

Site 20 Net A





Site 20 Net B



Site 20 Net D

Site 20 Net C



Site 21 Net A





Site 21 Net B



Site 21 Net D

Site 21 Net C





Site 21 Net E

Site 21 Net F



Site 22 Net A





Site 22 Net B



Site 22 Net D

Site 22 Net C



Site 23 Net A





Site 23 Net B



Site 23 Net D

Site 23 Net C



Site 24 Net A





Site 24 Net B



Site 24 Net D

Site 24 Net C



Site 24 Net E



Site 25 Net A





Site 25 Net B



Site 25 Net D

Site 25 Net C



Site 26 Net A





Site 26 Net B



Site 26 Net D

Site 26 Net C



Site 27 Net A





Site 27 Net B



Site 27 Net D

Site 27 Net C



Site 28 Net A





Site 28 Net B



Site 28 Net D

Site 28 Net C



Site 28 Net E



Site 29 Net A





Site 29 Net B



Site 29 Net D

Site 29 Net C



Site 30 Net A





Site 30 Net B



Site 30 Net D

Site 30 Net C



Site 31 Net A





Site 31 Net B



Site 31 Net D

Site 31 Net C



Site 32 Net A





Site 32 Net B



Site 32 Net D

Site 32 Net C



Site 33 Net A



Site 33 Net B





Site 33 Net D

Site 33 Net C



Site 34 Net A



Site 34 Net B



Site 34 Net D

Site 34 Net C



Site 35 Net A





Site 35 Net B



Site 35 Net D

Site 35 Net C



Site 36 Net A



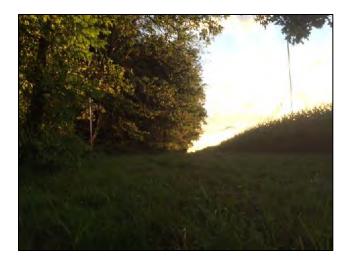


Site 36 Net B



Site 36 Net D

Site 36 Net C



Site 36 Net E



Site 36 Net F



Site 36 Net G



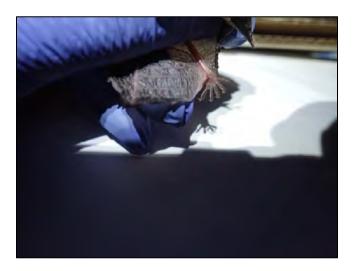
## APPENDIX C

**Bat Capture Photographs** 

412- Republic Wind Project Bat Survey, Seneca and Sandusky Counties, Ohio, July 2015

## **T&E bats**

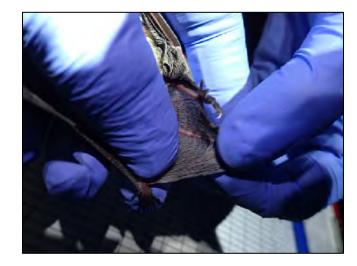
### MYSE 172.188\_ODNR23551\_Site26\_24July





### MYSE 172.587 \_ODNR23552\_Site26\_26July





MYSO 172.779 \_ODNR23553\_Site26\_26July





### MYSE 172.030\_ODNR23361\_Site18\_26July





MYSE 172.137\_ODNR23360\_Site18\_26July





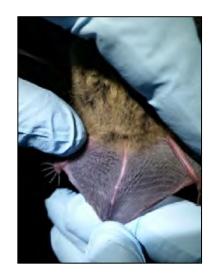
### MYSE 172.205\_ODNR17178\_Site13\_26July





### MYSE ODNR17179\_Site13\_26July





### MYSE\_ODNR17344\_Site12\_28July



### MYSE\_ODNR23362\_Site18\_28July



### MYSE\_ODNR17168\_Site20\_28July





### MYSE\_ODNR17345\_Site15\_31July





### MYSE 172.450\_ODNR17166\_Site33\_31July





# Non T&E bats



Lasiurus cinerus



Eptesicus fuscus



Lasiurus borealis



Perimyotis subflavus



# APPENDIX D

**Roost Tree Data Sheets** 

412- Republic Wind Project Bat Survey, Seneca and Sandusky Counties, Ohio, July 2015

ounty _	Servera UTMINE	41.2			State	04	15	Qua Zone	ad <u>Fives</u>	NADES Obs	ervers: 1,V	Johner
Tree Tag #		DBH (cm)		t ft or m Roost	Condition*	% Bark Usable		Tree Ranking***	Available Roost/ Observation	Interior	Habitat	Open
983	Epennsylvanica	27	9	3	S	H	AD	58	barte	Contention	1 Duge	1 Open
1000	Asacchan	111 -	20	-	Ľ.	6	(H)	C	none	Cano	py Cover at Roo	st
	Asacchan	10-2	17	1	L	6	+	C.	none	Open <	Intermediate	Closed
$z = \sqrt{2}$	É. pennsulvania	(02.6	22	)	S	L	4	5	hark			
1121	F. grandifolia		19	1	L	D	(#0)	C	none		Basal Area	
	A. Sacchann	1 - 1	18	(	L	C	100	C	none	Live Trees	Snags	All Trees
	A. saccharum	71	18	-	L	D	icto	C	none	90	20	0
	A.Saccharum	1021	19	-	L	D	THO	C	none	U		
1.1	A. salchanom	72.5	19	-	V	6	(4)	C	none	1	Roost Location	
	A.saccharum	78.4	19	1	L	0	H	C	none	Bark	Cavity	Crevice
	F. grand Folia	12.8	18	$\sum_{i=1}^{n} (i - 1) $	L	D	(H)	C	canity			
	0			10 million (1997)					1	QUICK REFE	RENCE / 1	CIRCLE
1						1				_		
									1	1.	*Condition	
									· · · · · · · · · · ·	Snag	Live	Live-Damage
			-									
								-			*% Bark Cover	
-			_							High = ≥ 25%	Moderate = $\geq$ 10-<25%	Low = < 10%
		-					1				10-~25%	< 10 ‰
						1					*Tree Ranking	

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

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



21

\*

F/188 Bat Species/Sex/Frequency Band # ODNR 23551 Roost Tree # Roost Tree Diagram: Location Diagram: TN Bat Days Bat Band Date Bat Sex of No. Observations Freq. # Bat 85983 188 ODNR can see transmi ther 20 12 1 2 3 4 5 roust 6 Ag 7 8 9 10 n 11 1 12 13 CR 23 14 **Emergence** Count Time Focal Cavity or Crevice Characteristics Temp # of Bats Bats Tagged Bat Personnel/ No. Date °F Weather Bats Sunset Start End Bat exit # Comments **Opening Measurements** 7/25 2129 2129 2129 1 No. Nature Aspect Width Height H<sub>2</sub>O Level Ground 203 2020 2 71/31 CAMERIA 1 3 2 4 3 Comments: is on a fallen limb off of tree # 4 and leaning herver NODS tree

COPPERHEAD

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

Location         Plot 16           County         State         OH           Lat-Long/UTM:         N/E         41.21831         W/N         82.96867									Quad Enceside Zone Datum: NAD83 Observers: A. Astmore							
# Tree Tag #		DBH	Height ft or n		Condition*	% Bark	Cover**	Tree	Available Roost/	Habitat						
		(cm)	Tree	Roost		Usable	Total	Ranking***	Observation	Interior	Edge	Open				
1 394	Prenos scrating		Ss'	35	Shau	L	1-1	C	hard of possible	crivier						
2	Act succession		60'	-	live	L	H	C	(Installer)	Cano	py Cover at Roo	st				
3	Carya sp.	39.4	75	~	1tuc	6	H	C		Open	Intermediate	Closed				
4	Unknown	47.8	70'	-	live	L	17	C	broke eli	1=01-1						
5	FECTIMES PANTALO	56.9	80	~	Sneg	M	14	C			Basal Area					
6	Acer sacchann	28.9	65	12	Tive -	L	14	6		Live Trees	Snags	All Trees				
7	FRAZIONS AMUTIN	443	80'		SAGA	14	H	C		60	100	120				
8	freques enterione	40	101		Shed	L	L	UL	1	100						
9	Acer serchar	19.)	(,s'	1	live	L	14	C		R	Roost Location					
o	FICKING SANDAR		71		Snag	L	1-1	4	4	Bark	Cavity	Crevice				
1	Air sucher		451		Ina	L	1-1	C			1	Citility				
2	Aco sechan	59.5	20		JAig	L	1-1	U		QUICK REFERENCE / CIRCLE						
3					1		P									
4											*Condition					
5										Snag	Live	Live-Damaged				
6		-			1.1.1.1.1.1.1					L oning	Live	erve-Danaget				
7										**	% Bark Cover					
8											1					
9		1.1.1								High = $\geq 25\%$	Moderate = ≥ 10-<25%	Low = < 10%				
0																
1			1								5					
2										***	Tree Ranking					
	nglish prism is used	to identif	fy troop w	ithin the n	lot contanad on	the react to				Canopy	Sub-Canopy	Understory				

COPPERHEAD

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

	Tree Dia	ree Diagram:								1.							
			1	//			P		-{/		No.	Date	Bat Freq.	Bat Day Bat Band OPt R	Sex of Bat	Ob	servations
		m	Val	/		1	5	111	11	S	1	7/26		23551	F		
			1X				11	111	118	toxies .	2	7/27	10387	23551	F	188 5	hed transmitter co
			pot	ontral			1	1115	$\langle \rangle \rangle$		3	7/28	188	23551	F	shed	transmitter li
			1 10	2051	1		1	111	N.,		4	1					
								TT	15	Sheel	5					-	
								L	-	Sheel	6				_		
								10.00		1	7		1.50				
									7	14	8						2
										Rous	9				-		
							Ag			Cord	10				-	<u>+</u>	
						1	ield			1-1	11					+	
			14							21-1-1	12	+			-		
									1		13 14	-			-	-	
					Emergence	e Count		_	_		14					I	
				1.50	T		ime		Focal				Cavit	y or Crevice C	haracterist	Hat	
		Temp		# of		Bats	Bats	Tagged	Bat	Personnel/	T	-	T	y of clevice c	Indiacterio	ics	
No.	Date	°F	Weather	Bats	Sunset	Start	End	Bat	exit #	Comments					Opening Measurem		nts
	7/26			1		-				transmitter still in the	No.	Nature	Aspect	Width	Height	Ground	H <sub>2</sub> O Level
1											1						
2	7/28	78	clear	0	2054	~	~			Commern 1	1	_	-			· · · · · ·	1000 C
2		78.	clear	0	2054	~	~			Canern 1 Canzed	1 2						

Comments:

Elying severals observed in potential woust site 7/28



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

	ation_	Genera	site	- 18		State	04		011	d Firesi	40		2712015	
at	-Long/	UTM: N/E_4	1.180	69	(	WN_81.	93027	· · ·	Zone _	Datum:	NAOB3 Obs	servers: <u>T.W</u>	etel, A.t	100
#	Tree Tag #	Species	DBH (cm)	Heigh Tree	t ft or m Roost	Condition*	% Bark ( Usable	Cover** Total	Tree Ranking***	Available Roost/ Observation	Interior	Habitat	Open	
1	985	F. gennsulvanice	28.5	la	8	S	M	H	C	bark		0		
2		U, americano		9	1	S	L	H	S	none	Cane	opy Cover at Roos	t	
3	1	Vienmericane	38	10	-	Sa	m	F)	S	bart	Open	Intermediate	Closed	
4		U, american		10	-		L	H	S	bark				
5	1	F. pennsulvani	ale.5	14	~	S	L	H	C	None		Basal Area		
6	-	A. Saccharum	21.2	12	(	L	L	17	S	vone	Live Trees	Snags	All Trees	
7		A. Saccharum	190	12	-	LA	L	H	2	none	40	170	110	
3		Piserotina		10	-	S	L	H	S	none	10	10		
9		Jingra	350	15	7	L	L	H	C	none		Roost Location		
0	1.000	A, sachanim	12.6	6	-	S	L	H	U	crevice	Bark	Cavity	Crevice	
1	-	Q. albo	107.5	17	-	L	L	H	C	berriforer				
2	-	114 <u> </u>		1.51							<b>QUICK REFE</b>	ERENCE / 1	CIRCLE	
3														
4			1									*Condition		
5											Snag	Live	Live-Damaged	
6	-				100						-			
7				-	:							*% Bark Cover		
18								(			High = ≥ 25%	Moderate = ≥	Low =	
9		[			-							10-<25%	< 10%	
0				-				-						
21						1		_				**Tree Ranking		
22	1		-								Canopy	Sub-Canopy	Understory	

6 COPPERHEAD DUND 0

		1					and and	)	52	1			Bat Day	ys		
		K						L		No.	Date	Bat Freq.	Bat Band	Sex of Bat	Ob	servations
	W						2196			1	22/27	137	23361	F		
	V	Y						( .	1. to	2	-				-	
	1	6			-			V	18	4		h	-		1	
	6	1			(g)					5			-			
				G	3					6						
	2				2					7						
	P				2					8						
	P	A			Z				J.	8						
	8				R				Read Provide State	8 9 10						
	8				M			100	Resort	8 9 10 11						
					Ø			100	And and a start of the start of	8 9 10 11 12						
					ETO	ownsh	un Ra	134	Room	8 9 10 11						
				Emergence		ownsh	up Ra	13.0	All and a second	8 9 10 11 12 13						
			1.1	Emergenc	e Count	owns/n		- 13 LØ Focal		8 9 10 11 12 13		Cavit	y or Crevice C	Characteris	stics	
Jo.	- Temp Date °F	Weather	# of		e Count Ti Bats	me Bats	Tagged	Focal Bat	Personnel/	8 9 10 11 12 13		Cavit	1		A	,×
lo.		Weather Col Telecr	1.1	Emergenc Sunset	e Count Ti Bats Start	me		Focal	Personnel/ Comments	8 9 10 11 12 13	Nature	Cavit	1		Measureme	nts H2O Lev

Comments:

\* But was not tracked to this tree on 7/28/15

COPPERHEAD

Co	unty	Servera	100			State	011		Qu	ad Fixesid	Date Fi		
La	-Long/	UTM: NYE_4	1.1.78	1.54.65		WN82	9280	4	Zone	1	N4083 Ob	servers: 13 Rea	ey/ F. McGre
#	Tree Tag #	Species	DBH (cm)	Heigh	t ft or m Roost	Condition*	% Bark Usable	Cover** Total	Tree Ranking***	Available Roost/	-	Habitat	
1	986	A. sarcharing	16.16	15	13	5	M	M	5	Observation	Interior	Edge	Open
2	-	A .Saccharimm	0	25	12	L	L	H	5	Barb	1	opy Cover at Roo	et
3		A sacharim	1	35	- 12	L	2	H	5	NONE	Open	Intermediate	Closed
4	1	A. sacharing	62.7	50	-	LD	m	4	C	Bart Crevice			closed
5	-	A sachanimum	35.3	45	~	5	M	H	6	Bark		Basal Area	
6	-	A. saccharinum	36.9	55	-	L	L	H	C	NONO	Live Trees	Snags	All Trees
7	~	A. saccharimm	27.7	65	-	L	2	H	C	None	200	40	240
8	~	A soccharimm	35.7	17	-	LD	L	M	5	Crevice			
9	-	P. delto:des	89.2	60	-	L	L	H	C	Crevice	1	Roost Location	
10	-	P. dettoides	85.9	65	~	L	L	14	C	NONC	Bark	Cavity	Crevice
11		A. sachaciram		50	-	L	L	H	C	Nore	(T		
12		A sacharinam	C	45	2	L	L	H	C	Nore	QUICK REFE	ERENCE / 1	CIRCLE
13	988	A Sacharina	-	50	-	LD	L	H	C	Crowice/Bu-4			
14	-	A. saccharing m	10100	14	$\sim$	5	L	M	Ц	everice	1.1	*Condition	
15	~	A. saccharing	1	50	-	L	L	H	C	NONE	Snag	Live	Live-Damaged
16	-	A. saccharinen		60	-	LD	m	H	6	Bark		1. Aug 1. Aug 1.	
17		A. sacchariman	the second second	45	-	2	m	H	C	Bark		*% Bark Cover	
18	~	A satchariman		20	-	S.	L	M	5	Cravice	High = ≥ 25%	Moderate = ≥	Low =
19	~	Asaccharimm	34.4	45	-	L	L	H	C	NOME		10-<25%	< 10%
20	~	A. saccharium		35	-	L	L	H	5	None	c		
21	-	A Saccharian			~	L	L	H	C	NONE		Tree Ranking	and the second s
22	factor Fr	A -sacha-inna		55 ty troops w	ithin the al	L contared	L	H	C	NONE	Canopy	Sub-Canopy	Understory
~	6	A - Sauharine		1111	65	iot, centered on	the roost the	14	C	NONE			

Bat Species/Sex/Frequency: MYSE/F/ 137 Band # ODNR 233101 Location Diagram: 1 Т e al and

			Holow		2			Guybe	hrv				2.1.1	Bat Day	s		
			Do			/	/	2	1		No.	Date	Bat Freq.	Bat Band	Sex of Bat	Ob	ervations
			131				/	$\odot$	0		1	7-28	137	233111	F		
			YA ,	2		/	1	2+ 986	21988	50 I I I I I I	2	1.0	ļ		-		
			10 /			1					3					( )i	
			181/								4		1		1.11		
			E Bar		1	1					5				1		
			KI - Bar	e was		10				1	6						
			R1						- 2		7		1		-		
	130	AC	VAI				6	rest		1	8	10. A 4	-			1	
			K/ L			1.00	10	1. 6. 1			9		-	Brown and			
		l	31			/	1			1	10						
		t	1		1		E.			11	11						
		Ĭ	14		*				STAN	m	12	1 E 1		1		() I	
		6	14			11	//	- 10	T	11	13	-				1	
		Y			ľ	/	/	Fores	/	11	14						
	-			_	Emergene	e Count			_					-			
				2.4	1.0	т	ime	-	Focal	1.00 million			Cavity	y or Crevice C	haracteris	tics	
No.	Date	Temp °F	Weather	# of Bats	Sunset	Bats Start	Bats End	Tagged Bat	Bat exit #	Personnel/ Comments			1010		Opening 1	Measureme	nts
-		81	Clear	1	2053	2110	2110	2110	1		No.	Nature	Aspect	Width	Height	Ground	H <sub>2</sub> O Level
1	7-28	01							1	- 121. J				2		2	
1 2	7-28			0	20:49	NIA	NIA	NIA	NIA	C. 15/049	1						1
1		76	Clear	0	20:49	NIA	NIK	NIA	NIA	C. 13/04	1	_				_	

Comments:

\* tree observed

Roost Tree # 986

Roost Tree Diagram:

1cd 6:45-9:25



Roost Locat		# 988 SC of	Pro	oject No	o./Projec	t Name $_4$		_1_6	ME150		Date Fir	st Found	-27-12
Coun	ty	JTM: D/E	+1 17	elala		State	2925	105	Qua	ad <u>F.</u>	: NADES Obs	ervers & Le	lovie male
		ли. (м/ Е	DBH	-	ft or m		1	Cover**	Tree	Available		Habitat	
#	e Tag #	Species	(cm)	Tree	Roost	Condition*	Usable	Total	Ranking***	Roost/ Observation	Interior	Edge	Open
19	88	A. saccharing	36.3	50	20	LO.	2	H	C	BarrilCrevice			1.000
2		A. sarcharum		20	-	LD	L	H	5	Crevice	Cano	py Cover at Roo	st
3		A. saccharing	1.00	40	÷	LD	L	H	C	Crevice	Open	Intermediate	Closed
4		A. saccharinan		55	-	L	L	H	6	NONE			
5		A. sacharum	1140	30	-	LD	m	M	S	Barr/ crenice	1	Basal Area	
69	86	A. sachariman	16.6	15	13	5	~	m	5	Rark/ capity Crevica	Live Trees	Snags	All Trees
7		A . sacharing	27.7	46	-	L	2	14	C	NONE	230	20	250
8		A gachavirun	62.1	40	Ţ	LD	m	14	C	Create			
9		A sacchariman	36.9	35	-	L	L	H	C	Nore	F	Roost Location	
10	,	A, Gacharizum	35,7	15	-	LD	L	M	5	cravice	Bark	Cavity	Crevice
11		A. Sachrim	28.6	50	-	L	L	H	6	NONC			
12		A. Sacharimm	29.0	30	-	LD	L	14	5	Crovice	QUICK REFE	RENCE / 🕇	CIRCLE
13		A. saccharinum	40.4	10	~	5	L	M	и	Crevice			
14		A - San harirtm	37.2	60	-	L	L	H	C	None		*Condition	
15		A, saccharimum	29.6	40	-	L	L	H	C	NONC	Snag	Live	Live-Damaged
16		A. sadnarinam	37.6	50	-	L	L	14	C	Bark	-	1	10000
17		A. Saccharitan	26.7	45	-	LD	L	H	C	Crevice		*% Bark Cover	
18		A. Saccharinhm	30.2	30	~	L.	L	H	5	Back	High = ≥ 25%	Moderate = ≥	Low =
19		A satcher, Nun	1 33.1	15	-	LD	m	M	5	BA-W/ Crevila	200 But - 2 20 M	10-<25%	< 10%
20		A Seccharinan	34.7	30	-	L.	L	H	5	None			
21		A. rubran	25.8	40	+	L.	L	4	C	NONE	**	*Tree Ranking	_
22	- 11	A saicharing m		40	201	L	L	14	C	none	Canopy	Sub-Canopy	Understory
A 10 fa	ctor En	glish prism is used	l to identi 〜 47,7		ithin the p	olot, centered or	the roost tr	ee. 14		None			

Roost Tree # 966

# Bat Species/Sex/Frequency: MYSE/F/137 Band # OPNR 23361

Roost Tree Diag	ram:		_	L	ocation D											
		1 tap	Vro ser			5	ey 600	N	·····			1.1	Bat Day	/s		
		$ \rangle$			1	2			/	No.	Date	Bat Freq.	Bat Band	Sex of Bat	Ob	servations
		At Er	posol Hearty	how	/	1	D 12+ 986	Ø	156	1	7/29	137	23361	F		
		M					12+ 986	121	986	2	7			1	þ	
		12			/					3	1.000				15	
		3.	τ.		1					4	1.000					
		1/1	ren					1		5	1					-
		144-00	nere	1.11						6	1.1.1.1.1	1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	1.2			
		2						1		7					-	
		A				F	orest	27	/	8					/	
								1	12	9	-	-		-	-	_
		1				1			/	10	1	_	-		-	
		1			-		Strens	-		11	-				-	
		1			/ /	1		100	11	13				-	1	
	3	11			1	/	Forts	$c_{\geq}$	12	14					110	
	-			Emergene	ce Count					-	11.11	1.11.2				
			1000			ime		Focal				Cavit	y or Crevice C	haracteris	stics	
	Temp	147-14	# of	C	Bats	Bats	Tagged	Bat	Personnel/		1		A			
No. Date	°F	Weather Claudy	Bats	Sunset	Start	End	Bat	exit #	Comments			1. 200		Opening 1	Measureme	nts
1 7-29	81	light rain	2	8:53	8:56	8:58		1000	1000	No.	Nature	Aspect	Width	Height	Ground	H <sub>2</sub> O Leve
2 7.30	80	clear	0	8:50	MÁ	NA	NA	NA	C. Bloyd	1				1		
3		_			-	-	-	-		2						
4			£			1				3			1.5			

Comments:

day or 7/30, the observed that night per emergence. \* Trongmitter Fell OFF bat

÷



ocation	111.7	Pro	ject No	o./Projec	t Name	2003	>	Ener	son Cr	eek Date Fir	st Found 🥏	15142
County	NW 05 Seneca		785	10	State	OH		Qu	ad Fivesi	de		
Tur	UTM: NE 4	DBH	Heigh	t ft or m	V)N_82.0	<u>\$1.74</u> % Bark	Cover**	Zone	Datum Available	n: <u>NAT83</u> 0bs	ervers:	letrel, A.
# #	Species	(cm)	Tree	Roost	Condition*	Usable	Total	Ranking***	Roost/ Observation	Interior	Edge	Open
1 984	F. penasylvani	434.3	12	7	5	H	H	C	park		1 Sac	
2	A.Sachanim		13	1.	S	Ŵ	H	C	crevice	Cano	py Cover at Roo	st
3	A.saccharum	58	15		LD	L	H	C	cremile	Open	Intermediate	Closed
4	A. Salcharum		15	-	LD_	L	H	C	bark			
5	Gavata	540	16	-	E	L	H	C	pare		Basal Area	
6	Alsacchanim		13	-	LD	M	H	S	browner energie	Live Trees	Snags	All Trees
7	V. americana	13	9	-	F	L	H	V	none	70	20	90
8	V. american	8.5	6	-	L	L	H	V	nene			
9	U. americana	13,4	9	-	L	L	H	U	pone	R	oost Location	
0			_							Bark	Cavity	Crevice
1			_	_					1	<u></u>		
2									· · · · ·	<b>QUICK REFE</b>	RENCE / 🕇	CIRCLE
3			_			-		-				
4										-	*Condition	
5										Snag	Live	Live-Damaged
6											-	
7	-	-		<u>1</u>				-		**	% Bark Cover	
8							-			High = $\geq 25\%$	Moderate = $\geq$ 10-<25%	Low = < 10%
9											10 20 70	\$ 10.0
0							_			-		
1			-	-							Tree Ranking	
2	nglish prism is used									Canopy	Sub-Canopy	Understory



10	NAR DV	mor	h	18			N.	-11+	-			2.5		Bat Day	5		
	0	1		1	k l		1				No.	Date	Bat Freq.	Bat Band	Sex of Bat	Ob	servations
-		3.	5	- 50	U <sup>2</sup>			- U (			1	7/27	030	23360	F	ouly 1	nt seen
2	1	2	1PS -	16,5	18			1			2	7/24	030	23360	F		
			here	0-1	XIN			1 1			3						
		. 1	3 MILLING		1			0			4						
5	1.0	1211	AN					11			5	-					
	11/11.1	ch.	to UN					1.	1		6				-	-	
1.20	1231	A	1000					71	- 'br	4K	7					1	
	V-Q	Ver	TARAL					1			9						
-		Y	1 ALAN					11			10					1.	
		N	Man A					11			11		1.2.1	1		11	
			MAKAM				Ŷ				12	1	1.000	1.1.1	_	0	
		A.	AUG M				1				13				-	C	
			AVENUES (71/ V V	-					_		14			-		1	
		11	a mention of			eCount			-		<b></b>		<b>C</b>	or Crevice C			
-	1	/		1	Emergeno										naracterist		
	July	Temp		# of	Emergeno	T Bats	ime Bats	Tagged	Focal Bat \	Personnel/			Cavity	of clevice c		lics	-
No	Date	°F	Weather	# of Bats	Sunset	Ti Bats Start		Bat	and the second sec	Personnel/ Comments			Cavity			leasuremer	nts
<u>No.</u>	July Date 27 28	Temp °F 72 81	Weather Sunny/clas	# of Bats		T Bats	Bats End 2123	Tagged Bat 2123	Bat \		No.	Nature	Aspect		Opening N		nts H2O Leve

Comments: HO416, TW Olympis

R

COPPERHEAD

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

.

at	ation unty -Longy	UTM: NYE 4	1. 181	79	(	State	0H 2.929	33	Qua Zone	ad <u>Fires.</u> Datum	de :Obs	ervers: BRe	aley R. ma
	Tree Tag #		DBH (cm)	-	t ft or m Roost	Condition*		Cover** Total	Tree Ranking***	Available Roost/ Observation	Interior	Habitat Edge	Open
1	987	A. sacchavimm	56,3	40	25	5	m	m	C	Bart	Interior	Luge	Open
2		A. sacchanima	54.1	15	-	S	L	m		Crevice	Cano	opy Cover at Roo	st
3	1614	A saucharinam	1.000	45	-	LD	L	Н	C	Bark	Open	Intermediate	Closed
4		A succharinum	57,5	50	-	L	L	H	C	NONE		(	-
5	1.1	A. Saccharinam		30	Ţ	LD	L	H	C	Crevice		Basal Area	
6		A sacchaviora	37.6	45	-	L	4	H	C	NONE	Live Trees	Snags	All Trees
7	la company	A. saccharimm	31.8	30	-	L	L	17	C	NONE	60	30	90
8		A. Sacharima	52.5	50	-	L	L	M	C	NONE			
9		A. saccharing	47.7	20	-	5	n	n	5	Bark	1	Roost Location	
10		100 C 100 C	1.00	0.1	Distant 1					<u></u>	Bark	Cavity	Crevice
11											(FILST CARE AND		
12			1					-			QUICK REFE	RENCE / 1	CIRCLE
13								_			-		
14	_	1211-001	-				1	17.4				*Condition	
5								1			Snag	Live	Live-Damaged
16							-						
17				_	-	17						*% Bark Cover	
18											High = ≥ 25%	Moderate = ≥	Low =
9				-								10-<25%	<10%
20		-											
21												*Tree Ranking	
22					1.000	1.					Canopy	Sub-Canopy	Understory



Bat Species/Sex/Frequency MYSE/F/030

## Band # ODNR 23340

Bat

Freq.

030

030

030

020

030

Date

1-29

7.30

7-31

8-2

8-

No.

1

2

3

4

loost	Tree Dia	gram:			L	ocation Di	iagram:		_	
	But al	The second	-Bored	IIIm		1/ may 1/	1 till she	Swamp		- Anna -
					+ + + + +	1/1/	1/1	RTAST	1 1 mail	
					Emergence	re Count	1/1	Rt asi	1 million	
					Emergenc		ime	Rt asi	Focal	
No.	Date	Temp °F	Weather	# of Bats	Emergenc		ime Bats End	R+ 957 Tagged Bat		Personnel/ Comments
No. 1	Date 7-29	Temp °F 80		# of		T Bats	Bats	Tagged	Focal Bat	Comment
		°F	Weather PT19 cldy Clear	# of Bats	Sunset	Ti Bats Start	Bats End	Tagged Bat	Focal Bat exit #	Comments R. Melorey
1	7.29	°F 80	PTIY cldy	# of Bats 3	Sunset 20:51	Ti Bats Start 2.0,59	Bats End 21:2(	Tagged Bat 21°21	Focal Bat exit #	

11	1					
12						
13						
14	Str. 12	1				
			or Crevice	1.00.00	Measureme	nts
No.	Nature	Aspect	Width	Height	Ground	H <sub>2</sub> O Level
1	1.2.4	1.5				
2			1			
3						

Bat Days Bat Band

#

23360

23340

233,00

23360

23360

Sex of

Bat

F

F

E

F

F

Observations

Comments:

Bottery Signal weath an Col2



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

Roost Tree # 987

·	unty -Long/	UTM: N/E_	11.21	838		W/N_82.	9684S	5		ad <u>fres</u> Datum	NAD8306	ervers: J. S	to/m	-
#	Tree Tag	Species	DBH	Heigh	t Dor m	Condition*	% Bark	Cover**	Tree	Available Roost/		Habitat	_	Rains
	#	1. 1. 0	(cm)	Tree	Roost	contaition	Usable	Total	Ranking***	Observation	Interior	Edge	Open	
1	369	Frazionas punnsylvai	400		9	S	M	L	4	cracks +				
2		Ftax aus Pennsylva		50	-	5	L	L	C	Cracks + Crevie Rg	Cano	py Cover at Roos	t	
3	- 45	Franky Pennsylus		50	-	5	M	H	6	Bark	Open	Intermediate	Closed	
4	( = )	Fronsylvanila	48.0	60	-	S	14	4	C	Bark				
5	1.10	Pine Sp.	37.3	40	-	5	L	14	C	Sur he inclustione		Basal Area		
6	1.	bak sp.	60.2	20	-	2	L	Н	u	cracks clevices	Live Trees	Snags	All Trees	
7	395	cherry	37.8	80	Yes	5	17	17	C	Roost tree	00	10	ITO	
8		SucarMaple	19.8	85	1	L	L	11	C	×				
9		Sugarmaple	34.4	100	$\sim$		L	17	C		1	Roost Location	2	
10	14.7	Sugarmaple	8.2	20	1	L	L	14	42		Bark	Cavity	Crevice	
11		Sugar Maple	173	80	1	L	L	it	C	1				
12		Sucarmaple	13,2	60	1	V	L	jx.	C		QUICK REFE	RENCE / 1	CIRCLE	
13		Sucar warde	323	100	/	V	L	X	C		-			
14		Sugarmaple	15.5	80	1	L	L	11	50			*Condition		
15	1.2.2	Sugar maple	6.2	40	1	- V	L	14	u		Snag	Live	Live-Damaged	
6		Sugarmaple	4.2	12	1	L	L	1+	U					
7		Sugarmaple	9.0	25	1	2.	V	H	30			% Bark Cover		
18	1.0.1	1				1.00					The base	Moderate = >	Low =	
9							1 2 1				High = $\geq 25\%$	10-<25%	< 10%	
0														
1	211											*Tree Ranking		
22	111	7		1.1	1.124						Canopy	Sub-Canopy	Understory	

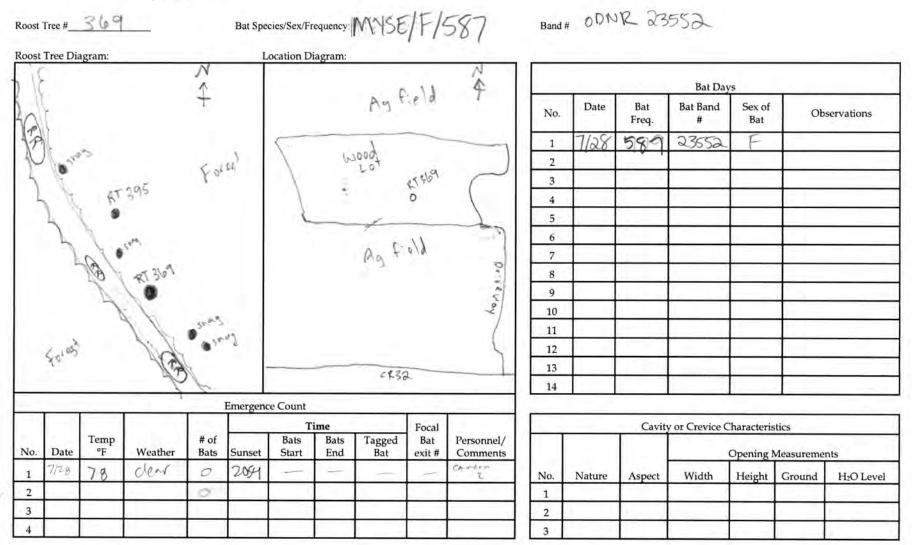
.

6

COPPERHEAD

PLAT REPOR

But loamere



Comments:

COPPERHEAD

Co	unty	Senica UTM: N/E 9	1.1.1				91.02	H	Qu Zone	ad Firesi	NAP83 Obs	orvers: J.S.	al un i K
21	Tree Tag		DBH	1	t ftor m	1		Cover**	Tree	Available		Habitat	0.00 100
#	#	Species	(cm)	Tree	Roost	Condition*	Usable	Total	Ranking***	Roost/ Observation	Interior	Edge	Open
1	371	Prohisilian ca	42.4	60	30	5	L	H	C	Bark		1 1	
2	1.1.1.1.1.1.1	Praving	56.)	65	-	S	1-1	H	C	Bark	Can	ppy Cover at Roos	t
3	1	Prinsinalis	28	50	3	5	M	H	C	Possilie Coostie	Open	Intermediate	Closed
4		pek se	74.3	20	1	5	L	H	SC	(incles)	0	10	
5		mapirmaple	15.5	30	/	Live	L	H	SC	NOVE		Basal Area	
6		Sucarman	20%	60	1	LNE	L	17	C	KD.	Live Trees	Snags	All Trees
7		Cupen whiste	41	100	/	L	1	12	C	10	210	40	250
8		Sucar maple	24	25	1	L	C	H	C	NOVIE			
9	1	DOIGHWOOD	34	35	1	L	L	17	C	none	1	Roost Location	
10		Bod dreim	49.5	100	1	5	1	14	C	Mon 2	Bark?	Cavity	Crevice
11		Sugarmagie	35	25	/	L	1	17	C	none			
12		Succument	20	60	1	L	L	It	C	110HE	QUICK REFE	RENCE / 1	CIRCLE
13		beech	59	10P	1	L	L	L	C	NOS			
14		Sugarmaply	19	50	1	L	4	14	36	nonl		*Condition	
15		Sippeyelm	4	15	/	1-	5	12	K	hove	Snag	Live	Live-Damaged
16	1000	Sugarmorte	23	60	1	L	4	14	50	HOM			
17		Stippey elm	50	100	1	L	1	1×	C	NOME	*	% Bark Cover	
18	1	Sucor maple	3.5	50	1	V	L	17	SC	NONE	High = ≥ 25%	Moderate = ≥	Low =
19	1	Block walnut	43.5	100	1	L	6	H	C	HONE	High - ≥ 25 %	10-<25%	< 10%
20		Sucarmook	12	4D	2	L	1	Q.	50-	noure			
21		SUGAY MADDLE	181	120	1	L	L	12	C	none	**	*Tree Ranking	
22		Supportern	4	20	1	L	6	1-1	U	nonl	Canopy	Sub-Canopy	Understory
. 1(	PPERHE T S	Stippert elm spish prism is used Snear maile A Jie H 3 71. RT Stipperty clum Shipperty clum	is 371			agam eved t		he f	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Marked	as	Sub-Canopy Copperhead Enviror P.O. Box 73, 11641 Paint Lick, KY 404	mental Consultin Richmond Rd.

Roost Tree # 37

Bat Species/Sex/Frequency:

Location Diagram:

587

Band # ODNR 23553

Roost Tree	Diagram:	n Ne		-
L	Y	Vi		
17	7	12	1	
1	2	VE	0	-
1	25	A		
	148-18			
	X AX			
	1	1	-	Eme



_	1 1		Bat Day	5	
No,	Date	Bat Freq.	Bat Band #	Sex of Bat	Observations
1	2t July	537	23552	F	
2	30 July	597	23552	F	
3	= L				
4	12000		· · · · · ·		
5		-		· · · · · · · · · · · · · · · · · · ·	
6		-			
7					
8					
9				I	
10	1.0	-			
11	1.00				
12					
13	1.1.1	L			
14					

110	-		-	_	Emergen	ce Count	_		_	· · · · · · · · · · · · · · · · · · ·				
	1.11	1.1	12.1	2011		Т	ïme		Focal				Cavity	or
No.	Date	Temp °F	Weather	# of Bats	Sunset	Bats Start	Bats End	Tagged Bat	Bat exit #	Personnel/ Comments				
1	7/29	79°	orticast	2	2051	2058	2115	2058	1	H.PP	No.	Nature	Aspect	
2	7/30		1	5	2050	2049	2102	2100	-1-1	J. Borre	1			
3			1.0		Anna in the	1.200			-		2			
4					· · · · · · · · · · · · · · · · · · ·						3			ΪŤ.

		Cavity	or Crevice	Characteris	stics	
		1.1	_	Opening 1	Measureme	nts
No.	Nature	Aspect	Width	Height	Ground	H <sub>2</sub> O Level
1					1	
2	1		1 ·····	1.00		
3					1	

Comments:

Bats emerged from where the two trues touch



Co	unty	eneca UTM: NE4	12192	20	510-1	State_	DV 9714		Qua	ad <u>Fires</u> Datum	Date First	ervers: Ro	a total fory
-	Tree Tag		DBH	1	t ft or m		the second se	Cover**	Tree	Available		Habitat	
#	#	Species	(cm)	Tree	Roost	Condition*	Usable	Total	Ranking***	Roost/ Observation	Interior	Edge	Open
1	372	shag parton	34	754	50St	Live	100	100	Canopy	ShRanall			
2	1	Sugar maple	0	50	/	Live	D	100	Sub-C	none	Cano	py Cover at Roos	t
3		Sugar map.	14.5	50	1	Live	D	Lob	5UD	NEVIL	Open	Intermediate	Closed
4		Sugarmap.	15	50	1	Live	0	100	50.62	110mm			
5	1	Asin Snaa	48.5	100	100	anag	500	150	COMORIA	Limited		Basal Area	
6		Sugarmaple	9,5	50	/	Live	0	160	Sala	MOYE	Live Trees	Snags	All Trees
7		Sugarmo	9.5	40	1	LIVE	5	155	446	VIONE	200	50	250
8		pananah	42.5	110	1	Smag	500	1.07	Eanopil	Inmine?	-		
9		Sug. maple	120	75	1	Live	0	1.92	SHACOO	SNOVE	R	oost Location	
10	1.1.11	Sug maple	65	30	/	Live	7	100	Subran		Bark	Cavity	Crevice
11		Agh yuag	50	120	50	Snaig	0	Ø	canopy	CREVILES			1
12	1	Sugar maple	14	60	/	Live	D	100	54.0	NONE	QUICK REFE	RENCE / <b>†</b>	CIRCLE
13		bacenood?	25,5	25	1	Live	D	100	canopy	none	r		
14	-	Sug. mape	16	50	1	LAV4_	0	120	646	HEM2		*Condition	
15		gua maple	20	60	1	Level -	0	1.2	614 2	HOVA	Snag	(Live)	Live-Damaged
16		514.	10.5	45	1	Live	0	100	549	None	-	$\smile$	
17		Shan bar Biog	49	90	00	Live	100	100	Com	VIDVIE	**	% Bark Cover	
18	-yoth	hanwood	45.6	80	60	Live	5	106	Canopin	broken	High = ≥ 25%	Moderate = $\geq$ 10-<25%	Low = < 10%
19		GACAN MADLE.	15	30	/	Live	12	100	they a	VIDVI P-	$\left( \right)$	10-~23 /0	S 1070
20			44	10	all	Shaby	30	30	Sub	15% FPLOT			
21		Am Broch	39	100	1	Live	1.12	100	COMO PU)	None	***	Tree Ranking	
22	0 factor Fr	glish prism is used	16.5	fy trees	within the r	Liefe	the roost tr	161	500	NDNK	Canopy	Sub-Canopy	Understory
		0.000	T	6	nom ner	evnerali	a.sh	6	00.0	115	P	O. Box 73, 11641	
	ALL ALL LE BA	Swar maple	10.4	110	1-	LINE	0	100	Saw	Unont	Р	aint Lick, KY 404	461 (859) 925-9012
J		Tumper outline	10.3	1-10	1.0		10	100	Con 1	Jame			

Bat Species/Sex/Frequency: MMSE/F/. 587 Band # ODN R23552 Roost Tree # 372 Roost Tree Diagram: Location Diagram: Bat Days Bat Band Date Bat Sex of No. Observations Bat Freq. OPHR 7/31 587 23557 P 1 2 3 4 5 6 7 8 9 HACESS RA 10 11 12 13 68-32 14 **Emergence** Count Time Cavity or Crevice Characteristics Focal # of Temp Bats Bats Tagged Bat Personnel/ Start 4 Date °F Weather No. Bats Sunset End Bat exit # Comments **Opening Measurements** 7/31 169 1934 70 2104 11 cleri 1 No. Nature Aspect Width Height Ground H<sub>2</sub>O Level 2 1 3 2 4 3 Comments: Recent free fall creates forest aap & i bost fire and provides shar expressive from

-picked up but in Style for energence



unty t-Long	e#_373 Same woo Semecici NUTM: N/E_4	1.2193	5A	6	State WZN82	9683	58	Qua	d Fires	NAD83 Obs		
Tree Ta	g Species	DBH (cm)	Heigh Tree	nt ft or m Roost	Condition*	% Bark Usable	Cover** Total	Tree Ranking***	Available Roost/ Observation	Interior	Habitat	0.000
373	Ash Guar	47.2	80	40	5	H		0	Ves	Interior	Edge	Open
	Basswood	Sloit	110	/	L	L	H	C		Cano	py Cover at Roo	st
	Sucarmople	32	80	/	L	L	14	C		Open	Intermediate	Closed
	Sugarmaple	14.5	50	1	L	L	IF	56				
1	Sucarmost	3.0	15	/	L	5	H	и			Basal Area	
-	Becch	5.1	12			L	H	И		Live Trees	Snags	All Trees
	Sycanople	18.4	76	2	L	L	14	50		140	10	170
	Sucarmosta	6.6	12	-	L	4	17.	И				100.0
1 1	Sucarmaple	28.1	76	-	L	5	H	C		R	oost Location	
0	Sucarmople	5,3	15	~	L	L	14	N		Bark	Cavity	Crevice
1	Sugarmaple	5.0	10	~	L	6	H	U				
2	Succemple	214	60	-	V	1	H	50		<b>QUICK REFE</b>	RENCE / 🕇	CIRCLE
3	Sugamonet	5.1	15	1	V		17	Ц				
1	Sugarmaple	2.1	25	-	L	L	17	1A			*Condition	
5	Belch	80.1	90		L	L	H	C		Snag	Live	Live-Damaged
5	Sugarmaple	6.5	30	1	L	L	14	U.				
7	beech	23,8	60	-	L	L	17	C		**	% Bark Cover	
3										High = ≥ 25%	Moderate = ≥ 10-<25%	Low = < 10%
)				10.000		i a conservatione d		m		L		
										1	Tree Ranking	
-		-									The Kanking	

1322 h

used to identify trees within the plot, centered on the roost tree. ngu sn prism



Roost Tree # 373

Bat Species/Sex/Frequency: M15E/F/,5827

# Band # ODNR23552

	iagram:				ocation D	iagram:										
150	D.	VI	1										Bat Day	s		
	h	T	1					(lag"		No.	Date	Bat Freq.	Bat Band	Sex of Bat	Ob	servations
2	10	14		1.1	T			6		1	8/1	587	23552	F	for b F.	Brance
	2 1	NUZ			1		C	2		2	812	582	23552	K	. Qon	Y Brond
		SW	2		1					3	11111					
	1	111E-00			/				A	4	1.200					
	1	Pro-				1				5	7				0.000	
511						-		/		6		· · · · · ·			1	
2.11										7	1					
	~	1							2.	8	1		-			
		F							621	9			1			
	1								261	9	-				-	_
									36	10	1	1				
									25							
									(A)	10 11 12						
							-32_		10 A)	10 11 12 13						
							-32		DE)	10 11 12						
				Emergeno			-32-		DA)	10 11 12 13						
	Temp			Emergenc	Т	ime Bate		Focal		10 11 12 13		Cavit	y or Crevice C	haracteris	stics	
	Temp °F	Weather	# of Bats	Emergenc		ime Bats End	32 Tagged Bat	Focal Bat exit #	Personnel/ Comments	10 11 12 13		Cavit		1000	stics	nts
9	Temp °F 21°C		# of	-	T Bats	Bats	Tagged	Bat	Personnel/ Comments	10 11 12 13 14	Nature			Opening I	Measureme	
1 8	°F	CLEGY	# of	Sunset	T Bats Start	Bats End	Tagged	Bat	Personnel/	10 11 12 13	Nature	Cavit		1000	Measureme	
1 8	°F 21°C		# of	Sunset 8:58	T Bats Start	Bats End	Tagged	Bat	Personnel/ Comments	10 11 12 13 14 No,	Nature			Opening I	Measureme	nts H2O Leve

Comments:

Cal every 10 14/15 ADh Shaa 1012 LE MOLDING , NEO vitad NIN in alle canopy rola 3 20 anonos 0 SOUL ners. U



in partie

at	any	111.				State	01	4	Out	d Fires	de		
	-Long/U	TM: N/E_	41.1-	180	88 (	WN 82	. 888	251	Zone	Datum	De 17178 Date Fi de NAD85_Obs	ervers: <u>3</u> . <i>P</i> .	may / C.
	Tree Tag	Species	DBH	Heigh	t ft or m	Condition*	% Bark	Cover**		Available Roost/		Habitat	
#	#	Species	(cm)	Tree	Roost	Condition	Usable	Total	Ranking***	Observation	Interior	Edge	Open
1		OFF	Par	rcel			1			1			-
2				1.1				_			Can	opy Cover at Roo	st
3											Open	Intermediate	Closed
4								-					~
5											1	Basal Area 📈	A
6	1						/	1	· · · · · · ·		Live Trees	Snags	All Trees
7	1												
8	1			20.00									
9												Roost Location	IA
10					1.0						Bark	Cavity	Crevice
11					1						П		100 / N 10
12							-				QUICK REFI	ERENCE / T	CIRCLE
13			-										_
14			-									*Condition	
15		_	1		-				-		Snag	Live	Live-Damag
16			1.0.000										
17			-									*% Bark Cover	
18	1.000		10111								High = $\geq 25\%$	Moderate = ≥	Low =
19				_								10-<25%	< 10%
20	_				1.1						ŕ		
21					10.01		1. 2. 21					**Tree Ranking	
22											Canopy	1	

To factor English prism is used to identify frees within the plot, centered on the ro



USE/F/205 Band # ODINE 17178 Roost Tree # N Bat Species/Sex/Frequency: Roost Tree Diagram: Location Diagram: Satorar 8-2-B 8-2-4 Bat Days 0 0 Bat Bat Band Sex of Date Q No. Observations Freq. ODWR Bat

Approximate

10Lation

598 25 92

8-1= 41. 178988

8-1-1-

0

SING

314

8-1

8-2

1

2

3

4

5

2

200

705

171

F

C

						Paybon	fren J.			41.1798937 -82,988234	6 7 8 9 10 11 12 13 14						
				1	Emergenc		ime	_	Easel		-		Cavita	or Crevice	Charactori	tion	
No.	Date	Temp °F	Weather	# of Bats	Sunset	Bats Start	Bats End	Tagged Bat	Focal Bat exit #	Personnel/ Comments			Cavity	of clevice		Measureme	nts
1											No.	Nature	Aspect	Width	Height	Ground	H <sub>2</sub> O Level
2					12.1					1	1						
3											2	)					
4						1					3	1	Sec 1				

#### Comments:

NI

GPS coordinates 8-1-A = 41, 17860/-82.88918, 242° Back 8 41. 7904 332 8-2-A= 41,7906/-42.88748 66 13mlr 8-2-B= 41,17907 88837 340 Bac



		ta Form (2014)				1		00 5	E. A. G.	00 Band # 17		01	 7 = [
Ro	ost Tree	# 170	Pro	oject No	D./Projec	t Name	112-0	2-1-12	MERTON	07	Date Fin	rst Found 2	F Sug 13
Co	unty	Seneca	10		COP (C)	State	OA	Succ	Qu	ad Firesid	e		-1.2.
Lat	t-Long/	UTM: N/E	1.178	192		W/N_92. 8	1089		Zone	Datum:	14083 Obs	ervers: <u>C</u>	hefting
#	Tree Tag	Species	DBH	Heigh	t ft of m	Condition*	% Bark	Cover**	Tree	Available Roost/		Habitat	
	#	species	(cm)	Tree	Roost	Condition	Usable	Total	Ranking***	Observation	Interior	Edge	Open
1	140	Frokis SIA	48.5	25	20	5000	10	90	CENOPY	Part		0	
2		U, granitana	6.7	3	/	Trie	0	100	126	~	Can	py Cover at Roo	st
3	1	Fraxing 50,	45.8	23	1	Snag	30	70	Canely	Bark	(Open)	Intermediate	Closed
4		Fraxievi S/	54	20	1	Spag	30	30	CANUNY	Bank			
5	1					5		1.	/			Basal Area	
6											Live Trees	Snags	All Trees
7				1					1		.10	30	40
8						1.1.1.1.1.1.1.1			1 2 4	-			
9											1	Roost Location	
10					1.22						Bark?	Cavity	Crevice
11					1.5.8						-0-		
12	1										QUICK REFE	RENCE / 1	CIRCLE
13													
14		10 C 10										*Condition	
15	1					-			1		Snag	Live	Live-Damaged
16	1.1					1			1			Lite	porte Dunaigee
17	ir i			1.1	1.000		1					*% Bark Cover	
18			-					1			10000	10000	Louis-
19			1.00								High = ≥ 25%	Moderate = ≥ 10-<25%	Low = <10%
20				1									
21			14.1	1							**	*Tree Ranking	
22		1 (com	1000			1.	1.00 - 11			1	Canopy	Sub-Canopy	Understory

1.4



			1/4		VA					1 6	-			Bat Day	s		
-0-			11		1	nu	~		~	wood	No.	Date	Bat Freq.	Bat Band	Sex of Bat	Ob	servations
23	1C			X	2			1		0.0	1	27July	192,205	17178	F		
2	1			12P				1	Crist	1/1	2	2854y	172.206	17178	F		
	1	1		1-F	cessi the		,	100°+	C.v.	) \	3	-1					
	1	1		4	rent-		L	1 Vot	~/	4	4						
		11					Å	10Armst	1	No News	5				1	-	
		11					1	Propante In	ari		6						
		13	1				1		QU1	BRAND	7	=	11				_
		1	1				lyphi		-	Kair	8		e				
			1.			1			111		9	-		_	-	-	_
			111						18	-	10	-		-	-	-	_
			10						1	all	11	-	-	-	-	-	
			N.						m	In	12	-			-		
			Uh A						1 .	11	13				-	-	
		-			Emergen	ce Count			1	)	14				-	-	_
		$\gamma = 1$		100			ime	-	Focal				Cavity	or Crevice C	haracteri	stics	
o.	Date	Temp °F	Weather	# of Bats	Sunset	Bats Start	Bats End	Tagged Bat	Bat exit #	Personnel/ Comments		1			Opening	Measureme	nts
1	27	20°c	clear	2	2055	2109	2113	2113	2		No.	Nature	Aspect	Width	Height	Ground	H <sub>2</sub> O Lev
	28	68.5		2	2053	21:11	21.20	71:20	2		1		-		0		
_		1400-1		100	Parents (		1		1.6		2				2		
3																	

.

0	untv -	SENECA UTM: N/E_4				Stata	ON I		0	1 TIMOC	Date Fi		
#	Tree Tag #	Species	DBH (cm)	Height Tree	ft or m Roost	Condition*	% Bark Usable	Cover** Total	Tree Ranking***	Available Roost/ Observation	Interior	Habitat	2
1	314	Quereus Sp.	91	60'		SNAC	Luw	HILH	C	Coservation	Interior	Edge	Open
2		ULAUS SP	10"	12'	- 1	LIVE	Low	Hield	SHE C		Can	opy Cover at Roo	st
3		Ulaus Sp	7"	10'		LIVE	Lou	4164	UNDOR		Open	Intermediate	Closed
4		Minas Spin	23°	40'		LIVE	Low	LiGH	Sun C	(			
5	·	Acer rubrin	19.5"	35'		LIVE	Low	Hist	Cn			Basal Area	n anna Al
6		Carga oraila	36 "	55	1.000	LIVE	Hert	Chart	C	1.0	Live Trees	Snags	All Trees
7		Carya nuale	31"	55		Live	HIGH	HIGH	с	V.	70	10	80
8		Carya ovata	9"	12		LIVE	Low	HIGH	BANDER				
9	_		had a l	2.41				-				Roost Location	
10									1.000	1	Bark	Cavity	Crevice
1 2 3											QUICK REFE	ERENCE / 🕇	CIRCLE
4			11211	·								*Condition	
5			1 - 11						1		Snag	Live	Live-Damage
6					<u> </u>			1.2		-			
7	-							1				*% Bark Cover	
8 9	21										High = ≥ 25%	Moderate = ≥ 10-<25%	Low = < 10%
0	201			1									
1		1	514									Tree Ranking	
2			1.1			1		1.11	1		Canopy	Sub-Canopy	Understory

Puis / Enu



														Bat Day	ys			
			Mi Lones	25			)	1		140001	No.	Date	Bat Freq.	Bat Band	Sex of Bat	OŁ	servations	
			Minit			001	2	14	pears		1	7.30	205	17178	F	1		
		1	M		1.1	~100°	5	4	,	1.1	2	7.31	205	17178	F	1		
		F	5		1.1			ì			3							
		Y	1					1		_	4	1			1			
		1					200 - 0				5							
			1				to.		Souther	XAT .	6	-	-		-			
		1						11	_N	1.0 1.0	7					-		
											9		1			-		
								( }			10		-					
			1				~				11		123103	·				
7		-1	1								12					2		
		1			11	Coers		11		_	13	10.000		1	1.2.8	1		
		1	1	_			1.000	1.1			14		-					
-	Emergence Count										-							
3		Temp	1.1.1.1.1.1	# of	of Bats Bats Tagged				Focal Bat	Personnel/	1	-	Cavity		y or Crevice Characteristics			
No.	Date	°F	Weather	Bats	Sunset	Start	End	Bat	exit #	Comments		1.000	6.0.5		Opening	Measureme	ents	
1	7/30/15	81	Clear	3	8:49	8:47	4:44	9:44		TAB	No.	Nature	Aspect	Width	Height	Ground	H <sub>2</sub> O Level	
2					()				-		1							
3		-		-	-						2	2.1			-	-		
omi	nents:	Nine	: 8:3:	Spm	; FA	quanco	201			Ēi		bet	tree	to the	(in the	+ not	Northern	
510	d T	ine			1	17-	40,	0		5	econd	- let	er-	Big Bra		110	100 1000 000	
E									0	3-1-15 0	EG &	arcel	1/	41.17	460	W 82	. 88919	
Er			Sila						4	1-1-19 0	IT I	-1	·V	1111	· /	6	101.7	
Er			847			JELL			6	8-2-15	1			4117	904	W 82	. 888 30	

100 · · ·

1.2

a	unty	Seveca JUTM NE 4	Nex	F F0	Soyle	State	+ Coyo 01+	te 600	Ve campe Qua Zone	ad Fires	Date Fin de NAD83_Obs	ervers: BA	enley/ C B	
	Tree Tag #		DBH (cm)		t ft or m Roost	Condition*		Cover** Total	Tree Ranking***	Available Roost/		Habitat		
1	396		31	35	20	5		/	6	Observation	Interior	Edge	Open	
	270		20	40	20	5	1	1.1		Ba-K				
	-	Fraximus sp Fraximus sp	26.5	40	-	5	M	H	5	Bart	$\sim$	ppy Cover at Roo	1. A. M. M. M.	
		, , , , , , , , , , , , , , , , , , , ,	215	35		2	1	14	17	· · · · · · · · · · · · · · · · · · ·	Open	Intermediate	Closed	
		Fraxions Sp Juglams Mora	6.10	60	-	1.	1	14	5	Ba-V	-	Basal Area		
	/	Juglens Migron	0.1	75	2	T	1	H	1	NONE	Live Trees	1	All Trees	
-		Frankings SP	39	55	-	S	M	M	1	Bart	30	Snags	90	
	-	Fraximus 21	16	17	~	6	1	11	5	None		1 00		
	-	Alnus vubru	17	24	-	1	Ĩ.	- H	5	NENE		Roost Location		
0				20				-pr			Bark	Cavity	Crevice	
1					-		1.000	1.2						
2					1.000			-			QUICK REFE	RENCE /	CIRCLE	
3	1.1.1									1				
E.	-											*Condition		
5	$\sim 100$		11.00					11.0			Snag	Live	Live-Damaged	
		1					1.21	1						
,			1111					1 in the second			25.00	*% Bark Cover		
			100.00								Walan area	Moderate = >	Low =	
						1		1			High = $\geq 25\%$	10-<25%	< 10%	
			1 - 1							N	×			
	12.1	-				·						*Tree Ranking		
2	1.2.1		1.000	11	12.0			1		1 11	Canopy	Sub-Canopy	Understory	



Roost Tree # 396

Bat Species/Sex/Frequency: MY3E/F/450 Band # ODNR 17166

					ocation Di	agram.				-					_	
				1		N.CI	R 27			-			Bat Day	ys		
	A	Gar	0 W#0	, A	130+	40			310107	No.	Date	Bat Freq.	Bat Band	Sex of Bat	Ob	servations
	11	1						/	100	1	8-1	450	17166	F		
	1	N.	16-1	1		1			L	2	8-2	450	17/106	F	11	
	T	1V	Brita	a					low	3	-				1	
	01	1	1 8	-						4						
	N	48A			1.7				12	5	_		-	-	1	
	1	in			5	2	nT 59	2		6		10.000			-	_
					20	10	21 21	C		8				-		_
					2	13		I.	-	9						
		1		1	1	Suns?		100	<u>}</u>	10						
		+ 31	ve we		0	554		2100						-		
		+B.	ve we	ord	Q	580		t sea		10						
		+ 3-	ve we	and .	0	510		73100		10 11						
		1 - 3-			VI	684		73000		10 11 12						
		18.		Emergene	ce Count			73000		10 11 12 13						
	Temp	+8-			ce Count	ime	Tagged	Focal	Personnel/	10 11 12 13		Cavit	y or Crevice C	Characteris	stics	
o, Date	Temp °F	Weather			ce Count		Tagged Bat	Focal Bat exit #	Personnel/ Comments	10 11 12 13		Cavit	1.000		stics Measuremen	nts
8-1	Temp °F 75		# of	Emergeno	ce Count T: Bats Start	ime Bats		Bat	Comments	10 11 12 13	Nature	Cavit	1.000	Opening 1		
8-1	°F	Weather	# of	Emergend	ce Count T: Bats Start	ime Bats End	Bat 21:27	Bat		10 11 12 13 14	Nature	T. S		Opening 1	Measureme	
1 8-1	°F 75	Weather Cleur	# of	Emergene Sunset 2046	ce Count Ti Bats Start 2   2 7	ime Bats End 2/27	Bat 21:27	Bat exit #	Comments B. Renta	10 11 12 13 14 No.	Nature	1.4		Opening 1	Measureme	H <sub>2</sub> O Leve

Comments:

S COPPERHEAD 927

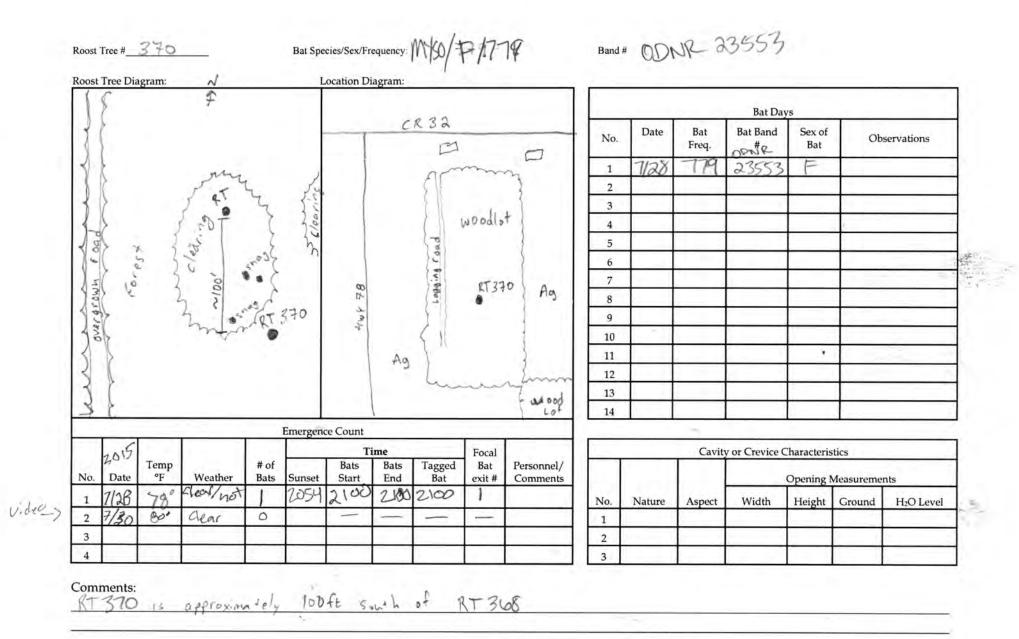
4

trees ovidence of Emerald Ash borg ash arc deal SNASS W.v.A. 15 601 millio 12d ba 3 in brown Hatty

Co	cation unty t-Long/	Site 26 Seneca UTM: N/E 41	,2089	4	1	State W/N	04		Qua Zone	ad <u>Fires</u> — Datum	NAD83 Obs	ervers: <u>J</u> , <i>S</i> +	orm
#	Tree Tag #	Species	DBH (cm)	Heigh Tree	t ftor m Roost	Condition*	% Bark Usable	Cover** Total	Tree Ranking***	Available Roost/ Observation	Interior	Habitat	Oren
1	370	Fraxinus Peansylva.ca	58.7	60	710	S	M	L	C	Observation	Interior	Euge	Open
2	-	Fronking &	46.2	20	-	S	L	H	SC	(racks & Clevices	Cano	opy Cover at Roos	it
3		Beech ?	42.3	18	-	5	L	H	SC	Barle	Open	Intermediate	Closed
4		oaksp	70	30	1	5	L	H	6	Bark & cracks			
5	10.15	Unknown	44	40		S	L	L	c	crachs crevices		Basal Area	
6	1.11	Fraxing Vanica	42.3	25	-	5	L	H	SC	traches revices	Live Trees	Snags	All Trees
7		Sucampple	14.1	50	1	L	L	17	50		130	60	190
8	12.5	Sucar maple	18:46	50	~	L	L	H	50		-		
9		Signi mogle	4.3	15	1	Ĺ	L	17	u		I	Roost Location	
10		Sugarmaple_	12.9	40	/	L	L	1+	50		Bark	Cavity	Crevice
11	1.000	Saccinicale	4.1	30	1	L	L	17	4				
12		Sucreit map [1	11.6	40	~	L	V	14	SC		QUICK REFE	RENCE / T	CIRCLE
13	4	mannaple	14.4	40	~	L	V	17	56				
14	-	Sugarmaple	11.8	30	1	L	V	14	56			*Condition	
15	-	elm	58.3	100	-	L	L	H	C		Snag	Livé	Live-Damage
16		Suciarmaple	169	25	1	L	L	H	°C				_
17		sugar maple	10.2	60	/	Ç	L	11	50		*	*% Bark Cover	
18		Science maple	11.6	60	1	Y	C	[+	9		High = ≥ 25%	Moderate = $\geq$	Low =
19	-	riger maple	149	75		L	L	1+	gi	· · · · · · · · · · · · · · · · · · ·		10-<25%	< 10%
20			14	-			1						
21											**	*Tree Ranking	
22				1.51	C	lot, centered on					Canopy	Sub-Canopy	Understory

PLOT REDO

COPPERHEAD



COPPERHEAD

at	Long/	UTM: NYE <u>-11</u>	,209	21	(	State	0H 9430	8	Qua	ad <u>tires</u> Datum:	NAD83 Obs	ervers: K. P.	July 2015
-	Free Tag #		DBH (cm)		t ft or m Roost	Condition*	% Bark Usable	Cover** Total	Tree Ranking***	Available Roost/		Habitat	
1	368	Unk.	52.7	70	25	SARA	LO		C	Observation	Interior	Edge	Open
2	200	heer succhan		50	-	Shaq	1	1-1	90		Cano	py Cover at Roos	t
3		FORY IN SALES	6 0	50	0	Spea	L	14	30	1	Open	Intermediate	Closed
4		Acor sociler		20	1	SIEN	L	L	US	sphendoll	- Chino		
5						1		1		-Inink	1	Basal Area	
6								1			Live Trees	Snags	All Trees
7											0	40	40
8				100 - T					1				
9		)									F	Roost Location	
0											Bark	Cavity	Crevice
1		10 · · · · · · · · · · · · · · · · · · ·						1					
2											QUICK REFE	RENCE /	CIRCLE
3									1.5				
4					+						-	*Condition	
5	-				-				1		Snag	Live	Live-Damaged
6	-												
7											**	% Bark Cover	
8				-							U:-h => 25%	Moderate = >	Low =
9										1	High = ≥ 25%	10-<25%	< 10%
20								1	1				
											-	*Tree Ranking	

6

COPPERHEAD

Bat Species/Sex/Frequency: WYS0/F/779

Band # 001NR-23553

oost Tree D	iagram:			1	ocation D	iagram:	1.1			-						
	VY.	XIV	11	2		R	1368		11		-	_	Bat Day	/s		
	N	NE	X						11	No.	Date	Bat Freq.	Bat Band #	Sex of Bat	Ob	servations
	1	NF4	1		1					1	7h7	,779	73553	F		
		1.	F	- I	11					2	7/29	,179	23553	F	9	
					-11					3	7/31	.779	23553	F	1	
		1/1				mite				4	8/1	,779	93553	F	Rain	Brande
						ang -			-	5	8/2	1776	73:42	6	Raw	- Exant
		1/1								6			1.1		1 1	- 120010
								- 1	's	7	17. 19	100				
rip'in	1 .1	124			C	-5-1			\	8	1.000				1.	
ripilie Wood ia	11 (11)	in l			2011	· E-I		11	m	9					1	
	lit-lu \							1	1 11	10	1.000				1	
101	1	11							L	11					( )	
		111							1	12	1000	1		S		
	)	1			-	V.	rel			13	1.000		A	· · · · · ·		
		11				14	10.		5	14		6 S	· · · · ·			
_		1.1		Emergen	ce Count										0.1	
	1.00	-	100	100		ime		Focal				Cavit	y or Crevice C	haracteris	stics	
lo. Date	Temp °F	Weather	# of Bats	Sunset	Bats Start	Bats End	Tagged Bat	Bat exit #	Personnel/ Comments	1				Opening I	Measureme	nts
7/17	75	clear	4	2054	2109	72.21	2109	1	1	No.	Nature	Aspect	Width	Height	Ground	H <sub>2</sub> O Leve
2 7/28	78	CLERY	1	2054	2104	2104	_	-		1		1 Mar 1			· · · · · · · · · · · · · · · · · · ·	
3 7/29	820	p-c+- nady	2	2053	2013	2800	2453	1		2	Second Second	1.00		-	5 J	
4 7/3/	700	Clear	5	20	20:56	21.31	20.56	1		3			· · · · · · · · · · · · · · · · · · ·	1 - 1	·	
8/1		Clear	2	1	20:56	20:58	20:38	2	Brandon Smill Brandon	that		_				
mments		clear	1		8:57											
Touse /	De ca	16 or al	dies	1 24	0- 1	2DF	12. 8	Real of	Jowe to	2						
uppedv.	021-	72 " 15 -11	6 L .	96 D.	de	-01/74	e lu	1.00	objected	4=00	is conte	2204				
- 4 - 1/	18	and when	.J. 164			-	-									

Roost Tree # 368

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

....



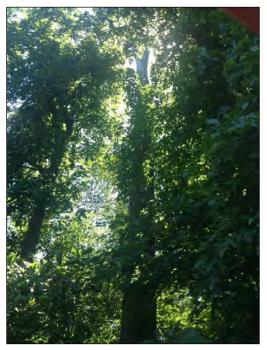
### APPENDIX E

**Roost Tree Photographs** 

412- Republic Wind Project Bat Survey, Seneca and Sandusky Counties, Ohio, July 2015



RT 140



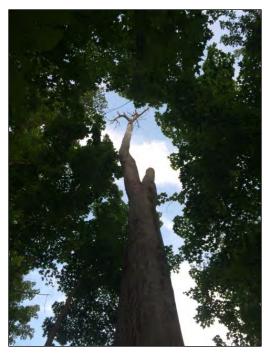
RT 314



RT 368



RT 369



RT 370



RT 371



RT 372



RT 373



RT 395



RT 396



RT 983



RT 984



RT 985



RT 986



RT 987



RT 988



# Summer 2016 Bat Survey for the Proposed Republic Wind Project, Seneca and Sandusky Counties, Ohio

USFWS #16-037

Completed by:

Theresa Wetzel, Christopher McNees, and Chris Leftwich

1 November 2016

COPPERHEAD ENVIRONMENTAL CONSULTING, INC. P.O. BOX 73 III 1641 RICHMOND RD. IIIPAINT LICK, KENTUCKY, 40461 (859) 925-9012 OFFICE (859) 925-9816 FAX mwgumbert@copperheadconsulting.com

www.copperheadconsulting.com

Business Confidential - Not for Public Disclosure

## TABLE OF CONTENTS

PROJECT BACKGROUND	1
METHODOLOGY	1
Level of Effort/Site Selection	1
Mist-Net Surveys	
White-Nose Syndrome Protocol	
RESULTS AND DISCUSSION	
Mist-Net Survey	4
CONCLUSIONS	
LITERATURE CITED	
LITERATURE CITED	0

## LIST OF FIGURES

Figure 1. Proposed Republic Wind Project overview with bat assessment area and mist-net
sites, Seneca and Sandusky Counties, Ohio, 2016

## LIST OF TABLES

Table 1.	Mist-net site locations, Republic Wind Project, Ohio, 2016	.4
Table 2.	Total bat captures by species, age, sex, and reproductive status, Republic Wind Projec	t,
Ohio, 20	16	.4

### **APPENDICES**

Appendix A: Mist-Net Data Sheets Appendix B: Mist-Net Site Photographs Appendix C: Bat Capture Photographs

## PROJECT BACKGROUND

In 2015, Copperhead Environmental Consulting, Inc. (Copperhead) completed a bat mist-net and telemetry survey for the Republic Wind Project (Project) in Seneca and Sandusky counties, Ohio. Since completion of the 2015 survey, the Project boundary changed to include an additional area (~7,882 acres) along the northern and western edges of the original Project. Therefore, Copperhead completed a mist-net survey of the expansion area, referred to as the 2016 assessment area (Figure 1). The goals of this survey were to document bat species diversity and abundance within the assessment area, and inform understanding of roosting habitat, foraging range, and spatial distribution of federally listed Indiana bats (*Myotis sodalis*) and northern long-eared bats (*Myotis septentrionalis*), and state listed Rafinesque's big-eared bats (*Corynorhinus rafinesquii*) and eastern small-footed bats (*Myotis leibeii*), if captured.

### METHODOLOGY

### Level of Effort/Site Selection

Mist-net surveys were implemented in accordance with guidelines outlined in the 2016 *Range-wide Indiana Bat Summer Survey Guidelines* (USFWS 2016), 2009 *Ohio Department of Natural Resources On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio* (ODNR 2009), and the most recent *Ohio Division of Wildlife Guidance for Bat Permitted Biologist* (ODNR-DOW 2015). A study plan was submitted to the USFWS and the ODNR on 6 July 2016 and concurrence was received on 6 July (USFWS) and 17 July (ODNR).

The level of effort outlined in the study plan was based on the estimated amount of forested habitat within the 2016 assessment area (~540 acres) resulting in 5 mist-net sites surveyed from 19 July through 22 July 2016.

Locations of mist-net sites were chosen based on the best available habitat present within parcels where landowner access was granted, and deemed most likely to yield Indiana and northern long-eared bat captures.

### Mist-Net Surveys

Mist-nets were set-up to maximize coverage of flight paths used by bats along suitable travel corridors, foraging areas, or drinking areas. Placement of mist-nets was based on the extent of canopy cover, presence of an open flyway, and forest conditions near the site. Actual location and orientation of each net was determined in the field by permitted biologists and mapped with ArcGIS (v. 10.3.1 ESRI, Redlands, CA).

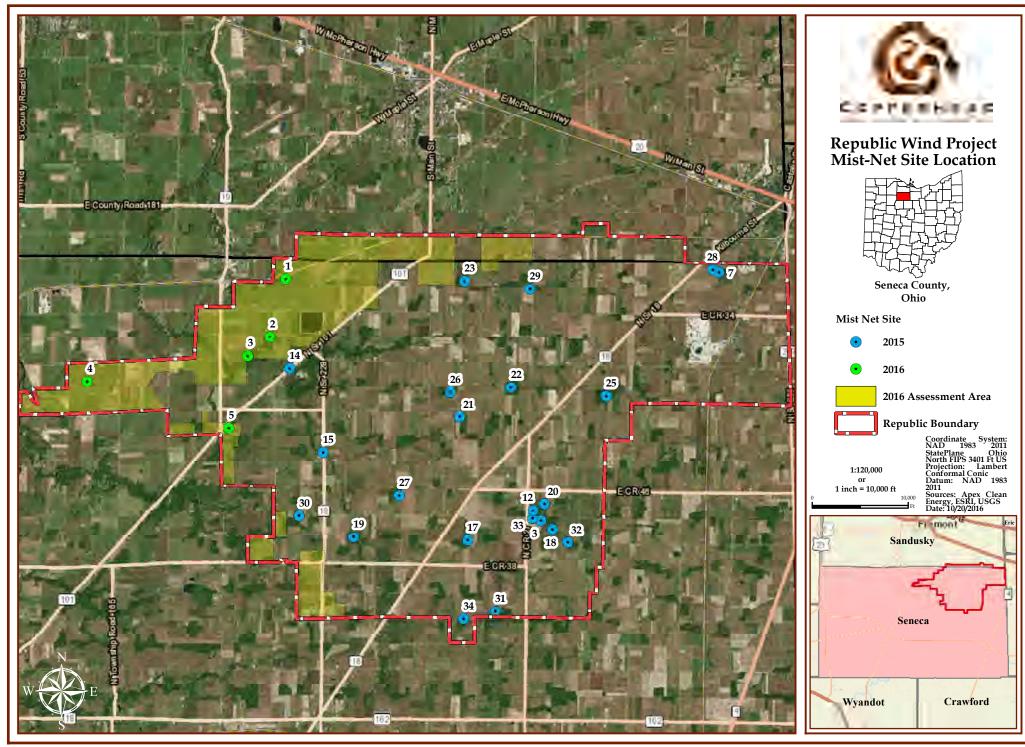


Figure 1. Proposed Republic Wind Project overview with bat assessment area and mist-net sites, Seneca and Sandusky Counties, Ohio, 2016.

#### COPPERHEAD ENVIRONMENTAL CONSULTING

Nine net nights of effort were completed at each site over two non-consecutive nights, with at least one mist-net set being a high net (three mist-nets stacked to create one set that was ~7.5 m tall) each night. Low visibility, high-quality, nylon nets, 4 to 12 meters in length (depending upon the width of the corridor) were used for each net set. Nets were deployed at sunset each night, left open for at least five hours, and checked every 10 minutes.

Disturbance near the nets was kept to a minimum. Weather data, including temperature, wind speed, and cloud cover, were recorded for each site on an hourly basis to ensure compliance with the mist-netting guidelines (e.g., temperature during survey >  $50^{\circ}$ F).

Bats were live-caught in mist-nets and released unharmed near the point of capture. For each individual captured, the following biological and morphometric data were recorded: species, sex, age class, reproductive condition, mass, and forearm length. In addition, the height and the specific net set of capture were recorded for each bat. Processing of bats was completed within 30 minutes from the time the bat was removed from the net.

### Radio-Telemetry & Emergence Counts

If captured, Indiana, northern long-eared, Rafinesque's big-eared, and eastern smallfooted bats were to be radio-tagged in order to locate day roosts, conduct emergence counts, and to estimate foraging range. Radio-telemetry and emergence counts were not conducted because no target species were captured during this survey.

### White-Nose Syndrome Protocol

In an effort to minimize the transmission of White-Nose Syndrome (WNS) between captured bats, all netting and field activities followed the "*National White-Nose Syndrome Decontamination Protocol - Version 04.12.2016*", established by USFWS. All netting equipment was sanitized in > 55°C (>131°F) water for 20 minutes prior to arrival and after each survey night. Individual bats were kept in unused paper bags while awaiting processing. Disposable latex gloves were worn over sanitized handling gloves and changed following the handling of each bat. All non-disposable equipment, e.g., PESOLA® scales, rulers, calipers, etc., coming into contact with bats were sanitized immediately with isopropyl alcohol disinfecting wipes following the handling of each bat. Bats were evaluated for potential WNS infection through wing scoring following Reichard and Kunz (2009).

## **RESULTS AND DISCUSSION**

### Mist-Net Survey

Mist-net surveys were conducted at five sites from 19 – 22 July 2016 (Table 1, Figure 1). A total of 78 bats of three species were captured over 45 net nights. No Indiana or northern long-eared bats were captured (Table 2). Big brown bats (*Eptesicus fuscus*) comprised 85 percent of total captures (n=66), and eastern red bats (*Lasiurus borealis*) comprised 13 percent of total captures (n=10). Completed bat capture data sheets are provided in Appendix A, photographs of mist-net sites are provided in Appendix B, and representative photographs of each bat species captured are provided in Appendix C.

Weather conditions during the surveys were within the parameters outlined in the USFWS survey guidance, including no rain or heavy winds and temperatures above  $10^{\circ}$ C ( $50^{\circ}$ F) during the entire five-hour survey period. No deviations from the survey methodology occurred during the course of the field survey. Captured bats were examined for any sign of WNS by using the Reichard Wing-Damage Index (WDI). No major traumas (i.e., WDI > 1) were observed on captured bats.

		, 1	} , ,	
Site No.	Latitude	Longitude	Site Location	
1	41.25035	-83.02975	trail through woodlot and ephemeral wetland	
2	41.23370	-83.03558	wood lot and stream of 180	
3	41.22830	-83.04389	large riparian forest along beaver creek	
4	41.22067	-83.10469	wood lot off TR0164	
5	41.20766	-83.05096	wide corridors leading to ag fields	

Table 1. Mist-net site locations, Republic Wind Project, Ohio, 2016.

Table 2. Total bat captures by species, age, sex, and reproductive status, Republic Wind Project, Ohio, 2016.

	Adult N	Male		Adu	lt Fem	ale	Juver	ile		
Species	NR*	S	Р	L	PL	NR	Female	Male	Escaped	Total
Eptesicus fuscus	5	11	0	2	13	0	12	21	2	66
Lasiurus borealis	1	4	0	0	2	1	1	1	0	10
Lasiurus cinereus	0	0	0	0	1	0	0	0	1	2

\* NR=non-reproductive, S=scrotal, P=pregnant, L=lactating, PL=post-lactating

### CONCLUSIONS

No federally or state listed species were captured during this survey. The lack of Indiana and northern long-eared bat captures suggests that these species are not using this portion of the project area during the summer maternity season, or the species are present in such low densities that current survey techniques failed to detect them.

### LITERATURE CITED

- Ohio Division of Natural Resources (ODNR). 2009. On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio: An Addendum to the Ohio Department of Natural Resource's Voluntary Cooperative Agreement.
- Ohio Division of Natural Resources Division of Wildlife (ODNR-DOW). 2015. Ohio Division of Wildlife and USFWS (OH Field Office) Guidance for Bat Permitted Biologist.
- Reichard, J. D. and T. H. Kunz. 2009. White-nose syndrome inflicts lasting injuries to the wings of little brown myotis (*Myotis lucifugus*). Acta Chiropterologica, 11(2) 457-464.
- United States Fish and Wildlife Service (USFWS). 2016. Range-wide Indiana Bat Summer Survey Guidelines.



# APPENDIX A

**Mist-Net Data Sheets** 

513- Republic Wind Project Bat Survey, Seneca and Sandusky Counties, Ohio, July 2016

-		tra:/ 1 neca A: Dy E_ 4/.	1				-						Freq.	ArAsl	more	GA	PPER	EDNAVITIN
#	Time	Species	Age	Sex	Repr.	(g)	FA (mm)	10.00	Height (m)	WDI	G/H/B/T	Band# Type		Moon Phase	e %	FU4	W	Vax / War
1	2215	EPFU	H	m		140	44	A	7	O-P			-			Rise		Set
2		EPFU	17	m	NR	17.0	44	A	7	0	1		-	Sun		del'	7	200
	0021	EPFU	T	m	NR	16.75	45	A	1.5	Ð	ļ			Moon		220	3	080
4			1	1	*									0				
5	1				+		1	1						Time	Temp (F)	Sky	Wind	No. Bats
6			0		1						1			Time	remp (r)	JKy	Willia	INO. Data
7			1	2										2100	77	unic	1	-
8					. · · · ·	1.1		1		1.0				2200	73	nik	0	1
9			1	1				1.000						2302	71	= nK	0	i
10														0000	70	unk	0	1
11														0100	70	nu	0	0
12	· · · · · · · · · · · · · · · · · · ·													0200	70	nu	0	0
13			0		0									H. Contraction		- 1		
14			- 1		1										-			
15	1				1		1											
16											1000					Sky Code		
17														0	Clear			
18			3											1	Few Cloue	ds		
19														2	Partly Clo	udy		
20										-				3	Cloudy or	overcast		
21								1						4	Fog or sm	oke		
22														5	Drizzle or	light rain		
23			1											6	Heavy rai	n - thunder	storm	
24													11	1				
25										1					Beau	afort Wind	Scale	
26			1	*					1					0	Calm: <1	mph		
27	1													1	Light air:	1-3 mph		
28		7												2	Light bree	ze: 4-6 mpl	h	
29			0						1.2	1				3	Gentle bre	eze: 7-10 n	nph	
30	1.00							S				1.		4	Moderate	breeze: 11-	16 mph	

Site N	lo. Site	1	Project	t No./N	Jame								Date	7-22-16			-	
Site L	ocation_	<u> </u>				_			_								0	
Coun	ty	И: N/E		State_	_		Time Up	2100	7 Tin	ne Dowi	1 0200			1125 124				14
Lat/L	on ; UTN	1: N/E			_W/N_				Zone		Datum_		Observe	IS E. Sr	nith			
			_										A.	Ashmore	B.Lo	ue	BONMINIAL	COMPOLIT
#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.	Moon Phas				Vax / Wa
1	22:40	E. fuscus	3	M	N	14	45	E	.5	0			-			Rise		Set
2	13:40	E. Fuscus	Ą		N	18	46	A	1	Ō	1			Sun			7	20:5
3	0050	E, Puscus	Å	M	N	17	48	A	6	0	1.		T.	Moon		22:		09/1
4	00:50	E. Fuscus	5	M	N	14		A	1	X	-			Intern	-	FL.	10	0 44
5	0200	E. Fuscus	A	M	5	17	46	A	4.5	X	-				1 1	1.1.1	1	
6				1			19	a	1.5	0		1		Time	Temp (F)	Sky	Wind	No. Ba
7	1		[		1					-			-	2100	81	0	1	-
8					1	-	1				-	-	-	2200	84	0	1	0
9	(		11.11		-		-	-		1				2300		0	1	4
10							-				10	-		0000	81	0	1	1
11	1									-				0100	80	- 2	20	Z
12				1		-	-		-		· · · · · · · · ·		-	0200	78	- (	2	4
13	P. P							-	-					0000	10	_	6	1
14				-									1		-	1000 mg	-	
15	1					-		-		-			1					
16											-					Sky Code		
17				-		-				-	1			0	Clear	oky coue	-	
18	1		-		1	-			-			0	-	1	Few Cloud	le.		
19	1		1		-	-								2				
20				47	Y			-		-				3	Partly Cloudy or	-	_	
21				1	1		-		-				-	4			-	_
22			-	-	g - and	-			-				-	5	Fog or smo Drizzle or			
23				-		-		-						6	-			
24			-		-			-		-			-		Heavy rair	- thunde	r storm	-
25				1		-		-					1	-	Boau	fort Wind	- Casla	
26	i	-		-	-	-								0	- C.C.V.S.		Jocale	
27			-							-					Calm: <1 n			
28	-			-	-					-			-	1	Light air: 1		1	
29				-						-	-	Y			Light breez			
30	-			1000						-		-		3	Gentle bree		A	
	stic Sur	ey: Unit type			Unit #_		Date	-	Ctart Li			Chan time -		4	Moderate l	preeze: 11	-16 mph	-
icou	Surv	cy. Onit type			ont #_				Start tim			Stop time_		Dlagas D.				
							Date		Start tim			Stop time_		Please Re			101/1	
	nerproof						Date Coordin		Start tim	ie		Stop time_		P.O. Box 2 (859) 925-		JCK, KY	, 40461.	

.

	4N_ 33. 029	Project No	Zone	<u> </u>	Observers	C.Lof	hoigh	, A.	Ash	ret	
Datum: NAD83 County Server	State	OH Qua	Fren	ont East	-	6.	4.35	<i>,</i>			
Site Diagram:	NT		ht Lengt	J-	1	-		nant Veg	etation	N. T.	-
	2.54	Net (m)		Dates		rchars	2	4. 4.			
efford		A 7.5		20;	2. C. un			5. F.			_
drywein		B 5.2		26:	3. A. ru	srum		6. 0	polisi	try.	
		C 5.2	-	201	1						
I B		D 5.0		20:	Tables			Set by H		E	
1		E 5.9	7	26.	Habitat	A	B	C	D	E	F
1 ud Tas	and 1	<u> </u>	-		River Stream		-			1	
forsted 80	VAL			-	Pond					-	
600	the	Site Photo	graphs /		Corridor				F	Y	-
C		Camera:	cl		Cave			10	~	~	1
		Photo Log	N		Mine	1.00					1
Contra (			11		Forest	~					
- // - >			1		Gap	~			-	17 it it	
( D)					Other		125.055	1			
diana Bat Habitat Characteriation (Cha	my		1.1.1.1.				X			1	
<u>Roost habitat</u> : 1. Poor: No or few snag 2. Moderate: Snags with sloughing bar	gs >= 5" DBH with rk or other roost fea	sloughing battering batter	rk or othe 5-15 inch	r usable roost fo DBH within 10	eatures (cracks, 00 feet of forest	ted areas.	etc)				_
<ul> <li><u>Roost habitat</u>: 1. Poor: No or few snag</li> <li>2. Moderate: Snags with sloughing bar</li> <li>3. Optimal: Snags with sloughing bark</li> </ul>	gs >= 5" DBH with rk or other roost fea s or other roost feat	sloughing ba atures presen ures present	urk or othe 5-15 inch >15 inch D	r usable roost fo DBH within 10	eatures (cracks, 00 feet of forest	ted areas.	etc)				
<ul> <li><u>Roost habitat</u>: 1. Poor: No or few snag</li> <li>2. Moderate: Snags with sloughing bar</li> <li>3. Optimal: Snags with sloughing bark</li> <li><u>Water Resources</u>: 1. Poor: bat drinking</li> </ul>	gs >= 5" DBH with rk or other roost feat or other roost feat ng resources not pro	sloughing b tures presen ures present esent at the s	urk or othe 5-15 inch >15 inch E te.	er usable roost fo DBH within 10 DBH within 1000	eatures (cracks, 00 feet of forest ) feet of foreste	ted areas. d areas.		Itaneous	v. No co	rridore	
<ul> <li><u>Roost habitat</u>: 1. Poor: No or few snag</li> <li>2. Moderate: Snags with sloughing bar</li> <li>3. Optimal: Snags with sloughing bark</li> </ul>	gs >= 5" DBH with rk or other roost feat or other roost feat ng resources not pro- t streams or pondee	sloughing b atures presen ures present esent at the s d areas prese	urk or othe 5-15 inch >15 inch E te.	er usable roost fo DBH within 10 DBH within 1000	eatures (cracks, 00 feet of forest ) feet of foreste	ted areas. d areas.		Iltaneousl	y. No co	orridors,	
<ul> <li><u>Roost habitat</u>: 1. Poor: No or few snag</li> <li>2. Moderate: Snags with sloughing bark</li> <li>3. Optimal: Snags with sloughing bark</li> <li><u>Water Resources</u>: 1. Poor: bat drinkin</li> <li>2. Moderate: Ephemeral or intermittent</li> <li>openings or canopy gaps allow bats eas</li> <li>3. Optimal: Streams or ponds (includin available.</li> </ul>	gs >= 5" DBH with rk or other roost feat or other roost feat ng resources not pro- t streams or ponder sy access to the reso ng road ruts) preser	sloughing ba attures present ures present esent at the s d areas prese purce. nt that appea	rrk or othe 5-15 inch >15 inch E te. nt but too to offer d	er usable roost fe DBH within 10 DBH within 1000 cluttered to allo rinking resourc	eatures (cracks, 00 feet of forest ) feet of foreste ow many bats to e throughout th	ted areas. d areas. o drink eas ne majority	sily or simu 7 of the sun				are
<ul> <li><u>Roost habitat</u>: 1. Poor: No or few snag</li> <li><u>Moderate</u>: Snags with sloughing bark</li> <li><u>Water Resources</u>: 1. Poor: bat drinkin</li> <li><u>Moderate</u>: Ephemeral or intermittent</li> <li>openings or canopy gaps allow bats eas</li> <li><u>Optimal</u>: Streams or ponds (includin available.</li> <li><u>Forest Structure</u>: (if hardwoods are ab</li> </ul>	gs >= 5" DBH with rk or other roost feat or other roost feat ng resources not pro- t streams or ponder sy access to the reso ng road ruts) preser osent or nearly abse	sloughing ba attures present ures present esent at the s d areas prese ource. at that appea ont or if stand	ark or othe 5-15 inch >15 inch E te. nt but too to offer d is monoc	er usable roost fe DBH within 10 DBH within 1000 cluttered to allo rinking resource alture, area auto	eatures (cracks, 00 feet of forest ) feet of forester ow many bats to e throughout the pomatically qual	ted areas. d areas. o drink eas ne majority ifies as a 1:	sily or simu 7 of the sun 1 poor).				are
<ul> <li><u>Roost habitat</u>: 1. Poor: No or few snag</li> <li><u>Moderate</u>: Snags with sloughing bark</li> <li><u>Water Resources</u>: 1. Poor: bat drinkin</li> <li><u>Moderate</u>: Ephemeral or intermittent</li> <li>openings or canopy gaps allow bats eas</li> <li><u>Optimal</u>: Streams or ponds (includin available,</li> <li><u>Forest Structure</u>: (if hardwoods are ab</li> <li><u>Poor</u>: Habitat even aged and young.</li> </ul>	gs >= 5" DBH with rk or other roost feat or other roost feat ng resources not pro- t streams or ponder sy access to the reso ng road ruts) preser osent or nearly abse Trees smaller than	sloughing ba atures present ures present esent at the s d areas prese ource. In that appea ont or if stand of inch DBH	rk or othe 5-15 inch >15 inch E te. nt but too to offer d is monoce Underste	er usable roost fe DBH within 10 DBH within 1000 cluttered to allo rinking resource alture, area auto ory growth clutt	eatures (cracks, 00 feet of forest ) feet of forester ow many bats to e throughout the omatically qual- tered and restri	ted areas. d areas. o drink eas ne majority ifies as a 1: cts flying/	sily or simu 7 of the sun poor). foraging	nmer. Fly	ways to	resources	
<ul> <li><u>Roost habitat</u>: 1. Poor: No or few snag</li> <li><u>Moderate</u>: Snags with sloughing bark</li> <li><u>Soptimal</u>: Snags with sloughing bark</li> <li><u>Water Resources</u>: 1. Poor: bat drinking</li> <li><u>Moderate</u>: Ephemeral or intermittent</li> <li>openings or canopy gaps allow bats east</li> <li><u>Soptimal</u>: Streams or ponds (includin available.</li> <li><u>Forest Structure</u>: (if hardwoods are ab</li> <li><u>Poor</u>: Habitat even aged and young.</li> <li><u>Moderate</u>: some diversity in age of the structure in the structure is the structure in the structure in the structure is the structure in the structure in the structure is the structure in the structure in the structure is the structure in the structure in the structure is the structure is the structure in the structure is the structure in the structure is the structure in the structure in the structure is the structure in the structure in the structure is the structure in the structure in the structure is the structure in the structure in the structure is the structure in the structure in the structure is the structure in the structure in the structure is the structure in the structure in the structure is the structure in the structure in the structure is the structure in the structure in the structure is the structure in the structure in the structure is the structure in the structure intermine in the structure intermine intermin</li></ul>	gs >= 5" DBH with rk or other roost feat or other roost feat ng resources not pro- t streams or ponder sy access to the reso ng road ruts) preser osent or nearly abse Trees smaller than	sloughing ba atures present ures present esent at the s d areas prese ource. In that appea ont or if stand of inch DBH	rk or othe 5-15 inch >15 inch E te. nt but too to offer d is monoce Underste	er usable roost fe DBH within 10 DBH within 1000 cluttered to allo rinking resource alture, area auto ory growth clutt	eatures (cracks, 00 feet of forest ) feet of forester ow many bats to e throughout the omatically qual- tered and restri	ted areas. d areas. o drink eas ne majority ifies as a 1: cts flying/	sily or simu 7 of the sun poor). foraging	nmer. Fly	ways to	resources	
<ul> <li><u>Roost habitat</u>: 1. Poor: No or few snag</li> <li><u>Moderate</u>: Snags with sloughing bar</li> <li><u>3</u>. Optimal: Snags with sloughing bark</li> <li><u>Water Resources</u>: 1. Poor: bat drinking</li> <li><u>2</u>. Moderate: Ephemeral or intermittent</li> <li>openings or canopy gaps allow bats east</li> <li><u>3</u>. Optimal: Streams or ponds (includin available.</li> <li><u>Forest Structure</u>: (if hardwoods are ab</li> <li><u>1</u>. Poor: Habitat even aged and young.</li> <li><u>2</u>. Moderate: some diversity in age of the may be present but rare.</li> </ul>	gs >= 5" DBH with tk or other roost feat a or other roost feat a g resources not pro- t streams or ponder sy access to the reso ag road ruts) preser osent or nearly abse Trees smaller than rees in the stand. T	sloughing ba atures present ures present esent at the s d areas prese ource. In that appea ont or if stand of inch DBH Grees 5 to 15 i	rk or othe 5-15 inch >15 inch E te. nt but too to offer d is monoce Underste nches pres	er usable roost fe DBH within 10 DBH within 1000 cluttered to allo rinking resource alture, area auto bry growth clutt ent. Understor	eatures (cracks, 00 feet of foreste ) feet of foreste ow many bats to e throughout th omatically qual- tered and restri y clutter domir	ted areas. d areas. o drink eas ne majority ifies as a 1: cts flying/ nant but no	sily or simu 7 of the sun poor). foraging ot ubiquitor	nmer. Fly 15. Trees	ways to greater t	resources han 15″ D	вн
<ul> <li><u>Roost habitat</u>: 1. Poor: No or few snag</li> <li><u>Moderate</u>: Snags with sloughing bark</li> <li><u>Water Resources</u>: 1. Poor: bat drinkin</li> <li><u>Moderate</u>: Ephemeral or intermittent</li> <li>openings or canopy gaps allow bats eas</li> <li><u>Optimal</u>: Streams or ponds (includin available.</li> <li><u>Forest Structure</u>: (if hardwoods are ab</li> <li><u>Poor</u>: Habitat even aged and young.</li> <li><u>Moderate</u>: some diversity in age of the may be present but rare.</li> <li><u>Optimal</u>: Mature forest. Diverse age</li> </ul>	gs >= 5" DBH with ik or other roost feat or other roost feat ing resources not pro- t streams or ponder sy access to the reso ing road ruts) preser osent or nearly abse Trees smaller than rees in the stand. T	sloughing ba atures present ures present esent at the s d areas prese ource. In that appea ant or if stand of inch DBH Grees 5 to 15 i esent. Trees	rk or othe 5-15 inch 1 >15 inch 1 te. nt but too to offer d is monoce Understanches pres > 15 inch 1	er usable roost fe DBH within 10 DBH within 1000 cluttered to allo rinking resource alture, area auto ory growth clutt ent. Understor DBH frequent. V	eatures (cracks, 00 feet of forest ) feet of forester ow many bats to e throughout the omatically qual- tered and restri y clutter domin Varying tree he	ted areas. d areas. o drink eas ne majority ifies as a 1: cts flying/ iant but no ight and tr	sily or simu 7 of the sun poor). foraging ot ubiquitou eefalls allo	nmer. Fly 15. Trees w for freq	ways to greater ti juent sma	resources han 15″ D	вн
<ul> <li><u>Roost habitat</u>: 1. Poor: No or few snag</li> <li><u>Moderate</u>: Snags with sloughing bark</li> <li><u>Water Resources</u>: 1. Poor: bat drinking</li> <li><u>Moderate</u>: Ephemeral or intermittent</li> <li>openings or canopy gaps allow bats east</li> <li><u>Optimal</u>: Streams or ponds (includin available.</li> <li><u>Forest Structure</u>: (if hardwoods are ab</li> <li><u>Poor</u>: Habitat even aged and young.</li> <li><u>Moderate</u>: some diversity in age of the may be present but rare.</li> <li><u>Optimal</u>: Mature forest. Diverse age</li> <li><u>gaps that facilitate bat foraging</u>.</li> <li><u>Land Cover</u>: 1. Poor: Square kilometer</li> </ul>	gs >= 5" DBH with ik or other roost feat a or other roost feat ag resources not pro- t streams or ponder sy access to the reso ag road ruts) preser psent or nearly abse Trees smaller than rees in the stand. T e classes of trees pre- tr surrounding site	sloughing ba atures present esent at the s d areas present ource. In that appeal ont or if stand of inch DBH Grees 5 to 15 i esent. Trees	ark or othe 5-15 inch 1 >15 inch 1 te. In but too to offer d is monoce Understanches pres > 15 inch 1 ly un-fore	er usable roost fe DBH within 10 DBH within 1000 cluttered to allo rinking resource alture, area auto ory growth clutt ent. Understor DBH frequent. V sted. Few matu	eatures (cracks, 00 feet of forest ) feet of forester ow many bats to e throughout the omatically qual- tered and restri y clutter domir Varying tree he re trees presen	ted areas. d areas. o drink eas ne majority ifies as a 1: cts flying/ iant but no ight and tr t not conne	sily or simu 7 of the sun poor). foraging ot ubiquitou eefalls allo ected to oth	nmer. Fly 15. Trees w for freq	ways to greater ti juent sma	resources han 15″ D	вн
<ul> <li><u>Roost habitat</u>: 1. Poor: No or few snag</li> <li><u>Moderate</u>: Snags with sloughing bark</li> <li><u>Water Resources</u>: 1. Poor: bat drinking</li> <li><u>Moderate</u>: Ephemeral or intermittent openings or canopy gaps allow bats east</li> <li><u>Optimal</u>: Streams or ponds (includin available.</li> <li><u>Forest Structure</u>: (if hardwoods are ab</li> <li><u>Poor</u>: Habitat even aged and young.</li> <li><u>Moderate</u>: some diversity in age of the may be present but rare.</li> <li><u>Optimal</u>: Mature forest. Diverse age</li> <li><u>gaps that facilitate bat foraging</u>.</li> <li><u>Land Cover</u>: 1. Poor: Square kilometer</li> <li><u>Marginal</u>: Trees present in the form</li> </ul>	gs >= 5" DBH with ik or other roost feat or other roost feat ing resources not pro- t streams or ponder sy access to the reso ing road ruts) preser psent or nearly abse Trees smaller than rees in the stand. T e classes of trees pre- er surrounding site of small woodlots	sloughing ba atures present ures present esent at the s d areas prese ource. In that appea out or if stand 5 inch DBH Trees 5 to 15 i esent. Trees predominant and wooded	ark or othe 5-15 inch >15 inch E te. In but too to offer d is monocc Understanches pres > 15 inch I ly un-fore fence row	er usable roost fe DBH within 10 DBH within 1000 cluttered to allo rinking resource alture, area auto ory growth clutt ent. Understor DBH frequent. V sted. Few matu s. Little connec	eatures (cracks, 00 feet of forest ) feet of forester ow many bats to e throughout the product and restri y clutter domir Varying tree he re trees presen tion to adjacent	ted areas. d areas. o drink eas ne majority ifies as a 1: cts flying/ iant but no ight and tr ight and tr t not conne t forested a	sily or simu 7 of the sun poor). foraging of ubiquitor eefalls allo ected to oth preas.	nmer. Fly 15. Trees w for freq ner areas c	rways to greater t juent sm of trees.	resources han 15″ D	вн
<ul> <li><u>Roost habitat</u>: 1. Poor: No or few snag</li> <li><u>Moderate</u>: Snags with sloughing bark</li> <li><u>Water Resources</u>: 1. Poor: bat drinking</li> <li><u>Moderate</u>: Ephemeral or intermittent</li> <li><u>openings</u> or canopy gaps allow bats ease</li> <li><u>Optimal</u>: Streams or ponds (includin available.</li> <li><u>Forest Structure</u>: (if hardwoods are ab</li> <li><u>Poor</u>: Habitat even aged and young.</li> <li><u>Moderate</u>: some diversity in age of the may be present but rare.</li> <li><u>Optimal</u>: Mature forest. Diverse age</li> <li><u>gaps that facilitate bat foraging</u>.</li> <li><u>Land Cover</u>: 1. Poor: Square kilometer</li> </ul>	gs >= 5" DBH with ik or other roost feat or other roost feat ing resources not pro- t streams or ponder sy access to the reso ing road ruts) preser psent or nearly abse Trees smaller than rees in the stand. T e classes of trees pre- er surrounding site of small woodlots	sloughing ba atures present ures present esent at the s d areas prese ource. In that appea out or if stand 5 inch DBH Trees 5 to 15 i esent. Trees predominant and wooded	ark or othe 5-15 inch >15 inch E te. In but too to offer d is monocc Understanches pres > 15 inch I ly un-fore fence row	er usable roost fe DBH within 10 DBH within 1000 cluttered to allo rinking resource alture, area auto ory growth clutt ent. Understor DBH frequent. V sted. Few matu s. Little connec	eatures (cracks, 00 feet of forest ) feet of forester ow many bats to e throughout the product and restri y clutter domir Varying tree he re trees presen tion to adjacent	ted areas. d areas. o drink eas ne majority ifies as a 1: cts flying/ iant but no ight and tr ight and tr t not conne t forested a	sily or simu 7 of the sun poor). foraging of ubiquitor eefalls allo ected to oth preas.	nmer. Fly 15. Trees w for freq ner areas c	rways to greater t juent sm of trees.	resources han 15″ D	вн
<ul> <li><u>Roost habitat</u>: 1. Poor: No or few snag</li> <li><u>Moderate</u>: Snags with sloughing bark</li> <li><u>Water Resources</u>: 1. Poor: bat drinking</li> <li><u>Moderate</u>: Ephemeral or intermittent openings or canopy gaps allow bats east</li> <li><u>Optimal</u>: Streams or ponds (includin available.</li> <li><u>Forest Structure</u>: (if hardwoods are ab</li> <li><u>Poor</u>: Habitat even aged and young.</li> <li><u>Moderate</u>: some diversity in age of the may be present but rare.</li> <li><u>Optimal</u>: Mature forest. Diverse age</li> <li><u>gaps that facilitate bat foraging</u>.</li> <li><u>Land Cover</u>: 1. Poor: Square kilometer</li> <li><u>Marginal</u>: Trees present in the form</li> </ul>	gs >= 5" DBH with rk or other roost feat or other roost feat ag resources not pro- t streams or pondec sy access to the reso ng road ruts) preser osent or nearly abse Trees smaller than rees in the stand. T e classes of trees pre- of small woodlots Wooded stands are of	sloughing ba atures present ures present esent at the s d areas prese ource. In that appea out or if stand 5 inch DBH Trees 5 to 15 i esent. Trees predominant and wooded	ark or othe 5-15 inch >15 inch E te. In but too to offer d is monocc Understanches pres > 15 inch I ly un-fore fence row	er usable roost fe DBH within 10 DBH within 1000 cluttered to allo rinking resource alture, area auto ory growth clutt ent. Understor DBH frequent. V sted. Few matu s. Little connec	eatures (cracks, 00 feet of forest ) feet of forester ow many bats to e throughout the product and restri y clutter domir Varying tree he re trees presen tion to adjacent	ted areas. d areas. o drink eas ne majority ifies as a 1: cts flying/ nant but no ight and tr t not conne t not conne t not conne	sily or simu 7 of the sun poor). foraging of ubiquitor eefalls allo ected to oth preas.	nmer. Fly 15. Trees w for freq ner areas c	rways to greater t juent sm of trees.	resources han 15″ D	вн
<ul> <li>2. Moderate: Snags with sloughing bark</li> <li>3. Optimal: Snags with sloughing bark</li> <li>Water Resources: 1. Poor: bat drinkin</li> <li>2. Moderate: Ephemeral or intermittent</li> <li>openings or canopy gaps allow bats eas</li> <li>3. Optimal: Streams or ponds (includin available.</li> <li>Forest Structure: (if hardwoods are ab</li> <li>1. Poor: Habitat even aged and young.</li> <li>2. Moderate: some diversity in age of the may be present but rare.</li> <li>3. Optimal: Mature forest. Diverse age gaps that facilitate bat foraging.</li> <li>Land Cover: 1. Poor: Square kilometer</li> <li>2. Marginal: Trees present in the form</li> <li>3. Optimal: Area is largely forested. W</li> </ul>	gs >= 5" DBH with rk or other roost feat or other roost feat ag resources not pro- t streams or pondec sy access to the reso ng road ruts) preser osent or nearly abse Trees smaller than rees in the stand. T e classes of trees pre- of small woodlots Wooded stands are of	sloughing ba atures present ures present esent at the s d areas prese ource. In that appea out or if stand 5 inch DBH Trees 5 to 15 i esent. Trees predominant and wooded	ark or othe 5-15 inch >15 inch E te. In but too to offer d is monocc Understanches pres > 15 inch I ly un-fore fence row	er usable roost fe DBH within 10 DBH within 1000 cluttered to allo rinking resource alture, area auto ory growth clutt ent. Understor DBH frequent. V sted. Few matu s. Little connec	eatures (cracks, 00 feet of foreste ) feet of foreste ow many bats to e throughout th omatically qual- tered and restri y clutter domir Varying tree he re trees presen tion to adjacent wooded stream	ted areas. d areas. o drink eas ne majority ifies as a 1: cts flying/ iant but no ight and tr t not conne t forested a n, fence row <b>n to:</b>	sily or simu 7 of the sum 5 poor). foraging ot ubiquitou eefalls allo ected to oth treas. w, or other	nmer. Fly 15. Trees w for freq ner areas c wooded c	rways to greater t juent sm of trees.	resources han 15″ D	вн

le Locali	2 ion	W000 L0	Project	CRAE	16 OFF 1	669		REPUB					1000	-20-16		-	Sheet	
ounty at/Lon ;	UTM	ед : N/E_4[.	2.337	State_(	OH _W/N_	- 83	Time Up • 03558	9:0	O Tin Zone	ne Dowr	Datum_	NA783	Observe	rs MTM,	MJG	- c .	PPEF	-
# Ti	ime	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.	Moon Phase	e /00 %		W	Vax / War
1 9:1	P	LABO	A	F	PL	11.5	42	P	4	0	-	١	-			Rise		Set
2 9:4		EPFU	A	F	PL	16	44	E	2	1	-	1	10-2-10	Sun		10:16	11. a. (11.11)	2100
3 9.4		EPFU	J	M	NR	14	42	E	5	0	~	+	-	Moon		09	24	0700
4 9 4		EPFU	A	M	5	16	46	E	5	0	1	3	-		1.1.1.1			18
5 94		EPFU.	A	M	5	16	41	D	55	0	-	ł	4	Time	Temp (F)	Sky	Wind	No. Bats
		EPFU	Ч	F	NR	16.5	43	A	1	0	1	-	-	Time	Temp (r)	Эку	wind	NO. Dats
		EPFU	A	F	PL	20	48	D	3	0	-	1	-	9:00	82°	0	0	5
8 /0,4	40	EPFU	Ъ	M	NR	14	45	D	7	0	1	-		10:00	75	D	0	3
9 11-1	05	EPFU	A	M	S	16.5	42	D	1	D	-	-		11:00	73	0	0	3
10 11:	15	EPPU	A	P	PL	18.5	45	E	5.5	0	-	-	-	12:00	72	0	0	2
11 11;	:00	EPFU	A	F	PL	20	49	B	6	0	_	1	/	1:00	72	0	0	-
12 //:		LACI	1.2			A 45		E	5.5		ESCAPE					-		-
13 12	:05	CABO	A	F	PL	12	43	P	0.5	0	~	+		1			T	1
14 12	:50	EPFU	A	m	S	17.5	48	D	7		-	-	Ţ		1.0.0			11
15		1.0			1000		( C.22)	1					1	0				2 C C C C C C C C C C C C C C C C C C C
16			1		[]						1.1.1.1			1.000		Sky Code	E.,	
17		5	1.00	1	·	II.	- ×		_					0	Clear			
18			1	1				-						1	Few Cloud	ls		
19			-				10000		1				t	2	Partly Clou	ıdy		
20	0.011			12.11	1	1.0			1 (Queen)	_	19.721			3	Cloudy or	overcast		
21				1-21		-6E-1		(						4	Fog or smo	oke		
22		1.12.21	1.00	0.750	1		1.2.2.2				1			5	Drizzle or	light rain	ALCOURT	
23			1	1.2.1					1		1			6	Heavy rair	- thunde	r storm	
24			1200		1		0	100	C		1	)		-		100		
25				4	-			1	1		8	1			Beau	fort Wind	d Scale	
26			11-41	10-0-01	(_=_=1		1-1							0	Calm: <1 n	nph		
27			in section	1.000			r 1		)		1		11	1	Light air: 1	-3 mph		
28			1	1.000							1		1	2	Light breez	ze: 4-6 mp	bh	
29					1.1									3	Gentle bre	eze: 7-10	mph	
				1				1000			0		2	4	Moderate	preeze: 11	-16 mph	-

٠

SCAPE

<u>,</u>

S	ite N	0. 2	ata Form W <sup>10</sup> D' LOT SECA I: N/E <u>4</u> ].	Project	No./N	lame	513	1 PI	EPUBL	ic.				Date	7-22-16			-	
S	ite L	ocation	1000 LOT	AND CR	RKK .	OFF 12	50	m. 11	0.0	/	-	1.50	7	1.	1 - 1 - 1	_		2	
T	at/L	on : UTN	• N/E 41	2337	State_	W/N	-83	D3556	0:0	Zone -	ne Dowr	Datum	NOOSA	Observe	Mont	156		6	
		,							-	Zone		Datum	141.900	Observe	IS MIN	MUG		PPE	RHEA
	#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.	Moon Phase	e %			Wax / Wa
	1	9:40	EPFU	A	F	PL	17.5	49	E	1	1	-	-	-			Rise		Set
	2	9:90	EPFU	A	M	5	16	45	E	2	0	1	-	-	Sun		61	7	10:55
	3	9:40	EPFU	A	M	5	15.5	45	P	4	0	1	)	-	Moon		22	40	0910
L	4	10:00	EPFy	J	F	NR	16	47	E	X	0	1	1	1					
		10:00	LABO	A	M	5	11	40	D	.5	D	-	1	-	Time	Temp (F)	Sky	Wind	No. Bat
L		10:50		J	M	NR	13.5		D	5	0	0.47	1	-	and the second second	2007 A. B.	Эку	wind	NO. Dat
L	7	12:20		5	M	NR	15	44	P	.5	0	1	1	1	9:00	88	0	0	3
KE	8		EPFU	5	M	NR	15	44	D	6	0	-	1	-	0.01	82	0	0	3
	9		EPFO	J	F		14	45	D	1	0		+	$\sim$	11.00	82	0	0	0
	10	1150	LADD	7	2	NR	10	40	D	6	0	$\sim$	-		12:00	81	0	0	Z
_	11		a second and the second of	-	120	1			1200		1			· · · · · · · · ·	1:00	79	Þ	D	E
	12	( )		1	1.0		1		-		1	B. 1993		· · · · · ·	2:00	78	0	ø	Ø
	13	1			· · · · · · · ·	K				(;					· · · · · ·	122201		1.1.1.1.1.1	6
	14	12-1-21		1		_	-		_	11				1	0				1
	15	1000		-	1	·	1000	1			1.00			1					
_	16	1.		-	1				1.000			7				-	Sky Code		
	17	1		-	1				_	· · · · ·					0	Clear	_		
_	18	1		1		(									1	Few Cloud			
	19			-		-				-					2	Partly Clou			
	20	-		-	11	-	_		_			1			3	Cloudy or			
	21				100		-	· · · · ·	_	·	-			_	4	Fog or smo			
	22	1							-	1		1.000		-	5	Drizzle or			
	23			-					-		-				6	Heavy rair	n - thunde	er storm	
_	24		_		-	-		-				1			-	<b>n</b>	C	10.1	
	25 26			-	-	-	-	-	-				-			Calm: <1 n	fort Wind	a Scale	
÷	20	-	~ •	-	-	-		1	1000		-				0	Light air: 1			
÷	28				-			_	-			-				Light air: 1			_
H	29	-		-				1							3	Gentle bree			N
	30				-				_	-					4	Moderate h		1	
		ctic Curry	ey: Unit typ			Unit #_	_	Date		Start tin	20		Stop time		4	Moderate	breeze: 11	-16 mpn	
ſ	acou	suc Surv	ey. Onit typ	e		Unit #_		Date		Start tin			Stop time		Please Re	tores to		_	
								Date		Start tin			Stop time		P.O. Box 7		ick KV	40461	
		herproof						Coordin		Start un	1e		stop une	· · · · · · · · · · · · · · · · · · ·	(859) 925-		MCK, NI	, 10101.	

-7

Lat/Lo	Net Site Habitat Sheet         Site N           on ; UTM: N/E         41.2337         W/	N - 83.03558	oject No./N	Zone			Observers_	MTM	, MJG		Date_7	-1-	
Datun	n: NADES County SENECA	State_0#	Quad	and the second second									
Site D	liagram: 180	10		Length					Domin	nant Veg	etation		-
	180	N N	et (m)	(m)	Da	ates	1. MAPLE			4			
			4 6	6	7/20	7/22	2. Suchero			5			
			3 6	4	7/20	7/22	3. Contorn	(Ceok		_6			
			2 6	10	7/20	_			-				
	- HE XA	- A ))	7.8	9	7/20	7/12				Set by H		1.1	
	20-0		6	9	7/20	7/22		A	В	C	D	E	
		) coo I	3	1000			River		1.2	1 E 1	1		
		11 -	-	1.1.1	11		Stream			· · · · · ·	1	~	1
	1 1	ONETE		15-11			Pond		1	-	E		1
			te Photogr	raphs			Corridor	V	~	~			_
			amera:			_	Cave		1				-
	NETD GR		noto Log:_		_		Mine Forest	-		-		-	-
1	F			_			Gap		11.000		19.01	10.00 V	
-	/ · · · · · · · · · · · · · · · · · · ·	9				-	Other		1	-	( <u> </u>		-
~						-	Other	1.11	IT TO T	1.1			
		NETE	-				· · · · · · · · · · ·						-
3	<ol> <li>Moderate: Snags with sloughing barl</li> <li>Optimal: Snags with sloughing bark</li> <li><u>Water Resources</u>: 1. Poor: bat drinkin</li> <li>Moderate: Ephemeral or intermittent openings or canopy gaps allow bats eas</li> <li>Optimal: Streams or ponds (including available.</li> <li><u>Forest Structure</u>: (if hardwoods are abs</li> <li>Poor: Habitat even aged and young.</li> <li>Moderate: some diversity in age of tr may be present but rare.</li> <li>Optimal: Mature forest. Diverse age gaps that facilitate bat foraging.</li> </ol>	or other roost features g resources not presen streams or ponded ar- y access to the resource g road ruts) present th eent or nearly absent o Trees smaller than 5 in ees in the stand. Trees classes of trees presen	present >1 t at the site eas present e. at appear to r if stand is nch DBH. U s 5 to 15 inc t. Trees > 1	5 inch D but too o offer d monocu Understo ches pres 15 inch D	BH withi cluttered rinking re diture, are ory growt ent. Und DBH frequ	in 1000 fo to allow esource f ea autom th clutter lerstory o uent. Va	eet of foreste many bats t throughout t natically qual red and restri clutter domin arying tree he	d areas. o drink eas ne majority ifies as a 1 cts flying/ nant but no ight and to	y of the sur : poor). /foraging ot ubiquito reefalls allc	nmer. Fly us. Trees ow for free	vways to greater t quent sm	resources han 15″ E	DBH
7	Land Cover: 1. Poor: Square kilometer 2. Marginal: Trees present in the form	of small woodlots and	wooded fe	ence row	s. Little c	onnectio	on to adjacen	t forested a	areas.			_	
<u>z</u> 9	3. Optimal: Area is largely forested. W						Please retu	n to:				2	÷.,
9							Please return P.O. Box 73		KY 4046	1		හ	•

at/L	on ; UTN	7 10rge ripini 1000 1: (Ny E 1/2)	2830	,	W/N_	83.0	24389	)	Zone /		Datum	AD83		A. A.	shman	CO	PPEF	CHEA
#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.	Moon Phase	e %	100	v	Vax / Wa
1	2145	EPFU	A	F	PL.	18.75	46	E	2.5	0	-					Rise	×.	Set
2	2150	EPFU	A	m	NR	15.0	46	G	2.0	0	1			Sun		0616	2	210
3	1062	EPFU	A	m	NR	145	45	E	2.0	0			(	Moon		2125	Y	070
4	2215	EPFU	5	m	NR	14.95	45	E	3.5	0	-	-	-	1			-	
5	2215	EPFU	Z	F	NK	15.5	44	E	4.0	0				Time	Temp (F)	Sky	Wind	No. Bat
6		EPFU	E	SC.	APR	ED	-	E					-	Time	Temp (r)	SKy	wind	INO. Dat
7	2035		E	TCA	PEL	$\sim -$		Ø	6.0			-	-	2100	72	unk	0	-
8	2320		A	m	NR	11,75	44	E	0.5	0				2200	72	unic	0	60
9	2340	EPFU	A	F	L	20.0	48	D	7.5	0				2300	70	UNIL	1	5
10				1		1				1.20				0000	68	unil	/	2
11	-													8100	66	unic	1	0
12														0200	66	UNK	1	D
13	1										1	1	1	1			4	
14	1											C						
15		-	1	-	1						1							
16			1													Sky Code	1	
17		· ·		1									1.2.5	0	Clear			
18			1			1.			12.00				1.	1	Few Cloud	ls		
19	-		1											2	Partly Clo	udy		
20	1		1	-				-						3	Cloudy or			
21	1	-		-	-	1		-		1.00			1	4	Fog or smo			
22			1		-		1								Drizzle or			
23				-	1				1			1		6	Heavy rain		storm	
24	7			-	-	1	-							-				
25				-	-		-						1.	1	Beau	fort Wind	Scale	
26	1			-	-				1				2	0	Calm: <1 r	nph		
27					-						-		-	1	Light air: 1			
28					-			-	-				5	2	Light bree		h	-1
29	1		-		-		-	-							Gentle bre			
30			-		1.000										Moderate		-	1.00
Spectorea MY/	alis (LABC AU); Myot	viations: Coryno ); Lasiurus ciner tis grisescens (M ceius humeralis	reus (LAC YGR); My	CI); Lasi yotis leil	urus semi bii (MYLI	inolus (L ); Myoti	ASE); Lasi s lucifugus	onycteri (MYLL	is noctivag J); Myotis s	ans (LAN eptentrio	O); Myotis	austroripariu	15	Please Ret P.O. Box 7	urn to:			1

Site N	lo. 5:1	te 3	Projec	t No./N	Jame	513	/						Date	1-21-16			-	1.1
Loun				C1 1				-									0	
	on · LITA	A N/E		State_	TAT / NT		Time Up	2100	7 Tin	ne Dowi								
Lat/Lon; UTM: N/EW/N								Zone Datum						rs E. Smit		- C 0	PPER	RHEAL
	1		1	1	1	1	1	-	1	-			1	B. Low	e	ENVI	EUNMINIAL	CONSULTIN
#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.	Moon Phas	e 100 %		v	Vax / War
1		EPFU	JUV	M	N	12	43	E	3	0			-	0.2		Rise		Set
2	10:50	EPPU	A	M	5	10.5	44	A	2,5	0				Sun		06:15		200
3					<u>j</u>								1	Moon		2203		0804
4				1	1	S												
5										1000				Time	Temp (F)	Sky	TATION	N. D.
6	1.000		I LE II		1.1		1							Time	remp (r)	Эку	Wind	No. Bats
7	1.00			1 m	1				1	( <u></u> )				21200	78	0	1	-
8						.+						1	-	22:00	77	0	1	1
9			1.											23:06	75	0	2	1
10														0000	74	0	3	0
11	N											5	· · · · · · · · · · · · · · · · · · ·	Ul:co	74	T	2	0
12		-												02:00	74	3	3	0
13				1								1	1				1 I	
14			12.00						1		1	17		5	1.2 2 2 1			
15																		
16	1						1									Sky Code		
17											V	1		0	Clear			
18			1.000										1	1	Few Cloud	ls		
19									1					2	Partly Clos	udy		
20	11.0		12										1 7	3	Cloudy or			
21	0				10.00									4	Fog or smo			
22			17	1			1		1.5			1		5	Drizzle or			
23			1		12									6	Heavy rain			
24				1									1	-			1	
25			1	1000			F						1.1.1		Beau	fort Wind	Scale	
26	1					(	1	1						0	Calm: <1 r	nph		
27					1.000								1 20 1	1	Light air: 1			
28	1			1	1				S					2	Light brees		h	1
29									1					3	Gentle bre			
30				1720	た三日		1		1.000			100	1000	4	Moderate			
Acou	stic Surv	vey: Unit typ	e	<u></u>	Unit #		Date		Start tim	ie		Stop time_						
							Date		Start tim			Stop time		Please Re	turn to:	1.2		
							Date		Start tim			Stop time		P.O. Box 7		ick, KY	, 40461.	
Veat	herproo	fing					Coordin							(859) 925-				
	nents:																	p. 2

	n; UTM: N/E_41.22830	649N 83.04	389	Zone	/	Observers	Cile	Fruid	-	i.	9 564	
	PAD 83 County Sene	St St	ate OH Qu	ad Watso	n		A.A	shmo	1e			
ite D	agram:	1.00		ight Length	Joh		11-11		nant Veg	etation		
1	NIE	11	AV ( )	m) (m)	Dates	1. A. ruby	14		4. 3. 1			
V.	Coreld,	11	A 5.	26	19	2.A. 500	henn		5.	1000		
1-			B 5.	26	19	3. Carya	50.		6.			
L	to la		C 5.	2 12	19	· · ·		1	- 2 4 5	1.2		
	1 de la	00	D 7.	8 9	19			Net S	Set by Ha	abitat		
	(NEA	Cer 1	E 5	29	19	Habitat	A	В	C	D	E	I
k.	1 1.1.1	1 IPL	F	11111		River						
V	On louis	1 ester				Stream				X	X	
-	En las all it	Fals	City Di	and the second		Pond	12	1.2		1	1 mar 1	A
1-		1.	Camera	tographs		Corridor	X	X	X			
-		9				Cave	H					
1	11.	//	A Photo L	og:		Mine	-		-		_	
-	Int	Frail	0	E	-	Forest	1.000				10.00	
1	11 0	B				Gap Other						-
		9/	the second se			Outer						
1	11 /											
diar	a Bat Habitat Characterization	(Choose appropri	ate score for e	ach habitat (	characteristic							
diar 2	a Bat Habitat Characterization Roost habitat: 1. Poor: No or fe	ew snags >= 5" DBH	with sloughing	bark or other	usable roost fe	atures (cracks,	crevices, e ed areas.	tc)				
diar 2 7	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fo 2. Moderate: Snags with slough	ew snags >= 5" DBH ing bark or other roos	with sloughing at features prese	bark or other ent 5-15 inch D	usable roost fe BH within 100	atures (cracks, 00 feet of forest	ed areas.	tc)				
diar 2 3	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fo 2. Moderate: Snags with slough 3. Optimal: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat	ew snags >= 5" DBH ing bark or other roos ng bark or other roost drinking resources no	with sloughing st features prese features preser of present at the	bark or other ent 5-15 inch D nt >15 inch DB site.	usable roost fe DBH within 100 H within 1000	atures (cracks, 00 feet of forest feet of forestec	ed areas. 1 areas.				_	
diar 2 3	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fo 2. Moderate: Snags with slough 3. Optimal: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat 2. Moderate: Ephemeral or inter	ew snags >= 5" DBH ing bark or other roos ng bark or other roost drinking resources no mittent streams or po	with sloughing st features prese features preser of present at the onded areas pre	bark or other ent 5-15 inch D nt >15 inch DB site.	usable roost fe DBH within 100 H within 1000	atures (cracks, 00 feet of forest feet of forestec	ed areas. 1 areas.		lltaneousl	y. No cc	orridors,	
diar 2 3	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fo 2. Moderate: Snags with slough 3. Optimal: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat 2. Moderate: Ephemeral or inter openings or canopy gaps allow	ew snags >= 5" DBH ing bark or other roost ng bark or other roost drinking resources no mittent streams or po bats easy access to the	with sloughing of features preser features preser of present at the onded areas pre e resource.	bark or other ent 5-15 inch D nt >15 inch DB e site. esent but too cl	usable roost fe PBH within 100 H within 1000 uttered to allo	atures (cracks, 00 feet of forest feet of forestec w many bats to	ed areas. 1 areas. 9 drink eas	ily or simu				
adiar 2 3	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fo 2. Moderate: Snags with slough 3. Optimal: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat 2. Moderate: Ephemeral or inter	ew snags >= 5" DBH ing bark or other roost ng bark or other roost drinking resources no mittent streams or po bats easy access to the	with sloughing of features preser features preser of present at the onded areas pre e resource.	bark or other ent 5-15 inch D nt >15 inch DB e site. esent but too cl	usable roost fe PBH within 100 H within 1000 uttered to allo	atures (cracks, 00 feet of forest feet of forestec w many bats to	ed areas. 1 areas. 9 drink eas	ily or simu				s are
adiar 2 3	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fe 2. Moderate: Snags with slough 3. Optimal: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat 2. Moderate: Ephemeral or inter openings or canopy gaps allow 3. Optimal: Streams or ponds (in available.	ew snags >= 5" DBH of ing bark or other roost ng bark or other roost drinking resources no cmittent streams or po bats easy access to the ncluding road ruts) pr	with sloughing of features preser features preser of present at the onded areas pre e resource. resource.	bark or other ent 5-15 inch D nt >15 inch DB e site. esent but too cl ear to offer drin	usable roost fe PBH within 100 H within 1000 uttered to allo nking resource	atures (cracks, 00 feet of foreste feet of forestec w many bats to e throughout th	ed areas. 1 areas. 9 drink eas ne majority	ily or simu of the sun				s are
adiar 2 3 3	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fe 2. Moderate: Snags with slough 3. Optimal: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat 2. Moderate: Ephemeral or inter openings or canopy gaps allow 3. Optimal: Streams or ponds (in available. <u>Forest Structure</u> : (if hardwoods 1. Poor: Habitat even aged and	ew snags >= 5" DBH of ing bark or other roost of bark or other roost drinking resources no critent streams or po bats easy access to the ncluding road ruts) pu s are absent or nearly young. Trees smaller	with sloughing of features preser features preser of present at the onded areas pre e resource. resent that appe absent or if star than 5 inch DB	bark or other ent 5-15 inch D nt >15 inch DB e site. esent but too cl ear to offer drin nd is monocult H. Understory	usable roost fe 2BH within 100 H within 1000 uttered to allo nking resource ture, area autor y growth clutte	atures (cracks, 00 feet of foreste feet of forestec w many bats to throughout the matically qualitered and restrict	ed areas. 1 areas. 9 drink eas ne majority ifies as a 1: cts flying/1	ily or simu of the sun poor). foraging	nmer. Fly	ways to	resources	
Indian 2 3 3	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fe 2. Moderate: Snags with slough 3. Optimal: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat 2. Moderate: Ephemeral or inter openings or canopy gaps allow 3. Optimal: Streams or ponds (in available. <u>Forest Structure</u> : (if hardwoods 1. Poor: Habitat even aged and y 2. Moderate: some diversity in a	ew snags >= 5" DBH of ing bark or other roost of bark or other roost drinking resources no critent streams or po bats easy access to the ncluding road ruts) pu s are absent or nearly young. Trees smaller	with sloughing of features preser features preser of present at the onded areas pre e resource. resent that appe absent or if star than 5 inch DB	bark or other ent 5-15 inch D nt >15 inch DB e site. esent but too cl ear to offer drin nd is monocult H. Understory	usable roost fe 2BH within 100 H within 1000 uttered to allo nking resource ture, area autor y growth clutte	atures (cracks, 00 feet of foreste feet of forestec w many bats to throughout the matically qualitered and restrict	ed areas. 1 areas. 9 drink eas ne majority ifies as a 1: cts flying/1	ily or simu of the sun poor). foraging	nmer. Fly	ways to	resources	
Indian 2 3 3	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fo 2. Moderate: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat 2. Moderate: Ephemeral or inter openings or canopy gaps allow 3. Optimal: Streams or ponds (in available. <u>Forest Structure</u> : (if hardwoods 1. Poor: Habitat even aged and y 2. Moderate: some diversity in a may be present but rare.	ew snags >= 5" DBH ing bark or other roost drinking resources no crmittent streams or po bats easy access to the ncluding road ruts) pr s are absent or nearly young. Trees smaller age of trees in the stan	with sloughing of features preser features preser of present at the onded areas pre e resource. resent that appe absent or if star than 5 inch DB of. Trees 5 to 15	bark or other i ent 5-15 inch D nt >15 inch DB e site. esent but too cli ear to offer drin nd is monocult iH. Understory 5 inches preser	usable roost fe PBH within 100 H within 1000 uttered to allounking resource ture, area autory growth clutte at. Understory	atures (cracks, 00 feet of forest feet of forestec w many bats to e throughout the matically quali ered and restric y clutter domin	ed areas. 1 areas. 9 drink eas ne majority ifies as a 1: cts flying/1 ant but no	ily or simu of the sun poor). foraging t ubiquitor	nmer. Fly us. Trees	ways to greater t	resources han 15″ E	овн
Indian 2 3 3	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fo 2. Moderate: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat 2. Moderate: Ephemeral or inter openings or canopy gaps allow 3. Optimal: Streams or ponds (in available. <u>Forest Structure</u> : (if hardwoods 1. Poor: Habitat even aged and y 2. Moderate: some diversity in a may be present but rare. 3. Optimal: Mature forest. Dive	ew snags >= 5" DBH of ing bark or other roost drinking resources no crmittent streams or po- bats easy access to the including road ruts) pro- s are absent or nearly young. Trees smaller age of trees in the stan	with sloughing of features preser features preser of present at the onded areas pre e resource. resent that appe absent or if star than 5 inch DB of. Trees 5 to 15	bark or other i ent 5-15 inch D nt >15 inch DB e site. esent but too cli ear to offer drin nd is monocult iH. Understory 5 inches preser	usable roost fe PBH within 100 H within 1000 uttered to allounking resource ture, area autory growth clutte at. Understory	atures (cracks, 00 feet of forest feet of forestec w many bats to e throughout the matically quali ered and restric y clutter domin	ed areas. 1 areas. 9 drink eas ne majority ifies as a 1: cts flying/1 ant but no	ily or simu of the sun poor). foraging t ubiquitor	nmer. Fly us. Trees	ways to greater t	resources han 15″ E	овн
Indiar 2 3 3 3	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fo 2. Moderate: Snags with slough 3. Optimal: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat 2. Moderate: Ephemeral or inter openings or canopy gaps allow 3. Optimal: Streams or ponds (in available. <u>Forest Structure</u> : (if hardwoods 1. Poor: Habitat even aged and y 2. Moderate: some diversity in a may be present but rare. 3. Optimal: Mature forest. Dive gaps that facilitate bat foraging.	ew snags >= 5" DBH of ing bark or other roost drinking resources no rmittent streams or po- bats easy access to the ncluding road ruts) pro- s are absent or nearly young. Trees smaller age of trees in the stan	with sloughing at features preser features preser of present at the onded areas pre- e resource. resent that appe absent or if star than 5 inch DB id. Trees 5 to 15 s present. Tree	bark or other ent 5-15 inch D at >15 inch DB e site. esent but too cl ear to offer drin nd is monocult H. Understory 5 inches preser es > 15 inch DB	usable roost fe PBH within 100 H within 1000 uttered to allou nking resource ture, area autou y growth clutte nt. Understory PH frequent. V	atures (cracks, 00 feet of forest feet of forested w many bats to e throughout the matically qualitered and restrict clutter domin	ed areas. 1 areas. 5 drink eas ne majority fies as a 1: cts flying/1 ant but no ight and tre	ily or simu of the sum poor). foraging t ubiquiton cefalls allo	nmer. Fly us. Trees ; w for freq	ways to greater t uent sm	resources han 15″ E	овн
A A A A A A A A A A A A A A A A A A A	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fo 2. Moderate: Snags with slough 3. Optimal: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat 2. Moderate: Ephemeral or inter openings or canopy gaps allow 3. Optimal: Streams or ponds (in available. <u>Forest Structure</u> : (if hardwoods 1. Poor: Habitat even aged and y 2. Moderate: some diversity in a may be present but rare. 3. Optimal: Mature forest. Dive gaps that facilitate bat foraging. Land Cover: 1. Poor: Square ki	ew snags >= 5" DBH ing bark or other roost ing bark or other roost drinking resources no mittent streams or po bats easy access to the including road ruts) pr s are absent or nearly young. Trees smaller age of trees in the stan erse age classes of tree lometer surrounding	with sloughing at features preser features preser of present at the onded areas pre- e resource. resent that appe absent or if star than 5 inch DB id. Trees 5 to 15 s present. Tree site predomina	bark or other ent 5-15 inch D at >15 inch D e site. esent but too cl ear to offer drin nd is monocult H. Understory 5 inches preser es > 15 inch DB antly un-foreste	usable roost fe PBH within 100 H within 1000 uttered to allow nking resource ture, area autor y growth clutte nt. Understory PH frequent. V ed. Few matur	atures (cracks, 00 feet of forest feet of forested w many bats to e throughout th matically quali ered and restricy clutter domin 'arying tree hei re trees present	ed areas. 1 areas. 5 drink eas 1 me majority 1 fies as a 1: 1 cts flying/1 1 ant but no 1 ight and tree 1 not conne	ily or simu of the sum poor). foraging t ubiquiton cefalls allo cted to oth	nmer. Fly us. Trees ; w for freq	ways to greater t uent sm	resources han 15″ E	овн
A A A A A A A A A A A A A A A A A A A	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fo 2. Moderate: Snags with sloughin 3. Optimal: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat 2. Moderate: Ephemeral or inter openings or canopy gaps allow 3. Optimal: Streams or ponds (in available. <u>Forest Structure</u> : (if hardwoods 1. Poor: Habitat even aged and y 2. Moderate: some diversity in a may be present but rare. 3. Optimal: Mature forest. Dive gaps that facilitate bat foraging. <u>Land Cover</u> : 1. Poor: Square ki 2. Marginal: Trees present in the	ew snags >= 5" DBH of ing bark or other roost of bark or other roost drinking resources no crittent streams or po- bats easy access to the ncluding road ruts) pro- s are absent or nearly young. Trees smaller age of trees in the stan erse age classes of tree lometer surrounding the form of small wood	with sloughing to features preserves features preserves of present at the onded areas pre- resource. resent that apper absent or if star than 5 inch DB od. Trees 5 to 15 s present. Treeves site predomina lots and woode	bark or other ent 5-15 inch D nt >15 inch DB e site. esent but too cli ear to offer drin nd is monocult H. Understory 5 inches preser es > 15 inch DB antly un-foreste ed fence rows.	usable roost fe 2BH within 100 H within 1000 uttered to allow nking resource ture, area autor y growth clutte nt. Understory 2H frequent. V ed. Few matur Little connect	atures (cracks, 00 feet of foreste feet of forestec w many bats to throughout the matically quali- ered and restric clutter domin farying tree hei- re trees present tion to adjacent	ed areas. 1 areas. 5 drink eas 1 he majority 1 fies as a 1: 1 cts flying/1 1 ant but no 1 ight and tre 1 not conne 1 forested a	ily or simu of the sum poor). foraging t ubiquiton cefalls allo cted to oth reas.	nmer. Fly us. Trees ; w for freq ner areas o	ways to greater t uent sm f trees.	resources han 15″ E all openir	овн
1 diau 2 3 3 3 1	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fa 2. Moderate: Snags with sloughin 3. Optimal: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat 2. Moderate: Ephemeral or inter openings or canopy gaps allow 3. Optimal: Streams or ponds (in available. <u>Forest Structure</u> : (if hardwoods 1. Poor: Habitat even aged and y 2. Moderate: some diversity in a may be present but rare. 3. Optimal: Mature forest. Dive gaps that facilitate bat foraging. <u>Land Cover</u> : 1. Poor: Square ki 2. Marginal: Trees present in th 3. Optimal: Area is largely fore	ew snags >= 5" DBH of ing bark or other roost ing bark or other roost drinking resources no critent streams or po- bats easy access to the including road ruts) pro- s are absent or nearly young. Trees smaller age of trees in the stan erse age classes of tree lometer surrounding the form of small wood sted. Wooded stands	with sloughing to features preserves features preserves of present at the onded areas pre- resource. resent that apper absent or if star than 5 inch DB od. Trees 5 to 15 s present. Treeves site predomina lots and woode	bark or other ent 5-15 inch D nt >15 inch DB e site. esent but too cli ear to offer drin nd is monocult H. Understory 5 inches preser es > 15 inch DB antly un-foreste ed fence rows.	usable roost fe 2BH within 100 H within 1000 uttered to allow nking resource ture, area autor y growth clutte nt. Understory 2H frequent. V ed. Few matur Little connect	atures (cracks, 00 feet of foreste feet of forestec w many bats to throughout the matically quali- ered and restric clutter domin farying tree hei- re trees present tion to adjacent	ed areas. 1 areas. 5 drink eas 1 he majority 1 fies as a 1: 1 cts flying/1 1 ant but no 1 ight and tre 1 not conne 1 forested a	ily or simu of the sum poor). foraging t ubiquiton cefalls allo cted to oth reas.	nmer. Fly us. Trees ; w for freq ner areas o	ways to greater t uent sm f trees.	resources han 15″ E all openir	овн
Indian 2 3 3 3 4	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fo 2. Moderate: Snags with sloughin 3. Optimal: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat 2. Moderate: Ephemeral or inter openings or canopy gaps allow 3. Optimal: Streams or ponds (in available. <u>Forest Structure</u> : (if hardwoods 1. Poor: Habitat even aged and y 2. Moderate: some diversity in a may be present but rare. 3. Optimal: Mature forest. Dive gaps that facilitate bat foraging. <u>Land Cover</u> : 1. Poor: Square ki 2. Marginal: Trees present in the	ew snags >= 5" DBH of ing bark or other roost ing bark or other roost drinking resources no critent streams or po- bats easy access to the including road ruts) pro- s are absent or nearly young. Trees smaller age of trees in the stan erse age classes of tree lometer surrounding the form of small wood sted. Wooded stands	with sloughing to features preserves features preserves of present at the onded areas pre- resource. resent that apper absent or if star than 5 inch DB od. Trees 5 to 15 s present. Treeves site predomina lots and woode	bark or other ent 5-15 inch D nt >15 inch DB e site. esent but too cli ear to offer drin nd is monocult H. Understory 5 inches preser es > 15 inch DB antly un-foreste ed fence rows.	usable roost fe 2BH within 100 H within 1000 uttered to allow nking resource ture, area autor y growth clutte nt. Understory 2H frequent. V ed. Few matur Little connect	atures (cracks, 00 feet of foreste feet of forestec w many bats to throughout the matically quali- ered and restric clutter domin farying tree hei- re trees present tion to adjacent	ed areas. I areas. I drink eas the majority ifies as a 1: cts flying/f ant but no ight and tro t not conne t not conne t forested a a, fence row	ily or simu of the sum poor). foraging t ubiquiton cefalls allo cted to oth reas.	nmer. Fly us. Trees ; w for freq ner areas o	ways to greater t uent sm f trees.	resources han 15″ E all openir	ОВН
Andian 2 3 3 3 4 L Comm	a Bat Habitat Characterization <u>Roost habitat</u> : 1. Poor: No or fo 2. Moderate: Snags with sloughin <u>Water Resources</u> : 1. Poor: bat 2. Moderate: Ephemeral or inter openings or canopy gaps allow 3. Optimal: Streams or ponds (in available. <u>Forest Structure</u> : (if hardwoods 1. Poor: Habitat even aged and y 2. Moderate: some diversity in a may be present but rare. 3. Optimal: Mature forest. Dive gaps that facilitate bat foraging. <u>Land Cover</u> : 1. Poor: Square ki 2. Marginal: Trees present in th 3. Optimal: Area is largely fore <u>Total Habitat Score</u> (Should be ba	ew snags >= 5" DBH of ing bark or other roost ing bark or other roost drinking resources no critent streams or po- bats easy access to the including road ruts) pro- s are absent or nearly young. Trees smaller age of trees in the stan erse age classes of tree lometer surrounding the form of small wood sted. Wooded stands	with sloughing to features preserves features preserves of present at the onded areas pre- resource. resent that apper absent or if star than 5 inch DB od. Trees 5 to 15 s present. Treeves site predomina lots and woode	bark or other ent 5-15 inch D nt >15 inch DB e site. esent but too cli ear to offer drin nd is monocult H. Understory 5 inches preser es > 15 inch DB antly un-foreste ed fence rows.	usable roost fe 2BH within 100 H within 1000 uttered to allow nking resource ture, area autor y growth clutte nt. Understory 2H frequent. V ed. Few matur Little connect	atures (cracks, 00 feet of forester feet of forester w many bats to e throughout the matically quali- ered and restrict clutter domin darying tree heit re trees present tion to adjacent wooded stream	ed areas. I areas. I areas. I areas. I areas. I are majority Ifies as a 1: Ifies as a	ily or simu of the sum poor). foraging t ubiquitou cefalls allo cted to oth reas. v, or other	nmer. Fly us. Trees ; w for freq ner areas o wooded c	ways to greater t uent sm f trees.	resources han 15″ E all openir	ОВН

			_	-			21.010		Zone		Datum_1	VAVO	Observe	rs	MUG	- C O	PPEF	CONFORTIN
#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.	Moon Phas	e 100 %		v	Vax / Wan
1						10					1f					Rise		Set
2			11.11	2.1		1			1		1			Sun		00:15	1	2100
3														Moon		20	41	000
4									1		L		1.1.1.1.1				121	-
5		h	10		1		X			-				Time	Temp (F)	Sky	Wind	No. Bat
7		1	11	/	N.	X	$\sim$							9:00	75		1	0
8		1			10				_			1		10:00	73	0	i	0
9			1000			1				-	i C			11 00	72	0	1	0
10			1			11			()	15				12:00	70	Ø	0	0
11			1	1.5	2		1	1	NVE	$\left( \right)$			· · · · ·	1:00	68	0	0	0
12	1				$\langle \rangle$	1	8	1	) 1		1		* m	2 00	67	0	0	1.50-
13						~	(1)	1			1.00		i i	1.000	1.1		I Paul Ch	
14			j — j			TX		2	1	1			0	J				1
15	1		1								1							
16	1		11.772.0		10.27				-					1000		Sky Code	(C	
17		1	÷											0	Clear			
18			()		1.1.1							L		1	Few Cloud	s		
19					1							r		2	Partly Clou	ıdy		
20	-	-												3	Cloudy or	overcast		
21		1		101	1		(*****);		1					4	Fog or smo	ke		
22	_				i = i				_				in the second second	5	Drizzle or	light rain		
23	· ··· · · ·		1.0	i  =  i		)ii								6	Heavy rair	- thunde	r storm	
24	-												, and the l	-				
25					1	1	-				-					fort Wind	Scale	
26	1		12021		1201									0	Calm: <1 n			
27	1		1.00		11 T	-								1	Light air: 1		· · · · · ·	
28			0-2-4		1									2	Light breez			
29			S. 199	1.0	1							1		3	Gentle bre			
30	1000					128		1.1				-		4	Moderate	preeze: 11	-16 mph	

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

2/2/2018 1:59:09 PM

in

Case No(s). 17-2295-EL-BGN

Summary: Application Exhibit J Appendix E - Part 8 of 12 electronically filed by Teresa Orahood on behalf of Sally W. Bloomfield