUC	NOID	LASBOR
PAS_RTE219_AM15_D500-20220613_030255-LASBOR.wav	AM15	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM15_D500-20220613_032608-LASBOR.wav	AM15	MYOLUC	NOID	LASBOR
PAS_RTE219_AM15_D500-20220613_041016-LASBOR.wav	AM15	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220612_205639-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220612_205747-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220612_205854-LASBOR.wav	AM16	MYOLUC	MYOLUC	LASBOR
PAS_RTE219_AM16_D500-20220612_205929-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220612_205938-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220612_205945-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220612_205956-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220612_210419-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220612_210436-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220612_210551-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220612_210632-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220612_211013-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220612_220636-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220612_220837-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220612_220848-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220612_220911-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220612_221150-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220612_221300-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220612_230912-HIFU.wav	AM16	MYOLUC	NOID	HIFU
PAS_RTE219_AM16_D500-20220612_234233-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220613_001238-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220613_012157-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220613_015859-LUCSOD.wav	AM16	MYOSOD	NOID	LUCSOD
PAS_RTE219_AM16_D500-20220613_022226-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220613_023506-HIFU.wav	AM16	MYOSEP	NOID	HIFU
PAS_RTE219_AM16_D500-20220613_023937-LUCSOD.wav	AM16	MYOLUC	NOID	LUCSOD
PAS_RTE219_AM16_D500-20220613_024348-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220613_024728-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220613_030236-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220613_031211-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220613_042853-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220613_044424-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220613_044729-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220613_044816-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220613_045740-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220613_205750-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220613_210539-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220613_210552-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220613_211339-LASBOR.wav	AM16	MYOLUC	EPTFUS	LASBOR

Table 4 (cont.). Comparison of files classified as *Myotis* by Kaleidoscope Pro with SonoBat and Manual ID

File Name	Site	Kaleidoscope Pro	SonoBat	Species Manual ID
PAS_RTE219_AM16_D500-20220614_003105-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220614_014213-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220614_014353-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220614_020921-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220614_023754-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220614_023827-HIFU.wav	AM16	MYOLEI	NOID	HIFU
PAS_RTE219_AM16_D500-20220614_024016-LUCSOD.wav	AM16	MYOSOD	NOID	LUCSOD
PAS_RTE219_AM16_D500-20220614_024045-LUCSOD.wav	AM16	MYOSOD	NOID	LUCSOD
PAS_RTE219_AM16_D500-20220614_024549-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220614_024558-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220614_031131-LUCSOD.wav	AM16	MYOLUC	NOID	LUCSOD
PAS_RTE219_AM16_D500-20220614_031545-HIFU.wav	AM16	MYOSEP	NOID	HIFU
PAS_RTE219_AM16_D500-20220614_031653-HIFU.wav	AM16	MYOSEP	LUCSOD	HIFU
PAS_RTE219_AM16_D500-20220614_043454-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220614_043746-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220614_044537-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM16_D500-20220614_044828-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220614_045717-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220614_050501-LASBOR.wav	AM16	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM16_D500-20220614_050724-LASBOR.wav	AM16	MYOLUC	NOID	LASBOR
PAS_RTE219_AM17_D500-20220613_032809-LASBOR.wav	AM17	MYOLUC	NOID	LASBOR
PAS_RTE219_AM18_D500-20220610_215940-LASBOR.wav	AM18	MYOLUC	NOID	LASBOR
PAS_RTE219_AM18_D500-20220611_225538-LASBOR.wav	AM18	MYOLUC	NOID	LASBOR
PAS_RTE219_AM18_D500-20220612_014310-LASBOR.wav	AM18	MYOLUC	NOID	LASBOR
PAS_RTE219_AM18_D500-20220612_021655-LASBOR.wav	AM18	MYOLUC	NOID	LASBOR
PAS_RTE219_AM19_D500-20220612_212318-MYOLEI.wav	AM19	MYOLEI	NOID	MYOLEI
PAS_RTE219_AM19_D500-20220613_001641-HIFU.wav	AM19	MYOSEP	NOID	HIFU
PAS_RTE219_AM22_D500-20220612_205953-LASBOR.wav	AM22	MYOLUC	NOID	LASBOR
PAS_RTE219_AM22_D500-20220613_030134-LASBOR.wav	AM22	MYOLUC	NOID	LASBOR
PAS_RTE219_AM22_D500-20220614_005030-HIFU.wav	AM22	MYOLEI	NOID	HIFU
PAS_RTE219_AM22_D500-20220614_023759-LASBOR.wav	AM22	MYOLUC	LUCSOD	LASBOR
PAS_RTE219_AM22_D500-20220614_025335-LASBOR.wav	AM22	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM22_D500-20220614_025435-LASBOR.wav	AM22	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM22_D500-20220614_035420-HIFU.wav	AM22	MYOLUC	NOID	HIFU
PAS_RTE219_AM23_D500-20220613_231254-LASBOR.wav	AM23	MYOLUC	NOID	LASBOR
PAS_RTE219_AM23_D500-20220614_035231-LASBOR.wav	AM23	MYOLUC	NOID	LASBOR
PAS_RTE219_AM23_D500-20220614_211826-LASBOR.wav	AM23	MYOLUC	NOID	LASBOR
PAS_RTE219_AM23_D500-20220614_211925-LASBOR.wav	AM23	MYOLUC	NOID	LASBOR
PAS_RTE219_AM23_D500-20220614_212336-LASBOR.wav	AM23	MYOLUC	NOID	LASBOR
PAS_RTE219_AM23_D500-20220614_213352-LASBOR.wav	AM23	MYOLUC	NOID	LASBOR
PAS_RTE219_AM23_D500-20220614_234933-HIFU.wav	AM23	MYOSOD	NOID	HIFU
PAS_RTE219_AM23_D500-20220615_014743-LASBOR.wav	AM23	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM23_D500-20220615_015922-LASBOR.wav	AM23	MYOLUC	NOID	LASBOR
PAS_RTE219_AM24_D500-20220614_004630-LASBOR.wav	AM24	MYOLEI	NOID	LASBOR
PAS_RTE219_AM24_D500-20220614_004729-LASBOR.wav	AM24	MYOLUC	NOID	LASBOR
PAS_RTE219_AM24_D500-20220615_001023-LASBOR.wav	AM24	MYOLUC	NOID	LASBOR
PAS_RTE219_AM24_D500-20220615_001423-LASBOR.wav	AM24	MYOLUC	NOID	LASBOR
PAS_RTE219_AM24_D500-20220615_002043-LASBOR.wav	AM24	MYOLUC	NOID	LASBOR
PAS_RTE219_AM24_D500-20220615_002213-LASBOR.wav	AM24	MYOLUC	NOID	LASBOR
PAS_RTE219_AM24_D500-20220615_003710-LASBOR.wav	AM24	MYOLUC	NOID	LASBOR
PAS_RTE219_AM24_D500-20220615_023716-LASBOR.wav	AM24	MYOLUC	NOID	LASBOR
PAS_RTE219_AM24_D500-LASBOR.wav	AM24	MYOLUC	NOID	LASBOR
PAS_RTE219_AM25_D500-20220605_030126-LUCSOD.wav	AM25	MYOSOD	NOID	LUCSOD
PAS_RTE219_AM26_D500-20220605_010345-LASBOR.wav	AM26	MYOLUC	NOID	LASBOR
PAS_RTE219_AM27_D500-20220604_205812-LASBOR.wav	AM27	MYOLUC	NOID	LASBOR
PAS_RTE219_AM27_D500-20220607_044455-LASBOR.wav	AM27	MYOLUC	NOID	LASBOR
PAS_RTE219_AM27_D500-20220607_044503-LASBOR.wav	AM27	MYOLUC	MYOSOD	LASBOR
PAS_RTE219_AM27_D500-20220607_222513-LASBOR.wav	AM27	MYOLUC	NOID	LASBOR

Table 4 (cont.). Comparison of files classified as *Myotis* by Kaleidoscope Pro with SonoBat and Manual ID

File Name	Site	Kaleidoscope Pro	SonoBat	Species Manual ID
PAS_RTE219_AM28_D500-20220605_235606-LASBOR.wav	AM28	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM28_D500-20220606_001556-LASBOR.wav	AM28	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM28_D500-20220606_213644-HIFU.wav	AM28	MYOLUC	NOID	HIFU
PAS_RTE219_AM28_D500-20220607_002203-HIFU.wav	AM28	MYOLUC	NOID	HIFU
PAS_RTE219_AM29_D500-20220608_023854-LASBOR.wav	AM29	MYOLUC	NOID	LASBOR
PAS_RTE219_AM30_D500-20220604_211633-LASBOR.wav	AM30	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM30_D500-20220607_014859-LASBOR.wav	AM30	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM33_D500-20220615_004757-LASBOR.wav	AM33	MYOLUC	NOID	LASBOR
PAS_RTE219_AM33_D500-20220615_005327-HIFU.wav	AM33	MYOLUC	NOID	HIFU
PAS_RTE219_AM33_D500-20220615_021131-HIFU.wav	AM33	MYOLUC	NOID	HIFU
PAS_RTE219_AM33_D500-20220615_023124-HIFU.wav	AM33	MYOLUC	NOID	HIFU
PAS_RTE219_AM33_D500-20220615_234606-LASBOR.wav	AM33	MYOLUC	NOID	LASBOR
PAS_RTE219_AM33_D500-20220615_235641-LASBOR.wav	AM33	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM33_D500-20220616_040903-HIFU.wav	AM33	MYOLUC	NOID	HIFU
PAS_RTE219_AM34_D500-20220613_210142-LASBOR.wav	AM34	MYOLUC	NOID	LASBOR
PAS_RTE219_AM34_D500-20220614_001241-LASBOR.wav	AM34	MYOLUC	NOID	LASBOR
PAS_RTE219_AM34_D500-20220614_024328-LASBOR.wav	AM34	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM34_D500-20220614_033817-LASBOR.wav	AM34	MYOLUC	NOID	LASBOR
PAS_RTE219_AM34_D500-20220614_210619-LASBOR.wav	AM34	MYOLUC	NOID	LASBOR
PAS_RTE219_AM34_D500-20220614_210626-LASBOR.wav	AM34	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM34_D500-20220614_210654-LASBOR.wav	AM34	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM34_D500-20220614_210729-LASBOR.wav	AM34	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM34_D500-20220614_210749-LASBOR.wav	AM34	MYOLUC	NOID	LASBOR
PAS_RTE219_AM34_D500-20220615_024253-LASBOR.wav	AM34	MYOLUC	NOID	LASBOR
PAS_RTE219_AM35_D500-20220613_205714-LASBOR.wav	AM35	MYOLUC	NOID	LASBOR
PAS_RTE219_AM35_D500-20220614_005659-HIFU.wav	AM35	MYOLUC	NOID	HIFU
PAS_RTE219_AM35_D500-20220614_015703-LASBOR.wav	AM35	MYOSOD	NOID	LASBOR
PAS_RTE219_AM35_D500-20220614_020016-LASBOR.wav	AM35	MYOLUC	NOID	LASBOR
PAS_RTE219_AM35_D500-20220614_020330-LASBOR.wav	AM35	MYOLUC	NOID	LASBOR
PAS_RTE219_AM35_D500-20220614_021738-LASBOR.wav	AM35	MYOSOD	NOID	LASBOR
PAS_RTE219_AM35_D500-20220614_021836-LASBOR.wav	AM35	MYOLUC	NOID	LASBOR
PAS_RTE219_AM35_D500-20220614_212011-LASBOR.wav	AM35	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM35_D500-20220615_015429-LASBOR.wav	AM35	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM35_D500-20220615_015516-LASBOR.wav	AM35	MYOLUC	NOID	LASBOR
PAS_RTE219_AM35_D500-20220615_015851-LASBOR.wav	AM35	MYOSOD	NOID	LASBOR
PAS_RTE219_AM35_D500-20220615_022039-HIFU.wav	AM35	MYOSEP	NOID	HIFU
PAS_RTE219_AM35_D500-20220615_022247-LASBOR.wav	AM35	MYOLUC	NOID	LASBOR
PAS_RTE219_AM35_D500-20220615_024434-LASBOR.wav	AM35	MYOLUC	NOID	LASBOR
PAS_RTE219_AM35_D500-20220615_025338-LASBOR-social.wav	AM35	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM37_D500-20220614_042405-HIFU.wav	AM37	MYOLEI	NOID	HIFU
PAS_RTE219_AM38_D500-20220615_043934-LASBOR.wav	AM38	MYOLUC	NOID	LASBOR
PAS_RTE219_AM38_D500-20220615_052505-LASBOR.wav	AM38	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM39_D500-20220805_052343-LASBOR.wav	AM39	MYOLUC	NOID	LASBOR
PAS_RTE219_AM40_D500-20220616_001601-LASBOR.wav	AM40	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM40_D500-20220616_004404-LASBOR.wav	AM40	MYOLUC	NOID	LASBOR
PAS_RTE219_AM41_D500-20220804_230522-LASBOR.wav	AM41	MYOSEP	NOID	LASBOR
PAS_RTE219_AM42_D500-20220808_054448-LASBOR.wav	AM42	MYOLUC	LASBOR	LASBOR
PAS_RTE219_AM46_D500-20220805_042958-HIFU.wav	AM46	MYOLUC	NOID	HIFU
PAS_RTE219_AM46_D500-20220805_052859-LASBOR.wav	AM46	MYOLUC	NOID	LASBOR
PAS_RTE219_AM46_D500-20220806_042902-HIFU.wav	AM46	MYOLUC	NOID	HIFU

Appendix A

Acoustic Site Data Sheets

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM01		**Total Valid Nights:** 2 **of** 2
Lat: 39.780190°		**Lon:** -79.030486°		**Photo:** AM01_3		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50241		
Elevation: 692m	**Mic AGL:** 5m	**Mic Az.:** 255°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: East edge of a power line ROW within a mature deciduous forest with sparsely spaced houses nearby. Mic was pointed South West across the ROW.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/12/22	3	60	160	20:46	05:46	8.2V	n/a	n/a	n/a	n/a	0	Deployed
06/14/22	3	60	160	20:46	05:46	8.0V	54	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM02		**Total Valid Nights:** 2 **of** 2
Lat: 39.775690°		**Lon:** -79.028350°		**Photo:** AM02_7		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50257		
Elevation: 723m	**Mic AGL:** 4m	**Mic Az.:** 240°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s

Station Description: East side of a small forest opening created by a grassy lane. The opening was North of a small pond and South of a second small pond nearby. The surrounding area was within a mature deciduous forest with a few sparsely spaced houses. Mic was pointed South West across the forest opening.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/12/22	3	60	160	20:46	05:46	8.1V	n/a	n/a	n/a	n/a	0	Deployed
06/14/22	3	60	160	20:46	05:46	7.8V	633	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM03		**Total Valid Nights:** 3 **of** 3	
Lat: 39.772160°		**Lon:** -79.030880°		**Photo:** AM03_2			
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50239			
Elevation: 726m	**Mic AGL:** 5m	**Mic Az.:** 50°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s	

Station Description: South side of a small forest opening with some small dying trees interspersed throughout. The opening was within a mature deciduous forest and adjacent to the West was a large agricultural field. Nearby in the forest to the East was a small tributary with open water. Several farm houses were nearby across the field. Mic was pointed North East across the opening.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/12/22	3	60	160	20:46	05:46	8.8V	n/a	n/a	n/a	n/a	0	Deployed
06/15/22	3	60	160	20:47	05:46	8.1V	232	3	0	0	3	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM04		**Total Valid Nights:** 3 **of** 3
Lat: 39.765740°		**Lon:** -79.031145°		**Photo:** AM04_1		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50118		
Elevation: 778m	**Mic AGL:** 5m	**Mic Az.:** 290°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: East side of a closed canopy jeep trail in a mature deciduous forest within PA State Game Land 231. Mic was pointed North West across the trail.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/12/22	3	60	160	20:46	05:46	8.2V	n/a	n/a	n/a	n/a	0	Deployed
06/15/22	3	60	160	20:47	05:46	7.8V	69	3	0	0	3	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM05		**Total Valid Nights:** 3 **of** 3
Lat: 39.764247°		**Lon:** -79.033191°		**Photo:** AM05_2		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50251		
Elevation: 774m	**Mic AGL:** 5m	**Mic Az.:** 40°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: West side of a closed canopy jeep trail running North East to South West in a mature deciduous forest within PA SGL 231. Mic was pointed North East across the trail.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/12/22	3	60	160	20:46	05:46	8.1V	n/a	n/a	n/a	n/a	0	Deployed
06/15/22	3	60	160	20:47	05:46	7.8V	8	3	0	0	3	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM06		**Total Valid Nights:** 3 **of** 3
Lat: 39.761054°		**Lon:** -79.032923°		**Photo:** AM06_1		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50222		
Elevation: 814m	**Mic AGL:** 4m	**Mic Az.:** 205°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: West side of a closed canopy ATV trail in a mature deciduous forest within PA SGL 231. Mic was pointed South West across the North East to South West running section of the trail.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/12/22	3	60	160	20:46	05:46	8.2V	n/a	n/a	n/a	n/a	0	Deployed
06/15/22	3	60	160	20:47	05:46	7.8V	15	3	0	0	3	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM07		**Total Valid Nights:** 3 **of** 5
Lat: 39.752454°		**Lon:** -79.039174°		**Photo:** AM07_6		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50228		
Elevation: 796m	**Mic AGL:** 4m	**Mic Az.:** 225°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s

Station Description: North East corner of a small North East to South West rectangular open grassy area within a mature deciduous forest with a dense understory. There are several grassy ATV trails leading to the open area from all sides. Mic was pointed South West across and along the length of the open area.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/08/22	3	60	160	20:44	05:46	9.1V	n/a	n/a	n/a	n/a	0	Deployed
06/13/22	3	60	160	20:46	05:46	8.2V	108	5	0	2	3	Rain: 6/8, 6/9. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM08		**Total Valid Nights:** 3 **of** 5
Lat: 39.750022°		**Lon:** -79.041529°		**Photo:** AM08_2		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 486		
Elevation: 798m	**Mic AGL:** 5m	**Mic Az.:** 280°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: East side of a small forest opening along a North West to South East running closed canopy jeep trail within mature deciduous forest with a dense understory. Mic was pointed North W across the jeep trail.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/08/22	3	60	160	20:44	05:46	9.1V	n/a	n/a	n/a	n/a	0	Deployed
06/13/22	3	60	160	20:46	05:46	8.1V	58	5	0	2	3	Rain: 6/8, 6/9. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM09		**Total Valid Nights:** 3 **of** 5
Lat: 39.745611°		**Lon:** -79.044514°		**Photo:** AM09_3		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50054		
Elevation: 793m	**Mic AGL:** 5m	**Mic Az.:** 150°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s

Station Description: West side of a small forest opening along a North to South running cluttered grassy jeep trail within a mature deciduous forest with a dense understory. Mic was pointed South East across the opening.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/08/22	3	60	160	20:44	05:46	8.0V	n/a	n/a	n/a	n/a	0	Deployed
06/13/22	3	60	160	20:46	05:46	7.8V	76	5	0	2	3	Rain: 6/8, 6/9. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM10		**Total Valid Nights:** 3 **of** 5
Lat: 39.744820°		**Lon:** -79.048590°		**Photo:** AM10_2		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50024		
Elevation: 756m	**Mic AGL:** 5m	**Mic Az.:** 185°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: North side of a small forest opening along an East to West running cluttered grassy jeep trail within a mature deciduous forest with a dense understory. Mic was pointed South across the opening.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/08/22	3	60	160	20:44	05:46	8.0V	n/a	n/a	n/a	n/a	0	Deployed
06/13/22	3	60	160	20:46	05:46	7.7V	76	5	0	2	3	Rain: 6/8, 6/9. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM11		**Total Valid Nights:** 2 **of** 5	
Lat: 39.745380°		**Lon:** -79.051970°		**Photo:** AM11_2			
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50262			
Elevation: 709m	**Mic AGL:** 5m	**Mic Az.:** 73°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s	
Station Description: South side of a narrow East to West running grassy jeep trail with an open canopy and within a mature deciduous forest with a dense understory. Mic was pointed North East across a slightly wider section of the trail.							

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/03/22	3	60	160	20:41	05:47	6.0V	n/a	n/a	n/a	n/a	0	Deployed
06/08/22	3	60	160	20:44	05:46	5.1V	74	5	0	3	2	Rain: 6/3-4, 6/7. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM12		**Total Valid Nights:** 2 **of** 5
Lat: 39.742715°		**Lon:** -79.053781°		**Photo:** AM12_2		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50240		
Elevation: 677m	**Mic AGL:** 5m	**Mic Az.:** 330°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s

Station Description: East side of a closed canopy forest road running North West to South East within a mature mixed forest and near Piney Creek. Mic was pointed North West across and down the road.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/03/22	3	60	160	20:41	05:47	9.0V	n/a	n/a	n/a	n/a	0	Deployed
06/08/22	3	60	160	20:44	05:46	7.9V	230	5	0	3	2	Rain: 6/3-4, 6/7. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM13		**Total Valid Nights:** 2 **of** 5
Lat: 39.742874°		**Lon:** -79.055329°		**Photo:** AM13_1		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50024		
Elevation: 659m	**Mic AGL:** 4m	**Mic Az.:** 10°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: South side of a narrow, closed canopy forest jeep trail running North East to South West within a mature mixed forest near Piney Creek. Mic was pointed North across and along the road.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/03/22	3	60	160	20:41	05:47	9.0V	n/a	n/a	n/a	n/a	0	Deployed
06/08/22	3	60	160	20:44	05:46	8.0V	77	5	0	3	2	Rain: 6/3-4, 6/7. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic	**State/County:** PA/Somerset	**Site:** AM14	**Total Valid Nights:** 2 **of** 5

Lat: 39.745756°		**Lon:** -79.055179°		**Photo:** AM14_1		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50228		
Elevation: 666m	**Mic AGL:** 5m	**Mic Az.:** 270°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: North side of Piney Run Road, a semi-open canopy dirt road running North West to South East within a mature mixed forest. Mic was pointed South West across the road.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/03/22	3	60	160	20:41	05:47	9.1V	n/a	n/a	n/a	n/a	0	Deployed
06/08/22	3	60	160	20:44	05:46	8.1V	157	5	0	3	2	Rain: 6/3-4, 6/7. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM15		**Total Valid Nights:** 3 **of** 5
Lat: 39.738388°		**Lon:** -79.049815°		**Photo:** AM15_4		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50240		
Elevation: 775m	**Mic AGL:** 5m	**Mic Az.:** 195°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: West side of a power line ROW and dirt access road running North East to South West within a mature deciduous forest. Mic was pointed South West across the road.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/08/22	3	60	160	20:44	05:46	8.0V	n/a	n/a	n/a	n/a	0	Deployed
06/13/22	3	60	160	20:46	05:46	7.7V	187	5	0	2	3	Rain: 6/8, 6/9. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM16		**Total Valid Nights:** 2 **of** 6
Lat: 39.738978°		**Lon:** -79.053338°		**Photo:** AM16_2		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50223/50162		
Elevation: 693m	**Mic AGL:** 5m	**Mic Az.:** 300°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: North side of Piney Run Road, a semi-open canopy dirt road running North West to South East within a mature mixed forest. Mic was pointed South West across the road.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/08/22	3	60	160	20:44	05:46	5.9V	n/a	n/a	n/a	n/a	0	Deployed
06/12/22	3	60	160	20:46	05:46	5.2V/ 5.7V	19902	4	4	N/A	4	Card corrupted, no viable files. Replaced detector with new card. Redeployed
06/14/22	3	60	160	20:46	05:46	5.3V	136	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM17		**Total Valid Nights:** 3 **of** 5
Lat: 39.736046°		**Lon:** -79.053600°		**Photo:** AM17_5		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50048		
Elevation: 725m	**Mic AGL:** 3m	**Mic Az.:** 225°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: North East side of a small opening on a narrow, closed canopy forest trail running North East to South West within a mature deciduous forest. Mic was pointed South West across the opening.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/08/22	3	60	160	20:44	05:46	5.9V	n/a	n/a	n/a	n/a	0	Deployed
06/13/22	3	60	160	20:46	05:46	5.2V	214	5	0	2	3	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM18		**Total Valid Nights:** 3 **of** 5
Lat: 39.734808°		**Lon:** -79.053937°		**Photo:** AM18_4		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50223		
Elevation: 726m	**Mic AGL:** 3m	**Mic Az.:** 175°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: West side of a power line ROW and dirt access road running North East to South West within a mature deciduous forest. Mic was pointed South across and down the ROW.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/08/22	3	60	160	20:44	05:46	5.9V	n/a	n/a	n/a	n/a	0	Deployed
06/13/22	3	60	160	20:46	05:46	5.2V	152	5	0	2	3	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM19		**Total Valid Nights:** 2 **of** 2
Lat: 39.732003°		**Lon:** -79.054386°		**Photo:** AM19_2		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50119		
Elevation: 680m	**Mic AGL:** 3m	**Mic Az.:** 230°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s

Station Description: North side of Piney Creek that ran East to West in that area and had an open canopy. The creek corridor was within a mature mixed forest. Mic was pointed South West over a large grassy sediment deposit on the North side of the creek.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/12/22	3	60	160	20:46	05:46	8.2V	n/a	n/a	n/a	n/a	0	Deployed
06/14/22	3	60	160	20:47	05:46	7.9V	60	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM20		**Total Valid Nights:** 4 **of** 4	
Lat: 39.734110°		**Lon:** -79.056766°		**Photo:** AM20_1			
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50119/50116			
Elevation: 680m	**Mic AGL:** 4m	**Mic Az.:** 170°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s	
Station Description: West side of a closed canopy jeep trail running North to South adjacent and parallel to Piney Creek. The trail was within a mature mixed forest. Mic was pointed South East across the jeep trail.							

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/12/22	3	60	160	20:46	05:46	5.8V	n/a	n/a	n/a	n/a	0	Deployed
06/14/22	3	60	160	20:47	05:46	5.1V/ 5.9V	46	2	0	0	2	No bat files recorded, only noise. Replaced detector and redeployed out of an abundance of caution.
06/16/22	3	60	160	20:47	05:46	5.5V	0	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM21		**Total Valid Nights:** 2 **of** 2
Lat: 39.730714°		**Lon:** -79.057418°		**Photo:** AM21_10		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50001		
Elevation: 736m	**Mic AGL:** 5m	**Mic Az.:** 345°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: North side of a narrow, open canopy jeep trial running South East to North West within a mature deciduous forest. Mic was pointed North West up and across the jeep trail.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/12/22	3	60	160	20:46	05:46	6.0V	n/a	n/a	n/a	n/a	0	Deployed
06/14/22	3	60	160	20:47	05:46	5.5V	148	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM22		**Total Valid Nights:** 2 **of** 2
Lat: 39.732404°		**Lon:** -79.060350°		**Photo:** AM22_1		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50164		
Elevation: 748m	**Mic AGL:** 5m	**Mic Az.:** 345°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: South side of an open canopy intersection of two jeep trials within a mature deciduous forest. Mic was pointed North West across the intersection.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/12/22	3	60	160	20:46	05:46	5.9V	n/a	n/a	n/a	n/a	0	Deployed
06/14/22	3	60	160	20:47	05:46	5.4V	70	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM23		**Total Valid Nights:** 2 **of** 2
Lat: 39.728200°		**Lon:** -79.064996°		**Photo:** AM23_6		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 486		
Elevation: 735m	**Mic AGL:** 5m	**Mic Az.:** 280°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: East side of a partially open canopy forest road running North East to South West within a mature deciduous forest. Mic was pointed West across the road.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/13/22	3	60	160	20:46	05:46	8.1V	n/a	n/a	n/a	n/a	0	Deployed
06/15/22	3	60	160	20:47	05:46	8.0V	42	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM24		**Total Valid Nights:** 2 **of** 2
Lat: 39.729384°		**Lon:** -79.067014°		**Photo:** AM24_6		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50223		
Elevation: 711m	**Mic AGL:** 4m	**Mic Az.:** 24°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s

Station Description: On the edge of a large grassy field to the West and a wetland with open water to the East. The wetland was on the edge of a mature deciduous forest that continued East. Mic was pointed South West across an opening between trees at the edge of the field and the wetland.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/13/22	3	60	160	20:46	05:46	6.0V	n/a	n/a	n/a	n/a	0	Deployed
06/15/22	3	60	160	20:47	05:46	5.5V	63	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM25		**Total Valid Nights:** 2 **of** 5
Lat: 39.739834°		**Lon:** -79.073646°		**Photo:** AM25_2		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50222		
Elevation: 749m	**Mic AGL:** 5m	**Mic Az.:** 247°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: North edge of a power line ROW running East to West within a mature deciduous forest and an agricultural field to the East. Mic was pointed South West across the ROW						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/03/22	3	60	160	20:41	05:47	9.0V	n/a	n/a	n/a	n/a	0	Deployed
06/08/22	3	60	160	20:44	05:46	8.0V	103	5	0	3	2	Rain: 6/3-4, 6/7. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM26		**Total Valid Nights:** 2 **of** 5
Lat: 39.739720°		**Lon:** -79.078150°		**Photo:** AM26_3		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50251		
Elevation: 726m	**Mic AGL:** 5m	**Mic Az.:** 330°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: East edge of an open canopy jeep trail running North to South between a power line ROW and a small agricultural field within a mature mixed forest. Mic was pointed North West across the jeep trail.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/03/22	3	60	160	20:41	05:47	8.9V	n/a	n/a	n/a	n/a	0	Deployed
06/08/22	3	60	160	20:44	05:46	8.1V	62	5	0	3	2	Rain: 6/3-4, 6/7. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM27		**Total Valid Nights:** 2 **of** 5
Lat: 39.736470°		**Lon:** -79.083657°		**Photo:** AM27_3		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50257		
Elevation: 682m	**Mic AGL:** 5m	**Mic Az.:** 310°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: East edge of a mostly open canopy ROW running North to South within a mature mixed forest. Mic was pointed North West across the ROW.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/03/22	3	60	160	20:41	05:47	9.1V	n/a	n/a	n/a	n/a	0	Deployed
06/08/22	3	60	160	20:44	05:46	8.0V	94	5	0	3	2	Rain: 6/3-4, 6/7. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM28		**Total Valid Nights:** 2 **of** 5
Lat: 39.738297°		**Lon:** -79.083714°		**Photo:** AM28_3		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50118		
Elevation: 673m	**Mic AGL:** 5m	**Mic Az.:** 40°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: West edge of a mostly open canopy ROW running North to South within a mature mixed forest. The ROW intersected with a power line ROW 100m North of Site. Mic was pointed North East across the ROW						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/03/22	3	60	160	20:41	05:47	9.0V	n/a	n/a	n/a	n/a	0	Deployed
06/08/22	3	60	160	20:44	05:46	8.0V	38	5	0	3	2	Rain: 6/3-4, 6/7. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM29		**Total Valid Nights:** 2 **of** 5
Lat: 39.732950°		**Lon:** 79.096261°		**Photo:** AM29_1		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50119		
Elevation: 667m	**Mic AGL:** 6m	**Mic Az.:** 80°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: South West edge of a small forest opening and intersection of two closed canopy jeep trials within a mature mixed forest. Mic was pointed North East across the intersection						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/03/22	3	60	160	20:41	05:47	9.1V	n/a	n/a	n/a	n/a	0	Deployed
06/08/22	3	60	160	20:44	05:46	8.1V	35	5	0	3	2	Rain: 6/3-4, 6/7. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM30		**Total Valid Nights:** 2 **of** 5
Lat: 39.729020°		**Lon:** -79.093371°		**Photo:** AM30_4		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50241		
Elevation: 690m	**Mic AGL:** 4m	**Mic Az.:** 280°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s

Station Description: South East edge of a small pond within a mature mixed forest. Mic was pointed West across a vegetated wetland area, South of the open water of the pond.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/03/22	3	60	160	20:41	05:47	9.1V	n/a	n/a	n/a	n/a	0	Deployed
06/08/22	3	60	160	20:44	05:46	8.1V	1097	5	0	3	2	Rain: 6/3-4, 6/7. Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM31		**Total Valid Nights:** 2 **of** 2
Lat: 39.729354°		**Lon:** -79.075938°		**Photo:** AM31_2		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50241		
Elevation: 683m	**Mic AGL:** 4m	**Mic Az.:** 10°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: South East edge of a small, vegetated wetland near Meadow Run and within a mature mixed forest. Mic was pointed North across the East end of the wetland area.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/14/22	3	60	160	20:46	05:46	8.9V	n/a	n/a	n/a	n/a	0	Deployed
06/16/22	3	60	160	20:47	05:46	8.3V	302	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM32		**Total Valid Nights:** 2 **of** 2
Lat: 39.731518°		**Lon:** -79.078568°		**Photo:** AM32_2		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50257		
Elevation: 680m	**Mic AGL:** 3m	**Mic Az.:** 180°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: North edge of a vegetated wetland drainage that is West of an open water wetland adjacent to Meadow Run. The surrounding area is a mature mixed forest. Mic was pointed South across the vegetated wetland area.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/14/22	3	60	160	20:46	05:46	9.0V	n/a	n/a	n/a	n/a	0	Deployed
06/16/22	3	60	160	20:47	05:46	8.3V	297	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM33		**Total Valid Nights:** 2 **of** 2
Lat: 39.730246°		**Lon:** -79.077884°		**Photo:** AM33_5		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50119		
Elevation: 681m	**Mic AGL:** 4m	**Mic Az.:** 225°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: South East edge of a vegetated wetland and near Meadow Run to the West. The surrounding area is a mature mixed forest. Mic was pointed North West across the vegetated wetland area.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/14/22	3	60	160	20:46	05:46	9.0V	n/a	n/a	n/a	n/a	0	Deployed
06/16/22	3	60	160	20:47	05:46	8.4V	166	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM34		**Total Valid Nights:** 2 **of** 2
Lat: 39.729609°		**Lon:** -79.070852°		**Photo:** AM34_2		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50048		
Elevation: 707m	**Mic AGL:** 4m	**Mic Az.:** 60°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s

Station Description: South edge of a short, mostly closed canopy, forest road running East to West between an open grass field and a pond adjacent to Meadow Run. The Site, pond, and Meadow Run were within a mature mixed forest. Mic was pointed North East across the road.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/13/22	3	60	160	20:46	05:46	5.9V	n/a	n/a	n/a	n/a	0	Deployed
06/15/22	3	60	160	20:47	05:46	5.5V	100	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM35		**Total Valid Nights:** 2 **of** 2
Lat: 39.724469°		**Lon:** -79.077130°		**Photo:** AM35_1		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50240		
Elevation: 729m	**Mic AGL:** 3m	**Mic Az.:** 155°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s

Station Description: West side of a short, mostly closed canopy, jeep trail running North to South, parallel to an agricultural field to the West, and between an open grass field to the North and a second agricultural field to the South. The jeep trail is within a mature mixed forest that continued East. Mic was pointed North East across the jeep trail.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/13/22	3	60	160	20:46	05:46	7.7V	n/a	n/a	n/a	n/a	0	Deployed
06/15/22	3	60	160	20:47	05:46	7.6V	29	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM36		**Total Valid Nights:** 2 **of** 2	
Lat: 39.723019°		**Lon:** -79.071567°		**Photo:** AM36_2			
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50024			
Elevation: 722m	**Mic AGL:** 3m	**Mic Az.:** 315°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s	

Station Description: South side of a narrow, mostly open canopy gas line ROW running East to West. The ROW ran parallel to an adjacent ROW to the South and this section was South of a large open field. The Site was on the edge of a mature mixed forest that continued South and West with Meadow Run within nearby to the West. Mic was pointed North West across the ROW

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/13/22	3	60	160	20:46	05:46	7.8V	n/a	n/a	n/a	n/a	0	Deployed
06/15/22	3	60	160	20:47	05:46	7.6V	1	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM37		**Total Valid Nights:** 2 **of** 2
Lat: 39.722684°		**Lon:** -79.076944°		**Photo:** AM37_1		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50054		
Elevation: 731m	**Mic AGL:** 3m	**Mic Az.:** 60°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s

Station Description: Open canopy intersection of a short, mostly closed canopy, jeep trail running North to South between grass and agricultural fields and a gas line ROW running East to West. A mixed mature forest surrounds the fields, jeep trail, and ROW. Mic was pointed North East across the intersection between the entrance to the jeep trail and the ROW.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/13/22	3	60	160	20:46	05:46	7.9V	n/a	n/a	n/a	n/a	0	Deployed
06/15/22	3	60	160	20:47	05:46	7.8V	137	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM38		**Total Valid Nights:** 2 **of** 2
Lat: 39.722546°		**Lon:** -79.081006°		**Photo:** AM38_4		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50228		
Elevation: 722m	**Mic AGL:** 4m	**Mic Az.:** 280°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s

Station Description: East edge of a small open grassy area with a tributary on the West side and within a mature mixed forest. Mic was pointed South West across the open area.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/13/22	3	60	160	20:46	05:46	8.1V	n/a	n/a	n/a	n/a	0	Deployed
06/15/22	3	60	160	20:47	05:46	8.0V	10	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** MD/Garrett		**Site:** AM39		**Total Valid Nights:** 3 **of** 3
Lat: 39.720224°		**Lon:** -79.080564°		**Photo:** AM39_3		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50024		
Elevation: 473m	**Mic AGL:** 6m	**Mic Az.:** 89°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: North side of gravel road running East and West though a mature deciduous forest opening up to a field in the East. The mic was pointed East along road towards field opening.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
08/04/22	3	60	160	20:27	06:17	8.9V	n/a	n/a	n/a	n/a	0	Deployed
08/07/22	3	60	160	20:25	06:19	8.1V	171	3	0	0	3	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** PA/Somerset		**Site:** AM40		**Total Valid Nights:** 2 **of** 2	
Lat: 39.722861°		**Lon:** -79.091668°		**Photo:** AM40_1			
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50001			
Elevation: 735m	**Mic AGL:** 5m	**Mic Az.:** 340°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s	

Station Description: South edge of a gas line ROW running East to West and a forest cut from the ROW NW to an agricultural field. The ROW ran through a strip of mature deciduous forest from a large commercial property to the East and to the same agricultural field to the West that the forest cut led to. The forest strip area continued North and South. Mic was pointed North West across the intersection.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
06/14/22	3	60	160	20:46	05:46	6.0V	n/a	n/a	n/a	n/a	0	Deployed
06/16/22	3	60	160	20:47	05:46	5.5V	954	2	0	0	2	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** MD/Garrett		**Site:** AM41		**Total Valid Nights:** 3 **of** 3
Lat: 39.72101°		**Lon:** -79.08922°		**Photo:** AM41_2		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50027		
Elevation: 739m	**Mic AGL:** 6m	**Mic Az.:** 280°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: South West end of large marsh within mature deciduous forest next to RT219 in Maryland. Mic was point West into marsh area.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
08/04/22	3	60	160	20:27	06:17	8.5V	n/a	n/a	n/a	n/a	0	Deployed
08/07/22	3	60	160	20:25	06:19	7.8V	2625	3	0	0	3	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** MD/Garrett		**Site:** AM42		**Total Valid Nights:** 8 **of** 12
Lat: 39.717703°		**Lon:** -79.087690°		**Photo:** AM42_1		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50228/50024		
Elevation: 773m	**Mic AGL:** m	**Mic Az.:** 255°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: South end of paved road within mature deciduous forest run-in East to West. Road led to driveway of a home. Small trail running from South East met up with paved road. Mic was pointed West up paved road.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
08/04/22	3	60	160	20:27	06:17	8.5V	n/a	n/a	n/a	n/a	n/a	Deployed
08/07/22	3	60	160	20:25	06:19	7.8V/ 8.2	123	3	3	0	0	Card corrupted, 0 files recovered, replaced detector and card, redeployed
08/16/22	3	60	160	20:19	06:24	7.4V	281	9	0	1	8	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** MD/Garrett		**Site:** AM43		**Total Valid Nights:** 3 **of** 3
Lat: 39.716614°		**Lon:** -79.082083°		**Photo:** AM43_2		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50054		
Elevation: 774m	**Mic AGL:** 5m	**Mic Az.:** 35°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s

Station Description: East side of jeep dirt road running North East to South West. A small stream to the West ran through road going North to South East. An opening to agricultural field opened in the South West end of road. Mic was pointed North East along road.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
08/04/22	3	60	160	20:27	06:17	9.0V	n/a	n/a	n/a	n/a	0	Deployed
08/07/22	3	60	160	20:25	06:19	8.2V	9	3	0	0	3	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** MD/Garrett		**Site:** AM44		**Total Valid Nights:** 8 **of** 12
Lat: 39.715341°		**Lon:** -79.083573°		**Photo:** AM44_2		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50119/50054		
Elevation: 785m	**Mic AGL:** 4m	**Mic Az.:** 188°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: On East side of ATV trail running North to South with large puddles through mature deciduous forest. Large pond to the West. Mic was pointed South along trail.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
08/04/22	3	60	160	20:27	06:17	9.0V	n/a	n/a	n/a	n/a	0	Deployed
08/07/22	3	60	160	20:25	06:19	8.3V/ 8.3V	0	3	3	0	3	Detector malfunction, 0 recorded files, replaced detector and redeployed
08/16/22	3	60	160	20:12	06:29	7.5	1208	9	0	1	8	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** MD/Garrett		**Site:** AM45		**Total Valid Nights:** 3 **of** 3
Lat: 39.712219°		**Lon:** -79.082489°		**Photo:** AM45_3		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50239		
Elevation: 813m	**Mic AGL:** 6m	**Mic Az.:** 185°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: North end of 3 way jeep dirt road running through mature deciduous forest. Large puddles nearby on roads. Mic was pointed South where the roads meet.						

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
08/04/22	3	60	160	20:27	06:17	8.6V	n/a	n/a	n/a	n/a	0	Deployed
08/07/22	3	60	160	20:25	06:19	8.1V	50	3	0	0	3	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: 2022 Route 219 Acoustic		**State/County:** MD/Garrett		**Site:** AM46		**Total Valid Nights:** 3 **of** 3
Lat: 39.712611°		**Lon:** -79.088066°		**Photo:** AM46_5		
Biologist: Todd Sinander, Kacy Lyn Kindred				**Detector:** 50240		
Elevation: 813m	**Mic AGL:** 6m	**Mic Az.:** 29°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s

Station Description: North side of jeep trail running through mature deciduous forest parallel to adjacent agricultural field, South end of grassy opening in the forest. On North West side opening are small buildings with jeep trail splitting three ways. Mic was pointed North towards grassy opening.

SERVICE	TS	GAIN	TL	START	STOP	BATT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	VALID NIGHTS	COMMENTS
08/04/22	3	60	160	20:27	06:17	9.0V	n/a	n/a	n/a	n/a	0	Deployed
08/07/22	3	60	160	20:25	06:19	8.0V	688	3	0	0	3	Demobilized

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

APPENDIX B

Biologist Qualifications

John Chenger

220 Old Stone House Road North
Carlisle, PA 17015

jchenger@batmanagement.com
jchenger@batsurveysolutions.com

Cell: 814-442-4246

- **Endangered species biologist and company head with 27+ years of bat sampling and management**
- **Designer of projects, sampling plans, and specialty equipment to meet clients' permit sampling needs**

Large Project Mist Net Sampling Plans | *Indiana Bat Migration Telemetry* | *Bat Acoustic Survey & Analysis*
PCG WEVCA/USFWS Compliance | *Bat Artificial Roost Design* | *Bat Survey Training*

Bat Conservation and Management, Inc. — Carlisle, PA — 1999 to Present

President/Project Biologist

Created a company based on performing high quality bat sampling and management services for industrial, commercial and government clients. Selected Contributions:

- Design, supervise and run projects to meet USFWS section 7 and 10 Indiana bat consultation needs.
- Supervise up to 20 employees, sampling over 2,000 summer mist net Sites and fall & spring mine surveys in 18 states across more than 140 projects.
- Designs bat acoustic monitoring studies in 8 states and provides expert manual analysis of recordings. Expert using SonoBat, Kaleidoscope, Echoclass, BCID analysis software, and Binary Acoustics, Pettersson, and Wildlife Acoustics bat acoustic hardware.
- Supervised employees radio tracking of over 230 bats of 6 species since 2000, including Myso, Myse, Myle, Mylu, Labo, and Laci. Tracking included migration, summer foraging, and locating roosts.
- Supervise employees providing surveys covering most of the needs of developers including mist net surveys, woodrat surveys, bat acoustic surveys, cave and mine project area evaluations, small-footed bat habitat evaluations, and artificial roost design and creation.
- Specialist with macro, near infrared, thermal, and multi-flash photography and video.
- Instructed or co-led over 60 training workshops for federal & state biologists, land managers, and consultants for proper use of acoustic monitoring equipment and bat capture techniques.
- Permitted to sample bats nationwide.

Pennsylvania Game Commission — 1992-2006

Biologist Aide

Assisted PGC biologists in a wide variety of biological sampling; Target animals included bats, woodrats, flying squirrels, small mammals, and peregrine falcons. Selected Contributions:

- Performed bat mist net, harp trap, and Anabat surveys; Handled 20,000+ individual bats
- Performed 300+ hibernacula surveys in caves, mines, tunnels, and aqueducts; Skilled in internal and external surveys; Identified 200,000+ individual bats in cave and mine surveys
- Assisted with first identification of modern use at 8 of PA and 2 NJ *M. sodalis* (Indiana bat) hibernacula
- Surveyed potential Sites for presence or historic presence of the Allegheny woodrat (*N. magister*)
- Ran small mammal trap lines in remote locations across PA

TODD SINANDER

Bat Conservation and Management, Inc., Carlisle, PA- (717) 241-2228

Professional Experience:

Bat Conservation and Management, Inc., Carlisle, PA 2010-Present

Wildlife Biologist, Project Manager

- Coordinate with project proponents, state and federal agencies, and land owners to plan and execute wildlife and habitat surveys.
- Conduct bat mist net and acoustic USFWS absence/presence, hibernacula harp trapping, and radio telemetry habitat use studies.
- Assess and delineate forest and rock habitat for bat roost and foraging quality using systematic transects and fixed forest plots.
- Analyze bat absence/presence acoustic data using auto-classification programs (SonoBat, Kaleidoscope Pro).
- Write technical reports summarizing absence/presence capture and acoustic data, radio telemetry, and habitat assessments.
- Supervise and manage 10+ biologists and seasonal technicians conducting wildlife, radio telemetry, and habitat surveys.
- Bat acoustics and capture techniques instructor in training workshops hosted by Bat Survey Solutions, LLC in PA, AZ, and FL. Instructed workshop participants in the use of acoustic bat detectors, acoustic data management, auto-classification software, and bat capture techniques and identification.
- Conduct public outreach programs, bats house building workshops, and formal lectures to the public.

Philadelphia Zoo, Philadelphia, PA 1990-2010

Lead Keeper, Small Mammals

- Established and implemented long term animal health, husbandry, and population management goals.
- Supervised the daily activities of small mammal keepers, coordinated public education, and maintained safety protocols.
- Designed and constructed animal exhibits to represent species natural habitat for both animal health and public education.

Relief Keeper

- Responsible for the daily husbandry of a variety of mammals, birds, and reptile species.
- Conducted behavior and reproductive research on the blind mole rat (*Nannospalax ehrenbergi*).

New York State Department of Environmental Conservation, New Paltz, NY 1989-1990

Fish and Wildlife Technician

- Operated cooperative big and small game hunting check stations.
- Reviewed permit applications and conducted site inspections for stream disturbances under NY environmental protection law.
- Sampled anadromous fish from the Hudson River Estuary using seine nets, electro-shocking. monitoring the commercial fishery.

Additional Experience:

- Collected environmental data and used radio telemetry to collect short-beaked echidna (*Tachyglossus aculeatus*) body temperatures on Kangaroo Island, Australia.
- Tracked coyotes (*Canis latrans*) to determine habitat use, behavioral patterns, and prey densities in the Adirondack Park, NY. Investigated kill sites and deer carcasses preyed upon by coyotes and bobcat. Conducted the analysis of coyote fecal samples to determine prey preference.
- Located, captured, and marked eastern massasauga rattlesnakes (*Sistrurus catenatus)* in Syracuse, NY using radio telemetry to determine their habitat use.
- Captured, took blood samples, and banded spruce grouse (*Falcipennis Canadensis)* for an ongoing census and genetics study of the population in the Adirondack Park, NY.
- Trapped broad-winged hawks (*Buteo platypterus*), tracked using radio telemetry, and observed nest visits.

Education:

SUNY College of Environmental Science and Forestry, Syracuse, NY - BS, Wildlife and Forest Biology 1989

Certifications/Affiliations:

- U.S. Fish and Wildlife Service Federally Permitted Bat Biologist
- Pennsylvania Game Commission: Qualified Bat Surveyor (QBS)
- Northeastern Bat Working group
- Florida Bat Working Group
- Southeastern Bat Diversity Network
- The Wildlife Society

Appendix C

Acoustic Data: Attached Electronic Document

US 6219, SECTION 050 TRANSPORTATION IMPROVEMENT PROJECT MEYERSDALE, PA TO OLD SALISBURY ROAD, MD 2022 FALL BAT CAPTURE HIBERNACULA USE ASSESSMENT

Somerset County, Pennsylvania
September 21 – October 26, 2022

Prepared by:

BAT Conservation & Management

1263 Claremont Road, Carlisle, Pennsylvania 17015
Office and Fax: (717) 241-2228
Mobile: (814) 442-4246
www.batmanagement.com

Project Principal:
John Chenger

Qualified Bat Surveyors:
John Chenger
Todd Sinander

Bat Surveyors:
Lori Braet
Ken Gearhart
Daniel Merrill

Report Prepared by:
Todd Sinander

Executive Summary

The Pennsylvania Department of Transportation (PennDOT) and Maryland State Highway Administration (MDSHA) proposes to construct a new 11.3 km (7 mile), limited-access section of State Route (SR) 6219, Section 050, from the Borough of Meyersdale, Somerset County, Pennsylvania, to Old Salisbury Road in Garrett County, Maryland. Bat Conservation and Management, Inc. (BCM) was contracted by KCI Technologies, Inc. to conduct a Fall Bat Hibernacula Use Assessment during September and October, 2022 at six previously surveyed sites near the proposed alignments. Five sites, 2005-01, 2005-19, 2005-27, and 2005-28 were described in 2005 and assessed for bat activity in 2005 and 2014. One site, 2014-01, was described and assessed for bat activity by BCM in 2014. The sixth site, [redacted] was last assessed for bat activity in 2005 by the Pennsylvania Game Commission. Bat activity was previously documented at all sites except 2014-01.

Harp traps and mist-nets were utilized to trap each site for six nights during the 6.5-week survey period in 2022. Bat use was confirmed at site 2005-19 with the capture of one Eastern small-footed bat (*Myotis leibii*) and at site 2005-27 with the capture of one tricolored bat (*Perimyotis subflavus*). Bat use was also confirmed at [redacted] where a total of 63 bats were captured which included Northern long-eared bats (*Myotis septentrionalis*), Eastern small-footed bats, tricolored bats, little brown bats (*Myotis lucifugus*), and big brown bats (*Eptesicus fuscus*). No bats were captured at sites 2005-01, 2005-28, and 2014-01. Results of this data suggest that these openings presently are not being used by bats of any species.

We have prepared this survey report for the use of our client's office for planning purposes in accordance with generally accepted bat capture and monitoring practices. No other warranties, either expressed or implied, are made as to the professional services included in this report. This report may be considered void without the electronic attachments originally accompanying it.

Introduction

In response to a U.S. Fish and Wildlife Service (USFWS) letter dated February 17, 2022 regarding outdated bat surveys on the US 219 Improvement Project, SR 6219, Section 050 (USFWS Project #2022-0001474, PNDI Receipt # 738552), Bat Conservation and Management, Inc. (BCM) was contracted to conduct a fall Bat Hibernaculum Use Assessment in 2022 at six previously surveyed sites near the proposed alignment.

An initial bat hibernacula habitat assessment within the US 219 Improvement Project Area conducted by BCM in 2005 delineated sites 2005-01, 2005-19, 2005-27, and 2005-28 as potential hibernacula (*Abandoned Mine Investigations for the U.S. 6219, Section 019 Highway Improvement Project*, August 27 - October 1, 2005). In 2014 BCM conducted a follow up assessment where previously delineated habitat was re-evaluated and a search for new habitat was conducted (*2014 RT 219 Fall Bat Harp Trapping and Abandoned Mine/Rocky Habitat Assessment,* October 2 - 12, 2014). During this assessment site 2014-01 was delineated as a new potential hibernaculum. The sixth site, [redacted] is an established, gated bat hibernaculum that BCM has not previously surveyed.

Fall bat activity was confirmed during past BCM hibernacula assessments at four of the sites in 2005 and 2014 (sites 2005-01, 2005-19, 2005-27, and 2005-28). In 2005 Northern Long-eared bat (*Myotis septentrionalis*) presence was documented at site 2005-01 and in 2014 presence of the Northern Long-eared bat was documented at site 2005-28. Site 2014-01 was previously trapped in the fall of 2014 by BCM and no bats were captured. [redacted] was last surveyed by the Pennsylvania Game Commission (PGC) in 2005 when the presence of the Indiana bat (*Myotis sodalis*) was documented. The 2022 BCM Bat Hibernaculum Use Assessment was conducted using the most recent USFWS and PGC physical capture survey protocols (2022 Guidelines) that are more robust than past guidelines. The protocols can be found within the 2022 USFWS *Range-Wide Indiana Bat Summer Survey Guidelines* and in Appendix B of the PGC document *Little Brown Bat and Tri-colored Bat Environmental Review Guidance Document* (10/3/19).

Methods

Capture Survey

The level of effort outlined within the 2022 Guidelines is a minimum of one night of sampling per week for six weeks at each suitable entrance using a harp trap (or mist-nets when the mine or cave configurations are not suitable to harp trapping). The survey is conducted during the period between September 15 to October 31 and each trapping night is to begin 30 minutes prior to sunset and continue for a minimum of five hours. The survey night was considered valid if; (1) the temperature remained ≥ 10°C (50°F) for the first two hours of trapping and did not fall below 4.4°C (40°F) at any point during the survey, (2) precipitation, including rain and/or heavy fog, did not persist for more than 30 minutes or continued intermittently, and (3) at least 3 hours of the survey period is free of high wind. The survey effort may be suspended at a site if no bats are captured after the first two valid survey nights.

Meta-data was collected that fully described individual trapping sites and included photographs, global positioning satellite (GPS) coordinates, nightly weather conditions during sampling, and general information regarding habitat and surrounding area. Data collected on captured bats included species, sex, age, and reproductive condition. Species age was determined by using the Epiphyseal-diaphyseal Fusion method. The reproductive condition of females was noted by inspection of mammary glands.

Capture Survey Sites

In 2022 BCM visited all six survey sites prior to trapping to confirm the location of entrances and to verify that they were open for bat access. The six trapping sites (2005-01, 2005-19, 2005-27, 2005-28, 2014-01, and [redacted] were surveyed between September 21 and October 26 , 2022 (Figure 1, Table 1, Appendix A).

Site 2005-01 is a rectangular abandoned coal mine entrance with an acid mine drainage flowing from the opening. The terrain around the mine portal gently slopes up except for a small steep rise directly at the mine entrance. The

site was surveyed using a large harp trap placed outside and parallel to the entrance on the first three survey nights. Bird netting was draped from the top of the trap to the embankment above the opening and around the sides of the trap. The trap was set perpendicular to the opening on the last three survey nights with netting blocking the entrance to the mine during the survey.

Site 2005-19 is an abandoned coal mine up higher on the steep west bank of Piney Creek at the base of a high cliff face. During the first two trapping nights at this site a small harp trap was set parallel and outside the mine entrance with netting blocking the areas of the opening around the trap. A medium size trap set outside and perpendicular to the mine entrance, with netting blocking the entrance, was used during the remaining four survey nights.

Sites 2005-27 and 2005-28 are abandoned coal mines 49 m (160 ft.) apart on a relatively short steep section of the east bank of Piney Creek close to the waterline. Both sites are within dense thickets of Rhododendron. The two mine portals near each other were trapped simultaneously with one medium sized harp trap at each entrance set parallel to the openings with netting blocking the entrance area outside of the traps.

Site 2014-01 is a deep sink hole with a small entrance in the middle of a drainage ravine. The site was trapped using a small harp trap with netting blocking the opening during the first survey night. On the second night of trapping at 2014-01 two single high mist-nets attached end to end to form an L-shape single high net was used. The angle of the L-shaped net was placed over the sink hole with the long net running down the drainage and the shorter arm running up the side of the drainage. On the remaining 4 nights of trapping site 2014-01 two separate single high nets were used that formed an open T-formation over the sink hole. One net ran down the drainage and the second ran across the drainage diagonally.

[redacted] is on the south facing slope of a ridge 85 m (280 ft.) above Piney Creek. The abandoned limestone mine entrance is relatively large with a dirt mound at the drip edge and a bat gate shortly inside the opening. The [redacted] was trapped each night using two large harp traps set together to form an L-shape against the bat gate just inside the mine. One trap was parallel and next to the bat gate and the other had one end against the end of the first trap and was perpendicular to the gate. Netting covered the gate in the areas around the taps.

Acoustic Monitoring

A Pettersson D500x bat detector (Pettersson Elektronik, Uppsala, Sweden) was placed within 4.5 m (15 ft.) from each mine or sink hole entrance to detect hourly bat activity at or very near each opening that was trapped. Detector microphones were orientated towards the largest volume of airspace directly in front of the entrance for each site surveyed (Appendix A). Each detector was stationary and programmed to record for at least five hours, beginning 30 minutes before local sunset, and corresponded to the time when the trapping survey occurred. The resulting individual 4-second bat recordings represent a single "pass" (fly by) from a single bat. However, if multiple bats are flying through the optimal volume of detection during the same 4-second interval, they were recorded in tandem.

Recorded echolocation calls were post-processed using SonoBat 4 call analysis software (SonoBat, Arcata, CA). This process attributed meta-data from the survey effort to each recording while preserving the date-time stamp when recordings were made. All recordings were run through the SonoBat scrubber program to remove those with no discernable bat call pulses present. The remaining recordings were manually reviewed using the SonoBat viewer to confirm that they contained bat pulses. Recorded bat passes were tallied for each site in five one-hour increments. Bats using echolocation in and near high clutter areas such as cave entrances emit calls that are too ambiguous to identify either by auto-classification software or by manual review. Captured bats produce largely unstudied distress and social calls when in traps and while being handled, which were recorded particularly at the [redacted] site. Therefore, no bat recordings were classified to species. Despite microphones focused on site entrances, monitoring microphones are capable of recording bat calls hundreds of feet away and behind the microphone. In this scenario, positive results cannot be used to assume presence, but are more of a general indication of activity. In addition, bats may reduce echolocation calls to a whisper in high traffic and high clutter areas such as cave entrances, rendering it impossible to obtain recording samples of every bat pass where negative results may not necessarily indicate an absence of bat activity. Considering these factors, acoustic monitoring at hibernacula is not an ideal survey method for bats and may be considered here for the record only.

Results

Survey Effort

A total of six sites were trapped for six survey nights each between September 21 and October 26, 2022 for a total of 30+ hours of trapping at each site. A significant number of nights during the 6.5-week hibernacula trapping survey period suggested by the 2022 Guidelines (September 15 – October 31) were below the minimum survey temperatures outlined in the protocols. An attempt was made to avoid trapping on the coldest nights. As a result, the USFWS and PGC preferred trapping schedule of one survey night each week during the 6.5-week survey period could not be maintained at sites 2005-01, 2005-27, 2005-28, and [redacted] These sites were not surveyed during week five and instead were trapped on two consecutive nights during the sixth week of the survey when the temperature was forecasted to be significantly higher. Even with a concerted effort to move scheduled survey dates depending on the forecasted temperature, a number of survey nights at each site were below the temperature guidelines (Table 2). While not ideal, cold temperatures do not necessarily preclude bat activity during the fall swarming period, as evidenced by the capture of a tri-colored bat (*Perimyotis subflavus*) at the end of the survey night on September 8 (2005-27) at a temperature of 6.8°C (44.2°F).

Temperatures remained above 10°C (50°F) for first two hours of trapping during four out of the six survey nights at sites 2005-27 and 2005-28, during three of the six nights at 2005-01 and [redacted] and during one night at 2014-01. There were no survey nights at site 2005-19 where the temperature stayed above the guideline temperature minimums (Table 2). No significant precipitation occurred during the nightly survey periods. Site-specific weather conditions are described on the PGC *Bat Netting/Trapping Site Survey Record Forms* (Appendix C: Attached Electronic Document).

Species Occupancy: Capture

No bats were captured at sites 2005-01, 2005-28, and 2014-01. One male Eastern small-footed bat (*Myotis leibii*) was captured at 2005-19 and one female tricolored bat (*Perimyotis subflavus*) was captured at 2005-27. At [redacted] 24 big brown bats (*Eptesicus fuscus*), 20 Eastern small-footed bats, 12 little brown bats (*Myotis lucifugus*), three Northern long-eared bats (*Myotis septentrionalis*), and four tricolored bats were captured (Tables 1, 3, and 4).

Bat Activity: Acoustic Monitoring

Bat detectors were deployed near the entrances at each of the six survey areas during all trapping nights and were removed when each survey night was complete. Bat passes were tallied during each hour of the five-hour survey night. No bat passes were recorded at site 2005-28 and one was recorded at site 2014-01. Over the six survey nights at sites 2005-01, 2005-27, and 2005-19 few bat passes were recorded with site 2005-19 having the highest total count of eight and the highest nightly count of 5 (10/11) for the three sites. Bat acoustic activity was recorded during all but one of the six survey nights at [redacted] On that night (9/28) the survey starting temperature was 9°C (48.2°F). However, four bats were captured on that same night, highlighting the ineffectiveness of acoustic monitoring in this application (Tables 5 and 6).

Conclusion

Five mine entrances and one sink hole opening were trapped between September 21 and October 26, 2022 to determine bat use during the fall swarming season. Bat use was confirmed at 2005-19 with the capture of one Eastern small-footed bat (*Myotis leibii*), at 2005-27 with the capture of one tricolored bat (*Perimyotis subflavus*), and at [redacted] with the capture of 24 big brown bats (*Eptesicus fuscus*), 20 Eastern small-footed bats, 12 little brown bats (*Myotis lucifugus*), three Northern long-eared bats (*Myotis septentrionalis*), and four tricolored bats. No bats were captured at sites 2005-01, 2005-28, and 2014-01 which suggests that these sites are not presently being used by bats of any species.

Of the six sites surveyed, 2014-01 is the only site that has not had fall bat activity documented during previous BCM surveys in 2005 and 2014. The most notable historic captures were Northern long-eared bats captured in 2005 at site 2005-01 and in 2014 at site 2005-28. Also of note are historical BCM captures of tricolored bats at sites 2005-01, 2005-19, and 2005-27 and little brown bats at sites 2005-01 and 2005-19 (Table 7).

Bat captures and acoustic detection of bat passes did not necessarily correlate. Although no bat passes were recorded on 9/28 at [redacted] four bats were captured. However, bat pass recordings did correlate with captures during all other nights at that site. Bat passes were also recorded at sites with no captures (2005-01, 2014-01) which is likely due to the wide detection range of the microphone. While the acoustic results did confirm bat activity near trap sites, these results alone are inconclusive regarding whether or not recorded bats are using the hibernacula.

Figures

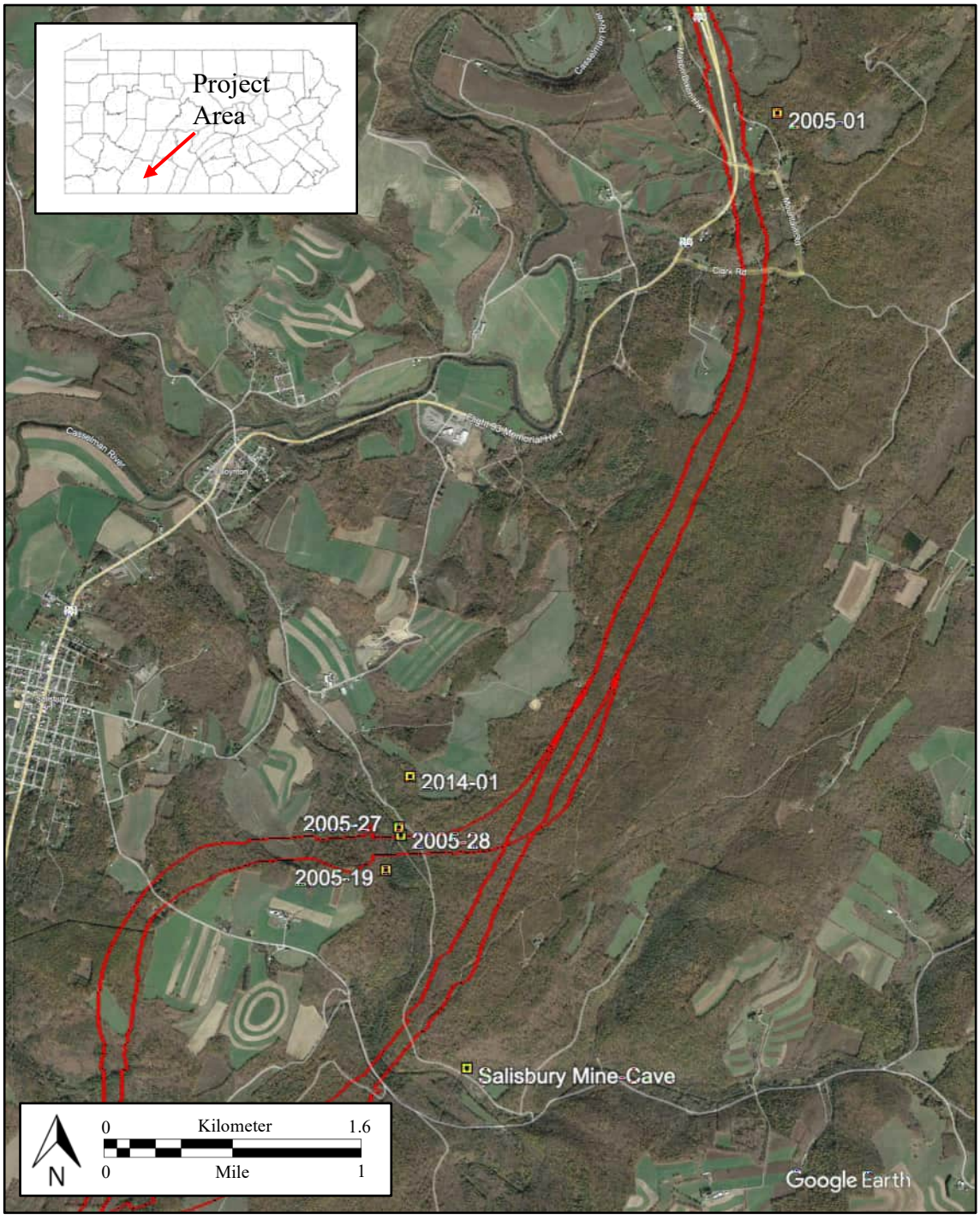


Figure 1. Location of six mine portals trapped in relation to the proposed SR 6219 Section 050 alignment.

Tables

Table 1. Trap site locations, level of effort, and captures by night.

Survey Site	Site Location Lat, Long, (WGS84)	Site description	Survey Method by Date	Survey Dates	Capture Results					
					EPFU	MYLE	MYLU	MYSE	PESU	Total by Date
2005-01	39.785564° -79.028208°	A ~6 ft. wide x 4 ft. high mine entrance with an acid mine drainage flowing out and into the surrounding mature deciduous forest. The entrance is ~365 ft. northeast from Mountain Rd. A horizontal flooded passage into the mine can be seen trending east at least 50 ft.	1- 6 ft. harp trap (1.8 m x 2.1 m), set parallel to opening on 09/21, 28 and 10/7 and set perpendicular on 10/12, 25, and 26, 1- Pettersson D500x Detector	09/21	-	-	-	-	-	***0***
				09/28	-	-	-	-	-	***0***
				10/07	-	-	-	-	-	***0***
				10/12	-	-	-	-	-	***0***
				10/25	-	-	-	-	-	***0***
				10/26	-	-	-	-	-	***0***
			2005-01 Species and Site Total		***0***	***0***	***0***	***0***	***0***	***0***
2005-19	39.743311° -79.056614°	Mine entrance is ~ 3 ft. high and 4 ft. wide and is located 75 ft. above the west bank of Piney Creek in a mature deciduous forest. The drift is on a very steep hillside without traces of old road and at the base of a 20 ft. high sandstone cliff.	1- 1.6 ft. harp trap (0.5 m x 0.8 m), 1- Pettersson D500x Detector	09/23	-	-	-	-	-	***0***
				09/29	-	-	-	-	-	***0***
			1- 3 ft. harp trap (0.9 m x 1.1 m), 1- Pettersson D500x Detector	10/05	-	-	-	-	-	***0***
				10/11	-	1	-	-	-	***1***
				10/18	-	-	-	-	-	***0***
				10/24	-	-	-	-	-	***0***
			2005-19 Site Species Totals		***0***	***1***	***0***	***0***	***0***	***1***
2005-27	39.745696° -79.055679°	Entrance is ~12 ft. wide and 5 ft. high and is located on the east bank of Piney Creek, ~15 ft. above the stream, and is within a mixed mature forest with a dense undergrowth of Rhododendron. This mine is 160 ft. north of 2005-28.	1- 3 ft. harp trap (0.9 m x 1.1 m), 1- Pettersson D500x Detector	09/21	-	-	-	-	-	***0***
				09/28	-	-	-	-	1	***1***
				10/06	-	-	-	-	-	***0***
				10/12	-	-	-	-	-	***0***
				10/25	-	-	-	-	-	***0***
				10/26	-	-	-	-	-	***0***
			2005-27 Site Species Totals		***0***	***0***	***0***	***0***	***1***	***1***
2005-28	39.745260° -79.055530°	Mine entrance is located ~75 ft. from the east bank of Piney Creek, ~20 ft. above the stream. The entrance is ~8 ft. wide and 3 ft. high and the site is within a mature mixed forest with a dense Rhododendron undergrowth.	1- 3 ft. harp trap (0.9 m x 1.1 m), 1- Pettersson D500x Detector	09/21	-	-	-	-	-	***0***
				09/28	-	-	-	-	-	***0***
				10/06	-	-	-	-	-	***0***
				10/12	-	-	-	-	-	***0***
				10/25	-	-	-	-	-	***0***
				10/26	-	-	-	-	-	***0***
			2005-28 Site Species Totals		***0***	***0***	***0***	***0***	***0***	***0***
2014-01	39.748539° -79.054863°	Feature is a sink hole with a 1.5 ft. diameter entrance at the upper elevations of a steep sided drainage trench with a small spring emerging from the bottom of the trench below the opening. The trench is in a mature mixed forest with a meadow just uphill on top of the rise.	1- 1.6 ft. harp trap (0.5 m x 0.8 m), 1 Pettersson D500x Detector	09/21	-	-	-	-	-	***0***
			2- single high mist-nets (6m+9m) attached end to end, 1- Pettersson D500x Detector	09/29	-	-	-	-	-	***0***
			2- single high mist-nets (6m+9m) in an open T-formation, 1- Pettersson D500x Detector	10/05	-	-	-	-	-	***0***
				10/11	-	-	-	-	-	***0***
				10/18	-	-	-	-	-	***0***
				10/24	-	-	-	-	-	***0***
			2014-01 Site Species Totals		***0***	***0***	***0***	***0***	***0***	***0***
[redacted]	[redacted]	The abandoned limestone mine entrance is 18 ft. wide and 8 ft. high with a dirt mound at the drip edge. The mine is wider 15 ft. inside the entrance where there is a bat gate. Beyond the gate the passage divides at least twice.	2- 6 ft. harp traps (each 1.8 m x 2.1 m) set together forming an L-shape, 1 Pettersson D500x Detector	09/21	-	5	8	2	2	***17***
				09/28	-	3	1			***4***
				10/07	-	-	3	1	1	***5***
				10/12	10	1	-	-	1	***12***
				10/25	11	6	-	-	-	***17***
				10/26	3	5	-	-	-	***8***
			[redacted] ***Site Species Totals***		***24***	***20***	***12***	***3***	***4***	***63***
			Project Species Totals		***24***	***21***	***12***	***3***	***5***	***65***

EPFU = big brown bat (*Eptesicus fuscus*), MYLE = Eastern small-footed bat (*Myotis leibii*), MYLU = little brown bat (*Myotis lucifugus*), MYSE = Northern long-eared bat (*Myotis septentrionalis*), PESU = tricolored bat (*Perimyotis subflavus*)

Table 2. Survey start/end times and temperatures.

Survey Site	Survey Dates	Time Start	Start Temp (℃)	Low Temp During First 2 Hours of Survey (℃)	Low Temp During Last 3 Hours of Survey (℃)	Survey End Time
2005-01	09/21	18:45	20.9	–	19.0	23:45
	09/28	18:30	9.6	–	7.3	23:35
	10/07	18:15	8.6	7.4	6.4	23:20
	10/12	18:10	15.0	14.1	13.6	23:10
	10/25	17:55	14.8	13.1	11.9	22:55
	10/26	17:55	10.2	8.6	6.4	22:55
2005-19	09/23	18:45	20.0	–	6.2	00:00
	09/29	18:35	8.9	7.2	4.8	23:35
	10/05	18:15	10.1	–	4.7	23:35
	10/11	18:00	12.1	–	5.3	23:30
	10/18	18:15	1.9	–	1.8	23:15
	10/24	18:00	12.4	–	7.7	23:30
2005-27	09/21	18:30	19.7	–	16.2	00:00
	09/28	18:30	9.6	–	6.8	23:30
	10/06	18:15	12.1	10.4	9.3	23:30
	10/12	18:10	13.7	12.6	12.4	23:10
	10/25	18:00	14.4	–	11.4	23:30
	10/26	18:00	12.1	–	7.5	23:00
2005-28	09/21	18:30	19.6	–	16.3	00:00
	09/28	18:30	9.6	–	6.8	23:30
	10/06	18:15	12.1	10.4	9.3	23:30
	10/12	18:10	13.7	12.6	12.4	23:10
	10/25	18:00	14.4	–	11.4	23:30
	10/26	18:00	12.1	–	7.5	23:00
2014-01	09/21	18:30	20.7	–	19.0	00:00
	09/29	18:30	12.1	7.8	5.4	23:35
	10/05	18:20	11.6	8.7	5.3	23:20
	10/11	18:10	14.0	8.7	6.1	23:11
	10/18	18:00	1.2	–	0.9	23:00
	10/24	18:00	12.4	–	7.7	23:30
[redacted]	09/21	18:45	19.8	–	19.1	00:00
	09/28	18:35	9.0	–	7.6	23:35
	10/07	18:00	8.8	–	5.3	23:30
	10/12	18:00	14.7	–	13.6	23:30
	10/25	18:00	14.4	–	11.4	23:30
	10/26	18:00	12.1	–	7.5	23:45

Highlighted survey dates were invalid due to low temperatures.

Table 3. Bat capture by site, sex, and age.

Trap Site	EPFU				MYLE				MYLU					MYSE				PESU				Totals By Sex				Site Totals
	Female		Male		Female		Male		Female		Male		Unk	Female		Male		Female		Male		Female		Male		
	Ad	Juv	Ad	Juv	Ad	Juv	Ad	Juv	Ad	Juv	Ad	Juv		Ad	Juv	Ad	Juv	Ad	Juv	Ad	Juv	Ad	Juv	Ad	Juv	
2005-01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	*0*	*0*	*0*	*0*	*0*
2005-19	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	*0*	*0*	*1*	*0*	*1*
2005-27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	*1*	*0*	*0*	*0*	*1*
2005-28	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	*0*	*0*	*0*	*0*	*0*
2014-01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	*0*	*0*	*0*	*0*	*0*
[redacted]	12	–	12	–	6	–	14	–	2	–	9	–	1	–	–	3	–	1	–	3	–	*21*	*0*	*41*	*0*	*63*
Species Totals	*12*	*0*	*12*	*0*	*6*	*0*	*15*	*0*	*2*	*0*	*9*	*0*	*1*	*0*	*0*	*3*	*0*	*2*	*0*	*3*	*0*	*22*	*0*	*42*	*0*	**Project Total**
	24				*21*				*12*					*3*				*5*				*64*				*65*

EPFU = big brown bat (*Eptesicus fuscus*), MYLE = Eastern small-footed bat (*Myotis leibii*), MYLU = little brown bat (*Myotis lucifugus*), MYSE = Northern long-eared bat (*Myotis septentrionalis*), PESU = tricolored bat (*Perimyotis subflavus*), Ad = Adult, Juv = Juvenile, Unk = sex unknown

Table 4. Reproductive condition of captured bats.

Trap Site	EPFU				MYLE			MYLU				MYSE			PESU			TOTALS				
	Fem		Male		Fem	Male		Fem	Male		Ukn	Fem	Male		Fem	Male		Fem		Male		Unk
	NR	Unk	SCR	NR	NR	SCR	NR	NR	SCR	NR		NR	SCR	NR	NR	SCR	NR	NR	Unk	SCR	NR	
2005-01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	*0*	*0*	*0*	*0*	*0*
2005-19	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	*0*	*0*	*0*	*1*	*0*
2005-27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	*1*	*0*	*0*	*0*	*0*
2005-28	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	*0*	*0*	*0*	*0*	*0*
2014-01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	*0*	*0*	*0*	*0*	*0*
[redacted]	10	2	2	10	6	4	10	2	5	4	1	–	1	2	1	1	2	*19*	*2*	*13*	*28*	*1*
Species Totals	*10*	*2*	*2*	*10*	*6*	*4*	*11*	*2*	*5*	*4*	*1*	*0*	*1*	*2*	*2*	*1*	*2*	*20*	*2*	*13*	*29*	*1*
	24				*21*			*12*				*3*			*5*			*65*				

NR = Non-reproductive, SCR = Scrotal

Table 5. Acoustic bat passes at sites 2005-01, -27, -28, and [redacted] during each survey hour.

Trap Site	Five Hour Survey Period During Each Survey Date																																Total Site Bat Passes
	09/21					09/28					10/06					10/07					10/12					10/25					10/26				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	
2005-01	–	–	–	–	–	–	–	–	–	–						–	–	–	–	–	–	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
2005-01 Totals	*0*					*0*										*0*					*4*					*0*					*0*					*4*
2005-27	–	1	–	–	–	–	–	–	–	3	–	–	1								–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
2005-27 Totals	*1*					*3*					*1*										*0*					*0*					*0*					*5*
2005-28	–	–	–	–	–						–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
2005-28 Totals	*0*										*0*					*0*					*0*					*0*					*0*					*0*
[redacted]	1	1	3	8	9	–	–	–	–	–						–	–	–	–	23	–	19	14	1	6	–	8	22	88	99	–	–	2	6		
Salisbury Mine-Cave Totals	*22*					*0*										*23*					*40*					*217*					*8*					*310*

Table 6. Acoustic bat passes at sites 2005-19, 2014-01 during each survey hour.

Trap Site	Five Hour Survey Period During Each Survey Date																																Total Site Bat Passes
	09/21					09/23					09/29					10/05					10/11					10/18					10/24				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	
2005-19										1			1		1										5												
2005-19 Totals						*1*					*2*					*0*					*5*					*0*					*0*					*8*
2014-01					1																															
2014-01 Totals	*1*										*0*					*0*					*0*					*0*					*0*					*1*

Table 7. Historical BCM capture data compared to 2022 captures at six survey trap sites.

Survey Site	Survey Year	EPFU	MYLU	MYSE	MYLE	PESU	Site Total by Year
2005-01[1]	2005	0	14	7	0	6	***27***
	2014	0	0	0	0	0	***0***
	2022	0	0	0	0	0	***0***
2005-19[2]	2005	0	2	0	0	2	***4***
	2014	0	0	0	0	0	***0***
	2022	0	0	0	1	0	***1***
2005-27[2]	2005	0	0	0	0	2	***2***
	2014	0	0	0	0	0	***0***
	2022	0	0	0	0	1	***1***
2005-28[2]	2005	0	0	0	0	2	***2***
	2014	0	0	2	0	5	***7***
	2022	0	0	0	0	0	***0***
2014-01[3]	2005						
	2014	0	0	0	0	0	***0***
	2022	0	0	0	0	0	***0***
Salisbury[4] **Mine-Cave**	2005						
	2014						
	2022	24	12	3	20	4	***63***

EPFU = big brown bat (*Eptesicus fuscus*), MYLE = Eastern small-footed bat (*Myotis leibii*), MYLU = little brown bat (*Myotis lucifugus*), MYSE = Northern long-eared bat (*Myotis septentrionalis*), PESU = tricolored bat (*Perimyotis subflavus*).

[1] Level of effort was 2 consecutive nights in 2005, 3 nights over a 2-week period in 2014, and 6 nights over a 6-week period in 2022.

[2] Level of effort was 2 consecutive nights in 2005, 3 consecutive nights in 2014, and 6 nights over a 6-week period in 2022.

[3] Site was not surveyed in 2005. Level of effort was 3 consecutive nights in 2014 and 6 nights over a 6-week period in 2022.

[4] Site was not surveyed by BCM in 2005 or 2014. Level of effort was 6 nights over a 6-week period in 2022.

Appendix A

Trap Site Photographs

Trap Site 2005-01 A: Mine opening trapped using a 6 ft. harp trap (1.8m x 2.1m) set parallel to entrance with netting draped over trap and top of opening (09/21,28 and 10/7). A Pettersson D500x mic was pointed toward trap (left side of photo).

Trap Site 2005-01 B: Mine opening trapped using a 6 ft. harp trap set perpendicular to entrance with netting draped over opening (10/12, 25, and 26). A Pettersson D500x mic pointed toward trap.

Trap Site 2005-19 A: Mine opening trapped using a 1.6 ft. harp trap (0.5m x 0.8m) set parallel to entrance with netting blocking entrance around the trap (9/23, 29). A Pettersson D500x mic pointed toward area in front of trap.

Trap Site 2005-19 B: Mine opening trapped using a 3 ft. harp trap (0.9m x 1.1m) set perpendicular to entrance with netting blocking entrance (10/5, 11, 18, 24). A Pettersson D500x mic pointed toward trap area.

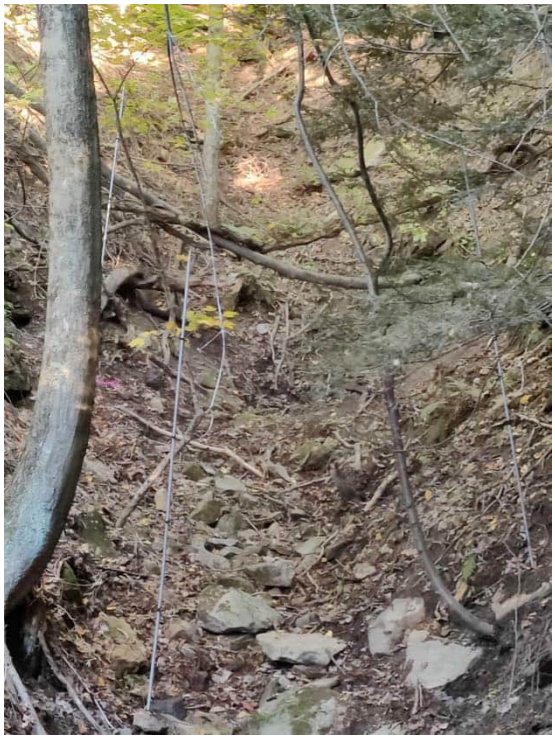
Trap Site 2005-27: Mine opening trapped using a 3 ft. harp trap (0.9m x 1.1m) set parallel to entrance with netting blocking entrance around the trap. A Pettersson D500x mic pointed toward trap area.

Trap Site 2005-28: Mine opening trapped using a 3 ft. harp trap (0.9m x 1.1m) set parallel to entrance with netting blocking entrance around the trap. A Pettersson D500x mic pointed toward trap area.

Trap Site 2014-01 A: A sink hole opening was trapped using a 1.6 ft. harp trap (0.5m x 0.8m) set downslope from the opening (9/29). Netting was draped over the back of the trap to the embankment over the opening.

Trap Site 2014-01 B: A 1.6 ft. harp trap with a Pettersson D500x mic pointed toward the trap and sink hole opening.

Trap Site 2014-01 C: Two single high mist-nets (6m + 9m) attached end to end to form a 15m L-shaped single high net with the angle over the sink hole (9/29). A Pettersson D500x mic pointed toward net and sink hole area.



Trap Site 2014-01 D: Two single high mist-nets in an open T-formation with Trap A (9m) running up the center of the drainage toward the sink hole and Trap B (6m) set diagonally across the drainage and over the sink hole (10/5, 11, 18, 24). A Pettersson D500x mic pointed toward net and sink hole area.

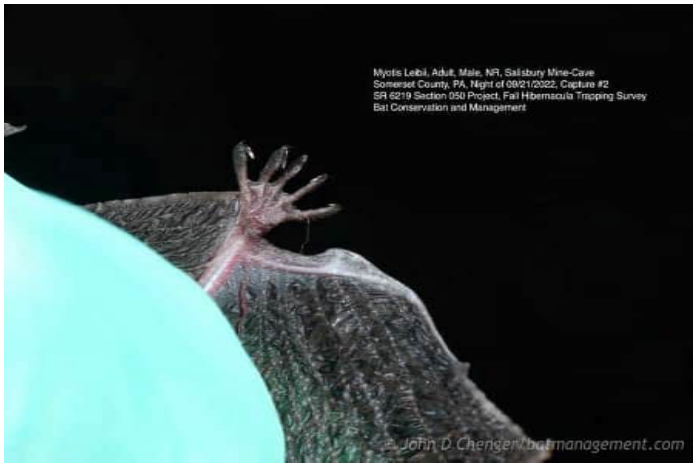
[redacted] **A**: Two 6 ft. harp traps (each 1.8 m x 2.1 m) set together forming an L-shape against the bat gate just inside the mine. A Pettersson D500x mic was pointed toward the area around the traps.

[redacted] **B**: Two 6 ft. harp traps set together forming an L-shape against the bat gate. Netting covered the gate around the traps.

Appendix B

Representative Photographs of Captured T&E Bat Species

Eastern small-footed bat (*Myotis leibii*): Profile, dark face. Adult male, NR, Site [redacted] Capture Night: 09/21/2022.



Eastern small-footed bat (*Myotis leibii*): Foot, keeled calcar. Adult male, NR, Site [redacted] Capture Night: 09/21/2022.

Little brown bat (*Myotis lucifugus*): Profile, tragus. Adult male, Site [redacted] Capture Night: 09/21/2022.

Little brown bat (*Myotis lucifugus*): Foot, toe hair, calcar. Adult male, Site [redacted] Capture Night: 09/21/2022.

Northern long-eared bat (*Myotis septentrionalis*): Profile, tragus. Adult male, Site [redacted] Capture Night: 09/21/2022.

Northern long-eared bat (*Myotis septentrionalis*): Foot, calcar, uropatagium. Adult male, Site [redacted] Capture Night: 09/21/2022.

Tricolor bat (*Perimyotis subflavus*): Profile, light forearm. Adult male, Site [redacted] Capture Night: 09/21/2022.

Appendix C

PGC Site and Bat Capture Forms: Attached Electronic Document

File Name: 2022_Rt219_FallTrap_BCMReport_AppB_TrapSite-DataSheets.zip

File Includes: 6 .pdf files, 1 for each survey site (e.g., 2022_Rt219_Fall-HiberTrapping_2005-01_DataSheets.pdf).

US 6219, SECTION 050 TRANSPORTATION IMPROVEMENT PROJECT MEYERSDALE, PA TO OLD SALISBURY ROAD, MD 2023 BAT HIBERNACULA HABITAT ASSESSMENT

Somerset County, Pennsylvania, Garrett County, Maryland
February 15 – April 26, 2023

Prepared by:

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Executive Summary

The Pennsylvania Department of Transportation (PennDOT) and Maryland State Highway Administration (MDSHA) proposes to construct a new 7 mile (11.3 km), limited-access section of State Route (SR) 6219, Section 050, from the Borough of Meyersdale, Somerset County, Pennsylvania, to Old Salisbury Road in Garrett County, Maryland. Bat Conservation and Management, Inc. (BCM) was contracted by KCI Technologies, Inc. to conduct a Bat Hibernacula Habitat Assessment during February, March , and April, 2023 within the proposed alignment plus a quarter mile buffer. Two new potential hibernacula sites were found (BCM 2023-01 and BCM 2023-02) during the assessment. Both were natural sandstone caves located within 1000 ft. (0.3 km) of Piney Creek. It is recommended that these sites be assessed to determine bat activity and use during the fall of 2023.

In addition to searching for new potential hibernacula, 27 abandoned mine features previously surveyed by BCM in 2005 and 2014 were assessed to evaluate their current status. No new openings were found at these sites but six of the sites have documented open portals and five of those are known hibernacula confirmed by bat captures during past fall trapping surveys. Degradation of habitat was noted at three of the five known hibernacula sites. These included site BCM 2005-01 that had visible signs of collapsed support timbers, BCM 2005-28 where vegetation encroachment was noted around the entrance, and at the [redacted] where there have been internal ceiling collapses and deterioration of an existing bat gate. In addition to the physical degradation of habitat, a predator (raccoon) was also observed emerging from two open portal sites during a BCM fall trapping survey in 2022; site BCM 2005-19, one of the five known hibernacula, and site BCM 2014-01, a potential hibernaculum where no bats have been captured during two fall trapping surveys (2014 and 2022).

We have prepared this survey report for the use of our client's office for planning purposes in accordance with generally accepted bat capture and monitoring practices. No other warranties, either expressed or implied, are made as to the professional services included in this report. This report may be considered void without the electronic attachments originally accompanying it.

Introduction

In response to the U.S. Fish and Wildlife Service (USFWS) letter dated February 17, 2022 regarding outdated bat surveys on the US 219 Improvement Project, SR 6219, Section 050 (USFWS Project #2022-0001474, PNDI Receipt # 738552), Bat Conservation and Management, Inc. (BCM) was contracted to conduct a Bat Hibernacula Habitat Assessment in 2023 to evaluate previously assessed abandoned mine land sites, established bat hibernacula sites, and to search for new potential bat hibernacula habitat.

An initial bat hibernacula habitat assessment conducted by BCM in 2005 within the US 6219 Improvement Project Area evaluated 28 potential abandoned mine sites. Four of the sites (BCM 2005-01, BCM 2005-19, BCM 2005-27, and BCM 2005-28) were assessed as potential hibernacula and, in the fall of 2005, a bat presence or probable absence trapping survey confirmed bat activity at all four sites (*Abandoned Mine Investigations for the U.S. 6219, Section 019 Highway Improvement Project*, August 27 - October 1, 2005). In 2014 BCM conducted a follow up hibernacula assessment where the 28 potential abandoned mine sites identified in 2005 were re-evaluated and a search for new habitat was conducted. During that assessment, site BCM 2014-01 was delineated as a new potential hibernaculum. Bat use at the four hibernacula established in 2005 and at the new 2014 potential hibernaculum was evaluated during a trapping survey in the fall of 2014 (*2014 RT 219 Fall Bat Harp Trapping and Abandoned Mine/Rocky Habitat Assessment,* October 2 - 12, 2014). In the fall of 2022 BCM again trapped the five sites surveyed in 2014 to determine bat use. In addition to those sites, the [redacted] was also trapped. The [redacted] is a known bat hibernaculum within the Project Area buffer that was not previously available to access since 2005 when the Pennsylvania Game Commission (PGC) confirmed the presence of hibernating Indiana bats (*Myotis sodalis*), northern long-eared bats (*Myotis septentrionalis*), little brown bats (*Myotis lucifugus*), and tricolored bats (*Perimyotis subflavus*) within the mine.

The 2023 BCM Bat Hibernacula Habitat Assessment was conducted using the most recent USFWS survey guidelines available (Guidelines). The protocols can be found within the 2023 USFWS *Range-Wide Indiana Bat Summer Survey Guidelines, Appendix H: Potential Hibernaculum Survey Guidance* and within the PGC document *Little Brown Bat and Tri-colored Bat Environmental Review Guidance Document*, *Appendix B: Protocol for Assessing Hibernacula* (10/3/19).

Methods

Survey Area

The 2023 Bat Hibernacula Habitat Assessment was conducted within the US 6219 Improvement Project 2023 proposed alignment's Limit of Disturbance (LOD) that include the Northern Section (Section 1 DU E), Middle Section (Section 2 DU and Section 2 E), and the Southern Section (Section 3 DU E and Section 3 DU E Shift) alignments. In addition, a quarter mile buffer (0.4 km) around the alignment's LOD was included which totaled a survey study area of approximately 4,650± acres (18.8 km^2) of primarily forested land interspersed with agricultural fields, commercial properties, and small clusters of residential areas (Figures 1-4). A portion of the Northern alignment buffer (Section 1) is within Pennsylvania State Game Lands 231.

Desktop Analysis Survey

A preliminary desktop analysis to map known and potential areas of interest within the US 6219 Improvement Project 2023 alignments plus buffer was conducted prior to the field reconnaissance of mapped sites, foot searches, and on-site assessments of habitat. Areas that were investigated during 2005 and 2014 BCM hibernacula habitat assessments were included in this survey to update their status. This included the 28 Abandoned Mine Land Features (AMLF) originally investigated in 2005 (BCM 2005-01 to BCM 2005-28), the AMLF and Coal Mine Point Location (CMPL) sites investigated by BCM from the 2014 desktop survey (AMLF 2014-01, AMLF 2014-02, CMPL 2014-03 to CMPL 2014-10), and the AMLF found by BCM during the 2014 survey foot search (BCM 2014-01, BCM 2014-02). The area around the two openings into [redacted] were also explored during the desktop survey in preparation for an updated description of the site.

In addition to sites previously investigated by BCM, publicly available map layer resources such as the Pennsylvania Mine Map Atlas (PA Department of Environmental Protection and Pennsylvania State University (https://www.minemaps.psu.edu/) and Google Earth® Pro Hillshade layer from Pennsylvania Spatial Data Access (PASDA, https://www.pasda.psu.edu/) were used to locate additional land feature sites to investigate.

Foot Search and Site Habitat Assessment

Systematic foot searches were conducted to look for potential hibernacula habitat throughout the US 6219 Improvement Project Area between February 15 and April 26, 2023. Searches were conducted by two or three surveyors prior to leaf out to increase the probability of detecting historical mining activity, sink holes or slumping, and natural rock formations that were not noted during the desktop survey. Hand held GPS units (Garman, Montana® 680) and two-way radios coordinated simultaneous searches through large tracts of land.

A USFWS Habitat Assessment Data Sheet was used to describe the condition and current environment around each previously assessed potential and known bat hibernacula sites, as well as new sites found. Air temperature inside the entrance of the mine or cave, ambient temperature outside, air flow at the entrance and general condition of the habitat and structure were recorded. Photographs were taken of all previous and new hibernacula habitat. All previously surveyed AMLF, CMPL and BCM sites were assessed for recent openings and their current condition was noted.

Results

Two new potential bat hibernacula (BCM 2023-01 and BCM 2023-02) were found within the 2023 US 6219 Improvement Project Area alignments plus a quarter mile buffer (Figure 3, Table 1). Both sites are natural sandstone caves within 1000 ft. (0.3 km) of Piney Creek in a mature deciduous forest. Site BCM 2023-01 was found east of Piney Run Road on the west facing slope of the ravine formed by Piney Creek. The cave opening was 1.5 ft. (0.5 m) high and 4 ft. (1.2 m) wide. The passage inside sloped downward toward the northeast and opened into a 5 ft. (1.5 m) high, 3 ft. (0.9 m) wide, and 15 ft. (4.6 m) long passage that turned left out of sight. A slight cool breeze could be felt flowing out of the entrance. The temperature inside the entrance was 34.5°F (1.4°C) while outside it was 63.8°F (17.7°C). Site BCM 2023-02 was found west of Greenville Road on the east facing slope near the ridge top of the Piney Creek ravine. The cave opening was 2.5 ft. (0.8 m) high and 1.5 ft (0.5 m) wide and was at the bottom of a 20 ft. (6.1 m) high cliff sandstone outcrop. The passage inside sloped down and was slightly larger than the opening. Approximately 3 ft. (0.9 m) past the entrance the passage turned sharply to the right and opened up to a 5 ft. (1.5 m) high and 2 ft. (0.6 m) wide passage that continued for 6 ft. (1.8 m) then narrowed down to several fissures in the rock that could not be closely observed from the entrance. A slight cool breeze could be felt flowing out of the opening. The temperature inside the entrance was 35.1°F (1.7°C) while outside it was 51.3°F (10.7°C).

In addition to the two new potential hibernacula sites found, 27 previously surveyed abandoned mine land sites located within the current study area were assessed (Table 1, Appendix A, B, and C). Fifteen were originally surveyed in 2005 and 12 sites were originally surveyed in 2014. Five of these sites have open portals where bat activity has been confirmed during past fall trapping surveys (BCM2005-01, BCM-2005-19, BCM-2005-27, BCM-2005-28, [redacted] One additional site that has an open portal (BCM 2014-01) was trapped in the fall of 2014 and 2022 with no bat activity during either survey (Table 2). None of the remaining previously surveyed abandoned mine land sites had open portals and their status has not changed.

Some degradation or increase in clutter has occurred at four of the known hibernacula sites. At site BCM 2005-01 a support rafter at the entrance has collapsed and the entire floor of the horizontal drift was flooded 6 in. (0.2 m) to 1 ft. (0.3 m) in depth. At site BCM 2005-27 the density of Rhododendron shrubs has significantly increased around the opening. The bat gate just inside the entrance of the [redacted] shows significant signs of oxidation at the top one third but is still intact. The current land owner of the [redacted] mentioned that there have been several collapses within the mine and there was concern expressed about its overall stability.

A more detailed current description of the two new potential hibernacula and known hibernacula sites as well as descriptions of sites not surveyed in 2023 can be found in Appendix A. Site photographs can be found in Appendix B and USFWS hibernacula habitat data sheets are in Appendix C.

Conclusion

Bat Conservation and Management, Inc. conducted a Bat Hibernacula Habitat Assessment in 2023 to evaluate previously assessed abandoned mine land sites, established bat hibernacula sites, and to search for new potential bat hibernacula habitat within the 2023 US 6219 Improvement Project Area. Two new natural sandstone potential bat hibernacula sites were found but no new mining related openings were discovered. The locations of both new potential bat hibernacula were outside of the current proposed alignment limit of disturbance (LOD) but inside the quarter mile (0.4 km) buffer around the LOD. It is recommended that the two potential bat hibernacula sites be assessed for bat fall swarming activity to determine bat use at the sites.

Some of the established hibernacula that have been visited multiple times are showing signs of collapses and vegetation encroachment. The continued degradation of these sites may eventually reduce the winter bat hibernation habitat near prime Piney Creek summer foraging and maternity roost habitat potentially forcing bats to travel further away to hibernate.

Figures

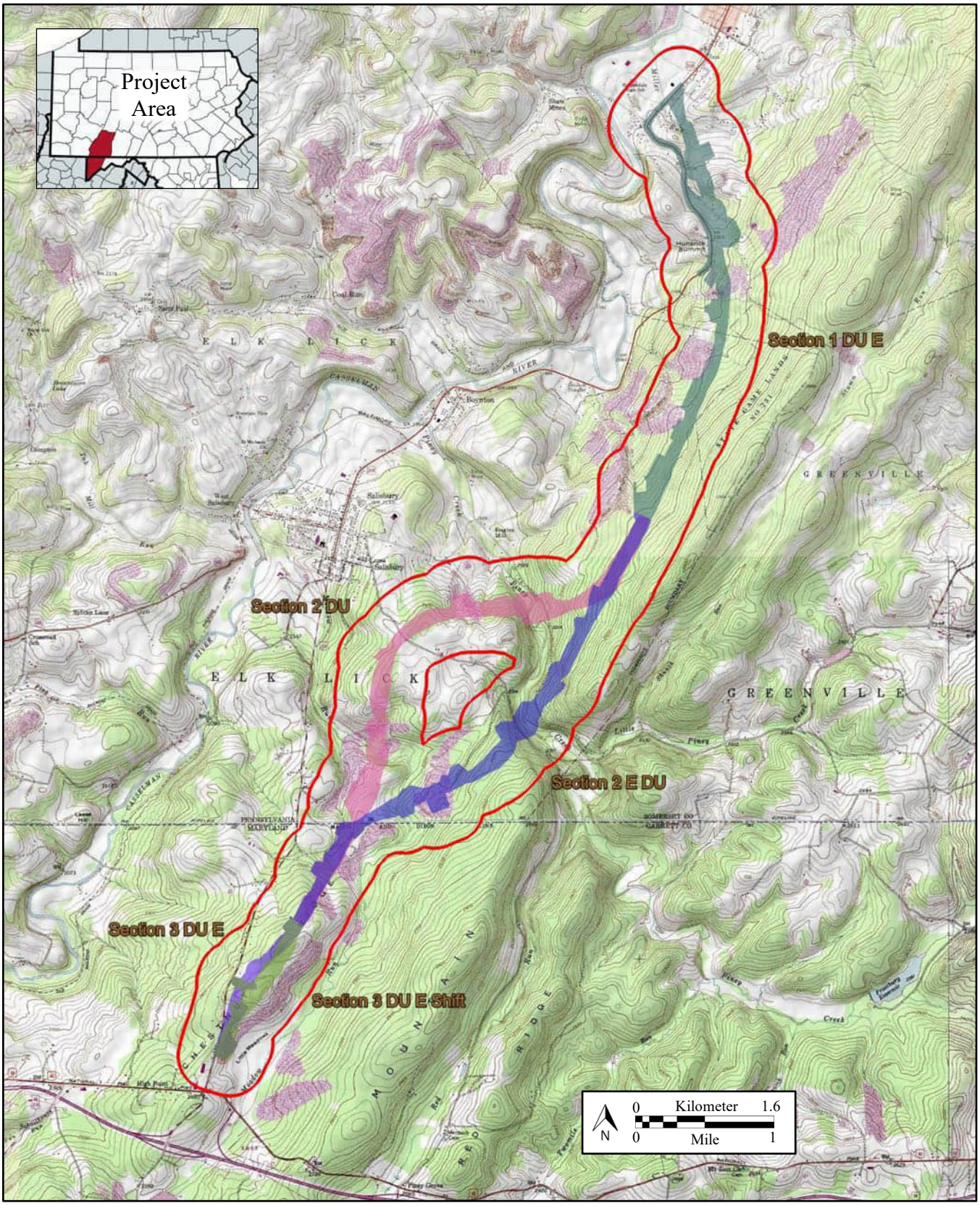


Figure 1. Proposed SR 6219 Section 050 alignment Sections, alignment limit of disturbance, and quarter mile buffer.

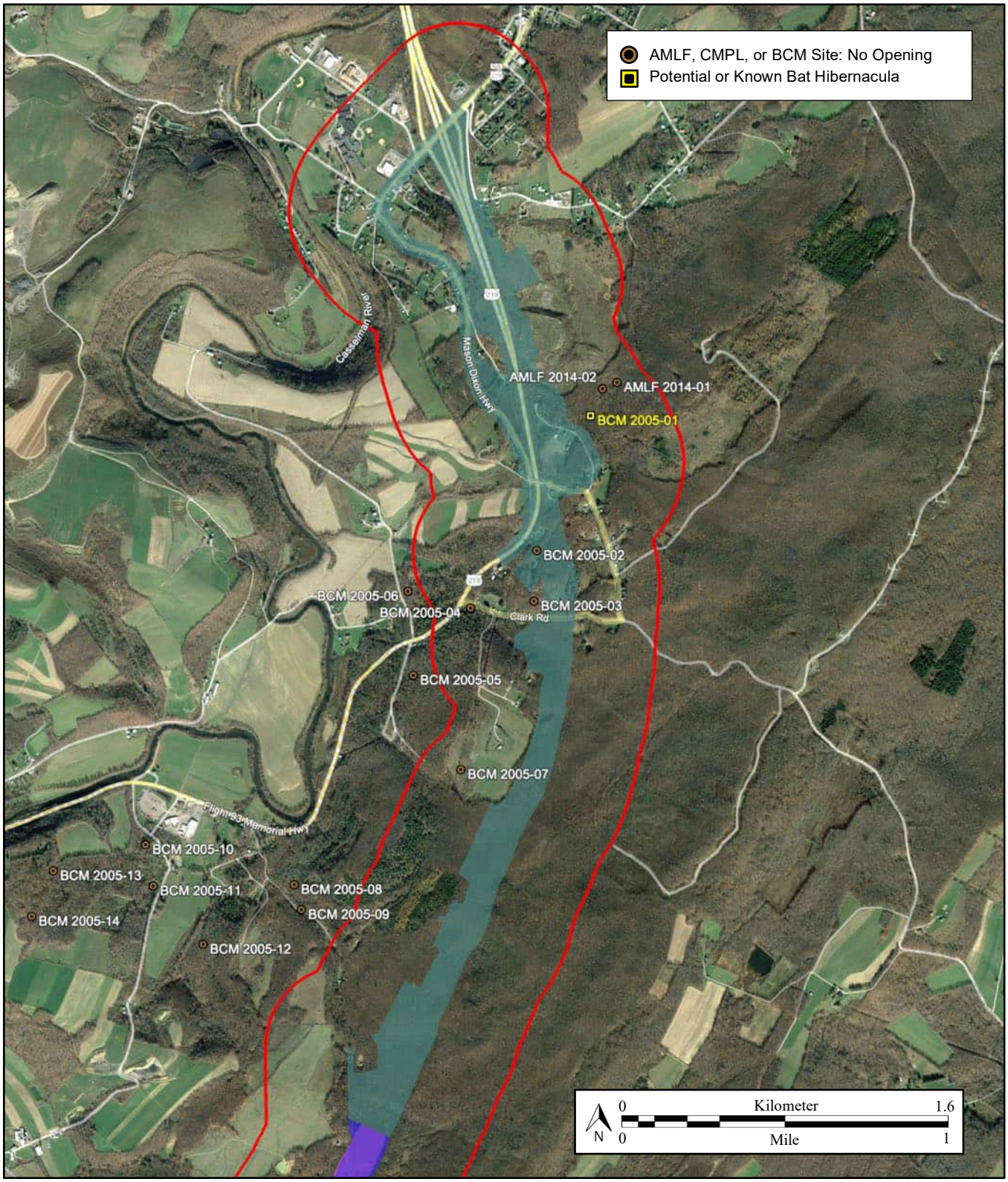


Figure 2. AMLF and BCM sites surveyed in the Northern (PA) Section 1 DU E alignment plus buffer study area.

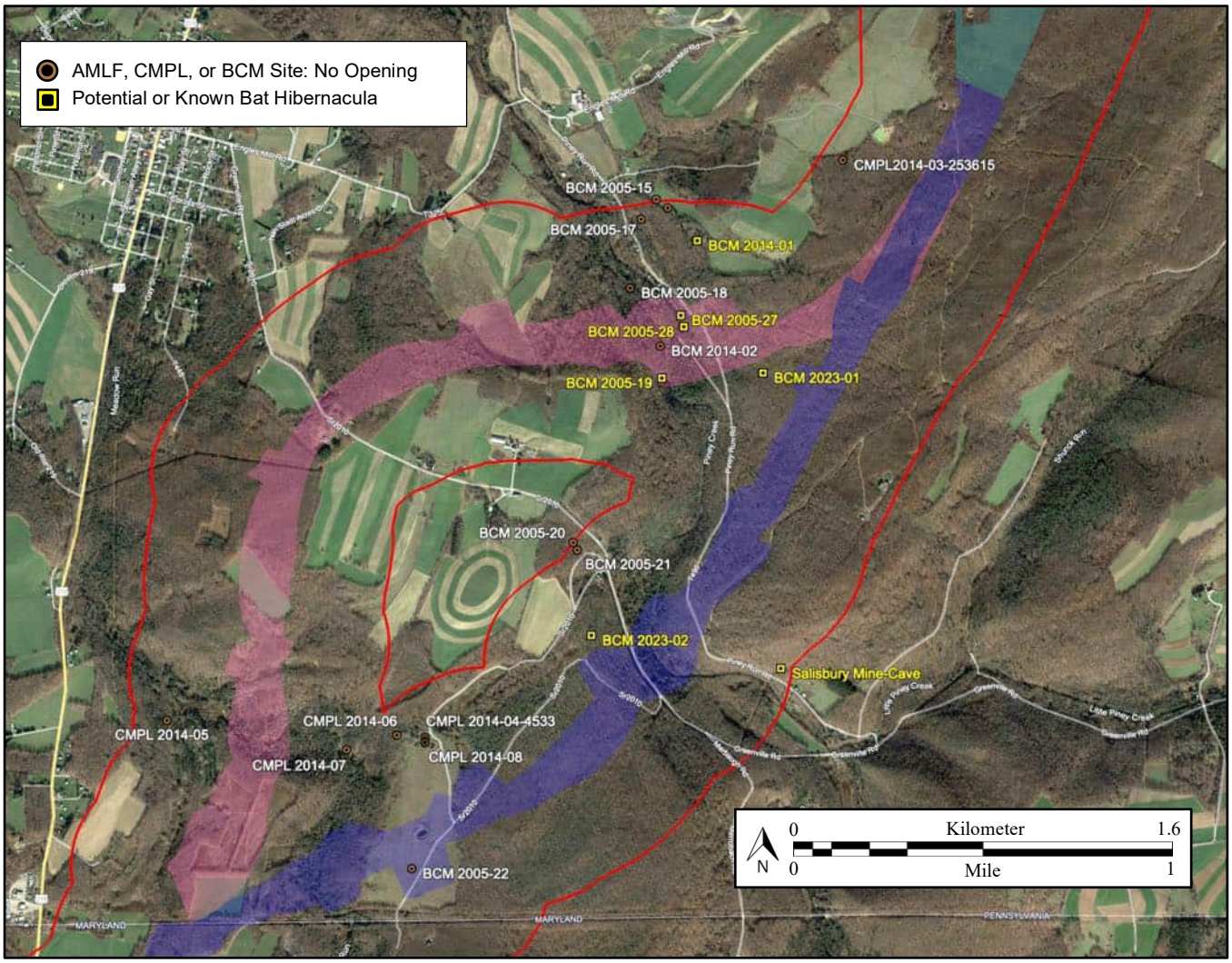


Figure 3. AMLF, CMPL, and BCM sites surveyed in the Middle (PA) Section 2 DU and Section 2 E alignments plus buffer study area.

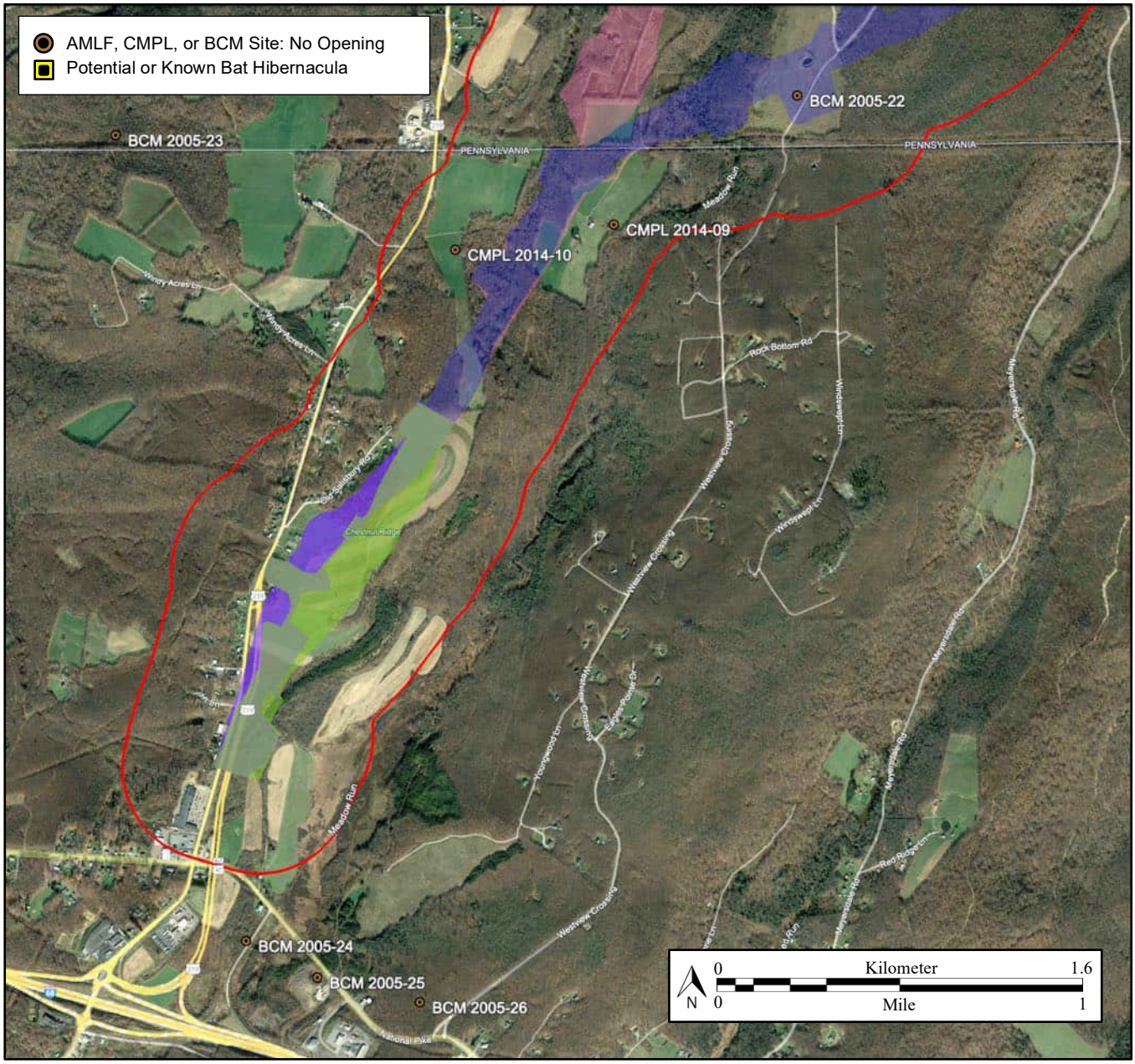


Figure 4. AMLF, CMPL, and BCM sites surveyed in the Southern (MD) Section 3 DU E and Section 3 DU Shift alignments plus buffer study area.

Tables

Table 1. Summary of hibernacula habitat assessment survey sites.

Habitat Site Name	Year Habitat Visited	Site Location Lat, Long (WGS84)	2023 Survey Comments
BCM 2005-01*	2005*, 2014*, 2022*, 2023	39.785566°, -79.028209°	Open abandoned mine entrance within deciduous forest. Small acid mine drainage stream from entrance flows past remnants of a block building. Observed recent deterioration at entrance.
BCM 2005-02	2005, 2014, 2023	39.779646°, -79.031284°	Trench with no opening. A few old railroad ties were at the bottom of the trench.
BCM 2005-03	2005, 2023	39.777424°, -79.031437°	Reclaimed mine with no openings that is now an open forested area with medium sized trees.
BCM 2005-04	2005, 2014, 2023	39.777124°, -79.035065°	Trench ending in a blind valley with no opening. Remnants of railroad tracks and outbuilding are still visible.
BCM 2005-05	2005	39.774169°, -79.038332°	Not investigated due to site location occurring outside of 2023 alignment Study Area.
BCM 2005-06	2005	39.777860°, -79.038637°	Not investigated due to site location occurring outside of 2023 alignment Study Area.
BCM 2005-07	2005, 2014, 2023	39.770033° , -79.035618°	Reclaimed mine with no openings. Currently site is an open meadow. Collapsed trenches and spoil piles are 600 ft. southwest from point.
BCM 2005-08	2005	39.764980°, -79.045137°	Not investigated due to site location occurring outside of 2023 alignment Study Area.
BCM 2005-09	2005, 2014	39.763883°, -79.044723°	Not investigated due to site location occurring outside of 2023 alignment Study Area.
BCM 2005-10	2005	39.766735°, -79.053621°	Not investigated due to site location occurring outside of 2023 alignment Study Area.
BCM 2005-11	2005	39.764921°, -79.053182°	Not investigated due to site location occurring outside of 2023 alignment Study Area.
BCM 2005-12	2005	39.762360°, -79.050337°	Not investigated due to site location occurring outside of 2023 alignment Study Area.
BCM 2005-13	2005	39.765585°, -79.058890°	Not investigated due to site location occurring outside of 2023 alignment Study Area.
BCM 2005-14	2005	39.763585°, -79.060121°	Not investigated due to site location occurring outside of 2023 alignment Study Area.
BCM 2005-15	2005, 2014, 2023	39.750113°, -79.056899°	Reclaimed mine, open pasture, no openings found.
BCM 2005-16	2005, 2014, 2023	39.749788°, -79.056332°	Reclaimed mine, open pasture, no openings found.
BCM 2005-17	2005, 2014, 2023	39.749352°, -79.057638°	Evidence of historical mining activity (trenches, spoil piles) are present. No openings were found.
BCM 2005-18	2005, 2014, 2023	39.746512°, -79.058664°	Evidence of historical mining activity (trenches, road cuts) are present 125 ft. west.
BCM 2005-19*	2005*, 2014*, 2022*, 2023	39.743311°, -79.056614°	Open abandoned mine entrance on a steep sloped area of Piney Creek's west bank. Raccoons observed emerging from entrance in 2022.
BCM 2005-20	2005, 2014, 2023	39.737050°, -79.061010°	Historical mine spoil piles and trenches with no open mine entrances.
BCM 2005-21	2005, 2014, 2023	39.736764°, -79.060805°	Historical mine spoil piles and trenches with no open mine entrances.
BCM 2005-22	2005, 2014, 2023	39.724642°, -79.068997°	Reclaimed mine and is currently an open meadow. No openings found.
BCM 2005-23	2005, 2014	39.723086°, -79.103662°	Not investigated due to site location occurring outside of 2023 alignment Study Area.
BCM 2005-24	2005, 2014	39.691581°, -79.097017°	Not investigated due to site location occurring outside of 2023 alignment Study Area.
BCM 2005-25	2005, 2014	39.690151°, -79.093392°	Not investigated due to site location occurring outside of 2023 alignment Study Area.
BCM 2005-26	2005, 2014	39.689187°, -79.088181°	Not investigated due to site location occurring outside of 2023 alignment Study Area.
BCM 2005-27*	2005*, 2014*, 2022*, 2023	39.745696°, -79.055679°	Open abandoned mine entrance on the east bank of Piney Creek. Vegetation density increased at entrance.
BCM 2005-28*	2005*, 2014*, 2022*, 2023	39.745260°, -79.055530°	Open abandoned mine entrance on the east bank of Piney Creek.
AMLF 2014-01	2014, 2023	39.787027°, -79.026692°	No evidence of mining activity or mine entrances were found at this site.
AMFL 2014-02	2014, 2023	39.786749°, -79.027526°	No evidence of mining activity or mine entrances were found at this site.
BCM 2014-01*	2014*, 2022*, 2023	39.748539°, -79.054863°	Open abandoned mine entrance through a sink hole within a collapsed trench. Water can be heard dripping inside. Raccoons observed emerging from entrance in 2022.
BCM 2014-02	2014, 2023	39.744527°, -79.056693°	Small slump along an old mining road above the west bank of Piney Creek. No entrance found.
CMPL 2014-03-253615	2014, 2023	39.751605°, -79.047657°	No evidence of mining activity or mine entrances were found at this site.
CMPL 2014-04-4533	2014, 2023	39.729441°, -79.068333°	Acid mine drainage remediation site. Infrastructure for discharge treatment was present.
CMPL 2014-05	2014, 2023	39.730277°, -79.081111°	Acid mine drainage remediation site. No infrastructure for discharge treatment was found.
CMPL 2014-06	2014, 2023	39.729719°, -79.069722°	Acid mine drainage remediation site. Infrastructure for discharge treatment was present.
CMPL 2014-07	2014, 2023	39.729166°, -79.072222°	Acid mine drainage remediation site. Infrastructure for discharge treatment was present.
CMPL 2014-08	2014, 2023	39.729441°, -79.068333°	Acid mine drainage remediation site. Infrastructure for discharge treatment was present.
CMPL 2014-09	2014, 2023	39.718611°, -79.086389°	Acid mine drainage remediation site. No infrastructure for discharge treatment was found.
CMPL 2014-10	2014, 2023	39.718611°, -79.086389°	Acid mine drainage remediation site. No infrastructure for discharge treatment was found.
BCM 2023-01	2023	39.743505°, -79.051612°	Natural sandstone cave opening under a dome shaped outcrop with a possible second opening.
BCM 2023-02	2023	39.733517°, -79.060108°	Natural sandstone cave opening at the base of a cliff face outcrop.
[redacted]	1986-20052022*, 2023	[redacted]	Open abandoned limestone mine with two entrances. Primary larger entrance has a bat gate.
[redacted]	2022, 2023	[redacted]°	Secondary horizontal opening of the abandoned limestone mine that is a small diameter metal culvert pipe partially covered by mining remnants of a wooden structure and vegetation.

* Site and year site was trapped in the fall to determine bat activity. Sites that are shaded were outside of the 2023 survey study area and were not assessed.

Table 2. Summary of fall trap capture data at five known and one potential hibernaculum sites.

Survey Site	Survey Year	EPFU	MYLU	MYSE	MYLE	PESU	Site Total by Year
BCM 2005-01[1]	2005	0	14	7	0	6	***27***
	2014	0	0	0	0	0	***0***
	2022	0	0	0	0	0	***0***
BCM 2005-19[2]	2005	0	2	0	0	2	***4***
	2014	0	0	0	0	0	***0***
	2022	0	0	0	1	0	***1***
BCM 2005-27[2]	2005	0	0	0	0	2	***2***
	2014	0	0	0	0	0	***0***
	2022	0	0	0	0	1	***1***
BCM 2005-28[2]	2005	0	0	0	0	2	***2***
	2014	0	0	2	0	5	***7***
	2022	0	0	0	0	0	***0***
BCM 2014-01[3]	2014	0	0	0	0	0	***0***
	2022	0	0	0	0	0	***0***
Salisbury[4] **Mine-Cave**	1992	0	1	2	2	2	***7***
	2004	8	509	48	0	14	***579***
	2022	24	12	3	20	4	***63***

EPFU = big brown bat (*Eptesicus fuscus*), MYLU = little brown bat (*Myotis lucifugus*), MYSE = Northern long-eared bat (*Myotis septentrionalis*), MYLE = Eastern small-footed bat (*Myotis leibii*), PESU = tricolored bat (*Perimyotis subflavus*).

[1] Level of effort was 2 consecutive nights in 2005, 3 nights over a 2-week period in 2014, and 6 nights over a 6-week period in 2022.

[2] Level of effort was 2 consecutive nights in 2005, 3 consecutive nights in 2014, and 6 nights over a 6-week period in 2022.

[3] Site was not surveyed in 2005. Level of effort was 3 consecutive nights in 2014 and 6 nights over a 6-week period in 2022.

[4] Site was surveyed by the PGC in 1992 and 2005. In 1992 level of effort was 1 night, dusk to dawn. In 2004 effort was 3 consecutive nights for 5 hours. Level of effort in 2022 was 6 nights, 5 hours each, over a 6-week period in 2022.

Appendix A

2023 Abandoned Mine Land Feature Updates

BCM 2005-01

The habitat at this site was originally assessed by BCM on August 28, 2005. It was described as a 6 ft. (1.8 m) wide by 4 ft. (1.2 m) high mine entrance with an acid mine drainage flowing out and into the surrounding mature deciduous forest. The entrance was 365 ft. (111.2 m) northeast from Mountain Road. A horizontal flooded passage into the mine can be seen trending east at least 50 ft. (15.2 m) and outside of the mine an empty shell of a block building is located 80 ft. (24.4 m) southwest of the entrance with the small stream drainage flowing past its foundation. Remnants of a rail line and mine-related foundations are nearby. An old mine rail cart is in front of the entrance, more than half buried in the sediment outflow from the drift. When the outside temperature is high a strong draft of cold air can be felt emerging from the entrance.

The mine was assessed again on October 10, 2014 and in the fall of 2022 to determine bat activity at the entrance. Most recently the site was visited on April 25, 2023. No changes to the site were noted in 2014 but during the most recent visits in 2022 and 2023 it was noted that a horizontal support timber at the entrance to the mine had fallen on one side so it is now laying diagonally across the entrance. During the 2023 visit the temperature 2 ft. (0.6 m) inside the cave was 47.8°F (8.8°C) and the outside temperature was 49.0°F (9.4°C). There was no detectable airflow at the cave entrance at this time.

The mine was trapped to determine bat activity in the fall of 2005, 2014, and in 2022. In 2005 twenty-seven bats were captured which included little brown bats (*Myotis lucifugus*), Northern long-eared bats (*Myotis septentrionalis*), and tricolored bats (*Perimyotis subflavus*). No bats were captured during the 2014 and 2022 fall bat activity surveys even though the level of effort was progressively increased each survey year (two consecutive nights in 2005, three nights during one week in 2014, and one night per week for 6 weeks in 2022).

BCM 2005-02

A foot search was originally conducted for this site on August 28, 2005. The homeowner in the mobile home at the time was aware of previous mining activity but did not know of an actual entrance. The site included a trench with no opening in a mature deciduous forest immediately behind the mobile home and 400 ft. (121.9 m) southeast from State Rt. 219. There were a few old railroad ties from tracks within the trench. No other evidence of mining activity was apparent. The site was revisited on October 2, 2014 and again on April 25, 2023. No mine entrances were found.

BCM 2005-03

A foot search was originally conducted for this site on August 28, 2005 and was determined to be reclaimed at that time and contained a meadow with immature trees. The site was not investigated in 2014. On April 25, 2023 the site was revisited and was confirmed as an open forested area with medium sized trees.

BCM 2005-04

On August 28, 2005 the site contained an old outbuilding that was visible from Clark Road. Just southeast of this structure a 20 ft. (6.1 m) deep and 300 ft. (91.4 m) long collapsed trench could be followed southeast through thick hemlocks ending in a blind valley. There were timbers visible in the bottom of the trench along with remnants of old rail tracks. No open portals were found in this area. The site was visited again on October 2, 2014 and most recently on April 25, 2023. No mine entrances were found and the site description did not require updating.

BCM 2005-05

A search was conducted for this site on October 1, 2005. A fragment of an old rail line and a concrete structure were found at this location. No entrance was apparent. The site was not investigated during the habitat assessments conducted in 2014 and 2023 due to the it being outside of the Study Area during both years.

BCM 2005-06

A search was conducted for this site on August 28, 2005. The reported mine location was in a small woodlot between a mobile home and Earnest Miller Road. The homeowner was unaware of previous mining activity. No entrance or mining evidence was apparent. The site was not investigated during the habitat assessments conducted in 2014 and 2023 due to it being outside of the Study Area during both surveys.

BCM 2005-07

A habitat assessment was conducted on October 1, 2005 at the site based on location points of historical mining activity found during the desktop survey. It was determined that the area had been strip mined and then reclaimed and was then a meadow with no open portals found in the area. The site was visited again on October 2, 2014 due to additional information about the area and no mine entrances or discharge points were found.

On March 16 and again on April 25, 2023 the area was searched for mining activity. Currently a meadow still exists at the BCM 2005-07 point. However, in the forested area, 600 ft. (182.9 m) southwest from the point in the meadow, extensive trenching with associated spoil piles were found. No mine openings or discharge points were found.

BCM 2005-08

A search was conducted on October 1, 2005. Upon entering the forest, spoil piles were evident. Moving past the piles northeast, the land has been strip mined and reclaimed. No open portals were found in this area. The site was not investigated during the habitat assessments conducted in 2014 and 2023 due to the it being outside of the study area during both surveys.

BCM 2005-09

During a search conducted on October 1, 2005, remnants of mine activity were found south of Grime Hollow Road. On the south side of the road from the BCM 2005-09 point was a collapsed trench and adit containing timber remnants. An old fan house (used to move air within the mine) was located in the trench and another related outbuilding foundation west immediately to the west. A small stream emerged from the workings and covers much of the bottom of the trench. A very small 2 ft. (0.6 m) wide, 1 ft. (0.3 m) high hole can be found under a tree at the east end of the trench. This leads to a very small chamber which was formed by slump action caused by the stream and does not lead into any workings. No airflow was observed. No open portals were found in this area.

The site was visited again on October 02, 2014. No mine entrances were found and the site description did not require updating. It was not investigated during the habitat assessments conducted in 2023 due to the site being outside of the Study Area.

BCM 2005-10

A foot search was conducted on August 28, 2005. A steep sided, forested blind valley was located at the historical mining activity point location found during the desktop survey. No open portals were found in this area, although the odd topography suggests past mine use. The site was not investigated during the habitat assessments conducted in 2014 and 2023 due to the it being outside of the Study Area during both surveys.

BCM 2005-11

A search was conducted on October 1, 2005. This location was within an open deciduous forest with relatively high visibility. No open portals were found in the area. The site was not investigated during the habitat assessments conducted in 2014 and 2023 due to the it being outside of the Study Area during both surveys.

BCM 2005-12

A search was conducted on October 1, 2005. The area was located in open deciduous forest. No open portals were found in the area. The site was not investigated during the habitat assessments conducted in 2014 and 2023 due to the it being outside of the Study Area during both surveys.

BCM 2005-13

A search was conducted on October 1, 2005. This location was in open deciduous forest with relatively high visibility. A cornfield was nearby. The mine location point was at an intersection of two old roads where an old clearing has become overgrown with brush. No open portals were found in this area. The site was not investigated during the habitat assessments conducted in 2014 and 2023 due to the it being outside of the Study Area during both surveys.

BCM 2005-14

A search was conducted on October 1, 2005. This location was in open deciduous forest with relatively high visibility. Several cornfields are nearby. The mine location point was in open woods with low slope. A number of trees were blown down. No open portals were found in the area. The site was not investigated during the habitat assessments conducted in 2014 and 2023 due to it being outside of the Study Area during both surveys.

BCM 2005-15

The area around a cluster of three adjacent sites (BCM 2005-15, BCM 2005-16, BCM 2005-17) generated from a desktop survey of historical mining activity was initially assessed for potential hibernacula on August 28, 2005 as follows. A large, obvious spoil pile was immediately encountered east of Piney Run Road within a deciduous forest. From the top of the spoil pile, there were number of adit traces and sinks located within 500 ft. (152.4 m) to the southeast. There was another parallel level of similar old development traces approximately 75 ft. (22.9 m) higher in elevation. A few hundred feet northeast of point BCM 2005-15 there was a small brick foundation next to what appeared to have been one of the better entrances but in 2005 was merely an old collapsed trench. Just beyond this to the north, the forest gave way to pasture, which appeared to be a reclaimed strip mine that was not depicted on the USGS Meyersdale/Avilton 7.5 minute topographic map. No open portals were found in this area. The site was visited again on October 2, 2014. No mine entrances were found and the site description did not require updating.

Site BCM 2005-15 was most recently visited on February 23, 2023. The point was north and just outside of the Study Area. The area around the point was reclaimed land that was currently on the southwest edge of an open pasture and a deciduous forest was to the south with no openings found in the area. The area described in 2005 that was northeast of BCM 2005-15 was further outside the study area and was not investigated. Site BCM 2005-16 was 200 ft. (61.0 m) southeast from this site and BCM 2005-17 is 350 ft. (106.7 m) southwest.

BCM 2005-16

The area around a cluster of three adjacent sites (BCM 2005-15, BCM 2005-16, BCM 2005-17) generated from a desktop survey of historical mining activity was initially assessed for potential hibernacula on August 28, 2005 as follows. A large, obvious spoil pile was immediately encountered east of Piney Run Road within a deciduous forest. From the top of the spoil pile, there were number of adit traces and sinks located within 500 ft. to the southeast. There was another parallel level of similar old development traces approximately 75 ft. (22.9 m) higher in elevation. A few hundred feet northeast of point BCM 2005-15 there was a small brick foundation next to what appeared to have been one of the better entrances but in 2005 was merely an old collapsed trench. Just beyond this to the north, the forest gave way to pasture, which appeared to be a reclaimed strip mine that was not depicted on the USGS Meyersdale/Avilton 7.5 minute topographic map. No open portals were found in this area. The site was visited again on October 2, 2014. No mine entrances were found and the site description did not require updating.

Site BCM 2005-16 was most recently visited on February 23, 2023. The site was 200 ft. (61.0 m) southeast from BCM 2005-15 and inside of the Study Area. The area around the point was reclaimed land that was currently on the

southwest edge of an open pasture and a deciduous forest to the south with no potential hibernacula found in the area. The site was 400 ft. (121.9 m) northeast from site BCM 2005-17.

BCM 2005-17

The area around a cluster of three adjacent sites (BCM 2005-15, BCM 2005-16, BCM 2005-17) generated from a desktop survey of historical mining activity was initially assessed for potential hibernacula on August 28, 2005 as follows. The area around the cluster of the three points generated from a desktop survey of historical mine sites was initially assessed for potential hibernacula on August 28, 2005. A large, obvious spoil pile was immediately encountered east of Piney Run Road within a deciduous forest. From the top of the spoil pile, there were number of adit traces and sinks located within 500 ft. to the southeast. There was another parallel level of similar old development traces approximately 75 ft. (22.9 m) higher in elevation. A few hundred feet northeast of point BCM 2005-15 there was a small brick foundation next to what appeared to have been one of the better entrances but in 2005 was merely an old collapsed trench. Just beyond this to the north, the forest gave way to pasture, which appeared to be a reclaimed strip mine that was not depicted on the USGS Meyersdale/Avilton 7.5 minute topographic map. No open portals were found in this area. The site was visited again on October 2, 2014 and on February 23, 2023. No mine entrances were found and the site description did not require updating.

Site BCM 2005-17 was most recently visited on February 23, 2023. The site was 350 ft. (106.7 m) southwest from BCM 2005-15 and 400 ft. (121.9 m) southwest from BCM 2005-16. The area around the point was within a deciduous forest 220 ft. (67.1 m) east from Piney Run Road. The spoil piles, adit traces, and sinks described in 2005 were within 100 ft. (30.5 m) northeast of the site and continued approximately 330 ft. (100.6 m) southeast past BCM 2005-17. No mine entrances were found.

BCM 2005-18

The site was initially assessed on August 28, 2005. At that time an entrance was reportedly located on the west bank of Piney Creek, directly behind several private residences. Homeowners indicated no knowledge of a mine in that location, but instead reported on mines BCM 2005-19, BCM 2005-27, and BCM 2005-28. The area around BCM 2005-18 was searched regardless of the landowner reports and no open portals were found. The site was visited again on October 02, 2014 and several blind trenches were noted, a few with small springs or seeps emerging, but no openings were found. Most recently, the area was searched for potential hibernacula on February 24, 2023. The search confirmed historical mining activity at the site within 150 ft. (45.7 m) southwest of the BCM 2005-18 point, above the west bank of Piney Creek. There were several old road cuts in the northeast facing ridge that led southeast parallel to Piney Creek as well. No potential hibernacula were found.

BCM 2005-19

A foot search was conducted on September 30, 2005. The entrance was located 75 ft. (22.9 m) above the west bank of Piney Creek. Locals also referred to the mine entrance as “panther hole.” The drift was on a very steep hillside without traces of old road. The entrance was largely collapsed and only a 3 ft. (0.9 m) high, 4 ft. (1.2 m) wide crawlway remained. The crawl sloped down over rubble and the passage could not be estimated beyond. No airflow was apparent. No other evidence of previous mining activity was visible.

No discernable changes at the site were noted when a return visit occurred in the fall of 2014 and again in the fall of 2022 to assess bat activity at the site. However, a night vision trail camera that was set up at the site during fall trapping in 2022 revealed a raccoon and a porcupine emerging from the cave separately during several trap nights. Most recently the site was visited on February 24, 2023 to evaluate its status. No physical changes were observed. During this visit the temperature 3 ft. (0.9 m) inside the cave was 39.2°F (4.0°C) and the outside temperature was 36.2°F (2.3°C). There was no detectable airflow at the cave entrance at this time.

Four bats were captured (2 little brown, 2 tricolored) when the site was trapped to determine bat activity on September 30 and October 1, 2005. No bats were captured at the site on October 6, 7, and 8, 2014. In 2022 the level of effort increased to six nights of trapping (one night per week from September 23 to October 24) resulting in the capture of one Eastern small-footed bat (*Myotis leibii*).

BCM 2005-20

This site was within 120 ft. northwest from BCM 2005-21 and both were generated from a desktop survey of historical mining activity that may have had two potential entrances. The sites were initially assessed together on August 27, 2005 with the following description. This is one of two entrances reported in relatively open deciduous forest. Coal spoil piles are located north of a gravel road. There is mining evidence in this entire woodlot consisting of at least seven traces of trenches and two entrance drifts that now end in blind valleys. No open portals were found in this area. The site was visited again on October 2, 2014 and no open portals were found in the area.

The site was most recently visited on March 2, 2023. Coal mine spoil piles and seven trenches with no open mine entrances were confirmed north of a gravel access road and 250 ft. (76.2 m) southwest of Greenville Road in a deciduous forest.

BCM 2005-21

This site was within 120 ft. (36.6 m) southeast from BCM 2005-20 and both were generated from a desktop survey of historical mining activity that may have had two potential entrances. The sites were initially assessed together on August 27, 2005 with the following description. This is one of two entrances reported in relatively open deciduous forest. Coal spoil piles are located north of a gravel road. There is mining evidence in this entire woodlot consisting of at least seven traces of trenches and two entrance drifts that now end in blind valleys. No open portals were found in this area. On October 2, 2014 the site was assessed again and no open portals were found.

The site was most recently visited on March 2, 2023. Coal mine spoil piles and seven trenches with no open mine entrances were confirmed north of a gravel access road and 250 ft. (76.2 m) southwest of Greenville Road in a deciduous forest.

BCM 2005-22

A search was initially conducted on October 1, 2005. The land has been strip mined and reclaimed. No open portals were found in this area. The site was visited again on July 22, 2014 and most recently on March 2, 2023. No mine entrances were found. Currently the BCM 2005-22 point is in the center of a 60-acre (0.2 km^2) meadow where the strip mine was located prior to being reclaimed. In 2014, five additional Coal Mine Point Locations (CMPL2014-04 to CMPL2014-08) were associated with this site during the 2014 desktop survey of the area prior to a foot search to survey the site. During the foot search in 2014, the CMPL sites were confirmed to be associated with strip mine point discharge treatment sites in and around Meadow Run, a small stream that runs along the west side of the reclaimed mine. In 2023 the infrastructure for discharge treatment sites were still present.

BCM 2005-23

A search was conducted on October 2, 2005. This site is located within a few hundred feet of a utility right-of-way. Mining traces include a built-up earthen work area leading into a small blind valley. A smaller collapse feature is just inside the tree line on the north side of the right-of-way, downhill of the larger working. No open portals were found in this area. The site was visited on October 08, 2014. No mine entrances were found and the site description did not require updating. The site was not investigated during the habitat assessments conducted in 2023 due to the it being outside of the Study Area.

BCM 2005-24

A foot search was initially conducted for this site on August 28, 2005 by BCM. The topography has been significantly altered by the construction of an I-68 exit ramp at the location of the reported entrance. No entrance or mining evidence was apparent. Dawn Noel reported that survey crews from McCormick Taylor, Inc. visited the site again on August 1 and 8, 2014 and no mine features were reported. The site was not investigated during the BCM habitat assessment conducted in 2023 due to it being outside of the study area.

BCM 2005-25

A foot search was conducted on August 28, 2005. A patch of forest adjacent to a recycling center and US 40 Alternate was searched. From the recycling center, a few small depressions were located near US 40 Alternate in the brush. The slope and forest cover increased to the northeast and no other features were notable. Dawn Noel reported that survey crews from McCormick Taylor, Inc. visited the site again on August 1 and 8, 2014 and no mine features were reported. It was also visited by BCM on July 22, 2014 and no new features were noted. The site was not investigated during the BCM habitat assessment conducted in 2023 due to it being outside of the study area.

BCM 2005-26

A foot search was conducted on August 28, 2005. The area was located in a gently sloping, open deciduous forest littered with small fragments of sandstone. Small, shallow depressions were located 600 ft. (128.9 m) due west of the reported mine location within sight of a garage. Additional depressions are just northeast of the garage. All depressions are only traces of previous development. No portal was found. The site was visited again on July 22, 2014 and no new features were noted. The site was not investigated during the habitat assessment conducted in 2023 due to it being outside of the Study Area.

BCM 2005-27

A foot search was conducted on August 27, 2005. The mine entrance was located on the east bank of Piney Creek, approximately 15 ft. (4.6 m) above the stream. The entrance was 12 ft. (3.7 m) wide and 5 ft. (1.5 m) high. The passage into the mine could be seen to extend at least 40 ft. (12.2 m) trending northeast. This is one of two sites that were pointed out to BCM surveyors by local land owners.

The mine was assessed again in October, 2014 with no significant changes to the site noted. It was noted in 2022 during fall trapping that the vegetation (Rhododendron) density around the entrance had increased since 2014. Most recently it was visited on February 23, 2023 to evaluate its status. This mine entrance is approximately 160 ft. (48.8 m) northwest from site BCM 2005-28 on the east bank of Piney Creek. No additional physical changes were observed. During this visit the temperature 5 ft. (1.5 m) inside the cave was 45.9°F (7.7°C) and the outside temperature was 61.9°F (16.6°C). There was no detectable airflow at the cave entrance at this time. Water was observed from the entrance flowing down the mine passage walls in several locations.

The mine was trapped to determine bat activity in the fall of 2005, 2014, and in 2022. In 2005 two tricolored bats (*Perimyotis subflavus*) were captured at the mine. No bats were captured during trapping in the fall of 2014 and one tricolored bat was captured during the 2022 fall trapping. The fall trapping level of effort at the site progressively increased with two consecutive trapping nights in 2005, three consecutive nights in 2014, and one night per week for 6 weeks in 2022.

BCM 2005-28

A foot search was conducted on August 27, 2005. The entrance was located 75 ft. (22.9 m) from the east bank of Piney Creek, approximately 20 ft. (6.1 m) above the stream. The entrance was 12 ft. (3.7 m) wide and 5 ft. (1.5 m) high. The passage can be seen to extend at least 40 ft. (12.1 m) trending northeast. Cold air could be felt emerging from the entrance. Several bat droppings were found on a large rock under the drip line. Access to the portal was improved by using earth to form a raised platform in front of the entrance. Another entrance may have existed 100 ft. (30.5 m) south where a seep emerges from a slump in the hillside. This is one of two sites that were pointed out to BCM surveyors by local land owners.

The mine was assessed again in October, 2014 during trapping with no significant changes to the site noted. Most recently it was visited on February 23, 2023 to evaluate its status. This mine entrance is approximately 160 ft. (48.8 m) southeast from site BCM 2005-28 on the east bank of Piney Creek. No additional physical changes were observed. During this visit the temperature 5 ft. (1.5 m) inside the cave was 45.7°F (7.6°C) and the outside temperature was 61.9°F (16.6°C). There was no detectable airflow at the cave entrance at this time.

The mine was trapped to determine bat activity in the fall of 2005, 2014, and in 2022. No bats were captured in 2005, two northern long-eared bats (*Myotis septentrionalis*) in 2014, and no bats were captured in 2022. The fall trapping level of effort at the site progressively increased with two consecutive trapping nights in 2005, three consecutive nights in 2014, and one night per week for 6 weeks in 2022.

AMLF 2014-01

The site area was visited on October 02, 2014 and no evidence of mine workings were present except for at the nearby site BCM 2005-01. What might appear to be a mine spoil pile on aerial photos 0.3 miles (470 m) northeast of the AMLF 2014-01 is a small pond.

The site was visited again on April 25, 2023. No evidence of mining activity or mine entrances were found at the site other than the open mine portal 660 ft. (201.2 m) southwest of this area at site BCM 2005-01.

AMLF 2014-02

The site area was visited on October 02, 2014 and no evidence of mine workings were present except for at the nearby site BCM 2005-01. What might appear to be a mine spoil pile on aerial photos 0.3 miles (470 m) northeast of the AMLF 2014-01 is a small pond.

The site was visited again on April 25, 2023. No evidence of mining activity or mine entrances were found at the site other than the open mine portal 650 ft. (201.2 m) southwest of this area at site BCM 2005-01.

BCM 2014-01

On September 26, 2014 John Chenger was revisiting a small group of reported entrance locations (BCM2005-15, BCM 2005-16, and BCM 2005-17). An entrance feature was encountered east of this cluster of sites. It was located in a steep sided trench with a small spring emerging from the hillside just below an open meadow, where a farm lane briefly intersects the forest. There were a few old timbers in the trench. Fifty feet (15.2 m) up the trench from where the water emerges was a small 1.5 ft. (0.5 m) diameter hole with a passage that dropped steeply and opened up wider. Water can be heard dripping in the chamber inside. No airflow was observed. Given the extent that the trench is collapsed above this hole, the mine passage may be collapsed.

The sink hole mine opening was assessed again in October, 2014 and in 2022 during fall trapping. Water can still be heard dripping into a pool from the chamber inside the entrance. No significant changes to the site noted. However, a night vision trail camera that was set up at the site during fall trapping in 2022 revealed several raccoons emerging from the hole during several trap nights. Most recently the site was visited on February 23, 2023 to evaluate its status. No additional physical changes were observed. During this visit the temperature 1 ft. inside the hole was 49.1°F (9.5°C) and the outside temperature was 61.9°F (16.6°C). There was no detectable airflow at the mine entrance at this time.

The hole was netted to determine bat activity in the fall of 2014 and, in 2022, it was initially harp trapped then netted. No bats were captured in during either survey year even though the survey effort increased from three consecutive nights in 2014 to one night per week for 6 weeks in 2022.

BCM 2014-02

During the course of reinvestigating BCM 2005-19 and BCM 2005-18 on October 02, 2014, this small slump was found along an old mining road 100 ft. (20.5 m) above the west bank of Piney Creek. It appeared to be slumped shut and had no airflow. It was listed for-the-record-only (FRO) to minimize confusion during future surveys. The site was visited again on February 24, 2023. No mine entrances were found and the site description did not require updating.

CMPL 2014-03-253615

The site area was visited on October 9, 2014 and no evidence of mine workings was present. However, the area consisted of a large boulder field adjacent to agricultural fields. This area was surveyed as possible *Myotis leibii* habitat. The habitat was located in a deciduous forest. The area was 755 ft. (230 m) in length and ranged from 148-443 ft. (45-135 m) in width. The habitat consisted of boulders ranging in size from less than 3.2-1.5 ft. (1-5 m) with shallow and deep crevices. The majority of the habitat was covered with organic matter and 100 percent canopy coverage. The site was visited again on February 15, 2023. No mine entrances were found and the site description did not require updating.

CMPL 2014-04-4533

The site area was visited on October 9, 2014 and was found to be an acid mine drainage remediation site. No entrances to underground workings were discovered. The site was visited again on March 2, 2023. No mine entrances were found and the infrastructure for discharge treatment was still present.

CMPL 2014-05

The site was visited on July 24, 2014 and was found to be a strip mine point discharge treatment site. No entrance to underground workings existed. The site was visited again on March 1, 2023. No mine entrances were found and the infrastructure for discharge treatment was still present.

CMPL 2014-06

The site was visited on July 24, 2014 and was found to be a strip mine point discharge treatment site. No entrance to underground workings existed. The site was visited again on March 2, 2023. No mine entrances were found and the infrastructure for discharge treatment was still present.

CMPL 2014-07

The site was visited on July 24, 2014 and was found to be a strip mine point discharge treatment site. No entrance to underground workings existed. The site was visited again on March 2, 2023. No mine entrances were found and the infrastructure for discharge treatment was still present.

CMPL 2014-08

The site was visited on July 24, 2014 and was found to be a strip mine point discharge treatment site. No entrance to underground workings existed. The site was visited again on March 2, 2023. No mine entrances were found and the infrastructure for discharge treatment was still present.

CMPL 2014-09

The site was visited on July 24, 2014 and was found to be a strip mine point discharge treatment site. No entrance to underground workings existed. The site was visited again on March 15, 2023. No mine entrances were found and there was no discharge treatment infrastructure present.

CMPL 2014-10

The site was visited on July 24, 2014 and was found to be a strip mine point discharge treatment site. No entrance to underground workings existed. The site was visited again on March 15, 2023. No mine entrances were found and there was no discharge treatment infrastructure present.

[redacted] mine that was first surveyed for hibernating bats by the Pennsylvania Game Commission (PGC) in February 1986. Due to access restrictions, the mine was assessed for the first time since 2005 in the fall of 2022 during a bat use trapping survey conducted by BCM to determine bat activity at the primary entrance. Most recently the site was visited on February 16, 2023 by BCM.

[redacted] The mine currently has two openings within a mature deciduous forest. An old access dirt road leads from a residential property on Piney Run Road to the primary entrance. [redacted] he passage is a few feet wider and higher 15 ft. (4.6 m) inside the entrance where a bat gate was installed in 1992. Beyond the gate the passage enlarges into a room and then divides into at least two passages heading north into the ridge. There is an abandoned car to the left of the entrance. The bat gate just inside the entrance is shown significant signs of oxidation at the top one third but is still intact. The temperature inside the cave at the bat gate was 43.1°F (6.2°C) and the outside temperature was 46.2°F (7.9°C).

The second opening (may also be known as Salisbury Lower) is a small diameter shaft located near th[redacted]. At one time this opening was larger, but was closed by the land owner. The vent is currently a 16 in. (0.4 m) diameter metal culvert pipe that extends horizontally north an unknown distance. Deteriorating remnants of a wooden structure with metal machine parts along with vegetation and cut logs partially cover the vent. Remnants of what may have been a cinder block structure are nearby. The temperature just inside the vent was 41.2°F (5.1°C) during the habitat assessment and there was heavy cool airflow coming out of it.

The PGC conducted 15 internal winter surveys to determine what bat species were hibernating at the site during the 19-year period from 1986 (winter of 1985) to 2005 (winter of 2004). The number of bats counted during the winter surveys peaked in 1994 with 2314. During the last winter survey in 2005 there were 2006 bats counted. The bat species recorded hibernating at the site were Indiana (*Myotis sodalis*), little brown (*Myotis lucifugus*), Northern long-eared (*Myotis septentrionalis*), tricolored (*Perimyotis subflavus*), Eastern small-footed (*Myotis Leibii*), and big brown (*Eptesicus fuscus*). The mine was harp trapped at the primary entrance to determine bat activity by the PGC in the fall of 1992 and 2004, and by BCM in 2022. In 1992 seven bats were captured during one night of trapping, 258 were captured during three consecutive nights of trapping in 2004, and 63 were captured in 2022 during 6 nights of trapping over a 6-week period. The bat species captured during fall trapping surveys included little brown, Northern long-eared, tricolored, Eastern small-footed, and big brown.

BCM 2023-01

During a foot search on February 15, 2023 a natural sandstone cave was found 540 ft. (164.6 m) east of Piney Run Road on the west facing slope of Piney Creek Ravine in a mature deciduous forest. The cave was formed under a fractured dome shaped outcrop that rises above the surrounding terrain with clumps of Rhododendron around the outside edge. The cave opening was 1.5 ft. (0.5 m) high and 4 ft. (1.2 m) wide. The passage inside sloped downward toward the northeast and opened into a 5 ft. (1.5 m) high, 3 ft. (0.9 m) wide, and 15 ft. (4.6 m) long passage that turned left out of sight. A slight cool breeze could be felt flowing out of the entrance. The temperature inside the entrance was 34.5°F (1.4°C) while outside it was 63.8°F (17.7°C). There was an opening in the canopy above the cave entrance so that area might receive a few hours of sunlight at mid-day. There were several smaller openings under slabs of rock around the primary opening but none of them were obviously connected directly to the primary passage and none had cold air inside or air flowing in or out of the entrance. Approximately 25 ft. (7.6 m) to the west at the edge of the outcrop was a slab ledge with a 4 ft. high (1.2 m), 6 ft. (1.8 m) wide, and 5 ft. (1.5 m) deep crawl space under it and with several cracks in fractured rock that continued northeast toward the primary entrance. The temperature at the back of the crawl space where the cracks started was 35.6 °F (2.0°C) and there was a slight flow of cold air coming out from the cracks.

BCM 2023-02

During a foot search on March 2, 2023 a natural sandstone cave was found 450 ft. (137.2 m) west of Greenville Road on the east facing slope near the ridge top of the Piney Creek ravine in a mature deciduous forest. The cave was at the bottom of a 20 ft. (6.1 m) high cliff outcrop that was part of a 550 ft. (167.6 m) long linear series of individual outcrops running north to south. The cave opening was 2.5 ft. (0.8 m) high and 1.5 ft (0.5 m) wide. The passage inside sloped down and was slightly larger than the opening and ice covered the floor. Approximately 3 ft. (0.9 m) past the entrance the passage turned sharply to the right and opened up to a 5 ft. (1.5 m) high and 2 ft. (0.6 m) wide passage that continued for approximately 6 ft. (1.8 m) then narrowed down to several fissures in the rock that could not be closely observed from the entrance. A slight cool breeze could be felt flowing out of the opening. The temperature inside the entrance was 35.1°F (1.7°C) while outside it was 51.3°F (10.7°C). There were several small cracks and crevices that could have led back out of the cave from inside the entrance and the entire cliff face included many crevices throughout the entire outcrop. Most of the outcrop containing the cave was open but overall, the rock surface up and down the linear series of outcrops was 50% covered with Rhododendron. The trees in the area directly east of the cave was were selectively cut which opened up the forest in that area.

Appendix B

Known and Potential Hibernacula Site Photographs

Hibernaculum Site BCM 2005-01 A: Entrance with mine acid drainage steam flowing out.

Hibernaculum Site BCM 2005-01 B: Habitat around mine entrance with remnants of block building, the acid mine drainage stream, and remnants of railroad track.

Hibernaculum Site BCM 2005-19 A: Mine opening at the base of a cliff face outcrop on a steep embankment.

Hibernaculum Site BCM 2005-19 B: Steep slope below the mine entrance down to the west bank of Piney Creek.

Hibernaculum Site BCM 2005-27: Mine opening on the east bank of Piney Creek with Rhododendron encroaching around the entrance.

Hibernaculum Site BCM 2005-28: Mine opening on the east bank of Piney Creek with surrounding habitat.

Potential Hibernaculum Site BCM 2014-01 A: A small sink hole mine opening in a forested hillside trench.

Potential Hibernaculum Site BCM 2014-01 B: Above the sink hole mine opening and forested trench is an open pasture. Down slope from the opening a small spring emerges and further down old mining timbers are in pooled water adjacent to a farm lane.

Hibernaculum Site [redacted] Primary opening north of Piney Run Road.

Hibernaculum Site [redacted] Bat gate within primary entrance with top third heavily oxidized.

Hibernaculum Site [redacted] Remnants of wood structure and vegetation on top of secondary opening into mine adjacent to Piney Run Road.

Hibernaculum Site [redacted] Secondary entrance small metal culvert under debris and vegetation.

Potential Hibernaculum Site BCM 2023-01 A: Horizontal opening into natural sandstone cave that leads down into a larger passage.

Potential Hibernaculum Site BCM 2023-01 B: Habitat around opening showing dome shaped outcrop that rises above the surrounding terrain.

Potential Hibernaculum Site BCM 2023-02 A: Entrance to natural sandstone cave with a passage that became larger and turned to the right.

Potential Hibernaculum Site BCM 2023-02 B: Entrance is at the bottom of a cliff outcrop that was part of a long linear series of individual outcrops.

Appendix C

Potential and known Hibernacula Assessment Data Sheets

Phase I Habitat Assessment USFWS Data Sheet

Location Rt 219 BCM 2005-01

Observers (include permit numbers) Todd Sinander, Ken Gearhart, Daniel Merrill

Latitude (WGS84) 39.785564 **Longitude**[82] -79.028208

Date 4/25/23 **Time** 19:00 **Temp (outside)** 49.0°F

	Opening #1	Opening #2	Opening #3	Opening #4
Opening Type (e.g., cave, portal, shaft)	Portal			
Opening vertical or horizontal	horizontal			
Opening Size: Height x Width (or Diameter)	4' high x 6' wide			
Internal Dimensions: Height x Width	~4' x 5'			
Slope (up or down from entrance)	0, none			
Entrance Stable?	Yes			
Direction of Airflow (In or out?)	No air flow			
Amount of Airflow (e.g., none, slight, heavy)	None			
Internal air warmer or cooler than outside temp.?	Cooler			
Evidence of collapse?	No			
Ceiling Condition	good			
Amount of water in opening	~10" flooded			
Evidence of past flooding?	Yes			
Observed length of internal passage	~50'			
Distance to nearest water source	At Entrance, 3'			
% Canopy Cover at entrance	70%			
Foraging Signs? (e.g., moth wings)	No			

Are any portals suspected or known to be connected? Which ones? No

Any observable side passages? No

Additional comments: Temp of entrance = 47.8°F. No air flow. A small acid mine drainage stream flows out of mine entrance.

Entry of abandoned mine portals, quarries, or caves can be extremely dangerous because of the potential for ceiling collapse and presence of toxic gases. Safety or health problems may occur as a result of entering abandoned mines. The FWS does not authorize or require anyone to enter any potential hibernaculum that is or could be unsafe while implementing surveys. These guidelines do not require any applicant or applicant employee, consultant, lessee, or other such designee to enter any cave, quarry, or mine portal.

[82] Provide coordinates for each opening.

Phase I Habitat Assessment USFWS Data Sheet

Location Rt219 BCM2005-19

Observers (include permit numbers) Todd Sinander

Latitude (WGS84) 39.743311 **Longitude**[82] -79.056614

Date 2/24/23 **Time** 13:15 **Temp (outside)** 36.2°F

	Opening #1	Opening #2	Opening #3	Opening #4
Opening Type (e.g., cave, portal, shaft)	Portal			
Opening vertical or horizontal	Horizontal			
Opening Size: Height x Width (or Diameter)	4'x6'			
Internal Dimensions: Height x Width	Smaller			
Slope (up or down from entrance)	Down			
Entrance Stable?	Yes			
Direction of Airflow (In or out?)	None			
Amount of Airflow (e.g., none, slight, heavy)	None			
Internal air warmer or cooler than outside temp.?	Warmer			
Evidence of collapse?	Yes			
Ceiling Condition	good			
Amount of water in opening	None			
Evidence of past flooding?	No			
Observed length of internal passage	30'			
Distance to nearest water source	100'			
% Canopy Cover at entrance	100			
Foraging Signs? (e.g., moth wings)	No			

Are any portals suspected or known to be connected? Which ones? No

Any observable side passages? No

Additional comments:

Temp inside entrance 39.2°F

Entry of abandoned mine portals, quarries, or caves can be extremely dangerous because of the potential for ceiling collapse and presence of toxic gases. Safety or health problems may occur as a result of entering abandoned mines. The FWS does not authorize or require anyone to enter any potential hibernaculum that is or could be unsafe while implementing surveys. These guidelines do not require any applicant or applicant employee, consultant, lessee, or other such designee to enter any cave, quarry, or mine portal.

[82] Provide coordinates for each opening.

Phase I Habitat Assessment USFWS Data Sheet

Location Rt219 BCM 2005-27

Observers (include permit numbers) Todd Sinnadar

Latitude (WGS84) 39.743311° **Longitude**[82] -79.056614°

Date 2/23/23 **Time** 12:20 **Temp (outside)** 61.9°F

	Opening #1	Opening #2	Opening #3	Opening #4
Opening Type (e.g., cave, portal, shaft)	Cave			
Opening vertical or horizontal	Horizontal			
Opening Size: Height x Width (or Diameter)	5'X12'			
Internal Dimensions: Height x Width	Similar			
Slope (up or down from entrance)	Down			
Entrance Stable?	Yes			
Direction of Airflow (In or out?)	Out			
Amount of Airflow (e.g., none, slight, heavy)	Slight			
Internal air warmer or cooler than outside temp.?	Cooler			
Evidence of collapse?	No			
Ceiling Condition	Good			
Amount of water in opening	Ice/No water			
Evidence of past flooding?	No			
Observed length of internal passage	~50'			
Distance to nearest water source	~30'			
% Canopy Cover at entrance	100%			
Foraging Signs? (e.g., moth wings)	NO			

Are any portals suspected or known to be connected? Which ones?
No

Any observable side passages? No

Additional comments:
Small amount of ice at entrance. Water dripping from walls & ceiling. Temp inside entrance = 45.7°F

Entry of abandoned mine portals, quarries, or caves can be extremely dangerous because of the potential for ceiling collapse and presence of toxic gases. Safety or health problems may occur as a result of entering abandoned mines. The FWS does not authorize or require anyone to enter any potential hibernaculum that is or could be unsafe while implementing surveys. These guidelines do not require any applicant or applicant employee, consultant, lessee, or other such designee to enter any cave, quarry, or mine portal.

[82] Provide coordinates for each opening.

Phase I Habitat Assessment USFWS Data Sheet

Location Rt219 BCM 2005-28

Observers (include permit numbers) Todd Sinander

Latitude (WGS84) 39.745696° **Longitude**[82] -79.055679°

Date 2/23/23 **Time** 12:05 **Temp (outside)** 61.9°F

	Opening #1	Opening #2	Opening #3	Opening #4
Opening Type (e.g., cave, portal, shaft)	Cave			
Opening vertical or horizontal	horizontal			
Opening Size: Height x Width (or Diameter)	3'x8'			
Internal Dimensions: Height x Width	Wider			
Slope (up or down from entrance)	Down			
Entrance Stable?	NO			
Direction of Airflow (In or out?)	None			
Amount of Airflow (e.g., none, slight, heavy)	None			
Internal air warmer or cooler than outside temp.?	Cooler			
Evidence of collapse?	Yes			
Ceiling Condition	Stable			
Amount of water in opening	None			
Evidence of past flooding?	No			
Observed length of internal passage	~50'			
Distance to nearest water source	75'			
% Canopy Cover at entrance	100			
Foraging Signs? (e.g., moth wings)	No			

Are any portals suspected or known to be connected? Which ones?
No

Any observable side passages? No

Additional comments: Water flowing down both North + South walls inside cave (~20') Temp just inside entrance = 45.7°F

Entry of abandoned mine portals, quarries, or caves can be extremely dangerous because of the potential for ceiling collapse and presence of toxic gases. Safety or health problems may occur as a result of entering abandoned mines. The FWS does not authorize or require anyone to enter any potential hibernaculum that is or could be unsafe while implementing surveys. These guidelines do not require any applicant or applicant employee, consultant, lessee, or other such designee to enter any cave, quarry, or mine portal.

[82] Provide coordinates for each opening.

Phase I Habitat Assessment USFWS Data Sheet

Location Rt 219 BCM 2014-01

Observers (include permit numbers) Todd Sinnicker

Latitude (WGS84) 39.748539° **Longitude**[82] -79.054863°

Date 2/23/23 **Time** 12:55 **Temp (outside)** 61.9°F

	Opening #1	Opening #2	Opening #3	Opening #4
Opening Type (e.g., cave, portal, shaft)	Sinkhole			
Opening vertical or horizontal	Vertical			
Opening Size: Height x Width (or Diameter)	1.5' diam.			
Internal Dimensions: Height x Width	Longer			
Slope (up or down from entrance)	Down			
Entrance Stable?	No			
Direction of Airflow (In or out?)	—			
Amount of Airflow (e.g., none, slight, heavy)	None			
Internal air warmer or cooler than outside temp.?	Cooler			
Evidence of collapse?	No			
Ceiling Condition	Unk			
Amount of water in opening	Drips			
Evidence of past flooding?	Yes			
Observed length of internal passage	No			
Distance to nearest water source	900'			
% Canopy Cover at entrance	100			
Foraging Signs? (e.g., moth wings)	No			

Are any portals suspected or known to be connected? Which ones? No

Any observable side passages? No

Additional comments: ~1' into the entrance the temp: 49.1°F

Entry of abandoned mine portals, quarries, or caves can be extremely dangerous because of the potential for ceiling collapse and presence of toxic gases. Safety or health problems may occur as a result of entering abandoned mines. The FWS does not authorize or require anyone to enter any potential hibernaculum that is or could be unsafe while implementing surveys. These guidelines do not require any applicant or applicant employee, consultant, lessee, or other such designee to enter any cave, quarry, or mine portal.

[82] Provide coordinates for each opening.

Phase I Habitat Assessment USFWS Data Sheet

Location Rt 219 - Salisbury Mine - Cave

Observers (include permit numbers) Todd Sinander, Ken Gearhart, Daniel Merrill

Latitude (WGS84) 39.732261 **Longitude**[82] -79.050730

Date 2/16/2023 **Time** 10:00 **Temp (outside)** 46.2°

	Opening #1	Opening #2	Opening #3	Opening #4
Opening Type (e.g., cave, portal, shaft)	Portal	Shaft		
Opening vertical or horizontal	horizontal	Virticle?		
Opening Size: Height x Width (or Diameter)	8' x 18'	16" x 16"		
Internal Dimensions: Height x Width	Larger	—		
Slope (up or down from entrance)	up	Down		
Entrance Stable?	Yes	No		
Direction of Airflow (In or out?)	Out	OUT		
Amount of Airflow (e.g., none, slight, heavy)	Slight	Heavy		
Internal air warmer or cooler than outside temp.?	Cooler	COOLER		
Evidence of collapse?	Yes	Yes		
Ceiling Condition	unstable	—		
Amount of water in opening	None	None		
Evidence of past flooding?	No	No		
Observed length of internal passage	>100'	—		
Distance to nearest water source	350'	200'		
% Canopy Cover at entrance	70%	20%		
Foraging Signs? (e.g., moth wings)	No	No		

Are any portals suspected or known to be connected? Which ones? yes, opening #1 & #2.

Any observable side passages? Yes, at least 2

Additional comments: Temperature at Primary Mine entrance (opening #1) is 43.1°F. Temperature at Salisbury Mine 2 (#2 opening) was 41.2°F. Location at opening #2: 39.732095°, -79.051288°

Entry of abandoned mine portals, quarries, or caves can be extremely dangerous because of the potential for ceiling collapse and presence of toxic gases. Safety or health problems may occur as a result of entering abandoned mines. The FWS does not authorize or require anyone to enter any potential hibernaculum that is or could be unsafe while implementing surveys. These guidelines do not require any applicant or applicant employee, consultant, lessee, or other such designee to enter any cave, quarry, or mine portal.

[82] Provide coordinates for each opening.

Phase I Habitat Assessment USFWS Data Sheet

Location Rt 219 BCM 2023-01

Observers (include permit numbers) Todd Sinander, Ken Gearhart, Daniel Merrill

Latitude (WGS84) 39.743505 **Longitude**[82] 79.051612

Date 2/15/2023 **Time** 16:40 **Temp (outside)** 63.8 °F

	Opening #1	Opening #2	Opening #3	Opening #4
Opening Type (e.g., cave, portal, shaft)	Cave	Cave		
Opening vertical or horizontal	Horizontal	Horizontal		
Opening Size: Height x Width (or Diameter)	18" x 4'	4' x 6'		
Internal Dimensions: Height x Width	5' x 3'	4' x 6'		
Slope (up or down from entrance)	Down	Down		
Entrance Stable?	Yes	Yes		
Direction of Airflow (In or out?)	Out	Out		
Amount of Airflow (e.g., none, slight, heavy)	Slight	Slight		
Internal air warmer or cooler than outside temp.?	Cooler	Cooler		
Evidence of collapse?	NO	Yes		
Ceiling Condition	Stable	Stable		
Amount of water in opening	None	Dripping		
Evidence of past flooding?	None	None		
Observed length of internal passage	15'	6'		
Distance to nearest water source	950'	950'		
% Canopy Cover at entrance	90%	100%		
Foraging Signs? (e.g., moth wings)	NO	NO		

Are any portals suspected or known to be connected? Which ones?
Yes / Each Cave has multiple holes around them that may be connected.

Any observable side passages? Especially #1 & #2
Yes

Additional comments:

- Temp cold within the opening of #1 (34.5°F) & #2 (35.6°F)
- Roughly 6 openings ranging from 15" x 15", 5' x 18", to 6' x 4'
- Openings #2: 39.743493°, -79.051707° Unsure if any openings are connected.

Entry of abandoned mine portals, quarries, or caves can be extremely dangerous because of the potential for ceiling collapse and presence of toxic gases. Safety or health problems may occur as a result of entering abandoned mines. The FWS does not authorize or require anyone to enter any potential hibernaculum that is or could be unsafe while implementing surveys. These guidelines do not require any applicant or applicant employee, consultant, lessee, or other such designee to enter any cave, quarry, or mine portal.

There was some ice at the entrance to one of the small holes that were probably not not connected to Opening #1 or #2. No passage beyon hole and no air flow.

[82] Provide coordinates for each opening.

Phase I Habitat Assessment USFWS Data Sheet

Location Rt219 BCM 2023-02

Observers (include permit numbers) Todd Snyder, Ken Gearhart, Daniel Merrill

Latitude (WGS84) 39.733517 **Longitude**[82] -79.060108

Date 3/2/23 **Time** 12:35 **Temp (outside)** 51.3°F

	Opening #1	Opening #2	Opening #3	Opening #4
Opening Type (e.g., cave, portal, shaft)	Cave			
Opening vertical or horizontal	Vertical			
Opening Size: Height x Width (or Diameter)	2.5' x 1.5'			
Internal Dimensions: Height x Width	5' x 2'			
Slope (up or down from entrance)	Down			
Entrance Stable?	yes			
Direction of Airflow (In or out?)	out			
Amount of Airflow (e.g., none, slight, heavy)	slight			
Internal air warmer or cooler than outside temp.?	Cooler			
Evidence of collapse?	No			
Ceiling Condition	good			
Amount of water in opening	None			
Evidence of past flooding?	No			
Observed length of internal passage	~6'			
Distance to nearest water source	930'			
% Canopy Cover at entrance	100%			
Foraging Signs? (e.g., moth wings)	No			

Are any portals suspected or known to be connected? Which ones? There are many small cracks (<0.5") and crevices that lead outside from this cave.

Any observable side passages? No

Additional comments: Temp ~2' inside = 35.1°F. Large outcrop on an east facing slope within a deciduous forest. There was ice on the floor of cave just inside entrance.

Entry of abandoned mine portals, quarries, or caves can be extremely dangerous because of the potential for ceiling collapse and presence of toxic gases. Safety or health problems may occur as a result of entering abandoned mines. The FWS does not authorize or require anyone to enter any potential hibernaculum that is or could be unsafe while implementing surveys. These guidelines do not require any applicant or applicant employee, consultant, lessee, or other such designee to enter any cave, quarry, or mine portal.

[82] Provide coordinates for each opening.

219 Meyersdale to Old Salisbury Rd

Terrestrial Habitat Assessment

July 2023

US 6219, Section 050
Transportation Improvement Project
Meyersdale, PA to Old Salisbury Road, MD

pennsylvania
DEPARTMENT OF TRANSPORTATION

MDOT
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

Table of Contents

1.0 INTRODUCTION

1.1 Project History

The "US 219, I-68 (Maryland) to Somerset, Pennsylvania Needs Analysis", prepared by the Pennsylvania Department of Transportation (PennDOT) in 1999, identified two projects with independent utility and logical termini on US 219. These projects were: US 219, Section 019 (currently Section 050) (from I-68 in Maryland to the southern terminus of the Meyersdale Bypass in Pennsylvania) and US 219, Section 020 (from the northern terminus of the Meyersdale Bypass to Somerset, Pennsylvania).

Preliminary engineering and work towards a Draft Environmental Impact Statement (DEIS) for US 219, Section 019, originally began in 2001 by PennDOT and the Maryland Department of Transportation/ Maryland State Highway Administration (MDOT/SHA) but was put on hold in 2007 due to funding constraints. Since that time, PennDOT has completed construction of US 219, Section 020, Meyersdale to Somerset, which opened to traffic in 2018.

The US 219, Section 020 project involved construction of a new 11 mile, four-lane, limited access roadway extending from the northern end of the Meyersdale Bypass of US 219 (a four-lane limited access roadway) to the southern end of the existing four-lane limited access US 219, south of Somerset.

The US 219 Section 050 project was re-started in 2014 as a Planning and Environmental Linkage (PEL) study. The study was completed in July 2016 and recommended two alignments that could move forward into the National Environmental Policy Act (NEPA) process: Alignments E and E-Shift. The PEL study also identified an independent, stand-alone breakout project within these two alignments in Maryland: from I-68 to Old Salisbury Road. This 1.4 mile project was advanced, and construction was completed in 2021.

1.2 Study Area Description and Location

This project was re-started in 2020 and includes the proposed construction of an eight mile (six miles in Pennsylvania and two miles in Maryland) four-lane limited access facility on new alignment from the end of the Meyersdale Bypass in Somerset County, Pennsylvania to the newly constructed portion of US 219 in Garrett County, Maryland.

The study area extends approximately eight miles from the southern end of the Meyersdale Bypass in Somerset County, Pennsylvania south to US 40 in Garrett County, Maryland. The study area encompasses portions of Elk Lick and Summit Townships in Somerset County, Pennsylvania, and the northeastern corner of Garrett County, Maryland. The Borough of Salisbury, Pennsylvania is also located within the central portion of the study area, as shown in Appendix A: Project Location Map. The study area is mostly rural, with residential and small commercial facilities, as well as larger amounts of forested areas and farmland.

This terrestrial habitat assessment was a joint effort between RETTEW and the Markosky Engineering Group, Inc. (Markosky). Markosky performed the habitat assessment of the Pennsylvania portions of the alignment and RETTEW performed the habitat assessment of the Maryland portions, following each state's respective guidance and accepted methodologies.

1.3 Project Purpose & Need

The purpose of the US 219 Section 050 Meyersdale to Old Salisbury Road project is to complete Corridor N of the Appalachian Development Highway System (ADHS), to improve the system linkage in the region, provide safe and efficient access for motorists, and provide a transportation infrastructure to support economic development within the Appalachian Region.

The project needs identified for this project are that existing US 219 does not provide efficient mobility for trucks and freight, there are numerous roadway and geometric deficiencies present along the existing US 219 alignment, and the existing roadway infrastructure is a limiting factor in economic development opportunities in the Appalachian Region.

2.0 DETAILED ALTERNATIVES

2.1 Segment Overview

The proposed project alternatives have been divided into three segments; Segment 1, Segment 2, and Segment 3. Segment 1 is also known as Segment 1 DU-E. Segment 2 has segment options, Segment 2 DU and Segment 2 E, and Segment 3 has two segment options, Segment 3 DU-E and Segment 3 DU-E Shift. When combined, these segments make up the four alternatives under consideration. These four alternatives, along with the No Build Alternative, are being evaluated for the project. A map depicting the segments is included in Appendix B: Detailed Alternatives Mapping. The alternatives under consideration include:

No Build Alternative

Segment 1 DU-E + Segment 2 DU + Segment 3 DU-E

Segment 1 DU-E + Segment 2 DU + Segment 3 DU-E Shift

Segment 1 DU-E + Segment 2 E + Segment 3 DU-E

Segment 1 DU-E + Segment 2 E + Segment 3 DU-E Shift

Segment 1 DU-E, Segment 2 DU, Segment 2 E, Segment 3 DU-E, and Segment 3 DU-E Shift are each being evaluated with a consistent roadway layout, also known as a typical section. The typical section for each segment provides a four-lane divided limited access highway with 12 feet wide travel lanes, 8 feet wide inside shoulders, and 10 feet wide outside shoulders. The width of the median between the inside edges of northbound and southbound travel lanes is 60 feet. In cut sections, where excavation will be required for construction, a proposed swale is located 15 feet outside the edge of the roadway shoulder. The backslope of the swale extends for 5 feet at a 4:1 slope, then continues at a 2:1 slope, until intersecting the existing ground. In fill sections, where fill must be placed for construction, a 10:1 slope extends from the outside roadway shoulder for 6 feet, then continues at a 2:1 slope until intersecting existing ground.

2.2 No Build Alternative

The No Build Alternative involves taking no action, except routine maintenance, along US 219. The existing two-lane alignment of US 219 between Meyersdale, Pennsylvania and Garrett County, Maryland would remain. No new alignments or additional roadway would be constructed. The No Build Alternative does not meet the approved Purpose and Need for the project.

2.3 Segment 1 DU-E

Segment 1 DU-E is a three mile portion of the proposed alternative, beginning in the northern end of the study area, at the existing Meyersdale interchange. The segment includes portions of the existing US 219 roadway and the surrounding area, including

along Mountain Road and Hunsrick Road. The segment continues to the south of Hunsrick Road, where it diverges from existing US 219 and crosses Clark Road. The segment then turns slightly west, minimizing impacts to the Pennsylvania State Gamelands 231. The segment then traverses along the bottom of Meadow Mountain. Stormwater management facilities have also been incorporated into the design.

As part of this segment, portions of several local roadways will be improved. These local improvements include: Improvements to the existing US 219 roadway (Mason-Dixon Highway), Hunsrick Road Extension, Mountain Road, and Clark Road. These are proposed as part of the construction of Segment 1 DU-E. These improvements are intended to ensure that local traffic has continued access. The scope of these proposed improvements is outlined below.

2.3.1 Mason-Dixon Highway

The Mason-Dixon Highway (T-355) will be improved between Hunsrick Road and the US 219 Meyersdale Interchange in accordance with PennDOT's Resurfacing, Restoration, and Rehabilitation (3R) design criteria, using a design speed transfer from 55 MPH to 35 MPH. The improvement corridor is roughly 1.3 miles in length, starting at the south near Hunsrick Road and ending at the US 219 Meyersdale Interchange.

Prior to the opening of the Meyersdale Bypass, Mason-Dixon Highway carried US 219. After the Meyersdale Bypass opened, PennDOT transferred ownership and maintenance of Mason-Dixon Highway to Summit Township. Following completion of the new US 219 alternative, ownership of Mason-Dixon Highway is to be transferred back to PennDOT as part of re-routed traffic patterns in the area.

2.3.2 Hunsrick Road Extension

Improvements made to tie the new US 219 alternative into existing US 219 necessitates the removal of the existing Hunsrick Road Bridge (SR 2102). Due to geometric and intersection sight distance constraints at the intersection of Hunsrick Road (T-355) and Mason-Dixon Highway (T-355), it was determined not to replace the Hunsrick Road Bridge and terminate Hunsrick Road on the east side of US 219.

As a result of the Hunsrick Road Bridge removal, a new roadway will be constructed; identified as the Hunsrick Road Extension. This new roadway will connect existing Hunsrick Road with Fike Hollow Road (T-363) and generally runs parallel to the new US 219 alternative along the eastern side. This new connector roadway will provide access from Hunsrick Road to US Business Route 219 (SR 2047) near the Meyersdale Interchange.

The proposed typical section for Hunsrick Road Extension includes 2- 10 feet travel lanes and 4 feet outside shoulders. The design speed is anticipated to be 25 miles per hour.

2.3.3 Mountain Road

Mountain Road (T-824) currently extends north from the intersection with Hunsrick Road to a cul-de-sac adjacent to existing US 219. With the associated improvements of the

Hunsrick Road Extension, the northern end of Mountain Road will be connected to Hunsrick Road Extension and the existing cul-de-sac will be removed. The existing intersection of Mountain Road with Hunsrick Road will be maintained.

To avoid the steep grade (14%) on the existing Mountain Road, a portion of Mountain Road is to be closed to traffic. Access to property along Mountain Road will be maintained and cul-de-sacs will be placed where the road will be closed. As noted above, the northern segment of Mountain Road will be accessible from the Hunsrick Road Extension while the southern segment of Mountain Road will be accessible from the existing intersection with Hunsrick Road.

2.3.4 Clark Road

Clark Road (T-353) extends west from Mountain Road (T-824) to existing US 219. Due to topographical and geometric constraints, providing a grade separated crossing of the new US 219 alternative was not practical. It was determined Clark Road should be bisected where it crosses the new alternative of US 219. A cul-de-sac will be placed at each end of the roadway where it intersects the US 219 right-of-way. The eastern side of Clark Road will maintain access to US Business Route 219 near the Meyersdale Interchange via Mountain Road, Hunsrick Road Extension, and Fike Hollow Road.

2.4 Segment 2 DU

Segment 2 DU turns west from Segment 1 DU-E, towards existing US 219 (Mason-Dixon Highway), and is sited between existing US 219 and Segment 2 E for about three miles. Segment 2 DU runs west across Piney Run Road and Piney Creek until it crosses Greenville Road, about 0.5 miles southeast of Salisbury Borough, and turns south. Segment 2 DU rejoins Segment 2 E at the Pennsylvania/Maryland border. From the Pennsylvania/Maryland border, Segment 2 DU and Segment 2 E continue south and west towards existing US 219. About 0.1 mile north of the Pennsylvania/Maryland border, there are preliminary plans for a PennDOT maintenance facility along Segment 2 DU, on the western side of the proposed US 219 alternative, with access to US 219 from the southbound lanes. Stormwater management facilities have also been incorporated into the design as appropriate.

2.5 Segment 2 E

After separating from Segment 1 DU-E, Segment 2 E continues southwest for approximately one mile before spanning Piney Run Road. As Segment 2 E crosses Piney Creek and Greenville Road, it continues west towards existing US 219 and Segment 2 DU for 1.3 miles. Subsequently, Segment 2 E rejoins Segment 2 DU at the Pennsylvania/Maryland border. Segment 2 E and Segment 2 DU follow approximately the same path for approximately 0.8 miles, from the Pennsylvania/Maryland border until the beginning of Segment 3. Approximately 0.1 mile north of the Pennsylvania/Maryland border, there are preliminary plans for a PennDOT maintenance facility along Segment 2 E, along the eastern side of the proposed alternative, with access to US 219 from the

northbound lanes. Stormwater management facilities have also been incorporated into the design.

2.6 Segment 3 DU-E

Segment 3 DU-E continues the proposed alternative south of the Pennsylvania/ Maryland border and ties back into the newly constructed section of US 219, south of Old Salisbury Road. The Segment 3 DU-E alternative is located approximately 0.05 miles east of Old Salisbury Road.

2.7 Segment 3 DU-E Shift

Segment 3 DU-E Shift is situated slightly southwest of Segment 3 DU-E. This segment ties into the newly constructed section of US 219 at the same location as Segment 3 DU-E. However, Segment 3 DU-E Shift is shifted slightly eastward, farther from Old Salisbury Road. This shift avoids or minimizes impacts to the Little Meadows Historic District to the extent possible.

3.0 PENNSYLVANIA METHODOLOGY

3.1 Anderson Method

A Land Use and Land Cover Classification System for Use with Remote Sensor Data (Anderson, et. al., 1976) (Anderson) was utilized to classify habitat units in the project area. The Anderson Method allows for classification to four levels of detail, Level I being the least detailed and Level IV being the most detailed. The target of this study was to classify terrestrial habitat in the study area to a Level III. The Land Use Classification types identified within the study area are shown in Table 1: Anderson Land Use Classifications.

This method begins with an identification of land cover types within the study area utilizing readily available aerial photography. For this study, the ESRI World Imagery aerial photography dated October 24, 2022 was used. Land cover types were classified to Level II utilizing aerial photography and a draft Anderson terrestrial habitat map was created. This map was utilized by field crews for a ground truthing. Field crews then walked the project area to confirm the Level II classifications and further classify the habitats within the study area to a Level III classification. Field work was conducted on numerous days between the spring of 2022 and spring of 2023. The results of the field investigations and land cover classifications were then used to develop final Level III Anderson mapping.

3.2 Fike Method

Terrestrial and palustrine plant communities of Pennsylvania (Fike, 1999) method was used for the second part of the terrestrial habitat assessment. Markosky environmental scientists utilized the methodologies described in this classification method to identify different plant communities within the project study area. The Fike method divides the state into 11 Ecological Regions of Pennsylvania. The project site is located within the Western Allegheny Mountains region. The differing plant communities were recorded with GPS survey technology with sub-meter accuracy and recorded on hard copy field maps. Finally, a specific habitat type appropriate for the region was assigned to each area.

3.3 Wildlife Crossing Study

The scope of this project also called for the identification of well used wildlife trails. The wildlife trail information will be used to determine the appropriate placement of wildlife highway crossing structures along the alignment. During field reconnaissance, any highly used wildlife trails, scat, etc, which were observed, were located with GPS. To better help evaluate the best potential wildlife crossing areas, only highly used wildlife trails were delineated. Additional field visits to the site also took place after prolonged snow cover which allowed for easier identification of well used trails in the winter months. These GPS points along with field notes were used to create a wildlife trail drawing (Appendix E).

4.0 MARYLAND METHODOLOGY

4.1 Regulatory Context and Methods- Terrestrial Habitat

Terrestrial habitats identified within the project alternatives include forest land, agricultural land, and urban or built-up land. Wetlands exist within the project alternatives however they are discussed in the Wetland Identification and Delineation Report.

Forest land is the most common terrestrial habitat within the project alternatives boundaries. The Code of Maryland Regulations (COMAR) defines a forest as, "a biological community dominated by trees and other woody plants covering a land area of 10,000 square feet or greater. It includes areas that have at least 100 live trees per acre with at least 50 percent of those trees having a 2-inch or greater diameter at 4.5 feet above the ground and larger, and forest areas that have been cut but not cleared (8.19.03.01)." State Funded highway construction projects that involve cutting and clearing of forest land are regulated under the Maryland Reforestation Law, a regulation that protects Maryland's forests from removal without adequate replacement. If the total area of forest cut or cleared as a result of the project equals 1 acre or more, the constructing agency shall locate an equivalent area of State owner or other publicly owned land to be reforested. Replacement of forest land cleared for highway construction must be accomplished on an acre-for-acre, one to one ratio on public lands and within two years or three growing seasons of the completion of the project.

The detailed study area for the terrestrial habitat investigation consisted of the proposed limits of disturbance for the project alternatives. Vegetative communities within the study area were identified and mapped via aerial mapping using Anderson's Land Use and Land Cover Classification System for Use with Remote Sensor Data (Anderson et al., 1976) level II rationale. Terrestrial level II land use / land cover types that qualified as wildlife habitats included deciduous forestland, evergreen forestland, herbaceous rangeland, scrub/shrub rangeland, and agricultural land. As part of the study a review of historic aerial photographs was conducted to identify any historic changes in land use / land cover. Aquatic land use / land cover types were identified during the aquatic resources investigations and included on the terrestrial mapping. Urban built-up land was identified as part of this investigation but were not considered as wildlife habitat. Field verification was conducted to verify cover types and boundaries. Detailed forest stand data was collected within each forested cover type using randomly located 1/10-acre plots, with a minimum of one plot per 4-acres of forest stand area. The dominant and co-dominant tree species within each plot were recorded, including the total number dominant and codominant by species and the total number of trees per size class. Percent canopy closure was determined using a Model A spherical densiometer and basal area was determined using a 10x prism. Common understory species, herbaceous species, percent of invasive species, and successional stage were noted. Forest stand characterization datasheets are compiled in Appendix H, and representative photographs of each land use / land cover type are compiled in Appendix I.

Specimen trees, defined as those trees having a diameter at breast height (DBH) of 30 inches or greater, or trees having 75% or more of the diameter of the current state champion tree, were identified in the field, measured using a dbh tape, and located and mapped using a Global Positioning Survey (GPS) receiver.

Rangeland and cropland cover types were characterized based on dominant species. Field datasheets are compiled in Appendix H, and representative photographs of each compartment are compiled in Appendix I.

Common species of wildlife were identified in the field by visual sightings, songs, calls, tracks, and other marks or indicators (scat, nests, cavities, etc). A list of wildlife sightings, by compartment, is provided in Appendix J.

The presence of forest conservation easements was investigated through the Maryland iMAP ArcGIS Online for Maryland, Maryland Protected Act – Forest Conservation Easements dataset and the Maryland Department of Natural Resources (MD DNR), Maryland Environmental Resource & Land Information Network (MERLIN) online GIS system. No forest conservation easements were identified.

4.2 Regulatory Context and Methods- Terrestrial Wildlife

Terrestrial wildlife species in Maryland are regulated under several provisions. The protection of all migratory birds is governed by the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712), under which it is illegal to “take, kill, possess, transport, or import migratory birds or any part, nest, or egg of such bird: unless authorized by a valid permit (16 U.S.C. 703) A list of migratory birds protected by the MBTA is included in 50 CFR 10.13, and includes most species within Maryland. However, on December 22, 2017, the Solicitor of the Department of Interior issued Solicitor’s Memorandum M-37050 that declares that only activities deliberately intended to kill or take migratory birds may be subject of regulation or enforcement under the MBTA.

Although the bald eagle is no longer a listed species under the Endangered Species Act, it is still protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). The Bald and Golden Eagle Protection Act prohibits the take, possession, sale, purchase, barter, transport, export, or import of any bald or golden eagle (alive or dead), including any part, nest, or egg without a valid permit issued by the Secretary of the Interior (50 CFR 22.3). The Act prohibits disturbing any bald or golden eagle, which includes agitating or bothering “to a degree that causes, or is likely to cause, based on scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

Forest Interior Dwelling Bird Species (FIDS) are regulated as a protected resource within the Chesapeake Bay Critical Area (Critical Area) (COMAR 27.01.09.04). Although there are no Critical Areas within or near the US 219 Corridor, and FIDS are not specifically regulated outside of the Critical Area, MD DNR encourages avoidance of impacts to FIDS habitat throughout the state. FIDS habitat includes documented FIDS breeding areas

within existing riparian forests that are at least 300 feet in width and that occur adjacent to streams, wetlands, or the Chesapeake Bay shoreline, and other forest areas used as breeding areas by forest interior dwelling birds.

A detailed wildlife habitat study was conducted by L. Robert Kimball & Associates, Inc. and McCormick Taylor, Inc. for the US 219, Section 019 (Meyersdale, Pennsylvania to I-68 in Maryland) between 2003 and 2005. Data on types of wildlife habitats and likely and observed wildlife species from this study was reviewed and verified to still be applicable to the current overall project study area. Although direct and indirect observations of wildlife were noted during the terrestrial fieldwork conducted for the current US 219 Improvement Study, no additional specific field assessment of terrestrial wildlife was completed during the current study.

5.0 FINDINGS PENNSYLVANIA

5.1 Anderson Method

The completion of the Anderson Method with the alignment determined that nineteen (19) Anderson Level III habitat types are located within the proposed alignment. A summary of the total acreage of each is provided below.

Table 5.1: Anderson Land Use Classifications

Level 1	Level II	Level III	Acreage
1. Urban or Built-up Land	11. Residential	111. Single Family Units	37.8
	14. Transportation, Communications, and Utilities	141. Highway ROW	51.3
		145. Roadway ROW	13.2
		151. Commercial Complex	1.9
	17. Other Urban or Built-up Land	171. Sediment Pond (Water Control Structure)	0.7
2. Agricultural Land	21. Cropland and Pasture	212. Pastureland	2.2
		213. Hayfield	12.9
3. Rangeland	31. Herbaceous Rangeland	312. Early Succession Old Field	46.1
	33. Mixed Rangeland	331. Moderate- Dense	17.2
		332. Grazed or Thin	40.2
4. Forest Land	41. Deciduous Forest Land	415. Mature Stage, Shrub Moderate- Dense	178.1
		416. Mature Stage, Shrub Grazed or Shrub Sparse.	141.3
	42. Evergreen Forest Land	425. Mature Stage, Shrub Moderate- Dense	11.4
	43. Mixed Forest Land	435. Mature Stage, Shrub Moderate- Dense	217.6
		436. Mature Stage, Shrub Grazed or Shrub Sparse	116.4
5. Water	51. Streams and Canals	511. Streams	11.9
7. Barren Land	75. Strip Mines, Quarries, and Gravel Pits	751. Strip Mine Total	21.7
	76. Transitional Areas	761. Fill Slope Total	1.6
NA	Wetland	Wetland	17.5
		Total	**941.1**

Mapping showing the Anderson Level III classifications is included in Appendix C.

5.2 Fike Method

The completion of the Fike Method with the alignment determined that nine (9) Fike habitat types are located within the proposed alignment. A summary of the total acreage of each is provided below.

Table 5.2: Fike Classifications

Fike Habitat Type	Acreage
Aspen/ Gray (Paper) Birch Forest	1.2
Dry Oak- Heath Forest	49.8
Dry Oak- Mixed Hardwood Forest	152.4
Hemlock- Northern Hardwood Forest	51.3
NA* (No Fike Category)	258.9
Red Maple Terrestrial Forest	190.3
Red Maple Terrestrial/ Red Oak- Mixed Hardwood Forest	69.4
Red Oak- Mixed Hardwood Forest	150.3
Wetland	17.5
Total	**941.1**

* NA indicates that no applicable Fike Habitat category is available for these areas.

Mapping showing the Fike classifications is included in Appendix D.

5.3 Wildlife Crossing Evaluation

The evaluation of potential wildlife crossings in the Pennsylvania sections revealed a widespread variety of species and concentrations throughout the study area. Wildlife use of the entire project area is evident from observation of individuals and scat as well as through the observation of wildlife trails. Deer, bear, rabbit, fox, coyote, and raccoon track were the dominant species tracks observed during field work. Large portions of the study area are open forest and the concentration of wildlife trails is sporadic in these areas. Trails appear in confining areas such as rhododendron stands, steep valleys or along field edges only to dissipate as the trails return to open forests. The location of the heaviest wildlife trails are presented on Wildlife Crossing map in Appendix E.

6.0 FINDINGS MARYLAND

6.1 Existing Conditions Terrestrial Wildlife

The Maryland section of the project is located east of US 219 and north of US 40. Areas adjacent to US 219 and US 40 are dominated by residential, commercial, and institutional uses. As shown on the Anderson Terrestrial Habitat Mapping (Appendix C) the project alternatives are dominated by forests and managed agricultural fields. A review of historical aerial photographs from 1960 to 2017 revealed evidence of surface mining and logging throughout the study area from approximately 1967 through the mid-1990s. Review of the 2004, 2008, and 2013 aerial photographs showed that the study area looked much the same during those time periods as it did when fieldwork was conducted in summer of 2022 and the spring of 2023 (Appendix K).

The following non-habitat land use / land cover types were identified within the project alternatives: residential, commercial, and transportation/communication and are described below.

Residential/Commercial/Services (Anderson land cover classifications 111/151) – Residential, commercial, and service areas are located along US 219 on the southern portion of the project area. Residential areas consist of single-family homes with manicured lawns, landscape plantings, and small forest stands that do not meet the COMAR definition of a forest. One, small, commercial complex was identified on the west side of old US 219, as well as one service provider, the Cherry Grove Church of the Brethren, east of old US 219 and south of Old Salisbury Road. Residential/Commercial/ Services accounts for 3.8 acres within the detailed study area.

Transportation/Communication (Anderson land cover classification 141) – This cover type consists of the areas of old US 219, the newly constructed 4-lane US 219, and a cellular tower in the southern portion of the alternative alignments. Transportation/communication accounts for 19.9 acres within the detailed study area.

The following wildlife habitat land use / land cover types were identified within the project alternatives: agricultural cropland; herbaceous and shrub-brush rangeland; deciduous forestland, evergreen forestland, and mixed forestland and below is a brief description.

Agricultural (Anderson land cover classification 211 and 213) – Agricultural land is located throughout the study area, totals 78.6 acres and comprises approximately 43 percent of the detailed study area. These areas consist of active farmland and current crops include soybean, corn, oats, and hayfield.

Herbaceous Rangeland (Anderson land cover classification 312) – This land cover type is located in the central portion of the study area. The area is in a transitional state between a hayfield and an old field community and is dominated by naturally occurring grasses and forbs. This cover type consists of 0.8 acres within the study area and is dominated by grasses (*Poa spp.)*, goldenrods (*Solidago spp.)*, (*Cirseum spp.*) thistle, and

Queen Anne's lace (*Daucus carota*). Herbaceous rangeland comprises less than 1 percent of the detailed study area.

Shrub-Brush Rangeland (Anderson land cover classification 331) – This land cover type is in a transitional state between and old field and a pioneer forest and is located at the southern portion of the alternatives adjacent to the newly constructed 4-lane section of US 219. This cover type consists of 1.6 acres and includes naturally occurring grasses and forbs with patches of saplings throughout the area. The common tree saplings include red maple (Acer rubrum), green ash (Fraxinus pennsylvanica), black cherry (Prunus serotina), and Eastern white pine (pinus strobus). The herbaceous layer is comprised of grasses, goldenrods, and various other species. Shrub-brush rangeland comprises less than 1 percent of the detailed study area.

Forested land represents approximately 40 percent, 74.1 acres, and is the second highest percentage of land cover within the study area. Deciduous forestland accounts for 71.5 acres, mixed forestland accounts for 0.7 acres, and evergreen forestland accounts for 1.9 acres. Thirteen distinct Anderson land use / land cover compartments were identified within the alternative alignments, nine deciduous, three evergreen, and one mixed. In addition, 28 specimen trees were identified. These trees are mostly concentrated in the northern portion of the study area. Forest cover compartments are described below and the locations of compartments and specimen trees are located in Appendix C.

Compartment 416-1 is a deciduous forest stand consisting of 43.3 acres within the project alternatives. This stand is a Sugar Maple/Red Maple/Black Cherry Association located in the northern portion of the study area. This early-mid successional forest is dominated by sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), and black cherry (*Prunus* serotina) with inclusions of mockernut hickory (*Carya tomentosa*), yellow birch (*Betula alleghaniensis*), basswood (*Tilia americana*), and green ash (*Fraxinus pennsylvanica*). Canopy closure is approximately 85 percent and the dominant size class ranges from 2.5 to 20-inch DBH. The common understory species include sugar maple, red maple, spicebush (*Lindera benzoin*), and witch hazel (*Hamamelis virginiana*). Common species in the herbaceous layer include hay-scented fern (*Dennstaedtia punctiloba*), Christmas fern (*Polystichum acrostichoides*), wood nettle (*Laoprtea canadensis*), maple-leaf viburnum (*Viburnum acerifolium*), and jack-in-the-pulpit (*Arisaema triphyllum*). There was evidence of past logging and several trees have recently been girdled. The forest is in good condition and portions of this compartment are being used for maple syrup production. Invasives are minimal.

Compartment 416-2 is a deciduous forest stand consisting of 8.2 acres within the project alternatives. This stand is a Sugar Maple/Black Cherry Association and is located north of Old Salisbury Road. This early-mid successional forest is dominated by sugar maple and black cherry with inclusions of red oak (*Quercus rubra*) and cucumber tree (*Magnolia acuminata*). Canopy closure is approximately 80 percent and the dominant size class ranges from 2.5 to 20-inch DBH. The common understory species include sugar maple, striped maple (*Acer pensylvanicum*), and black cherry. Common species in the herbaceous layer include hay-scented fern, violets (*viola spp.*), zigzag goldenrod

(*Solidago flexicaulis*), sessile-leaf bellwort (*Uvularia sessilifolia*), wild yam (*Dioscorea villosa*), sedges (*Caerx spp*.), and jack-in-the-pulpit. The forest is in good condition and most of the trees are of the same size. Invasives are minimal.

Compartment 415-3 is a deciduous forest stand consisting of 13.1 acres within the project alternatives. This stand is a Sugar Maple/Black Cherry/Red Oak Association and is located east of Old Salisbury Road. This early successional forest was recently logged of oaks and cherry and is currently dominated by young sugar maple. Canopy closure is approximately 25 to 40 percent and the dominant size class ranges from 2 to 12-inch DBH. The common understory species include sugar maple, black gum (*Nyssa sylvatica*), yellow birch, and black birch (*Betula Lenta*). Common species in the herbaceous layer include intermediate wood fern (*Dryopteris intermedia*), Canada mayflower (*Maianthemum canadense*), blackberry (*Rubus spp.*), pokeweed (*Phytolacca americana*), and hay-scented fern. The forest is disturbed due to recent logging with piles of brush throughout. Invasives are minimal.

Compartment 415-5 is a deciduous forest stand consisting of 4.8 acres within the project alternatives. This stand is a Hawthorne/Black Locust Association and is located east of the new US 219 4-lane section on a hillslope. This mid-late successional forest is dominated by hawthorns and black locust with inclusions of black cherry and white ash. Canopy closure is approximately 75 to 90 percent and the dominant size class ranges from 2 to 30-inch DBH. The common understory species include Hawthorne (*Crataegus spp.*). Common species in the herbaceous layer include white snakeroot (*Ageratina altissima*), garlic mustard (*Alliaria petiolata*), goldenrod, Canada germander (*Teucrium canadense*), white aster (*Symphyotrichum ericoides*), and wild basil (*Clinopodium vulgare*). This compartment has had recent disturbance along the western edge by the building of the new 4-lane 219, however overall, the forest is in good condition with minimal invasives.

Compartment 415-6 is a deciduous forest stand consisting of 0.2 acres within the project alternatives. This stand is a Red Maple/Black Birch Association and is located at the southern portion of the alternative alignments east of the new US 219 4-lane section. This mid-late successional forest is dominated by red maple and black birch with inclusions of black cherry and green ash. Canopy closure is approximately 80 percent and the dominant size class ranges from 2 to 20-inch DBH. The common understory species include red maple, black birch, and Chinese privet (*Ligustrum sinense*) and covers approximately 50 percent of the understory. Common species in the herbaceous layer include green ash, bigleaf aster (*Eurybia macrophylla*), and multiflora rose (*Rosa multiflora*). The herbaceous layer is dense and covers approximately 90 percent of the ground. The forest is in good condition with minimal invasives.

Compartments 415-7 and 416-8 are deciduous forest stands consisting of 1.2 and 0.1 acres within the project alternatives. These stands are a Red Maple/Black Birch Association and are located at the southern portion of the alternative alignments east of the new US 219 4-lane section. This early-mid successional forests are dominated by red maple and black birch with inclusions of Hawthorne species and black cherry. Canopy

closure is approximately 77 percent and the dominant size class ranges from 2 to 20-inch DBH. The common understory species include red maple, Hawthorne species, and autumn olive (*Elaeagnus umbellate*) and covers approximately 44 percent of the understory. Common species in the herbaceous layer include Solidago species, grasses, and garlic mustard. The forest is in good condition with minimal invasives.

Compartments 416-9 and 416-10 are deciduous forest stands each consisting of 0.3 acres within the project alternatives. These stands are a Red Maple/Black Cherry Association and are located at the far eastern limits of the alternative alignments in the middle of the study area. These mid-late successional forests are dominated by red maple and black cherry with inclusions of Hawthorne species and black locust. Canopy closure ranges from 70 – 90 percent and the dominant size class ranges from 2 to 20-inch DBH. The common understory species include Hawthorne species, autumn olive, and rubus species and covers approximately 24 percent of the understory. Common species in the herbaceous layer include Solidago species, grasses, garlic mustard and stinging nettle (*Urtica dioica*). The forest is in good condition with minimal invasives.

Compartments 426-1, 426-2, and 426-3 are evergreen forest stands consisting of 0.9, 0.5, and 0.5 acres within the project alternatives. These stands are Eastern White Pine Associations and are located east of the new US 219 4-lane roadway on the north facing ridge slope. These late successional forests are dominated by eastern white pine (*Pinus* strobus) and Scots pine (*Pinus sylvestris*). Other species include black locust (*Robinia pseudoacacia*) and white ash although these areas are heavily dominated by pines. Canopy closure is approximately 80-85 percent and the dominant size class ranges from 2 to 30-inch DBH. The common understory species are minimal and include green ash, Hawthorne species, and black locust. Common species in the herbaceous layer include wood fern, spotted jewelweed (*Impatiens capensis*), green ash, goldenrod, aster, black raspberry (*Rubus occidentalis*), common burdock (*Arctium minus*), and garlic mustard. These areas had numerous standing dead trees and invasives are minimal.

Compartment 436-1 is a mixed forest stand consisting of 0.7 acres within the project alternatives. This stand is a Maple/Birch/Pine Association is located east of the new US 219 4-lane roadway on a south facing slope of the hillside. This early-mid successional forest is dominated by Scots pine, jack pine (*Pinus banksiana*), black birch, red maple, and black locust. Canopy closure is approximately 65-70 percent and the dominant size class ranges from 2 to 12-inch DBH. The common understory species include red maple, jack pine, eastern white pine, green ash, black locust, arrowwood (*Viburnum dentatum*), and black poplar (*Populus nigra*). Common species in the herbaceous layer include goldenrod, lowbush blueberry (*vaccinium angustifolium*), and aster. Herbaceous cover was between 81-100 percent. The forest is in good condition and no invasives were observed.

The table below provides a summary of the land use / land cover types within the study area.

Table 6.1: Anderson Land Use / Land Cover Type Summary

Level 1	Level II	Level III	Acreage
1. Urban or Built-up Land	11. Residential	111. Single Family Units	3.1
	14. Transportation, Communications, and Utilities	141. Highway ROW	19.9
		145. Roadway ROW	0.0
		151. Commercial Complex	0.8
	17. Other Urban or Built-up Land	171. Sediment Pond (Water Control Structure)	0.0
2. Agricultural Land	21. Cropland and Pasture	211. Cropland	47.9
		213. Hayfield	30.7
3. Rangeland	31. Herbaceous Rangeland	312. Early Succession Old Field	0.8
	33. Mixed Rangeland	331. Moderate- Dense	1.6
		332. Grazed or Thin	0.0
4. Forest Land	41. Deciduous Forest Land	415. Mature Stage, Shrub Moderate- Dense	19.4
		416. Mature Stage, Shrub Grazed or Shrub Sparse.	52.1
	42. Evergreen Forest Land	426. Mature Stage, Shrub Grazed or Shrub Sparse.	1.9
	. Mixed Forest Land	435. Mature Stage, Shrub Moderate- Dense	0.0
		436. Mature Stage, Shrub Grazed or Shrub Sparse	0.7
5. Water	51. Streams and Canals	511. Streams	1.0
7. Barren Land	75. Strip Mines, Quarries, and Gravel Pits	751. Strip Mine Total	0.0
	76. Transitional Areas	761. Fill Slope Total	0.0
NA	Wetland	Wetland	1.7
		Total	**181.5**

Specimen Trees

A total of 31 trees of specimen size were found within the study area during field reconnaissance. None of these trees are considered champion trees or are within 75 percent of the state champion tree for a given species. Specimen trees identified are summarized in Table 6.2 and located on Anderson Terrestrial Habitat Mapping located in Appendix C. A total of six different species were identified and the largest tree found was a sugar maple with a 48-inch DBH measurement. Photographs of specimen trees are located in Appendix L.

Table 6.2: Specimen Trees within the US 219 Study Alternatives

Common Name	Scientific Name	# of Specimen (≥30" DBH)	Compartment
Red Maple	Acer rubrum	4	416-1
Sugar Maple	Acer saccharum	13	416-1
Black Cherry	Prunus serotina	5	416-1
Northern Red Oak	Quercus rubra	6	111-1, 416-1
American Basswood	Tilia americana	1	416-1
Cucumber Tree	Magnolia acuminata	2	416-1
Total		31	

6.2 Existing Conditions Terrestrial Wildlife

Terrestrial wildlife expected within the project study area reflect the availability of various natural and man-modified habitats. The US 219 Improvement Project Maryland study area is dominated by forests and agricultural fields; however, residential lots are located directly along US 219 where the proposed alternatives tie into existing US 219. While many of the more natural areas remain forested, all the forested habitats have been fragmented by agricultural lands. Terrestrial habitats within the project corridor have not changed considerably since the earlier field studies, and the terrestrial habitats within the US 219 Improvement Project study area are representative of the habitats described for the previous US 6219, Section 019 Project. Appendix J provides a list of observed wildlife species encountered during the US 6219, Section 019 studies.

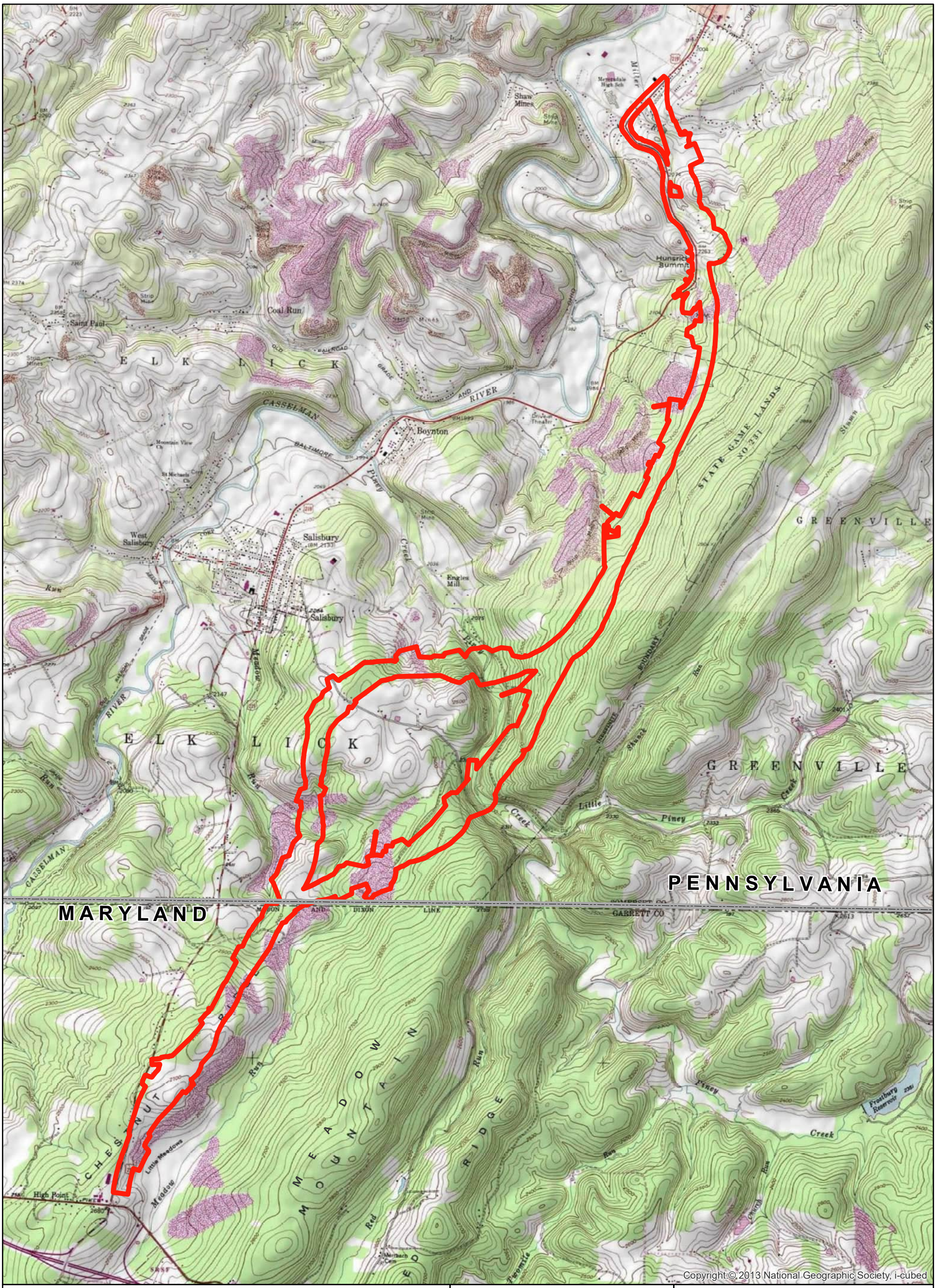
As noted in Section 6.1 above, the forested areas range from early successional to mid-late successional and contain varying levels of disturbance. Many of these forests are surrounded by agricultural fields and provide habitat for primarily edge adapted and disturbance tolerant wildlife species.

Less disturbed and larger contiguous forests can provide habitat for FIDS. DNR recognizes 25 species of FIDS in Maryland. FIDS require larger forest patches to successfully maintain viable populations. A review of the Maryland Living Resources – Forest Interior Dwelling Species ArcGIS Online indicates that potential FIDS habitat is present within the study area. This data is the result of modeling depicting where FIDS habitat might occur based on certain criteria and has not been field tested. Using ArcGIS,

a FIDS analysis for the project area was conducted by identifying interior forested areas that are 300 feet, or greater, from the nearest forest edge. This resulted in the identification of two potential areas located within compartment 416-1 (Appendix C). FIDS Area #1 is located just south of the Maryland/Pennsylvania line and the FIDS habitat consists of approximately 1.0 acre of deciduous forestland. FIDS Area #2 is located approximately 700 feet to the south and the FIDS habitat consists of approximately 8.0 acres of deciduous forestland.

APPENDIX A

PROJECT LOCATION MAP



Overall Study Area

State Boundary

N

Feet
0 1,000 2,000

Meters
0 300 600

219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX A

PROJECT LOCATION MAP

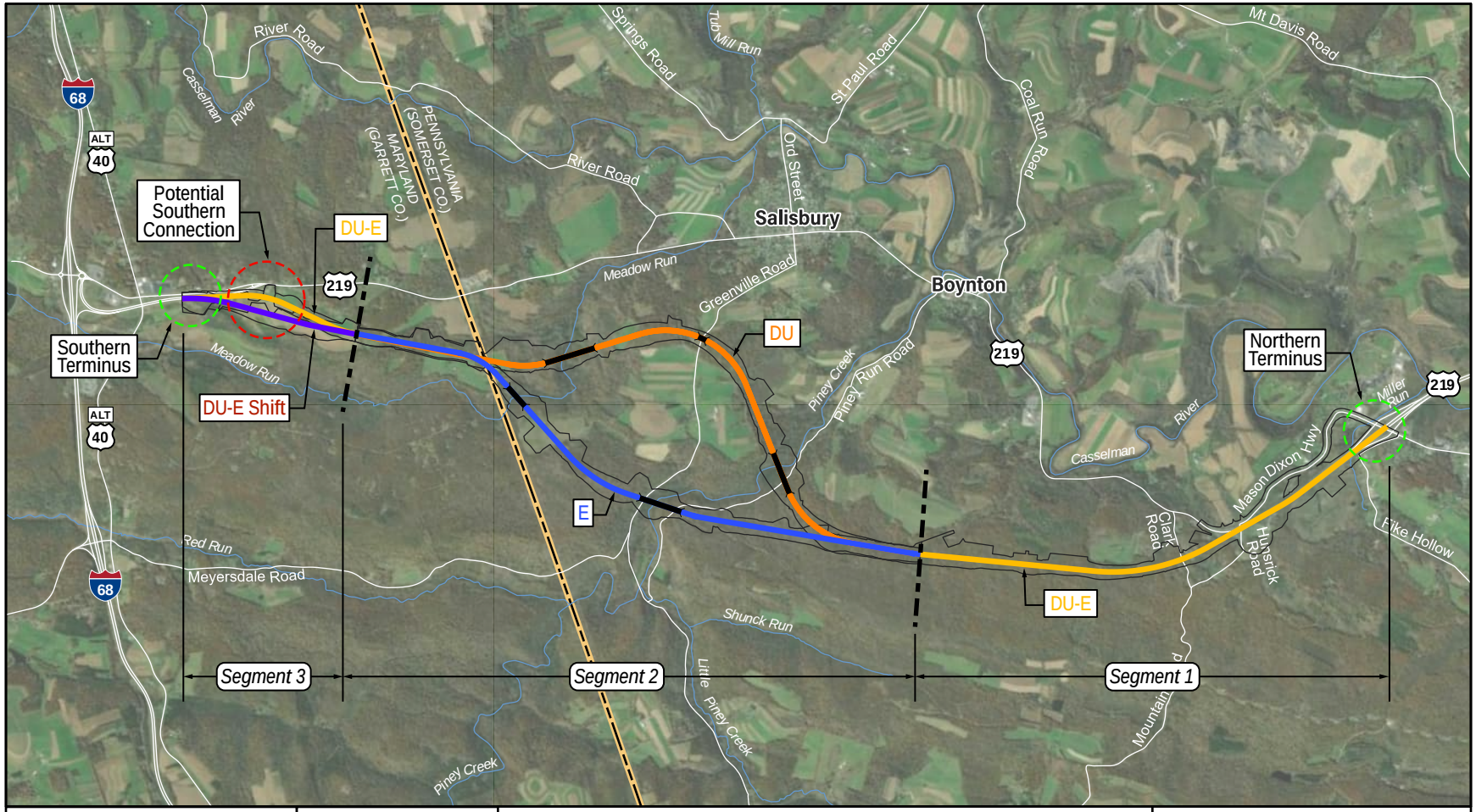
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

APPENDIX B

DETAILED ALTERNATIVES MAP



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

pennsylvania DEPARTMENT OF TRANSPORTATION

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

LEGEND

- Segment 1 - DU-E
- Segment 2 - E
- Segment 2 - DU
- Segment 3 - DU-E
- Segment 3 - DU-E Shift
- Segment Break
- Proposed Bridge
- Limit of Disturbance

APPENDIX B

DETAILED ALTERNATIVES MAPPING

N

Miles

0 0.2 0.4 0.8 1.2

APPENDIX C

ANDERSON TERRESTRIAL HABITAT MAPPING

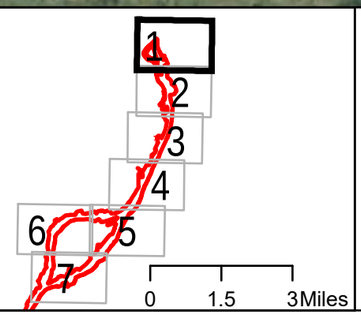
Color	Anderson Land Use/Land Cover		Description
	Level II	Level III	
Non-Habitat			
	11	111	Single-family Units
	14	141	Highway ROW
		142	Roadway ROW
	15	151	Commercial Complex
	17	171	Sediment Pond (Water Constrol Structure)
	75	751	Strip Mine
	76	761	Fill Slope
Wildlife Habitat			
	21	212	Agricultural - Pasture
		213	Agricultural - Hayfield
	31	312	Early succession old field
	33	331	33%+ intermixture, moderate - dense
		332	33%+ intermixture , grazed or thin
	41	414	Deciduous: pole stage, shrub sparse
		415	Deciduous: mature, shrub mod - dense
		416	Deciduous: mature, shrub grazed - sparse
	42	425	Evergreen: mature, shrub mod - dense
	43	435	Mixed; mature, shrub mod - dense
		436	Mixed: matue, shrub grazed - sparse
	51	511	Stream
	61	611	Wetland

N

Feet
0 500 1,000

Meters
0 150 300

Study Area



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

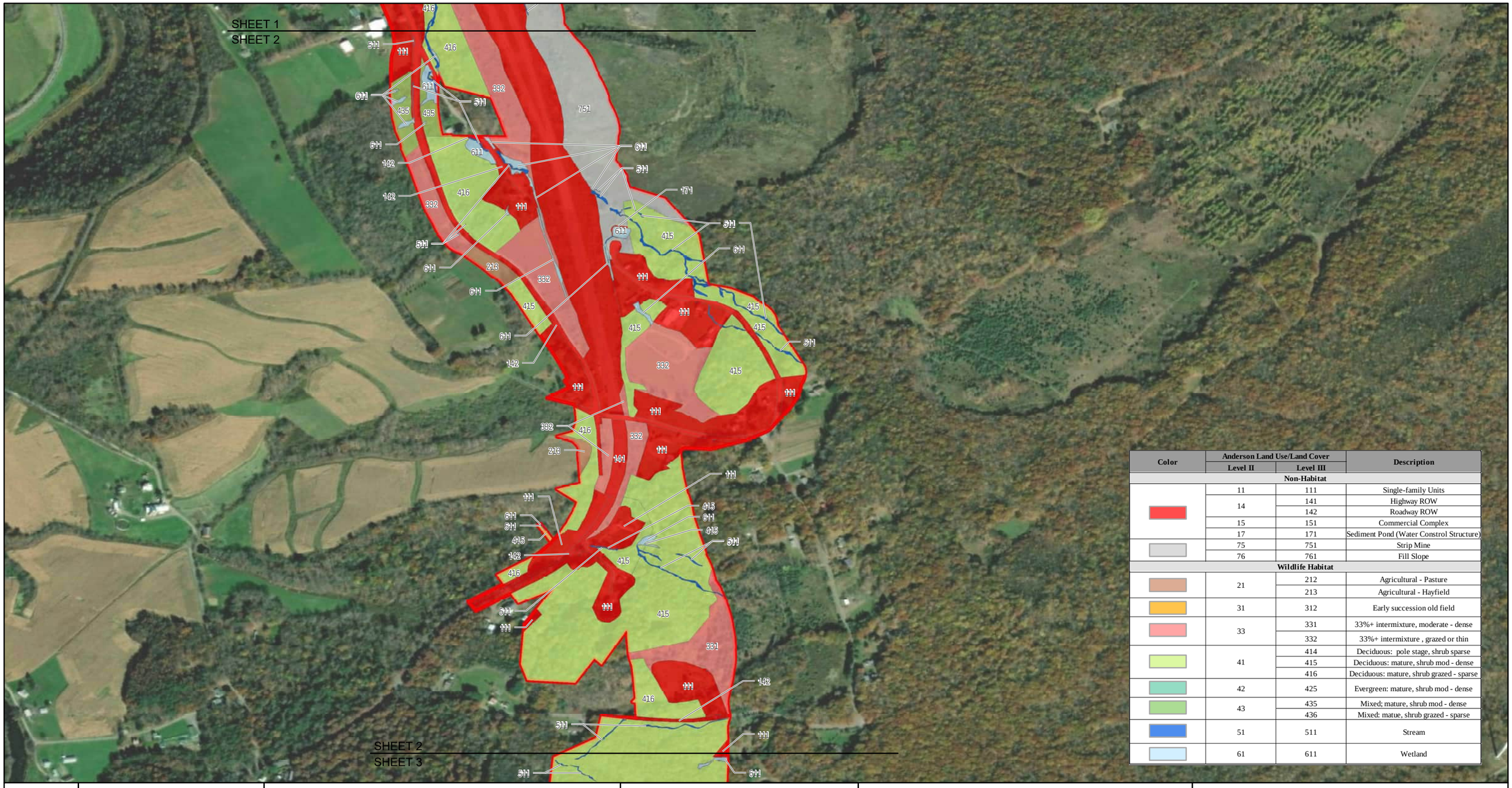
APPENDIX C
PENNSYLVANIA ANDERSON TERRESTRIAL HABITAT MAPPING

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/29/2023

Source: MARKOSKY



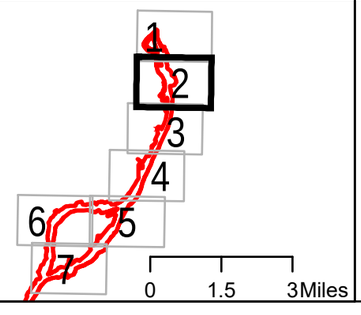
Color	Anderson Land Use/Land Cover		Description
	Level II	Level III	
Non-Habitat			
	11	111	Single-family Units
	14	141	Highway ROW
		142	Roadway ROW
	15	151	Commercial Complex
	17	171	Sediment Pond (Water Constrol Structure)
	75	751	Strip Mine
	76	761	Fill Slope
Wildlife Habitat			
	21	212	Agricultural - Pasture
		213	Agricultural - Hayfield
	31	312	Early succession old field
	33	331	33%+ intermixture, moderate - dense
		332	33%+ intermixture , grazed or thin
	41	414	Deciduous: pole stage, shrub sparse
		415	Deciduous: mature, shrub mod - dense
		416	Deciduous: mature, shrub grazed - sparse
	42	425	Evergreen: mature, shrub mod - dense
	43	435	Mixed; mature, shrub mod - dense
		436	Mixed: matue, shrub grazed - sparse
	51	511	Stream
	61	611	Wetland

N

Feet
0 500 1,000

Meters
0 150 300

Study Area



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

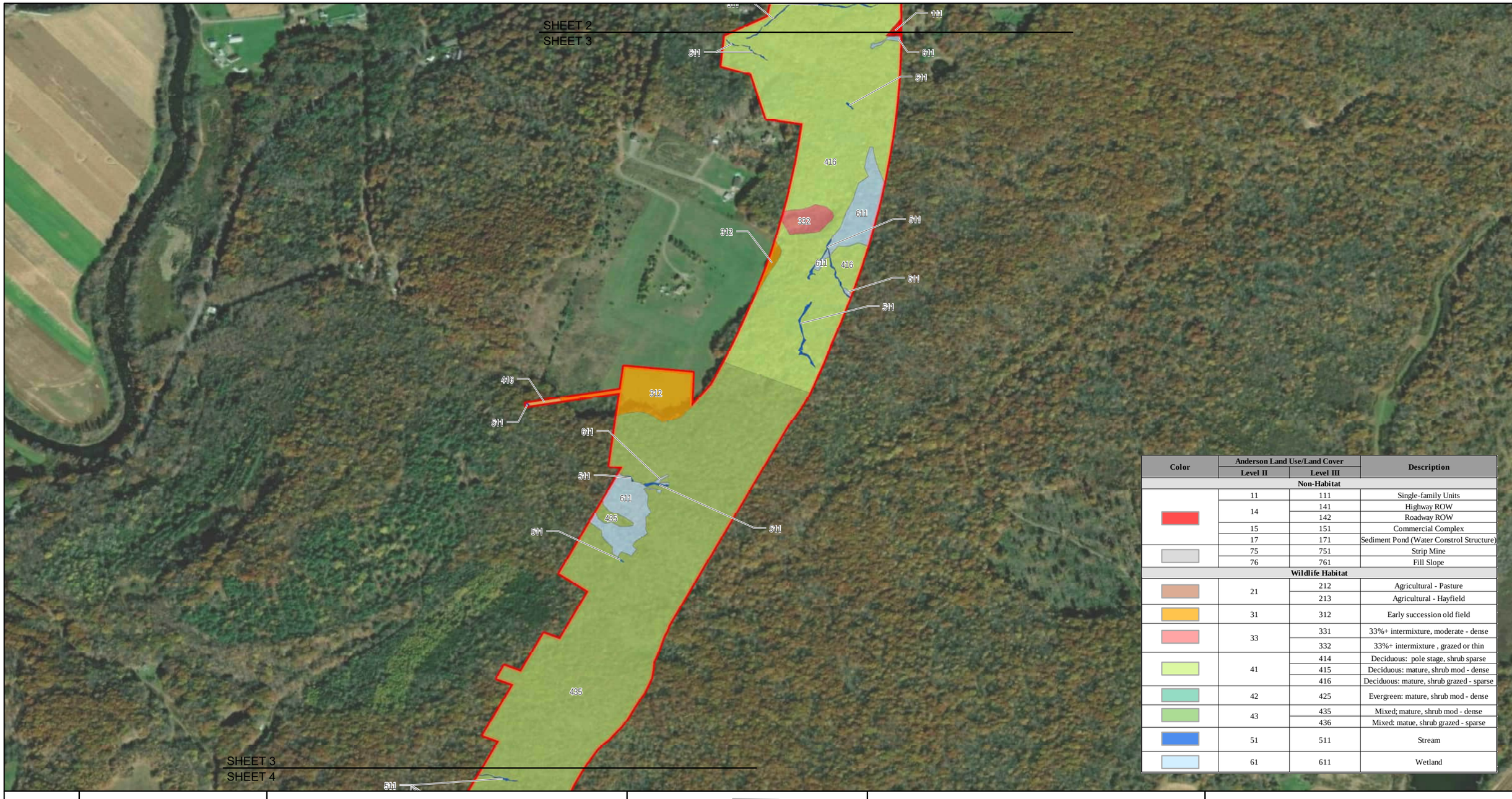
APPENDIX C
PENNSYLVANIA ANDERSON TERRESTRIAL HABITAT MAPPING

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/29/2023

Source: MARKOSKY



Color	Anderson Land Use/Land Cover		Description
	Level II	Level III	
Non-Habitat			
	11	111	Single-family Units
	14	141	Highway ROW
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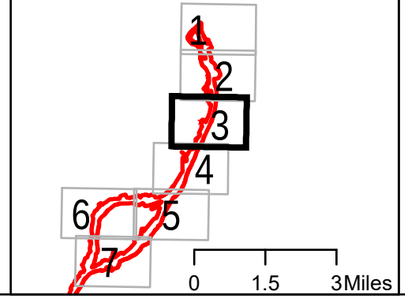
		436	Mixed: matue, shrub grazed - sparse
	51	511	Stream
	61	611	Wetland

N

Feet
0 500 1,000

Meters
0 150 300

Study Area



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX C
PENNSYLVANIA
ANDERSON TERRESTRIAL HABITAT MAPPING

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/29/2023

Source: MARKOSKY

SHEET 3

SHEET 4

SHEET 4

SHEET 5

Color	Anderson Land Use/Land Cover		Description
	Level II	Level III	
Non-Habitat			
	11	111	Single-family Units
	14	141	Highway ROW
		142	Roadway ROW
	15	151	Commercial Complex
	17	171	Sediment Pond (Water Constrol Structure)
	75	751	Strip Mine
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	51	511	Stream
	61	611	Wetland

N

Feet
0 500 1,000

Meters
0 150 300

Study Area

1 2 3 4 5 6 7
0 1.5 3 Miles

219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

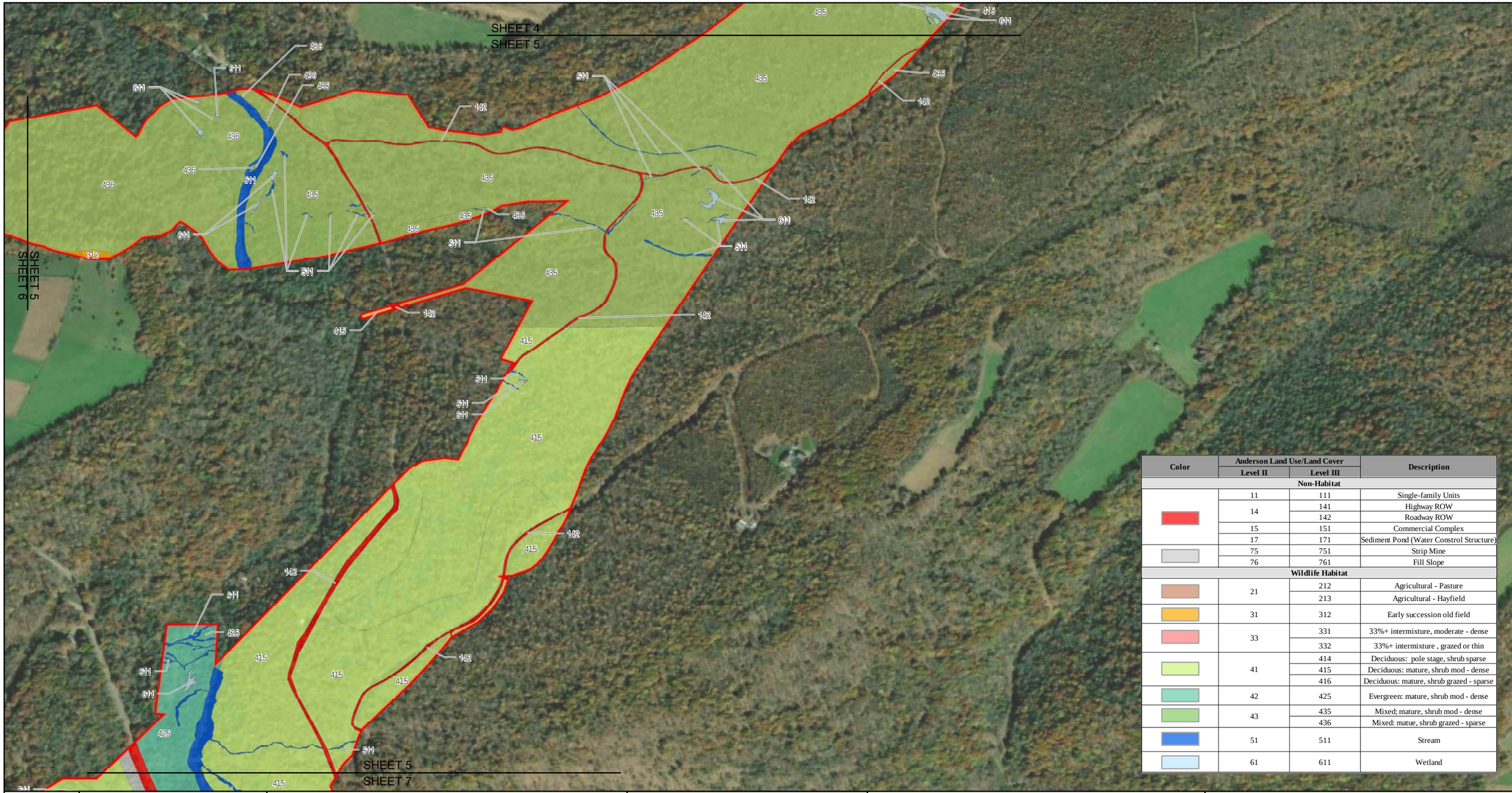
APPENDIX C
PENNSYLVANIA
ANDERSON TERRESTRIAL HABITAT MAPPING

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/29/2023

Source: MARKOSKY



N

Feet
0 500 1,000

Meters
0 150 300

Study Area

1 2 3 4 5 6 7
0 1.5 3 Miles

219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

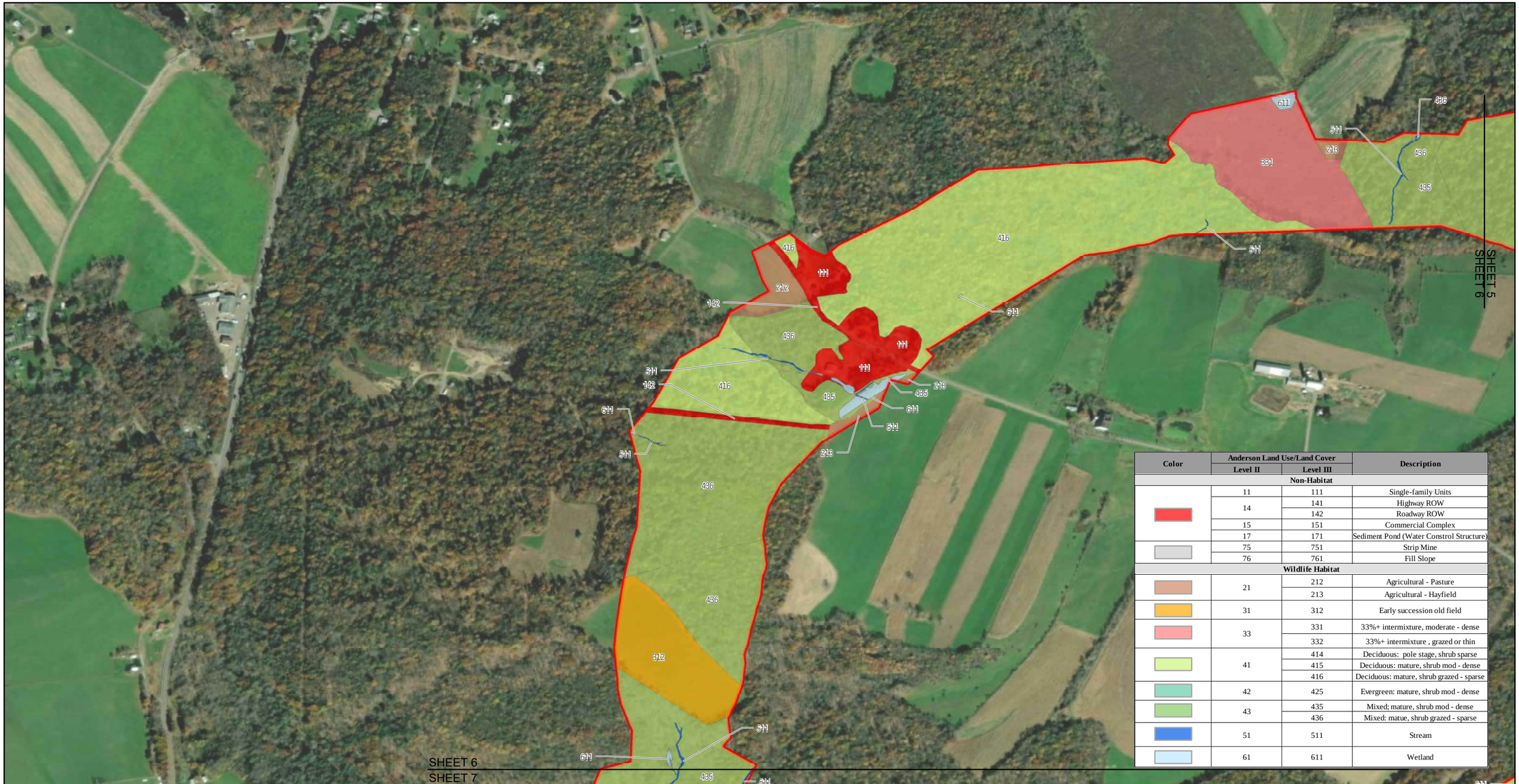
APPENDIX C
PENNSYLVANIA
ANDERSON TERRESTRIAL HABITAT MAPPING

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/29/2023

Source: MARKOSKY



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	Level II	Level III	
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	11	111	Single-family Units
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		142	Roadway ROW
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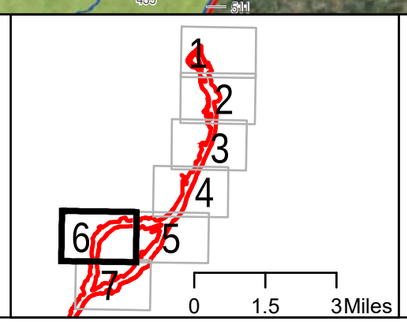
	43	435	Mixed; mature, shrub mod - dense
		436	Mixed: matue, shrub grazed - sparse
	51	511	Stream
	61	611	Wetland

N

Feet
0 500 1,000

Meters
0 150 300

Study Area



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX C
PENNSYLVANIA
ANDERSON TERRESTRIAL HABITAT MAPPING

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/29/2023

Source: MARKOSKY

SHEET 6
SHEET 7

PENNSYLVANIA
MARYLAND

Color	Anderson Land Use/Land Cover		Description
	Level II	Level III	
Non-Habitat			
	11	111	Single-family Units
	14	141	Highway ROW
		142	Roadway ROW
	15	151	Commercial Complex
	17	171	Sediment Pond (Water Constrol Structure)
	75	751	Strip Mine
	76	761	Fill Slope
Wildlife Habitat			
	21	212	Agricultural - Pasture
		213	Agricultural - Hayfield
	31	312	Early succession old field
	33	331	33%+ intermixture, moderate - dense
		332	33%+ intermixture , grazed or thin
	41	414	Deciduous: pole stage, shrub sparse
		415	Deciduous: mature, shrub mod - dense
		416	Deciduous: mature, shrub grazed - sparse
	42	425	Evergreen: mature, shrub mod - dense
	43	435	Mixed; mature, shrub mod - dense
		436	Mixed: matue, shrub grazed - sparse
	51	511	Stream
	61	611	Wetland

N

Feet
0 500 1,000

Meters
0 150 300

Study Area

1 2 3 4 5 6 7
0 1.5 3Miles

219 Meyersdale to Old Salisbury Rd

TRANSPORTATION
IMPROVEMENT PROJECT

APPENDIX C
PENNSYLVANIA
ANDERSON TERRESTRIAL HABITAT MAPPING

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/29/2023

Source: MARKOSKY

PENNSYLVANIA

MARYLAND

SHEET 8

SHEET 9

Color	Anderson Land Use/Land Cover		Description
	Level II	Level III	
Non-Habitat			
	11	111	Single-family Units
	14	141	Highway ROW
		142	Roadway ROW
	15	151	Commercial Complex
	17	171	Sediment Pond (Water Constrol Structure)
	75	751	Strip Mine
	76	761	Fill Slope
Wildlife Habitat			
	21	211	Agricultural - Cropland
		213	Agricultural - Hayfield
	31	312	Early succession old field
	33	331	33%+ intermixture, moderate - dense
		332	33%+ intermixture , grazed or thin
	41	414	Deciduous: pole stage, shrub sparse
		415	Deciduous: mature, shrub mod - dense
		416	Deciduous: mature, shrub grazed - sparse
	42	426	Evergreen: mature, shrub grazed - sparse
	43	435	Mixed; mature, shrub mod - dense
		436	Mixed: matue, shrub grazed - sparse
	51	511	Stream
	61	611	Wetland

N

Feet
0 500 1,000

Meters
0 150 300

Specimen Tree
Forest Interior Dwelling Species Habitat (FID)
Study Area

0 1.5 3 Miles

219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX C
MARYLAND
ANDERSON TERRESTRIAL HABITAT MAPPING

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 7/12/2023

Source: RETTEW

SHEET 8
SHEET 9

Color	Anderson Land Use/Land Cover		Description
	Level II	Level III	
Non-Habitat			
	11	111	Single-family Units
	14	141	Highway ROW
		142	Roadway ROW
	15	151	Commercial Complex
	17	171	Sediment Pond (Water Constrol Structure)
	75	751	Strip Mine
	76	761	Fill Slope
Wildlife Habitat			
	21	211	Agricultural - Cropland
		213	Agricultural - Hayfield
	31	312	Early succession old field
	33	331	33%+ intermixture, moderate - dense
		332	33%+ intermixture , grazed or thin
	41	414	Deciduous: pole stage, shrub sparse
		415	Deciduous: mature, shrub mod - dense
		416	Deciduous: mature, shrub grazed - sparse
	42	426	Evergreen: mature, shrub grazed - sparse
	43	435	Mixed; mature, shrub mod - dense
		436	Mixed: matue, shrub grazed - sparse
	51	511	Stream
	61	611	Wetland

N

Feet
0 500 1,000

Meters
0 150 300

- Specimen Tree
- Forest Interior Dwelling Species Habitat (FID)
- Study Area

0 1.5 3 Miles

219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX C
MARYLAND ANDERSON TERRESTRIAL HABITAT MAPPING

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 7/12/2023

Source: RETTEW

APPENDIX D

FIKE TERRESTRIAL HABITAT MAPPING

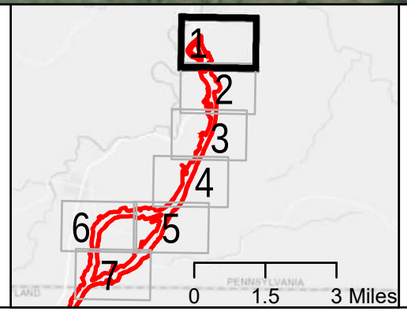
SHEET 1
SHEET 2

N

Feet
0 500 1,000

Meters
0 150 300

- Study Area
- Dry oak - mixed hardwood forest
- Red maple (terrestrial) forest
- Red oak - mixed hardwood forest
- Wetland
- Non-applicable (non-terrestrial or palustrine habitat)



MD 219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX D
PENNSYLVANIA FIKE TERRESTRIAL HABITAT MAPPING

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

SHEET 1
SHEET 2

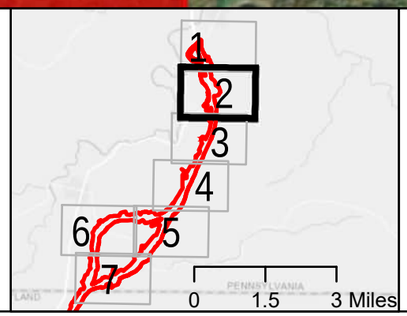
SHEET 2
SHEET 3

N

Feet
0 500 1,000

Meters
0 150 300

- Study Area
- Aspen / gray (paper) birch forest
- Dry oak - mixed hardwood forest
- Red maple (terrestrial) forest
- Red oak - mixed hardwood forest
- Wetland
- Non-applicable (non-terrestrial or palustrine habitat)



MD 219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX D
PENNSYLVANIA FIKE TERRESTRIAL HABITAT MAPPING

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

SHEET 2
SHEET 3

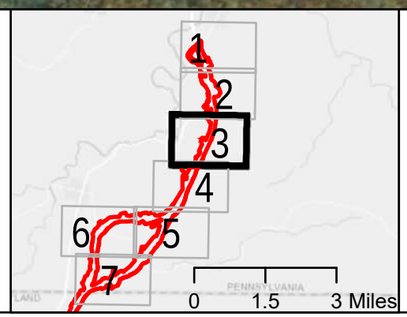
SHEET 3
SHEET 4

N

Feet
0 500 1,000

Meters
0 150 300

- Study Area
- Red maple (terrestrial) forest
- Red maple (terrestrial) forest / Red oak - mixed hardwood forest
- Wetland
- Non-applicable (non-terrestrial or palustrine habitat)



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX D
PENNSYLVANIA FIKE TERRESTRIAL HABITAT MAPPING

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

SHEET 3
SHEET 4

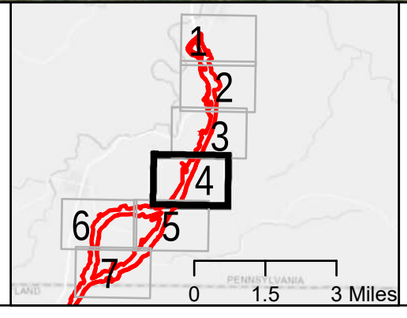
SHEET 4
SHEET 5

N

Feet
0 500 1,000

Meters
0 150 300

- Study Area
- Dry oak - mixed hardwood forest
- Red maple (terrestrial) forest
- Red maple (terrestrial) forest / Red oak - mixed hardwood forest
- Wetland
- Non-applicable (non-terrestrial or palustrine habitat)



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

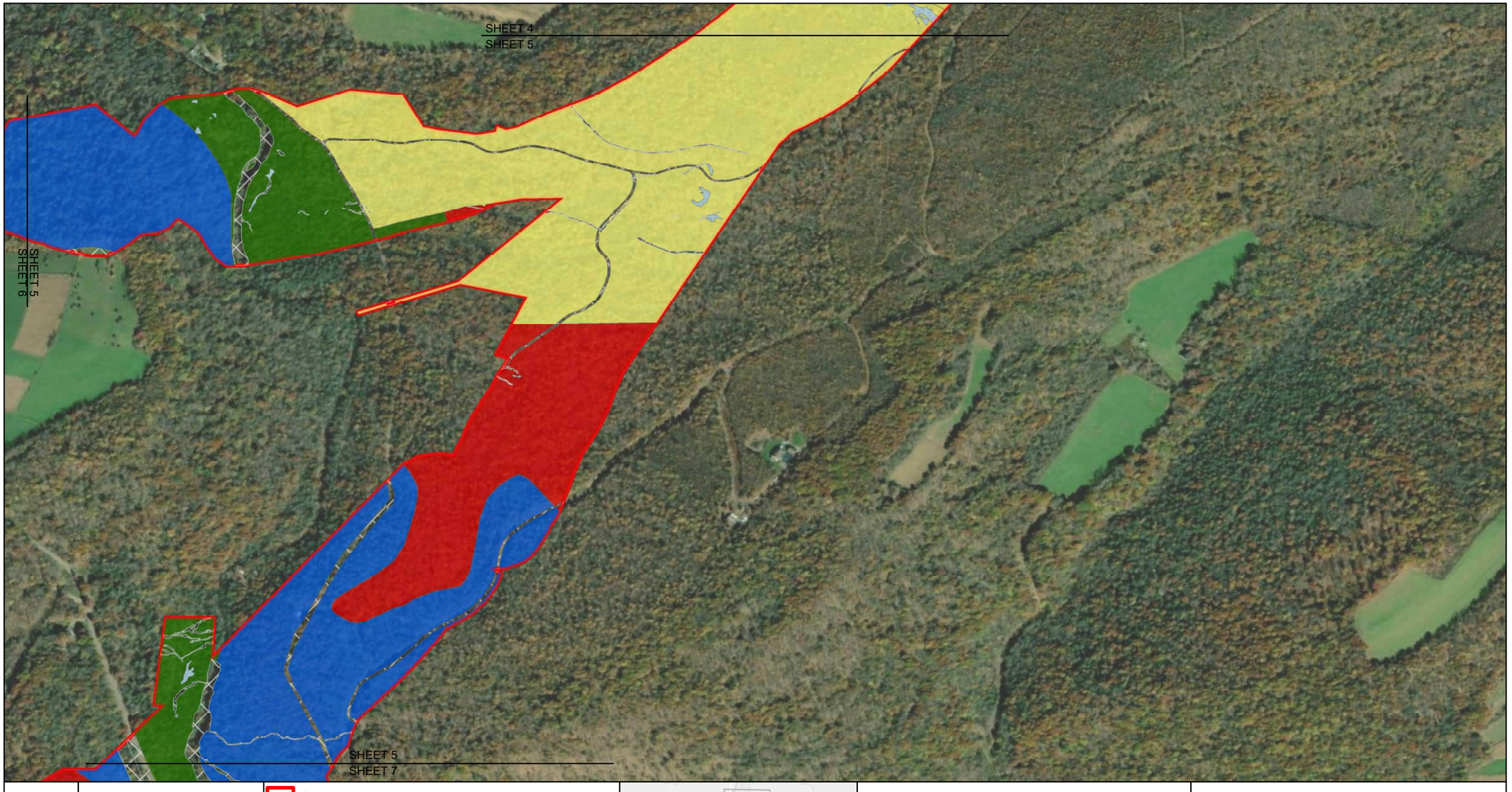
APPENDIX D
PENNSYLVANIA FIKE TERRESTRIAL HABITAT MAPPING

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

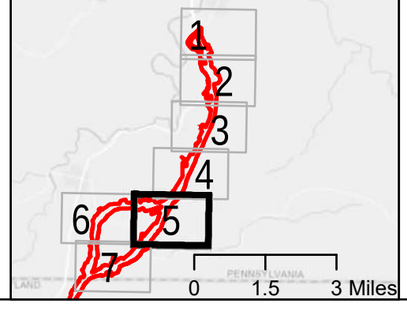


N

Feet
0 500 1,000

Meters
0 150 300

- Study Area
- Dry oak - mixed hardwood forest
- Hemlock - northern hardwood forest
- Red maple (terrestrial) forest
- Red oak - mixed hardwood forest
- Wetland
- Non-applicable (non-terrestrial or palustrine habitat)



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX D
PENNSYLVANIA FIKE TERRESTRIAL HABITAT MAPPING

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

SHEET 5
SHEET 6

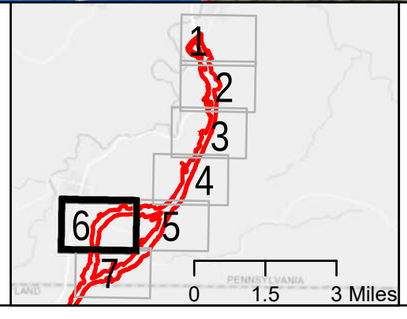
SHEET 6
SHEET 7

N

Feet
0 500 1,000

Meters
0 150 300

- Study Area
- Dry oak - heath forest
- Hemlock - northern hardwood forest
- Red maple (terrestrial) forest
- Red oak - mixed hardwood forest
- Wetland
- Non-applicable (non-terrestrial or palustrine habitat)



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX D
PENNSYLVANIA FIKE TERRESTRIAL HABITAT MAPPING

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

SHEET 6
SHEET 7

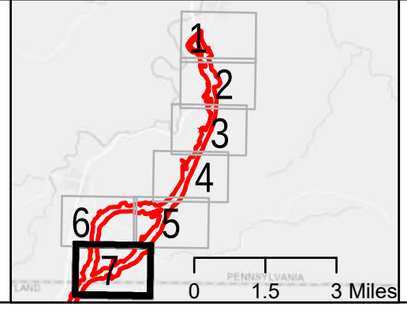
PENNSYLVANIA
MARYLAND

N

Feet
0 500 1,000

Meters
0 150 300

- Study Area
- Dry oak - heath forest
- Hemlock - northern hardwood forest
- Red maple (terrestrial) forest
- Red oak - mixed hardwood forest
- Wetland
- Non-applicable (non-terrestrial or palustrine habitat)



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX D
PENNSYLVANIA FIKE TERRESTRIAL HABITAT MAPPING

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

APPENDIX E

WILDLIFE CROSSING

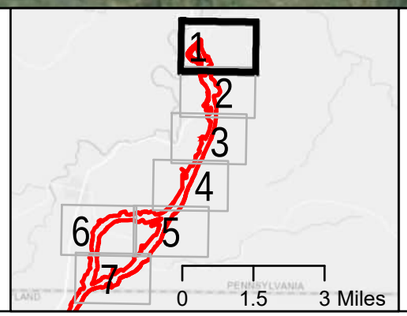
SHEET 1
SHEET 2

N

Feet
0 500 1,000

Meters
0 150 300

- Study Area
- Wildlife Trail
- Stream Habitat
- Wetland Habitat
- Wildlife Observation
- GPS point field note



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX E
PENNSYLVANIA WILDLIFE CROSSING

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

SHEET 1
SHEET 2

Wildlife trail

Trail along power line

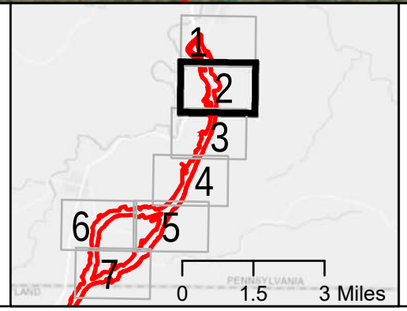
SHEET 2
SHEET 3

N

Feet
0 500 1,000

Meters
0 150 300

- Study Area
- Wildlife Trail
- Stream Habitat
- Wetland Habitat
- Wildlife Observation
- GPS point field note



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX E
PENNSYLVANIA WILDLIFE CROSSING

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

SHEET 2
SHEET 3

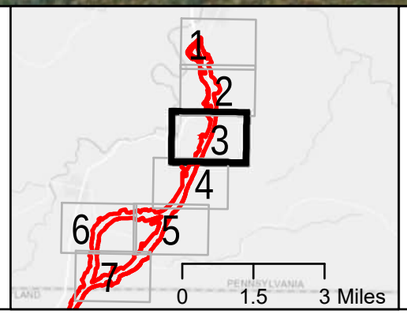
SHEET 3
SHEET 4

N

Feet
0 500 1,000

Meters
0 150 300

Study Area
Wildlife Trail
Stream Habitat
Wetland Habitat
Wildlife Observation
GPS point field note



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX E
PENNSYLVANIA WILDLIFE CROSSING

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

SHEET 3
SHEET 4

Intermittent deer trails throughout dense Mountain Laurel/ Rhododendron understory and boulder field area

SHEET 4
SHEET 5

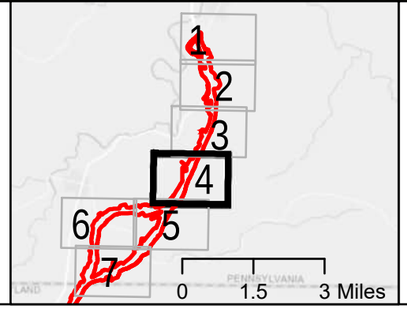
fe trail along tram road

N

Feet
0 500 1,000

Meters
0 150 300

- Study Area
- Wildlife Trail
- Stream Habitat
- Wetland Habitat
- Wildlife Observation
- GPS point field note



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX E
PENNSYLVANIA WILDLIFE CROSSING

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

SHEET 4
SHEET 5

Wildlife trail along tram road

Wildlife trail to tram road

Wildlife trail to tram road

Wildlife trail along tram road

SHEET 5
SHEET 6

Wildlife trail along tram road

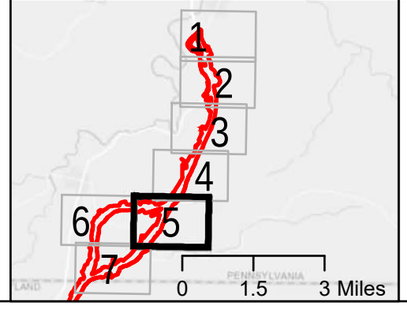
SHEET 5
SHEET 7

N

Feet
0 500 1,000

Meters
0 150 300

Study Area
Wildlife Trail
Stream Habitat
Wetland Habitat
Wildlife Observation
GPS point field note



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

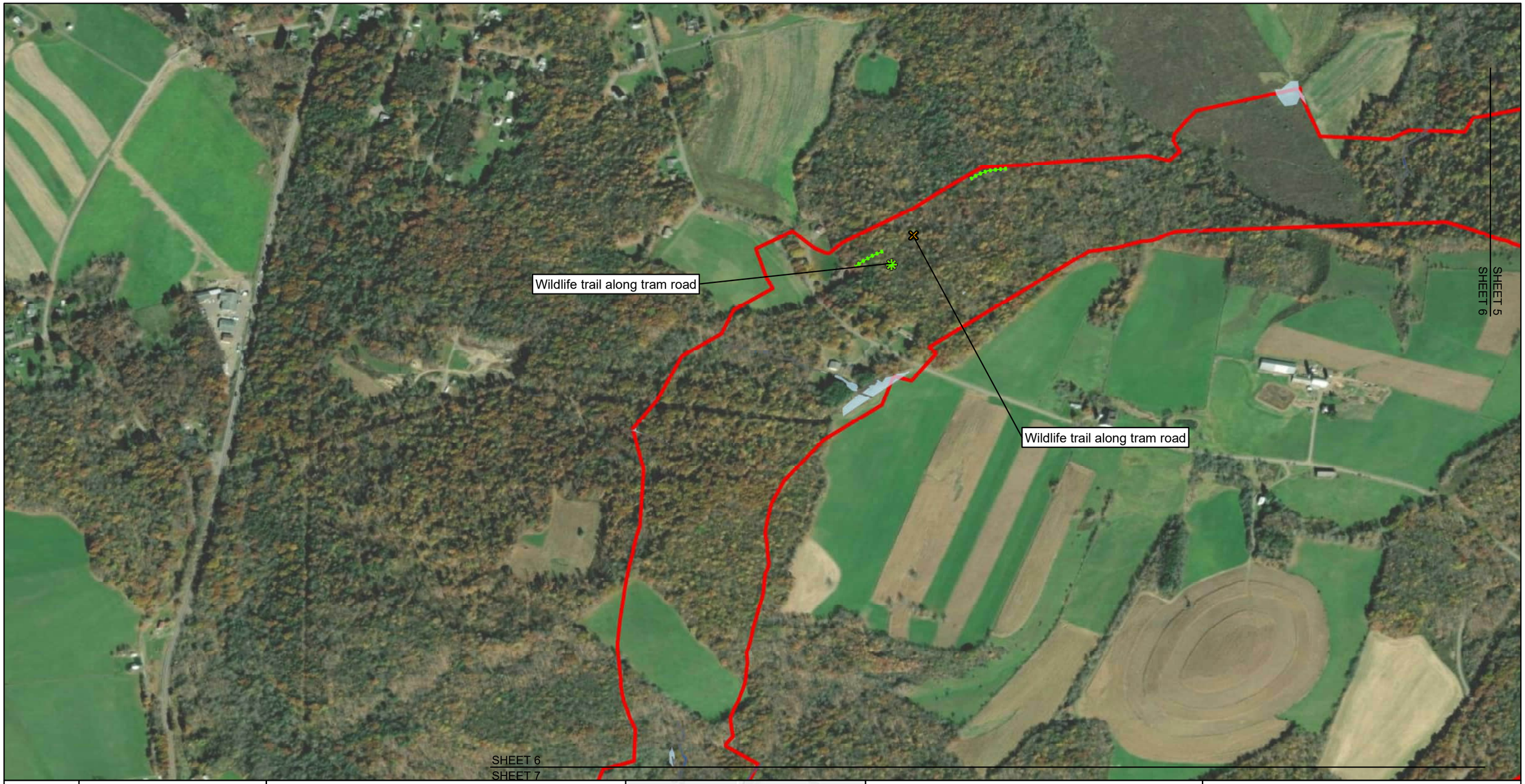
APPENDIX E
PENNSYLVANIA WILDLIFE CROSSING

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

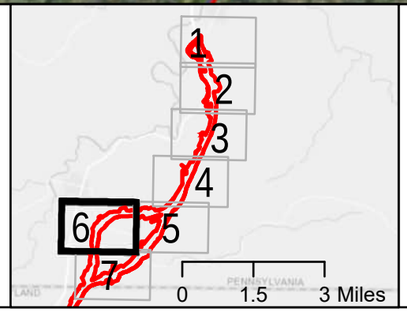


N

Feet
0 500 1,000

Meters
0 150 300

- Study Area
- Wildlife Trail
- Stream Habitat
- Wetland Habitat
- Wildlife Observation
- GPS point field note



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX E
PENNSYLVANIA WILDLIFE CROSSING

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

SHEET 6
SHEET 7

Beaver Dam

PENNSYLVANIA

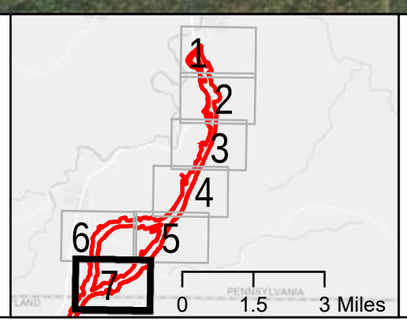
MARYLAND

N

Feet
0 500 1,000

Meters
0 150 300

- Study Area
- Wildlife Trail
- Stream Habitat
- Wetland Habitat
- Wildlife Observation
- GPS point field note



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX E
PENNSYLVANIA WILDLIFE CROSSING

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

APPENDIX F
PHOTOS

Photo 1: Field (no Fike Habitat), Facing west (06.23.2023)

Photo 2: Beaver Dam, Facing east (06.23.2023)

Photo 3: Heavily Used Crossing, Facing east (06.23.2023)

Photo 4: Dry Oak Heath Forest, Facing west (09.15.2022)

Photo 5: Dry Oak Heath Forest, Facing north (09.15.2022)

Photo 6: Red Maple Forest, Facing north (06.23.2023)

Photo 7: No Fike habitat, Facing west (06.23.2023)

Photo 8: Red Oak Mixed Hardwood , Facing north (09.16.2022)

Photo 9: Dry Oak Heath Forest, Facing north (09.16.2022)

Photo 10: Red Maple Terrestrial Forest, Facing north (09.16.2022)

Photo 11: Red Oak Mixed Hardwood Forest, Facing east (09.16.2022)

Photo 12: Red Maple Terrestrial Forest, Facing east (09.16.2022)

Photo 13: Red Oak Mixed Hardwood Habitat, Facing west (09.16.2022)

Photo 14: Red Oak Mixed Hardwood Habitat, Facing east (06.23.2023)

Photo 15: Dry Oak Mixed Hardwood Forest, Facing north (07.20.2022)

Photo 16: Dry Oak Mixed Hardwood Forest, Facing northeast (07.20.2022)

Photo 17: Red Maple/Red Oak Mixed Forest, Facing north (06.09.2022)

Photo 18: Red Maple Forest, Facing north (07.20.2022)

Photo 19: Red Maple Forest, Facing south (07.20.2022)

Photo 20: No Fike habitat, Facing north (06.23.2023)

Photo 21: No Fike habitat, Facing north (07.20.2022)

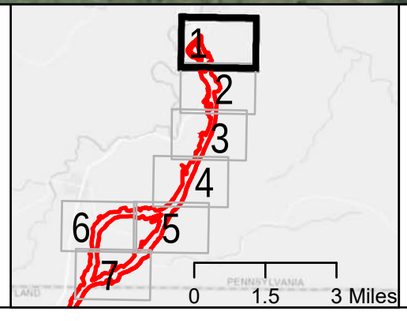
SHEET 1
SHEET 2

N

Feet
0 500 1,000

Meters
0 150 300

Study Area
Photo Location



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

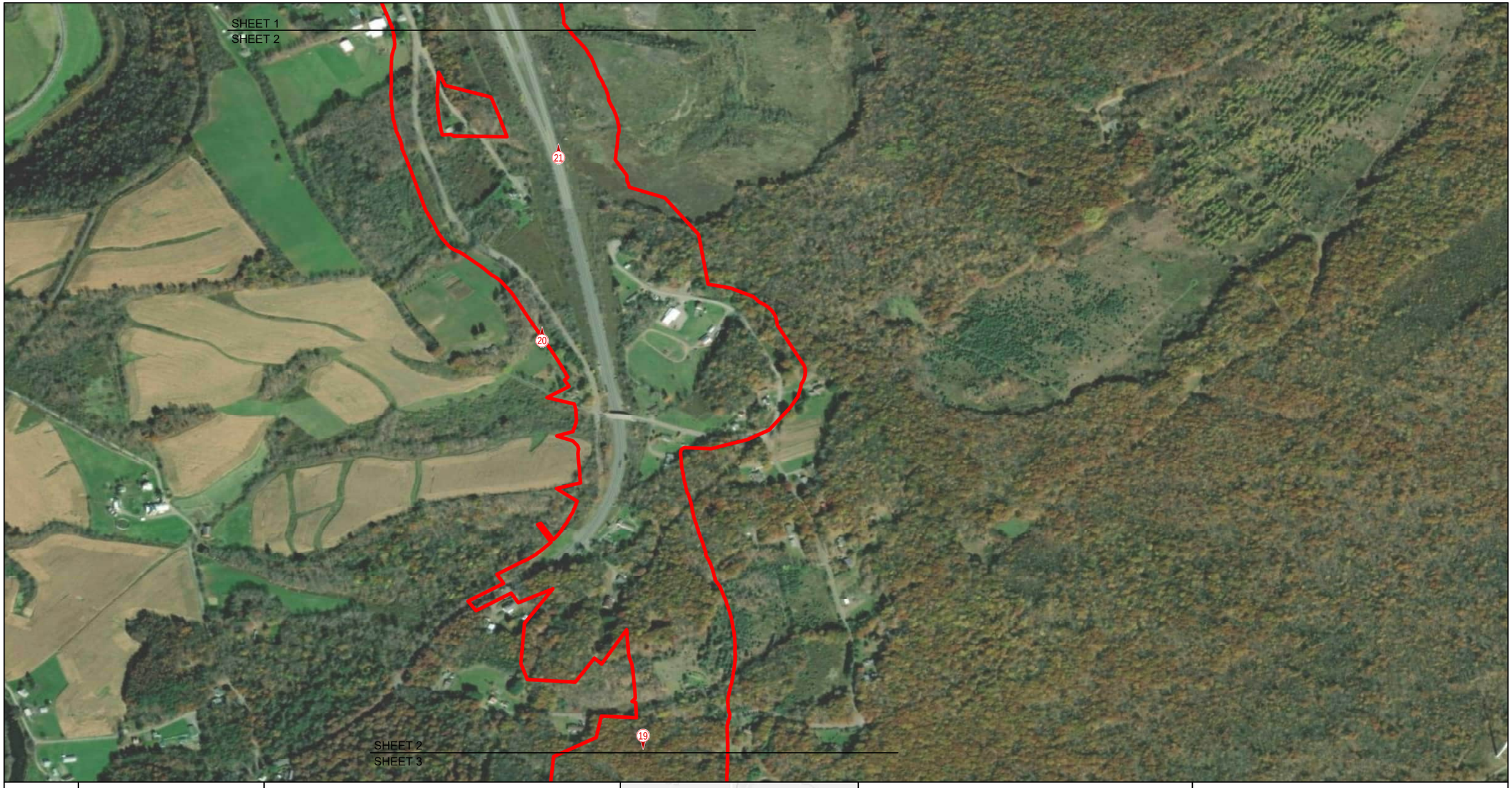
APPENDIX G
PENNSYLVANIA PHOTOS

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

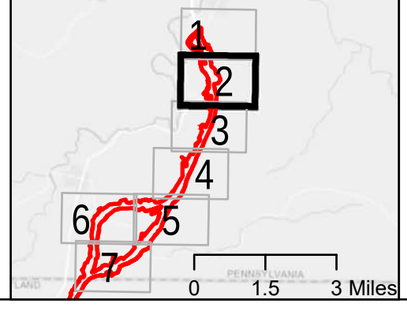


N

Feet
0 500 1,000

Meters
0 150 300

Study Area
Photo Location



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX G
PENNSYLVANIA PHOTOS

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

SHEET 2
SHEET 3

19
18
17

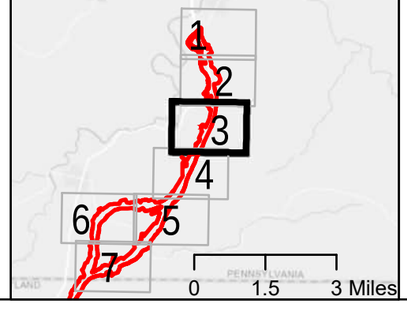
SHEET 3
SHEET 4

N

Feet
0 500 1,000

Meters
0 150 300

Study Area
Photo Location



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX G
PENNSYLVANIA PHOTOS

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

SHEET 3
SHEET 4

16

15

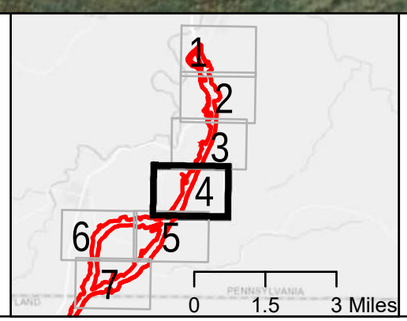
SHEET 4
SHEET 5

N

Feet
0 500 1,000

Meters
0 150 300

Study Area
Photo Location



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX G
PENNSYLVANIA PHOTOS

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

SHEET 4
SHEET 5

SHEET 5
SHEET 6

13

14

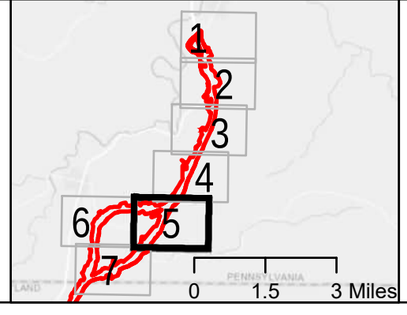
SHEET 5
SHEET 7

N

Feet
0 500 1,000

Meters
0 150 300

Study Area
Photo Location



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

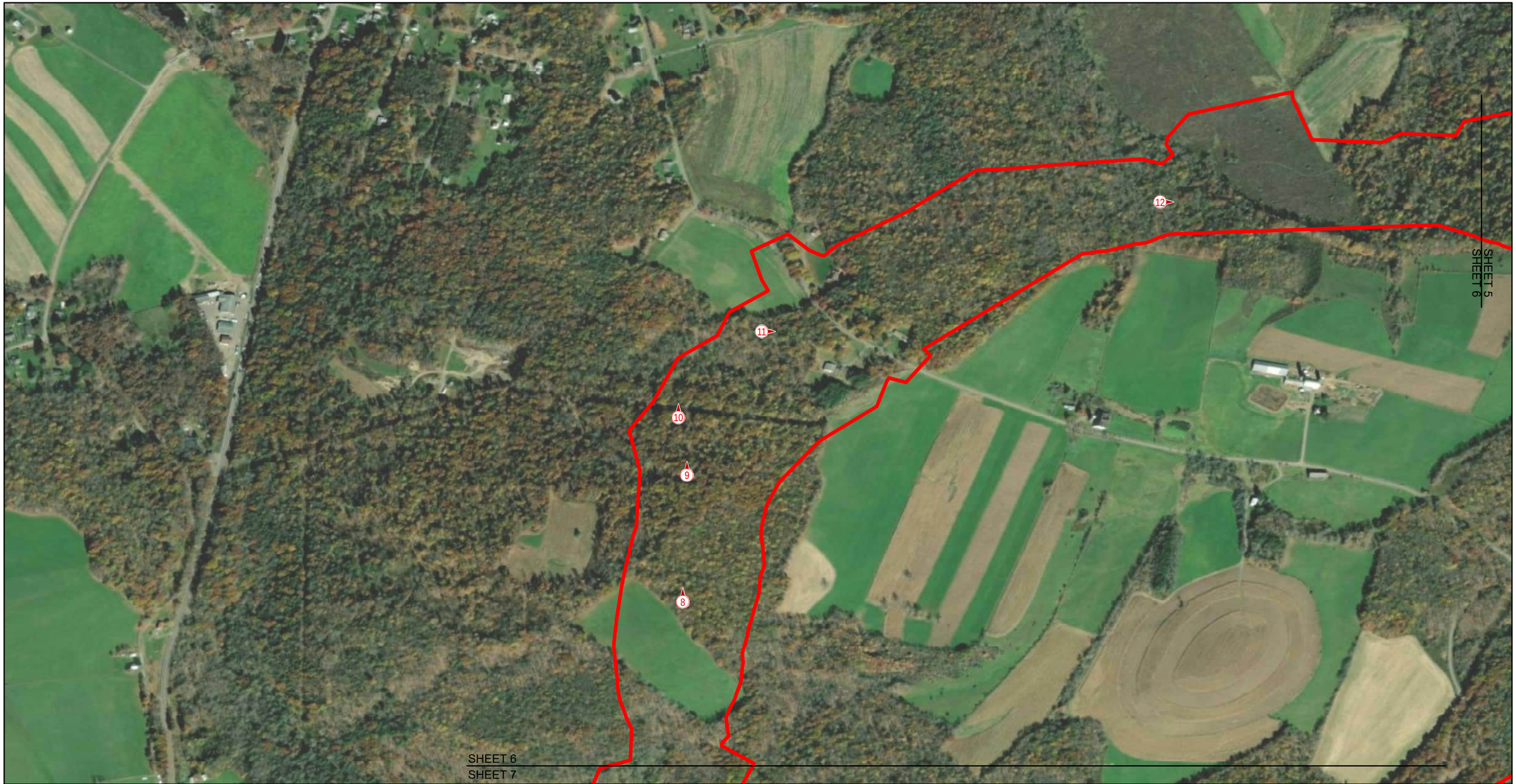
APPENDIX G
PENNSYLVANIA PHOTOS

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY



N

Feet
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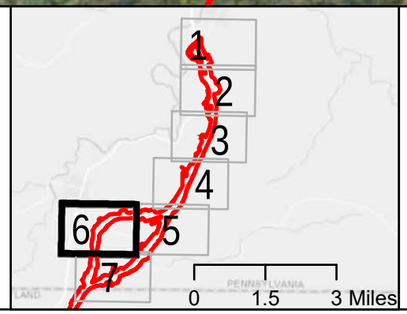
Meters
0 150 300

Study Area
Photo Location



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX G
PENNSYLVANIA PHOTOS

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

SHEET 6
SHEET 7

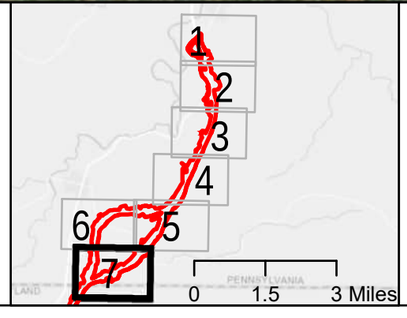
PENNSYLVANIA
MARYLAND

N

Feet
0 500 1,000

Meters
0 150 300

Study Area
Photo Location



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

APPENDIX G
PENNSYLVANIA PHOTOS

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

pennsylvania DEPARTMENT OF TRANSPORTATION

Date: 6/28/2023

Source: MARKOSKY

APPENDIX G
FIELD DATA SHEETS

Property: US 219 Alternative E+DU Prepared By BMS BJS, EMA
Stand #: 41-1 Plot #: 1 Plot Size: 1/10thac Date: 9/7/22

Basal Area in sf/acre:	Size class of trees > 20' height within sample plot															
120																
Tree Species	**# of Trees 2-5.9" dbh**			**# of Trees 6-11.9" dbh**			**# of Trees 12-19.9" dbh**			**# of Trees 20-29.9 dbh**			**# of Trees > 30" dbh**			**Total**
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Black cherry							4									4
Red maple		1		1	1											3
Sugar maple		2		1												3
Yellow birch				1												1
Total Number of Trees per Size Class	3			4			4									11
Number & Size of Standing Dead Trees							1									1

List of Common Understory Species 3'-20':
Yellow birch, red maple

List of Herbaceous Species 0'-3':
Hay-scented fern
Canada mayflower

% of Canopy Closure

C	N	E	S	W	Total
83	74	76	77	78	78

% Understory Cover 3'-20'

C	N	E	S	W	Total
0	2	0	0	1	1

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
90	20	95	95	85	77

Percent of Invasive Cover per Plot (All Layers): None

T	U	H

Plot Successional Stage: early-mid

Comments: Black cherry-maple community. Open forest with sparse understory & dense fern layer. Rocky substrate, Mesic forest. Gently sloping topography. No invasives, except for some along woods road that runs along eastern section for entire length of wooded area. Trees have been girdled throughout forested area. Mason-Dixon Monument (concrete) - 1767 (dated) present in these woods.
Sheet __ of __

Forest Sampling Data Worksheet C:1

Property: US 219 Alternative E & DU Prepared By BMS, BJS, EMA
Stand #: 41-1 Plot #: 2 Plot Size: 1/10th ac Date: 9/7/22

Basal Area in sf/acre: 70	Size class of trees > 20' height within sample plot

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Sugar maple		7	1	3												11
Hawthorne			1													1
Black cherry			1													1
Total Number of Trees per Size Class	10			3												13
Number & Size of Standing Dead Trees	1															1

List of Common Understory Species 3'-20':
Sugar maple, spicebush

% of Canopy Closure

C	N	E	S	W	Total
76	78	82	86	79	80

Percent of Invasive Cover per Plot (All Layers): None

Plot Successional Stage: early-mid

List of Herbaceous Species 0'-3':
Violet, greenbriar, hawthorne, partridgeberry, aster, sensitive fern

% Understory Cover 3'-20'

C	N	E	S	W	Total
0	0	0	15	10	6

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
2	5	2	5	1	3

T U H

Comments This section of forest is adjacent to hayfield. Evidence of logging. Mesic area with sparse understory and herbaceous layers. Piles of rocks (human disturbance). There are some invasives (none in plot) in vicinity of plot including Japanese barberry.

Sheet __ of __

Forest Sampling Data Worksheet C:1

Property: US 219 Alternative E+ DU Prepared By BMS, BJS, EMA
Stand #: 41-1 Plot #: 3 Plot Size: 1/10th ac. Date: 9/7/22

Basal Area in sf/acre: 20

Size class of trees > 20' height within sample plot

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Sugar maple		29		3												32
witch hazel		1														1
Total Number of Trees per Size Class	30			3												33
Number & Size of Standing Dead Trees																

List of Common Understory Species 3'-20':
sugar maple, spicebush, witch hazel, japanese barberry*

List of Herbaceous Species 0'-3':
christmas fern, hay-scented fern, maple-leaf viburnum, jack-in-pulpit.

% of Canopy Closure

C	N	E	S	W	Total
86	85	53	89	86	80

% Understory Cover 3'-20'

C	N	E	S	W	Total
50	40	20	15	15	20

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
50	10	50	30	10	30

Percent of Invasive Cover per Plot (All Layers): 3%

T U H

	3			

Plot Successional Stage: Early

Comments *= invasive, Young woods with dense sapling layer. Rocky, gradual sloping area adjacent to clearing. Area is mesic with rich soils, Some invasives (barberry + multiflora rose) is present throughout. This area is a sugarbush - collection tubing (extensive) in plot & found throughout this section of woods. Plot adjacent to overhead utility line that goes to a residence east of study area.
Sheet __ of __

Forest Sampling Data Worksheet C:1

Property: US 219 Alternative E & DL Prepared By: BMS, BJS, & MA
Stand #: 41-1 Plot #: 4 Plot Size: 1/10th ac. Date: 9/7/22

Basal Area in sf/acre: 70	Size class of trees > 20' height within sample plot															
Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Sugar maple		2		2			1									5
Witch hazel		2														2
Mockernut hickory							1									1
Total Number of Trees per Size Class	4			2			2									8
Number & Size of Standing Dead Trees																

List of Common Understory Species 3'-20': Yellow birch, hawthorne, hickory

% of Canopy Closure					
C	N	E	S	W	Total
69	72	64	72	71	70

Percent of Invasive Cover per Plot (All Layers): 1%

Plot Successional Stage: Early - mid.

List of Herbaceous Species 0'-3': christmas fern, sedge, greenbriar, hayscented fern, multiflora rose*, white wood aster

% Understory Cover 3'-20'						T	U	H
C	N	E	S	W	Total			
0	0	40	20	10	14	0	0	1

% of Herbaceous Cover 0'-3'					
C	N	E	S	W	Total
15	30	30	25	30	26

Comments: Fairly open maple-oak-hickory community. Rocky with some understory, and moderately sparse herbaceous layer. Gently sloping topography. Mesic area with some multiflora rose (invasive).

Sheet __ of __ * = invasive.

Forest Sampling Data Worksheet C:1

Property: US 219 Alternative E + DU Prepared By: BMS, BTS, EMA

Stand #: 41-1 Plot #: 5 Plot Size: 1/10th ac. Date: 9/7/22

Basal Area in sf/acre:	Size class of trees > 20' height within sample plot
30	

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Sugar maple	25			2												27
Black cherry				1												1
Mockernut hickory	4		1													5
Yellow Birch		6		1												7
Basswood				2												2
Total Number of Trees per Size Class	36			6												42
Number & Size of Standing Dead Trees																

List of Common Understory Species 3'-20':
Sugar maple, mockernut hickory, grape, witchhazel

% of Canopy Closure					
C	N	E	S	W	Total
77	73	77	77	69	75

Percent of Invasive Cover per Plot (All Layers): 0 %

Plot Successional Stage: Early-mid

List of Herbaceous Species 0'-3':
Hay-scented fern, christmas fern, wood nettle, maple-leaf viburnum, ground ivy.

% Understory Cover 3'-20'					
C	N	E	S	W	Total
80	75	80	60	40	67

% of Herbaceous Cover 0'-3'					
C	N	E	S	W	Total
0	30	60	20	60	34

T U H

Comments: Part of sugar mapling area (sugarbush), young black cherry-sugar maple community, moist with rich soils. Dense saplings, rocky next to stream. Gradually sloping topography

Sheet __ of __

Forest Sampling Data Worksheet

C:1

Property: US 219 Alternative E+ DL Prepared By BMS, BJS, EMA
Stand #: 41-1 Plot #: 6 Plot Size: 1/10th ac. Date: 9/7/22

Basal Area in sf/acre: 140	Size class of trees > 20' height within sample plot															
Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Black locust				2			1									3
Sugar maple	8			1												9
Green Ash				1												1
R&D maple				1												1
Black cherry				1												1
Total Number of Trees per Size Class	8			6			1									15
Number & Size of Standing Dead Trees	11			3												

List of Common Understory Species 3'-20':
Red maple, black cherry, sugar maple, japanese barberry*, multiflora rose*

% of Canopy Closure

C	N	E	S	W	Total
64	70	73	64	72	69

Percent of Invasive Cover per Plot (All Layers): 10%

Plot Successional Stage: early-mid

List of Herbaceous Species 0'-3':
Sedge, hay-scented fern, zig zag goldenrod

% Understory Cover 3'-20'

C	N	E	S	W	Total	T	U	H
20	10	15	10	5	12	0	10	0

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
75	60	60	60	75	66

Comments: Previously disturbed area next to pond and wetlands. Woods road winds through area. There are mounds of dirt with trees and sapling growing on them. Most of the dead standing trees are black locust. Newt and bull frog using area.

Sheet __ of __

* = invasives

Forest Sampling Data Worksheet

C:1

Property: US 219 Alternative E + DU Prepared By: BMS, GJS, EMA
Stand #: 41-1 Plot #: 7 Plot Size: 1/10th ac. Date: 9/7/22

Basal Area in sf/acre: 60	Size class of trees > 20' height within sample plot

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Sugar maple	9						2									11
Mockernut hickory				1												1
Black cherry		1		1												2
Total Number of Trees per Size Class	10			2			2									14
Number & Size of Standing Dead Trees	5			1												6

List of Common Understory Species 3'-20': sugar maple, grape

% of Canopy Closure

C	N	E	S	W	Total
70	73	83	76	78	76

Percent of Invasive Cover per Plot (All Layers): 0%

Plot Successional Stage: early-mid

List of Herbaceous Species 0'-3': wood nettle, maple-leaf viburnum, hayscented fern, blue cohosh, violet, sedge, christmas fern and plant that looks like sweet cicely, but not sure due to lack of flowers.

% Understory Cover 3'-20'

C	N	E	S	W	Total
1	5	0	15	10	6

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
5	30	35	20	30	24

T U H

Comments: Rich, mesic area with gradual topography. Fairly open with diverse, dense herbaceous cover. Sugar maple-black cherry community

Sheet __ of __

Forest Sampling Data Worksheet C:1

Property: US219 Alternative E+ DU Prepared By BMS, BJS, EMA
Stand #: 41-1 Plot #: 8 Plot Size: 1/10th ac. Date: 9/7/22

Basal Area in sf/acre: 120

Size class of trees > 20' height within sample plot

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Sugar maple		4		6			2									12
Basswood		1					3			1						5
Green ash												1				1
Total Number of Trees per Size Class	5			6			5			2						18
Number & Size of Standing Dead Trees	2						2									4

List of Common Understory Species 3'-20':
sugar maple

% of Canopy Closure

C	N	E	S	W	Total
68	75	65	69	68	69

Percent of Invasive Cover per Plot (All Layers): 10%

Plot Successional Stage: mid

List of Herbaceous Species 0'-3':
Christmas fern, garlic mustard*, blue cohosh, northern shorthusk, hay-scented fern

% Understory Cover 3'-20'

C	N	E	S	W	Total
5	2	2	2	5	3

T U H
10

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
1	5	5	5	10	5

Comments * = invasive. Mesic, rocky area with several dead ash. Open section of forest with little understory and a sparse herbaceous layer. Area slopes toward ponded area adjacent to Plot 6.

Sheet __ of __

Forest Sampling Data Worksheet

C:1

Property: US 219 Alternative E+ DU Prepared By BMS, BJS, EMA
Stand #: 41-1 Plot #: 9 Plot Size: 1/10th ac Date: 9/8/22

Basal Area in sf/acre:	Size class of trees > 20' height within sample plot

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Sugar maple		9		4			1			1						15
Total Number of Trees per Size Class	9			4			1			1						15
Number & Size of Standing Dead Trees				3												3

List of Common Understory Species 3'-20': Sugar maple, grape

% of Canopy Closure

C	N	E	S	W	Total
79	81	83	72	75	78

Percent of Invasive Cover per Plot (All Layers): 1%

Plot Successional Stage: Mid

List of Herbaceous Species 0'-3': Hay-scented fern, New York fern, wood nettle, violet, jack-in-pulpit.

% Understory Cover 3'-20'

C	N	E	S	W	Total
30	50	15	5	40	28

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
1	40	50	40	30	32

T U H

1%

Comments: Sugar maple forest with gradually sloping topography. Sparse understory, rocky terrain, moist and rich. Minimum invasive plants. Many trees have been girdled throughout the compartment. Most of trees that were girdled are black cherry. Woods road goes through forest. Japanese barberry - invasive - in plot.

Sheet __ of __

Forest Sampling Data Worksheet C:1

Property: US 219 Alternative E & DU Prepared By: BMS, BJS, EMA
Stand #: 41-2 Plot #: 1 Plot Size: 1/10th ac. Date: 9/8/22

Basal Area in sf/acre: 200	Size class of trees > 20' height within sample plot

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Sugar maple	13						2									15
Red oak							2									2
Chestnut oak							2									2
Black cherry				5												5
Total Number of Trees per Size Class	13			5			6									24
Number & Size of Standing Dead Trees	4			1												5

List of Common Understory Species 3'-20':
Sugar maple, striped maple, black cherry

% of Canopy Closure

C	N	E	S	W	Total
80	78	80	77	85	80

Percent of Invasive Cover per Plot (All Layers): 0 %

Plot Successional Stage: early-mid

List of Herbaceous Species 0'-3':
hay-scented fern, ground cedar, early lowbush blueberry, sedge

% Understory Cover 3'-20'

C	N	E	S	W	Total
0	5	0	0	0	1

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
10	80	85	75	55	61

T U H

Comments: Mixed oak-sugar maple community. Xeric. Some rocky areas. Open forest with little understory, dense herbaceous layer. Gradual slopes. All trees about the same size/age. No invasive plants.

Sheet __ of __

Forest Sampling Data Worksheet C:1

Property: US 219 Alternative E+DU Prepared By: BMS, BTS, EMA, LY, NW, NS
Stand #: 41-2 Plot #: 2 Plot Size: 1/10th ac Date: 9/6/22

Basal Area in sf/acre:	Size class of trees > 20' height within sample plot
80	

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Black cherry	5			4						2						11
Sugar maple		6			1											7
Red oak		2			2			1								5
Cucumber tree					1											1
Total Number of Trees per Size Class	13			8			1			2						24
Number & Size of Standing Dead Trees	5			1												6

List of Common Understory Species 3'-20':
striped maple

% of Canopy Closure

C	N	E	S	W	Total
86	83	80	86	77	82

Percent of Invasive Cover per Plot (All Layers):
None

T U H

Plot Successional Stage:
Early-

List of Herbaceous Species 0'-3':
Hay-scented fern, sessile-leaf bellwort, sedge, zigzag goldenrod starflower, violet, wild yam, jack-in-pulpit

% Understory Cover 3'-20'

C	N	E	S	W	Total
30	15	15	20	10	18

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
2	5	5	10	3	5

Comments: Mesic woodland with many young saplings. Black cherry - sugar maple community. Adjacent to agricultural field. No invasive plants observed.

Sheet __ of __

Forest Sampling Data Worksheet C:1

Property: US 219 Alternative E + DU Prepared By BMS, BJS, EMA
Stand #: 41-3 Plot #: 1 Plot Size: 1/10th ac Date: 9/8/22

Basal Area in sf/acre:	Size class of trees > 20' height within sample plot
10	

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Sugar maple				2												2
Striped maple	1															1
Red maple				1												1
Total Number of Trees per Size Class	1			3												4
Number & Size of Standing Dead Trees																

List of Common Understory Species 3'-20':
Yellow birch, black birch

% of Canopy Closure

C	N	E	S	W	Total
11	27	39	25	24	25

Percent of Invasive Cover per Plot (All Layers): 1%

Plot Successional Stage: Early

List of Herbaceous Species 0'-3':
Intermediate wood fern, yellow birch, Canada mayflower blackberry, pokeweed

% Understory Cover 3'-20'

C	N	E	S	W	Total
0	10	5	0	25	8

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
5	20	10	60	30	25

T U H
1

Comments: Recently logged area with only maples still standing. Tree limb brush piles throughout. ATV path goes through center. Oriental ladythumb (invasive plant) dominant along path. Area is rocky and gently sloping.

Sheet __ of __

Forest Sampling Data Worksheet C:1

Property: US 219 Alternative E + DU Prepared By BMS, BJS, EMA
Stand #: 41-3 Plot #: 2 Plot Size: 1/10th ac. Date: 9/8/22

Basal Area in sf/acre: 20	Size class of trees > 20' height within sample plot															
Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Sugar maple		1		2												3
Total Number of Trees per Size Class	1			2												3
Number & Size of Standing Dead Trees																

List of Common Understory Species 3'-20': Sugar maple, black gum

% of Canopy Closure

C	N	E	S	W	Total
26	29	74	25	36	38

Percent of Invasive Cover per Plot (All Layers): None

Plot Successional Stage: Early

List of Herbaceous Species 0'-3': Hay-scented fern, blackberry, pokeweed buckwheat

% Understory Cover 3'-20'

C	N	E	S	W	Total
10	5	10	0	0	5

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
75	100	95	90	95	91

T U H

Comments: Recently logged oak-cherry-maple community with only maples still standing. Dense herbaceous layer. tree limb piles throughout.

Sheet __ of __

Forest Sampling Data Worksheet

C:1

Property: US 219 Alternative E + DU Prepared By BMS, BJS, EMA
Stand #: 41-3 Plot #: 3 Plot Size: 1/10th ac. Date: 9/8/22

Basal Area in sf/acre: 40	Size class of trees > 20' height within sample plot															
Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Sugar maple	1			4												5
Mockernut hickory				1												1
Total Number of Trees per Size Class	1			5												6
Number & Size of Standing Dead Trees																

List of Common Understory Species 3'-20': Sugar maple

% of Canopy Closure

C	N	E	S	W	Total
52	50	42	51	21	43

Percent of Invasive Cover per Plot (All Layers): 5%

Plot Successional Stage: Early

List of Herbaceous Species 0'-3': Wild lettuce, pokeweed, blackberry, sedge, various grasses, yellow foxtail grass*, Oriental lady thumb*

% Understory Cover 3'-20'

C	N	E	S	W	Total	T	U	H
10	2	20	0	0	6	0	0	5

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
15	60	40	70	50	47

Comments * = invasive. Recently logged area with brush piles throughout. Just maples are still standing. Good bird + rabbit habitat.

Sheet __ of __

Forest Sampling Data Worksheet C:1

Property: US 219 Alternative E+OU Prepared By NWS, NRW
Stand #: 11-4 Plot #: 1 Plot Size: 1/10 acre Date: 9/8/22

Basal Area in sf/acre: 110

Size class of trees > 20' height within sample plot

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Sugar Maple	11			4	1		14			1						28
White Ash		4														4
Total Number of Trees per Size Class	19			5			7			1						32
Number & Size of Standing Dead Trees													1 - 30.1" 1 - 37.3"			2

List of Common Understory Species 3'-20':
Sugar maple
White ash

% of Canopy Closure
15.6 37.24 29.12 18.72 28

C	N	E	S	W	Total
84.4	67.76	70.88	81.28	74	75.66

Percent of Invasive Cover per Plot (All Layers):
8%
reed canarygrass
garlic mustard (H)
multiflora

Plot Successional Stage:
Early-Late

List of Herbaceous Species 0'-3':
White Snakeroot
Bigleaf aster
White heath aster

% Understory Cover 3'-20'

C	N	E	S	W	Total
5	15	10	10	20	12

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
55	90	90	60	62	71.4

Comments: Flat hillside forest dominated by sugar maples. Located between croplfield, planted roadside area, and equipment staging area. Herbaceous dominated by white snakeroot.

Sheet 1 of 1

Forest Sampling Data Worksheet

C:1

Property: US 219 Alternative E & DU Prepared By NRW, NWS

Stand #: 41-5 Plot #: 1 Plot Size: 1/10 ac Date: 9/8/22

Basal Area in sf/acre: 120	Size class of trees > 20' height within sample plot

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Hawthorne sp.	18			4			2			2						26
Black locust		1			4											5
Black cherry		1			1			1								3
White Ash		3														3
Total Number of Trees per Size Class	23			9			3			2			0			37
Number & Size of Standing Dead Trees	2			0			0			0			0			2

List of Common Understory Species 3'-20':

Hawthorne sp.

% of Canopy Closure					
C	N	E	S	W	Total
81	87	92	87	94	88.2

Percent of Invasive Cover per Plot (All Layers):

~ 12% invasive

Garlic mustard (H)

Plot Successional Stage:

Late mid-successional

List of Herbaceous Species 0'-3':

White snakeroot
White Ash
Garlic mustard

% Understory Cover 3'-20'					
C	N	E	S	W	Total
0	4	0	8	18	6.0

% of Herbaceous Cover 0'-3'					
C	N	E	S	W	Total
46	40	42	35	24	37.4

Comments Gentle forested hillslope dominated by Hawthornes. Located adjacent to retention basin area that was recently planted with saplings. Herbaceous primarily dominated by white snakeroot and white ash.

Sheet __ of __ Photos (2): S to N, N to S

Forest Sampling Data Worksheet C:1

Property: US 219 Alternative E & DU Prepared By: NRW, NWS

Stand #: 41-5 Plot #: 2 Plot Size: 1/10 ac Date: 9/7/22

Basal Area in sf/acre: 40	Size class of trees > 20' height within sample plot															
Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Hawthorne Sp.		5														5
White Ash		2			1											3
Black Locust		3			4											7
Sugar Maple					3											3
Cucumber Tree					1											1
Blackcherry								1								1
Total Number of Trees per Size Class	10			9			1									20
Number & Size of Standing Dead Trees				2												2

List of Common Understory Species 3'-20':
Hawthorne Sp.

% of Canopy Closure: 25, 16, 29, 20

C	N	E	S	W	Total
26	16.64	30.16	20.8	27.04	75.87

Percent of Invasive Cover per Plot (All Layers): none

Plot Successional Stage: Mid

List of Herbaceous Species 0'-3':
Canadian goldenrod
Canada germander
wild basil
white heath aster

% Understory Cover 3'-20'

C	N	E	S	W	Total
7	24	9	30	12	16.4

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
100	100	100	100	100	100

Comments: Plot is located in the mixed forage edge of

Photos (2) S to N, N to S

Sheet 1 of 1

Forest Sampling Data Worksheet C:1

Property: US 219 Alternative E & DU **Prepared By** NRW, NWS
Stand #: 41-6 **Plot #:** 1 **Plot Size:** 1/10 acre **Date:** 9/7/22

Basal Area in sf/acre: 100	Size class of trees > 20' height within sample plot															
Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Red maple	11			9			4									24
Black Cherry		2			4											6
Black Birch		6			3			1								10
Green Ash		2						1								3
Total Number of Trees per Size Class	21			16			6			0			0			43
Number & Size of Standing Dead Trees	1			0			1			0			0			2

List of Common Understory Species 3'-20':
Chinese privet
Black birch
Red maple

% of Canopy Closure

C	N	E	S	W	Total
83	82	80	79	79	80.6

Percent of Invasive Cover per Plot (All Layers): 7%
Rosa multiflora
Chinese Privet

Plot Successional Stage: Late-mid Successional

List of Herbaceous Species 0'-3':
Green Ash
Bigleaf Aster
Multiflora rose

% Understory Cover 3'-20'

C	N	E	S	W	Total
68	52	54	43	28	

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
95	83	78	95	90	

Comments Red maple / Black birch community
Dense layer of green ash herbaceous
Photos (2) S to N, N to S looking over plot

Sheet 1 of 1

Forest Sampling Data Worksheet

C:1

Property: US 219 Alternative E 3DU Prepared By NRW, NWS
Stand #: 42-1 Plot #: 1 Plot Size: 1/10 ac Date: 9/7/22

Basal Area in sf/acre: 140

Size class of trees > 20' height within sample plot

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
eastern white pine	1			10			10									21
Black locust								2								2
Scots pine					1											1
Black birch					1											1
Total Number of Trees per Size Class	1			12			12			0			0			
Number & Size of Standing Dead Trees	2			6			2			0			0			

List of Common Understory Species 3'-20':
Green ash

List of Herbaceous Species 0'-3':
Wood fern
Spotted jewelweed
Green ash

% of Canopy Closure					
C	N	E	S	W	Total
89	80	87	88	81	85.0

% Understory Cover 3'-20'					
C	N	E	S	W	Total
4	4	0	0	6	2.8

% of Herbaceous Cover 0'-3'					
C	N	E	S	W	Total
46	40	32	30	42	38.0

Percent of Invasive Cover per Plot (All Layers):
NO invasives

Plot Successional Stage:
Late Successional

Comments: Sphagnum moss present throughout plot
Mature stand of eastern white pine. Little to no understory

2 Photos, S to N, N to S

Sheet __ of __

Forest Sampling Data Worksheet

C:1

Property: US 219 Alternative E 3DV Prepared By NRW, NWS

Stand #: 42-1 Plot #: 2 Plot Size: 1/10 ac Date: 9/7/22

Basal Area in sf/acre: 200

Size class of trees > 20' height within sample plot

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Eastern white pine	1			13			12			1						27
Sugar maple		1														1
Scot's pine								1								1
Black locust					4											4
Total Number of Trees per Size Class	2			17			13			1			0			33
Number & Size of Standing Dead Trees	3			2			3			0			0			8

List of Common Understory Species 3'-20':

Green ash

% of Canopy Closure

C	N	E	S	W	Total
79	87	92	81	78	83.4

Percent of Invasive Cover per Plot (All Layers):

None

Plot Successional Stage:

Late Successional

List of Herbaceous Species 0'-3':

Wood fern
Green ash
Spotted jewelweed

% Understory Cover 3'-20'

C	N	E	S	W	Total
0	0	0	6	5	2.2

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
18	17	12	13	16	15.2

Comments: Community dominated by mature eastern white pine. Little to no understory.

Sheet __ of __

2 Photos S to N, N to S

Forest Sampling Data Worksheet

C:1

Property: US 219 Alternative E4DU **Prepared By** NWS, NRW
Stand #: 42-2 **Plot #:** 1 **Plot Size:** 1/10 acre **Date:** 9/8/22

Basal Area in sf/acre:	Size class of trees > 20' height within sample plot
150	

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Eastern White Pine					HHT			|||								8
Yellow Birch					|											1
Scot's Pine					||||			||								6
Black Locust		|||			||			|								6
White Ash		|			||											3
Hawthorne sp.		||														2
Sugar maple		|														1
Total Number of Trees per Size Class	7			14			6									27
Number & Size of Standing Dead Trees	||||			HHT||												11

List of Common Understory Species 3'-20':
Hawthorne Sp.
Amur honeysuckle
Black locust

List of Herbaceous Species 0'-3':
Canadian goldenrod
Wild basil
White heath aster
Black raspberry

% of Canopy Closure
24.96 22.88 8.32 23.92 18.72

C	N	E	S	W	Total
75.04	77.12	91.68	76.08	81.28	80.24

% Understory Cover 3'-20'

C	N	E	S	W	Total
0	9	5	22	5	8.2

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
18	95	17	30	50	42

Percent of Invasive Cover per Plot (All Layers): 15%
Amur honeysuckle (U)
garlic mustard ? (H)
burdock ?

Plot Successional Stage: Early-Late

Comments Plot is located in an area of planted rows of Scot's and eastern white pine trees along the hillslope between the wetland and the transportation/disturbed area

Burdock (H)
Amur honeysuckle (U)
garlic mustard invasive (H)

Photos (2) - S to N, N to S

Sheet 1 **of** 1

Forest Sampling Data Worksheet

C:1

Property: US 219 Alternative E DU Prepared By: NRW, MWS
Stand #: 42-2 Plot #: 2 Plot Size: 1/10 ac Date: 9/8/22

Basal Area in sf/acre: 140

Size class of trees > 20' height within sample plot

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
eastern white pine					1			3								4
Scot's pine				5			2	1								7
Chokecherry		1														1
Black locust		2			2											4
White Ash		4			3											7
Sugar Maple		1														1
Total Number of Trees per Size Class	8			11			5			0			0			24
Number & Size of Standing Dead Trees	7			4			2			0			0			13

List of Common Understory Species 3'-20':
White ash
Sugar maple

% of Canopy Closure

C	N	E	S	W	Total
83	78	90	89	76	83.2

Percent of Invasive Cover per Plot (All Layers):
Rambler rose 5%
Garlic mustard 7%
12%

Plot Successional Stage: Early
Late Successional

List of Herbaceous Species 0'-3':
Solidago canadensis
white heath aster
white ash
common burdock
Garlic mustard

% Understory Cover 3'-20'

C	N	E	S	W	Total
5	16	7	10	7	9.0

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
69	70	65	62	70	67.0

Comments: Mature stand of Scot's pine on a steep hillslope

Photos (2) S to N, N to S

Sheet __ of __

Forest Sampling Data Worksheet C:1

Property: US 219 Alternative Eton Prepared By NWS, NRW

Stand #: 43-1 Plot #: 1 Plot Size: 1/10 acre Date: 9/7/22

Basal Area in sf/acre: 20

Size class of trees > 20' height within sample plot

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Scotts Pine	II	III			II											5
Eastern White Pine		I														1
Jack Pine		IIII			I											6
Black Birch		IIII			III											7
Total Number of Trees per Size Class		13			6											19
Number & Size of Standing Dead Trees	1															1

List of Common Understory Species 3'-20':
Red Maple
Jack Pine
Eastern White Pine

% of Canopy Closure

31.2 28.08 37.44 23.92 33.28

C	N	E	S	W	Total
68.8	71.92	62.56	76.08	66.72	69.2

Percent of Invasive Cover per Plot (All Layers): none

Plot Successional Stage: Early - Mid

List of Herbaceous Species 0'-3':
White Goldenrod
Lowbush Blueberry
Wood Bluegrass

% Understory Cover 3'-20'

C	N	E	S	W	Total
10	8	5	5	5	67

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
11	13	22	34	15	81

Comments: Mixed forestland between a wetland and the disturbed land for the in bioswale/ retention basin. Sphagnum moss present throughout the plot. Rocky terrain.

Sheet 1 of 1

Photos (2) - S to N & N to S looking over plot.

Forest Sampling Data Worksheet C:1

Property: US 219 Alternative E+04 Prepared By NWS NRW
Stand #: 43-1 Plot #: 1 Plot Size: 1/10 acre Date: 9/7/22

Basal Area in sf/acre: 20

Size class of trees > 20' height within sample plot

Tree Species	# of Trees 2-5.9" dbh			# of Trees 6-11.9" dbh			# of Trees 12-19.9" dbh			# of Trees 20-29.9 dbh			# of Trees > 30" dbh			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Red Maple		11			1											3
Black Locust		11			1											3
Green Ash		1			1											2
Black Birch					1											1
Black v. Cherry			1													1
Total Number of Trees per Size Class		6			4											10
Number & Size of Standing Dead Trees	1															1

List of Common Understory Species 3'-20':
Green Ash, Black Locust, Arrowwood Viburnum, Black Poplar

% of Canopy Closure

	C	N	E	S	W	Total
40.56 61.36 17.64 37.14 19.76	59.41	38.64	82.32	62.56	80.24	64.64

Percent of Invasive Cover per Plot (All Layers): none

Plot Successional Stage: Early-Mid

List of Herbaceous Species 0'-3':
Canadian Goldenrod, White Heath Aster

% Understory Cover 3'-20'

C	N	E	S	W	Total
0	12	0	10	75	67.66

% of Herbaceous Cover 0'-3'

C	N	E	S	W	Total
100	100	100	100	100	100

Comments: Edge community located between wetland and fallow field. Dense layer of golden rod covering herbaceous layer

Sheet 1 of 1 2 photos South to North & North to South looking over plot

Forest Sampling Data Worksheet C:1

Cropland/Rangeland
Species List

Compartment Number: 21-1	Investigators: B. Taylor, L. Young, B. Smith, E. Anderson
Date: 9/6/22	

Scientific Name	Common Name
1 Dactylis glomerata	orchard grass (D)
2 Plantago lanceolata	lance-plantain
3 Taraxacum officinale	dandelion
4 Trifolium repens	white clover
5	lance-leaf plantain
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Notes: Hayfield - routinely cut. Gently sloping fields bordered on both sides by forests. Residence with shed / barn also adjacent to field.
(D) = Dominant

Cropland/Rangeland
Species List

Compartment Number: 21-2	Investigators: LY, BMS, BJS, EMA
Date: 9/6/22	

Scientific Name	Common Name
1 Dactylis glomerata	Orchard grass (D)
2 Plantago lanceolata	Lanceleaf plantain
3 Fragaria virginiana	strawberry
4	Oat
5	Corn
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Notes: Part hay and part corn with a sliver of oat. The hayfield is routinely cut. Corn & oat doing well & almost ready to be harvested.

Cropland/Rangeland
Species List

Compartment Number: 21-3 (TBD)	Investigators: LY, BMS, BJS, EMA
Date: 9/6/22	

Scientific Name	Common Name
1 Dactylis glomerata	Orchard grass (D)
2 Daucus carota	Queen Anne's lace
3 Plantago lanceolata	Lanceleaf plantain (D)
4 Asclepias syriaca	Common milkweed
5 Coronilla varia	Crown vetch (D)
6 Taraxacum officinale	Dandelion (D)
7 Schedonorus arundinaceus	Meadow fescue (D)
8 Prunella vulgaris	Heal-all
9	
10	
11	
12	
13	
14	
15	

Notes: Cropland-pasture (formerly herbaceous Rangeland 31-1). Hayfield perhaps cut one/year. Gently sloping. Located between forested areas.

Cropland/Rangeland
Species List

Compartment Number: 31-1	Investigators: BMS, LY, BJS, EMA
Date: 9/6/22	

Scientific Name	Common Name
1 Solidago spp.	Goldenrod (D)
2 Cirsium sp.	Thistle (D)
3 Daucus carota	Queen Anne's lace (D)
4 Schedonorus arundinaceus	Meadow Fescue
5 Lotus corniculatus	Bird's-foot trefoil
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Notes: Herbaceous - Rangeland (formerly mapped as Shrub & Brush Rangeland 32-1)
Meadow dominated with forbs (wildflowers) including thistle, various species of goldenrod, Queen Anne's lace. ~~Some~~ A couple of shrubs. Many butterflies observed on flowers. Saw one monarch, a couple swallowtails and sulfur butterflies. Gently sloping. Borders deciduous forest (41-1) and hayfield (21-?).
(D) = Dominant

Cropland/Rangeland
Species List

Compartment Number: 32-2	Investigators: NPW, NWS
Date: 9/6/22	

H = Herb S = Shrub/Sapling T = Tree

	Scientific Name		Common Name
1	Solidago rugosa	H	Wrinkle-leaf goldenrod
2	Solidago canadensis	H	Canadian goldenrod
3	Fraxinus pennsylvanica	S	Green ash
4	Acer rubrum	S	Red maple
5	Prunus serotina	S	Black cherry
6	Daucus carota	H	Queen Anne's-lace
7	Phalaris arundinacea	H	Reed canary grass
8	Rubus argutus	H	Saw-tooth blackberry
9	Spiraea alba	H	White meadowsweet
10	Pinus strobus	S & T	Eastern White pine
11	Clinopodium vulgare	H	Wild basil
12	Panicum virgatum	H	Wand panic grass
13	Solidago bicolor	H	White goldenrod
14	Achillea millefolium	H	Common yarrow
15	Symphyotrichum ericoides	H	White heath American-aster
16	Viburnum dentatum	S	Southern arrow-wood

Notes: Fallow field with patches of sapling trees present.

APPENDIX H

MARYLAND ANDERSON LU-LC PHOTOS

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 1

Date Taken:
September 6, 2022

Comments:
Looking north at plot 416-1-1, which characterizes a Black Cherry-Maple association forest located in the northern section of the alternatives E & DU.

Photo 2

Date Taken:
September 6, 2022

Comments:
Looking south at plot 416-1-2, which characterizes a Sugar Maple dominated forest located in the northern section of the AOI near the Pennsylvania Border.

RETTEW Associates, Inc.
Photo Documentation

Client:
Stantec Consulting Services Inc.

Site Name:
US 219 Meyersdale to Old Salisbury Rd

Site Location:
Garrett County, MD

Project Number:
019342063

Photo 3

Date Taken:
September 6, 2022

Comments:
Looking north at plot 416-1-4, which characterizes a fairly open maple-oak-hickory association forest located in the northern section of the AOI.

Photo 4

Date Taken:
September 6, 2022

Comments:
Looking north at plot 416-1-6, which characterizes a Black Locust – Sugar Maple dominated forest located a previously disturbed area next to a pond and wetlands.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 5

Date Taken:
September 6, 2022

Comments:
Looking north at plot 416-1-7, which characterizes a Black Cherry-Sugar Maple association forest located in a rich mesic area with dense herbaceous cover.

Photo 6

Date Taken:
September 6, 2022

Comments:
Looking south at plot 416-1-8, which characterizes a Sugar Maple dominated forest located in an open section of forest with a sparse herbaceous layer.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 7

Date Taken:
September 6, 2022

Comments:
Looking north at plot 416-1-9, which characterizes a Sugar Maple association forest located in the northern section of the AOI.

Photo 8

Date Taken:
September 6, 2022

Comments:
Looking south at plot 416-2-1, which characterizes a mixed Oak-Sugar Maple forest located in the northern section of the AOI.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 9

Date Taken:
September 6, 2022

Comments:
Looking north at plot 416-2-2, which characterizes a Black Cherry-Sugar Maple association forest located adjacent to an agricultural field.

Photo 10

Date Taken:
September 6, 2022

Comments:
Looking north at plot 415-3-1, which characterizes a recently logged Sugar Maple dominated forest located in the central section of the AOI.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 11

Date Taken:
September 6, 2022

Comments:
Looking south at plot 415-3-2 which characterizes a Sugar Maple dominated forest.

Photo 12

Date Taken:
September 6, 2022

Comments:
Looking south at plot 415-3-3, which characterizes a Sugar Maple dominated forest.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 13

Date Taken:
September 6, 2022

Comments:
Looking south at plot 41-4-1 which characterizes a hillside Sugar Maple-White Ash association forest.

Photo 14

Date Taken:
September 6, 2022

Comments:
Looking south at plot 415-5-1, which characterizes gentle forested hillslope dominated by Hawthorne located in the southern section of the AOI.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 15

Date Taken:
September 6, 2022

Comments:
Looking south at plot 415-5-2 which characterizes a Black Locust-Hawthorne association forest located in the southern section of the AOI.

Photo 16

Date Taken:
September 6, 2022

Comments:
Looking north at plot 415-6-1, which characterizes a Red Maple-Black Birch dominated forest located in the southern section of the AOI.

RETTEW Associates, Inc.
Photo Documentation

Client:
Stantec Consulting Services Inc.

Site Name:
US 219 Meyersdale to Old Salisbury Rd

Site Location:
Garrett County, MD

Project Number:
019342063

Photo 17

Date Taken:
September 7, 2022

Comments:
Looking south at plot 426-1-1 which characterizes an Eastern White Pine dominated forest located in the southern section of the AOI.

Photo 18

Date Taken:
September 7, 2022

Comments:
Looking south at plot 426-1-2, which characterizes an Eastern White Pine dominated forest located in the southern section of the AOI.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 19

Date Taken:
September 8, 2022

Comments:
Looking north at plot 426-2-1 which characterizes a mixed forest with planted rows of pines located in the southern section of the AOI.

Photo 20

Date Taken:
September 8, 2022

Comments:
Looking north at plot 426-2-2, which characterizes a Mixed forest located in the southern section of the AOI along a sleep slope.

RETTEW Associates, Inc.
Photo Documentation

Client:
Stantec Consulting Services Inc.

Site Name:
US 219 Meyersdale to Old Salisbury Rd

Site Location:
Garrett County, MD

Project Number:
019342063

Photo 21

Date Taken:
September 7, 2022

Comments:
Looking south at plot 436-1-1 which characterizes a mixed forest of evergreen and deciduous trees located in the southern section of the AOI.

Photo 22

Date Taken:
September 7, 2022

Comments:
Looking north at plot 436-1-2, which characterizes an edge forest community along a wetland located in the southern section of the AOI.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 23

Date Taken:
September 7, 2022

Comments:
Looking north at plot 32-1.

Photo 24

Date Taken:
September 7, 2022

Comments:
Typical agricultural field.

APPENDIX I

MARYLAND WILDLIFE SIGHTINGS

Wildlife Sightings
Observations

Investigator: B. Sulon, B. Smith, E. Anderson		Date: 9/6/22
Species	**Compartment**	**Notes**
turkey vulture	21-1	In flight over field
black crow	21-1	In flight over field
Pee wee	41-1	
Hummingbirds	21-1	In flight
turkey	21-1	Flock in field
chipmunks	41-1	
RED EFT NEWT	41-1	Curled next to stick
Deer	41-1	Poop & heard running tracks throughout - Sno trail
Insect (Woodroach)?	41-1	Ben - photo
RED TAIL	41-1	
Flicker	41-1	
Squirrel	41-1	
Butterfly	21-1	Lonnie photo
Stinkbug	41-1	Ben photo
white furry caterpillar	41-1	
HAWK	41-2	Flew from treeedge to cornfield
turkeys	21-2	
Monarchs	31-1	Herb/Rangeland on thistle
Owl or Raptor	21-2/41-2	Feathers + scat noticed at edge of field/woods

Wildlife Sightings
Observations

Investigator: B. Sulon, B. Smith, & Anderson		Date: 9/9/22
Species	**Compartment**	**Notes**
Blue jay	41.1	
turkey	21.1	Flock of 17 using field, flew into 41.1 when flushed
Red-eft newts	41.1	many observed near eastern edge
Downy woodpecker	41.1	seen along forest edge
Chipmunk	41.1	Several seen foraging & sheltering
Chickadee	41.1	flock heard in the morning foraging
Coopers hawk	41.1	Perched at edge
Wood ants	41.1	colony on basswood
Woolly caterpillar	41.1	crawling on tree
Snail	41.1	at plot 5
Bullfrog	41.1	Calling. In pond next to plot 6.
Woodpecker	41.1	cavities in dead trees (ash) in plot 8

* Rained most of the day

Wildlife Sightings
Observations

Investigator: B. Sulon, B. Smith, & Anderson		Date: 9/8/22
Species	Compartment	Notes
~~Pileated~~ Hairy woodpecker	41-3	Pair - foraging
Downy woodpecker	41-3	foraging
Goldfinch	41-3	foraging in brush piles
Yellow ~~-rumped~~ -throated vireo	41-3	flock of approx 5-10
Titmouse	41-3, 1	

Wildlife Sightings
Observations

Investigator: NRW, NWS		Date: 9/6/22
Species	Compartment	Notes
Sparrow	14-2, 43-1, 41-3 21-2	Many visibly seen in each compartment
Catbird	43-1	heard bird call
Yellow finch	14-2, 21-2, 41-3	7 visibly seen
Common yellowthroat Warbler	14-2	1 visibly seen
Carolina Chickadee	14-2, 42-1, 43-1	6 visibly seen
Whitetail deer	32-2	visibly seen 1 deer
Whitetail deer	41-6, 43-1, 42-1 41-5	deer trail
mourning dove	14-2, 41-3	2 visibly seen
Sparrow Species	14-2.	1 visibly seen
Turkey	43-1, 21-2	feather
Whitetail deer	41-6	deer bed
Leopard Frog	61-1	heard frog call
Raccoon	61-1	Scat
Turkey	21-2	Tracks along edge of Ag field.
Monarch butterfly	21-2	2 visibly seen
Turkey Vulture	21-2 & 41-3	1 visibly seen flying over Ag field and forested area
Swallow	21-2	2 visibly seen in Ag field
Eastern wood-peewee	41-3	2 visibly seen
Redtail Hawk	21-2, 41-3	1 visibly seen
Crow	21-2, 41-3, 41-4	5 visibly seen in Ag field and forested area
Catbird	41-3	1 visibly seen
Ruby-throated hummingbird	21-2, 41-3.	3 visibly seen

Wildlife Sightings
Observations

Investigator: NRW, NWS		Date: 9/6/22
Species	Compartment	Notes
Red-bellied woodpecker	41-3	2 visibly seen
Turkey vulture	21-2	feather along edge of Ag field
Hairy Woodpecker	41-3	1 visibly seen
Fox squirrel	41-3	1 visibly seen
American Toad	41-5,	1 visibly seen
Mallard ducks	14-2	8 visibly seen
Wood duck	14-2	1 visibly seen
Groundhog holes	14-2, 41-4	

Table 20.
Phase II Study Area
Observed Wildlife Species

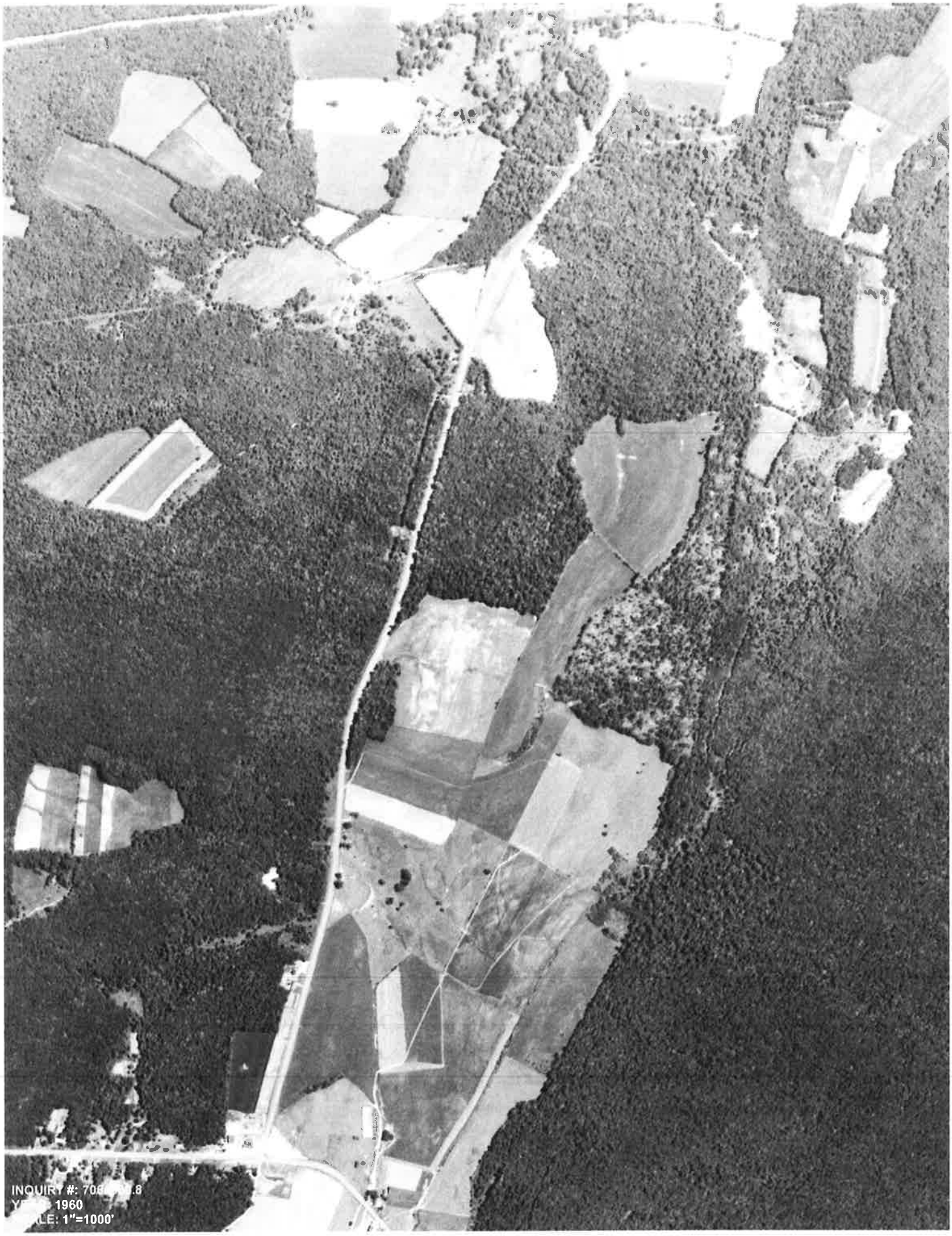
Common Name	Scientific Name
Mammals	
Eastern coyote	*Canis latrans*
Beaver	*Castor canadensis*
Virginia opossum	*Didelphis virginiana*
Groundhog	*Marmota monax*
Striped skunk	*Mephitis mephitis*
Field mouse	*Peromyscus leucopus*
Whitetail deer	*Odocoileus virginianus*
Raccoon	*Procyon lotor*
Grey squirrel	*Sciurus carolinensis*
Fox squirrel	*Sciurus niger*
Eastern cottontail	*Sylvilagus floridanus*
Chipmunk	*Tamias striatus*
Red squirrel	*Tamiasciurus hudsonicus*
Grey fox	*Urocyon cinereoargenteus*
Black bear	*Ursus americanus*
Red fox	*Vulpes vulpes*
Birds	
Cooper's hawk	*Accipiter cooperii*
Sharp-shinned hawk	*Accipiter striatus*
Red-winged blackbird	*Agelaius phoeniceus*
Mallard	*Anas platyrhynchos*
Ruby-throated hummingbird	*Archilochus colubris*
Great blue heron	*Ardea herodias*
Ruffed grouse	*Bonasa umbellus*
Great horned owl	*Bubo virginianus*
Red-tailed hawk	*Buteo jamaicensis*
Broad-winged hawk	*Buteo platypterus*
Green heron	*Butorides striatus*
Northern cardinal	*Cardinalis cardinalis*
American goldfinch	*Carduelis tristis*
House finch	*Carpodacus mexicanus*
Turkey vulture	*Cathartes aura*
Killdeer	*Charadrius vociferus*
Common flicker	*Colaptes auratus*
Rock dove	*Columba livia*
Black vulture	*Coragyps atratus*
Common crow	*Corvus brachyrhynchos*
Blue jay	*Cyanocitta cristata*
Pileated woodpecker	*Dryocopus pileatus*
Gray catbird	*Dumetella carolinensis*
American kestrel	*Falco sparverius*
Barn swallow	*Hirundo rustica*
Baltimore oriole	*Icterus galbula*
Dark-eyed junco	*Junco hyemalis*

Common Name	Scientific Name
Belted kingfisher	*Megaceryle alcyon*
Red-bellied woodpecker	*Melanerpes carolinus*
Wild turkey	*Meleagris gallopavo*
Song sparrow	*Melospiza melodia*
Screech owl	*Otus asio*
Osprey	*Pandion haliaetus*
Black-capped chickadee	*Parus aricapillus*
Tufted titmouse	*Parus bicolor*
House sparrow	*Passer domesticus*
Ring-necked pheasant	*Phasianus colchicus*
Rose-breasted grosbeak	*Pheucticus ludovicianus*
American woodcock	*Philohela minor*
Downy woodpecker	*Picoides pubescens*
Hairy woodpecker	*Picoides villosus*
Common grackle	*Quiscalus quiscula*
Golden-crowned kinglet	*Regulus satrapa*
White-breasted nuthatch	*Sitta carolinensis*
Chipping sparrow	*Spizella passerina*
European starling	*Sturnus vulgaris*
American robin	*Turdus migratorius*
Mourning dove	*Zenaida macroura*
Reptiles	
Snapping turtle	*Chelydraserpentina*
Black racer	*Coluber constrictor*
Ringneck snake	*Diadophis punctatus*
Black rat snake	*Elaphe obsoleta*
Northern water snake	*Nerodia sipedon*
Northern brown snake	*Storeria dekayi*
Garter snake	*Thamnophis sirtalis*
Amphibians	
American toad	*Bufo americanus*
Northern dusky salamander	*Desmognathus fuscus*
Northern two-lined salamander	*Eurycea bislineata*
Spring peeper	*Hyla crucifer*
Red spotted newt	*Notophthalmus viridescens*
Redback salamander	*Plethodon cinereus*
Slimy salamander	*Plethodon glutinosis*
Green frog	*Rana clamitans*
Pickerel frog	*Rana palustris*
Wood frog	*Rana sylvatica*

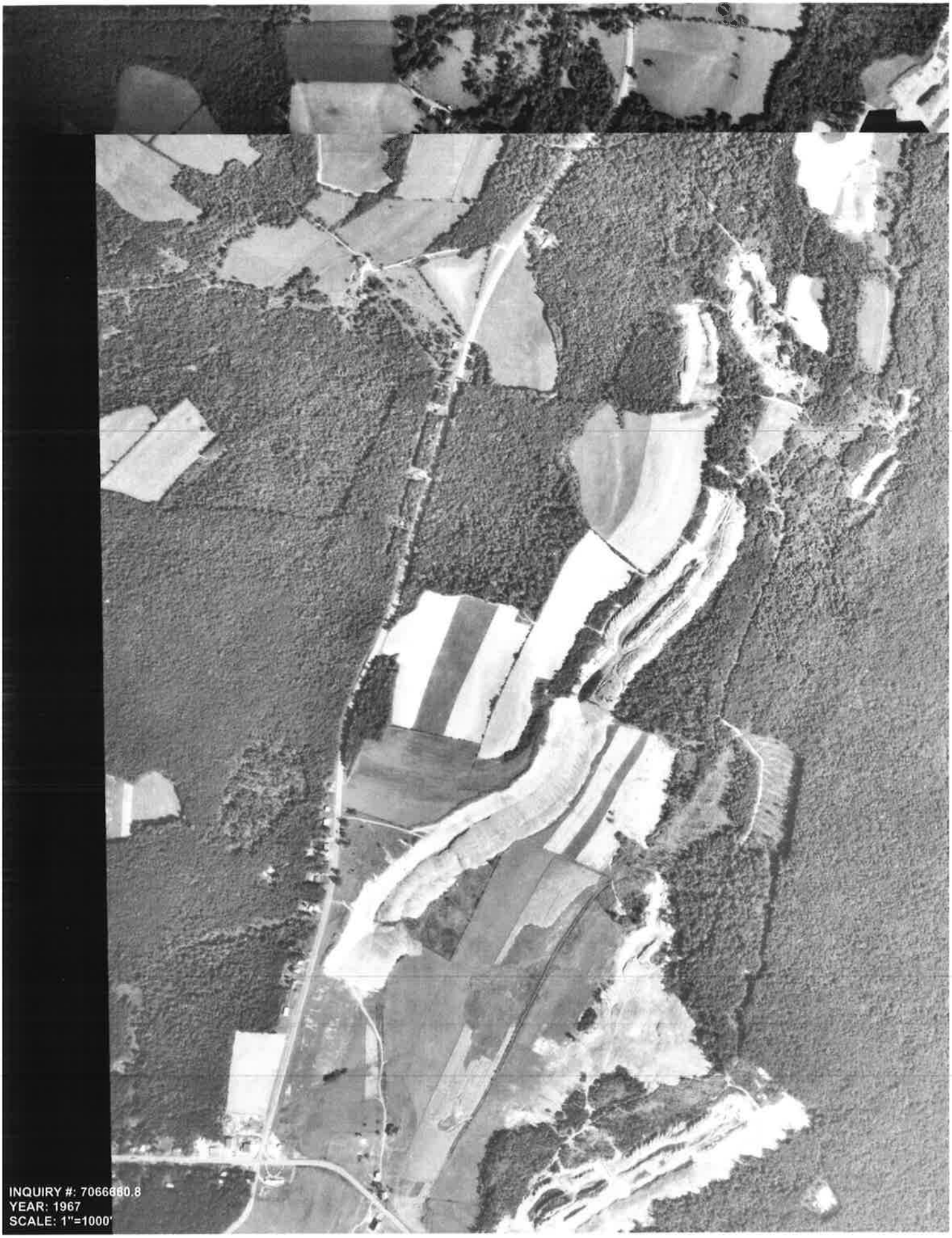
Source: Terrestrial Wildlife ans Species of Special Concern Habitat Report:
L. Robert Kimball & Associates, inc. 2006

APPENDIX J

MARYLAND HISTORIC AERIAL PHOTOS

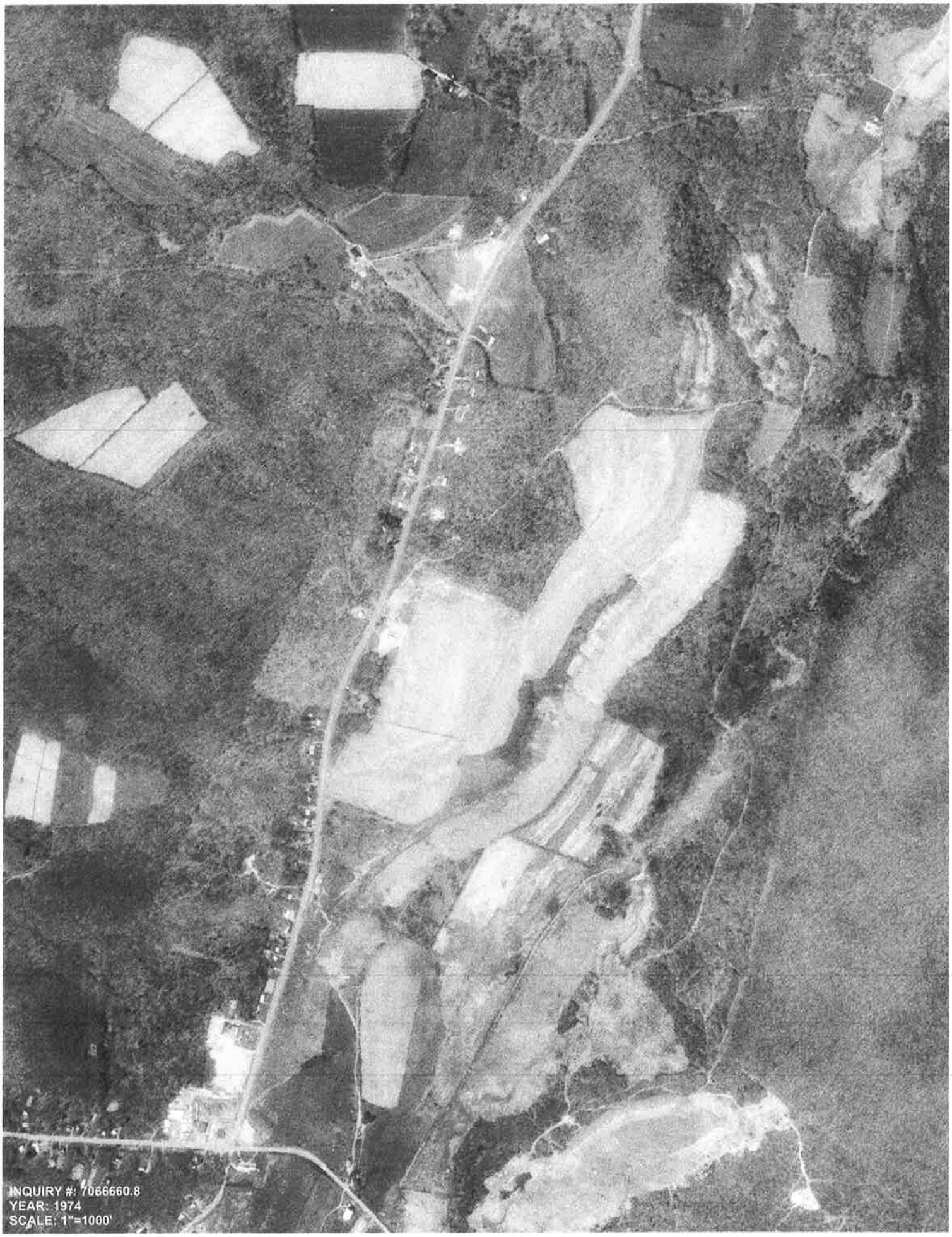

INQUIRY #: 708
1960
LE: 1"=1000'

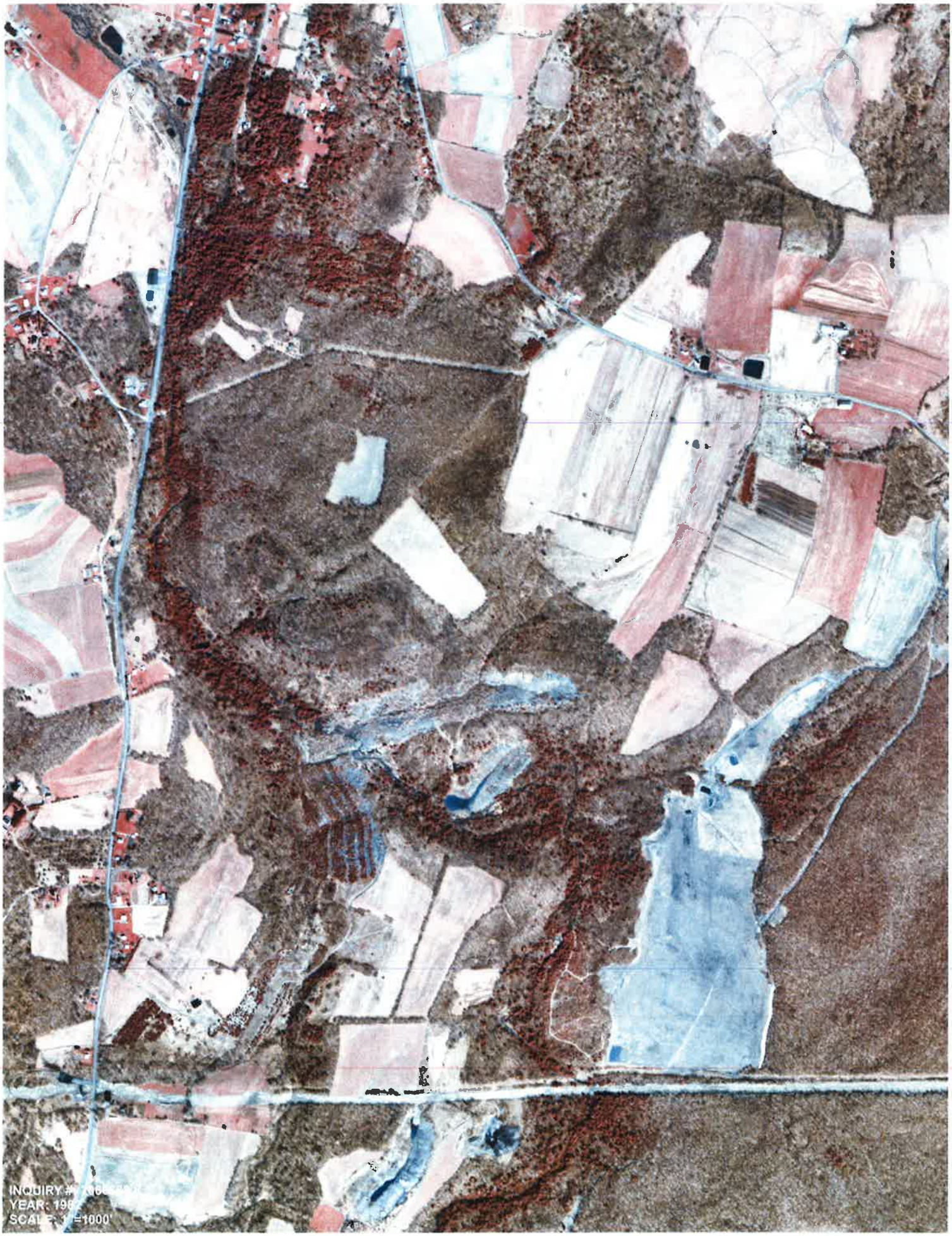

INQUIRY #: 7366660.8
YEAR: 1967
SCALE: 1"=1000'



INQUIRY #: 7066660.8
YEAR: 1967
SCALE: 1"=1000'


INQUIRY #: 7066660.8
YEAR: 1974
SCALE: 1"=1000'


INQUIRY #: 7066660.8
YEAR: 1974
SCALE: 1"=1000'


INQUIRY #
YEAR: 19
SCALE: 1"=1000'


INQUIRY #: 7066660.8
YEAR: 1982
SCALE: 1"=1000'


INQUIRY #: 7006660.8
YEAR: 1993
SCALE: 1"=


INQUIRY #: 7066660.8
YEAR: 1993
SCALE: 1" = 1000'


INQUIRY #: 7066660.8
YEAR: 2004
SCALE: 1"=1000'


INQUIRY #: 7066660.8
YEAR: 2008
SCALE: 1"=1000'


INQUIRY #: 7066660.8
YEAR: 2013
SCALE: 1"=1000'


INQUIRY #: 7066660.8
YEAR: 2017
SCALE: 1"=1000'

APPENDIX K

SPECIMEN TREE PHOTOS

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 1

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 1. Note: Tree #1 is located in Pennsylvania.

Photo 2

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 2. Note: Tree #1 is located in Pennsylvania.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 3

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 3.

Photo 4

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 4. Note: Tree 4 is <30” and is not included as a specimen tree.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 5

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 5.

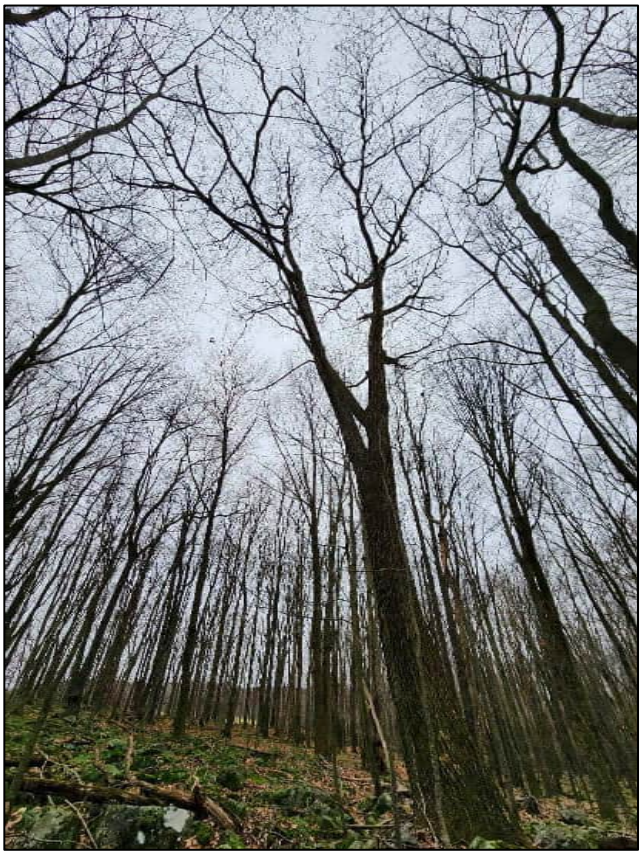
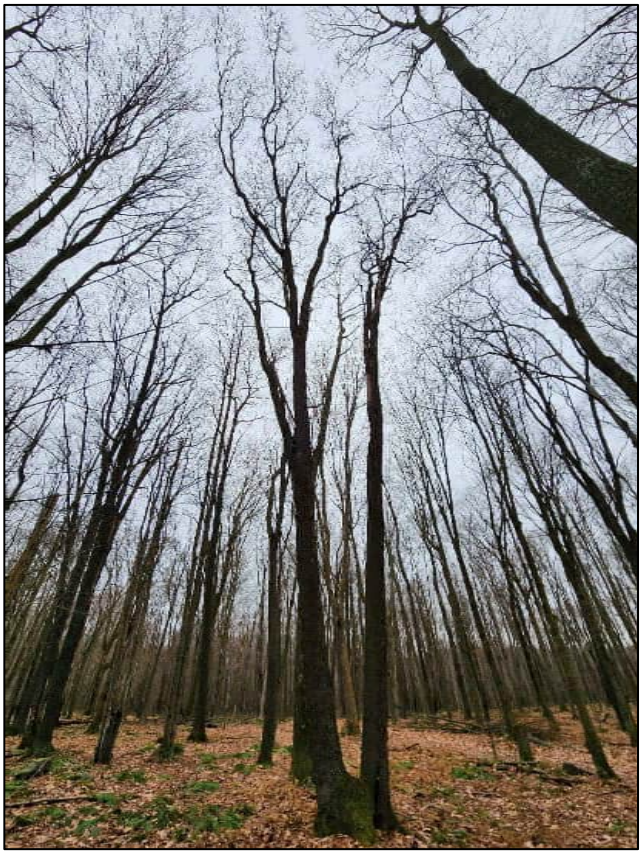


Photo 6

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 6.



RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 7

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 7.

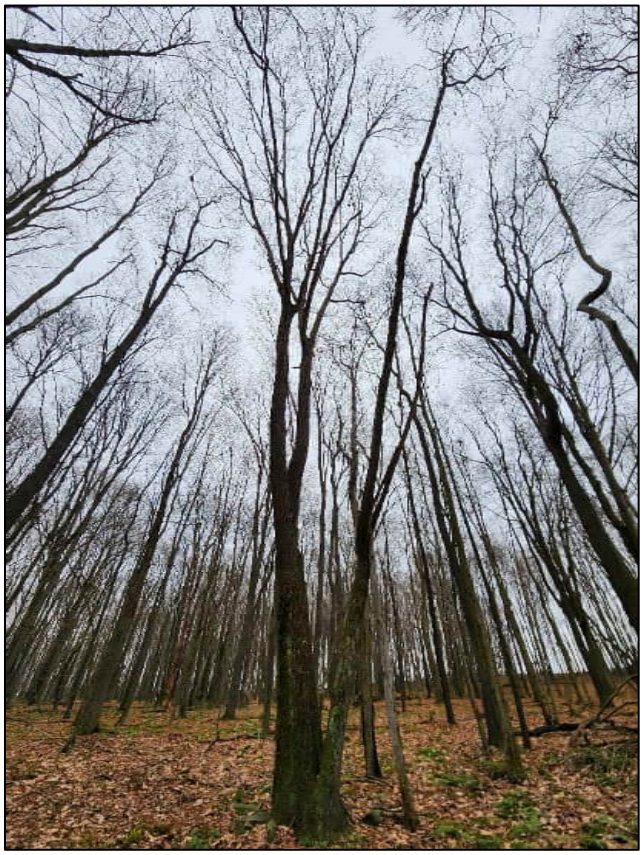
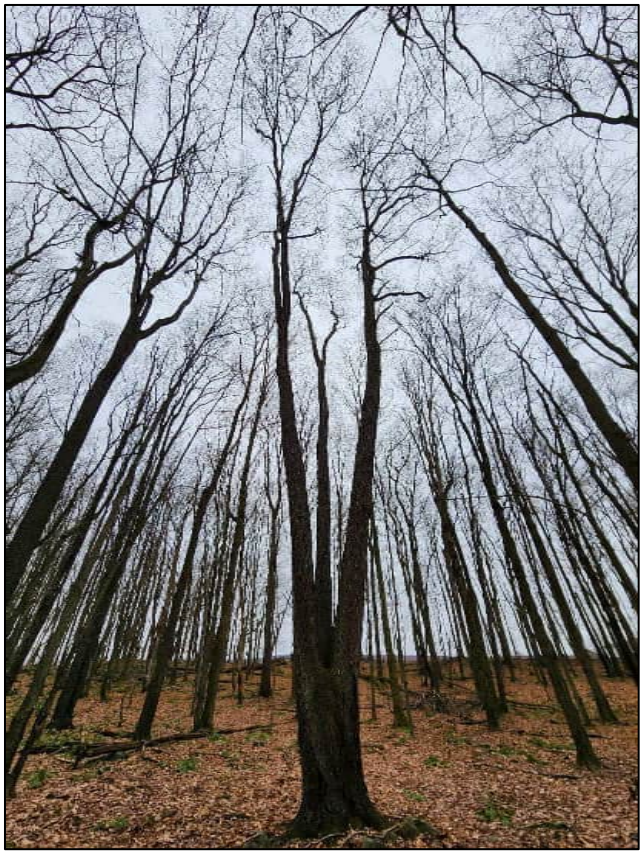


Photo 8

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 8.



RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 9

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 9.

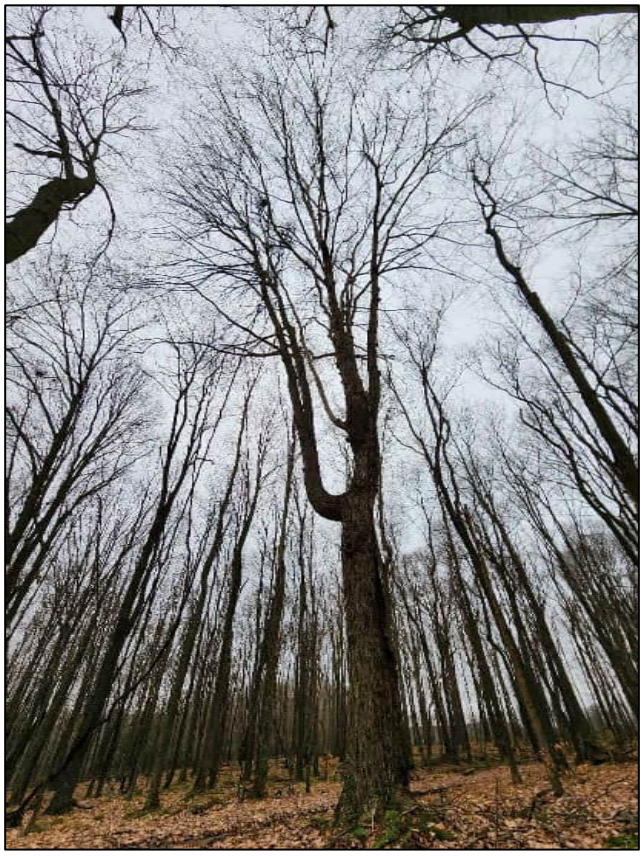
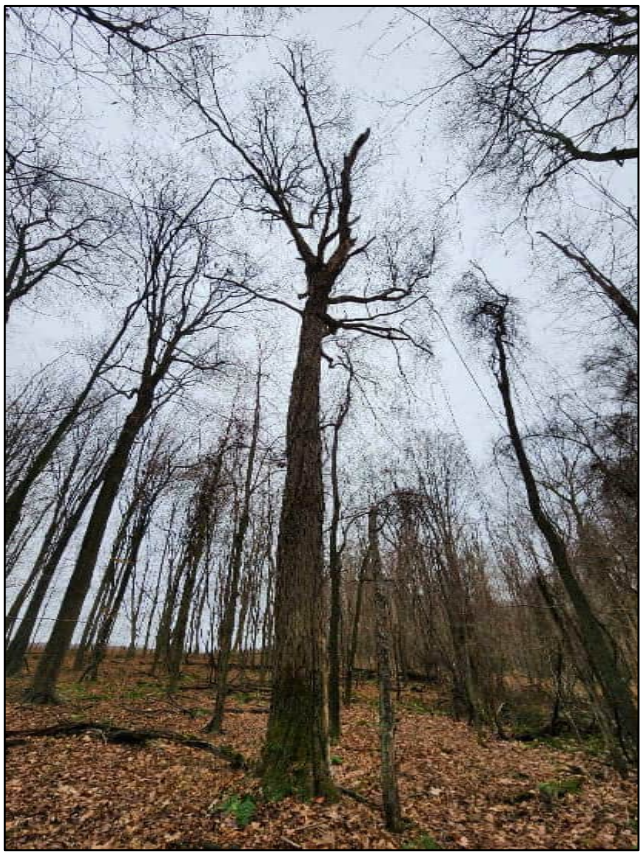


Photo 10

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 10. Note: Tree #10 is <30” and is not considered a specimen tree



RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 11

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 11.

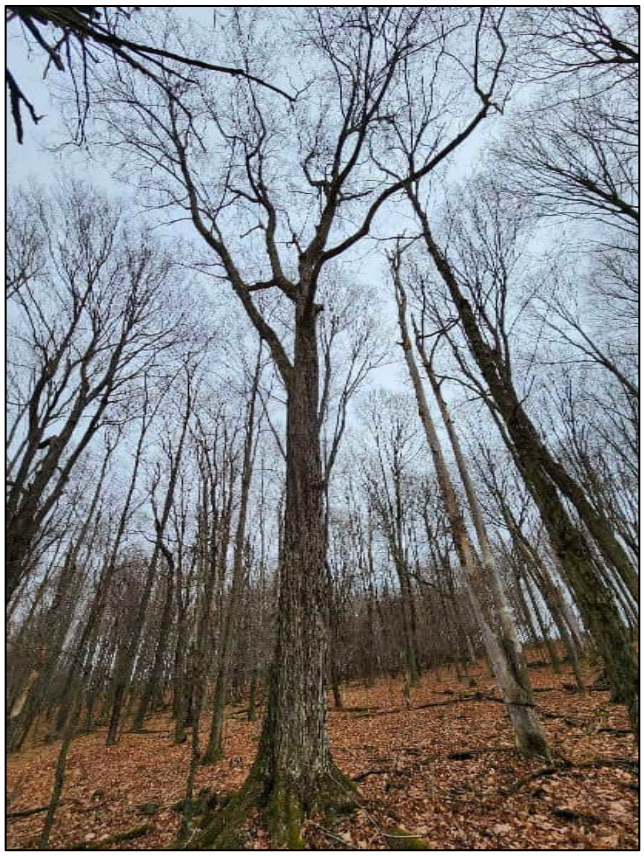
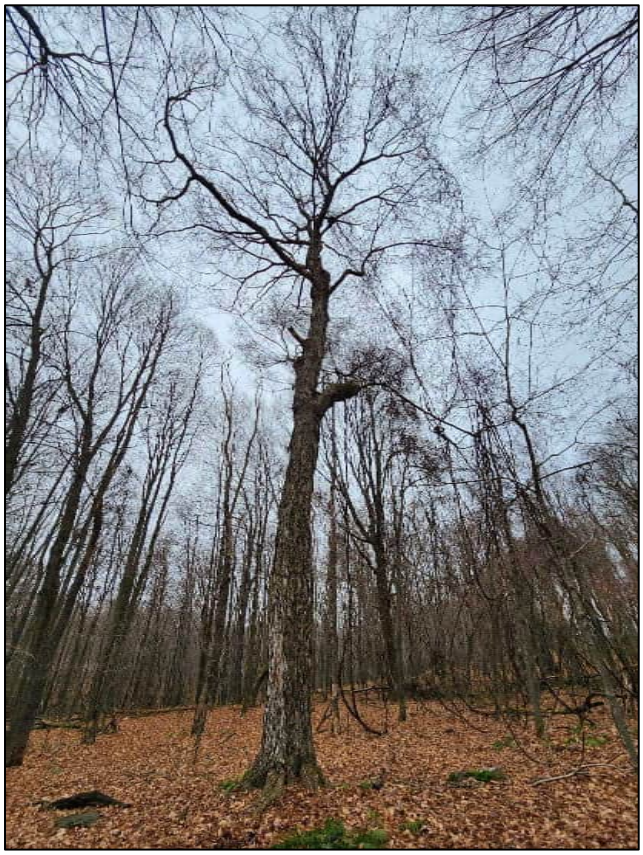


Photo 12

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 12.



RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 13

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 13.

Photo 14

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 14. Note: Tree #14 is <30” and is not considered a specimen tree.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 15

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 15.

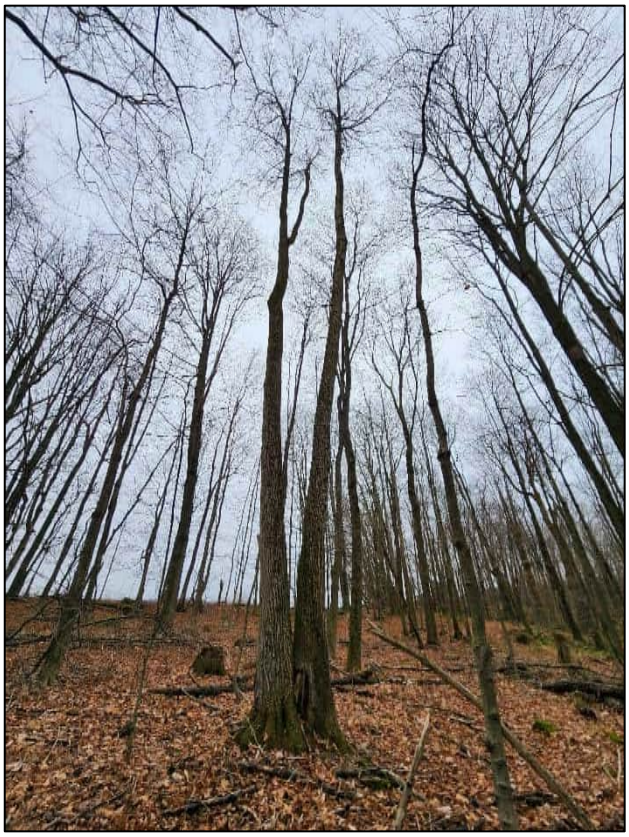


Photo 16

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 16.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 17

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 17.

Photo 18

Date Taken:
September 6, 2022

Comments:
Looking at Specimen Tree 18.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 19

Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 19.

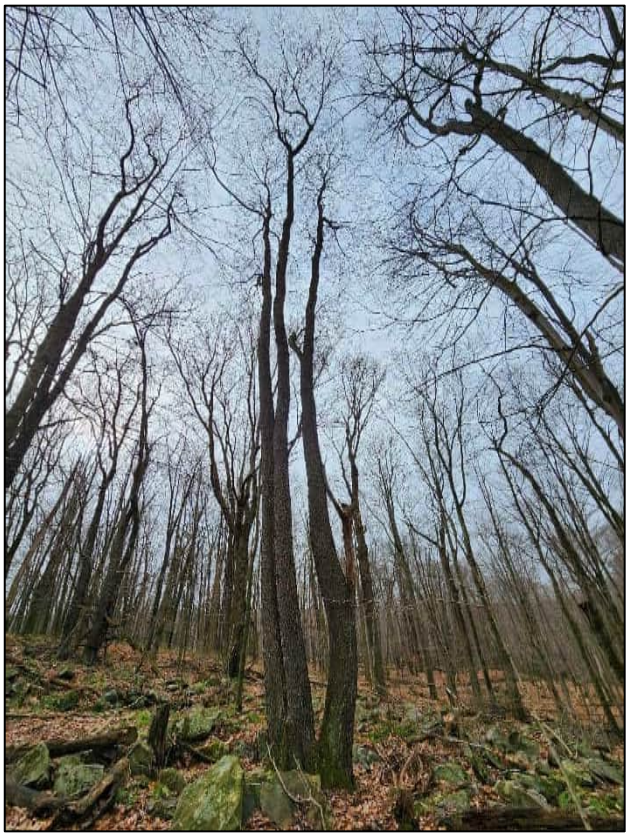
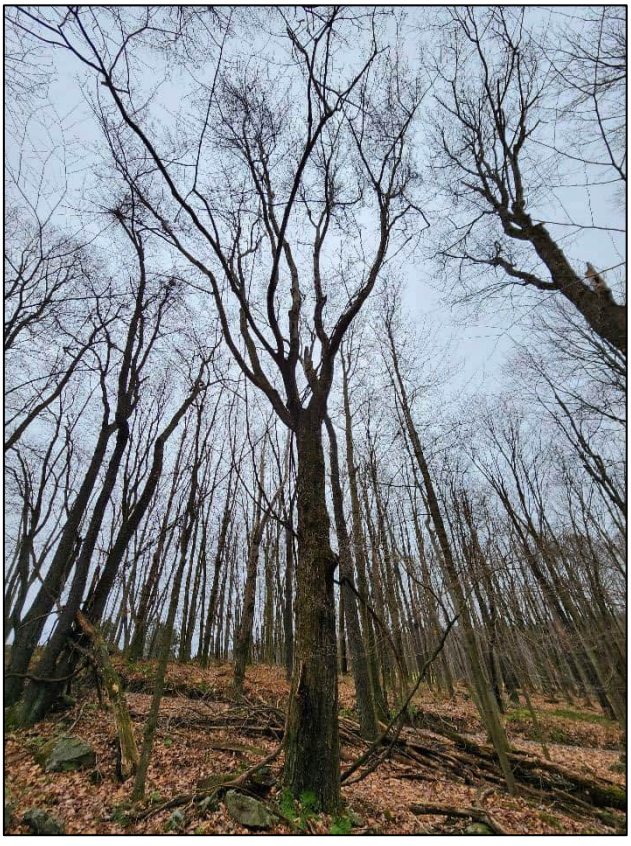


Photo 20

Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 20.



RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 21

Date Taken:
September 8, 2022

Comments:
Looking at Specimen Tree 21.

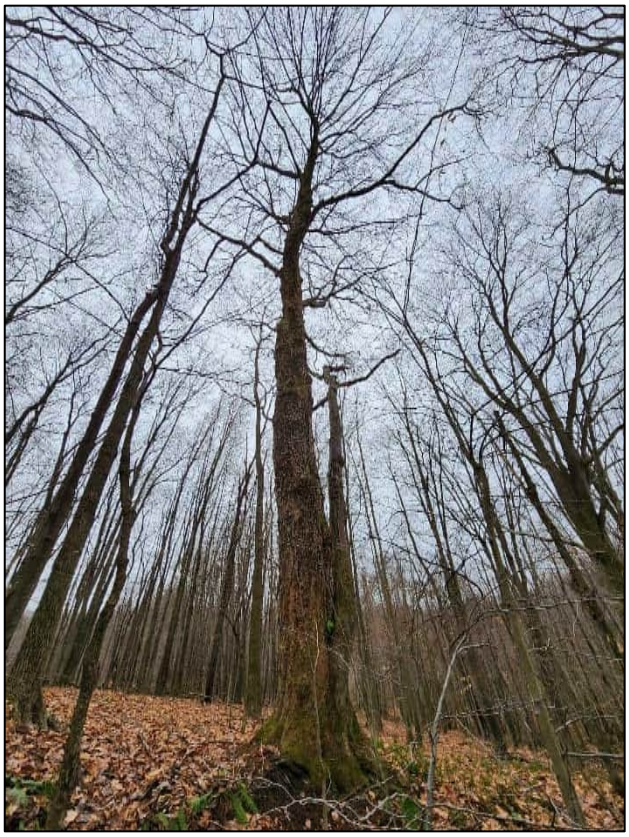
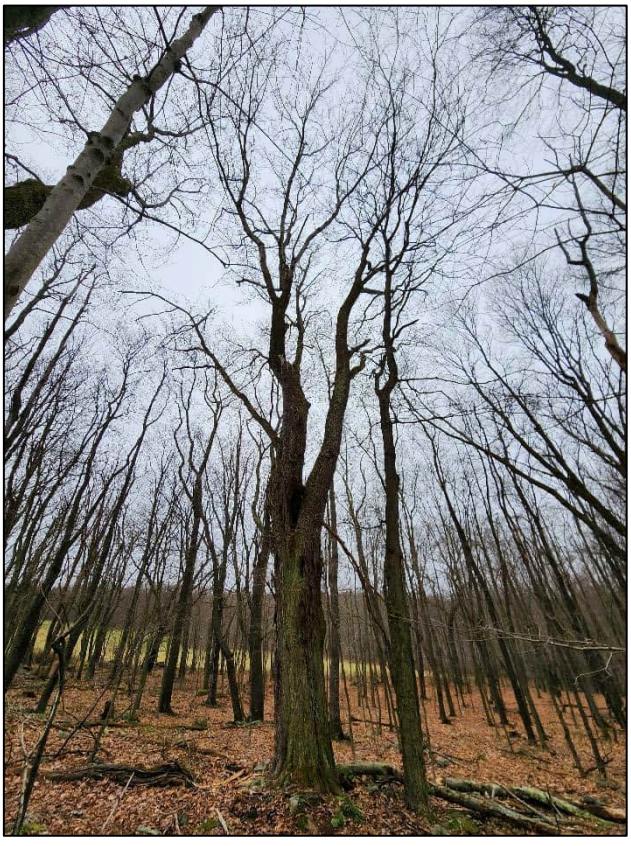


Photo 22

Date Taken:
September 8, 2022

Comments:
Looking at Specimen Tree 22.



RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 23

Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 23.

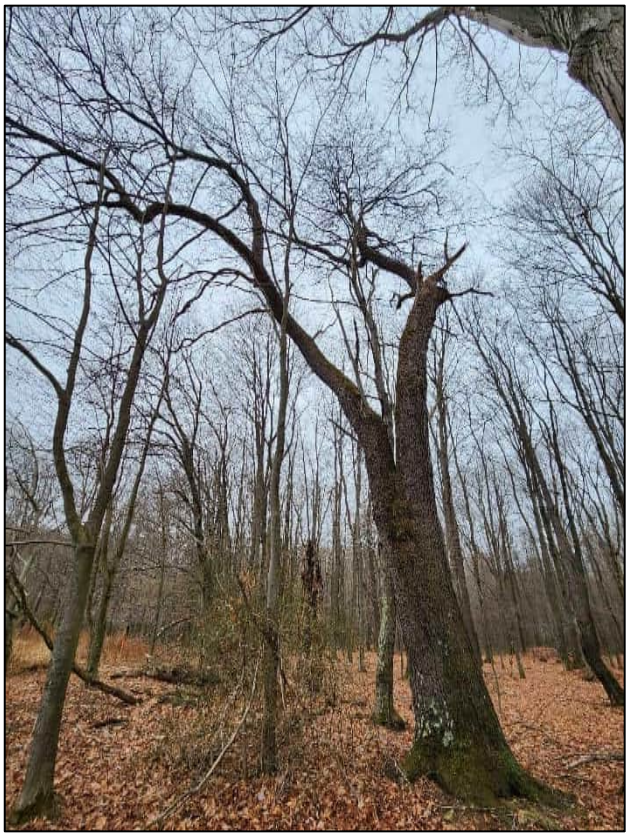


Photo 24

Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 24.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 25

Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 25.

Photo 26

Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 26.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 27

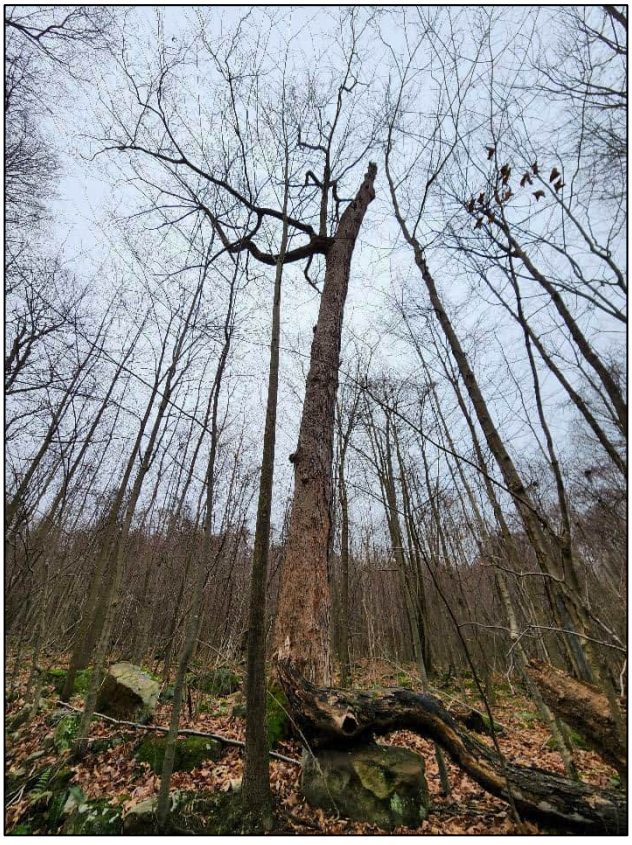
Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 27.

Photo 28

Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 28.



RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 29

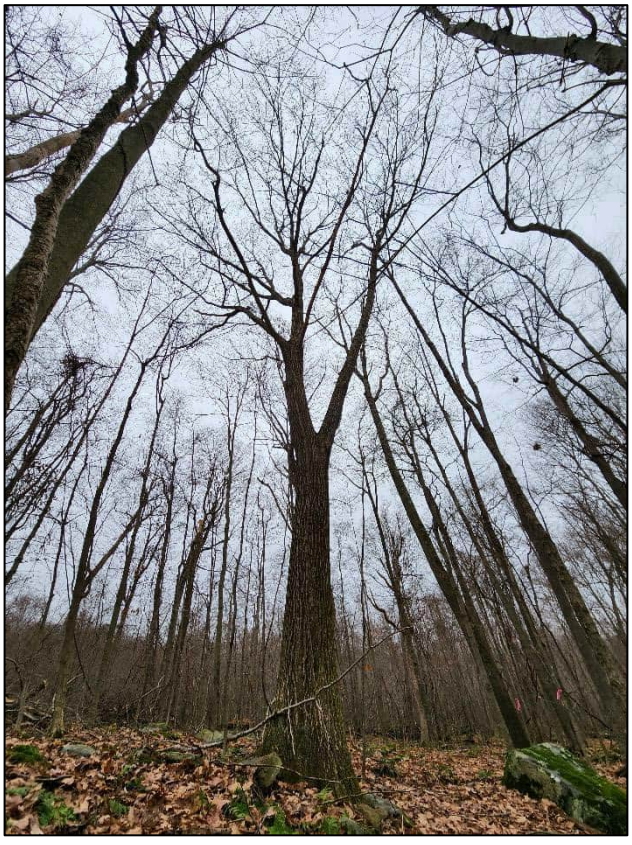
Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 29.

Photo 30

Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 30.



RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 31

Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 31.

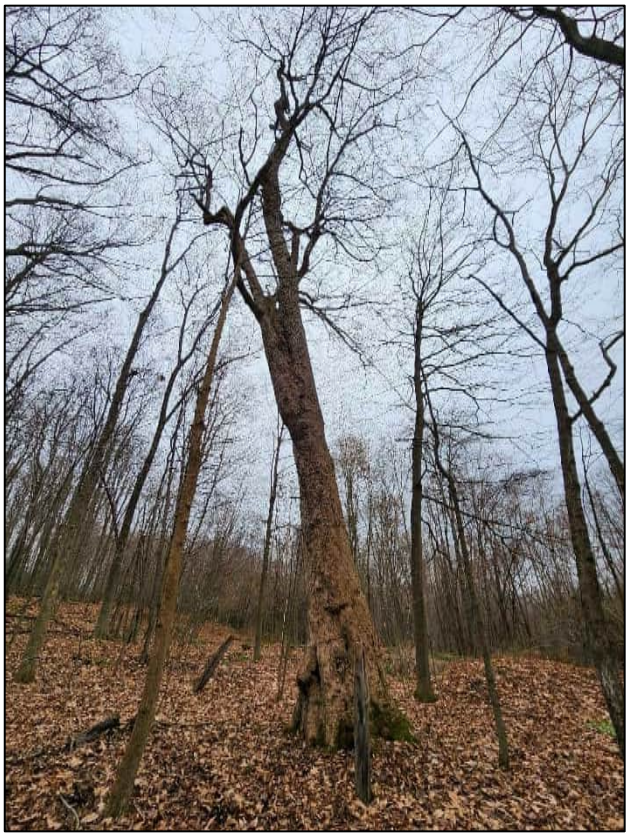


Photo 32

Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 32.

RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 33

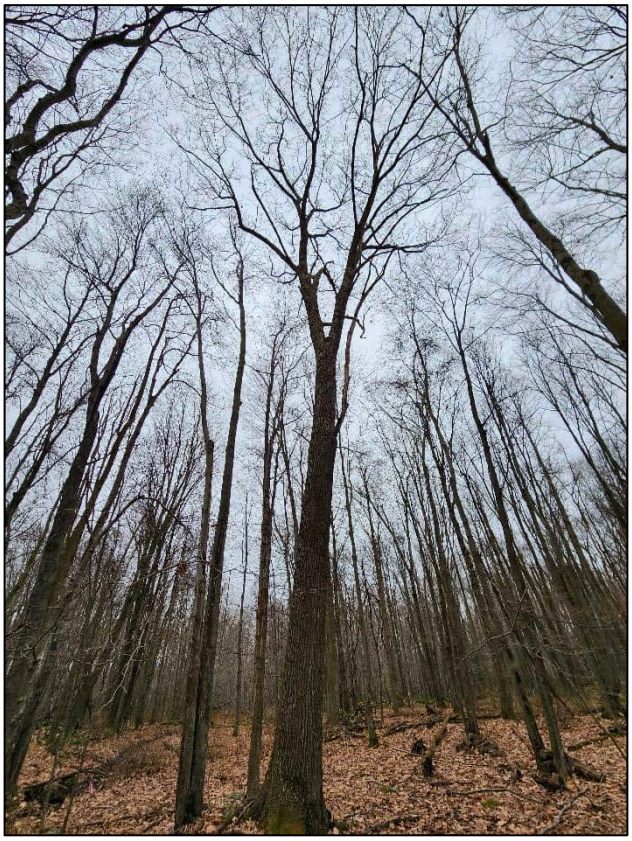
Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 33.

Photo 34

Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 34.



RETTEW Associates, Inc.
Photo Documentation

Client:	**Site Name:**	**Site Location:**	**Project Number:**
Stantec Consulting Services Inc.	US 219 Meyersdale to Old Salisbury Rd	Garrett County, MD	019342063

Photo 35

Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 35.

Photo 36

Date Taken:
September 7, 2022

Comments:
Looking at Specimen Tree 36.

US 6219, SECTION 050 TRANSPORTATION IMPROVEMENT PROJECT
MEYERSDALE, PA TO OLD SALISBURY ROAD, MD
2023 FALL BAT CAPTURE HIBERNACULA USE ASSESSMENT

Somerset County, Pennsylvania
September 19 – October 3, 2023

Prepared by:

BAT Conservation & Management

1263 Claremont Road, Carlisle, Pennsylvania 17015
Office and Fax: (717) 241-2228
Mobile: (814) 442-4246
www.batmanagement.com

Project Principal:
John Chenger

Qualified Bat Surveyor:
Todd Sinander

Bat Surveyor:
Meredith Goza

Report Prepared by:
Todd Sinander

Executive Summary

The Pennsylvania Department of Transportation (PennDOT) and Maryland State Highway Administration (MDSHA) proposes to construct a new 11.3 km (7 mile), limited-access section of State Route (SR) 6219, Section 050, from the Borough of Meyersdale, Somerset County, Pennsylvania, to Old Salisbury Road in Garrett County, Maryland. Bat Conservation and Management, Inc. (BCM) was contracted by KCI Technologies, Inc. to conduct a Fall Bat Hibernacula Use Assessment during September and October, 2023 at two potential hibernacula sites near the proposed alignments. Both sites, 2023-01 and 2023-02, were found and described during a Bat Hibernacula Habitat Assessment conducted by BCM in the winter and spring of 2023.

Harp traps were utilized to trap each site for three nights during the 6.5-week survey period in September and October of 2023. No bats were captured at either site. Results of this data suggest that these openings presently are not being used by bats of any species.

We have prepared this survey report for the use of our client's office for planning purposes in accordance with generally accepted bat capture and monitoring practices. No other warranties, either expressed or implied, are made as to the professional services included in this report. This report may be considered void without the electronic attachments originally accompanying it.

Introduction

In response to a U.S. Fish and Wildlife Service (USFWS) letter dated February 17, 2022 regarding outdated bat surveys on the US 219 Improvement Project, SR 6219, Section 050 (USFWS Project #2022-0001474, PNDI Receipt # 738552), Bat Conservation and Management, Inc. (BCM) was contracted by KCI Technologies, Inc. to conduct a Bat Hibernaculum Use Assessment at two new potential hibernacula sites, BCM 2023-01 and BCM 2023-02. The sites were found during a Bat Hibernacula Habitat Assessment conducted by BCM in February-April of 2023 within the proposed alignments plus a quarter mile buffer (*US 6219, Section 050 Transportation Improvement Project Meyersdale, PA to Old Salisbury Road, MD, 2023 Bat Hibernacula Habitat Assessment*; Figure 1).

The 2023 BCM Bat Hibernaculum Use Assessment was conducted using the most recent USFWS and Pennsylvania Game Commission (PGC) physical capture survey protocols (2023 Guidelines) that are more robust than past guidelines. The protocols can be found within the 2023 USFWS *Range-Wide Indiana Bat Summer Survey Guidelines* and in Appendix B of the PGC document *Little Brown Bat and Tri-colored Bat Environmental Review Guidance Document* (10/3/19).

Prior to the current 2023 Bat Hibernaculum Habitat and Use Assessments, an initial habitat and use assessment within the US 219 Improvement Project Area was conducted by BCM in 2005 which delineated sites BCM 2005-01, BCM 2005-19, BCM 2005-27, and BCM 2005-28 as potential hibernacula (*Abandoned Mine Investigations for the U.S. 6219, Section 019 Highway Improvement Project*, August 27 - October 1, 2005). In the fall of 2005, a BCM Bat Hibernaculum Use Assessment trapping survey confirmed bat activity at all four sites. In 2014, BCM conducted a follow up assessment where previously delineated habitat was re-evaluated and a search for new habitat was conducted (*2014 RT 219 Fall Bat Harp Trapping and Abandoned Mine/Rocky Habitat Assessment,* October 2 - 12, 2014). During this assessment site BCM 2014-01 was delineated as a new potential hibernaculum. Bat use at the four hibernacula established in 2005 and at the new 2014 potential hibernaculum was evaluated during a trapping survey in the fall of 2014 (*2014 RT 219 Fall Bat Harp Trapping and Abandoned Mine/Rocky Habitat Assessment,* October 2 - 12, 2014). In the fall of 2022 BCM again trapped the five sites surveyed in 2014 to determine bat use (*US 6219, Section 050 Transportation Improvement Project Meyersdale, PA to Old Salisbury Road, MD, 2022 Fall Bat Capture Hibernacula Use Assessment*). No bats were captured during fall assessments at site BCM 2014-01 in 2014 or 2022. In addition to the five previous sites surveyed in 2022, the [redacted] was also trapped by BCM in the fall of 2022. The [redacted] is a known bat hibernaculum within the Project Area buffer that was last surveyed for bat activity in the fall of 2004 and during an internal survey in March of 2005 by the Pennsylvania Game Commission (PGC; Figure 1).

Methods

Capture Survey

The level of effort outlined within the 2023 Guidelines is a minimum of one night of sampling per week for six weeks during the period between September 15 to October 31 using a harp trap at each suitable entrance. Each trapping night began 30 minutes prior to sunset and continued for a minimum of five hours. The survey night was considered valid if; (1) the temperature remained ≥ 50°F (10°C) for the first two hours of trapping and did not fall below 40°F (4.4°C) at any point during the survey, (2) precipitation, including rain and/or heavy fog, did not persist for more than 30 minutes or continued intermittently, and (3) at least 3 hours of the survey period is free of high wind. The survey effort at an opening will be suspended if no bats (of any species) are captured after the first two nights of acceptable survey effort.

Meta-data was collected that fully described individual trap sites and included photographs, global positioning satellite (GPS) coordinates, nightly weather conditions during sampling, and general information regarding habitat

and surrounding area. Data collected on captured bats include species, sex, age, and reproductive condition. Species age is determined by using the Epiphyseal-diaphyseal Fusion method. The reproductive condition of females is noted by inspection of mammary glands.

Capture Survey Sites

In 2023 BCM found and described two potential hibernacula sites (BCM 2023-01 and BCM 2023-02) during a Bat Hibernacula Habitat Assessment conducted from February 15 to April 26 on the US 219 Improvement Project. The two potential hibernacula sites were trapped to determine bat use between September 19 and October 3, 2023 (Figure 1; Table 1; Appendix A).

Site BCM 2023-01 is a natural sandstone cave on the west facing slope of Piney Creek Ravine in a mature deciduous forest. The cave was formed under a fractured dome-shaped outcrop that rises above the surrounding terrain with clumps of Rhododendron around the outside edge. The cave opening was 1.5 ft. (0.5 m) high and 4 ft. (1.2 m) wide. The passage inside sloped downward toward the northeast and opened into a 5 ft. (1.5 m) high, 3 ft. (0.9 m) wide, and 15 ft. (4.6 m) long passage that turned left out of sight. The site was surveyed using a harp trap, 3 ft. x 3.6 ft. (0.9 m x 1.1 m), placed outside and parallel to the entrance. Bird netting was draped from the top of the trap to the area above the opening and around the sides of the trap.

Site BCM2023-02 is a natural sandstone cave on an east facing slope near the ridge top of the Piney Creek ravine in a mature deciduous forest. The cave was at the bottom of a 20 ft. (6.1 m) high cliff outcrop that was part of a 550 ft. (167.6 m) long linear series of individual outcrops running north to south. The cave opening was 2.5 ft. (0.8 m) high and 1.5 ft (0.5 m) wide. The passage inside sloped down and was slightly larger than the opening. Approximately 3 ft. (0.9 m) past the entrance the passage turned sharply to the right and opened up to a 5 ft. (1.5 m) high and 2 ft. (0.6 m) wide passage that continued for approximately 6 ft. (1.8 m) then narrowed down to several fissures in the rock that could not be closely observed from the entrance. The site was surveyed using a harp trap, 3 ft. x 3.6 ft. (0.9 m x 1.1 m), placed outside and parallel to the entrance. Bird netting was draped from the top of the trap to the rock above the opening and around the sides of the trap.

Acoustic Monitoring

A Pettersson D500x bat detector (Pettersson Elektronik, Uppsala, Sweden) was placed within 15 ft. (4.5 m) from each cave entrance to detect hourly bat activity at or very near each opening that was trapped. Detector microphones were orientated towards the largest volume of airspace directly in front of the entrance at each site surveyed (Appendix A). Each detector was stationary and programmed to record for at least five hours, beginning 30 minutes before local sunset, and corresponded to the time when the trapping survey occurred. The resulting individual 4-second bat recordings represent a single “pass” (fly by) from a single bat. However, if multiple bats are flying through the optimal volume of detection during the same 4-second interval, they were recorded in tandem.

Recorded echolocation calls were post-processed using SonoBat30 call analysis software (SonoBat, Arcata, CA). This process attributed meta-data from the survey effort to each recording while preserving the date-time stamp when recordings were made. All recordings were run through the SonoBat scrubber program to remove those with no discernable bat call pulses present. The remaining recordings were manually reviewed using the SonoBat viewer to confirm that they contained bat pulses. Recorded bat passes were tallied for each site in five one-hour increments. Bats using echolocation in and near high clutter areas such as cave entrances emit calls that are too ambiguous to identify either by auto-classification software or by manual review. Therefore, no bat recordings were classified to species. Despite microphones focused on site entrances, monitoring microphones are capable of recording bat calls hundreds of feet away and behind the microphone. In this scenario, positive results cannot be used to assume presence, but are more of a general indication of activity. In addition, bats may reduce echolocation calls to a whisper in high traffic and high clutter areas such as cave entrances, rendering it impossible to obtain recording samples of every bat pass where negative results may not necessarily indicate an absence of bat activity. Considering these factors, acoustic monitoring at hibernacula is not an ideal survey method for bats and may be considered here for the record only.

Results

Survey Effort

A total of two sites (BCM 2023-01 and BCM 2023-02) were trapped for three nights between September 19 and October 3, 2023 (9/19, 9/27, and 10/3). No bats were captured following the trapping effort of 15+ hours at each site. During the second night of trapping at both sites the temperature dropped below 50°F (10°C) during the first two hours but remained above 47.1°F (8.4°C) for the remainder of the five-hour survey period. The USFWS 2023 Guidelines state that the survey effort may be suspended at a site if no bats are captured after two valid survey nights. As a result, trapping was unnecessary at the two sites after the third night. The total trapping effort for the project was over 30 hours (Tables 1 and 2).

The temperature remained above 50°F (10°C) for first two hours of trapping during two out of the three survey nights at both BCM 2023-01 and BCM 2023-02 (Table 2). No precipitation occurred during the nights the survey was conducted. Site-specific weather conditions are described on the PGC *Bat Netting/Trapping Site Survey Record Forms* (Appendix B).

Species Occupancy: Capture

No bats were captured at both sites BCM 2023-01 and 2023-02.

Bat Activity: Acoustic Monitoring

Bat detectors were deployed near the cave entrances at each of the two survey sites during all trapping nights and were removed when each survey night was complete. Bat passes were tallied during each hour of the five-hour survey night. Two bat passes were recorded at site BCM 2023-01, one on September 19 and one on September 27. Both passes were recorded during the first two hours of the survey and both were on the edge of detection range which suggests that the bats were likely flying through the area above the site and not near the cave entrance. No bat passes were recorded on the last and warmest night of the survey (10/3) at site BCM 2023-01. At site BCM 2023-02 no bat passes were recorded during the first two survey nights (9/19 and 9/27). The bat detector malfunctioned at this site on the third survey night (10/3) resulting in no acoustic data from site BCM 2023-02 during that night (Table 3).

Conclusion

Cave entrances were trapped at sites BCM 2023-01 and BCM 2023-02 during three survey nights between September 19 and October 3, 2023 to determine bat use during the fall swarming season. No bats were captured at either site and just one distant acoustic bat pass was recorded during two of the three survey nights at site BCM 2023-01 with no bat passes recorded at site BCM 2023-02. These data suggest that both sites are not presently being used by bats of any species.

Fall bat activity was confirmed during past BCM Hibernacula Use Assessments within the US 219 Improvement Project Area at four sites initially described by BCM in 2005 (sites BCM 2005-01, BCM 2005-19, BCM 2005-27, and BCM 2005-28). In 2005 Northern Long-eared bat (*Myotis septentrionalis*) presence was documented at site BCM 2005-01, little brown bat (*Myotis lucifugus*) presence was confirmed at BCM 2005-01 and BCM 2005-19, and the tricolored bat (*Perimyotis subflavus*) was confirmed at all four sites. In 2014 presence of the Northern Long-eared bat and tricolored bat were documented at site BCM 2005-28. At the [redacted] the Northern Long-eared bat presence was confirmed by the PGC in the fall of 2004 and March of 2005 the PGC confirmed the presence of the Indiana bat (*Myotis sodalis*) at the site during an internal hibernaculum survey. In the fall of 2022 BCM confirmed the presence of the Northern long-eared bat, tricolored bat, the Eastern small-footed bat (*Myotis leibii*), and little brown bat (*Myotis lucifugus*) at the [redacted] the small-footed bat at site BCM 2005-19, and the tricolored bat at site 2005-27 (Table 4).

Figures

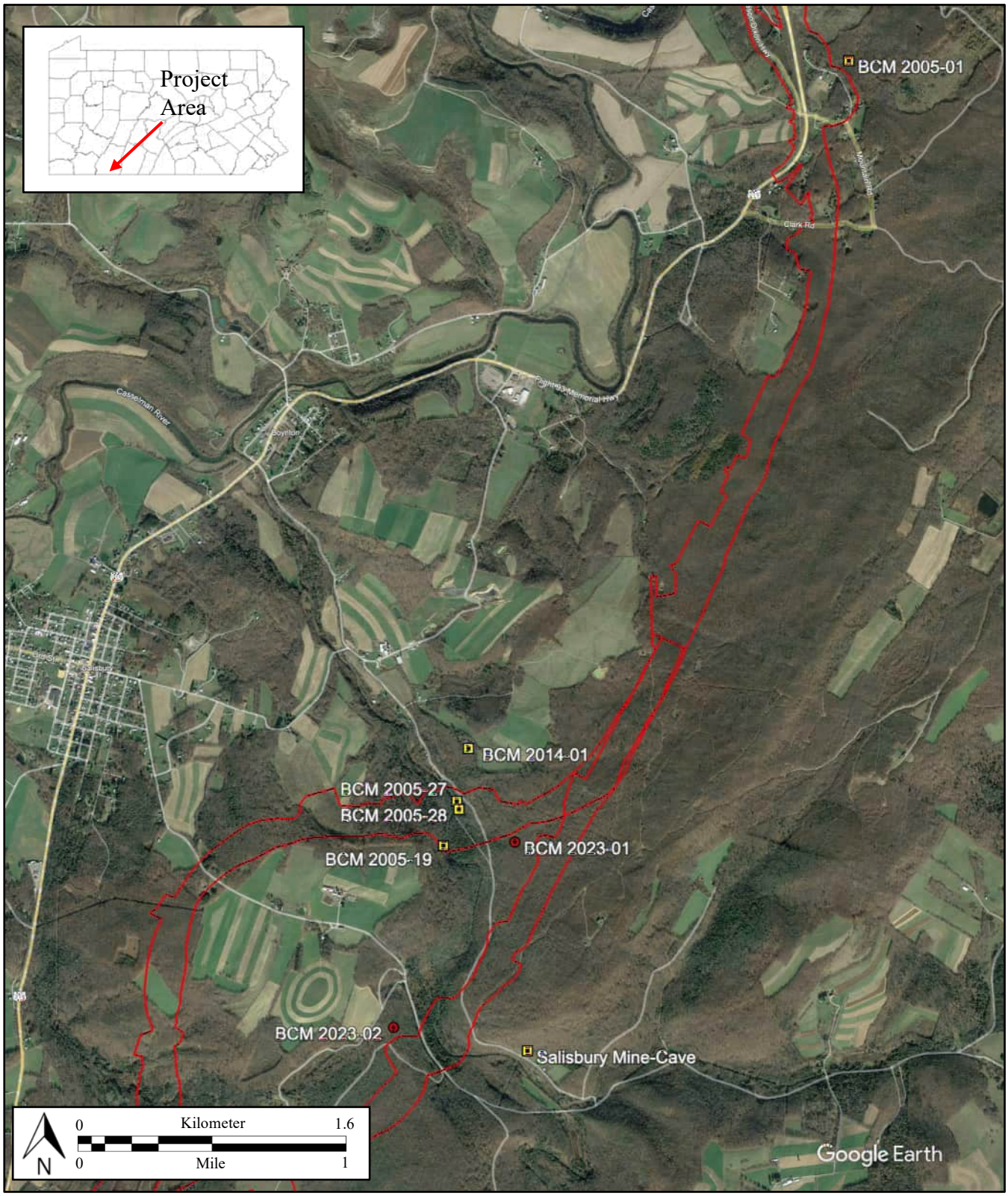


Figure 1. Location of two sandstone natural caves trapped in 2023 (sites BCM 2023-01 and BCM 2023-02) in relation to six mine portals previously trapped and the proposed alignments.

Tables

Table 1. Trap site locations, level of effort, and captures by night.

Survey Site	Site Location Lat, Long, (WGS84)	Site description	Survey Method by Date	Survey Dates	Capture Results					
					EPFU	MYLE	MYLU	MYSE	PESU	Total by Date
BCM 2023-01	39.743505° -79.051612°	A 4 ft. wide x 1.5 ft. high sandstone cave entrance formed under a fractured dome shaped outcrop that rises above the surrounding terrain. The passage inside sloped downward and opened into a 3 ft. high x 5 ft. wide x 15 ft. long passage that turned left out of sight.	One 3 ft. harp trap set outside and parallel to the entrance with one Pettersson D500x Detector. The D500x mic was pointed at the entrance.	09/19	-	-	-	-	-	***0***
				09/27	-	-	-	-	-	***0***
				10/03	-	-	-	-	-	***0***
2023-01 Species and Site Total					***0***	***0***	***0***	***0***	***0***	***0***
BCM 2023-02	39.733517° -79.060108°	A 1.5 ft. wide x 2.5 ft. high sandstone cave entrance at the base of a 20 ft. high cliff outcrop. The passage inside sloped down and was slightly larger than the opening. 3 ft. past the entrance the passage turned sharply to the right and opened up to a 5 ft. high and 2 ft. wide passage that continued for 6 ft. then narrowed down to several fissures in the rock.	One 3 ft. harp trap set outside and parallel to the entrance with one Pettersson D500x Detector. The D500x mic was pointed at the entrance.	09/19	-	-	-	-	-	***0***
				09/27	-	-	-	-	-	***0***
				10/03	-	-	-	-	-	***0***
2023-02 Species and Site Totals					***0***	***0***	***0***	***0***	***0***	***0***
Project Species Totals					***0***	***0***	***0***	***0***	***0***	***0***

EPFU = big brown bat (*Eptesicus fuscus*), MYLE = Eastern small-footed bat (*Myotis leibii*), MYLU = little brown bat (*Myotis lucifugus*), MYSE = Northern long-eared bat (*Myotis septentrionalis*), PESU = tricolored bat (*Perimyotis subflavus*)

Table 2. Survey start and end times and temperatures.

Survey Site	Survey Dates	Time Start	Start Temp (°C)	Low Temp During First 2 Hours of Survey (°C)	Low Temp During Last 3 Hours of Survey (°C)	Survey End Time
BCM 2023-01	09/19	18:50	13.6	10.5	7.9	00:00
	09/27	18:35	11.8	9.7	8.4	23:35
	10/03	18:25	19.1	14.5	12.1	23:25
BCM 2023-02	09/19	19:09	13.6	10.4	8.2	00:09
	09/27	18:35	10.1	9.6	8.4	23:35
	10/03	18:25	19.1	13.9	11.0	23:25

Highlighted survey dates were invalid due to low temperatures.

Table 3. Acoustic bat passes at sites BCM 2023-01 and BCM 2023-02 during each survey hour.

Trap Site	Five Hour Survey Period During Each Survey Date															Total Site Bat Passes
	09/19					09/27					10/03					
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	
BCM 2023-01	–	1	–	–	–	1	–	–	–	–	–	–	–	–	–	**2**
BCM 2023-01 Totals	**1**					**1**					**0**					
BCM 2023-02	–	–	–	–	–	–	–	–	–	–	*	*	*	*	*	**0**
BCM 2023-02 Totals	**0**					**0**					*					

*Detector at site BCM 2023-02 on 10/03 malfunctioned and did not collect data.

Table 4. Summary of US 219 Improvement Project historical and 2023 fall trapping results.

Survey Site Name (Lat/Long, WGS84)	Survey Year	EPFU	MYLU	MYSE	MYLE	PESU	Site Total by Year
BCM 2005-01[1] (39.785566°, -79.028209°)	2005	0	14	7	0	6	***27***
	2014	0	0	0	0	0	***0***
	2022	0	0	0	0	0	***0***
BCM 2005-19[2] (39.743311°, -79.056614°)	2005	0	2	0	0	2	***4***
	2014	0	0	0	0	0	***0***
	2022	0	0	0	1	0	***1***
BCM 2005-27[2] (39.745696°, -79.055679°)	2005	0	0	0	0	2	***2***
	2014	0	0	0	0	0	***0***
	2022	0	0	0	0	1	***1***
BCM 2005-28[2] (39.745260°, -79.055530°)	2005	0	0	0	0	2	***2***
	2014	0	0	2	0	0	***2***
	2022	0	0	0	0	0	***0***
BCM 2014-01[3] (39.748539°, -79.054863°)	2014	0	0	0	0	0	***0***
	2022	0	0	0	0	0	***0***
[redacted]	1992	0	1	2	2	2	***7***
	2004	8	509	48	0	14	***579***
	2022	24	12	3	20	4	***63***
BCM 2023-01[5] (39.743505°, -79.051612°)	2023	0	0	0	0	0	***0***
BCM 2023-02[5] (39.733517°, -79.060108°)	2023	0	0	0	0	0	***0***

EPFU = big brown bat (*Eptesicus fuscus*), MYLE = Eastern small-footed bat (*Myotis leibii*), MYLU = little brown bat (*Myotis lucifugus*), MYSE = Northern long-eared bat (*Myotis septentrionalis*), PESU = tricolored bat (*Perimyotis subflavus*).

[1] Level of effort was 2 consecutive nights in 2005, 3 nights over a 2-week period in 2014, and 6 nights over a 6-week period in 2022.

[2] Level of effort was 2 consecutive nights in 2005, 3 consecutive nights in 2014, and 6 nights over a 6-week period in 2022.

[3] Site was not surveyed in 2005. Level of effort was 3 consecutive nights in 2014 and 6 nights over a 6-week period in 2022.

[4] Site was surveyed by PGC in 1992 and 2004. Site was not surveyed in 2014. Level of effort was 6 nights over a 6-week period in 2022.

[5] Site was found in 2023. Level of effort was 3 nights over a 3-week period in 2023.

Appendix A

Trap Site Photographs

Trap Site 2023-01: Sandstone cave opening on a large dome shaped outcrop. The cave was trapped using a 3 ft. harp trap (0.9m x 1.1m) set parallel to entrance with netting draped over and around trap and cave opening. A Pettersson D500x bat detector microphone was pointed toward trap.

Trap Site 2023-02: Sandstone cave opening near the bottom of a large outcrop. The cave was trapped using a 3 ft. harp trap (0.9m x 1.1m) set parallel to entrance with netting draped over and around the trap and cave opening. A Pettersson D500x bat detector microphone was pointed toward trap.

Appendix B

PGC Site and Bat Capture Forms

FORM WD-70008-N/T
05/21

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. **Survey Date:** 9/19/2023 2. **Company Name:** Bat Conservation & Management
3. **Reporter:** Todd Sinander 4. **Assistants:** Meredith Cooza
5. **Site Name and/or Number:** BCM 2023-01
6. **Site is (circle one):** (hibernation site) summer habitat
7a. **If hibernation site circle one:** limestone mine, coal mine, limestone cave, (sandstone cave), RR tunnel, other structure, describe - —
7b. **If summer habitat, describe area being sampled** (e.g., forested stream or forest clearing with stream): N/A
8. **County:** Somerset 9. **Township:** Elk Lick
10. **Was site GPS'd with a GPS unit?** (YES) NO
11. **Geographic Coordinates (DD):** Latitude: 39.743505 °N, Longitude: -79.091612 °W
Datum *(circle one)*: (WGS84 (Preferred)), NAD83, NAD27, Other: —
12. **Ownership and Access:** *(Who owns site or controls access? Give name and address; include phone and/or email if available)* Stephen Hershberger
PO Box 459, Salisbury PA 15558
13. **Time** *(military)* **& Temperature:** Start Time 1852 h Stop Time 0000 h Total Minutes: 312
Start Temp. 56.4° End Temp. 46.2 ° F / C *(circle one)*
14. **General Weather** *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other: —
15. **Wind Conditions** *(circle one)*: (Calm); Slight Breeze (leaves rustle); Gentle Breeze (leaves and twigs move); Moderate Breeze (small branches move); Windy (trees swaying).
16. **Describe habitat 150 m around site:** *(topography and vegetation including dominant tree species)*

Mature mixed forest dominated by oak & maple with some hemlock & white pine. Site is on a west facing slope.

Time	Temp °F
2000	51.3°
2100	50.8°
2200	49.1
2300	47.7

(Site Survey Record – Continued) Site Name/No.: BCM2023-01 Date: 9/19/23

17. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	Total Area (m)	Vertical Extent	Geographic Coordinates (DD)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*	*0m - 11.4m*	*Latitude/Longitude*
A	Harp Trap	1	0.9m x 1.1m	outside & parallel to entrance	0.98m²	1-2m	39.713505°N -79.051612°

Total Capture Area: 0.98m²

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in* ***Total*** *columns)*

*CAPTURE RESULTS

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	*2*		*1*			*3*	*2*	*1*	*1*	*4*	*7*
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Pipistrellus subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Bats

Reproductive Status: NR= nonreproductive, PG= pregnant, L= lactating, PL= post lactating, SCR= scrotal/epididymis swollen.

Grand Total: Ø

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

19. REMARKS:

FORM WD-70008-N/T
05/21

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. **Survey Date:** 9/27/2023 2. **Company Name:** Bat Conservation & Management

3. **Reporter:** Todd Swanda 4. **Assistants:** Meredith Goza

5. **Site Name and/or Number:** BCM2023-01

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, coal mine, limestone cave, (sandstone cave), RR tunnel,

other structure, describe - —

7b. **If summer habitat, describe area being sampled** (e.g., forested stream or forest clearing with stream):

N/A

8. **County:** Somerset 9. **Township:** Elk Lick

10. **Was site GPS'd with a GPS unit?** (YES) - NO

11. **Geographic Coordinates (DD):** Latitude: 39.743505 °N, Longitude: -79.051612 °W

Datum *(circle one)*: (**WGS84** (Preferred), NAD83, NAD27, Other: —

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address; include phone and/or email if available)*

Stephen Hershberger
PO Box

13. **Time** *(military)* **& Temperature:** Start Time 1835 h Stop Time 2335 h Total Minutes: ____

Start Temp 53.2° End Temp 47.1 (°F) / C *(circle one)*

14. **General Weather** *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other: ____

15. **Wind Conditions** *(circle one)*: Calm; (Slight Breeze (leaves rustle); Gentle Breeze (leaves and twigs move); Moderate Breeze (small branches move); Windy (trees swaying).

16. **Describe habitat 150 m around site:** *(topography and vegetation including dominant tree species)*

Mature mixed forest dominated by oak & maple with some hemlock & white pine. Site is on a west facing slope.

Time	Temp °F
1935	50.2°F
2000	49.9°
2035	49.4°
2135	48.8°
2235	48.7°

(Site Survey Record – Continued) Site Name/No.: BCM2023-01 Date: 9/27/23

17. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	Total Area (m)	Vertical Extent	Geographic Coordinates (DD)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*	*1m -11.4m*	*Latitude/Longitude*
A	Harp Trap	1	0.9m x 1.1m	outside + parallel to entrance	0.98m²	1-2m	39.743505° -79.057612°

Total Capture Area: 0.98m²

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in* __Total__ *columns)*

*CAPTURE RESULTS

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	*2*		*1*			*3*	*2*	*1*	*1*	*4*	*7*
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Pipistrellus subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Bats

__Reproductive Status:__ **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete __Measurement and Capture Data Form__ for all:**
__(1)__ __Myotis sodalis__, (2) __Myotis leibii__, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: Ø

19. REMARKS:

FORM WD-70008-N/T
05/21

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. **Survey Date:** 10/3/2023 2. **Company Name:** Bat Conservation & Management

3. **Reporter:** Todd Sinnamon 4. **Assistants:** Meredith Cooza

5. **Site Name and/or Number:** BCM 2023-01

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, coal mine, limestone cave, (sandstone cave), RR tunnel, other structure, describe - –

7b. **If summer habitat, describe area being sampled** (e.g., forested stream or forest clearing with stream):

N/A

8. **County:** Somerset 9. **Township:** Elk Lick

10. **Was site GPS'd with a GPS unit?** (YES) NO

11. **Geographic Coordinates (DD):** Latitude: 39.743505 °N, Longitude: -79.051612 °W

Datum *(circle one)*: (WGS84) (Preferred), NAD83, NAD27, Other: –

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address; include phone and/or email if available)*

Stephen Hershberger
PO Box 459, Salisbury PA 15558

13. **Time** *(military)* **& Temperature:** Start Time 1825 h Stop Time 2325 h Total Minutes: 720

Start Temp. 66.4 ° End Temp. 53.7 (°F) / C *(circle one)*

14. **General Weather** *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other: –

15. **Wind Conditions** *(circle one)*: (Calm); Slight Breeze (leaves rustle); Gentle Breeze (leaves and twigs move); Moderate Breeze (small branches move); Windy (trees swaying).

16. **Describe habitat 150 m around site:** *(topography and vegetation including dominant tree species)*

Mature mixed forest dominated by oak & maple with some hemlock & white pine. Site is on a west facing slope.

Time	Temp °F
1925	62.0°
2025	58.1°
2125	56.4°
2225	54.8°

(Site Survey Record – Continued) Site Name/No.: BCM 2023 - 01 Date: 10/3/2023

17. Capture Setup at Site:

Set a	Type	Count	Dimensions	Description	Total Area (m)	Vertical Extent	Geographic Coordinates (DD)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m	1m - 11.4m	Latitude Longitude
A	Harp trap	1	0.9m x 1.1m	outside + downhill to entrance	0.98m²	1-2m	39.743505° -79.051612°

Total Capture Area: 0.98m²

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in Total columns)*

*CAPTURE RESULTS

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Pipistrellus subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 7

19. REMARKS:

FORM WD-70008-N/T
05/21

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. **Survey Date:** 9/19/2023 2. **Company Name:** Bat Conservation & Management

3. **Reporter:** Todd Sneider 4. **Assistants:** Meredith Craze

5. **Site Name and/or Number:** BCM 2023-02

6. **Site is (circle one):** (hibernation site) summer habitat

7a. **If hibernation site circle one:** limestone mine, coal mine, limestone cave, (sandstone cave,) RR tunnel, other structure, describe - —

7b. **If summer habitat, describe area being sampled** (e.g., forested stream or forest clearing with stream):

N/A

8. **County:** Somerset 9. **Township:** Elk Lick

10. **Was site GPS'd with a GPS unit?** (YES) NO

11. **Geographic Coordinates (DD):** Latitude: 39.733517 °N, Longitude: -79.060108 °W

Datum *(circle one)*: **(WGS84)** (Preferred), NAD83, NAD27, Other: —

12. **Ownership and Access:** *(Who owns site or controls access? Give name and address; include phone and/or email if available)* Kevin Weimer, 166 Coal Run Road, Meyersdale PA 15552

13. **Time** *(military)* **& Temperature:** Start Time 19:09 h Stop Time 00:09 h Total Minutes: 300

Start Temp. 56.9 ° End Temp. 46.2 ° (F) C *(circle one)*

14. **General Weather** *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain; Steady Rain; Thunderstorms; Snow; Other: —

15. **Wind Conditions** *(circle one)*: (Calm); Slight Breeze (leaves rustle); Gentle Breeze (leaves and twigs move); Moderate Breeze (small branches move); Windy (trees swaying).

16. **Describe habitat 150 m around site:** *(topography and vegetation including dominant tree species)*

Cliffside of mostly rocky terrain with immature deciduous trees, mosses, & ferns throughout.

Time	Temp
20:00	53.2
21:00	50.7
22:00	51.8
23:00	49.8

★ Porcupine at 2214S near cave — was wandering around it then ran off after I shined light on it for a while. Did not see it again (was licking at me)

(Site Survey Record – Continued) Site Name/No.: BCM2023-07 Date: 9/19/23

17. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	Total Area (m)	Vertical Extent	Geographic Coordinates (DD)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*	*1m -11.4m*	*Latitude Longitude*
A	Harp Trap	1	0.9m x 1.1m	Outside & parallel cave entrance	0.98 m²	1 – 2 m	39.773517° -79.060128°

Total Capture Area: 0.98 m²

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in* **Total** *columns)*

*CAPTURE RESULTS

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	*2*		*1*			*3*	*2*	*1*	*1*	*4*	*7*
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis					No	Bats					
Eptesicus fuscus											
Pipistrellus subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: 0

19. REMARKS:

FORM WD-70008-N/T
05/21

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 9/27/2023 **2. Company Name:** Bat Conservation & Management

3. Reporter: Todd Sinander **4. Assistants:** Meredith Goza

5. Site Name and/or Number: BCM2023-02

6. Site is (circle one): (hibernation site) summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, (sandstone cave), RR tunnel,

other structure, describe - —

7b. If summer habitat, describe area being sampled (e.g., forested stream or forest clearing with stream):

N/A

8. County: Somerset **9. Township:** Elk Lick

10. Was site GPS'd with a GPS unit? (YES) NO

11. Geographic Coordinates (DD): Latitude 39.733517 °N, Longitude: -79.060108 °W

Datum *(circle one)*: **WGS84** (Preferred), NAD83, NAD27, Other: —

12. Ownership and Access: *(Who owns site or controls access? Give name and address; include phone and/or email if available)*

Kevin Weimer, 166 Coal Run Rd,
Meyersdale PA 15552

13. Time *(military)* **& Temperature:** Start Time 18:35 h Stop Time 23:35 h Total Minutes: 300

Start Temp. [illegible]° End Temp. 47.2 ° F / C *(circle one)*

14. General Weather *(circle one)*: Clear; (Partly Cloudy); Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain;

Steady Rain; Thunderstorms; Snow; Other:

15. Wind Conditions *(circle one)*: Calm; (Slight Breeze) (leaves rustle); Gentle Breeze (leaves and twigs move);

Moderate Breeze (small branches move); Windy (trees swaying).

16. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species)*

22:00 - checked [illegible]

Time	Temp
19:00	50.3
20:30	49.4
21:30	49.2
22:30	48.9
23:30	

(Site Survey Record – Continued) Site Name/No.: BCM2023-02 Date: 9/19/23

17. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	Total Area (m)	Vertical Extent	Geographic Coordinates (DD)
1	*Nets*	*4*	*12m x 2.6m*	*Stacked over trail*	*124.8 sq. m*	*1m - 11.4m*	*Latitude Longitude*
A	Harp trap	1	0.9m×1.1m	Outside + parallel / [illegible]	0.98m²	1-2m	39.753517° -79.060108°

Total Capture Area: 0.98m²

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in* ***Total*** *columns)*

*CAPTURE RESULTS

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	*2*		*1*			*3*	*2*	*1*	*1*	*4*	*7*
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Pipistrellus subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify:											
Other – specify:											

No Bats

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: Ø

19. REMARKS:

FORM WD-70008-N/T
05/21

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission

BAT NETTING/TRAPPING SITE SURVEY RECORD

1. Survey Date: 10/3/2023 **2. Company Name:** Bat Conservation & Management

3. Reporter: Todd Simander **4. Assistants:** Meredith Gozar

5. Site Name and/or Number: BCM 2023-02

6. Site is (circle one): (hibernation site) summer habitat

7a. If hibernation site circle one: limestone mine, coal mine, limestone cave, (sandstone cave), RR tunnel,

other structure, describe - —

7b. If summer habitat, describe area being sampled (e.g., forested stream or forest clearing with stream):

N/A

8. County: Somerset **9. Township:** Elk Lick

10. Was site GPS'd with a GPS unit? (YES) NO

11. Geographic Coordinates (DD): Latitude: 39.733517 °N, Longitude: -79.060108 °W

Datum *(circle one)*: (WGS84) (Preferred), NAD83, NAD27, Other: —

12. Ownership and Access: *(Who owns site or controls access? Give name and address; include phone and/or email if available)*

Kevin Weimer, 166 Coal Run Road

Meyersdale PA 15552

13. Time *(military)* **& Temperature:** Start Time 1825 h Stop Time 2325 h Total Minutes: 300

Start Temp. 66.3 ° End Temp. 51.8 ° F / C *(circle one)*

14. General Weather *(circle one)*: (Clear); Partly Cloudy; Mostly Cloudy; Cloudy; Drizzle; Intermittent Rain;

Steady Rain; Thunderstorms; Snow; Other: —

15. Wind Conditions *(circle one)*: Calm; (Slight Breeze) (leaves rustle); Gentle Breeze (leaves and twigs move);

Moderate Breeze (small branches move); Windy (trees swaying).

16. Describe habitat 150 m around site: *(topography and vegetation including dominant tree species)*

Time	Temp
19:25	59.1
20:25	57.0
21:25	54.8
22:25	53.9

21:55 – saw porcupine & made hole [illegible] under netting

(Site Survey Record – Continued) Site Name/No.: BCM 2023-02 Date: 10/3/2023

17. Capture Setup at Site:

Set #	Type	Count	Dimensions	Description	Total Area (m)	Vertical Extent	Geographic Coordinates (DD)
1	Nets	4	12m x 2.6m	Stacked over trail	124.8 sq. m	1m - 11.4m	Latitude/Longitude
A	Harp trap	1	0.9m x 1.1m	Outside of tunnel entrance	0.98 m^2	1-2m	39.733517° -79.060108°

Total Capture Area: 0.98 m^2

18. Was reproductive status checked? YES / NO *(if "NO" only enter numbers in Total columns)*

*CAPTURE RESULTS

Species	Number of Adult Females				No. Juv. Fem.	Total No. Fem.	Number of Adult Males		No. Juv. Male	Total No. Males	Species Totals
	NR	PG	L	PL			SCR	NR			
Eptesicus fuscus	2		1			3	2	1	1	4	7
Myotis lucifugus											
Myotis septentrionalis											
Myotis leibii											
Myotis sodalis											
Eptesicus fuscus											
Pipistrellus subflavus											
Lasiurus borealis											
Lasiurus cinereus											
Lasionycteris noctivagans											
Other – specify											
Other – specify											

No bats

Reproductive Status: **NR**= nonreproductive, **PG**= pregnant, **L**= lactating, **PL**= post lactating, **SCR**= scrotal/epididymis swollen.

***Complete Measurement and Capture Data Form for all:**
(1) Myotis sodalis, (2) Myotis leibii, (3) bats you are banding or band recaptures, (4) radio-tagged bats and (5) bat species not usually found in PA.

Grand Total: Ø

19. REMARKS: