



COPPERHEAD
ENVIRONMENTAL CONSULTING

12 June 2014

Ms. Angela Boyer
Wildlife Biologist
US Fish & Wildlife Service
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230

AND

Ms. Jennifer L. Norris
Wildlife Research Biologist
ODNR Wind Energy Biologist
ODNR, Division of Wildlife
2045 Morse Road, Building G
Columbus, OH 43229-6693

Sent via e-mail

RE: CASTO Bat Survey Report for the Proposed Albany Park Northeast Project, Franklin County, Ohio;
Concurrence on negative findings sought (**Reference No. 14-004**)

Dear Ms. Boyer and Ms. Norris:

No Indiana bats were captured during these surveys. As such, Copperhead seeks concurrence on our results and confirmation that no conservation measures are necessary for the Indiana bat based on the survey results. Please let me know if you require any additional information or clarification.

Sincerely,

Chris Leftwich
Biologist/Project Manager

COPPERHEAD ENVIRONMENTAL CONSULTING, INC.

P.O. BOX 73 ■ 11641 RICHMOND RD. ■ PAINT LICK, KENTUCKY, 40461

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FINAL REPORT:

Summer 2014 Indiana Bat Presence/Probable Absence Survey for the Proposed Albany Park Northeast Project, Franklin County, Ohio

CASTO

Prepared by
Chris Leftwich and Kelsey Pearman

11 June 2014

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INTRODUCTION

CASTO is proposing to construct a multi-family residential development project in Columbus, Ohio at the northeast intersection of Hamilton Road and State Route 161. Since the project area occurs within the summer range of the federally endangered Indiana bat, construction may potentially impact summer populations of the species. In order to determine the presence or probable absence of Indiana bats, Copperhead Environmental Consulting, Inc. (Copperhead) surveyed one (1) site for three calendar nights, totaling nine (9) net nights within the project area.

No Indiana bats were captured during the mist-net surveys.

METHODS

Site Selection/Mist Netting

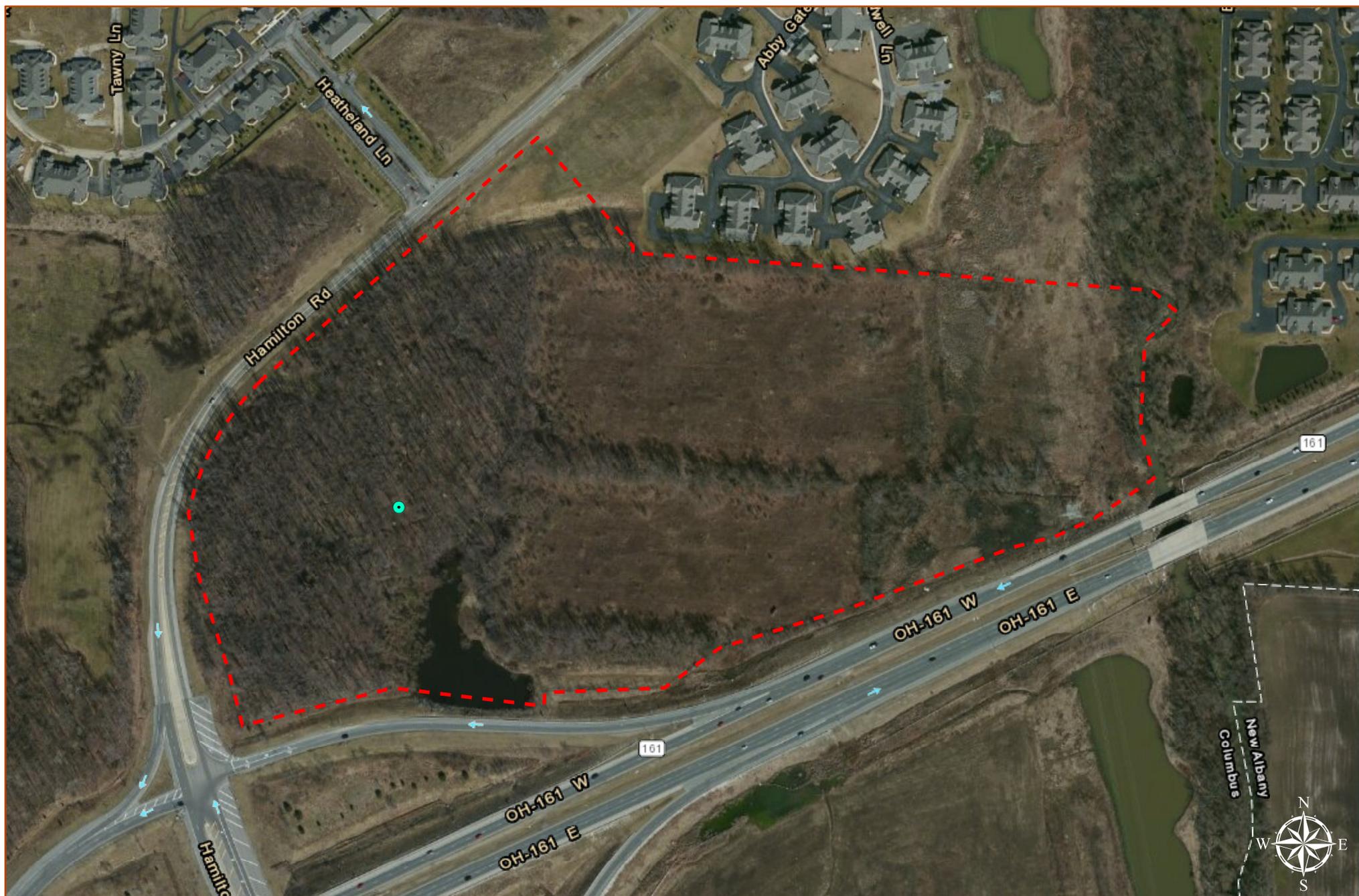
One mist-net site was selected and surveyed within the project area (Table 1; Figure 1). The level of effort was based on amount of forested habitat (~27 ac) within the project area. A study plan was submitted to the USFWS Ohio Field Office and ODNR on 4 April 2014 and concurrence was received on 22 April (USFWS) and 30 May (ODNR). The mist-net site location was selected after Copperhead biologists conducted field reconnaissance of the entire project area. Mist-net surveys were implemented in accordance with guidelines outlined in the *2014 Range-wide Indiana bat summer survey guidelines* and per ODNR protocol.

Table 1. Mist-net site location for the proposed Albany Park Northeast Project, Franklin County, Ohio.

Site No.	Description	Dates (2014)	County	Quad	Latitude	Longitude
1	Woodlot northeast of State Road 161 and Hamilton Road intersection	2, 3, 4 June	Franklin	New Albany	40.08677	-82.85265

Survey site location was recorded using a handheld Global Positioning System (GPS) unit. Mist-nets were set prior to sunset and deployed at dusk. Nets were left open for at least five hours after sunset each night and checked every 10 minutes. Disturbance near the nets was kept to a minimum. Weather data, including temperature, relative wind speed, and cloud cover was recorded on an hourly basis to ensure compliance with mist-net survey guidelines (e.g., temperature during survey > 50°F, no rain, etc.).

Low visibility, high-quality, nylon nets, 4 to 13 meters (~13 - 42 ft) in length (depending upon the width of the corridor) were used for each net set. A two tier set, at least 7 meters (~20 ft) high, constituted a net set. The site was surveyed for three nights, for a total of nine (9) net nights.



- Mist-net Site
- Survey Area (44.41 Acres)

Albany Park Northeast
Mist-net Site Location Map
Franklin County, Ohio



Scale: 1: 3,600
or
1 inch = 300 ft

North American Datum 1983
State Plane Ohio South
Lambert Conformal Conic
Source: EMH&T, ESRI
Date: 6/9/2014

Figure 1. Mist-netsite location for the proposed Albany Park Northeast project, Franklin County, Ohio.

Data recorded for bats captured included capture time, species, sex, age (adult or juvenile), reproductive condition (pregnant, lactating, post-lactating, scrotal, non-reproductive), weight (g), and forearm length (mm). In addition, the height, and the specific net set, of capture were recorded for each bat. Completed data sheets are provide in Appendix A, and site photographs are provided in Appendix B.

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 most up to date guidelines established by USFWS. All hard, non-porous netting equipment was sanitized with a Lysol® IC solution prior to arrival and after each survey night; all other equipment was submersed in hot water (122°F) for a minimum of 20 minutes. Individual bats were kept in unused paper bags while waiting 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 was sanitized immediately following the handling of each bat.

RESULTS

Mist-net surveys were conducted on 2, 3, and 4 June 2014. No Indiana bats were captured during surveys. A total of fourteen bats representing two species were captured during mist-net survey efforts: 13 *Eptesicus fuscus* (EPFU) and 1 *Lasiurus borealis* (LABO) (Table 2). Six *E. fuscus* and one *L. borealis* were pregnant females and seven *E. fuscus* were non-reproductive adult males.

Captured bats were examined for signs of WNS by using the Reichard Wing-Damage Index. No major traumas were observed on captured bats.

Table 2. Summary of bat captures by species, age, sex, and reproductive condition for the proposed Albany Park Northeast Project, Franklin County, Ohio.

Species	Adult Male		Adult Female			Juvenile		Escaped*	Total
	NR	SCR	PG	L	PL	NR	Male		
<i>Eptesicus fuscus</i>	7		6						13
<i>Lasiurus borealis</i>			1						1
Total	7		7						14

NR = non reproductive; SCR = scrotal; L = lactating; PG = pregnant; PL = post lactating

* Species was determined, but bat escaped prior to collection of morphometric data.

CONCLUSIONS

Species composition of bats captured during the survey was typical for the geographic location, level of effort (i.e. number of survey nights), and habitats present.

No Indiana bats were captured during the survey; therefore it is unlikely the species is present in the project area during the maternity season. Forested habitat within the project area consisted of a forested wetland dominated by mature red maple (*Acer rubrum*), mature red oak (*Quercus rubra*), and mature American elm (*Ulmus americana*), with an understory dominated by spicebush (*Lindera benzoin*). The project area is largely surrounded by residential areas and old field/early successional forests, with mature forests across Hamilton Road on the western boundary of the project area. The forest consisted of natural regeneration dominated by a moderately dense understory with openings. One forested corridor was present through the project area, which led through the woodlot to a pond. Standing snags were relatively common throughout the forested area, but many snags lacked the characteristics preferred by Indiana bats due to their relatively small DBH and limited solar exposure, resulting in roosting habitat being considered moderate. These factors likely limit the presence of Indiana bat maternity colonies within the project area.

CASTO is interested in moving forward to the construction phase of this project as soon as possible. As such, Copperhead seeks concurrence on our results and confirmation that no conservation measures are necessary for the Indiana bat based on the survey results.

APPENDIX A

DATA SHEETS

Mist Netting Data Form

Sheet _____ of _____

Site No. 1 Project No./Name 302 / New Albany Park MYSO Survey Date 2 June 2014
 Site Location Woodlot NE of intersection of State Rd 161 and Hamilton Rd
 County Franklin State OH Time Up 2045 Time Down 0154
 Lat/Lon; UTM: NYE 40.08677 W/N 82.85265 Zone — Datum NAD83 Observers K. Pearman, T. Culbertson



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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	EPPU	A	F	P	24.25	48	C	3	0	—	band too big	—
2	2220	EPPU	A	M	NR	15.5	45	C	2.5	0	—	—	—
3													
4													
5													
6													
7													
8													
9													
10													
11													
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26													
27													
28													
29													
30													

Moon Phase	%	Wax / Wane
	Rise	Set
Sun	6:04	20:54
Moon	10:30	—

Time	Temp (F)	Sky	Wind	No. Bats
2100	76°	3	2	—
2200	73	3	2	1
2300	73	3	2	1
0000	72	3	2	0
0100	69	5	2	0
0145	69	5	2	0

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

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

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:
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Mist Netting Data Form

Site No. 1 Project No./Name 302 / New Albany Park MVSO Survey Date 3 June 2014
 Site Location Woodlot NE of intersection of State Rd 161 and Hamilton Rd.
 County Franklin State OH Time Up 2040 Time Down 0155
 Lat/Lon; UTM: N/E 40.08677 W/N 82.85265 Zone - Datum NAD83 Observers K. Pearman, T. Culbertson



#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type	Freq.
1	2145	EPFU	A	F	P	215	46	C	4.5	0	-	-	-
* 2	2218	EPFU	A	F	P	25.75	48	C	5.5	0	-	-	-
3	2340	EPFU	A	F	P	29.5	48	C	3	0	-	-	-
4	0155	LATD	A	F	P	15.75	41	D	2.5	0	-	-	-
5													
6													
7													
8													
9													
10													
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28													
29													
30													

Moon Phase	%	Wax / Wane
	Rise	Set
Sun	0603	2055
Moon	1125	1224

Time	Temp (F)	Sky	Wind	No. Bats
2100	75°	0	0	-
2200	71°	0	0	1
2300	70°	0	0	1
2400	68°	0	0	1
0000	66°	0	0	0
0100	66	0	0	0
0200	65	0	0	0

Sky Code

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

Beaufort Wind Scale

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

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

Date _____ Start time _____ Stop time _____

Date _____ Start time _____ Stop time _____

Weatherproofing _____ Coordinates _____

Comments:

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*recap from 2 June 2014, bad right canine, may have an extra canine

Mist Netting Data Form

Sheet of

Site No. 1 Project No./Name 302 / New Albany Park MPO Survey Date 4 June 2014
 Site Location Woodlot NE of intersection of State Rd 161 and Hamilton Rd
 County Franklin State OH Time Up 2050 Time Down 0156
 Lat/Lon; UTM: N/E 40.08677 W/N 82.85265 Zone Datum NAD83 Observers K. Pearson, T. Culbertson



#	Time	Species	Age	Sex	Repr.	Mass (g)	FA (mm)	Net	Height (m)	WDI	G/H/B/T	Band# Type <u>OR</u>	Freq. <u> </u>
1	2115	EPFU	A	M	NR	14.0	46	E	3.5	0	—	—	—
2	2144	EPFU	A	M	NR	17.0	47	B	2.5	0	—	—	—
3	2145	EPFU	A	M	NR	17.0	47	B	2.5	0	—	—	—
4	2150	EPFU	A	F	P	24.0	47	E	3.5	0	—	—	—
5	2153	EPFU	A	M	NR	16.25	46	D	2.5	0	—	—	—
6	2154	EPFU	A	F	P	26	47	D	1.5	0	—	—	—
* 7	2215	EPFU	A	M	NR	17.5	45	E	2.0	0	—	—	—
8	2218	EPFU	A	M	NR	17	49	E	3.0	0	—	—	—
9													
10													
11													
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28													
29													
30													

Moon Phase	%	Wax / Wane
	Rise	Set
Sun	0603	2056
Moon	0118	0125

Time	Temp (F)	Sky	Wind	No. Bats
2100	65	3	2	—
2200	62	3	2	6
2300	61	3	2	2
0000	61	3	2	0
0100	59	3	2	0
0130	59	3	2	0

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

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

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

* Bat # 2 from 2 Jun 2014

Mist Net Site Habitat Sheet

Site No. 1

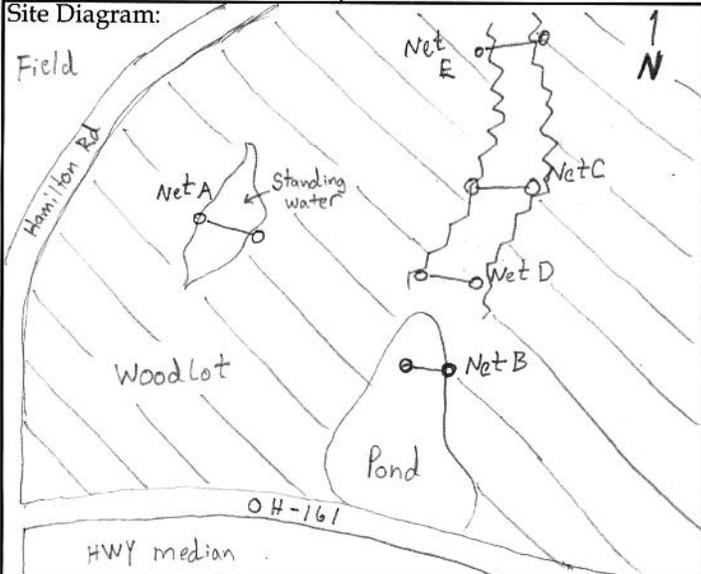
Project No./Name 302 1 New Albany Park MYSO Survey Date 2 June 2014

Lat/Lon ; UTM: (N)E 40.08677 (W)N 82.85262 Zone —

Observers K. Pearman, T. Culbertson

Datum: NAD83 County Franklin State OH Quad New Albany

Site Diagram:



Net	Height (m)	Length (m)	Dates
A	6	9/12	6/2, 6/3
B	5	12	6/2
C	6	6	6/2, 6/3, 6/4
D	6	9	6/3, 6/4
E	7.5		6/4
F			

Site Photographs
 Camera: Kelsey P.
 Photo Log:

Dominant Vegetation	
1. <u>Acer rubrum</u>	4. <u>Spice bush</u>
2. <u>Quercus robra</u>	5. _____
3. <u>Ulmus americana</u>	6. _____

Net Set by Habitat						
Habitat	A	B	C	D	E	F
River						
Stream						
Pond		X				
Corridor			X	X	X	
Cave						
Mine						
Forest						
Gap						
Other	X standing open water in forest					

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

- 2 **Roost habitat:** 1. **Poor:** No or few snags >= 5" DBH with sloughing bark or other usable roost features (cracks, crevices, etc)
 2. **Moderate:** Snags with sloughing bark or other roost features present 5-15 inch DBH within 1000 feet of forested areas.
 3. **Optimal:** Snags with sloughing bark or other roost features present >15 inch DBH within 1000 feet of forested areas.
- 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 ruts) present that appear to offer drinking resource throughout the majority of the summer. Flyways to resources are available.
- 3 **Forest Structure:** (if hardwoods are absent or nearly absent or if stand is monoculture, area automatically qualifies as a 1: poor).
 1. **Poor:** Habitat even aged and young. Trees smaller than 5 inch DBH. Understory growth cluttered and restricts flying/foraging
 2. **Moderate:** some diversity in age of trees in the stand. Trees 5 to 15 inches present. Understory clutter dominant but not ubiquitous. Trees greater than 15" DBH may be present but rare.
 3. **Optimal:** Mature forest. Diverse age classes of trees present. Trees > 15 inch DBH frequent. Varying tree height and treefalls allow for frequent small openings and gaps that facilitate bat foraging.
- 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.

10 * based upon viewing the entire project area, surrounded predominantly by residential areas and fields
Total Habitat Score (Should be between 4 & 12) bordered on 2 sides by major roadways

Comments: bordered on 2 sides by major roadways

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APPENDIX B

SITE PHOTOGRAPHS



Site 1 - Net A (2, 3 June)



Site 1 - Net B (2 June)



Site 1 - Net C (2, 3, 4 June)



Site 1 - Net D (3, 4 June)



Site 1 - Net E (4 June)