

Mist Net Site Habitat Sheet

Site No. 22

Project No./Name 501, Emerson West

Date 7/15/2016

Lat/Lon: UTM: N/E 41.09254 W/N 82.83337

Zone

Observers T. Wetzel, D. Smith

Datum: NAD83 County Seneca State OH Quad Centerton

Site Diagram:



Net	Height (m)	Length (m)	Dates
A	7.8	6	7/15, 7/21
B	5.2	6	7/15, 7/21
C	5.2	9	7/15, 7/21
D	5.2	12	7/15
E	5.2	12	7/15, 7/21
F			

Site Photographs
 Camera: TW phone
 Photo Log:

Dominant Vegetation					
1. <i>Acer saccharum</i>	4. <i>Populus deltoides</i>				
2. <i>Quercus rubra</i>	5. <i>Ulmus americana</i>				
3. <i>Fagus grandifolia</i>	6.				

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

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

- 2 **Roost habitat:** 1. Poor: No or few snags $\geq 5"$ DBH with sloughing bark or other usable roost features (cracks, crevices, etc)
 2. Moderate: Snags with sloughing bark or other roost features present 5-15 inch DBH within 1000 feet of forested areas.
 3. Optimal: Snags with sloughing bark or other roost features present >15 inch DBH within 1000 feet of forested areas.
- 1 **Water Resources:** 1. Poor: bat drinking resources not present at the site.
 2. Moderate: Ephemeral or intermittent streams or ponded areas present but too cluttered to allow many bats to drink easily or simultaneously. No corridors, openings or canopy gaps allow bats easy access to the resource.
 3. Optimal: Streams or ponds (including road ruts) present that appear to offer drinking resource throughout the majority of the summer. Flyways to resources are available.
- 2 **Forest Structure:** (if hardwoods are absent or nearly absent or if stand is monoculture, area automatically qualifies as a 1: poor).
 1. Poor: Habitat even aged and young. Trees smaller than 5 inch DBH. Understory growth cluttered and restricts flying/foraging
 2. Moderate: some diversity in age of trees in the stand. Trees 5 to 15 inches present. Understory clutter dominant but not ubiquitous. Trees greater than 15" DBH may be present but rare.
 3. Optimal: Mature forest. Diverse age classes of trees present. Trees >15 inch DBH frequent. Varying tree height and treefalls allow for frequent small openings and gaps that facilitate bat foraging.
- 2 **Land Cover:** 1. Poor: Square kilometer surrounding site predominantly un-forested. Few mature trees present not connected to other areas of trees.
 2. Marginal: Trees present in the form of small woodlots and wooded fence rows. Little connection to adjacent forested areas.
 3. Optimal: Area is largely forested. Wooded stands are connected to other wooded stands via wooded stream, fence row, or other wooded corridor.

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

Comments:

Woodlot cluttered with many saplings. Very few corridors.

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859-925-9012

COPPERHEAD
ENVIRONMENTAL CONSULTING

Mist Netting Data Form

Sheet of

Site No. 23 Project No./Name 501 / Emerson West Date 14 July 2016
 Site Location Woodlot south of E Township Rd 106
 County Seneca State OH Time Up 2104 Time Down 0204
 Lat/Lon; UTM: (N)E 41.08845 (W)N 82.85002 Zone Datum NAD83 Observers T. Wetzel
D. Smith

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#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2200	EPFU	A	M	NR	17.5	46	B	2.5	0	—	—	—
2	2200	EPFU	A	F	PL	18.5	47	B	2.0	1	—	—	—
3	2225	EPFU	A	F	NR	19.75	48	A	3.0	1	—	—	—
4	2230	EPFU	J	F	NR	14.75	48	B	2.5	0	—	—	—
5	2255	EPFU	J	F	NR	12.5	48	B	4.0	0	—	—	—
6	2315	EPFU	J	M	NR	13.5	47	B	5.0	0	—	—	—
7	2315	EPFU	A	F	PL	21.25	48.5	B	3.0	0	—	—	—
8	2340	EPFU	A	F	L	17.75	46	B	4.0	0	—	—	—
9	0010	LABO	A	F	L	13.5	41	B	2.5	0	—	—	—
10	0200	EPFU	A	M	S	18.0	47	B	3.0	1	—	—	—
11													
12													
13													
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29													
30													

Moon Phase <u>65%</u>		Wax / Wane	
	Rise	Set	
Sun	<u>0611</u>	<u>2104</u>	
Moon	<u>1419</u>	<u>0219</u>	

Time	Temp (F)	Sky	Wind	No. Bats
2100	76	2	1	0
2200	73	2	2	5
2300	73	2	2	3
0000	73	2	2	1
0100	72	2	1	0
0200	72	1	1	—

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

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

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

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

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Mist Netting Data Form

Site No. 23 Project No./Name 501 / Emerson West Date 18 July 2016
 Site Location Woodlot South of E Township Rd 106
 County Seneca State NY Time Up 2101 Time Down 0201
 Lat/Lon; UTM: N 41.08845 W 82.85002 Zone — Datum NAD83 Observers T. Wetzel
D. Smith

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#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2215	EPFU	A	M	NR	15	45	B	4.0	0	—	—	—
2	2255	LABO	J	M	NR	8.5	40	B	4.5	0	—	—	—
3	2255	EPFU	J	M	NR	16.5	48	B	4.5	0	—	—	—
4	2335	EPFU	J	M	NR	15.0	47	C	4.5	0	—	—	—
5	2355	EPFU	J	M	NR	17.5	51	B	4.5	0	—	—	—
6	0010	LABO	A	M	S	11.0	40	A	3.0	0	—	—	—
7													
8													
9													
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Moon Phase 95% Wax Wane

	Rise	Set
Sun	<u>0614</u>	<u>2101</u>
Moon	<u>1953</u>	<u>0407</u>

Time	Temp (F)	Sky	Wind	No. Bats
2100	<u>78</u>	<u>3</u>	<u>0</u>	<u>0</u>
2200	<u>74</u>	<u>3</u>	<u>0</u>	<u>3</u>
2300	<u>72</u>	<u>1</u>	<u>0</u>	<u>2</u>
0000	<u>71</u>	<u>0</u>	<u>0</u>	<u>1</u>
0100	<u>69</u>	<u>0</u>	<u>0</u>	<u>0</u>
0200	<u>68</u>	<u>0</u>	<u>0</u>	<u>0</u>

Sky Code

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

Beaufort Wind Scale

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

Acoustic Survey: Unit type — Unit # — Date — Start time — Stop time —
 Date — Start time — Stop time —
 Date — Start time — Stop time —
 Weatherproofing — Coordinates —

Comments: —

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Mist Net Site Habitat Sheet

Site No. 23

Project No./Name 501, Emerson West

Date 14 July 2016

Lat/Lon; UTM: N/E 41.06845 W/N 82.85002

Zone

Observers T. Wetzel, D. Smith

Datum: NAD83 County Seneca

State OH Quad Centerton

Site Diagram:



Net	Height (m)	Length (m)	Dates
A	7.8	6	7/14, 7/18
B	5.2	12	7/14, 7/18
C	5.2	9	7/14, 7/18
D	5.2	10	7/14, 7/18
E	5.2	12	7/14
F			

Site Photographs

Camera: TW Phone

Photo Log:

Dominant Vegetation

1. *Acer saccharum*
2. *Populus deltoides*
3. *Ulmus americana*
4. *Acer rubrum*
- 5.
- 6.

Net Set by Habitat

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

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

- 3 Roost habitat: 1. Poor: No or few snags $\geq 5"$ DBH with sloughing bark or other usable roost features (cracks, crevices, etc)
- 1 2. Moderate: Snags with sloughing bark or other roost features present 5-15 inch DBH within 1000 feet of forested areas.
3. Optimal: Snags with sloughing bark or other roost features present >15 inch DBH within 1000 feet of forested areas.
- Water Resources: 1. Poor: bat drinking resources not present at the site.
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1. Poor: Habitat even aged and young. Trees smaller than 5 inch DBH. Understory growth cluttered and restricts flying/foraging
2. Moderate: some diversity in age of trees in the stand. Trees 5 to 15 inches present. Understory clutter dominant but not ubiquitous. Trees greater than 15" DBH may be present but rare.
- 2 3. Optimal: Mature forest. Diverse age classes of trees present. Trees > 15 inch DBH frequent. Varying tree height and treefalls allow for frequent small openings and gaps that facilitate bat foraging.
- Land Cover: 1. Poor: Square kilometer surrounding site predominantly un-forested. Few mature trees present not connected to other areas of trees.
2. Marginal: Trees present in the form of small woodlots and wooded fence rows. Little connection to adjacent forested areas.
- 8 3. Optimal: Area is largely forested. Wooded stands are connected to other wooded stands via wooded stream, fence row, or other wooded corridor.

Total Habitat Score (Should be between 4 & 12)

Comments: No real trails or corridors through woodlot, very open in some spots or very cluttered.

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Sheet 1 of 2

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Observers R. Stinson L. Jacob

Observers R. Stinson L. Jacob

Moon Phase <u>Wax</u>		<u>Wax</u> / Wane
	Rise	Set
Sun	0612	2103
Moon	1620	0218

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

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

Mist Netting Data Form

Site No. 24 Project No./Name 501 / Emerson nest Date 14-Jul-16
 Site Location woodlot east of Powerline cut south of 162
 County Geneca State OH Time Up 2100 Time Down 0200
 Lat/Lon ; UTM: N/E 41.11955 W/N -82.98499 Zone Datum NAD83 Observers R. Stinson M. Gorden



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#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2215	EPFU	A	F	L	20.0	49.0	A	1.0	0	-	-	-
2	2340	EPFU	A	M	NR	15.25	46.0	D	1.5	0	-	-	-
3	0115	LABO	A	M	S	11.75	42	D	4.0	0	-	-	-
4	0210	LABO	S	M	NR	9.25	41	D	4.5				
5													
6													
7													
8													
9													
10													
11													
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29													
30													

Moon Phase 100 % Wax / Wane

	Rise	Set
Sun	0616	2100
Moon	2042	0602

Time	Temp (F)	Sky	Wind	No. Bats
2100	75	1	1	0
2200	72	1	0	1
2300	70	1	0	1
0000	69	0	0	0
0100	68	0	1	1
0200	66	0	0	-

Sky Code

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

Beaufort Wind Scale

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

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

Date _____ Start time _____ Stop time _____

Date _____ Start time _____ Stop time _____

Coordinates _____

Weatherproofing _____

Comments: _____

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Mist Net Site Habitat Sheet

Site No.

24

Project No./Name

501 / Emerson west

Date

14-Jul-16

Lat/Lon; UTM: N/E

41.11955

W/N

-82.98499

Zone

Observers

R. Stinson C. Jacobi

Datum: NAD83

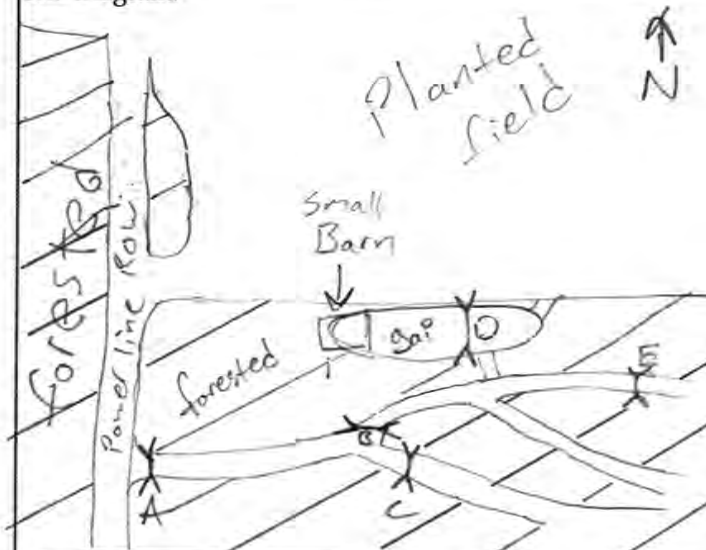
County Seneca

State OH

Quad

Attica

Site Diagram:



Net	Height (m)	Length (m)	Dates
A	5.2	9	7-14 + 19
B	5.2	6	7-14 + 19
C	5.2	4	7-14 + 19
D	7	6	7-14 + 19
E	5.2	6	7-14 -
F			

Site Photographs

Camera: Robs Phone

Photo Log:

Dominant Vegetation

1. <i>A. saccharum</i>	4. <i>A. rubra</i>
2. <i>F. americana</i>	5.
3. <i>A. rubra</i>	6.

Net Set by Habitat

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

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

Roost habitat: 1. Poor: No or few snags $\geq 5"$ DBH with sloughing bark or other usable roost features (cracks, crevices, etc)

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Forest Structure: (if hardwoods are absent or nearly absent or if stand is monoculture, area automatically qualifies as a 1: poor).

1. Poor: Habitat even aged and young. Trees smaller than 5 inch DBH. Understory growth cluttered and restricts flying/foraging

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Land Cover: 1. Poor: Square kilometer surrounding site predominantly un-forested. Few mature trees present not connected to other areas of trees.

2. Marginal: Trees present in the form of small woodlots and wooded fence rows. Little connection to adjacent forested areas.

3. Optimal: Area is largely forested. Wooded stands are connected to other wooded stands via wooded stream, fence row, or other wooded corridor.

Total Habitat Score (Should be between 4 & 12)

Comments:

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Mist Netting Data Form

Sheet 1 of 1

Site No. 25 Project No./Name 501 / Emerson West Date 15 July 16
 Site Location Small woodlot w/ dry ditch, surrounded by bean fields
 County Seneca State OH Time Up 2055 Time Down 2005
 Lat/Lon; UTM: N/E 41.14166 WYN 83.02054 Zone — Datum NAD 83 Observers G. Lethrich
A. Ashmore

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#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2145	EPU	A	F	PL	16.5	45	A	2.5	0	—	—	—
2	2145	EPU	ES	CA	PL	—	—	A	2.0	—	—	—	—
3	2205	EPU	A	F	PL	19.0	45	A	2.5	0	—	—	—
4	2205	EPU	A	F	PL	17.5	47	A	3.0	0	—	—	—
5	2210	EPU	A	F	PL	16.0	47	A	2.0	0	—	—	—
6	2210	EPU	A	F	PL	19.75	49	A	2.5	0	—	—	—
7	2215	EPU	A	M	NR	17.50	48	C	7.0	0	—	—	—
8	2225	EPU	A	F	PL	21.0	48	A	3.0	0	—	—	—
9	2230	EPU	A	M	NR	16.5	44	C	5.0	0	—	—	—
10	2304	EPU	A	F	PL	21.0	48	A	4.5	0	—	—	—
11	2340	EPU	A	F	PL	19.0	46	A	3.0	—	—	—	—
12													
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28													
29													
30													

Moon Phase	% <u>75</u>	☒ Wax	☐ Wane
	Rise	Set	
Sun	<u>0612</u>	<u>2103</u>	
Moon	<u>1715</u>	<u>0254</u>	

Time	Temp (F)	Sky	Wind	No. Bats
<u>2100</u>	<u>73</u>	<u>2</u>	<u>1</u>	<u>1</u>
<u>2200</u>	<u>68</u>	<u>2</u>	<u>1</u>	<u>2</u>
<u>2300</u>	<u>66</u>	<u>2</u>	<u>1</u>	<u>3</u>
<u>0000</u>	<u>64</u>	<u>2</u>	<u>1</u>	<u>2</u>
<u>0100</u>	<u>66</u>	<u>3</u>	<u>1</u>	<u>0</u>
<u>0200</u>	<u>66</u>	<u>3</u>	<u>0</u>	<u>0</u>

Sky Code

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

Beaufort Wind Scale

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

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

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

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Site No. _____ Project No./Name _____ / _____ Date _____
 Site Location _____
 County _____ State _____ Time Up _____ Time Down _____
 Lat/Lon ; UTM: N/E _____ W/N _____ Zone _____ Datum _____ Observers _____

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ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
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29													
30													

Acoustic Survey: Unit type _____ Unit # _____

Weatherproofing _____

Comments: _____

Date _____ Start time _____ Stop time _____

Date _____ Start time _____ Stop time _____

Date _____ Start time _____ Stop time _____

Coordinates _____

Moon Phase _____ % _____ Wax / Wane _____
 _____ Rise _____ Set _____
 Sun _____
 Moon _____

Time	Temp (F)	Sky	Wind	No. Bats

Sky Code

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

Beaufort Wind Scale

0	Calm: <1 mph
1	Light air: 1-3 mph
2	Light breeze: 4-6 mph
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p. 2

[illegible]

Moon Phase	%	Wax / Wane
	Rise	Set
Sun		
Moon		

[illegible]

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or overcast
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3	Gentle breeze: 7-10 mph
4	Moderate breeze: 11-16 mph

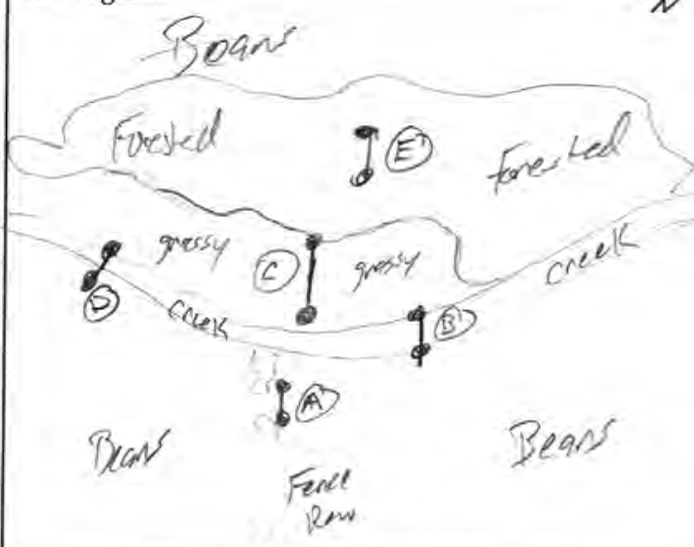
Please Return to:
P.O. Box 73, Paint Lick, KY, 40461.
(859) 925-9012

p. 2

Mist Net Site Habitat Sheet

Site No. 25Project No./Name Sol 1, Emerson WestDate 15 July 16Lat/Lon; UTM: N 41.14166W 83.02058Zone 18Observers C. LettichDatum NAD83County SumnerState OHQuad

Site Diagram:



Net	Height (m)	Length (m)	July Dates
A	5.2	9	15
B	5.2	8	15
C	7.8	9	15
D	5.2	6	15
E	5.2	6	15
F			

Site Photographs
Camera: ✓
Photo Log: ✓

Dominant Vegetation

1. <u>P. deltoidea</u>	4. <u></u>
2. <u>J. nigra</u>	5. <u></u>
3. <u>M. rubra</u>	6. <u></u>

Net Set by Habitat

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

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

- 2 **Roost habitat:** 1. Poor: No or few snags $\geq 5"$ DBH with sloughing bark or other usable roost features (cracks, crevices, etc)
2. Moderate: Snags with sloughing bark or other roost features present 5-15 inch DBH within 1000 feet of forested areas.
3. Optimal: Snags with sloughing bark or other roost features present >15 inch DBH within 1000 feet of forested areas.
- 1 **Water Resources:** 1. Poor: bat drinking resources not present at the site.
2. Moderate: Ephemeral or intermittent streams or ponded areas present but too cluttered to allow many bats to drink easily or simultaneously. No corridors, openings or canopy gaps allow bats easy access to the resource.
3. Optimal: Streams or ponds (including road ruts) present that appear to offer drinking resource throughout the majority of the summer. Flyways to resources are available.
- 2 **Forest Structure:** (if hardwoods are absent or nearly absent or if stand is monoculture, area automatically qualifies as a 1: poor).
1. Poor: Habitat even aged and young. Trees smaller than 5 inch DBH. Understory growth cluttered and restricts flying/foraging
2. Moderate: some diversity in age of trees in the stand. Trees 5 to 15 inches present. Understory clutter dominant but not ubiquitous. Trees greater than 15" DBH may be present but rare.
3. Optimal: Mature forest. Diverse age classes of trees present. Trees > 15 inch DBH frequent. Varying tree height and treefalls allow for frequent small openings and gaps that facilitate bat foraging.
- 1 **Land Cover:** 1. Poor: Square kilometer surrounding site predominantly un-forested. Few mature trees present not connected to other areas of trees.
2. Marginal: Trees present in the form of small woodlots and wooded fence rows. Little connection to adjacent forested areas.
3. Optimal: Area is largely forested. Wooded stands are connected to other wooded stands via wooded stream, fence row, or other wooded corridor.

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

Comments:

Please return to:

P.O. Box 73, Paint Lick, KY. 40461

859-925-9012

COPPERHEAD
ENVIRONMENTAL CONSULTING

Mist Netting Data Form

Sheet of Site No. 25 Project No./Name 501 / Emerson West Date July 22, 2016Site Location Small wood lot with dry ditch, surrounded by bean fieldsCounty Seneca State OH Time Up 2045 Time Down 0200Lat/Lon; UTM: N/E 41.14/66 W/N 83.02054 Zone Datum NAD 83Observers G. Libby, R. EatonCOPPERHEAD
ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2210	EPFU	J	F	NR	16.0	47	A	2	0	—	DNR	
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
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29													
30													

Moon Phase 90 % Wax / Wane

	Rise	Set
Sun	6:18 am	8:58 pm
Moon	10:40 pm	9:12 am

Time	Temp (F)	Sky	Wind	No. Bats
2100	83°	1	0	0
2200	80°	1	0	1
2300	78°	0	0	0
000	76°	0	0	0
100	75°	1	0	0
200	75°	1	0	0
				1

Sky Code

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

Beaufort Wind Scale

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

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

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

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

Mist Net Site Habitat Sheet

Site No. 25

Project No./Name 501 / Emerson West

Date July 22, 2016

Lat/Lon; UTM: N/E 41.14166

W/N 83.02054

Zone

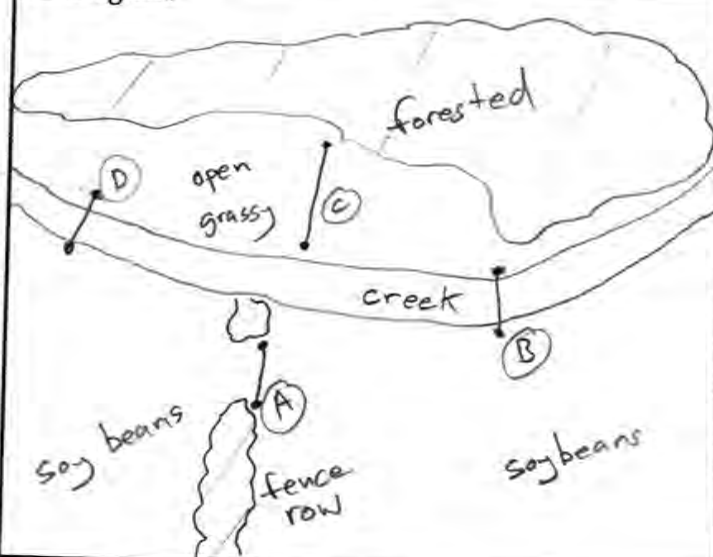
Observers G. Libby, R. Eaton

Datum: NAD 83

County Seneca

State OH Quad

Site Diagram:



Net	Height (m)	Length (m)	Dates
A	5.2	9	7-22-16
B	5.2	4	7-22-16
C	7.8	9	7-22-16
D	5.2	6	7-22-16
E			
F			

Site Photographs
 Camera: Nikon AW-100
 Photo Log: uploaded

Dominant Vegetation	
1. <i>P. deltoides</i>	4. <i>J. nigra</i>
2. <i>M. alba</i>	5. <i>U. americana</i>
3. <i>A. negundo</i>	6. <i>M. pomifera</i>

Net Set by Habitat						
Habitat	A	B	C	D	E	F
River						
Stream		X		X		
Pond						
Corridor			X			
Cave						
Mine						
Forest						
Gap						
Other fence row gap	X					

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

- 2 **Roost habitat:** 1. Poor: No or few snags $\geq 5"$ DBH with sloughing bark or other usable roost features (cracks, crevices, etc)
 2. Moderate: Snags with sloughing bark or other roost features present 5-15 inch DBH within 1000 feet of forested areas.
 3. Optimal: Snags with sloughing bark or other roost features present >15 inch DBH within 1000 feet of forested areas.
- 1 **Water Resources:** 1. Poor: bat drinking resources not present at the site.
 2. Moderate: Ephemeral or intermittent streams or ponded areas present but too cluttered to allow many bats to drink easily or simultaneously. No corridors, openings or canopy gaps allow bats easy access to the resource.
 3. Optimal: Streams or ponds (including road ruts) present that appear to offer drinking resource throughout the majority of the summer. Flyways to resources are available.
- 2 **Forest Structure:** (if hardwoods are absent or nearly absent or if stand is monoculture, area automatically qualifies as a 1: poor).
 1. Poor: Habitat even aged and young. Trees smaller than 5 inch DBH. Understory growth cluttered and restricts flying/foraging
 2. Moderate: some diversity in age of trees in the stand. Trees 5 to 15 inches present. Understory clutter dominant but not ubiquitous. Trees greater than 15" DBH may be present but rare.
 3. Optimal: Mature forest. Diverse age classes of trees present. Trees >15 inch DBH frequent. Varying tree height and treefalls allow for frequent small openings and gaps that facilitate bat foraging.
- 1 **Land Cover:** 1. Poor: Square kilometer surrounding site predominantly un-forested. Few mature trees present not connected to other areas of trees.
 2. Marginal: Trees present in the form of small woodlots and wooded fence rows. Little connection to adjacent forested areas.
 3. Optimal: Area is largely forested. Wooded stands are connected to other wooded stands via wooded stream, fence row, or other wooded corridor.

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

Comments:

Please return to:

P.O. Box 73, Paint Lick, KY. 40461

859-925-9012



Mist Netting Data Form

Site No. 210 Project No./Name 501 Emerson Wood Bats Date 07/20/2016
 Site Location Woodlot / Ag. Fields South of Miller Rd.
 County Sumner State OH Time Up 2059 Time Down 0159
 Lat/Lon ; UTM: N E 41.14928 W N 83.04395 Zone _____ Datum _____ Observers J. Hankins, C. Jacoby



#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2135	EPFU	AD	M	S	14.5	45.0	E	3	0	—	—	—
2	2150	EPFU	AD	F	PL	18.8	46.0	D	3	0	—	—	—
3	2220	EPFU	AD	F	PL	19.5	45.0	B	5	0	—	—	—
4	2230	LAB	JV	M	NR	9.0	40.0	E	4	0	—	—	—
5	2230	EPFU	JV	M	NR	12.5	44.0	E	4	0	—	—	—
6	2300	EPFU	JV	M	NR	13.8	45.0	E	5	0	—	—	—
7	2320	EPFU	JV	M	NR	16.8	48.0	E	4	0	—	—	—
8	2330	EPFU	JV	M	NR	14.3	45.0	E	3	0	—	—	—
9	2335	EPFU	JV	F	NR	14.0	47.0	E	4	0	—	—	—
10	2335	EPFU	AD	F	PL	18.3	45.0	E	5	0	—	—	—
11													
12													
13													
14													
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30													

Moon Phase 99% Wax / Wane (W)

	Rise	Set
Sun	<u>0617</u>	<u>2059</u>
Moon	<u>2116</u>	<u>0659</u>

Time	Temp (F)	Sky	Wind	No. Bats
2100	81	0	2	0
2200	75	0	0	2
2300	70	0	0	4
0000	70	0	0	4
0100	68	0	0	0
0200	67	0	0	0

Sky Code

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

Beaufort Wind Scale

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

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

Weatherproofing N/A Date _____ Start time _____ Stop time _____

Comments: _____ Coordinates _____

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

Mist Netting Data Form

Sheet of

Site No. 26 Project No./Name 501 / Emerson West Apex Date 7-15-2016
 Site Location Woodlot South of Miller Road
 County Seneca State OH Time Up 2103 Time Down
 Lat/Lon ; UTM: N/E 41.14928 W/N 83.04395 Zone Datum Observers J. Hawkins
M. Gooden

COPPERHEAD
ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2118	EPFU	A	F	L	19.0	45.0	E	3	0	—	—	—
2	2315	LABO	JV	F	NR	9.8	39.0	D	2	0	—	—	—
3	0000	EPFU	JV	F	NR	17.0	45.0	B	4	0	—	—	—
4													
5													
6													
7													
8													
9													
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Moon Phase 85 % Wax / Wane

	Rise	Set
Sun	<u>0613</u>	<u>2103</u>
Moon	<u>1707</u>	<u>0255</u>

Time	Temp (F)	Sky	Wind	No. Bats
<u>2103</u>	<u>75</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>2203</u>	<u>73</u>	<u>0</u>	<u>0</u>	<u>1</u>
<u>2303</u>	<u>70</u>	<u>0</u>	<u>0</u>	<u>2</u>
<u>0003</u>	<u>68</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>0103</u>	<u>68</u>	<u>0</u>	<u>0</u>	<u>0</u>

Sky Code

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

Beaufort Wind Scale

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

Please Return to:

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

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

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

Mist Net Site Habitat Sheet

Site No. 26

Project No./Name 501 / Emerson West

Date 7-15-2016

Lat/Lon; UTM: (N)E 41.14928

(W)N 83.04395

Zone -

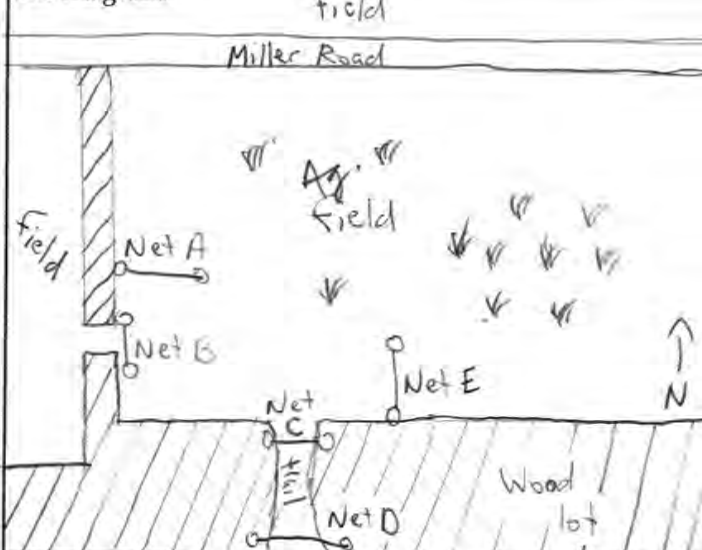
Observers J. Hawkins, M. Gordon

Datum: -

County Seneca

State OH Quad -

Site Diagram:



Net	Height (m)	Length (m)	Dates
A	9	5.2	7/15
B	6	5.2	7/15, 20
C	4	5.2	7/15, 20
D	6	5.2	7/15, 20
E	9	7.8	7/15, 20
F			

Site Photographs
Camera: Jeff's iPhone
Photo Log: Downloaded to Google Drive

Dominant Vegetation						
1. Quercus rubra	4. Fraxinus americana					
2. Acer rubrum	5. Gleitsia tricanthos					
3. Fraxinus pennsylvanica	6.					
Net Set by Habitat						
Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Corridor			X	X		
Cave						
Mine						
Forest						
Gap		X				
Other	X				X	

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

- 3 **Roost habitat:** 1. Poor: No or few snags $\geq 5"$ DBH with sloughing bark or other usable roost features (cracks, crevices, etc).
2. Moderate: Snags with sloughing bark or other roost features present 5-15 inch DBH within 1000 feet of forested areas.
3. Optimal: Snags with sloughing bark or other roost features present >15 inch DBH within 1000 feet of forested areas.
- 1 **Water Resources:** 1. Poor: bat drinking resources not present at the site.
2. Moderate: Ephemeral or intermittent streams or ponded areas present but too cluttered to allow many bats to drink easily or simultaneously. No corridors, openings or canopy gaps allow bats easy access to the resource.
3. Optimal: Streams or ponds (including road ruts) present that appear to offer drinking resource throughout the majority of the summer. Flyways to resources are available.
- 2 **Forest Structure:** (if hardwoods are absent or nearly absent or if stand is monoculture, area automatically qualifies as a 1: poor).
1. Poor: Habitat even aged and young. Trees smaller than 5 inch DBH. Understory growth cluttered and restricts flying/foraging
2. Moderate: some diversity in age of trees in the stand. Trees 5 to 15 inches present. Understory clutter dominant but not ubiquitous. Trees greater than 15" DBH may be present but rare.
3. Optimal: Mature forest. Diverse age classes of trees present. Trees > 15 inch DBH frequent. Varying tree height and treefalls allow for frequent small openings and gaps that facilitate bat foraging.
- 2 **Land Cover:** 1. Poor: Square kilometer surrounding site predominantly un-forested. Few mature trees present not connected to other areas of trees.
2. Marginal: Trees present in the form of small woodlots and wooded fence rows. Little connection to adjacent forested areas.
3. Optimal: Area is largely forested. Wooded stands are connected to other wooded stands via wooded stream, fence row, or other wooded corridor.

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

Comments:

Please return to:

P.O. Box 73, Paint Lick, KY. 40461

859-925-9012



Mist Netting Data Form

Site No. 27 Project No./Name 501 Emerson Wood / Apex Bats Date 7/21
 Site Location Small woodlot surrounding Carpenter Ditch
 County Seneca State OH Time Up 2059 Time Down 0159
 Lat/Lon ; UTM: (N)E 41.11877 (W)N 82.91131 Zone _____ Datum _____ Observers J. Hankin, C. Jaeger

COPPERHEAD
ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2205	EPFU	JV	M	NR	15.8	46.0	C	3	0	—	—	—
2	2205	EPFU	JV	F	NR	13.8	47.0	C	5	0	—	—	—
3	2210	EPFU	AD	M	S	17.3	46.0	D	4	0	—	—	—
4	2220	EPFU	AD	M	S	17.3	46.0	E	4	0	—	—	—
5	2245	EPFU	JV	M	NR	13.3	45.0	C	5	0	—	—	—
6	2305	EPFU	AD	F	PL	18.0	43.0	E	5	0	—	—	—
7	2315	EPFU	AD	M	S	20.5	47.0	D	3	0	—	—	—
8	0125	LACI	JV	M	NR	24.0	52.0	C	5	0	—	—	—
9													
10													
11													
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30													

Moon Phase 95% Wax / Wane (Wane)

	Rise	Set
Sun	<u>0617</u>	<u>2057</u>
Moon	<u>0802</u>	<u>2156</u>

Time	Temp (F)	Sky	Wind	No. Bats
2100	83	3	1	0
2200	80	0	1	0
2300	70	0	0	5
0000	70	3	1	2
0100	70	0	1	1

Sky Code

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

Beaufort Wind Scale

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

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

Date _____ Start time _____ Stop time _____

Date _____ Start time _____ Stop time _____

Weatherproofing _____ Coordinates _____

Comments: _____

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

Mist Netting Data Form

Sheet _____ of _____

Site No. 27 Project No./Name 501 / Emerson West Apex Date 7-16-2016
 Site Location Small Woodlot on Carpenter Ditch South of Route 162
 County Seneca State OH Time Up 2102 Time Down _____
 Lat/Lon ; UTM: N/E 41.1877 WYN 8291131 Zone - Datum - Observers J. Hawkins
M. Gooden

COPPERHEAD
ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2205	EPFU	A	F	PL	18.5	44	E	3	0	—	—	—
2	2230	EPFU	A	M	S	15.8	45	D	2	0	—	—	—
3	2312	EPFU	J	M	NR	13.5	43	E	3	0	—	—	—
4													
5													
6													
7													
8													
9													
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29													
30													

Moon Phase 91 % Wax / Wane

	Rise	Set
Sun	<u>0615</u>	<u>2102</u>
Moon	<u>1814</u>	<u>0334</u>

Time	Temp (F)	Sky	Wind	No. Bats
<u>2102</u>	<u>69</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>2202</u>	<u>66</u>	<u>0</u>	<u>0</u>	<u>2</u>
<u>2302</u>	<u>61</u>	<u>0</u>	<u>0</u>	<u>1</u>
<u>0002</u>	<u>59</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>0102</u>	<u>59</u>	<u>0</u>	<u>0</u>	

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

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

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

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

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

Mist Net Site Habitat Sheet

Site No. 27

Project No./Name 501 / Emerson Wood Area

Date 7-16-2016

Lat/Lon ; UTM: N/E 41.11877

W/N 82.91131

Zone

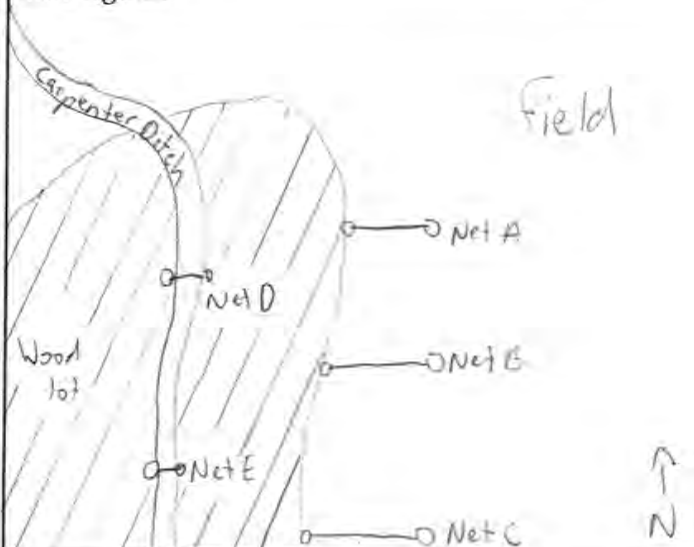
Observers J. Hawkins M. Gooden

Datum:

County Seneca

State OH Quad

Site Diagram:



Net	Height (m)	Length (m)	Dates
A	5.2	9	7/16
B	5.2	9	7/16, 21
C	7.8	9	7/16, 21
D	5.2	4	7/16, 21
E	5.2	6	7/16, 21
F			

Site Photographs
 Camera: Jeff's iPhone
 Photo Log: Downloaded to Google Drive

Dominant Vegetation					
1. Quercus rubra	4. Vitis sp.				
2. Acer rubrum	5. Robinia pseudoacacia				
3. Carya cordiformis	6.				
Net Set by Habitat					
Habitat	A	B	C	D	E
River					
Stream				X	X
Pond					
Corridor					
Cave					
Mine					
Forest					
Gap					
Other	X	X	X		

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

- 1 **Roost habitat:** 1. Poor: No or few snags $\geq 5"$ DBH with sloughing bark or other usable roost features (cracks, crevices, etc)
 2. Moderate: Snags with sloughing bark or other roost features present 5-15 inch DBH within 1000 feet of forested areas.
 3. Optimal: Snags with sloughing bark or other roost features present >15 inch DBH within 1000 feet of forested areas.
- 3 **Water Resources:** 1. Poor: bat drinking resources not present at the site.
 2. Moderate: Ephemeral or intermittent streams or ponded areas present but too cluttered to allow many bats to drink easily or simultaneously. No corridors, openings or canopy gaps allow bats easy access to the resource.
 3. Optimal: Streams or ponds (including road cuts) present that appear to offer drinking resource throughout the majority of the summer. Flyways to resources are available.
- 2 **Forest Structure:** (if hardwoods are absent or nearly absent or if stand is monoculture, area automatically qualifies as a 1: poor).
 1. Poor: Habitat even aged and young. Trees smaller than 5 inch DBH. Understory growth cluttered and restricts flying/foraging
 2. Moderate: some diversity in age of trees in the stand. Trees 5 to 15 inches present. Understory clutter dominant but not ubiquitous. Trees greater than 15" DBH may be present but rare.
 3. Optimal: Mature forest. Diverse age classes of trees present. Trees > 15 inch DBH frequent. Varying tree height and treefalls allow for frequent small openings and gaps that facilitate bat foraging.
- 1 **Land Cover:** 1. Poor: Square kilometer surrounding site predominantly un-forested. Few mature trees present not connected to other areas of trees.
 2. Marginal: Trees present in the form of small woodlots and wooded fence rows. Little connection to adjacent forested areas.
 3. Optimal: Area is largely forested. Wooded stands are connected to other wooded stands via wooded stream, fence row, or other wooded corridor.

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

Comments:

Please return to:

P.O. Box 73, Paint Lick, KY. 40461

859-925-9012



Mist Netting Data Form

Sheet of

Site No. 28 Project No./Name 501 / Emerson West Date 16 July 2016
 Site Location Woodlot West of N township Rd 181
 County Seneca State OH Time Up 2103 Time Down 0203
 Lat/Lon; UTM: N/E 4113056 W/N 82.99911 Zone — Datum NAD83 Observers T. Wetzel
D. Smith

COPPERHEAD
ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2205	EPPU	J	M	NR	12.75	48	A	7.0	0	—	—	—
2	2205	EPPU	J	M	NR	13.75	48	A	5.0	0	—	—	—
3	2225	LABO	J	M	NR	9.0	41	E	3.5	0	—	—	—
4	2245	EPPU	A	M	S	11.75	41	B	3.5	0	—	—	—
5	2300	LABO	J	M	NR	9.25	39	D	4.0	0-P	—	—	—
6	2305	LABO	A	F	L	14.75	44	B	2.0	0	—	—	—
7													
8													
9													
10													
11													
12													
13													
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22													
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24													
25													
26													
27													
28													
29													
30													

Moon Phase 80% Wax ☒ Wane ☐

	Rise	Set
Sun	<u>0613</u>	<u>2103</u>
Moon	<u>1810</u>	<u>0334</u>

Time	Temp (F)	Sky	Wind	No. Bats
2100	<u>76</u>	<u>0</u>	<u>0</u>	<u>0</u>
2200	<u>66</u>	<u>0</u>	<u>0</u>	<u>4</u>
2300	<u>65</u>	<u>0</u>	<u>0</u>	<u>2</u>
0000	<u>64</u>	<u>0</u>	<u>0</u>	<u>0</u>
0100	<u>63</u>	<u>0</u>	<u>0</u>	<u>0</u>
0200	<u>62</u>	<u>1</u>	<u>0</u>	<u>1</u>

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

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

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

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

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

Mist Netting Data Form

Site No. 28 Project No./Name 501 / Emerson West Date 19 July 2010
 Site Location Woodlot N of N Township Rd 181
 County Seneca State OH Time Up 2101 Time Down 0201
 Lat/Lon: UTM: N/E 41.13056 W/N 82.99911 Zone — Datum NAD83 Observers TWetzel
TSmith



COPPERHEAD
ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2230	EPU	J	F	NR	15.5	48	A	4.5	0	—	—	—
2	2230	EPU	J	F	NR	15	48	E	4.5	0	—	—	—
3	2235	EPU	J	M	NR	10.5	44	A	5.0	0	—	—	—
4	2240	EPU	A	M	S	19.23	49	A	7.0	0	—	—	—
5	2300	EPU	J	F	NR	13	45	E	3.5	0	—	—	—
6	2300	EPU	A	F	PL	21.25	49	E	4.5	0	—	—	—
7	2305	EPU	J	M	NR	13.0	44	A	5.0	0	—	—	—
8	2345	EPU	A	M	S	18.0	47	B	3.0	0	—	—	—
9	0145	LABO	A	F	L	4.5	43	E	3.0	0	—	—	—
10													
11													
12													
13													
14													
15													
16													
17													
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29													
30													

Moon Phase 99% Wax / Wane

	Rise	Set
Sun	<u>0615</u>	<u>2101</u>
Moon	<u>2040</u>	<u>0603</u>

Time	Temp (F)	Sky	Wind	No. Bats
<u>2100</u>	<u>78</u>	<u>2</u>	<u>0</u>	<u>0</u>
<u>2200</u>	<u>75</u>	<u>1</u>	<u>1</u>	<u>4</u>
<u>2300</u>	<u>70</u>	<u>0</u>	<u>2</u>	<u>4</u>
<u>0000</u>	<u>69</u>	<u>0</u>	<u>1</u>	<u>0</u>
<u>0100</u>	<u>67</u>	<u>0</u>	<u>1</u>	<u>1</u>
<u>0200</u>	<u>66</u>	<u>0</u>	<u>0</u>	<u>—</u>

Sky Code

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

Beaufort Wind Scale

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

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

Weatherproofing — Coordinates —

Comments: —

Please Return to:
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(859) 925-9012

Mist Net Site Habitat Sheet

Site No. 28

Project No./Name 501 / Emerson West

Date 16 July 2016

Lat/Lon; UTM: N/E 41.13051

W/N 82.99911

Zone

Observers

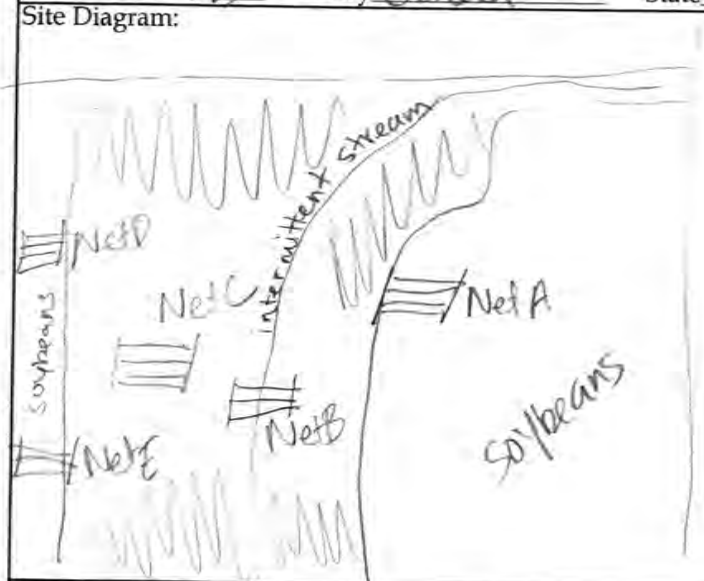
Theresa Wetzel

Datum: NAD83

County Seneca

State OH Quad

Site Diagram:



Net	Height (m)	Length (m)	Dates
A	7.8	6	7/16, 7/19
B	5.2	6	7/16, 7/19
C	5.2	9	7/16, 7/19
D	5.2	12	7/16, 7/19
E	5.2	12	7/16, 7/19
F			

Site Photographs

Camera: TW Phone

Photo Log: 1- Net B

2- Net C

3- Net D

4- Net E

5- Net A

Dominant Vegetation

- | | |
|----------------------|---------------------|
| 1. Populus deltoides | 4. Acer saccharinum |
| 2. Quercus laevis | 5. Vitis americana |
| 3. Acer saccharum | 6. |

Net Set by Habitat

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

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

- 2 **Roost habitat:** 1. Poor: No or few snags $\geq 5"$ DBH with sloughing bark or other usable roost features (cracks, crevices, etc)
 2. Moderate: Snags with sloughing bark or other roost features present 5-15 inch DBH within 1000 feet of forested areas.
 3. Optimal: Snags with sloughing bark or other roost features present >15 inch DBH within 1000 feet of forested areas.
- 2 **Water Resources:** 1. Poor: bat drinking resources not present at the site.
 2. Moderate: Ephemeral or intermittent streams or ponded areas present but too cluttered to allow many bats to drink easily or simultaneously. No corridors, openings or canopy gaps allow bats easy access to the resource.
 3. Optimal: Streams or ponds (including road ruts) present that appear to offer drinking resource throughout the majority of the summer. Flyways to resources are available.
- 2 **Forest Structure:** (if hardwoods are absent or nearly absent or if stand is monoculture, area automatically qualifies as a 1: poor).
 1. Poor: Habitat even aged and young. Trees smaller than 5 inch DBH. Understory growth cluttered and restricts flying/foraging
 2. Moderate: some diversity in age of trees in the stand. Trees 5 to 15 inches present. Understory clutter dominant but not ubiquitous. Trees greater than 15" DBH may be present but rare.
 3. Optimal: Mature forest. Diverse age classes of trees present. Trees > 15 inch DBH frequent. Varying tree height and treefalls allow for frequent small openings and gaps that facilitate bat foraging.
- 2 **Land Cover:** 1. Poor: Square kilometer surrounding site predominantly un-forested. Few mature trees present not connected to other areas of trees.
 2. Marginal: Trees present in the form of small woodlots and wooded fence rows. Little connection to adjacent forested areas.
 3. Optimal: Area is largely forested. Wooded stands are connected to other wooded stands via wooded stream, fence row, or other wooded corridor.

Total Habitat Score (Should be between 4 & 12)

Comments: Stream intermittent and VERY cluttered. Very little foraging space in woodlot. Lots of available roosts and downed trees.

Please return to:

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859-925-9012



COPPERHEAD ENVIRONMENTAL CONSULTING

Mist Netting Data Form

Site No. 29 Project No./Name 501 / Emerson West Date 20 July 2016
 Site Location Woodlot South of Trail 0106
 County Seneca State OH Time Up 2059 Time Down 0159
 Lat/Lon ; UTM: N/E 41.09148 W/N -82.866430 Zone — Datum NAD83 Observers J Adams, H Price

COPPERHEAD
ENVIRONMENTAL CONSULTING

#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2155	EPFU	J	M	NR	12.00	43.0	A	3.5	0	—	—	—
2	2225	EPFU	A	M	NR	18.00	50.0	A	1.5	0	—	—	—
3	2225	EPFU	J	F	NR	13.00	43.0	A	6.5	0	—	—	—
4	2238	EPFU	A	M	NR	19.00	49.0	B	3.0	0	—	—	—
5	2255	EPFU	J	F	NR	15.00	47.0	B	3.0	0	—	—	—
6	2255	EPFU	J	M	NR	16.75	44.0	A	4.5	0	—	—	—
7	2305	EPFU	F	F	L	21.00	48.0	A	5.5	1	—	—	—
8	2312	EPFU	A	M	TD	18.50	46.0	B	2.5	0	—	—	—
9	2320	EPFU	J	M	NR	16.25	46.0	A	4.5	0	—	—	—
10	2325	EPFU	A	F	PL	18.25	47.0	A	4.0	1	—	—	—
11	2355	EPFU	A	F	PL	22.00	51.0	D	1.5	0	—	—	—
12	0020	EPFU	J	F	NR	13.50	47.0	A	3.5	0	—	—	—
13	0040	EPFU	J	F	NR	11.25	45.0	A	4.5	0	—	—	—
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													

Moon Phase 98% Wax / (Wane)

	Rise	Set
Sun	<u>0605</u>	<u>2059</u>
Moon	<u>2123</u>	<u>0702</u>

Time	Temp (F)	Sky	Wind	No. Bats
<u>2059</u>	<u>73</u>	<u>0</u>	<u>0</u>	<u>1</u>
<u>2159</u>	<u>70</u>	<u>0</u>	<u>0</u>	<u>5</u>
<u>2259</u>	<u>68</u>	<u>0</u>	<u>0</u>	<u>5</u>
<u>2359</u>	<u>66</u>	<u>0</u>	<u>0</u>	<u>2</u>
<u>0059</u>	<u>68</u>	<u>0</u>	<u>1</u>	<u>0</u>
<u>0159</u>	<u>66</u>	<u>0</u>	<u>0</u>	

Sky Code

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

Beaufort Wind Scale

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

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

Date _____ Start time _____ Stop time _____

Date _____ Start time _____ Stop time _____

Weatherproofing _____ Coordinates _____

Comments:

Please Return to:
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Sheet of



COPPERHEAD
ENVIRONMENTAL CONSULTING

Moon Phase 98%		Wax / Wane
	Rise	Set
Sun	0614	2101
Moon	1953	0507

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

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

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

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

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

Mist Net Site Habitat Sheet

Site No. 29

Project No./Name 501 Emerson West

Date 18 July 2016

Lat/Lon ; UTM: N/E 41.09148

W/N -82.860430

Zone

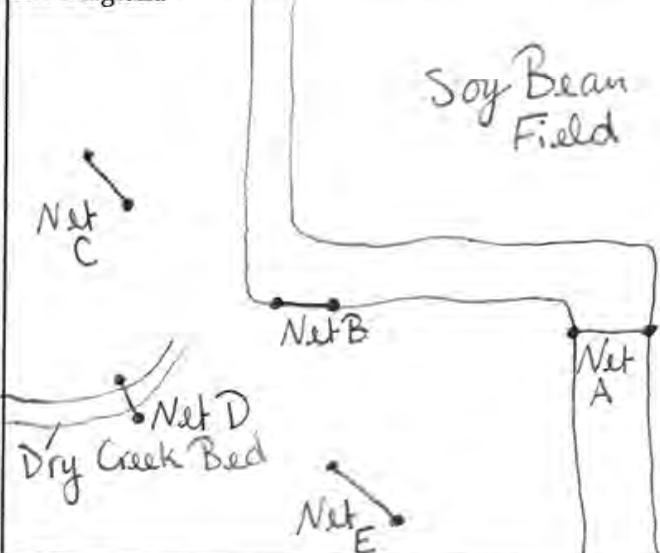
Observers J Adams, H Price

Datum: NAD83

County Seneca

State OH Quad Centerton

Site Diagram:



Net	Height (m)	Length (m)	Dates
A	7.3	6	18 July
B	5.2	9	18 July
C	5.2	6	18 July
D	5.2	4	18 July
E	5.2	6	18 July
F			

Site Photographs

Camera: _____

Photo Log: _____

Dominant Vegetation						
1. <i>Carya ovata</i>						
2. <i>Carthagus sp.</i>						
3. <i>Quercus palustris</i>						
4. _____						
5. _____						
6. _____						
Net Set by Habitat						
Habitat	A	B	C	D	E	F
River						
Stream				✓		
Pond						
Corridor						
Cave						
Mine						
Forest						
Gap			✓		✓	
Other	✓	✓				
Edge						
Edge						

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

- 2 **Roost habitat:** 1. Poor: No or few snags $\geq 5"$ DBH with sloughing bark or other usable roost features (cracks, crevices, etc)
2. Moderate: Snags with sloughing bark or other roost features present 5-15 inch DBH within 1000 feet of forested areas.
- 1 3. Optimal: Snags with sloughing bark or other roost features present >15 inch DBH within 1000 feet of forested areas.
- Water Resources:** 1. Poor: bat drinking resources not present at the site.
2. Moderate: Ephemeral or intermittent streams or ponded areas present but too cluttered to allow many bats to drink easily or simultaneously. No corridors, openings or canopy gaps allow bats easy access to the resource.
- 2 3. Optimal: Streams or ponds (including road cuts) present that appear to offer drinking resource throughout the majority of the summer. Flyways to resources are available.
- Forest Structure:** (if hardwoods are absent or nearly absent or if stand is monoculture, area automatically qualifies as a 1: poor).
1. Poor: Habitat even aged and young. Trees smaller than 5 inch DBH. Understory growth cluttered and restricts flying/foraging
2. Moderate: some diversity in age of trees in the stand. Trees 5 to 15 inches present. Understory clutter dominant but not ubiquitous. Trees greater than 15" DBH may be present but rare.
3. Optimal: Mature forest. Diverse age classes of trees present. Trees > 15 inch DBH frequent. Varying tree height and treefalls allow for frequent small openings and gaps that facilitate bat foraging.
- 1 **Land Cover:** 1. Poor: Square kilometer surrounding site predominantly un-forested. Few mature trees present not connected to other areas of trees.
2. Marginal: Trees present in the form of small woodlots and wooded fence rows. Little connection to adjacent forested areas.
3. Optimal: Area is largely forested. Wooded stands are connected to other wooded stands via wooded stream, fence row, or other wooded corridor.

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

Comments:

Please return to:

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859-925-9012



APPENDIX B

Mist-Net Site Photographs

501- Emerson West Wind Project Bat Survey, Seneca County, Ohio, July 2015 and 2016.

Business Confidential – Not for Public Disclosure

2015 Mist-Net Site Photographs



Site 1 Net A



Site 1 Net B



Site 1 Net C



Site 1 Net D



Site 2 Net A - 1



Site 2 Net B - 1



Site 2 Net C - 1



Site 2 Net D - 1



Site 2 Net A - 2



Site 2 Net B - 2



Site 2 Net C - 2



Site 2 Net D - 2



Site 4 Net A



Site 4 Net B



Site 4 Net C



Site 4 Net D



Site 5 Net A



Site 5 Net B



Site 5 Net C



Site 5 Net D



Site 6 Net A - 1



Site 6 Net B - 1



Site 6 Net C - 1



Site 6 Net D - 1



Site 6 Net A - 2



Site 6 Net B - 2



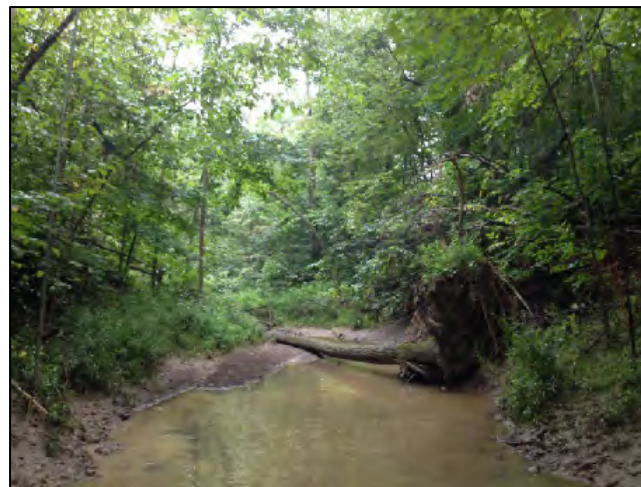
Site 6 Net C - 2



Site 6 Net D - 2



Site 8 Net A



Site 8 Net B



Site 8 Net C



Site 8 Net D



Site 8 Net E



Site 9 Net A



Site 9 Net B



Site 9 Net C



Site 9 Net D



Site 10 Net A



Site 10 Net B



Site 10 Net C



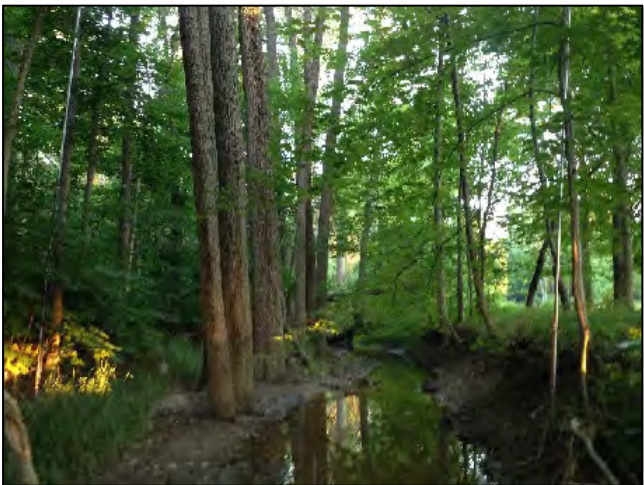
Site 10 Net D



Site 11 Net A



Site 11 Net B



Site 11 Net C



Site 11 Net D



Site 13 Net A



Site 13 Net B



Site 13 Net C



Site 13 Net D



Site 16 Net A



Site 16 Net B



Site 16 Net C



Site 16 Net D



Site 24 Net A



Site 24 Net B



Site 24 Net C



Site 24 Net D



Site 24 Net E



Site 36 Net A



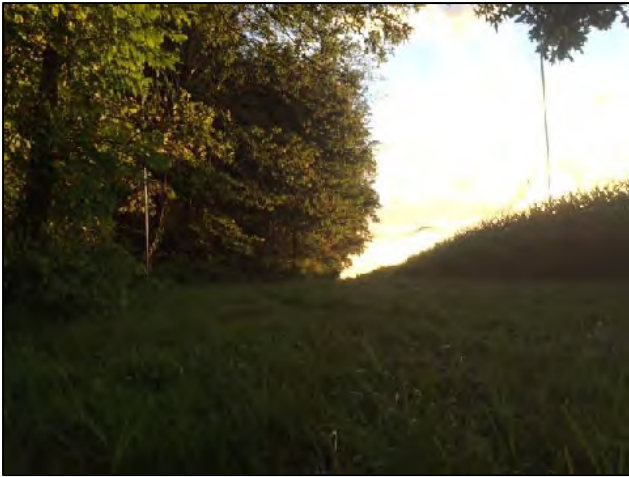
Site 36 Net B



Site 36 Net C



Site 36 Net D



Site 36 Net E



Site 36 Net F

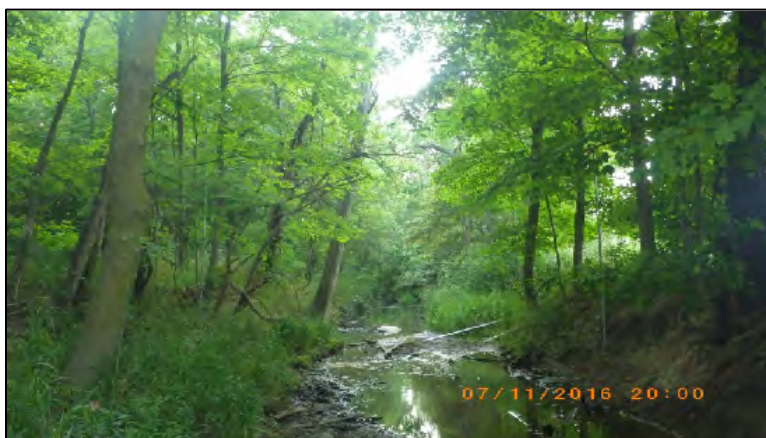


Site 36 Net G

2016 Mist-net Site Photos



Site 1 Net A



Site 1 Net B



Site 1 Net C



Site 1 Net D



Site 1 Net E



Site 2 Net A



Site 2 Net B



Site 2 Net C



Site 2 Net D



Site 2 Net E



Site 3 Net A



Site 3 Net B



Site 3 Net C



Site 3 Net E



Site 4 Net A



Site 4 Net B



Site 4 Net C



Site 4 Net D



Site 4 Net E



Site 5 Net A



Site 5 Net B



Site 5 Net C



Site 5 Net D



Site 5 Net E



Site 6 Net A



Site 6 Net B



Site 6 Net C



Site 6 Net D



Site 6 Net E



Site 7 Net A



Site 7 Net B



Site 7 Net C



Site 7 Net D



Site 7 Net E



Site 8 Net A



Site 8 Net B



Site 8 Net C



Site 8 Net D



Site 8 Net E



Site 9 Net A



Site 9 Net B



Site 9 Net C



Site 9 Net D



Site 9 Net E



Site 10 Net A



Site 10 Net B



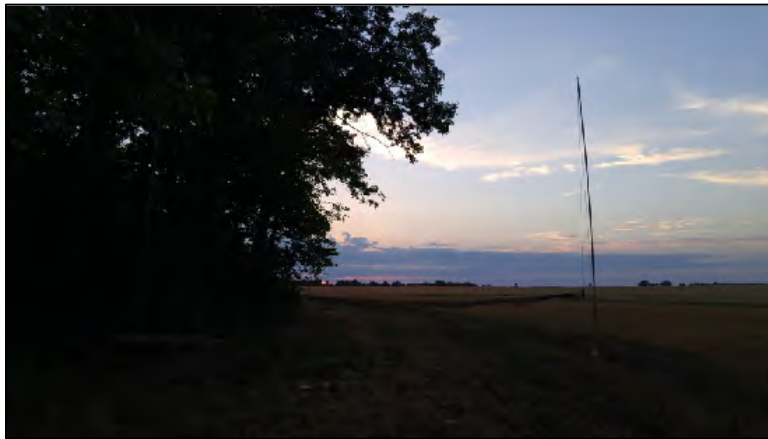
Site 10 Net C



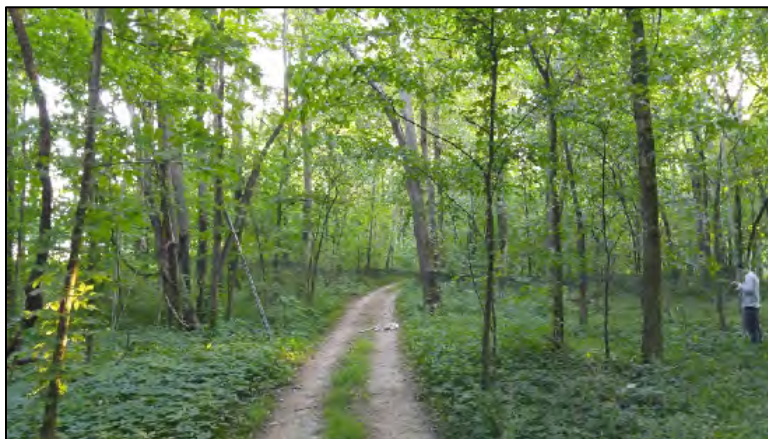
Site 10 Net D



Site 10 Net E



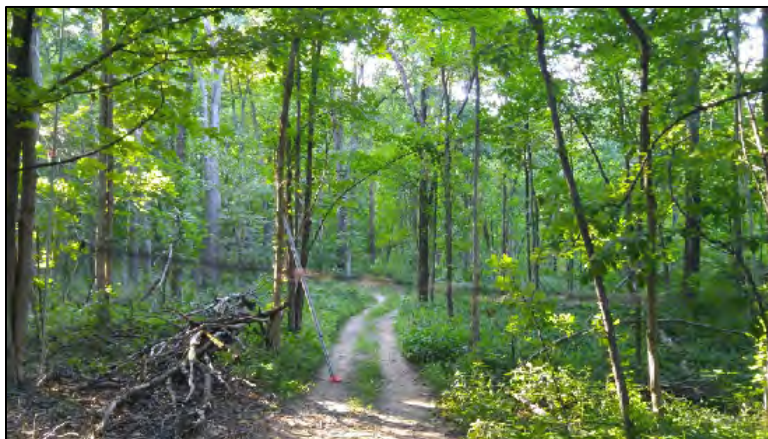
Site 10 Net F



Site 11 Net A



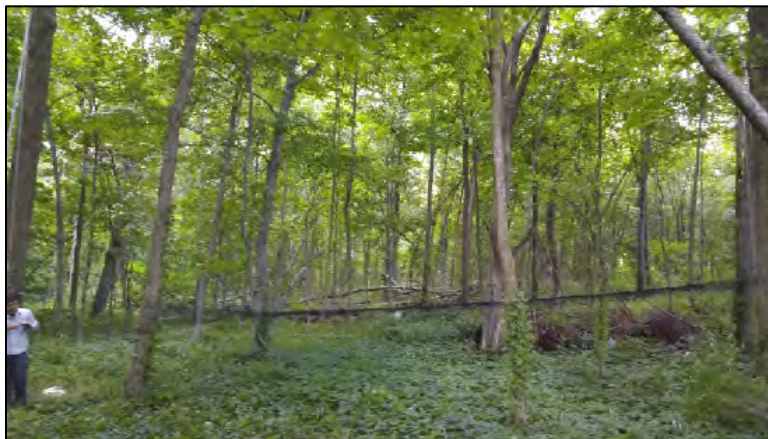
Site 11 Net B



Site 11 Net C



Site 11 Net D



Site 11 Net E



Site 11 Net F



Site 12 Net A



Site 12 Net B



Site 12 Net C



Site 12 Net D



Site 12 Net E



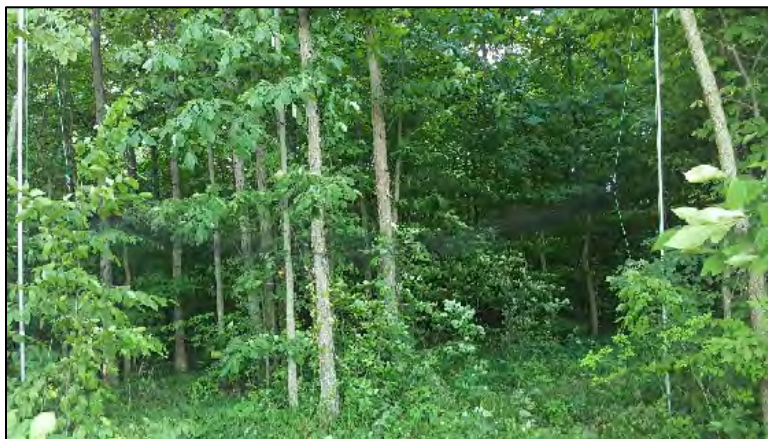
Site 13 Net A



Site 13 Net B



Site 13 Net C



Site 13 Net D



Site 13 Net E



Site 14 Net A



Site 14 Net B



Site 14 Net C



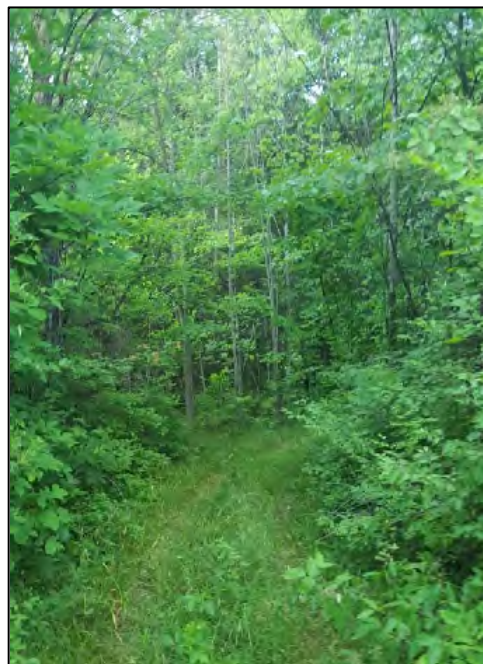
Site 14 Net D



Site 14 Net E



Site 15 Net A



Site 15 Net B



Site 15 Net C



Site 15 Net D



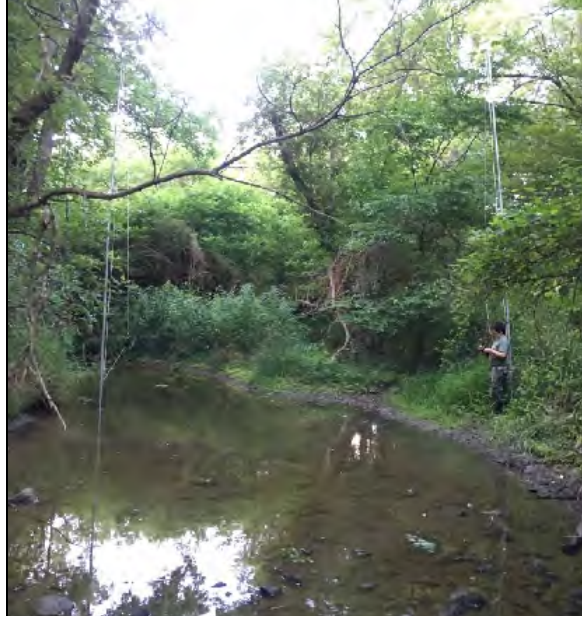
Site 15 Net E



Site 16 Net A



Site 16 Net B



Site 16 Net C



Site 16 Net D



Site 16 Net E



Site 17 Net A



Site 17 Net B



Site 17 Net C



Site 17 Net D



Site 17 Net E



Site 18 Net A



Site 18 Net B



Site 18 Net C

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in

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

Summary: Application Exhibit J Appendix E - Part 11 of 12 electronically filed by Teresa Orahod on behalf of Sally W. Bloomfield