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Indiana and Northern Long-eared Bat Acoustic and Mist-net Survey for the Proposed Rocky Forge Wind Project, Botetourt County, Virginia

Summary Report
August 2015

Rocky Forge Wind, LLC

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Project Background and Location

Copperhead Environmental Consulting, Inc. (Copperhead) was contracted by Rocky Forge Wind, LLC (ROC), an affiliate of Apex Clean Energy Management, LLC, to conduct a federally listed bat presence/probable absence surveys for the proposed Rocky Forge Wind Project (project), Botetourt County, Virginia (Figure 1). Study methodology followed Copperhead's USFWS approved Study Plans (June 22, 2015 and August 6, 2015). Two study plans were approved based on the addition of lands in the western ridge portion of the project area mid-survey season, resulting in slightly different methodology used for western ridge than in the rest of the project area.

Acoustic Survey

Per the methodology outlined in the USFWS approved Study Plan (22 June 2015), six acoustic sites were established throughout the project area (Table 1, Figure 1). Each site was monitored for two nights from sunset to sunrise, for a total of 12 detector nights. Acoustic site data sheets are in Appendix A and site photographs are in Appendix B.

Acoustic data were downloaded in the field and processed through the latest version of Bat Call ID East (BCID). All calls files indicated as potential federally listed bat species (site level MLE ≤ 0.05) based on software output were vetted manually through careful visual examination by a Copperhead biologist trained in acoustic bat identification. Manual vetting allowed recognition of obvious species identification errors (e.g., poor quality, fragmented call files) and provided more accurate characterization of the bat community present at the project. A second opinion was obtained from Ryan Allen of BCID for call files determined to be consistent with Indiana bats by Copperhead. Although neither Virginia big-eared bats (*Corynorhinus townsendii virginianus*) nor gray bats (*Myotis grisescens*) are expected to occur within the project area based on their known ranges, these species were considered in the analysis, in addition to Indiana bat (*Myotis sodalis*) and northern long-eared bat (*M. septentrionalis*), which are known to occur in the project region.

Table 1. Locations of acoustic survey sites, Rocky Forge Wind Project, 2015.

Site	Latitude	Longitude
AS1	37.72354	-79.7023
AS2	37.71091	-79.7155
AS3	37.69929	-79.7194
AS4	37.69327	-79.7219
AS5	37.67104	-79.7351
AS6	37.67775	-79.7433

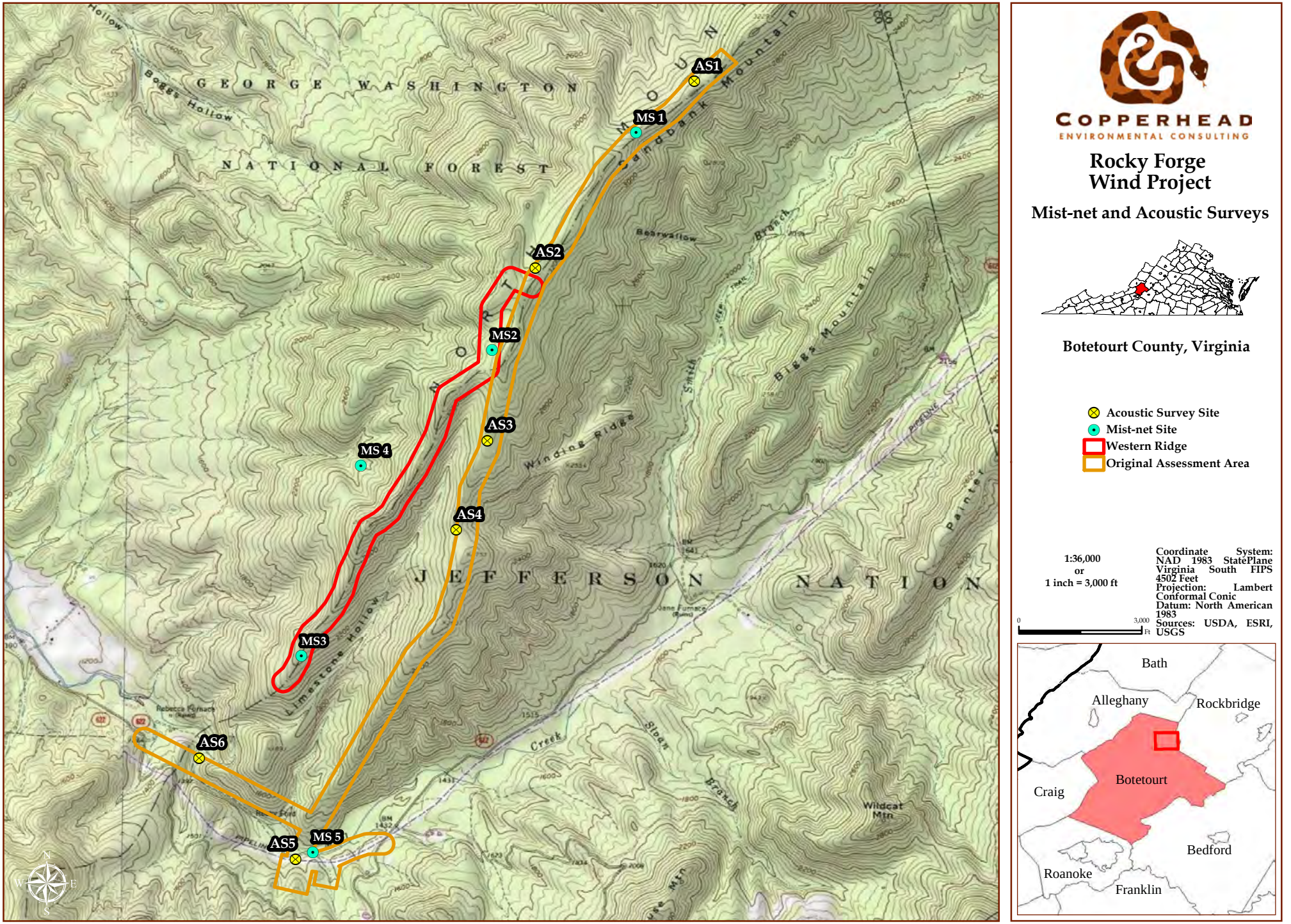


Figure 1. Mist-net and acouistic survey site locations for the Rocky Forge Wind Project, 2015.

BCID identified 79 call files as gray bat, 1 call file as a northern long-eared bat, and 13 call files as Indiana bat. Manual vetting determined that call files identified by BCID as gray bat calls were likely produced by eastern red bats (*Lasiurus borealis*). Similarly, manual vetting determined that the one call file identified by BCID as a northern long-eared bat was typical of that produced by an eastern red bat, and call files identified by BCID as Indiana bat were determined to be consistent with calls that may be produced by Indiana bat (n=5), little brown bat (*Myotis lucifugus*) (n=3), and eastern red bat (n=5). In addition, files identified by BCID as Indiana bat, gray bat, and northern long-eared bat were processed post hoc through Kaleidoscope Pro (v 3.1.1) in order to compare species identification results between the two programs (Table 2).

In summary, of the 1,498 call files collected over 12 detector nights, a total of 5 call files were identified as potential Indiana bat, and zero call files were identified as northern long-eared bat, gray bat, or Virginia big-eared bat.

Table 2. Manual vetting and Kaleidoscope Pro results of acoustic survey call files identified by BCID as Indiana, northern long-eared, or gray bats, Rocky Forge Wind Project, 2015.

Site	Date Surveyed (2015)	File Name	BCID Results	Kaleidoscope Results	Manual Vetting Conclusion
AS1	6-Jul	P7062237.56#	MYGR	LABO	LABO
AS1	6-Jul	P7062320.54#	MYGR	LABO	LABO
AS1	6-Jul	P7070105.07#	MYGR	LABO	LABO
AS1	6-Jul	P7070116.03#	MYGR	LABO	LABO
AS1	6-Jul	P7070120.29#	MYGR	LABO	LABO
AS1	6-Jul	P7070122.01#	MYGR	LABO	LABO
AS1	6-Jul	P7070126.45#	MYGR	LABO	LABO
AS1	6-Jul	P7070128.58#	MYGR	LABO	LABO
AS1	6-Jul	P7070129.35#	MYGR	LABO	LABO
AS1	6-Jul	P7070112.32#	MYGR	MYGR	LABO
AS1	6-Jul	P7070133.05#	MYGR	MYGR	LABO
AS1	6-Jul	P7062055.38#	MYSO	MYLE	consistent with MYSO
AS1	6-Jul	P7062055.53#	MYSO	MYLE	consistent with MYSO
AS1	7-Jul	P7072040.14#	MYGR	LABO	LABO
AS1	7-Jul	P7072107.08#	MYGR	LABO	LABO
AS1	7-Jul	P7072107.16#	MYGR	LABO	LABO
AS1	7-Jul	P7072107.39#	MYGR	LABO	LABO
AS1	7-Jul	P7072108.02#	MYGR	LABO	LABO
AS1	7-Jul	P7072108.17#	MYGR	LABO	LABO
AS1	7-Jul	P7072108.23#	MYGR	LABO	LABO
AS1	7-Jul	P7072108.58#	MYGR	LABO	LABO
AS1	7-Jul	P7072109.29#	MYGR	LABO	LABO
AS1	7-Jul	P7072110.35#	MYGR	LABO	LABO
AS1	7-Jul	P7072110.43#	MYGR	LABO	LABO
AS1	7-Jul	P7072113.01#	MYGR	LABO	LABO

Site	Date Surveyed (2015)	File Name	BCID Results	Kaleidoscope Results	Manual Vetting Conclusion
AS1	7-Jul	P7072113.35#	MYGR	LABO	LABO
AS1	7-Jul	P7072113.51#	MYGR	LABO	LABO
AS1	7-Jul	P7072114.37#	MYGR	LABO	LABO
AS1	7-Jul	P7072115.59#	MYGR	LABO	LABO
AS1	7-Jul	P7072116.37#	MYGR	LABO	LABO
AS1	7-Jul	P7072116.52#	MYGR	LABO	LABO
AS1	7-Jul	P7072117.27#	MYGR	LABO	LABO
AS1	7-Jul	P7072118.54#	MYGR	LABO	LABO
AS1	7-Jul	P7072119.50#	MYGR	LABO	LABO
AS1	7-Jul	P7072125.02#	MYGR	LABO	LABO
AS1	7-Jul	P7072313.28#	MYGR	LABO	LABO
AS1	7-Jul	P7080059.55#	MYGR	LABO	LABO
AS1	7-Jul	P7080120.38#	MYGR	LABO	LABO
AS1	7-Jul	P7080311.23#	MYGR	LABO	LABO
AS1	7-Jul	P7072109.18#	MYSO	LABO	LABO
AS1	7-Jul	P7072108.31#	MYGR	MYGR	LABO
AS1	7-Jul	P7072108.46#	MYGR	MYGR	LABO
AS1	7-Jul	P7072109.39#	MYGR	MYGR	LABO
AS1	7-Jul	P7072110.18#	MYGR	MYGR	LABO
AS1	7-Jul	P7072111.42#	MYGR	MYGR	LABO
AS1	7-Jul	P7072113.42#	MYGR	MYGR	LABO
AS1	7-Jul	P7072115.07#	MYGR	MYGR	LABO
AS1	7-Jul	P7072115.39#	MYGR	MYGR	LABO
AS1	7-Jul	P7072116.22#	MYGR	MYGR	LABO
AS1	7-Jul	P7072119.03#	MYGR	MYGR	LABO
AS1	7-Jul	P7072119.29#	MYGR	MYGR	LABO
AS1	7-Jul	P7072119.39#	MYGR	MYGR	LABO
AS1	7-Jul	P7072204.32#	MYGR	MYGR	LABO
AS1	7-Jul	P7072103.06#	MYSO	MYLU	LABO
AS1	7-Jul	P7080043.08#	MYSO	MYSO	MYLU*
AS1	7-Jul	P7080036.56#	MYGR	No ID	LABO/PESU
AS2	6-Jul	P7062113.17#	MYGR	LABO	Noise
AS2	6-Jul	P7062251.00#	MYGR	LABO	LABO
AS2	6-Jul	P7062259.49#	MYGR	LABO	LABO
AS2	6-Jul	P7062327.30#	MYGR	LABO	LABO
AS2	6-Jul	P7062123.19#	MYGR	MYGR	LABO
AS2	6-Jul	P7062134.25#	MYSO	MYLE	consistent with MYSO
AS2	6-Jul	P7062319.53#	MYGR	MYLU	LABO
AS2	7-Jul	P7072159.18#	MYGR	LABO	LABO
AS2	7-Jul	P7072217.33#	MYGR	LABO	LABO
AS2	7-Jul	P7072337.58#	MYGR	LABO	LABO

Site	Date Surveyed (2015)	File Name	BCID Results	Kaleidoscope Results	Manual Vetting Conclusion
AS2	7-Jul	P7072340.50#	MYGR	LABO	LABO
AS2	7-Jul	P7072356.13#	MYGR	LABO	LABO
AS2	7-Jul	P7072330.17#	MYGR	MYGR	LABO
AS2	7-Jul	P7072341.35#	MYGR	MYGR	LABO
AS2	7-Jul	P7080051.38#	MYSO	MYLU	LABO
AS2	7-Jul	P7080357.56#	MYSO	MYSO	consistent with MYSO
AS3	7-Jul	P7080405.37#	MYSE	LABO	LABO
AS4	6-Jul	P7062216.58#	MYGR	LABO	LABO
AS4	6-Jul	P7062220.47#	MYGR	LABO	LABO
AS4	6-Jul	P7062223.45#	MYGR	LABO	LABO
AS4	6-Jul	P7062224.19#	MYGR	LABO	LABO
AS4	6-Jul	P7062240.05#	MYGR	LABO	LABO
AS4	6-Jul	P7070037.37#	MYGR	LABO	LABO
AS4	6-Jul	P7062222.10#	MYSO	LABO	LABO
AS4	7-Jul	P7080043.25#	MYGR	LABO	LABO
AS4	7-Jul	P7080119.51#	MYGR	LABO	LABO
AS4	7-Jul	P7080120.35#	MYGR	LABO	LABO
AS4	7-Jul	P7080320.41#	MYGR	LABO	LABO
AS4	7-Jul	P7072345.15#	MYSO	MYLU	LABO
AS5	6-Jul	P7070048.19#	MYSO	MYLE	consistent with MYSO
AS5	6-Jul	P7070108.04#	MYSO	MYSO	MYLU*
AS5	7-Jul	P7080037.19#	MYGR	MYGR	LABO
AS5	7-Jul	P7080111.42#	MYSO	MYSO	MYLU*
AS6	6-Jul	P7062114.25#	MYGR	LABO	LABO
AS6	6-Jul	P7070003.12#	MYGR	LABO	LABO
AS6	7-Jul	P7080030.55#	MYGR	LABO	LABO
AS6	7-Jul	P7080132.23#	MYGR	LABO	LABO

[1] MYSO = Indiana bat, MYGR = gray bat, LABO = eastern red bat, MYLE = eastern small-footed bat, MYLU = little brown bat, PESU = tri-colored bat
*Manual vetting conclusion by Mr. Allen of BCID

Mist-Net Survey

As described in the June 22, 2015 Study Plan, follow up mist-net surveys were conducted at three sites (26 net nights) as close as possible to three acoustics sites (AS1, AS2, AS5) where BCID and manual vetting identified calls from Indiana bats. Additionally, per the methodology outlined in the August 6, 2015 Study Plan, 16 net nights were completed at two mist-net sites within the western ridge area (Table 3, Figure 1). The goal of the mist-net surveys was to capture listed bats and to attach transmitters in order to locate day roosts. Mist-net site data sheets are in Appendix C and site photographs are in Appendix D.

A total of 25 bats of four species were captured from three sites over 26 net nights within the original assessment area. A total of six bats representing two species were captured during the

additional 16 net nights completed along the western ridge. Three northern long-eared bats and zero Indiana, gray or Virginia big-eared bats were captured (Table 4).

Table 3. Mist-net site locations, Rocky Forge Wind Project, 2015.

Site	Latitude	Longitude	Dates	Description
MS5	37.67153	-79.73362	13-14 July	Forested corridors along Mill Creek
MS1	37.72007	-79.70714	15-16 July	Corridor on top of ridge
MS2	37.70535	-79.71907	15-16 July	Forested corridor on ridge south of Sandbank Mountain
MS3	37.68467	-79.73482	11-12 August	Ridgeline on old mine rd., Mt. Evan
MS4	37.69749	-79.73001	13-14 August	Old mine rd.

Table 4. Total bat captures by mist-net site, species, age, sex, and reproductive status, Rocky Forge Wind Project, 2015.

Site	Species	Age	Sex	Reproductive Status	Total Bats	Notes
MS1	*Eptesicus fuscus*	adult	male	scrotal	2	
	Lasiurus borealis	adult	male	non-reproductive	1	
	Lasiurus borealis	-	-	-	1	Escaped
	Myotis septentrionalis	adult	female	post-lactating	1	
	Myotis septentrionalis	juvenile	female	non-reproductive	1	
	Myotis septentrionalis	adult	male	non-reproductive	1	
MS5	*Eptesicus fuscus*	adult	female	non-reproductive	2	
	Eptesicus fuscus	adult	female	post-lactating	2	
	Eptesicus fuscus	juvenile	female	non-reproductive	1	
	Eptesicus fuscus	adult	male	non-reproductive	1	
	Eptesicus fuscus	adult	male	scrotal	4	
	Eptesicus fuscus	-	-	-	1	Escaped
MS2	*Eptesicus fuscus*	adult	female	post-lactating	1	
	Lasiurus borealis	juvenile	female	non-reproductive	1	
	Lasiurus borealis	adult	male	non-reproductive	2	
	Myotis leibii	adult	male	non-reproductive	3	
MS4	*Eptesicus fuscus*	adult	male	non-reproductive	1	
	Eptesicus fuscus	adult	male	scrotal	1	
MS3	*Lasiurus borealis*	adult	female	non-reproductive	1	
	Lasiurus borealis	juvenile	female	non-reproductive	1	
	Lasiurus borealis	juvenile	male	non-reproductive	2	

Radio Telemetry

Radio transmitters were attached to the three northern long-eared bats (1 adult female, 1 adult male, 1 juvenile female) in order to locate day roosts. Each individual was tracked for seven days after the night of capture. A total of twelve roost trees were located during telemetry efforts (Table 5, Figure 2). Photographs of roost trees are in Appendix E. Roost tree data sheets are in Appendix F.

No radio-tagged bats were located on 20 July due to equipment failure. The adult female was not located on 21 July even after extensive searching with the project and surrounding areas. The juvenile female was not located on 23 July due to transmitter failure.

A minimum of six roost trees were used by the adult male and no roost trees were used more than once during the tracking effort. All male roost trees, except RT 257, were north east of the area used by the adult and juvenile females and were located outside the project boundary (Figure 2). The adult female used a minimum of five roost trees, with RT 256 being used on three consecutive days. The juvenile female roosted in a minimum of five roost trees and was not found to use a roost tree more than once (Table 6).

Two emergence counts were conducted (either by a biologist or night vision video camera) at each roost tree, except RT 63 that was found on the last day of radio tracking. The maximum number of individuals counted emerging from a roost tree was 10 and the median emergence count was 1. Simultaneous emergence counts conducted at two roost trees (RT 256, RT 257) on 17 July suggest that the colony is comprised of at least 11 individuals (Table 7).

Table 5. Northern long-eared bat roost trees located during telemetry efforts, Rocky Forge Wind Project, 2015.

Roost Tree No.	Species	Latitude	Longitude	DBH (cm)	Estimated Height (m)		Condition [2]	Tree Ranking[3]	Bat Use[4]	No. Calendar Days Used
					Tree	Roost				
54	*Quercus montana*	37.72925	-79.69673	56.5	18.0	14.0	S	C	AM	1
55	*Acer rubrum*	37.71965	-79.70881	55.0	17.0	5.0	LD	C	JF	1
56	unk[1]	37.71967	-79.70899	43.9	17.0	6.0-9.0	S	C	AF	1
57	*Q. montana*	37.72957	-79.69833	56.0	8.0	5.0-6.0	S	SC	AM	1
58	unk	37.72925	-79.69655	38.5	5.0	4.0	S	SC	AM	1
59	*Carya* sp.	37.72185	-79.70363	22.2	6.0	6.0	S	SC	JF	1
60	*Q. montana*	37.71946	-79.70795	33.9	4.0	4.0	S	SC	JF	1
61	*A. rubrum*	37.72937	-79.69647	15.3	5.0	4.0	S	SC	AM	1
62	*Q. montana*	37.72381	-79.70826	44.3	15.0	5.0	LD	C	AF	1
63	*Betula alleghaniensis*	37.72934	-79.69643	43.6	15.0	6.0	L	C	AM	1
256	*Q. montana*	37.72294	-79.70217	12.6	5.0	3.0	S	SC	AF, JF, AM	3
257	*Q. montana*	37.72938	-79.69632	20.0	6.0	3.0	S	SC	JF	1

[1] unk = too decayed to identify species

[2] L = live, LD = live damaged, S = snag

[3] C= canopy, SC = sub canopy, U = understory

[4] AM = adult male, JF = juvenile female, AF = adult female

Table 6. Roost tree use by radio-tagged northern long-eared, Rocky Forge Wind Project, 2015.

Bat[1]	16-July	17-July	18-July	19-July	20-July*	21-July	22-July	23-July
AF	RT 256	RT 256	RT 256	RT 56	-	-	RT 62	
AM		RT 256	RT 54	RT 57	-	RT 58	RT 61	RT 63
JF		RT 257	RT 256	RT 55	-	RT 59	RT 60	-

[1] AF = adult female, AM = adult male, JF = juvenile female

Table 7. Emergence counts of northern long-eared bat roost trees, Rocky Forge Wind Project, 2015.

Roost Tree	16-July	17-July	18-July	19-July	20-July	21-July	22-July	23-July
RT 256	10	9	9					
RT 257		2	0					
RT 54			1	0				
RT 55				1	0			
RT 56				3	0			
RT 57				0*	1			
RT 58						0*		0
RT 59						2	1	
RT 60							1	0
RT 61							1	0
RT 62							0*	0
RT 63								1
Total	10	11	10	4	1	2	3	1

* = radio-tagged bat was present in tree, but did not emerge before dark

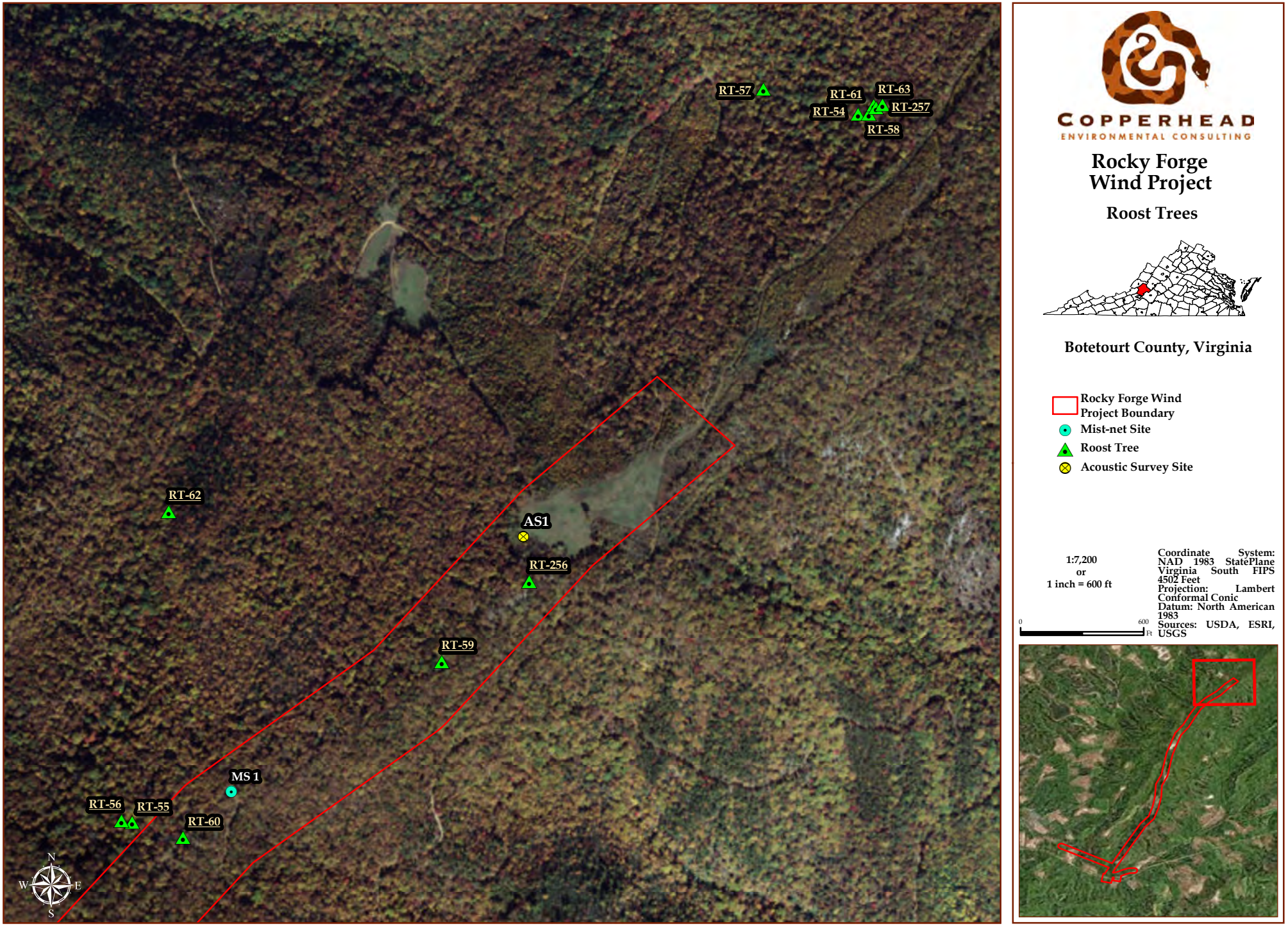


Figure 2. Northern long-eared bat roost tree locations, Rocky Forge Wind Project, 2015.

Summary

Indiana Bat

Results of the acoustic data analysis suggest that Indiana bats may be present within the project area; however, no Indiana bats were captured during the follow up mist-net survey despite placement of mist nets in optimal habitat and conditions for the species near locations where software indicated potential presence. If Indiana bats are present, the low number of acoustic calls and lack of captures suggest that a large colony is not likely roosting nearby, and Indiana bats may be using these areas as summer foraging or commuting habitat at low density.

For the western ridge portion of the project, the mist-net survey exceeded the USFWS minimum level of effort to determine presence/probable absence of Indiana bats in this part of the project area during the maternity season. Results of the survey indicate that Indiana bats are not likely present within the western ridge portion of the project.

Northern Long-eared bat

Acoustic surveys indicted probable absence of northern long-eared bats; however three individuals were captured during mist-net efforts and radio-tracked to roosts nearby. A total of 12 roost trees were located and 24 emergence counts were completed. The maximum number of individuals counted emerging from a roost tree was 10 and the median emergence count was 1.

For the western ridge portion of the project, the mist-net survey exceeded the USFWS minimum level of effort to determine presence/probable absence of northern long-eared bats in this part of the project area during the maternity season, suggesting summer presence only on the north end of the project.

Appendix A

Acoustic Survey Data Sheets

2015 Bat Acoustic Survey Form

Site No./Name AS1 Project: No. / Name 406 / Rocky Forge Wind Facility Acoustic Survey Date July 6, 2015 *
County Botetourt State VA Quad Sugarloaf mt. Observers: TC, NK Photos taken? (Yes)/No Camera Red pentax (113-1056 through
Habitat Description: edge of woodlot; farthest field from entrance Automatic Identification Program(s) Used (circle): (BCID) / Kaleidoscope 113-1059)

	Time Up	Time Down	Latitude	Longitude	Program	Total # Calls	# MYSO	# MYSE	MLE	Vetting (circle)
Detector # 214	1740	1111	37.72354	079.70228	BCID	165	2	0	.002765 (MYSO)	(Agree) Disagree
					Kpro					Agree Disagree

Results (check):

- ○ **No Target Species Detected**
- ✓ **MYSO Detected**
- ○ **MYSE Detected**

*note: positive detection results indicate that automated acoustic ID program(s) considered presence of the target specie(s) probable with high levels of certainty (P<0.05) AND manual vetting confirmed that the calls identified by the automated program(s) were consistent with calls that may be produced by the target species.

Manual Vetting Notes:
The two calls consistent with those that may be made by this species. (Three additional calls not ID'd by the software were also consistent with Myotis call sequence)

***Weather:** Low Temp 58 Time 0400

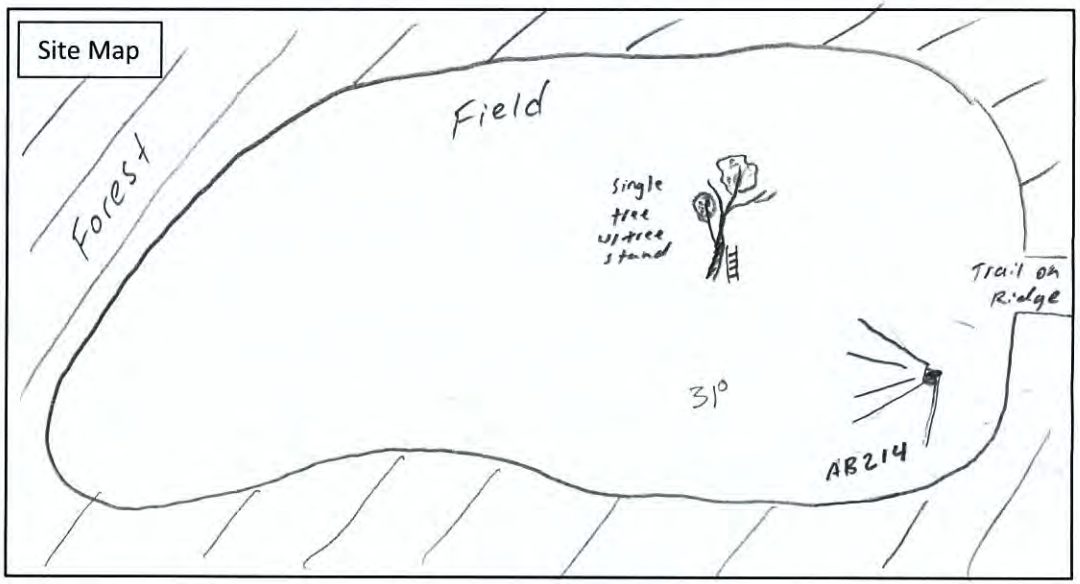
Precipitation: (Yes)/No
Comments: light rain first 20 min

* Nightly weather data will be downloaded from the mesowest website (http://mesowest.utah.edu) or obtained by on-site field crews to ensure weather minimums are not exceeded.

Deployment Checklist (please check each bubble after completion):

- ○ **All cables attached and secure**
- ○ **Power unit on and finger rub test performed**
- ○ **Power unit off (timer should have it remain in Standby mode)**
- ○ **Sensitivity Adjusted**
- ○ **Turn Volume DOWN**
- ○ **Confirm AnaBat unit is in standby mode**
- ○ **GPS position recorded**
- ○ **Pictures of and AnaBat unit site taken**

Site Map



* Time recorded in central time, mic type

Ridge top off of Hwy 220

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Copperhead Environmental Consulting Inc.
P.O. Box 73, 11641 Richmond Rd., Paint Lick, Kentucky 40461 (859) 925-9012

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2015 Bat Acoustic Survey Form

Site No./Name AS1 Project: No. / Name 406 / Rocky Forge Wind Facility Date 7/7/2015

	Time Up	Time Down	Latitude	Longitude	Program	Total # Calls	# MYSO	# MYSE	MLE	Vetting (circle)
Detector #	1103	0938	37.72354	-79.70228	(BCID)	183	3	0	.000054	~~Agree~~ Disagree
214					Kpro					Agree Disagree

Results (check):

- ○ **No Target Species Detected**
- ✓ **MYSO Detected**
- ○ **MYSE Detected**

*note: positive detection results indicate that automated acoustic ID program(s) considered presence of the target specie(s) probable with high levels of certainty (P<0.05) AND manual vetting confirmed that the calls identified by the automated program(s) were consistent with calls that may be produced by the target species.

Manual Vetting Notes:
Two of the calls ID'd as MYSO are portions of a LABO sequence, but 1 call ID'd as MYSO is consistent with those that may be made by this species.

***Weather:** Low Temp 62 Time 0330

* Nightly weather data will be downloaded from the mesowest website (http://mesowest.utah.edu) or obtained by on-site field crews to ensure weather minimums are not exceeded.

Precipitation: Yes/(No)
Comments: recorded in central time.

7/6 - 11 gray bat calls not consistent with that species

7/7 - 39 gray bat calls not consistent with that species.

Deployment Checklist (please check each bubble after completion):

- ○ **All cables attached and secure**
- ○ **Power unit on and finger rub test performed**
- ○ **Power unit off (timer should have it remain in Standby mode)**
- ○ **Sensitivity Adjusted**
- ○ **Turn Volume DOWN**
- ○ **Confirm AnaBat unit is in standby mode**
- ○ **GPS position recorded**
- ○ **Pictures of and AnaBat unit site taken**

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2015 Bat Acoustic Survey Form

Site No./Name AS2 Project No. / Name 406 / Rocky Forge Wind Facility Acoustic Survey Date 7/6/2015
County Botetourt State VA Quad Sugarloaf Mt. Observers: TC, NK Photos taken? Yes/No Camera Red pentax (113-1060 through 113-1062)
Habitat Description: edge of large woodlot near connecting corridor Automatic Identification Program(s) Used (circle): BCID / Kaleidoscope

	Time Up	Time Down	Latitude	Longitude	Program	Total # Calls	# MYSO	# MYSE	MLE	Vetting (circle)
Detector # 336	1755	1220	37.71091	-79.71505	BCID	17	1	0	.105943 (MYSO)	Agree Disagree
					Kpro					Agree Disagree

Results (check):

- ○ **No Target Species Detected**
- ✓ **MYSO Detected**
- ○ **MYSE Detected**

*note: positive detection results indicate that automated acoustic ID program(s) considered presence of the target specie(s) probable with high levels of certainty (P<0.05) AND manual vetting confirmed that the calls identified by the automated program(s) were consistent with calls that may be produced by the target species.

Manual Vetting Notes:

Call consistent with those made by MYSO.

***Weather:** Low Temp 58 Time 0400

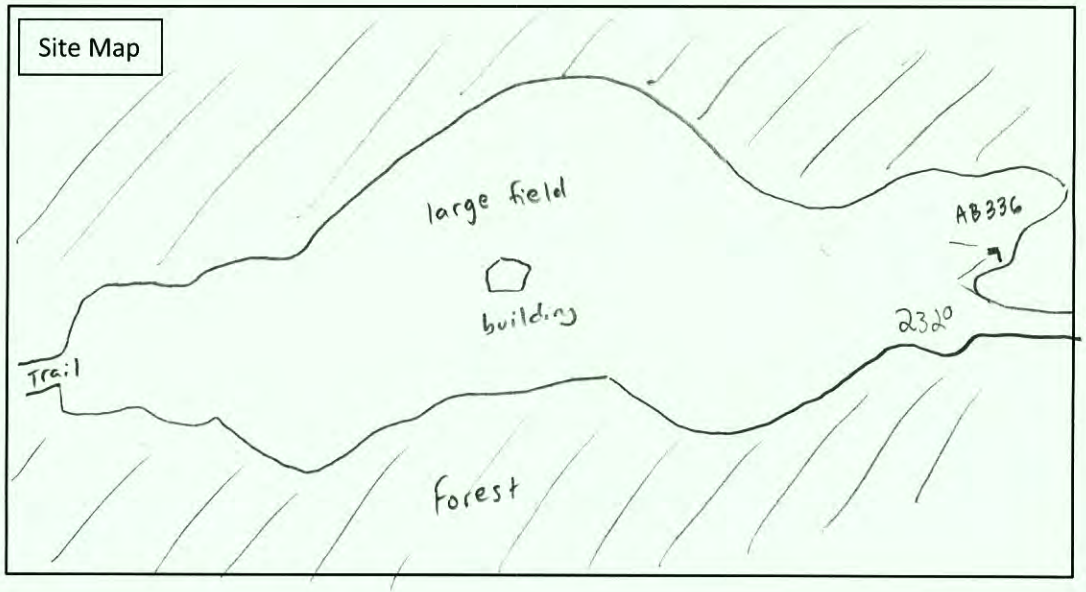
* Nightly weather data will be downloaded from the mesowest website (http://mesowest.utah.edu) or obtained by on-site field crews to ensure weather minimums are not exceeded.

Precipitation: Yes/No
Comments: Light rain first 20 min

Deployment Checklist (please check each bubble after completion):

- ○ **All cables attached and secure**
- ○ **Power unit on and finger rub test performed**
- ○ **Power unit off (timer should have it remain in Standby mode)**
- ○ **Sensitivity Adjusted**
- ○ **Turn Volume DOWN**
- ○ **Confirm AnaBat unit is in standby mode**
- ○ **GPS position recorded**
- ○ **Pictures of and AnaBat unit site taken**

Site Map



* Recorded in central time

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2015 Bat Acoustic Survey Form

Site No./Name AS2 Project: No. / Name 406 / Rocky Forge Wind Facility Date 7/7/2015

	Time Up	Time Down	Latitude	Longitude	Program	Total # Calls	# MYSO	# MYSE	MLE	Vetting (circle)
Detector # 336	1142	1007	37.71091	-79.71505	(BCID)	49	2	0	.012002	(Agree) Disagree
					Kpro					Agree Disagree

Results (check):

- ○ **No Target Species Detected**
- ✓ **MYSO Detected**
- ○ **MYSE Detected**

*note: positive detection results indicate that automated acoustic ID program(s) considered presence of the target specie(s) probable with high levels of certainty (P<0.05) AND manual vetting confirmed that the calls identified by the automated program(s) were consistent with calls that may be produced by the target species.

Manual Vetting Notes:

One call not consistent with calls made by MYSO, One call is consistent with calls made by MYSO.

***Weather:** Low Temp 62 Time 0330

* Nightly weather data will be downloaded from the mesowest website (http://mesowest.utah.edu) or obtained by on-site field crews to ensure weather minimums are not exceeded.

Precipitation: Yes/(No)
Comments: Recorded in central time.

7/6 - 6 gray bat calls not consistent with that species

7/7 - 7 gray bat calls not consistent with that species

Deployment Checklist (please check each bubble after completion):

- ○ **All cables attached and secure**
- ○ **Power unit on and finger rub test performed**
- ○ **Power unit off (timer should have it remain in Standby mode)**
- ○ **Sensitivity Adjusted**
- ○ **Turn Volume DOWN**
- ○ **Confirm AnaBat unit is in standby mode**
- ○ **GPS position recorded**
- ○ **Pictures of and AnaBat unit site taken**

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2015 Bat Acoustic Survey Form

Site No./Name AS3 Project: No. / Name 406 / Rocky Forge Wind Facility Acoustic Survey Date 7/6/2015
County Botetourt State VA Quad Sugarloaf Mt. Observers: TC, NK Photos taken? (Yes)/No Camera Red pentax (113-1063 through 113-1065)
Habitat Description: edge of woodlot Automatic Identification Program(s) Used (circle): BCID / Kaleidoscope

	Time Up	Time Down	Latitude	Longitude	Program	Total # Calls	# MYSO	# MYSE	MLE	Vetting (circle)
Detector # 6	1828	1256	37.69929	-79.71937	BCID	16	0	0	N/A	(Agree) Disagree
					Kpro					Agree Disagree

Results (check):

- ✓ **No Target Species Detected**
- ○ **MYSO Detected**
- ○ **MYSE Detected**

*note: positive detection results indicate that automated acoustic ID program(s) considered presence of the target specie(s) probable with high levels of certainty (P<0.05) AND manual vetting confirmed that the calls identified by the automated program(s) were consistent with calls that may be produced by the target species.

Manual Vetting Notes:

X

***Weather:** Low Temp 58 Time 0400

* Nightly weather data will be downloaded from the mesowest website (http://mesowest.utah.edu) or obtained by on-site field crews to ensure weather minimums are not exceeded.

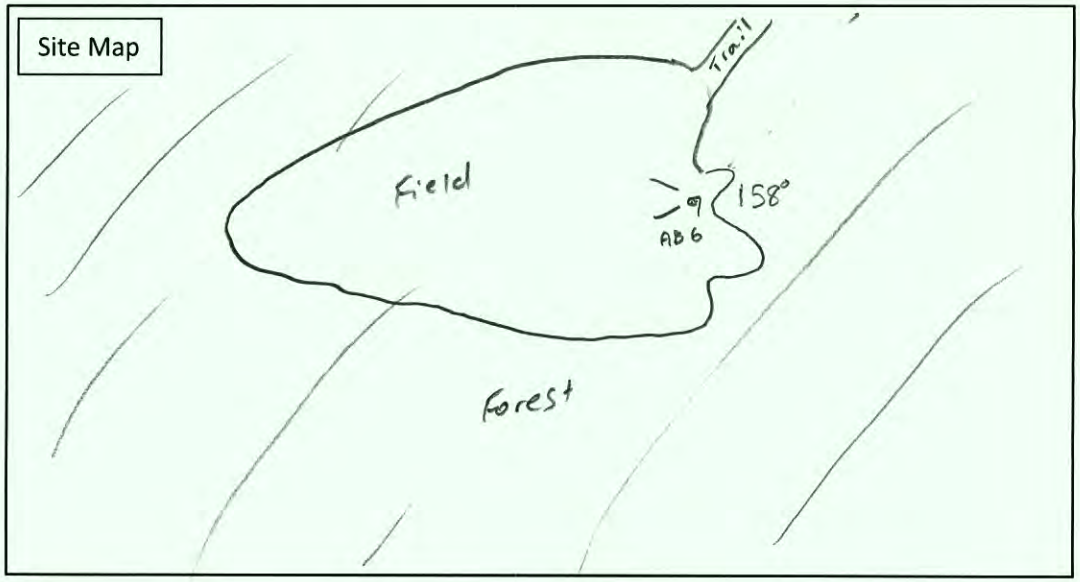
Precipitation: (Yes)/No
Comments: Light rain 1st 20 min

Deployment Checklist (please check each bubble after completion):

- ○ **All cables attached and secure**
- ○ **Power unit on and finger rub test performed**
- ○ **Power unit off (timer should have it remain in Standby mode)**
- ○ **Sensitivity Adjusted**
- ○ **Turn Volume DOWN**
- ○ **Confirm AnaBat unit is in standby mode**
- ○ **GPS position recorded**
- ○ **Pictures of and AnaBat unit site taken**

*Recorded in central time

Site Map



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2015 Bat Acoustic Survey Form

Site No./Name AS3 Project: No. / Name 406 / Rocky Forge Wind Facility Date 7/7/2015

	Time Up	Time Down	Latitude	Longitude	Program	Total # Calls	# MYSO	# MYSE	MLE	Vetting (circle)
Detector # 6	1207	1025	37.69929	-79.71937	(BCID)	17	0	1	.020426	Agree (Disagree)
					Kpro					Agree Disagree

Results (check):

- ✓ **No Target Species Detected**
- ○ **MYSO Detected**
- ○ **MYSE Detected**

*note: positive detection results indicate that automated acoustic ID program(s) considered presence of the target specie(s) probable with high levels of certainty (P<0.05) AND manual vetting confirmed that the calls identified by the automated program(s) were consistent with calls that may be produced by the target species.

Manual Vetting Notes:

Call is not consistent with that of MYSE. (LABO)

***Weather:** Low Temp 62 Time 0330

Precipitation: Yes/(No)

Comments: recorded in central time.

* Nightly weather data will be downloaded from the mesowest website (http://mesowest.utah.edu) or obtained by on-site field crews to ensure weather minimums are not exceeded.

Deployment Checklist (please check each bubble after completion):

- ○ **All cables attached and secure**
- ○ **Power unit on and finger rub test performed**
- ○ **Power unit off (timer should have it remain in Standby mode)**
- ○ **Sensitivity Adjusted**
- ○ **Turn Volume DOWN**
- ○ **Confirm AnaBat unit is in standby mode**
- ○ **GPS position recorded**
- ○ **Pictures of and AnaBat unit site taken**

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2015 Bat Acoustic Survey Form

Site No./Name AB 4 Project: No. / Name 406 / Rocky Forge Wind facility Acoustic Survey Date 7/6/2015
County Botetourt State VA Quad Sugarloaf Mt. Observers: TC, NK Photos taken? Yes/No Camera Red pentax (113-1066 thru 113-1068)
Habitat Description: edge wood lot Automatic Identification Program(s) Used (circle): BCID / Kaleidoscope

	Time Up	Time Down	Latitude	Longitude	Program	Total # Calls	# MYSO	# MYSE	MLE	Vetting (circle)
Detector # 199	1812	1217	37.69327	-79.72189	BCID	163	1	0	.008811(MYSO)	Agree / Disagree
					Kpro					Agree / Disagree

Results (check):

- [x] **No Target Species Detected**
- [ ] **MYSO Detected**
- [ ] **MYSE Detected**

*note: positive detection results indicate that automated acoustic ID program(s) considered presence of the target specie(s) probable with high levels of certainty (P<0.05) AND manual vetting confirmed that the calls identified by the automated program(s) were consistent with calls that may be produced by the target species.

Manual Vetting Notes:
Dissagree: call too low quality for ID and likely portion of a LABO call sequence. No other Myotis calls found.

***Weather:** Low Temp 58 Time 0400

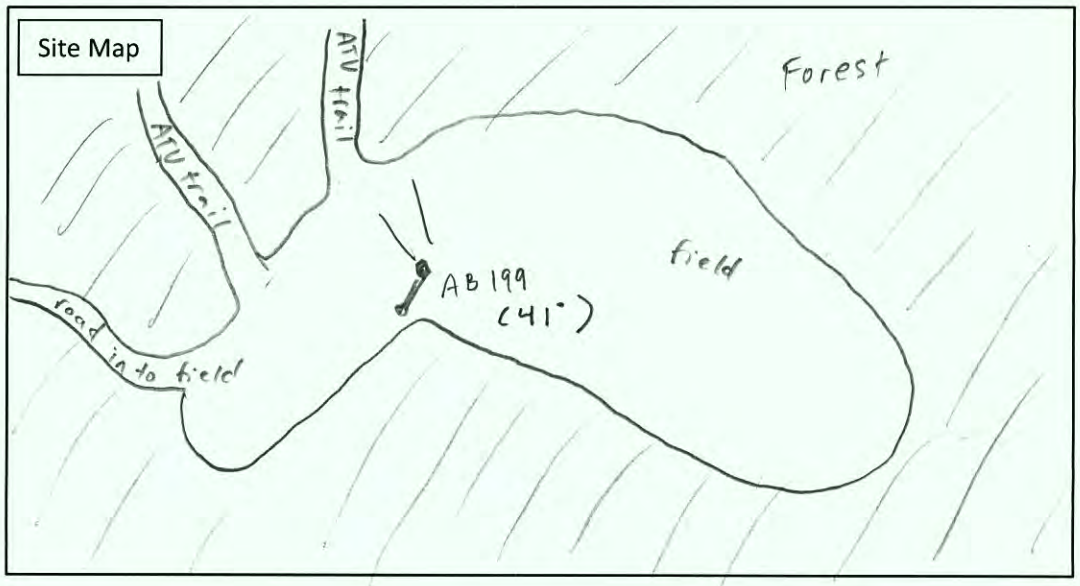
* Nightly weather data will be downloaded from the mesowest website (http://mesowest.utah.edu) or obtained by on-site field crews to ensure weather minimums are not exceeded.

Precipitation: Yes/No
Comments: Light rain first 20 min

Deployment Checklist (please check each bubble after completion):

- ○ **All cables attached and secure**
- ○ **Power unit on and finger rub test performed**
- ○ **Power unit off (timer should have it remain in Standby mode)**
- ○ **Sensitivity Adjusted**
- ○ **Turn Volume DOWN**
- ○ **Confirm AnaBat unit is in standby mode**
- ○ **GPS position recorded**
- ○ **Pictures of and AnaBat unit site taken**

Recorded in Central Time



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2015 Bat Acoustic Survey Form

Site No./Name AS4 Project: No. / Name 406 / Rocky Forge Wind Facility Date 7/7/2015

	Time Up	Time Down	Latitude	Longitude	Program	Total # Calls	# MYSO	# MYSE	MLE	Vetting (circle)
Detector #	12:30	1039	37.69327	-79.72189	BCID	144	1	Ø	.052264	Agree (Disagree)
199					Kpro					Agree Disagree

Results (check):

- [x] **No Target Species Detected**
- [ ] **MYSO Detected**
- [ ] **MYSE Detected**

*note: positive detection results indicate that automated acoustic ID program(s) considered presence of the target specie(s) probable with high levels of certainty (P<0.05) AND manual vetting confirmed that the calls identified by the automated program(s) were consistent with calls that may be produced by the target species.

Manual Vetting Notes:
Call not consistent with MYSO calls. Likely a LABO.

***Weather:** Low Temp 62 Time 0330

* Nightly weather data will be downloaded from the mesowest website (http://mesowest.utah.edu) or obtained by on-site field crews to ensure weather minimums are not exceeded.

Precipitation: Yes (No)
Comments: _____

7/6 – 6 gray bat calls not consistent with that species

7/7 – 4 gray bat calls not consistent with that species

Deployment Checklist (please check each bubble after completion):

- [ ] **All cables attached and secure**
- [ ] **Power unit on and finger rub test performed**
- [ ] **Power unit off (timer should have it remain in Standby mode)**
- [ ] **Sensitivity Adjusted**
- [ ] **Turn Volume DOWN**
- [ ] **Confirm AnaBat unit is in standby mode**
- [ ] **GPS position recorded**
- [ ] **Pictures of and AnaBat unit site taken**

Recorded in Central Time

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2015 Bat Acoustic Survey Form

Site No./Name AS 5 Project: No. / Name 406 101 / Rocky Forge Wind Facility Acoustic Survey Date 7/6/2015
County Botetourt State VA Quad Sugarloaf Mt. Observers: TC, NK Photos taken? Yes/No Camera Red pentax (113-1069 through 113-1071)
Habitat Description: edge of forest near fields in field near river Automatic Identification Program(s) Used (circle): BCID / Kaleidoscope

	Time Up	Time Down	Latitude	Longitude	Program	Total # Calls	# MYSO	# MYSE	MLE	Vetting (circle)
Detector # 346	1828	1319	37.67104	-79.73508	BCID	63	2	0	.000433(MYSO)	(Agree) Disagree
					Kpro					Agree Disagree

Results (check):

- ○ **No Target Species Detected**
- ✓ **MYSO Detected**
- ○ **MYSE Detected**

*note: positive detection results indicate that automated acoustic ID program(s) considered presence of the target specie(s) probable with high levels of certainty (P<0.05) AND manual vetting confirmed that the calls identified by the automated program(s) were consistent with calls that may be produced by the target species.

Manual Vetting Notes:
The two calls are consistent with those that may be made by this species. No other Myotis calls found at this site for this night.

***Weather:** Low Temp 58 Time 0400

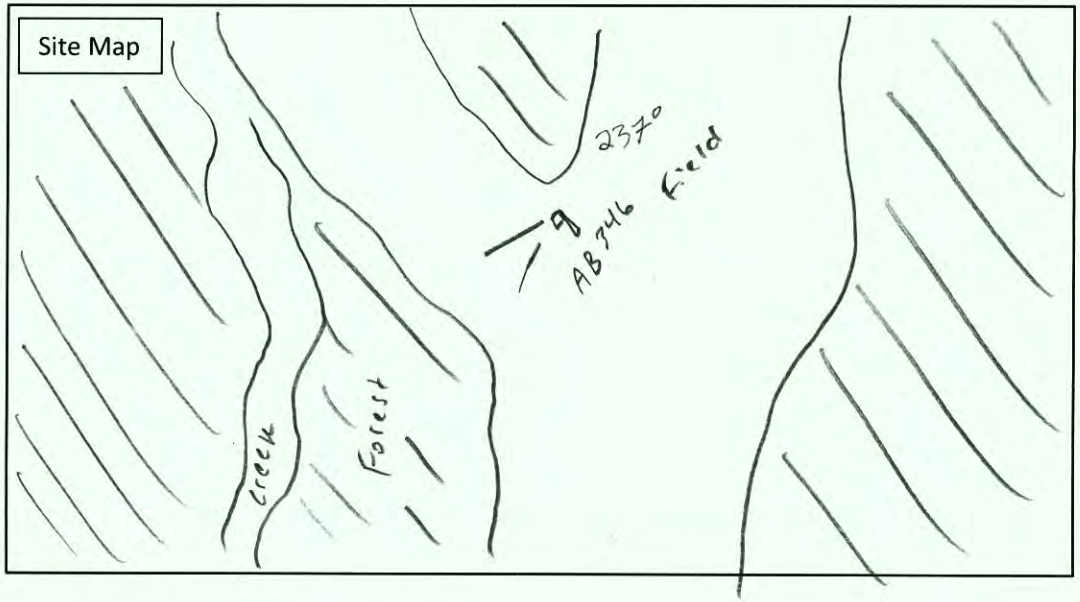
Precipitation: (Yes)/No
Comments: Light rain 1st 20 min

* Nightly weather data will be downloaded from the mesowest website (http://mesowest.utah.edu) or obtained by on-site field crews to ensure weather minimums are not exceeded.

Deployment Checklist (please check each bubble after completion):

- ○ **All cables attached and secure**
- ○ **Power unit on and finger rub test performed**
- ○ **Power unit off (timer should have it remain in Standby mode)**
- ○ **Sensitivity Adjusted**
- ○ **Turn Volume DOWN**
- ○ **Confirm AnaBat unit is in standby mode**
- ○ **GPS position recorded**
- ○ **Pictures of and AnaBat unit site taken**

Site Map



* Recorded in central time

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2015 Bat Acoustic Survey Form

Site No./Name AS5 Project: No. / Name 406 / Rocky Forge Wind Facility Date 7/7/2015

	Time Up	Time Down	Latitude	Longitude	Program	Total # Calls	# MYSO	# MYSE	MLE	Vetting (circle)
Detector # 346	1331	1132	37.67104	-79.73508	BCID	150	1	0	.020300	(Agree) Disagree
					Kpro					Agree Disagree

Results (check):

- ○ **No Target Species Detected**
- ✓ **MYSO Detected**
- ○ **MYSE Detected**

*note: positive detection results indicate that automated acoustic ID program(s) considered presence of the target specie(s) probable with high levels of certainty (P<0.05) AND manual vetting confirmed that the calls identified by the automated program(s) were consistent with calls that may be produced by the target species.

Manual Vetting Notes:

The one call ID'd as MYSO is consistent with those that may be made by this species. No other Myotis calls found at this site for this night.

***Weather:** Low Temp 62 Time 0330

* Nightly weather data will be downloaded from the mesowest website (http://mesowest.utah.edu) or obtained by on-site field crews to ensure weather minimums are not exceeded.

Precipitation: Yes/(No)
Comments: Recorded in central time.

7/7 - 1 gray bat call not consistent with that species

Deployment Checklist (please check each bubble after completion):

- ○ **All cables attached and secure**
- ○ **Power unit on and finger rub test performed**
- ○ **Power unit off (timer should have it remain in Standby mode)**
- ○ **Sensitivity Adjusted**
- ○ **Turn Volume DOWN**
- ○ **Confirm AnaBat unit is in standby mode**
- ○ **GPS position recorded**
- ○ **Pictures of and AnaBat unit site taken**

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2015 Bat Acoustic Survey Form

Site No./Name AS6 Project: No. / Name 406.01 / Rocky Forge Wind Facility Acoustic Survey Date 06 July 2015
County Botetourt State VA Quad Sugarloaf Mt Observers: TC, NK Photos taken? Yes/No Camera Red Pentax (113-1072 through 113-1074)
Habitat Description: Road Corridors through wood lot Automatic Identification Program(s) Used (circle): BCID / Kaleidoscope

	Time Up	Time Down	Latitude	Longitude	Program	Total # Calls	# MYSO	# MYSE	MLE	Vetting (circle)
Detector # 180	1848	1341	37.67775	-79.74332	BCID	254	2	Ø	.155182 / Ø	Agree / Disagree
					Kpro					Agree / Disagree

Results (check):

- [x] **No Target Species Detected**
- [ ] **MYSO Detected**
- [ ] **MYSE Detected**

*note: positive detection results indicate that automated acoustic ID program(s) considered presence of the target specie(s) probable with high levels of certainty (P<0.05) AND manual vetting confirmed that the calls identified by the automated program(s) were consistent with calls that may be produced by the target species.

Manual Vetting Notes:

X

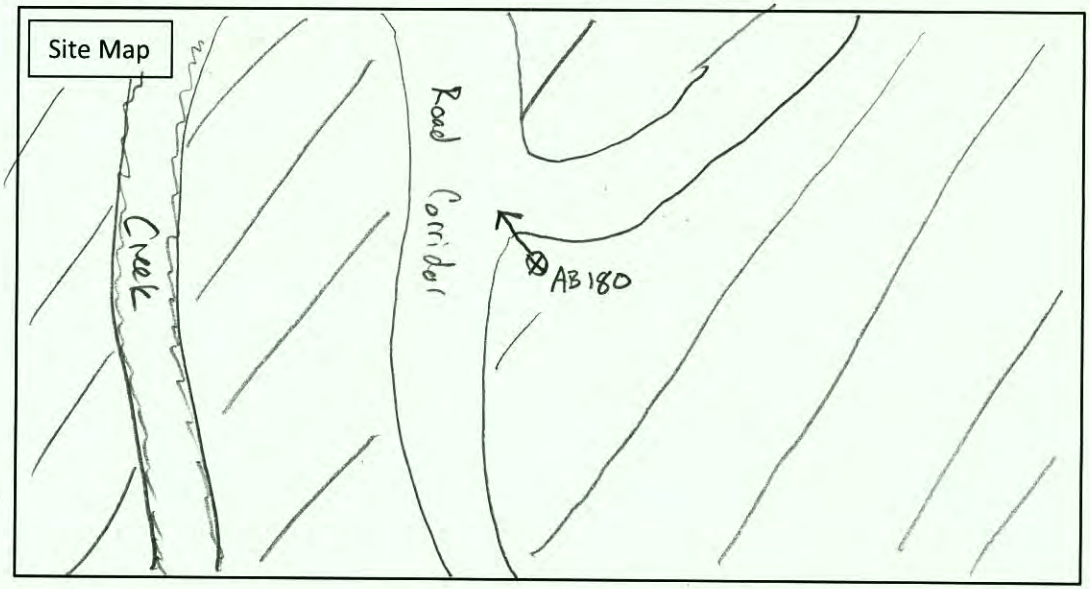
***Weather:** Low Temp 58 Time 0400

* Nightly weather data will be downloaded from the mesowest website (http://mesowest.utah.edu) or obtained by on-site field crews to ensure weather minimums are not exceeded.

Precipitation: Yes/No
Comments: Light rain first 20 min.

Deployment Checklist (please check each bubble after completion):

- ○ **All cables attached and secure**
- ○ **Power unit on and finger rub test performed**
- ○ **Power unit off (timer should have it remain in Standby mode)**
- ○ **Sensitivity Adjusted**
- ○ **Turn Volume DOWN**
- ○ **Confirm AnaBat unit is in standby mode**
- ○ **GPS position recorded**
- ○ **Pictures of and AnaBat unit site taken**



* Time recorded in Central time

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2015 Bat Acoustic Survey Form

Site No./Name AS6 Project: No. / Name 406 / Rocky Forge Wind Facility Date 7/7/2015

	Time Up	Time Down	Latitude	Longitude	Program	Total # Calls	# MYSO	# MYSE	MLE	Vetting (circle)
Detector # 180	1353	1147	37.67775	-79.74332	(BCID)	277	Ø	Ø	~~t~~ ~~f~~	(Agree) Disagree
					Kpro					Agree Disagree

Results (check):

X **No Target Species Detected**

O **MYSO Detected**

O **MYSE Detected**

*note: positive detection results indicate that automated acoustic ID program(s) considered presence of the target specie(s) probable with high levels of certainty (P<0.05) AND manual vetting confirmed that the calls identified by the automated program(s) were consistent with calls that may be produced by the target species.

Manual Vetting Notes:

X

***Weather:** Low Temp 62 Time 0330

* Nightly weather data will be downloaded from the mesowest website (http://mesowest.utah.edu) or obtained by on-site field crews to ensure weather minimums are not exceeded.

Precipitation: Yes/(No)
Comments: recorded in central time.

7/6 - 2 graybat calls not consistent with that species

7/7 - 2 graybat calls not consistent with that species.

Deployment Checklist (please check each bubble after completion):

- o **All cables attached and secure**
- o **Power unit on and finger rub test performed**
- o **Power unit off (timer should have it remain in Standby mode)**
- o **Sensitivity Adjusted**
- o **Turn Volume DOWN**
- o **Confirm AnaBat unit is in standby mode**
- o **GPS position recorded**
- o **Pictures of and AnaBat unit site taken**

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Appendix B

Acoustic Site Photographs

AS 1

AS 2

AS 3

AS 4

AS 5

AS 6

Appendix C

Mist-net Site Data Sheets

Mist Netting Data Form

Sheet 1 of 2

Site No. MS 1 Project No./Name 406.02 / Rocky Forge Date 7/15/2015

Site Location Logging road on forested ridge top.

County Botetourt State VA Time Up 2040 Time Down 0141

Lat/Lon ; UTM: N/E 37.72007 W/N -79.70714 Zone — Datum NAD83 Observers G Janos N Kovacs

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#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type CC	Freq. 172.
1	2135	MYSE	A	F	PL	6.5	36.5	B	0.5	0	—	CC0926	.584
2	2149	LABO	A	M	NR	11.5	44.0	D	4.5	0	—	—	—
3													
4													
5													
6													
7													
8													
9													
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30													

Species Abbreviations: Corynorhinus rafinesquii (CORA); Corynorhinus t. virginianus (COVI); Eptesicus fuscus (EPFU); Lasiurus borealis (LABO); Lasiurus cinereus (LACI); Lasiurus seminolus (LASE); Lasionycteris noctivagans (LANO); Myotis austroriparius (MYAU); Myotis grisescens (MYGR); Myotis leibii (MYLE); Myotis lucifugus (MYLU); Myotis septentrionalis (MYSE); Myotis sodalis (MYSO); Nycticeius humeralis (NYHU); Perimyotis subflavus (PESU); Tadarida brasiliensis (TABR)

Other Abbreviations: Male: M; Female: F; Pregnant: P; Lactating: L; Post Lactating: PL; Scrotal: S; Non Repro: NR

Moon Phase | % **Wax / (Wane)**

	Rise	Set
Sun	0608	2041
Moon	0553	2013

Time	Temp (F)	Sky	Wind	No. Bats
2100	66	0	2	2
2200	66	0	2	0
2300	66	0	2	0
0000	65	0	2	0
0100	64	0	2	0
0200	64	0	2	0

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or overcast
4	Fog or smoke
5	Drizzle or light rain
6	Heavy rain - thunder storm

Beaufort Wind Scale	
0	Calm: <1 mph
1	Light air: 1-3 mph
2	Light breeze: 4-6 mph
3	Gentle breeze: 7-10 mph
4	Moderate breeze: 11-16 mph

Please Return to:
P.O. Box 73, Paint Lick, KY, 40461.
(859) 925-9012

Mist Netting Data Form

Site No. MS 1 Project No./Name 406.02 / Rocky Forge Date 16 July 2015

Site Location Logging rd on forested ridgetop

County Botetourt State VA Time Up 2040 Time Down 0140

Lat/Lon ; UTM: N/E 37.72007 W/N -79.70714 Zone — Datum NAD83 Observers G Janosi N Kovacs

COPPERHEAD ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type CC	Freq. 172.
1	2155	MYSE	J	F	NR	5.5	35.5	B	2.0	0	—	CC0647	.782
2	2200	MYSE	A	M	NR	6.5	35.0	C	2.5	0	—	CC0646	.687
3	2315	LABO	Escape	from	net	—	—	E	5.0	—	—	—	—
4	2335	EPFU	A	M	S	18.5	47.0	B	0.5	0	—	—	—
5	2335	EPFU	A	M	S	17.25	46.5	B	1.0	0	—	—	—
6													
7													
8													
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10													
11													
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29													
30													

Moon Phase 0 % (Wax) / Wane

	Rise	Set
Sun	0609	2040
Moon	0649	2055

Time	Temp (F)	Sky	Wind	No. Bats
2030	65	1	2	0
2130	64	1	2	2
2230	63	1	1	1
2330	63	1	1	2
0030	63	0	0	0
0130	63	0	2	0

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or overcast
4	Fog or smoke
5	Drizzle or light rain
6	Heavy rain - thunder storm

Beaufort Wind Scale	
0	Calm: <1 mph
1	Light air: 1-3 mph
2	Light breeze: 4-6 mph
3	Gentle breeze: 7-10 mph
4	Moderate breeze: 11-16 mph

Acoustic Survey: Unit type_____ Unit #_____ Date_____ Start time_____ Stop time_____

Date_____ Start time_____ Stop time_____

Date_____ Start time_____ Stop time_____

Weatherproofing_____ Coordinates_____

Comments:

* Moved net C to new location farther down main trail. Called new net location "net E." (past net D)

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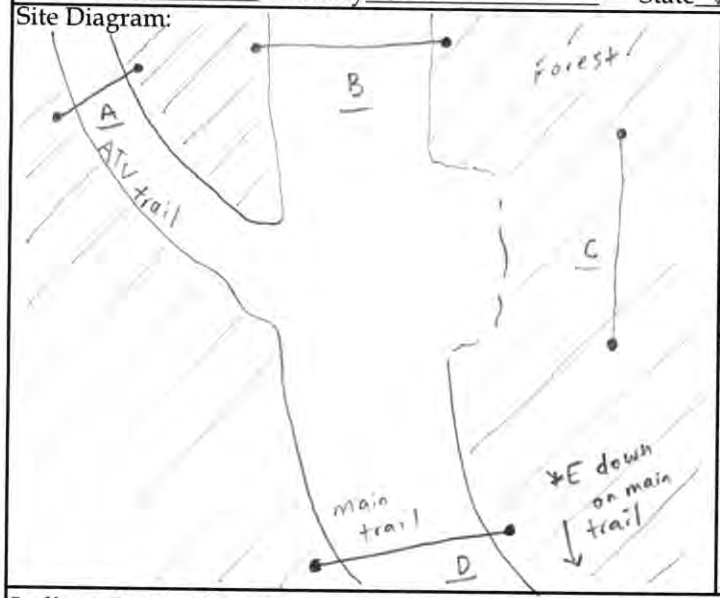
Mist Net Site Habitat Sheet Site No. MS 1 Project No./Name 406.02 / Rocky Forge Date 7/15/2015

Lat/Lon ; UTM: N/E 37.72007 W/N -79.70714 Zone - Observers G Janos, N Kovacs

Datum: NAD83 County Botetourt State VA Quad Sugarloaf Mtn

Site Diagram:



Net	Height (m)	Length (m)	Dates
A	5.2	4	7/15 - 7/16
B	5.2	6	7/15 - 7/16
C	5.2	12	7/15 -
D	5.2	9	7/15 - 7/16
E	5.2	9	7/16
F			

Site Photographs
Camera: Fujifilm (Gregg)
Photo Log:

Dominant Vegetation

1. Q montana
2. R pseudoacacia
3. P strobus
4. A rubrum
5.
6.

Net Set by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Corridor	X	X		X	X	
Cave						
Mine						
Forest Gap			X			
Other						

Indiana Bat Habitat Characterization (Choose appropriate score for each habitat characteristic)

3 **Roost habitat**: **1. Poor**: No or few snags >= 5" DBH with sloughing bark or other usable roost features (cracks, crevices, etc)
2. Moderate: Snags with sloughing bark or other roost features present 5-15 inch DBH within 1000 feet of forested areas.
3. Optimal: Snags with sloughing bark or other roost features present >15 inch DBH within 1000 feet of forested areas.

1 **Water Resources**: **1. Poor**: bat drinking resources not present at the site.
2. Moderate: Ephemeral or intermittent streams or ponded areas present but too cluttered to allow many bats to drink easily or simultaneously. No corridors, openings or canopy gaps allow bats easy access to the resource.
3. Optimal: Streams or ponds (including road ruts) present that appear to offer drinking resource throughout the majority of the summer. Flyways to resources are available.

3 **Forest Structure**: (if hardwoods are absent or nearly absent or if stand is monoculture, area automatically qualifies as a 1: poor).
1. Poor: Habitat even aged and young. Trees smaller than 5 inch DBH. Understory growth cluttered and restricts flying/foraging
2. Moderate: some diversity in age of trees in the stand. Trees 5 to 15 inches present. Understory clutter dominant but not ubiquitous. Trees greater than 15" DBH may be present but rare.
3. Optimal: Mature forest. Diverse age classes of trees present. Trees > 15 inch DBH frequent. Varying tree height and treefalls allow for frequent small openings and gaps that facilitate bat foraging.

3 **Land Cover**: **1. Poor**: Square kilometer surrounding site predominantly un-forested. Few mature trees present not connected to other areas of trees.
2. Marginal: Trees present in the form of small woodlots and wooded fence rows. Little connection to adjacent forested areas.
3. Optimal: Area is largely forested. Wooded stands are connected to other wooded stands via wooded stream, fence row, or other wooded corridor.

10 **Total Habitat Score** (Should be between 4 & 12)

Comments:

Please return to:
P.O. Box 73, Paint Lick, KY. 40461
859-925-9012
COPPERHEAD ENVIRONMENTAL CONSULTING

Mist Netting Data Form

Sheet____ of ____

Site No. MS2 Project No./Name 406.02 / Apex Virginia Rocky Forge Date 15 July 2015

Site Location Wilderness Rd. on ridge south of Sandbank Mountain

County Botetourt State VA Time Up 2020 Time Down 0141

Lat/Lon ; UTM: (N)/E 37.70535 (W)/N 79.71907 Zone — Datum Nad83 Observers P. Riby, A. Cable

COPPERHEAD ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type____	Freq. ____
1	0025	LABO	A	M	NR	10.5	39	C	1.5	0	—	—	—
2	0120	LABO	A	M	NR	11.5	41	D	4.5	0	—	—	—
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
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22													
23													
24													
25													
26													
27													
28													
29													
30													

Species Abbreviations: Corynorhinus rafinesquii (CORA); Corynorhinus t. virginianus (COVI); Eptesicus fuscus (EPFU); Lasiurus borealis (LABO); Lasiurus cinereus (LACI); Lasiurus seminolus (LASE); Lasionycteris noctivagans (LANO); Myotis austroriparius (MYAU); Myotis grisescens (MYGR); Myotis leibii (MYLE); Myotis lucifugus (MYLU); Myotis septentrionalis (MYSE); Myotis sodalis (MYSO); Nycticeius humeralis (NYHU); Perimyotis subflavus (PESU); Tadarida brasiliensis (TABR)

Other Abbreviations: Male: M; Female: F; Pregnant: P; Lactating: L; Post Lactating: PL; Scrotal: S; Non Repro: NR

Moon Phase 0 % Wax / (Wane)

	Rise	Set
Sun	0608	2041
Moon	0553	2013

Time	Temp (F)	Sky	Wind	No. Bats
2000	68	0	0	0
2100	66	0	0	0
2200	66	0	1	0
2300	66	0	1	0
0000	66	0	1	1
0100	65	0	1	1
0200	65	0	1	0

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or overcast
4	Fog or smoke
5	Drizzle or light rain
6	Heavy rain - thunder storm

Beaufort Wind Scale	
0	Calm: <1 mph
1	Light air: 1-3 mph
2	Light breeze: 4-6 mph
3	Gentle breeze: 7-10 mph
4	Moderate breeze: 11-16 mph

Please Return to:
P.O. Box 73, Paint Lick, KY, 40461.
(859) 925-9012

Mist Netting Data Form

Site No. MS 2 Project No./Name 406.02 / Rocky Forge Date 16 July 15

Site Location Wilderness Rd on Ridge South of Sand Bank Mountain

County Botetourt State VA Time Up 2030 Time Down 0140

Lat/Lon ; UTM: N/E 37.70535 W/N 79.71907 Zone — Datum Nad 83 Observers P. Roby, A. Cable

COPPERHEAD ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type___	Freq. ___
1	2115	MYLE	A	M	NR	5.0	32	E	1.0	0	—	—	—
2	2159	MYLE	A	M	NR	5.5	32	A	1.5	0	—	—	—
3	2207	MYLE	A	M	NR	5.75	31	C	1.5	0	—	—	—
4	0005	EPFU	A	F	PL	19.5	47	B	3.0	0	—	—	—
5	0055	LABO	J	F	NR	10.0	41	D	3.5	0	—	—	—
6													
7													
8													
9													
10													
11													
12													
13													
14													
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30													

Acoustic Survey: Unit type_____ Unit #_____ Date_____ Start time_____ Stop time_____

Date_____ Start time_____ Stop time_____

Date_____ Start time_____ Stop time_____

Weatherproofing_____ Coordinates_____

Comments:

Moon Phase ○ % Wax / Wane

	Rise	Set
Sun	0609	2040
Moon	0649	2055

Time	Temp (F)	Sky	Wind	No. Bats
2100	66	1	1	2
2200	64	1	1	1
2300	63	1	1	0
0000	63	2	1	2
0100	62	2	1	0
0200	62	1	0	0

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or overcast
4	Fog or smoke
5	Drizzle or light rain
6	Heavy rain - thunder storm

Beaufort Wind Scale	
0	Calm: <1 mph
1	Light air: 1-3 mph
2	Light breeze: 4-6 mph
3	Gentle breeze: 7-10 mph
4	Moderate breeze: 11-16 mph

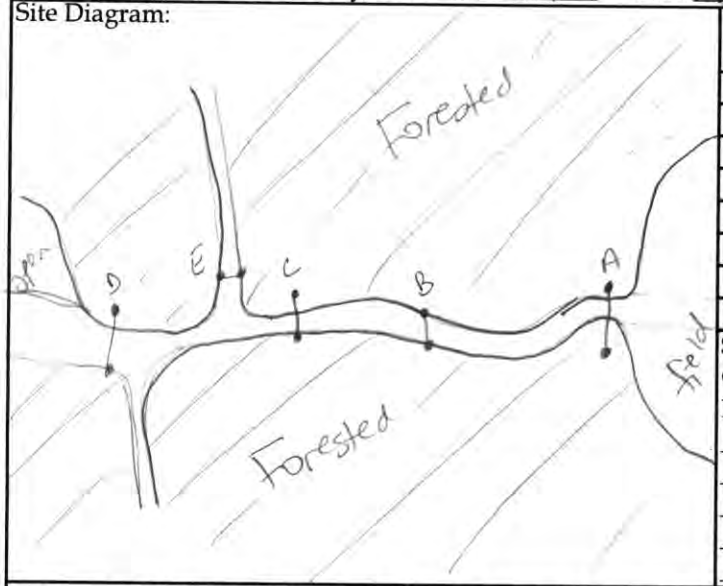
Please Return to:
P.O. Box 73, Paint Lick, KY, 40461.
(859) 925-9012

Mist Net Site Habitat Sheet Site No. MS2 Project No./Name 406.02/ Apex Virginia Rock Force Date 15 July 2015

Lat/Lon ; UTM: (N)/E 37.70535 (W)N 79.71907 Zone — Observers P. Roby, A. Cable

Datum: Nad 83 County Botetourt State VA Quad Sugarloaf Mountain

Site Diagram:



Net	Height (m)	Length (m)	Dates
A	5.2	9	15 July
B	5.2	6	15+16 July
C	5.2	6	15+16 July
D	5.2	6	15+16 July
E	2.6	4	15+16 July
F			
A	5.2	12	16 July

Site Photographs
Camera: Piper
Photo Log: Net A, B, C, D, E

Dominant Vegetation

1. Castanea dentata
2. Quercus rubra
3. Acer pensylvanicum
4. Quercus Pinus
5. Nyssa sylvatica
6.

Net Set by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Corridor	X	X	X	X	X	
Cave						
Mine						
Forest Gap						
Other						

Indiana Bat Habitat Characterization (Choose appropriate score for each habitat characteristic)

2 **Roost habitat**: **1. Poor**: No or few snags >= 5" DBH with sloughing bark or other usable roost features (cracks, crevices, etc)
2. Moderate: Snags with sloughing bark or other roost features present 5-15 inch DBH within 1000 feet of forested areas.
3. Optimal: Snags with sloughing bark or other roost features present >15 inch DBH within 1000 feet of forested areas.

2 **Water Resources**: **1. Poor**: bat drinking resources not present at the site.
2. Moderate: Ephemeral or intermittent streams or ponded areas present but too cluttered to allow many bats to drink easily or simultaneously. No corridors, openings or canopy gaps allow bats easy access to the resource.
3. Optimal: Streams or ponds (including road ruts) present that appear to offer drinking resource throughout the majority of the summer. Flyways to resources are available.

2 **Forest Structure**: (if hardwoods are absent or nearly absent or if stand is monoculture, area automatically qualifies as a 1: poor).
1. Poor: Habitat even aged and young. Trees smaller than 5 inch DBH. Understory growth cluttered and restricts flying/foraging
2. Moderate: some diversity in age of trees in the stand. Trees 5 to 15 inches present. Understory clutter dominant but not ubiquitous. Trees greater than 15" DBH may be present but rare.
3. Optimal: Mature forest. Diverse age classes of trees present. Trees > 15 inch DBH frequent. Varying tree height and treefalls allow for frequent small openings and gaps that facilitate bat foraging.

3 **Land Cover**: **1. Poor**: Square kilometer surrounding site predominantly un-forested. Few mature trees present not connected to other areas of trees.
2. Marginal: Trees present in the form of small woodlots and wooded fence rows. Little connection to adjacent forested areas.
3. Optimal: Area is largely forested. Wooded stands are connected to other wooded stands via wooded stream, fence row, or other wooded corridor.

9 **Total Habitat Score** (Should be between 4 & 12)

Comments:

Please return to:
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859-925-9012

COPPERHEAD ENVIRONMENTAL CONSULTING

Mist Netting Data Form

Sheet____ of _____

Site No. MS 3 Project No./Name 406.04 / Rocky Forge Date 8/11/15

Site Location Ridgeline on Old mine rd, Mt. Evan

County Botetourt State VA Time Up 2018 Time Down 0120

Lat/Lon ; UTM: N/E 37.68467 W/N 079.73482 Zone — Datum NAD83 Observers C. Leftwich J. Bourne

COPPERHEAD ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type___	Freq. ___
1	0045	LABO	J	M	NR	8.5	38	D	1	0	—	—	—
2													
3													
4													
5													
6													
7													
8													
9													
10													
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27													
28													
29													
30													

Species Abbreviations: Corynorhinus rafinesquii (CORA); Corynorhinus t. virginianus (COVI); Eptesicus fuscus (EPFU); Lasiurus borealis (LABO); Lasiurus cinereus (LACI); Lasiurus seminolus (LASE); Lasionycteris noctivagans (LANO); Myotis austroriparius (MYAU); Myotis grisescens (MYGR); Myotis leibii (MYLE); Myotis lucifugus (MYLU); Myotis septentrionalis (MYSE); Myotis sodalis (MYSO); Nycticeius humeralis (NYHU); Perimyotis subflavus (PESU); Tadarida brasiliensis (TABR)

Other Abbreviations: Male: M; Female: F; Pregnant: P; Lactating: L; Post Lactating: PL; Scrotal: S; Non Repro: NR

Moon Phase % 15 Wax / Wane

	Rise	Set
Sun	0630	2018
Moon	0347	1810

Time	Temp (F)	Sky	Wind	No. Bats
2030	71	2	2	0
2130	68	2	2	0
2230	66	2	1	0
2330	66	0	1	0
0030	65	0	1	1
0120	65	0	2	0

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or overcast
4	Fog or smoke
5	Drizzle or light rain
6	Heavy rain - thunder storm

Beaufort Wind Scale	
0	Calm: <1 mph
1	Light air: 1-3 mph
2	Light breeze: 4-6 mph
3	Gentle breeze: 7-10 mph
4	Moderate breeze: 11-16 mph

Please Return to:
P.O. Box 73, Paint Lick, KY, 40461.
(859) 925-9012

Night 1

Mist Netting Data Form

Site No. MS 3 Project No./Name 406.04 / Rocky Forge Date 8/12/15

Site Location Ridgeline on Old Mine rd., Mt. Evan

County Botetourt State VA Time Up 2015 Time Down 0120

Lat/Lon ; UTM: N/E 37.68467 W/N 079.73482 Zone ____ Datum NAD 83 Observers C. Leftwich J. Bourne

COPPERHEAD ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type___	Freq. ____
1	2105	LABO	J	M	NR	8.0	39	D	2.0	0			
2	2155	LABO	J	F	NR	10.5	38	D	1.0	0			
3	0025	LABO	A	F	NR	5.5	40	B	3.0	0			
4													
5													
6													
7													
8													
9													
10													
11													
12													
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23													
24													
25													
26													
27													
28													
29													
30													

Moon Phase 5 % Wax / (Wane)

	Rise	Set
Sun	0631	2017
Moon	0442	1853

Time	Temp (F)	Sky	Wind	No. Bats
2030	67	1	0	1
2130	62	1	0	1
2230	60	0	0	0
2330	60	0	1	1
0030	60	0	0	0
0130	58	0	0	0

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or overcast
4	Fog or smoke
5	Drizzle or light rain
6	Heavy rain - thunder storm

Beaufort Wind Scale	
0	Calm: <1 mph
1	Light air: 1-3 mph
2	Light breeze: 4-6 mph
3	Gentle breeze: 7-10 mph
4	Moderate breeze: 11-16 mph

Acoustic Survey: Unit type____ Unit #____ Date____ Start time____ Stop time____

Date____ Start time____ Stop time____

Date____ Start time____ Stop time____

Weatherproofing____ Coordinates____

Comments:

Please Return to:
P.O. Box 73, Paint Lick, KY, 40461.
(859) 925-9012

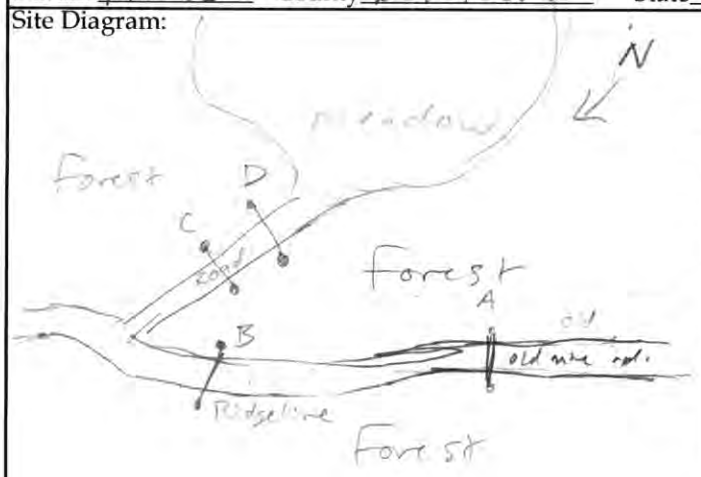
night 2

Mist Net Site Habitat Sheet Site No. MS 3 Project No./Name 406.04 / Rocky Forge Date 8/11/15

Lat/Lon ; UTM: N/E 37.68467 W/N 079.73482 Zone — Observers C. Leftwich

Datum: NAD83 County Botetourt State VA Quad Sugarloaf mtn. J. Bourne

Site Diagram:



Net	Height (m)	Length (m)	Dates
A	5.2	6	8/11 - 8/12
B	5.2	6	8/11, 8/12
C	5.2	6	8/11, 8/12
D	5.2	6	8/11, 8/12
E			
F			

Site Photographs
Camera: CC
Photo Log:

Dominant Vegetation

1. Q. montana
2. N. sylvatica
3.
4.
5.
6.

Net Set by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Corridor	X	X	X	X		
Cave						
Mine						
Forest Gap						
Other						

Indiana Bat Habitat Characterization (Choose appropriate score for each habitat characteristic)

2 **Roost habitat**: **1. Poor**: No or few snags >= 5" DBH with sloughing bark or other usable roost features (cracks, crevices, etc)
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3. Optimal: Mature forest. Diverse age classes of trees present. Trees > 15 inch DBH frequent. Varying tree height and treefalls allow for frequent small openings and gaps that facilitate bat foraging.

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2. Marginal: Trees present in the form of small woodlots and wooded fence rows. Little connection to adjacent forested areas.
3. Optimal: Area is largely forested. Wooded stands are connected to other wooded stands via wooded stream, fence row, or other wooded corridor.

9 **Total Habitat Score** (Should be between 4 & 12)

Comments:

Please return to:
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859-925-9012
COPPERHEAD ENVIRONMENTAL CONSULTING

19.5

Mist Netting Data Form

Sheet 1 of 1

Site No. MS 4 Project No./Name 406.04 / Rockforge Date 13 Aug 15

Site Location old mine Rd

County Botetourt State VA Time Up 2015 Time Down 0120

Lat/Lon ; UTM: N/E 37.69749 W/N 079.73001 Zone — Datum WGS84 Observers C. Leftwich J. Bourne

COPPERHEAD ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2225	EPFU	A	M	S	19.25	44	A	1.5	O	—	—	—
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
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21													
22													
23													
24													
25													
26													
27													
28													
29													
30													

Species Abbreviations: Corynorhinus rafinesquii (CORA); Corynorhinus t. virginianus (COVI); Eptesicus fuscus (EPFU); Lasiurus borealis (LABO); Lasiurus cinereus (LACI); Lasiurus seminolus (LASE); Lasionycteris noctivagans (LANO); Myotis austroriparius (MYAU); Myotis grisescens (MYGR); Myotis leibii (MYLE); Myotis lucifugus (MYLU); Myotis septentrionalis (MYSE); Myotis sodalis (MYSO); Nycticeius humeralis (NYHU); Perimyotis subflavus (PESU); Tadarida brasiliensis (TABR)

Other Abbreviations: Male: M; Female: F; Pregnant: P; Lactating: L; Post Lactating: PL; Scrotal: S; Non Repro: NR

Moon Phase 5 % **Wax / Wane**

	Rise	Set
Sun	0631	2015
Moon	0538	1932

Time	Temp (F)	Sky	Wind	No. Bats
2030	65	0	1	0
2130	65	0	1	1
2230	66	0	1	0
2330	66	0	2	0
0030	65	0	2	0
0120	63	0	1	0

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or overcast
4	Fog or smoke
5	Drizzle or light rain
6	Heavy rain - thunder storm

Beaufort Wind Scale	
0	Calm: <1 mph
1	Light air: 1-3 mph
2	Light breeze: 4-6 mph
3	Gentle breeze: 7-10 mph
4	Moderate breeze: 11-16 mph

Please Return to:
P.O. Box 73, Paint Lick, KY, 40461.
(859) 925-9012

Night 1

Mist Netting Data Form

Site No. MS 4 Project No./Name 406.04 / Rocky Forge Date 14-Aug-2015

Site Location Old Mine Rd.

County Botetourt State VA Time Up 2014 Time Down 0115

Lat/Lon ; UTM: N/E 37.69479 W/N 079.73001 Zone — Datum NAD83 Observers C. Leftwich, J. Bourn

COPPERHEAD ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2150	EPFU	A	M	NR	23.5	43	B	1.0	0	—	—	—
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
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20													
21													
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26													
27													
28													
29													
30													

Acoustic Survey: Unit type _____ Unit # _____ Date _____ Start time _____ Stop time _____

Date _____ Start time _____ Stop time _____

Date _____ Start time _____ Stop time _____

Weatherproofing _____ Coordinates _____

Comments:

Moon Phase 3 % **Wax / Wane**

	Rise	Set
Sun	0632	2014
Moon	0634	2007

Time	Temp (F)	Sky	Wind	No. Bats
2030	69	0	1	0
2130	68	0	1	1
2230	67	0	1	0
2330	67	0	1	0
0030	66	0	1	0
0115	66	0	1	0

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or overcast
4	Fog or smoke
5	Drizzle or light rain
6	Heavy rain - thunder storm

Beaufort Wind Scale	
0	Calm: <1 mph
1	Light air: 1-3 mph
2	Light breeze: 4-6 mph
3	Gentle breeze: 7-10 mph
4	Moderate breeze: 11-16 mph

Please Return to:
P.O. Box 73, Paint Lick, KY, 40461.
(859) 925-9012

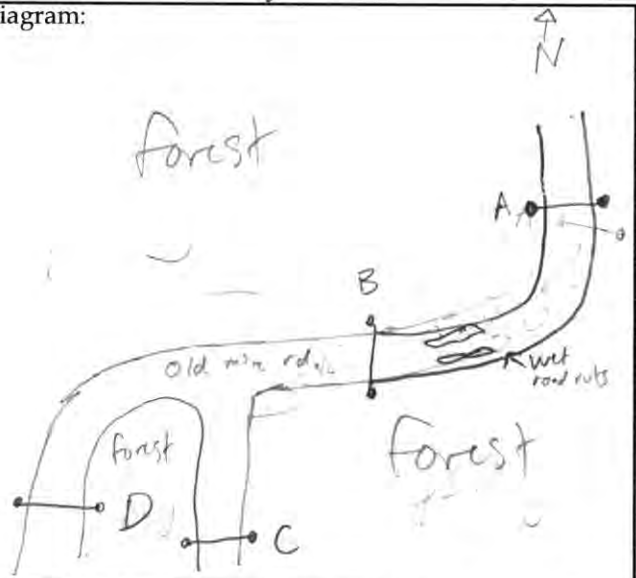
Night 2

Mist Net Site Habitat Sheet Site No. MS 4 Project No./Name 406,041 Back Forge Date 13 Aug 15

Lat/Lon ; UTM: N/E 37.69749 W/N 079.73001 Zone — Observers C. Lehtinen

Datum: NAD83 County Botetourt State VA Quad Sugarloaf Mtn. J. Bourne

Site Diagram:



Net	Height (m)	Length (m)	Dates
A	2.6	4	8/13 ; 8/14
B	5.2	4	8/13 ; 8/14
C	5.2	4	8/13 ; 8/14
D	5.2	4	8/13 ; 8/14
E			
F			

Site Photographs
Camera: C
Photo Log:

Dominant Vegetation

1. A. rubrum
2. Q. montana
3. N. sylvatica
4.
5.
6.

Net Set by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Corridor	X	X	X	X		
Cave						
Mine						
Forest Gap						
Other						

Indiana Bat Habitat Characterization (Choose appropriate score for each habitat characteristic)

2 **Roost habitat**: **1. Poor**: No or few snags >= 5" DBH with sloughing bark or other usable roost features (cracks, crevices, etc)
2. Moderate: Snags with sloughing bark or other roost features present 5-15 inch DBH within 1000 feet of forested areas.
3. Optimal: Snags with sloughing bark or other roost features present >15 inch DBH within 1000 feet of forested areas.

1 **Water Resources**: **1. Poor**: bat drinking resources not present at the site.
2. Moderate: Ephemeral or intermittent streams or ponded areas present but too cluttered to allow many bats to drink easily or simultaneously. No corridors, openings or canopy gaps allow bats easy access to the resource.
3. Optimal: Streams or ponds (including road ruts) present that appear to offer drinking resource throughout the majority of the summer. Flyways to resources are available.

3 **Forest Structure**: (if hardwoods are absent or nearly absent or if stand is monoculture, area automatically qualifies as a 1: poor).
1. Poor: Habitat even aged and young. Trees smaller than 5 inch DBH. Understory growth cluttered and restricts flying/foraging
2. Moderate: some diversity in age of trees in the stand. Trees 5 to 15 inches present. Understory clutter dominant but not ubiquitous. Trees greater than 15" DBH may be present but rare.
3. Optimal: Mature forest. Diverse age classes of trees present. Trees > 15 inch DBH frequent. Varying tree height and treefalls allow for frequent small openings and gaps that facilitate bat foraging.

3 **Land Cover**: **1. Poor**: Square kilometer surrounding site predominantly un-forested. Few mature trees present not connected to other areas of trees.
2. Marginal: Trees present in the form of small woodlots and wooded fence rows. Little connection to adjacent forested areas.
3. Optimal: Area is largely forested. Wooded stands are connected to other wooded stands via wooded stream, fence row, or other wooded corridor.

9 **Total Habitat Score** (Should be between 4 & 12)

Comments:

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Mist Netting Data Form

Sheet 1 of _____

Site No. MS 5 Project No./Name 906.02 / Rocky Forge Date 13 July 2015

Site Location Forested corridors along Mill Creek

County Botetourt State VA Time Up 2045 Time Down 0145

Lat/Lon ; UTM: N/E 37.67153 W/N -79.73362 Zone — Datum NAD 83 Observers G. Jonos, N. Kovacs

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#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type___	Freq. ___
1	2138	EPFU	A	M	S	20.0	49.0	B	0.5	0	—	—	—
2	2315	EPFU	A	M	S	17.5	48.0	D	0.5	0	—	—	—
3	2332	EPFU	Escape	from	net	—	—	D	3	—	—	—	—
4	2332	EPFU	A	M	S	17.0	47.0	A	2.5	0	—	—	—
5	0024	EPFU	A	F	NR	22.0	48.0	B	2.5	0	—	—	—
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
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20													
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22													
23													
24													
25													
26													
27													
28													
29													
30													

Species Abbreviations: Corynorhinus rafinesquii (CORA); Corynorhinus t. virginianus (COVI); Eptesicus fuscus (EPFU); Lasiurus borealis (LABO); Lasiurus cinereus (LACI); Lasiurus seminolus (LASE); Lasionycteris noctivagans (LANO); Myotis austroriparius (MYAU); Myotis grisescens (MYGR); Myotis leibii (MYLE); Myotis lucifugus (MYLU); Myotis septentrionalis (MYSE); Myotis sodalis (MYSO); Nycticeius humeralis (NYHU); Perimyotis subflavus (PESU); Tadarida brasiliensis (TABR)

Other Abbreviations: Male: M; Female: F; Pregnant: P; Lactating: L; Post Lactating: PL; Scrotal: S; Non Repro: NR

Nets opened a few minutes late due to brief thunder shower

Moon Phase % 20 Wax / (Wane)

	Rise	Set
Sun	0607	2041
Moon	0406	1835

Time	Temp (F)	Sky	Wind	No. Bats
2100	70	2	2	1
2200	67	2	1	0
2300	66	3	1	3
0000	66	3	1	1
0100	64	2	0	0
0200	63	0	0	0

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or overcast
4	Fog or smoke
5	Drizzle or light rain
6	Heavy rain - thunder storm

Beaufort Wind Scale	
0	Calm: <1 mph
1	Light air: 1-3 mph
2	Light breeze: 4-6 mph
3	Gentle breeze: 7-10 mph
4	Moderate breeze: 11-16 mph

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Mist Netting Data Form

Site No. MS5 Project No./Name 406.02 / Rocky Forge Date 14 July 2015

Site Location Forested corridors along Mill Creek

County Botetourt State VA Time Up 2041 Time Down 0201

Lat/Lon ; UTM: N/E 37.67153 W/N -79.73362 Zone — Datum NAD83 Observers G. Janos, N. Kovacs

COPPERHEAD ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2155	EPFU	A	M	NR	17.5	48.0	B	2.5	0	—	—	—
2	2220	EPFU	J	F	NR	20.5	48.0	A	1.0	0	—	—	—
3	2240	EPFU	A	F	PL	21.75	49.0	A	1.0	0	—	—	—
4	2300	EPFU	A	F	PL	20.5	47.0	A	2.0	0	—	—	—
5	0041	EPFU	A	M	S	20.0	47.0	B	2.0	0	—	—	—
6	0041	EPFU	A	F	NR	21.0	48.0	B	4.5	0	—	—	—
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													

Moon Phase % 5 Wax / Wane

	Rise	Set
Sun	0607	2041
Moon	0458	1927

Time	Temp (F)	Sky	Wind	No. Bats
2100	67	5	1	1
2200	67	3	0	2
2300	65	3	0	1
0000	64	0	0	2
0100	63	0	0	0
0200	62	2	0	0

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or overcast
4	Fog or smoke
5	Drizzle or light rain
6	Heavy rain - thunder storm

Beaufort Wind Scale	
0	Calm: <1 mph
1	Light air: 1-3 mph
2	Light breeze: 4-6 mph
3	Gentle breeze: 7-10 mph
4	Moderate breeze: 11-16 mph

Acoustic Survey: Unit type_____ Unit #_____ Date_____ Start time_____ Stop time_____

Date_____ Start time_____ Stop time_____

Date_____ Start time_____ Stop time_____

Weatherproofing_____ Coordinates_____

Comments:

Rain from 2050 to 2110

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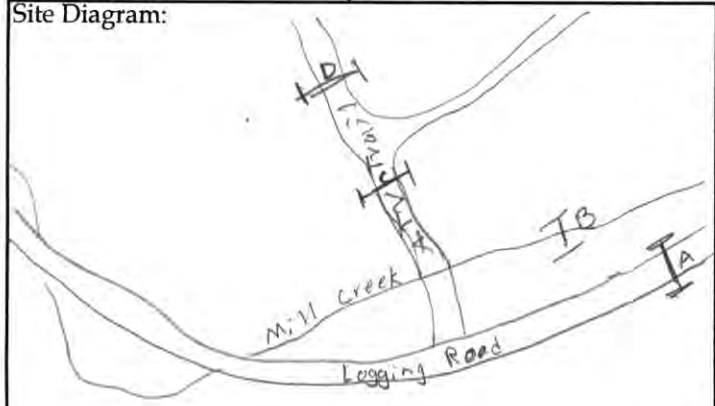
Mist Net Site Habitat Sheet Site No. MS 5 Project No./Name 406.02 Rocky Forge Date 13 July 2015

Lat/Lon ; UTM: (N)/E 37.67153 (W)N -79.73362 Zone — Observers G. Janos, N. Kovacs

Datum: NAD 83 County Botetourt State VA Quad Sugarloaf Mountain

Site Diagram:



Net	Height (m)	Length (m)	Dates
A	5.2	6	7/13 - 7/14
B	5.2	9	7/13 - 7/14
C	5.2	6	7/13 - 7/14
D	5.2	6	7/13 - 7/14
E			
F			

Site Photographs
Camera: Fugifilm
Photo Log: 2040 - 2047

Dominant Vegetation

1. T. canadensis
2. Q. alba
3. L. tulipifera
4. P. strobus
5.
6.

Net Set by Habitat

Habitat	A	B	C	D	E	F
River						
Stream		✓				
Pond						
Corridor	✓		✓	✓		
Cave						
Mine						
Forest Gap						
Other						

Indiana Bat Habitat Characterization (Choose appropriate score for each habitat characteristic)

2 **Roost habitat**: **1. Poor**: No or few snags >= 5" DBH with sloughing bark or other usable roost features (cracks, crevices, etc)
2. Moderate: Snags with sloughing bark or other roost features present 5-15 inch DBH within 1000 feet of forested areas.
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2. Moderate: some diversity in age of trees in the stand. Trees 5 to 15 inches present. Understory clutter dominant but not ubiquitous. Trees greater than 15" DBH may be present but rare.
3. Optimal: Mature forest. Diverse age classes of trees present. Trees > 15 inch DBH frequent. Varying tree height and treefalls allow for frequent small openings and gaps that facilitate bat foraging.

3 **Land Cover**: **1. Poor**: Square kilometer surrounding site predominantly un-forested. Few mature trees present not connected to other areas of trees.
2. Marginal: Trees present in the form of small woodlots and wooded fence rows. Little connection to adjacent forested areas.
3. Optimal: Area is largely forested. Wooded stands are connected to other wooded stands via wooded stream, fence row, or other wooded corridor.

11 **Total Habitat Score** (Should be between 4 & 12)

Comments:

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Appendix D

Mist-net Site Photographs

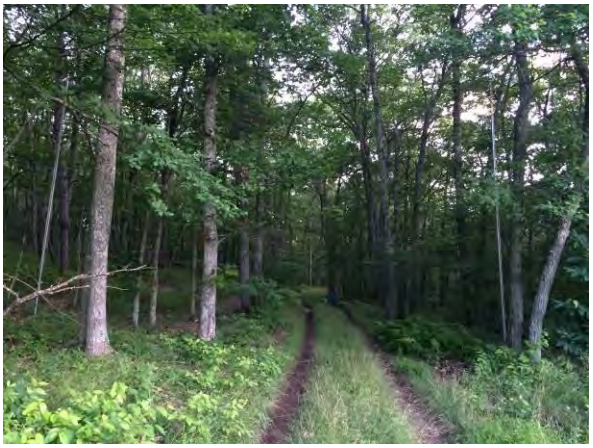
MS 1 Net A

MS 1 Net B

MS 1 Net C

MS 1 Net D

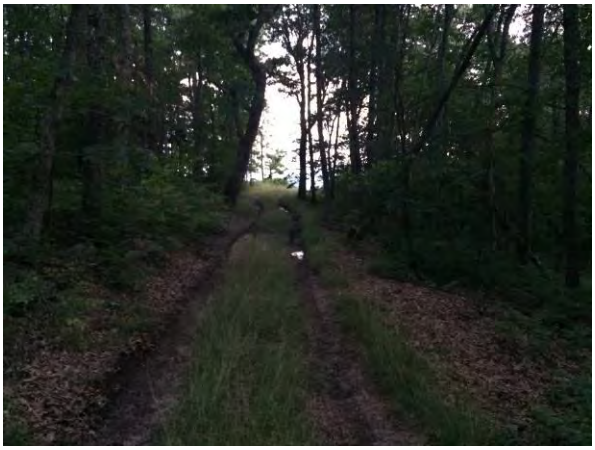
MS 2 Net E



MS 2 Net A

MS 2 Net B

MS 2 Net C



MS 2 Net D

MS 2 Net E

MS 3 Net A

MS 3 Net B

MS 3 Net C

MS 3 Net D

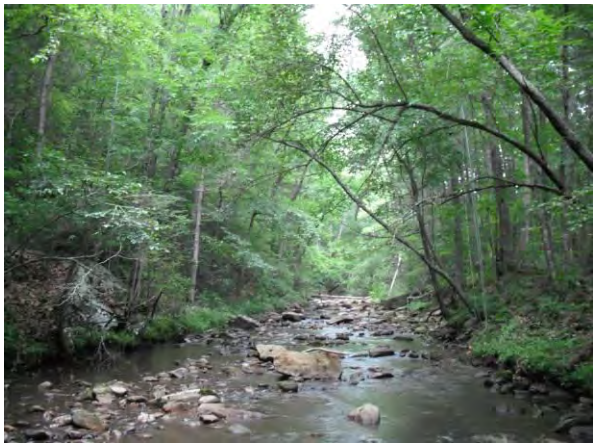
MS 4 Net A

MS 4 Net B

MS 4 Net C

MS 4 Net D

MS 5 Net A



MS 5 Net B

MS 5 Net C

MS 5 Net D

Appendix E

Roost Tree Photographs

RT 55

RT 56

RT 57

RT 58

RT 59

RT 60

RT 61

RT 62

RT 63

RT 256

RT 257

Appendix F

Roost Tree Data Sheets

Roost Tree Data Form (2014) Bat Species/Sex/Frequency: MYSE/M/172.687 Band # CC0646 Page 1 of 1

Roost Tree # RT 54 Project No./Project Name 406.03 / Rocky Forge Date First Found 18 July 2015

Location Open forest off ATV trail (Close to RT 257)

County Botetourt State VA Quad Sugarloaf Mtn.

Lat-Long/UTM: N/E 37.72925 W/N -79.69673 Zone — Datum: NAD83 Observers: N Kovacs, J Bourne

#	Tree Tag #	Species	DBH (cm)	Height ft or m		Condition*	% Bark Cover**		Tree Ranking***	Available Roost/ Observation
				Tree	Roost		Usable	Total		
1	54	Q montana	56.5	20	15	snag	H	H	C	bark/ crevice
2		A rubrum	30.5	20	—	live	L	H	C	—
3		A rubrum	14.6	15	-	live	L	H	SC	—
4		A rubrum	28.2	15	-	live	L	H	C	—
5		Q rubra	86.1	32	-	live	M	H	C	—
6		A rubrum	47.8	10	-	snag	H	H	SC	crevice
7		A rubrum	48.4	13	—	snag	H	H	SC	crevice/ cavity
8		Q montana	59.5	23	—	live	L	H	C	—
9		A rubrum	30.2	20	—	live	L	H	C	—
10		B alleghaniensis	14	18	-	live	L	H	SC	-
11		Q montana	51.1	22	-	live	M	H	C	crevice
12		Q montana	72.1	22	-	live-damaged	M	H	C	cavity
13		Q montana	71.1	19	-	live-damaged	L	H	C	bark
14		Q montana	75.7	20	-	live-damaged	H	H	C	bark/ crevice
15										
16										
17										
18										
19										
20										
21										
22										

A 10 factor English prism is used to identify trees within the plot, centered on the roost tree.

Habitat		
(Interior)	Edge	Open

Canopy Cover at Roost		
Open	(Intermediate)	Closed

Basal Area		
Live Trees	Snags	All Trees
110	30	140

Roost Location		
(Bark)	Cavity	(Crevice)

↓QUICK REFERENCE / ↑ CIRCLE

*Condition		
Snag	Live	Live-Damaged

**% Bark Cover		
High = ≥ 25%	Moderate = ≥ 10-<25%	Low = < 10%

***Tree Ranking		
Canopy	Sub-Canopy	Understory

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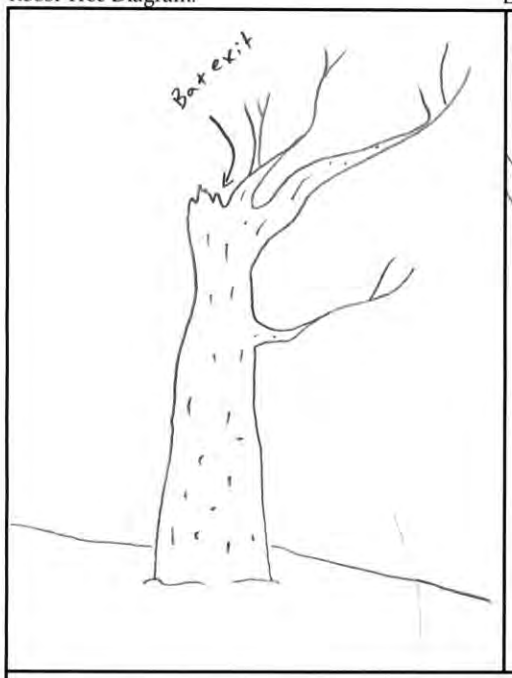
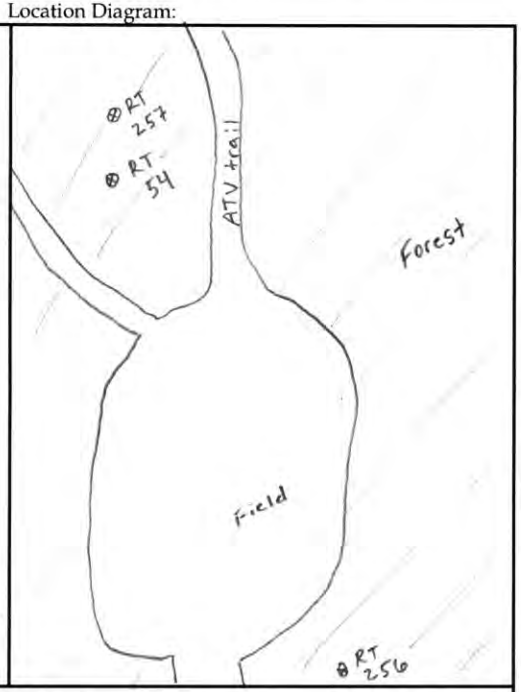
Roost Tree # 54 Bat Species/Sex/Frequency: MYSE/M/172.687 Band # CC0646

Roost Tree Diagram:



Location Diagram:



Bat Days

No.	Date	Bat Freq.	Bat Band #	Sex of Bat	Observations
1	7/18	.687	CC0646	M	Bark/crevice where large limb broke.
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

Emergence Count

No.	Date	Temp °F	Weather	# of Bats	Time				Focal Bat exit #	Personnel/ Comments
					Sunset	Bats Start	Bats End	Tagged Bat		
1	7/18	75	few clouds	1	2038	2049	2049	2049	1	
2	7/19	75	few clouds	0	2039	—	—	—	—	video
3										
4										

Cavity or Crevice Characteristics

No.	Nature	Aspect	Opening Measurements			
			Width	Height	Ground	H_2O Level
1						
2						
3						

Comments:

Second night (7/19) emergence video recorded. Black bag → camera 2

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Roost Tree Data Form (2014) Bat Species/Sex/Frequency: MYSE / F / 172.782 Band # CC0647 Page 1 of 1

Roost Tree # 55 Project No./Project Name 406.03 / Rocky Forge Date First Found 19 July 2015

Location Forest off of main ridge trail

County Botetourt State VA Quad Sugarloaf Mtn.

Lat-Long/UTM: N/E 37.71965 W/N -79.70881 Zone — Datum: NAD83 Observers: N Kovacs, J Bourne

#	Tree Tag #	Species	DBH (cm)	Height (ft or m)		Condition*	% Bark Cover**		Tree Ranking***	Available Roost/ Observation
				Tree	Roost		Usable	Total		
1	55	A rubrum	45.1	55	15	live-damaged	H	H	C	cavity/bark
2		A rubrum	24.8	25	—	live	L	H	SC	—
3		A rubrum	55.3	60	20 30	snag	H	H	C	cavity/crevice
4		Q montana	42.5	65	—	live	L	H	C	—
5		Q montana	56.6	60	—	live	M	H	C	—
6		Q montana	50	65	—	live	M	H	C	—
7		Q rubra	28.8	50	—	live	L	H	C	—
8		Q montana	40.4	55	—	live	L	H	C	—
9		Q montana	45.3	60	—	live	L	H	C	—
10		unknown	37.2	30	20	snag	H	L	SC	cavity
11		Q montana	72.4	65	—	live	M	H	C	—
12	56	unknown	43.9	55	20 10 30	snag	H	M	C	cavity/crevice
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										

A 10 factor English prism is used to identify trees within the plot, centered on the roost tree.

Habitat		
Interior	Edge	Open

Canopy Cover at Roost		
Open	Intermediate	Closed

Basal Area		
Live Trees	Snags	All Trees
90	30	120

Roost Location		
Bark	Cavity	Crevice

↓QUICK REFERENCE / ↑ CIRCLE

*Condition		
Snag	Live	Live-Damaged

**% Bark Cover		
High = ≥ 25%	Moderate = ≥ 10-<25%	Low = < 10%

***Tree Ranking		
Canopy	Sub-Canopy	Understory

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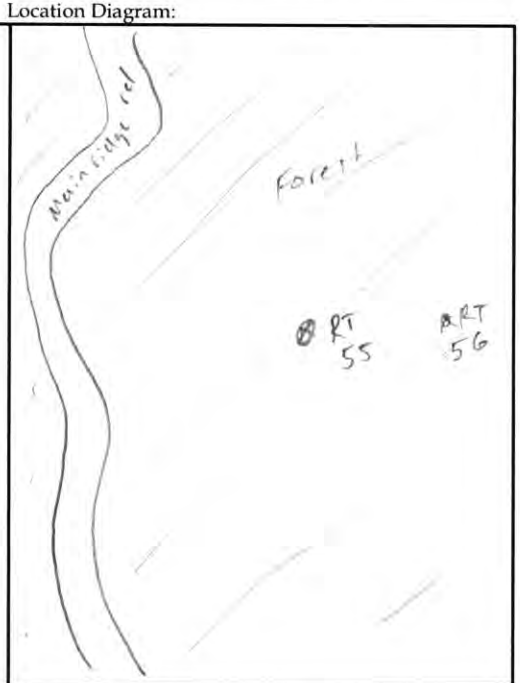
Roost Tree # 55 Bat Species/Sex/Frequency: MYSE / F / 172.782 Band # CC0647

Roost Tree Diagram:

Location Diagram:



Bat Days

No.	Date	Bat Freq.	Bat Band #	Sex of Bat	Observations
1	7/19	.782	CC0647	F	In broken limb
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

Emergence Count

No.	Date	Temp °F	Weather	# of Bats	Time				Focal Bat exit #	Personnel/ Comments
					Sunset	Bats Start	Bats End	Tagged Bat		
1	7/19/16	75°	few clouds	1	8:51	9:00	9:00	9:00	1	
2	7/20	71	few clouds	0	8:38	—	—	—	—	video
3										
4										

Cavity or Crevice Characteristics

No.	Nature	Aspect	Opening Measurements			
			Width	Height	Ground	H_2O Level
1						
2						
3						

Comments:

Second night (7/20) emergence video recorded. Black bag → camera 2.

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Roost Tree Data Form (2014) Bat Species/Sex/Frequency: MYSE / F / 172.584 Band # CC0926 Page 1 of 1

Roost Tree # RT 56 Project No./Project Name 406.03 / Rocky Forge Date First Found 19 July 2015

Location Forest off of main ridge trail (near RT 55)

County Botetourt State VA Quad Sugarloaf mtn.

Lat-Long/UTM: N/E 37.71967 W/N -79.70899 Zone - Datum: NAD83 Observers: N Kovacs, J Bourne

#	Tree Tag #	Species	DBH (cm)	Height (ft or m) Tree	Height (ft or m) Roost	Condition*	% Bark Cover** Usable	% Bark Cover** Total	Tree Ranking***	Available Roost/ Observation
1	56	unknown	43.9	55	20 to 30	snag	H	M	C	cavity crevice
2		A rubrum	8.7	20	—	live	L	H	SC	—
3		A rubrum	18.5	20	—	live	L	H	SC	—
4		A rubrum	55	50	15	live	M	H	C	crevice
5		Q montana	56.1	60	—	live	L	H	C	—
6		unknown	56.7	45	35	snag	H	L	C	cav/crev.
7		A rubrum	18.9	20	20	live damage	M	H	SC	crevice
8		Q montana	51.3	65	—	live	L	H	C	—
9		A rubrum	18	45	—	live	L	H	C	—
10		A rubrum	21.7	45	—	live	L	H	C	—
11		A rubrum	24.6	35	—	live	L	H	SC	—
12		A rubrum	55 3	60	20 to 30	snag	H	H	C	cav/ crevice
13		A pennsylvanica	14.5	20	—	live	L	H	SC	—
14	55	A rubrum	45.1	55	15	live damaged	H	H	C	cav/ bark
15										
16										
17										
18										
19										
20										
21										
22										

A 10 factor English prism is used to identify trees within the plot, centered on the roost tree.

Habitat		
(Interior)	Edge	Open

Canopy Cover at Roost		
Open	(Intermediate)	Closed

Basal Area		
Live Trees	Snags	All Trees
110	30	140

Roost Location		
Bark	(Cavity)	(Crevice)

↓QUICK REFERENCE / ↑ CIRCLE

*Condition		
(Snag)	Live	Live-Damaged

**% Bark Cover		
High = ≥ 25%	Moderate = ≥ 10-<25%	Low = < 10%

***Tree Ranking		
Canopy	Sub-Canopy	Understory

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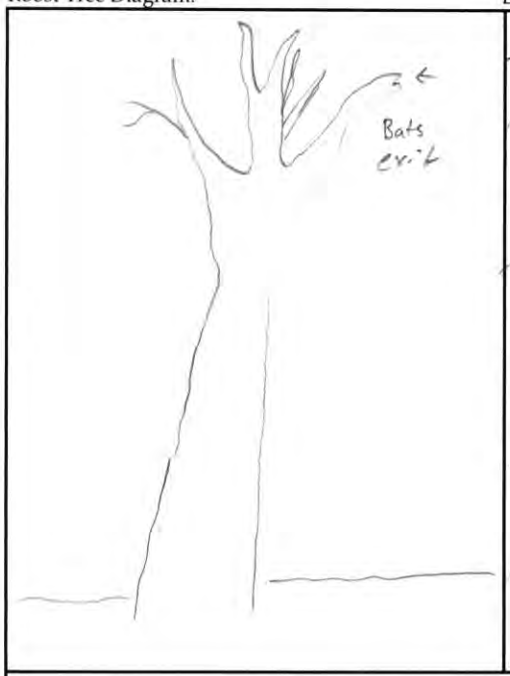
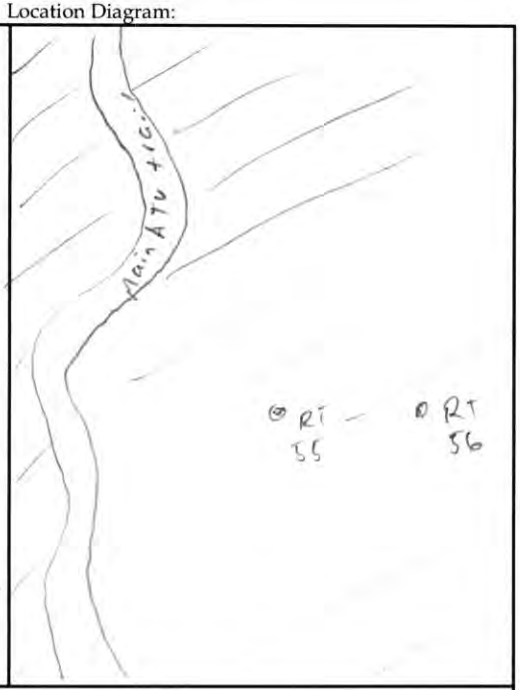
Roost Tree # 56 Bat Species/Sex/Frequency: MYSE/F/172.584 Band # CC0926

Roost Tree Diagram:



Location Diagram:



Bat Days

No.	Date	Bat Freq.	Bat Band #	Sex of Bat	Observations
1	7/19	.584	CC0926	F	cavity near top
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

Emergence Count

No.	Date	Temp °F	Weather	# of Bats	Time				Focal Bat exit #	Personnel/ Comments
					Sunset	Bats Start	Bats End	Tagged Bat		
1	7/19	75	few clouds	3	2051	2057	2058	—	—	No receiver
2	7/20	71	few clouds	0	2053	—	—	—	—	—
3										
4										

Cavity or Crevice Characteristics

No.	Nature	Aspect	Opening Measurements			
			Width	Height	Ground	H_2O Level
1						
2						
3						

Comments:
Checked with receiver after count and bat left. (7/19)

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Roost Tree Data Form (2014) Bat Species/Sex/Frequency: MYSE/M/ 172.687 Band # CC0646 Page 1 of 1

Roost Tree # RT 57 Project No./Project Name 406.03 / Rocky Forge Date First Found 7/19/15

Location open forest off ATV trail (Club to RT 57)

County Botetourt State VA Quad Sugarloaf Mtn.

Lat-Long/UTM: N/E 37.72957 W/N -79.69833 Zone — Datum: NAD 83 Observers: N. Kovalcik, J. Bourne

#	Tree Tag #	Species	DBH (cm)	Height ft or m		Condition*	% Bark Cover**		Tree Ranking***	Available Roost/ Observation
				Tree	Roost		Usable	Total		
1	57	Q montana	56	25	15 to 20	snag	H	M	SC	bark/tree crevice
2		A rubrum	18.2	35	–	live	L	H	C	–
3		Q rubra	19.4	40	–	live damage	M	H	C	bark
4		B alleghaniensis	38.6	45	–	live	L	H	C	–
5		A rubrum	32	40	–	live damage	L	H	C	–
6		A rubrum	21.1	40	–	live	L	H	C	–
7		B alleghaniensis	29.9	50	–	live	L	H	C	–
8		N sylvatica	10.1	35	–	live	L	H	SC	–
9		N sylvatica	46	45	–	live	L	H	C	–
10		N sylvatica	23.6	40	–	live	L	H	C	–
11		Q rubra	37.5	40	–	live	L	H	C	–
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										

A 10 factor English prism is used to identify trees within the plot, centered on the roost tree.

Habitat		
Interior	Edge	Open

Canopy Cover at Roost		
Open	Intermediate	Closed

Basal Area		
Live Trees	Snags	All Trees
100	10	110

Roost Location		
Bark	Cavity	Crevice

↓QUICK REFERENCE / ↑ CIRCLE

*Condition		
Snag	Live	Live-Damaged

**% Bark Cover		
High = ≥ 25%	Moderate = ≥ 10-<25%	Low = < 10%

***Tree Ranking		
Canopy	Sub-Canopy	Understory

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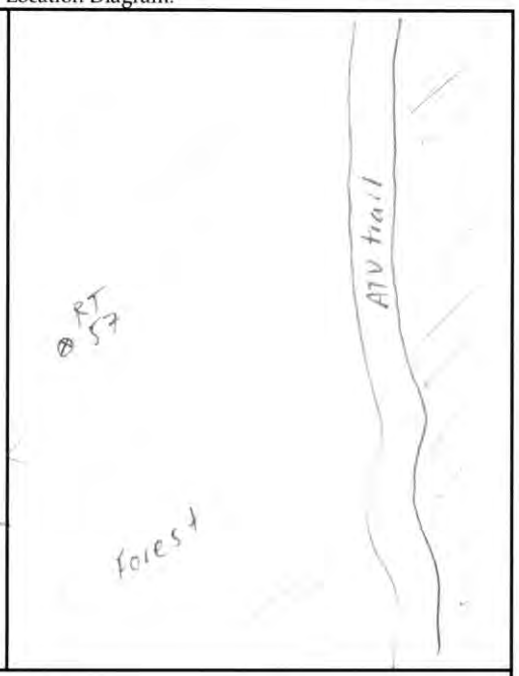
Roost Tree # 57 Bat Species/Sex/Frequency: MYSE / M / 172.667 Band # CC0646

Roost Tree Diagram:

Location Diagram:



Bat Days

No.	Date	Bat Freq.	Bat Band #	Sex of Bat	Observations
1	7/19	.687	CC0646	M	bark/cavity crevice
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

many options for 1 of 3

Emergence Count

No.	Date	Temp °F	Weather	# of Bats	Time				Focal Bat exit #	Personnel/ Comments
					Sunset	Bats Start	Bats End	Tagged Bat		
1	7/19	75	few clouds	0	2039	—	—			
2	7/20	71	few clouds	1	2038	2033	2033	—	—	video
3										
4										

Cavity or Crevice Characteristics

No.	Nature	Aspect	Opening Measurements			
			Width	Height	Ground	H_2O Level
1						
2						
3						

Comments:

Second night (7/20) emergence video recorded. Red bag → camera 1

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(.689)

Roost Tree Data Form (2014) Bat Species/Sex/Frequency: MYSE/M/172.687 Band # [illegible] Page 1 of 1

Roost Tree # 58 Project No./Project Name 406.03 / [illegible] Date First Found 21 July 2015

Location forest off of ATV trail near Roost tree 54

County Botetourt State VA Quad Sugarloaf Mtn

Lat-Long/UTM: N/E 37.72925 W/N -79.69655 Zone ____ Datum: NAD83 Observers: N. Koumes, J. Bowman

#	Tree Tag #	Species	DBH (cm)	Height ft or m		Condition*	% Bark Cover**		Tree Ranking***	Available Roost/ Observation
				Tree	Roost		Usable	Total		
1	58	unknown	38.5	18	14	snag	H	L	SC	cavity
2		Q montana	59.3	55	45	live	M	H	C	crevice
3		Q montana	61.7	50	–	live	L	H	C	–
4		Q montana	62.7	45	–	live	L	H	C	–
5		Q rubra	36.1	45	–	live	L	H	C	–
6		Q rubra	29.1	40	–	live	L	H	C	–
7		Fraxinus spp	25.8	30	–	live	L	H	SC	–
8		N sylvatica	59.6	50	–	live	L	H	C	–
9		Q rubra	32.3	45	–	live	L	H	C	–
10		Q rubra	24.2	40	–	live	L	H	C	–
11		A rubrum	22.5	30	–	live	L	H	SC	–
12		Q montana	38.7	25	20-30	snag	M	H	SC	cav/crev
13		Q montana	47.9	20	20	snag	M	H	SC	crevice
14		Q rubra	46.2	60	25	live	M	H	C	crevice
15	54	Q montana	75.7	60	45	snag	H	H	C	bark/ crevice
16										
17										
18										
19										
20										
21										
22										

A 10 factor English prism is used to identify trees within the plot, centered on the roost tree.

* found w/ freq. 172.649

Habitat		
(Interior)	Edge	Open

Canopy Cover at Roost		
Open	(Intermediate)	Closed

Basal Area		
Live Trees	Snags	All Trees
110	40	150

Roost Location		
Bark	(Cavity)	Crevice

↓QUICK REFERENCE / ↑ CIRCLE

*Condition		
Snag	Live	Live-Damaged

**% Bark Cover		
High = ≥ 25%	Moderate = ≥ 10-<25%	Low = < 10%

***Tree Ranking		
Canopy	Sub-Canopy	Understory

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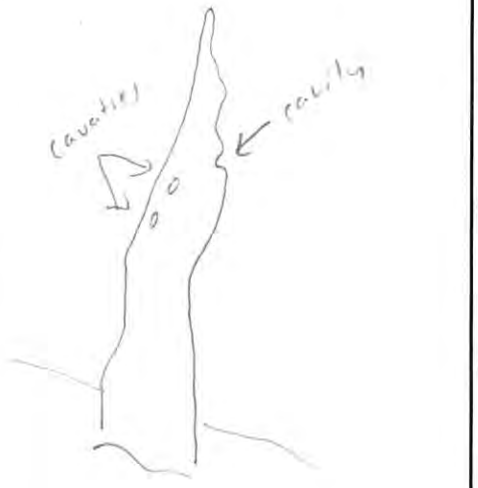
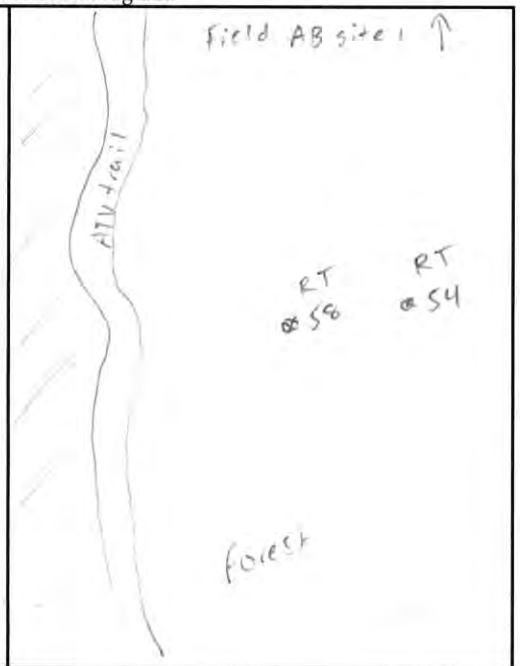
Roost Tree # 58 Bat Species/Sex/Frequency: MYSE/M/172.687 (688-89) Band # CC0646

Roost Tree Diagram:



Location Diagram:



Bat Days

No.	Date	Bat Freq.	Bat Band #	Sex of Bat	Observations
1	7/21	.687	CC0646	M	cavity
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

Emergence Count

No.	Date	Temp °F	Weather	# of Bats	Time				Focal Bat exit #	Personnel/ Comments
					Sunset	Bats Start	Bats End	Tagged Bat		
1	7/21	69	partly cloudy	0	2039	—	—	—	—	—
2	7/23	46°	partly cloudy	0	2036	—	—	—	—	visible
3										
4										

Cavity or Crevice Characteristics

No.	Nature	Aspect	Opening Measurements			
			Width	Height	Ground	H_2O Level
1						
2						
3						

Comments:

(21 July) Couldn't pick up bat .687 on correct frequency, found her signal at .688 and when we closed in on her position had to switch to .689 in order to pin-point the snag

7/21 – bat didn't emerge before dawn

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Roost Tree Data Form (2014) Bat Species/Sex/Frequency: MYSE/ F/ 172.782 (783) Band # CC 0647 Page 1 of 1

Roost Tree # 59 Project No./Project Name 406.03 / Rocky Forge Date First Found 21 July 2015

Location Small clearing w multiple snags off of main ridge trail

County Botetourt State VA Quad Sugarloaf Mtn

Lat-Long/UTM: N/E 37.72185 W/N -79.70363 Zone — Datum: NAD83 Observers: N Kovacs, J Bourne

#	Tree Tag #	Species	DBH (cm)	Height (ft) or m		Condition*	% Bark Cover**		Tree Ranking***	Available Roost/ Observation
				Tree	Roost		Usable	Total		
1	59	Carya spp	22.2	20	20	snag	M	H	SC	crevice/ cavity
2		Q alba	63.9	60	—	live	L	H	C	—
3		C glabra	15	20	-	live damaged	L	H	SC	—
4		C glabra	11.3	20	—	live	L	H	SC	—
5		Q alba	36	50	-	live	L	H	C	-
6		Q alba	48.2	50	-	live	L	H	C	—
7		Q alba	37.5	45	-	live	L	H	C	-
8		Q montana	51.6	55	-	live	L	H	C	crevice
9		Q rubra	32.7	50	—	live	L	H	C	-
10		Q rubra	38.4	50	—	live	L	H	C	-
11		unknown	24	20	-	snag	H	L	SC	cavity, crevice
12		Q rubra	56.1	55	-	live	L	H	C	—
13		P serotina	29.5	40	20	live- damaged	M	H	C	cavity
14		P serotina	28	40	15	live- damaged	M	H	C	cavity
15		Q alba	48.4	50	20	live damaged	L	H	C	crevice
16		C glabra	22.4	35	←	live	L	H	SC	—
17										
18										
19										
20										
21										
22										

A 10 factor English prism is used to identify trees within the plot, centered on the roost tree.

Habitat		
Interior	Edge	Open

Canopy Cover at Roost		
Open	Intermediate	Closed

Basal Area		
Live Trees	Snags	All Trees
140	20	160

Roost Location		
Bark	Cavity	Crevice

↓QUICK REFERENCE / ↑ CIRCLE

*Condition		
Snag	Live	Live-Damaged

**% Bark Cover		
High = ≥ 25%	Moderate = ≥ 10-<25%	Low = < 10%

***Tree Ranking		
Canopy	Sub-Canopy	Understory

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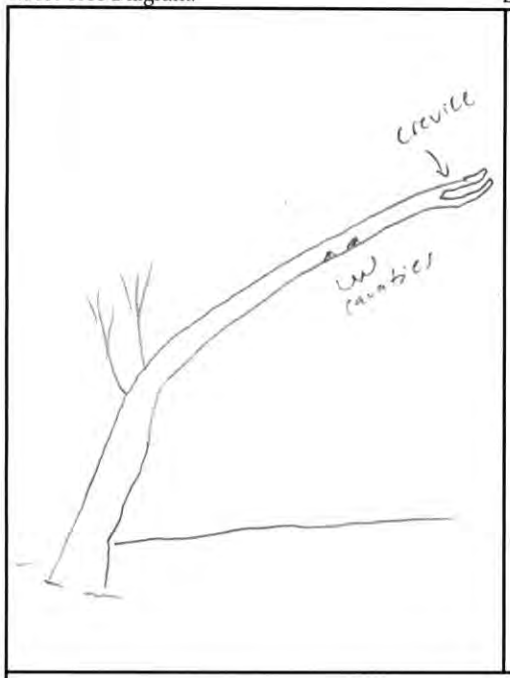
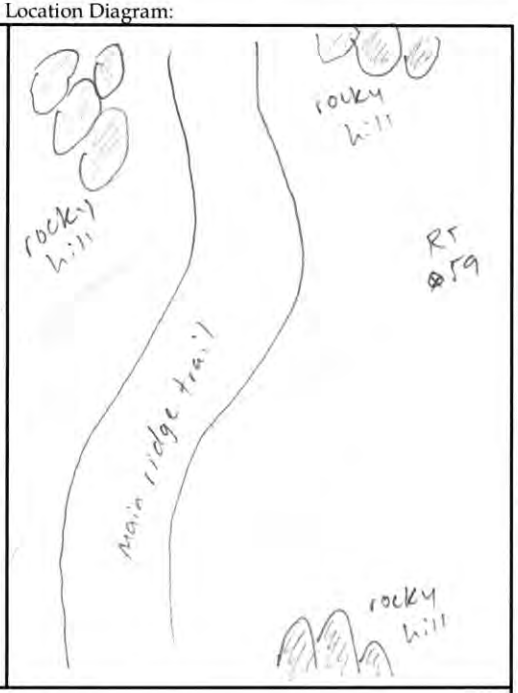
Roost Tree # RT 59 Bat Species/Sex/Frequency: MYSE/F/172.782 (783) Band # CC0647

Roost Tree Diagram:



Location Diagram:



Bat Days

No.	Date	Bat Freq.	Bat Band #	Sex of Bat	Observations
1	7/21	.782	CC0647	F	crevice at top
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

Emergence Count

No.	Date	Temp °F	Weather	# of Bats	Time			Focal Bat exit #	Personnel/ Comments
					Sunset	Bats Start	Bats End / Tagged Bat		
1	7/21	69	partly cloudy	2	2038	2058	2100 / —	—	No receiver
2	7/22	63°	Partly cloudy	1	2035	2100	2100 / —	—	—
3									
4									

Cavity or Crevice Characteristics

No.	Nature	Aspect	Opening Measurements			
			Width	Height	Ground	H_2O Level
1						
2						
3						

Comments:

(21 July) Couldn't pick bat .782 on the correct frequency. Had to use 172.783.

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Roost Tree Data Form (2014) Bat Species/Sex/Frequency: MYSE/F/172.782 Band # CC0647 Page 1 of 1

Roost Tree # 60 Project No./Project Name 406.03 / Rocky Forge Date First Found 22 July 2015
Location Small clearing w/ multiple snags near main ridge rd. (near RT 55, 56)
County Botetourt State VA Quad Sugarloaf Mtn
Lat-Long/UTM: N/E 37.71946 W/N -79.70795 Zone - Datum: NAD83 Observers: NKovacs, JBovin

#	Tree Tag #	Species	DBH (cm)	Height ft or m		Condition*	% Bark Cover**		Tree Ranking***	Available Roost/ Observation
				Tree	Roost		Usable	Total		
1	60	Q montana	33.9	14	13	Snag	H	H	SC	cav./crevice
2		Q montana	54	55	-	live	L	H	C	-
3		Q montana	48.6	50	~	live	L	H	C	-
4		A rubrum	28.3	30	-	live	L	H	SC	-
5		A rubrum	15.4	30	-	live	L	H	SC	-
6		Q montana	47.6	40	25	snag	M	H	C	cavity
7		A rubrum	45.7	40	-	live damaged	L	H	C	cavity
8		Q montana	48.5	35	-	Snag	L	H	C	-
9		A rubrum	46.4	50	-	Snag	L	H	C	-
10		unknown	37.9	30	10-20	Snag	H	L	C	cav/crevice
11		N sylvatica	20.9	20	-	live	L	H	SC	-
12		Q montana	34.1	25	-	snag	L	H	SC	-
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										

A 10 factor English prism is used to identify trees within the plot, centered on the roost tree.

Habitat		
Interior	(Edge)	Open

Canopy Cover at Roost		
(Open)	Intermediate	Closed

Basal Area		
Live Trees	Snags	All Trees
60	60	120

Roost Location		
Bark	(Cavity)	(Crevice)

↓QUICK REFERENCE / ↑ CIRCLE

*Condition		
Snag	**L**ive	**L**ive-**D**amaged

**% Bark Cover		
High = ≥ 25%	**M**oderate = ≥ 10-<25%	**L**ow = < 10%

***Tree Ranking		
Canopy	**S**ub-Canopy	**U**nderstory

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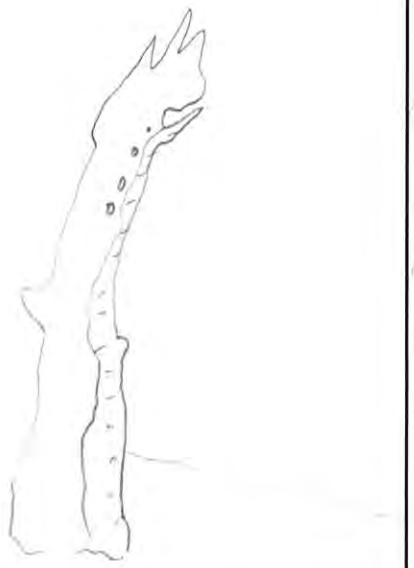
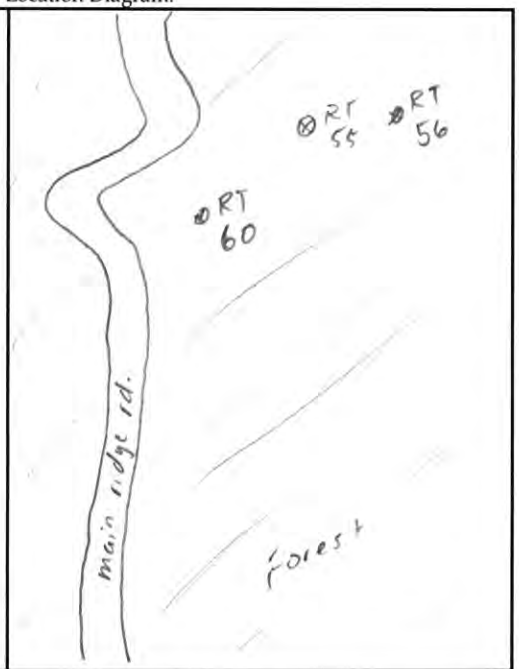
Roost Tree # 60 Bat Species/Sex/Frequency: MYSE / F / 172.782 Band # CC0647

Roost Tree Diagram:



Location Diagram:



Bat Days

No.	Date	Bat Freq.	Bat Band #	Sex of Bat	Observations
1	7/22	.782	CC0647	F	cave/crevice
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

Emergence Count

No.	Date	Temp °F	Weather	# of Bats	Time				Focal Bat exit #	Personnel/ Comments
					Sunset	Bats Start	Bats End	Tagged Bat		
1	7/22	68°	partly cloudy	1	2037	2112	2112	–	–	No receiver
2	7/23	66°	partly cloudy	0	2036	—	—	—	—	video *
3										
4										

Cavity or Crevice Characteristics

No.	Nature	Aspect	Opening Measurements			
			Width	Height	Ground	H_2O Level
1						
2						
3						

Comments:

* Had to use freq. 172.783 to locate bat.

7/23 had to use freq. 172.784 to locate bat

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Roost Tree Data Form (2014) Bat Species/Sex/Frequency: MYSE/M/12.687 Band # CC0646 Page 1 of 1

Roost Tree # 61 Project No./Project Name 406.03 / Rocky Forge 257 Date First Found 22 July 2015

Location Forest off of ATV Trail near Roost tree

County Bath/Alleghany State Quad Sugar Run Mtn.

Lat-Long/UTM: N/E 37.72937 W/N 79.69647 Zone — Datum: NAD 83 Observers: N. Kovacs, J. Boulet

#	Tree Tag #	Species	DBH (cm)	Height ft or m		Condition*	% Bark Cover**		Tree Ranking***	Available Roost/ Observation
				Tree	Roost		Usable	Total		
1	61	A rubrum	15.3	15	14	Snag	H	H	SC	bark
2		A rubrum	16.0	25	-	snag	L	H	SC	-
3		A rubrum	19.3	35	-	live	L	H	C	-
4		B alleghaniensis	42.9	50	-	live	L	H	C	bark
5		Q rubra	33.9	45	-	live	L	H	C	-
6		N Sylvatica	19	25	-	live	L	H	SC	-
7		Q montana	58	35	35	live damaged	M	H	C	crevice
8		Q montana	43.2	45	25	live	M	H	C	bark
9		Q montana	58.3	60	—	live	M	H	C	bark
10		Q montana	54.9	55	30	live	M	H	C	bark
11		Q rubra	18	35	-	live	L	H	C	—
12		Q rubra	39.5	50	-	live	L	H	C	-
13		N Sylvatica	59.5	50	-	live	L	H	C	-
14		Q rubra	49.9	55	-	live	L	H	C	-
15										
16										
17										
18										
19										
20										
21										
22										

A 10 factor English prism is used to identify trees within the plot, centered on the roost tree.

Habitat		
Interior	Edge	Open

Canopy Cover at Roost		
Open	Intermediate	Closed

Basal Area		
Live Trees	Snags	All Trees
120	20	140

Roost Location		
Bark	Cavity	Crevice

↓QUICK REFERENCE / ↑ CIRCLE

*Condition		
Snag	Live	Live-Damaged

**% Bark Cover		
High = ≥ 25%	Moderate = ≥ 10-<25%	Low = < 10%

***Tree Ranking		
Canopy	Sub-Canopy	Understory

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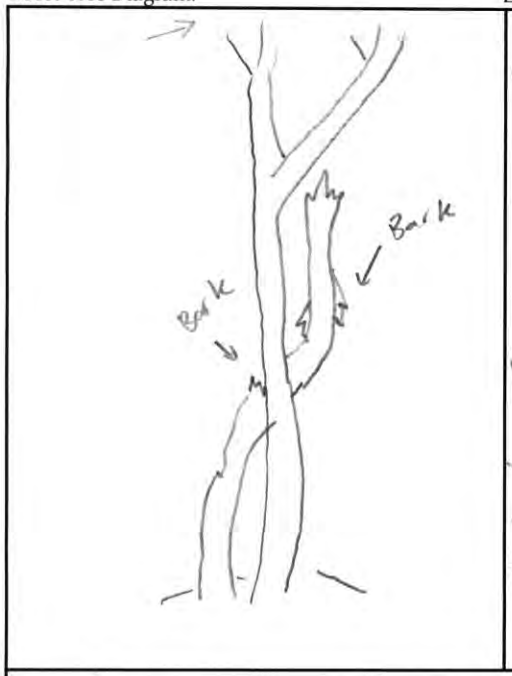
Roost Tree # 61 Bat Species/Sex/Frequency: MYSE / M / 172.687 Band # CC0646

Roost Tree Diagram:



Location Diagram:

Bat Days

No.	Date	Bat Freq.	Bat Band #	Sex of Bat	Observations
1	7/22	.687	CC0646	M	Bark
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

Emergence Count

No.	Date	Temp °F	Weather	# of Bats	Time				Focal Bat exit #	Personnel/ Comments
					Sunset	Bats Start	Bats End	Tagged Bat		
1	7/22	68°	[illegible]	1	2035	2055	2055			video
2	7/23	66°	partly cloudy	0	2036	0	0	—	—	—
3										
4										

Cavity or Crevice Characteristics

No.	Nature	Aspect	Opening Measurements			
			Width	Height	Ground	H_2O Level
1						
2						
3						

Comments:

* Had to pick up bat on frequency 172.688., Camera 2

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Roost Tree Data Form (2014) Bat Species/Sex/Frequency: MYSE/F/178.584 Band # CC0926 Page 1 of 1

Roost Tree # 62 Project No./Project Name 406.03 / Rocky Forge Date First Found 22 Jul 2015

Location Valley forest off of ridge

County Botetourt State VA Quad Sugarloaf Mountain

Lat-Long/UTM: N/E 37.72381 W/N -79.70826 Zone - Datum: NAD83 Observers: N Kovacs, J Bourne

#	Tree Tag #	Species	DBH (cm)	Height ft or m		Condition*	% Bark Cover**		Tree Ranking***	Available Roost/ Observation
				Tree	Roost		Usable	Total		
1	62	Q montana	44.3	50	15	live-damaged	H	H	C	crevice
2		N sylvatica	8.1	15	-	live	L	H	U	-
3		Pinus spp.	20	40	-	live	L	H	C	-
4		Pinus spp.	13.3	35	-	live	L	H	C	-
5		Q montana	71.3	50	-	live	M	H	C	crevice
6		Q montana	30	50	-	live	L	H	C	-
7		A rubrum	15	25	-	live	L	H	SC	-
8		Q montana	51.8	60	25	live damaged	M	H	C	cavity
9		Q montana	30.7	55	-	live	L	H	C	-
10		Q montana	52.9	50	-	live damaged	M	H	C	crevice
11		N sylvatica	11.2	13	-	live damaged	L	H	U	-
12		N sylvatica	7.1	12	-	live	L	H	U	-
13		N sylvatica	7.2	12	-	live	L	H	U	-
14										
15										
16										
17										
18										
19										
20										
21										
22										

A 10 factor English prism is used to identify trees within the plot, centered on the roost tree.

Habitat		
(Interior)	Edge	Open

Canopy Cover at Roost		
Open	Intermediate	(Closed)

Basal Area		
Live Trees	Snags	All Trees
130	0	130

Roost Location		
Bark	Cavity	(Crevice)

↓QUICK REFERENCE / ↑ CIRCLE

*Condition		
Snag	**L**ive	**L**ive-**D**amaged

**% Bark Cover		
High = ≥ 25%	**M**oderate = ≥ 10-<25%	**L**ow = < 10%

***Tree Ranking		
Canopy	**S**ub-Canopy	**U**nderstory

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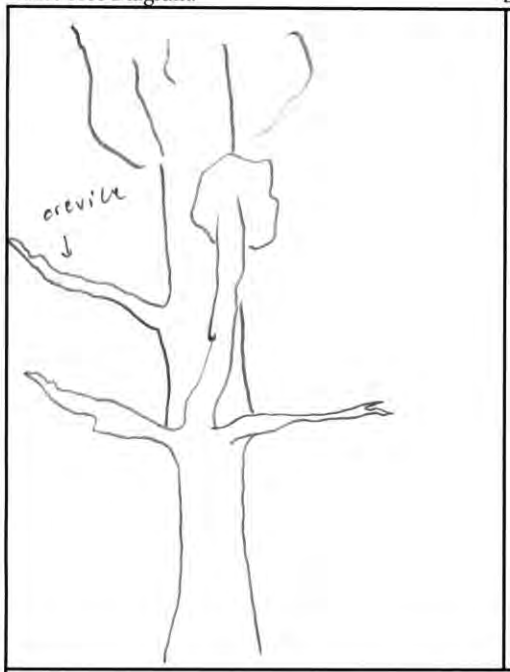
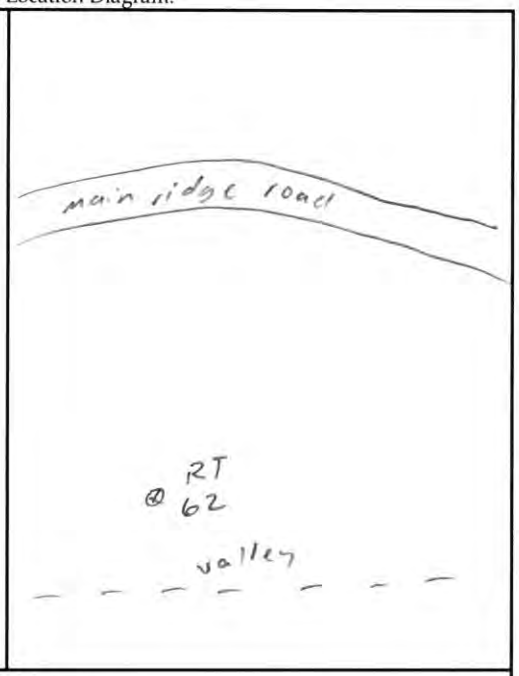
Paint Lick, KY 40461 (859) 925-9012

Roost Tree # 62 Bat Species/Sex/Frequency: MYSE / F / 172.584 Band # CC0926

Roost Tree Diagram:



Location Diagram:



Bat Days

No.	Date	Bat Freq.	Bat Band #	Sex of Bat	Observations
1	7/22	.584	CC0926	F	crevice
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

Emergence Count

No.	Date	Temp °F	Weather	# of Bats	Time				Focal Bat exit #	Personnel/ Comments
					Sunset	Bats Start	Bats End	Tagged Bat		
1	7/22	68°	[illegible]	0	2035	—	—	—	—	
2	7/23	66°	partly cloudy	0	2036	—	—	—	—	exercise may have left
3										
4										

Cavity or Crevice Characteristics

No.	Nature	Aspect	Opening Measurements			
			Width	Height	Ground	H_2O Level
1						
2						
3						

Comments:

* Had to use frequency 172.585 to pick her up.
Bat remained in tree until at least 2120

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Roost Tree Data Form (2014) Bat Species/Sex/Frequency: MYSE/M/72.687 Band # CC Page 1 of 1

Roost Tree # 63 Project No./Project Name 406.03 / Rocky Forge Date First Found 23 Jul 2015

Location Woodlot off of ATV trail (near RT 257 etc.)

County Botetourt State VA Quad Sugarloaf Mtn

Lat-Long/UTM: N/E 37.72934 W/N -79.69643 Zone — Datum: NAD83 Observers: N Kovacs

#	Tree Tag #	Species	DBH (cm)	Height (ft or m) Tree	Height (ft or m) Roost	Condition*	% Bark Cover** Usable	% Bark Cover** Total	Tree Ranking***	Available Roost/ Observation
1	63	B alleghaneinsis	43.6	50	20	live	M	H	C	bark/crevice
2		Q rubra	28.9	45	-	live	L	H	C	-
3		B alleghaneinsis	22.3	40	-	live	L	H	C	-
4		Q rubra	49.4	50	-	live	L	H	C	-
5		A rubrum	19.6	35	-	live	L	H	C	-
6		Q rubra	40.7	55	-	live	L	H	C	-
7		Q montana	58.4	50	20-30	live damaged	M	H	C	bark crevice
8		Q rubra	34	40	-	live	L	H	C	-
9		Q montana	57.5	50	20-30	live damaged	M	H	C	bark/crevice cavity
10		Q rubra	18.5	40	-	live	L	H	C	-
11		Q rubra	32.9	40	-	live	L	H	C	-
12		N sylvatica	59.6	50	-	live	L	H	C	-
13		Q rubra	49.6	50	-	live	L	H	C	-
14										
15										
16										
17										
18										
19										
20										
21										
22										

A 10 factor English prism is used to identify trees within the plot, centered on the roost tree.

Habitat		
(Interior)	Edge	Open

Canopy Cover at Roost		
Open	(Intermediate)	Closed

Basal Area		
Live Trees	Snags	All Trees
130	0	130

Roost Location		
(Bark)	Cavity	(Crevice)

↓QUICK REFERENCE / ↑ CIRCLE

*Condition		
Snag	Live	Live-Damaged

**% Bark Cover		
High = ≥ 25%	Moderate = ≥ 10-<25%	Low = < 10%

***Tree Ranking		
Canopy	Sub-Canopy	Understory

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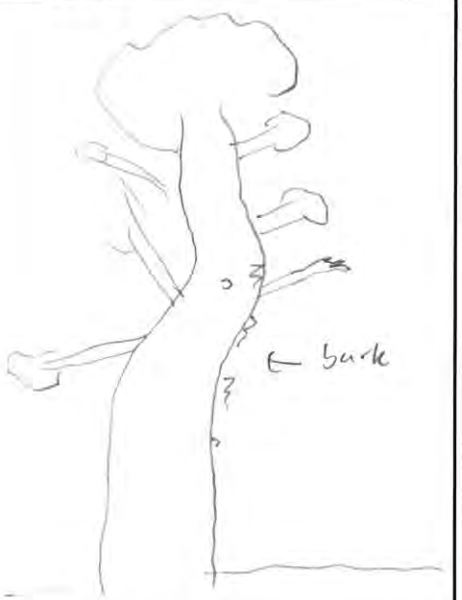
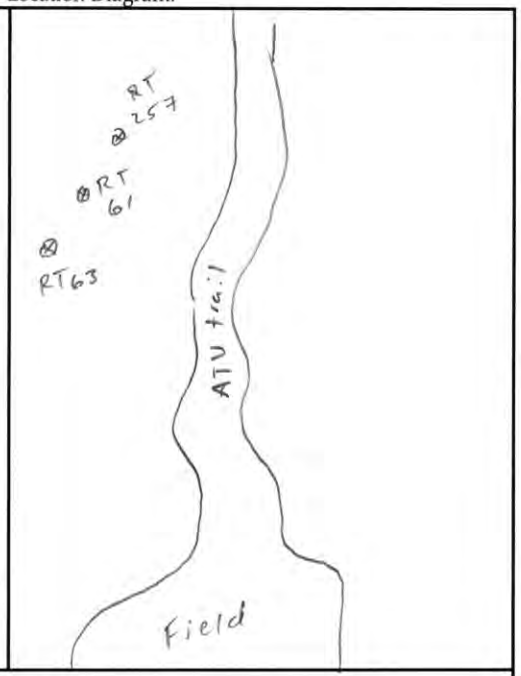
Roost Tree # 63 Bat Species/Sex/Frequency: MYSE/M/172.687 Band #

Roost Tree Diagram:



Location Diagram:



Bat Days

No.	Date	Bat Freq.	Bat Band #	Sex of Bat	Observations
1	7/23	.687		M	bark (various places)
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

Emergence Count

No.	Date	Temp °F	Weather	# of Bats	Time				Focal Bat exit #	Personnel/ Comments
					Sunset	Bats Start	Bats End	Tagged Bat		
1	7/23	66°	partly cloudy	1	2036	2058	2058	—	—	—
2										
3										
4										

Cavity or Crevice Characteristics

No.	Nature	Aspect	Opening Measurements			
			Width	Height	Ground	H_2O Level
1						
2						
3						

Comments:

* found bat under frequency 172.689

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Roost Tree Data Form (2014) Bat Species/Sex/Frequency: MYSE / F / 172.584 Band # CC0926 Page 1 of 1

Roost Tree # RT 256 Project No./Project Name 406.02 / Rocky Forge Date First Found 16 July 2015

Location Forest gap ontop of ridge

County Botetourt State VA Quad Sugarloaf Mountain

Lat-Long/UTM: N/E 37.72294 W/N -79.70217 Zone 17 Datum: NAD 83 Observers: G. Janos, N. Kovacs

#	Tree Tag #	Species	DBH (cm)	Height ft or m		Condition*	% Bark Cover**		Tree Ranking***	Available Roost/ Observation
				Tree	Roost		Usable	Total		
1	256	Q. montana	12.6	6	3	Snag	L	L	S-C	Cavity
2		Q. montana	46.3	9	—	Snag	L	H	S-C	—
3		Q. montana	58.2	20	—	Snag	L	H	C	—
4		Q. montana	14.6	10	—	Snag	L	L	S-C	—
5		Q.	33.3	18	—	live	L	H	C	—
6		Q. rubra	34.0	21	—	live	L	H	C	—
7		Q. rubra	25.1	21	—	live	L	H	C	—
8		Q. montana	26.3	9	—	Snag	H	M	S-C	—
9		Q. montana	37.0	14	—	live-damaged	M	H	S-C	—
10		Q. montana	25.0	12	—	Snag	H	H	S-C	—
11		Q. montana	11.1	4	—	Snag	L	L	S-C	—
12		Q. montana	28.5	8	—	Snag	H	H	S-C	—
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										

A 10 factor English prism is used to identify trees within the plot, centered on the roost tree.

Habitat		
(Interior)	Edge	Open

Canopy Cover at Roost		
Open	(Intermediate)	Closed

Basal Area		
Live Trees	Snags	All Trees
30	80	120

Roost Location		
Bark	(Cavity)	Crevice

↓QUICK REFERENCE / ↑ CIRCLE

*Condition		
Snag	Live	Live-Damaged

**% Bark Cover		
High = ≥ 25%	Moderate = ≥ 10-<25%	Low = < 10%

***Tree Ranking		
Canopy	Sub-Canopy	Understory

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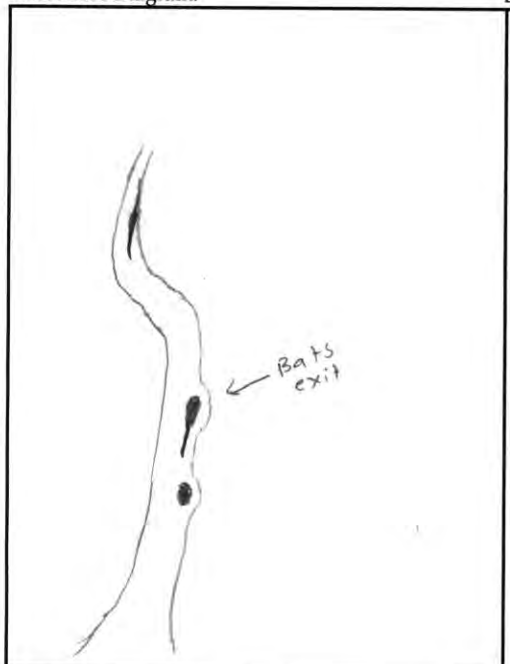
Roost Tree # 256

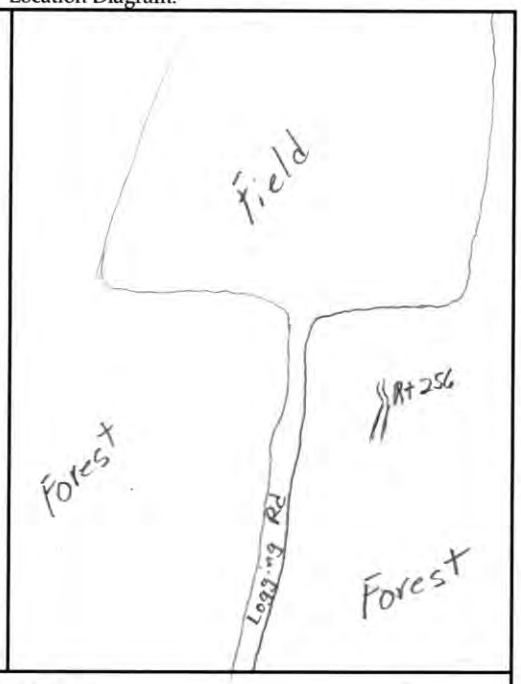
Bat Species/Sex/Frequency: MYSE / F / 172.584
MYSE / F / 172.782
MYSE / M / 172.687

Band # CC0926
CC0646

Roost Tree Diagram:



Location Diagram:



Bat Days

No.	Date	Bat Freq.	Bat Band #	Sex of Bat	Observations
1	7/16	.584	CC0926	F	Woodpecker cavity
2	7/17	.584	CC0926	F	" " "
3	7117	.687	CC0646	M	" " "
4	7/18	.584	CC0926	F	" " "
5	7/18	.782	CC0647	F	" " "
6					
7					
8					
9					
10					
11					
12					
13					
14					

Emergence Count

No.	Date	Temp °F	Weather	# of Bats	Time: Sunset	Time: Bats Start	Time: Bats End	Time: Tagged Bat	Focal Bat exit #	Personnel/ Comments
1	7/16	65	Few clouds	10	2040	2050	2108	2106	6	
2	7/17	68	Few clouds	9	2040	2052	2106	—	—	no receiver
.782 / .584 3	7/18	65	few clouds	9	2038	2102	2107	—	—	No receiver/ video
4										

Cavity or Crevice Characteristics

No.	Nature	Aspect	Opening Measurements: Width	Height	Ground	H_2O Level
1						
2						
3						

Comments:
Third night (7/18) emergence video recorded black bag → camera 2.

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Roost Tree Data Form (2014) Bat Species/Sex/Frequency: MYSE / F / 172.782 Band # CC0647 Page 1 of 1

Roost Tree # RT257 Project No./Project Name 406.03 / Rocky Forge Date First Found 17 July 2015

Location Open forest area off of ATV trail

County Botetourt State VA Quad Sugarloaf Mtn.

Lat-Long/UTM: N/E 37.72938 W/N -79.69632 Zone — Datum: NAD83 Observers: G Janos, N Kovacs

#	Tree Tag #	Species	DBH (cm)	Height ft or m Tree	Height ft or m Roost	Condition*	% Bark Cover** Usable	% Bark Cover** Total	Tree Ranking***	Available Roost/ Observation
1	257	Q. montana	20	7m	3m	Snag	H.	H	SC	Bark
2		Q montana	60.2	30m	—	Live	M	H	C	Bark
3		A. rubrum	17.3	9	—	L	L	H	C	—
4		Q. montana	43.9	24	—	L	L	H	SC	Crevice
5		Q. montana	48.5	24	—	L	L	H	C	Cavity
6		Q. rubra	26.3	24	—	L	L	H	C	—
7		Q. montana	42.8	7	—	S	L	H	SC	Crevice
8		Q. montana	55.5	25	—	L	L	H	C	—
9		N. sylvatica	9.1	6	—	L	L	H	SC	—
10		Q. montana	31.7	28	—	L	L	H	C	—
11		A. rubra	27.1	14	—	L	L	H	SC	—
12		N. sylvatica	60.6	21	—	L	L	H	C	—
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										

A 10 factor English prism is used to identify trees within the plot, centered on the roost tree.

Habitat		
(Interior)	Edge	Open

Canopy Cover at Roost		
Open	(Intermediate)	Closed

Basal Area		
Live Trees	Snags	All Trees
100	20	120

Roost Location		
(Bark)	Cavity	(Crevice)

↓QUICK REFERENCE / ↑ CIRCLE

*Condition		
Snag	Live	Live-Damaged

**% Bark Cover		
High = ≥ 25%	Moderate = ≥ 10-<25%	Low = < 10%

***Tree Ranking		
Canopy	Sub-Canopy	Understory

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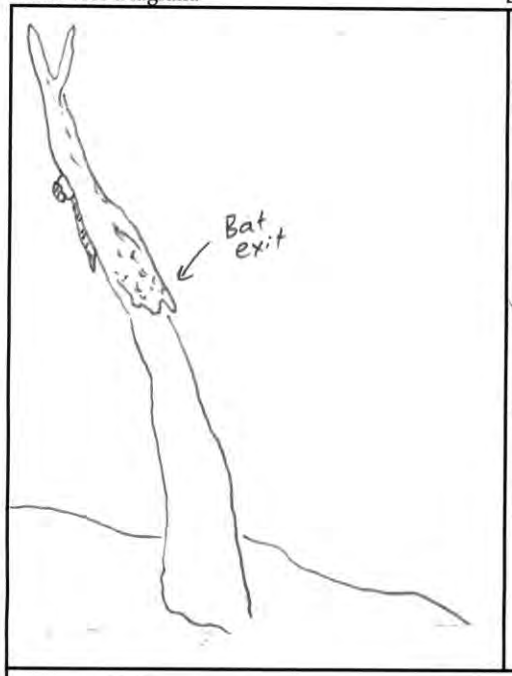
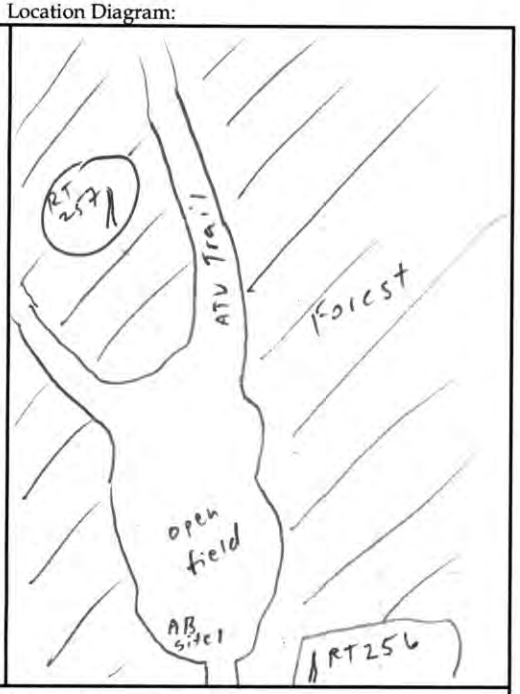
Roost Tree # 257 Bat Species/Sex/Frequency: MYSE/F/172.782 Band # CC0647

Roost Tree Diagram:



Location Diagram:



Bat Days

No.	Date	Bat Freq.	Bat Band #	Sex of Bat	Observations
1	7/17	.782	CC0647	F	Wood Knot in snag
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

Emergence Count

No.	Date	Temp °F	Weather	# of Bats	Time				Focal Bat exit #	Personnel/ Comments
					Sunset	Bats Start	Bats End	Tagged Bat		
1	7/17	68	Few clouds	2	2039	2103	2109	.782	1	
2	7/18	65	few clouds	0	2038	—	—	—	—	—
3										
4										

Cavity or Crevice Characteristics

No.	Nature	Aspect	Opening Measurements			
			Width	Height	Ground	H_2O Level
1						
2						
3						

Comments:

No receiver available for emergence of 7/18.

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