

Figure 2. Counties near the project area with hibernacula, summer maternity, and other summer (non-reproductive) records for the Indiana bat (*Myotis sodalis*).

Project No.340

Sources: USFWS, Indiana Bat Revised Recovery Plan, Agency Draft, 2007.  
Updated October 2010



ENVIRONMENTAL SOLUTIONS  
& INNOVATIONS, INC.

## 2.0 Methods

### 2.1 Mist Netting

Sampling efforts will follow guidelines provided by the Indiana Bat Recovery Team in the 2007 Indiana Bat Draft Recovery Plan (First Revision) (Table 1) as supplemented by guidance provided in ODNR's On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio (Table 2).

#### 2.1.1 Level of Effort

In prior correspondence, ODNR requested that 25 sites be sampled for bats based on the amount of forest contained in the Project area (Figure 3).

Table 1. USFWS Indiana Bat Mist Net Survey Guidelines

#### NETTING GUIDELINES

1. Netting Season: 15 May to 15 August, when Indiana bats occupy summer habitat.
2. Equipment (Mist Nets): constructed of the finest, lowest visibility mesh commercially available – monofilament or black polyester – with the mesh size approximately 38 millimeter (approximately 1.5 in).
3. Net Placement: mist nets extend approximately from water or ground level to tree canopy and are bounded by foliage on the sides. Net width and height are adjusted for the fullest coverage of the flight corridor at each site. A “typical” net set consists of three (or more) nets “stacked” on top of one another; width may vary up to 20 meters (60 ft).
4. Net Site Spacing:
  - ◆ Streams – one net site per 1 kilometer (0.6 mi)
  - ◆ Land Tracts – two net sites per 1 square kilometer (246 ac) of forested habitat
5. Minimum Level of Effort Per Net Site:
  - ◆ Two net locations (sets) per net site, with locations (sets) at least 30 meters (100 ft) apart
  - ◆ Two (calendar) nights of netting
  - ◆ At least four net–nights (1 net–night = 1 net set deployed for 1 night); typically, two net sets are deployed at one site for two nights, resulting in four net–nights
  - ◆ Sample Period: begin at dusk and net for 5 hours (approximately 0200h)
  - ◆ Nets are monitored at approximately 10-minute intervals
  - ◆ No disturbance near the nets between checks
6. Weather Conditions: net only if the following weather conditions are met:
  - ◆ No precipitation
  - ◆ Temperature  $\geq 10^{\circ}$  Celsius ( $50^{\circ}$  F)
  - ◆ No strong winds

Source: U.S. Fish and Wildlife Service, 2007

Table 2. ODNR Moderate Monitoring Mist Net Survey Guidelines for Proposed Commercial Wind Facilities

**ODNR MODERATE MONITORING NETTING GUIDELINES**

1. Netting Season: 15 June to 31 July.
2. Net Placement:
  - ◆ Nets are placed on pulley systems that allow at least two standard nets to be “stacked” on top of each other and with one set of poles allowing 3 nets to be stacked and reach 7.5 meters from the substrate.
  - ◆ Proposed net sites are to be inspected by ODNR personnel prior to beginning sampling efforts.
3. Net Site Spacing: Land Tracts – two net sites per 1 square kilometer (246 ac) of forested habitat
4. Minimum Level of Effort Per Net Site:
  - ◆ Four net locations (sets) per net site, with all locations (sets) within at least 100 meters (30 ft) of each other
  - ◆ Two non-consecutive (calendar) nights of netting
  - ◆ At least eight net–nights (1 net–night = 1 net set deployed for 1 night);
  - ◆ Sample Period: begin at dusk and net for 5 hours (approximately 0200 h)
  - ◆ Photos of all species captured
5. Marking of Bats:
  - ◆ Small dots of nontoxic, water-soluble paint applied to one forearm of all bats to temporarily identify recaptures.
  - ◆ Indiana and Rafinesque’s Big-Eared bats banded with bands provided by ODNR
  - ◆ Eastern Small-Footed Bats are not banded due to risk of injury

Source: Ohio Department of Natural Resources 2009

**2.1.2 Net Placement**

Mist nets are set to maximize coverage of flight paths used by Indiana bats along suitable travel corridors, foraging areas, and/or drinking areas. Riparian corridors are often used for travel or foraging by Indiana bats; however, upland corridors (e.g., trails or logging roads) also provide suitable sites. In upland areas, net sites in the vicinity of road ruts holding water have resulted in Indiana bat captures in many portions of the range.

Using GIS, ESI’s biologist identified 30 potential sites (Figure 3) for sampling. This includes 8 sites beyond the required 25 to address potential issues related to property access and to address sites with unsuitable characteristics that may not be detected using remote sensing techniques. The 30 sites are distributed throughout the Project area and were placed so to maximize bat capture. Preferred sites include:

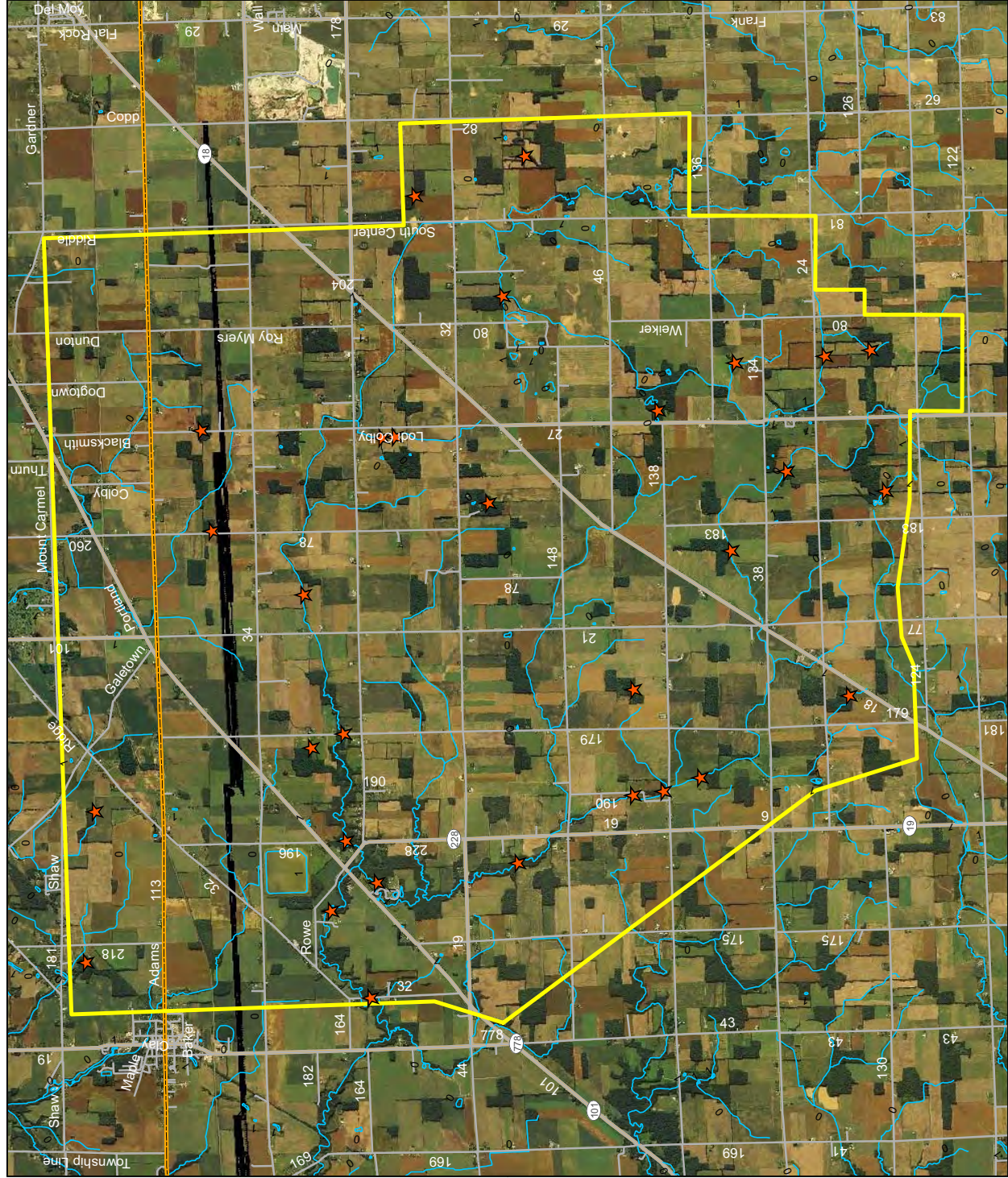
1. Riparian corridors along streams that connect larger woodlands, which could be used by foraging or roosting bats
2. Wooded upland corridors (roadways, fencerows) that connect larger woodlands, which could be used by foraging or roosting bats
3. Upland corridors including trails and utility rights-of-ways through larger woodlands that bats use for commuting and foraging
4. Choke points entering and exiting high potential foraging grounds (such as small fields or wetlands)
5. Areas identified as suitable using a model of habitat suitability (Weber and Sparks In Litt).

These potential sites are general locations. Once in the field, qualified bat biologist will select the exact netting locations and net orientation so to maximize bat capture. Extra sites have been pre-selected to allow field biologist maximum flexibility to select high quality net sites, and in the expectation that some preferred sites will be on inaccessible parcels. Because netting efforts can be easily impacted by environmental factors such as changes in vegetation or water level, the actual location and orientation of each net set is determined in the field by a qualified bat biologist.

Given that ESI was not directly involved in the negotiation of net sites, and that ODNR has, on other sites, agreed to lower the sampling effort in exchange for the inclusion of other techniques. ESI requests concurrence from USFWS and ODNR that this survey effort will be accepted as a presence, probable absence survey for the Indiana bat.



Figure 3. Potential mist netting sites within the Project area.



### **2.1.3 Bat Capture and Marking**

Bats are live-caught in mist nets and released unharmed near the point of capture. Captured bats are identified to species, sex, age class, and reproductive condition. Weight and right forearm length of each individual are also recorded. Age is determined by examining the epiphyseal-diaphyseal fusion of long bones in the wing. Reproductive condition of female bats is recorded as pregnant (based on gentle abdominal palpation), lactating, post lactating, or non-reproductive. Time and location/net site of captured bats is recorded. Indiana and Rafinesque's big-eared bats will be banded with bands provided by ODNR and processing is typically completed within 30 minutes of the time each bat is removed from the net.

In response to the current White Nose Syndrome (WNS) issue, ESI biologists will follow Bat Handling/Disinfection Protocol for Summer Bat Field Studies, developed by the USFWS and any subsequent updates issued by either ODNR or USFWS. ESI biologists will also categorize wing damage using the "Wing-Damage Index Used for Characterizing Wing Condition of Bats Affected by White-nose Syndrome" established by Jon Reichard in 2008.

### **2.1.4 Habitat Characterization**

Concurrent with mist netting, habitat is described for each net site. The emphasis of this description is habitat form: size and relative abundance of large trees and snags that potentially serve as roost trees, canopy closure, understory clutter/openness, water availability, and flight corridors. Habitat form is emphasized because the Indiana bat roosts in a great many species of trees. Tree species composition is included in the assessment since it provides insight on edaphic conditions on site.

ESI's habitat characterization does more than emphasize species of large trees near the net. It identifies components of the canopy and subcanopy layers. As defined in the Indiana Bat Habitat Suitability Index Model, dominant trees are the large trees in the canopy (> 40 cm diameter at breast height [dbh]) that have the greatest likelihood of being used by maternity colonies of Indiana bats. ESI's habitat characterization identifies dominant and subdominant elements of the canopy. The amount of understory, or clutter, is also recorded, as many bat species, including the Indiana bat, tend to avoid areas of high clutter.

Each net site is documented with a sketch on the Net Site Habitat Description data sheet.

### **2.1.5 Weather and Temperature**

Weather conditions will be monitored each night of survey to assure compliance with mist netting guidelines. Temperature, wind speed and direction, and percent cloud cover are recorded on an hourly basis. Netting will be discontinued during rain. A

standard thermometer will be used to record temperature. Wind speed will be determined by use of the Beaufort wind scale, and cloud cover will be visually estimated. Weather data will be provided in an appendix to the final report.

## **2.2 Capture of Indiana Bats**

### **2.2.1 Transmitter Attachment**

After collecting morphometric data, up to four Indiana bats will be fitted with radio-transmitters. A maximum of three transmitters will be attached per net site, and as feasible, transmitters will be placed on females or juveniles in preference to males. Only one transmitter will be attached to an adult male bat. Transmitters are obtained from Holohil Systems Ltd., ®Wildlife Materials, Inc., ®Titley Electronics, PTY LTD, ®Blackburn Transmitters, or a similarly reputable vendor. Bat transmitters weigh from 0.20 to 0.68 gram; ESI typically uses 0.35-gram transmitters, favoring minimal impact to the bat over the additional tracking window associated with larger devices. Batteries on these 0.35-gram transmitters typically last from 7 to 14 days. Transmitters are activated and tested before attachment. A small interscapular area is trimmed of fur and the transmitter attached to this area with non-toxic surgical adhesive. The adhesive degrades over time (typically 1 to 4 weeks) and the transmitter falls off the bat. Biologists record the transmitter weight, weight of the bat before and after transmitter attachment, and holding time. Bats are released unharmed near the points of capture. Standardized data forms are used for transmitter attachment information.

ESI will notify USFWS, ODNR, and Republic of any Indiana bat captures by the next business day.

### **2.2.2 Diurnal Roost Telemetry**

To locate roosting bats, ESI tracks radio-telemetry signals using either a ®Wildlife Materials TRX-2000S PLL Synthesized Tracking Receiver, an ®Advanced Telemetry Systems, Inc. Model R2000 Scanning Receiver, or a ®Titley Australis 26k receiver with three-element folding Yagi directional antennas manufactured by either ®Wildlife Materials, Inc. or ®Titley Electronics, PTY LTD. Receivers are not water resistant and will not be used during periods of rain.

Beginning the day after bat capture and transmitter attachment, ESI biologists use telemetry to locate each bat's diurnal roost. Roost trees are identified to species and dbh is measured. The approximate height at which the bat is roosting and general condition of the roost tree (dead, live, dying, % bark cover, etc.) is noted. A description of habitat near the roost tree is recorded. Occasionally, Indiana bats roost in man-made structures, most frequently bridges. Standardized data forms are used to characterize roost trees and assess associated habitat; the form also provides for assessment of man-made structures used as roosts. Roosts are

photographed and flagged or marked in another acceptable manner for ease of future identification. Coordinates of each roost are recorded with a GPS unit. When feasible, distances among roost trees and other notable landscape features are determined.

Bats will be tracked for approximately six days after the date of capture or until the transmitter is shed or fails, whichever happens first. Emergence counts will be performed on each identified roost tree for three days. In situations where multiple bats are being tracked and each bat uses a new roost daily, it can quickly become financially and logistically infeasible to complete three days of emergence on all trees. In those situations, all trees will be watched for at least 1 day. Beyond that, ESI biologists will use their best judgment to select which trees receive further observation.

GPS location, tree species, dbh, and various other habitat characteristics will be recorded on ESI's Roost Habitat data sheets.

### **2.2.3 Nocturnal Telemetry**

At night, for the life of the transmitter, the tagged bat will be followed to identify foraging and activity areas to determine the home range of the individual and collectively of all tagged bats from the same maternity colony. Telemetry readings are taken at approximately 5-minute intervals, simultaneously by three or four biologists so that triangulation can be used to ascertain the location of the bat. These data points are plotted on maps and used to construct "minimum convex polygons" or "kernels" depicting areas used by the bat(s). Within that area, habitat use versus availability can be used to determine whether bats are concentrating their activity in a specific area or habitat.

## **2.3 Capture and Telemetry of Eastern Small-footed or Rafinesque's Big-eared Bats**

Although highly unlikely, ESI will radio-tag any and all eastern small-footed or Rafinesque's big-eared bats that are captured. The same techniques will be used to track these species as are outlined above for tracking Indiana bats to determine both their day roosts and home range.



## **2.4 Capture and Telemetry of Colonial Bats**

Maternity colonies concentrate individuals in an area and thus increase the risk of death or injury if turbines are located nearby. If more than 15 reproductive females or juveniles of one of the more common colonial species (e.g., big brown, little brown, or northern bat) are captured within a night's trapping, radio telemetry will be used to locate the maternity colony. A maximum of 10 transmitters will be used to complete this task, and their use will be stratified across the project area.

Each roost that is located will be monitored at least five times at dusk, unless only one or no bats are observed on three consecutive emergence counts.

## **3.0 Timeline and Reporting**

Mist net and surveys will be conducted between 20 June and 31 July 2011, and any associated radio-telemetry will be completed by 5 August 2011. ESI will prepare a detailed technical report that provides results and discussion of the mist net survey. Copies of field data sheets and an interpretation of those data will also be included. The report will also contain maps clearly identifying the Project area, mist net sites, and diurnal roost trees (if applicable). Representative photographs of net sites, all bat species captured, and roost trees will be included.

## **4.0 Request for Site-Specific Authorization to Proceed**

Please consider this study plan a request for site-specific authorization to begin sampling throughout the proposed Project Area on 20 June 2011.

## **5.0 Personnel**

A list of ESI staff that may be involved in field work for the Project follows. Other staff not listed here may also participate – resumes can be provided upon request; all individuals responsible for bat identification are listed on ESI's scientific collection permit(s).

1. Dr. Virgil Brack, Jr. – Principal Scientist
2. Dr. Dale W. Sparks – Project Manager
3. Mr. Adam Mann
4. Mr. Jason Duffey
5. Ms. Lisa Winhold
6. Ms. Erin (Pfeffer) Basiger
7. Dr. L. Michelle Gilley
8. Mr. Jack Basiger
9. Mr. David Jeffcott
10. Mr. Jared Helms
11. Mr. Nick Gikas
12. Dr. Justin Boyles

## **CORRESPONDENCE**

From: Norris, Jennifer [mailto:Jennifer.Norris@dnr.state.oh.us]  
Sent: Wednesday, July 27, 2011 1:27 PM  
To: Megan\_Seymour@fws.gov; Dale Sparks  
Cc: Keith\_Lott@fws.gov; Melanie\_Cota@fws.gov; Angela\_Boyer@fws.gov  
Subject: RE: Republic Wind Project

Megan-

Capture site: 41 12' 25.2", -82 57' 10.3"

Roost 1: 41 13' 07.5", -82 56' 38.0"

Roost 2: 41 13' 06.1", -82 56' 44.6"

Both roost trees are shag bark hickory. Jack indicated ESI was still netting as well- they should be done netting by the end of the week.

**Jennifer L. Norris**  
**Wildlife Research Biologist**  
**Olentangy Wildlife Research Station**  
**ODNR, Division of Wildlife**  
**8589 Horseshoe Road**  
**Ashley, OH 43003**  
**Tel: 740 747-2525 Ext: 26**  
**Email: [jennifer.norris@dnr.state.oh.us](mailto:jennifer.norris@dnr.state.oh.us)**

-----Original Message-----

From: Megan\_Seymour@fws.gov [mailto:Megan\_Seymour@fws.gov]  
Sent: Wednesday, July 27, 2011 1:21 PM  
To: Dale Sparks  
Cc: Norris, Jennifer; Keith\_Lott@fws.gov; Melanie\_Cota@fws.gov; Angela\_Boyer@fws.gov  
Subject: RE: Republic Wind Project

Dale,  
Thank you for the notification. There was no map attached, so please provide that and the lat/long when you get a chance. We look forward to hearing more from you about this bat. Are you still netting? How many more sites/nights do you anticipate netting for?  
Thanks again,  
Megan

■ Dale Sparks <[DSparks@environmentalsi.com](mailto:DSparks@environmentalsi.com)>

**Dale Sparks**  
<[DSparks@environmentalsi.com](mailto:DSparks@environmentalsi.com)>

07/26/2011 05:57 PM

To "Megan\_Seymour@fws.gov"  
<[Megan\\_Seymour@fws.gov](mailto:Megan_Seymour@fws.gov)>,  
"Jennifer.Norris@dnr.state.oh.us"  
<[Jennifer.Norris@dnr.state.oh.us](mailto:Jennifer.Norris@dnr.state.oh.us)>

cc

SubjectRE: Republic Wind Project

Jennifer and Megan:

My field crew at republic captured and radio-tagged a post-lactating Indiana bat on Sunday night. They have located the bat to a woodlot located immediately to the West of the label for site 13 in the attached map.

I apologize for the late notice. I was on the road yesterday and had thought you had already been notified.

---

From: Megan\_Seymour@fws.gov [Megan\_Seymour@fws.gov]  
Sent: Friday, July 08, 2011 12:43 PM  
To: Virgil Brack  
Cc: Dale Sparks; Funk, Jason (Jason.Funk@tetrattech.com)  
Subject: Re: Republic Wind Project

Virgil,  
Thank you for providing this. When Angie receives requests for wind projects she always runs them by whoever has been coordinating on that project, so we did already see this proposal and agree that it was appropriate.  
Sincerely,  
Megan

[[cid:1\\_\\_=0ABBF254DFC843218f9e8a93df938690@fws.gov](mailto:cid:1__=0ABBF254DFC843218f9e8a93df938690@fws.gov)]Virgil Brack  
<[VBrack@environmentalsi.com](mailto:VBrack@environmentalsi.com)>

Virgil Brack <[VBrack@environmentalsi.com](mailto:VBrack@environmentalsi.com)>

06/30/2011 11:58 AM

To

"Megan Seymour ([Megan\\_Seymour@fws.gov](mailto:Megan_Seymour@fws.gov))" <[Megan\\_Seymour@fws.gov](mailto:Megan_Seymour@fws.gov)>

cc

"Funk, Jason ([Jason.Funk@tetrattech.com](mailto:Jason.Funk@tetrattech.com))" <[Jason.Funk@tetrattech.com](mailto:Jason.Funk@tetrattech.com)>, Dale Sparks <[DSparks@environmentalsi.com](mailto:DSparks@environmentalsi.com)>

Subject

Republic Wind Project



[cid:4\_\_=0ABBF254DFC843218f9e8a93df938690@fws.gov]

Megan,

Attached please find the study plan for the Republic Wind Energy Project (Republic Wind Energy, LLC - a Nordex company), a proposed commercial wind energy facility consisting of approximately 16,028 hectares (39,607 ac) in Seneca and Sandusky Counties, Ohio. The Project straddles the Seneca/Sandusky county line, just east of the town of Green Springs in Sandusky County, Ohio and covers part of the Fremont East, Clyde, Watson, and Fireside USGS 1/24000 quadrangles.

ESI has been retained to complete sampling/netting for the chiroptero fauna at the Project site, including the endangered Indiana bat. The study plan details sampling efforts that follow guidelines provided by the Indiana Bat Recovery Team in the 2007 Indiana Bat Draft Recovery Plan (First Revision) and guidance provided in ODNR's On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio. Based on previous coordination, ODNR indicated that the Project met the need for a moderate level of wildlife monitoring.

We are seeking your approval of the study plan. It was previously sent to Angela Boyer (USFWS) and Jennifer Norris (ODNR) and we received approval from both of them, but you unfortunately did not keep in this loop. For that I apologize.

Thanks

Virgil

---

ESI has Moved. Our NEW ADDRESS is:

Environmental Solutions & Innovations, Inc.  
4525 Este Avenue  
Cincinnati, OH 45232

Virgil Brack, Jr., Ph.D., MBA  
CEO and Principal Scientist  
Office: 513-451-1777; Cell: 513-235-1076; Fax: 451-3321  
[attachment "340 Republic Wind Study Plan 20 June 2011.pdf" deleted by  
Megan Seymour/R3/FWS/DOI]

**APPENDIX C**  
**COMPLETED MIST NET, ROOST TREE, AND TELEMETRY DATA SHEETS**



## NET SITE HABITAT DESCRIPTION

Project #: 340.01 Date: 19 Jul 11 Biologists: Jack Basiger  
Project Name: Republic Site Name/#: 2  
State: OH County: Sandusky USGS Quad: Fremont East

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Picture #	Waypoint #
<u>A</u>	<u>N</u>	<u>41° 15' 36.4" N</u>	<u>83° 00' 26.9" W</u>	<u>970</u>	<u>2A</u>
<u>B</u>	<u>N</u>	<u>41° 15' 56.5" N</u>	<u>83° 00' 28.7" W</u>	<u>971</u>	<u>2B</u>
<u>C</u>	<u>N</u>	<u>41° 15' 59.1" N</u>	<u>83° 00' 30.2" W</u>	<u>972</u>	<u>2C</u>
<u>D</u>	<u>N</u>	<u>41° 15' 56.9" N</u>	<u>83° 00' 31.7" W</u>	<u>973</u>	<u>2D</u>

Distance to closest water source (meters): 10 Type of water source: Pond  
Water source name: Private pond

### ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS): N/A

Bank Height: \_\_\_\_\_ meters Channel Width: \_\_\_\_\_ meters Stream Width: \_\_\_\_\_ meters  
Substratum: \_\_\_\_\_ Bedrock \_\_\_\_\_ Boulder \_\_\_\_\_ Cobble \_\_\_\_\_ Gravel \_\_\_\_\_ Sand \_\_\_\_\_ Silt/Clay  
Still Water Present (Y/N): \_\_\_\_\_ Average Water Depth: \_\_\_\_\_ m or cm Clarity (H,M,L): \_\_\_\_\_

### VEGETATION:

Dominant Canopy Species (> 40 cm/16" dbh) Subdominant Canopy Species (< 40 cm/16" dbh)  
Acer rubrum Acer rubrum  
Coryc ovata Quercus palustris  
Quercus palustris Fagus grandifolia  
Estimated dbh range: Lg: 70 Sm: 40 Estimated dbh range: Lg: 39 Sm: 10  
Relative abundance of dominant vs. subdominant (ratio): 1:75

Estimated canopy closure: \_\_\_\_\_ Closed ☒ Moderate \_\_\_\_\_ Open  
Roost tree potential consists of: \_\_\_\_\_ Large Trees \_\_\_\_\_ Snags ☒ Neither  
Roost tree potential for the area is: \_\_\_\_\_ High \_\_\_\_\_ Moderate ☒ Low  
Roost potential comments: large trees have tight bark  
Subcanopy clutter: ☒ Closed \_\_\_\_\_ Moderate \_\_\_\_\_ Open  
Subcanopy comprised largely of: ☒ Lower Branches of Canopy Trees ☒ Saplings \_\_\_\_\_ Shrubs  
Common Subcanopy Species: \_\_\_\_\_

Habitat Description: Large woodlot with corp field on all 4 sites  
AnaBat Habitat: N/A

### Check all that apply:

☐ Mature Upland Forest ☐ Recently Logged Forest ☒ Crop/Pasture Land \_\_\_\_\_ Other \_\_\_\_\_  
☐ Young Upland Forest ☒ Forest Edge \_\_\_\_\_ Stream/River \_\_\_\_\_  
☐ Mature Lowland Forest ☒ Woodlot \_\_\_\_\_ Vernal Pool \_\_\_\_\_  
☒ Young Lowland Forest ☐ Old Field ☒ Deepwater Lake/Pond \_\_\_\_\_

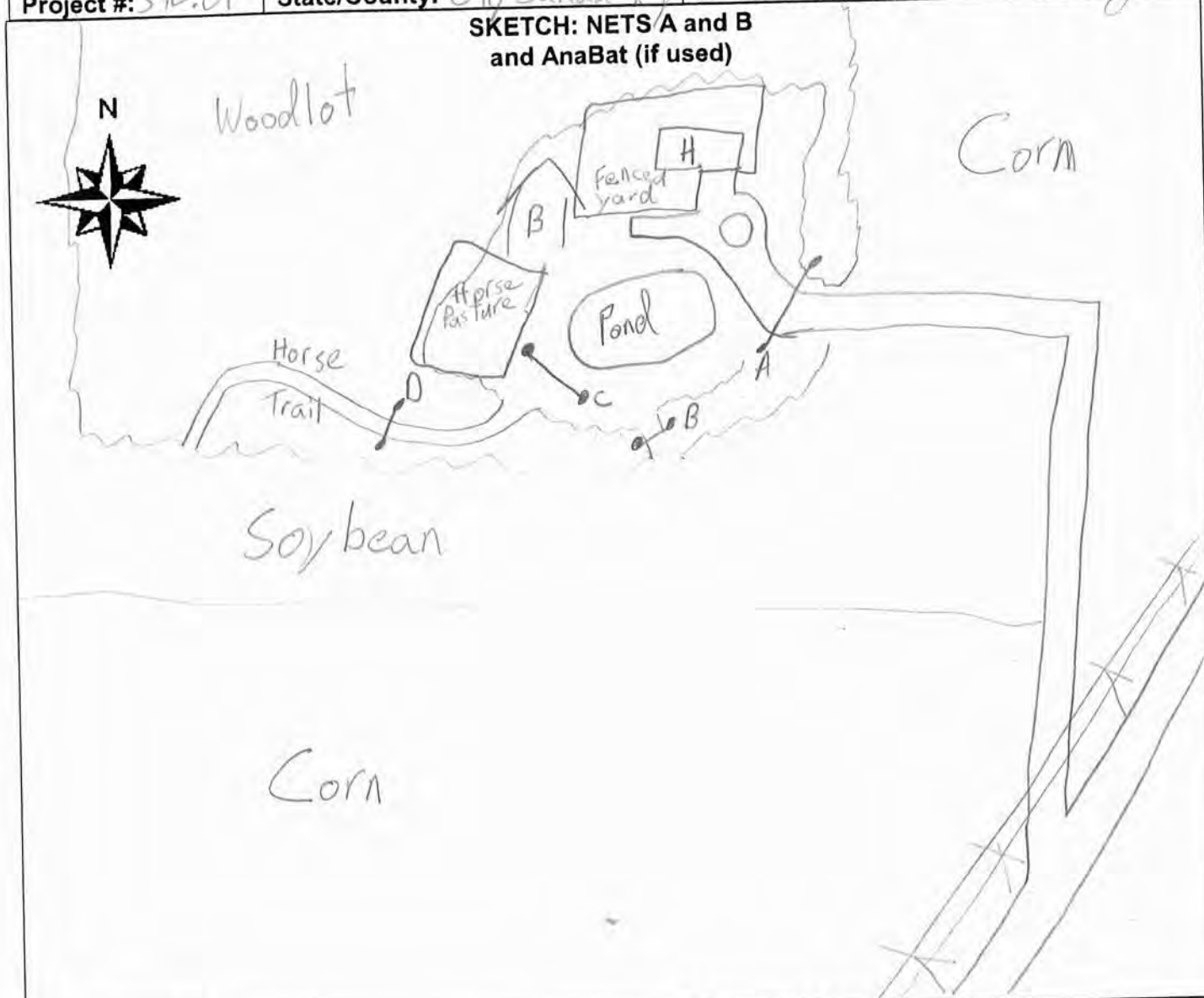
Herbaceous Cover: \_\_\_\_\_ Sparse ☒ Moderate \_\_\_\_\_ Dense



## NET SITE HABITAT DESCRIPTION (continued)

Project #: 340.01	State/County: OH/Sandusky	Site Name/#: 2	Initials: J
-------------------	---------------------------	----------------	-------------

SKETCH: NETS A and B  
and AnaBat (if used)



### LEGEND

Nets: ● — ●

### COMMENTS

---

---

---

---



## BAT CAPTURE DATA

Project #: 346.01 Date: 19 Jul 2011  
Project Name: Republic  
State: OH County: Seneca  
Biologists: J. Banger M. Flynn, A. Gant  
Site name#: 2  
GPS Unit #: BS1 465671 Camera #: can 671

### MOON PHASE\*

☐ New moon ☐ Waxing crescent ☐ First quarter  
☐ Waxing gibbous ☐ Full moon ☐ Waning gibbous  
☐ Last quarter ☐ Waning crescent

## WEATHER DATA

Time (0000 h)	Temp (°C)	Wind Speed (estimated - see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
2100	25.2	0	-	0	
2130	24.9	-	-	0	
2200	24.3	-	-	0	
2230	23.9	-	-	0	
2300	23.5	-	-	0	
2330	23.2	-	-	0	
0000	23.1	1-3	W-E	0	
0030	23.1	-	-	0	
0100	23.0	1-3	W-E	0	
0130	22.5	-	-	0	
0200	22.1	0	-	0	

Net/Trap/Anabat #	Net/Trap Type <sup>1</sup>	Latitude	Longitude	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
A	Net	41° 15' 56.4" N	83° 00' 26.9" W	9	6	2040	0215	970
B	Net	41° 15' 56.5" N	83° 00' 26.7" W	6	6	2045	0210	971
C	Net	41° 15' 57.1" N	83° 00' 30.2" W	12	9	2050	0205	972
Net	Net	41° 15' 56.9" N	83° 00' 31.7" W	6	6	2055	0200	973

### Net Placement/Site Description:

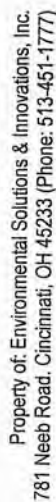
Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Comments
1	A	<i>Lasiurus borealis</i>	2140	Ad	F	PL	-	38	M	0	
2	A	<i>Eptesicus fuscus</i>	2140	Ad	F	PL	15.5	42	M	0	
3	A	<i>E. fuscus</i>	2150	Ad	F	PL	17.5	44	M	0	
4	B	<i>E. fuscus</i>	2150	Ad	F	PL	16.75	46	M	0	
5	C	<i>E. fuscus</i>	2150	Ad	F	PL	20.5	47	E	0	
6	D	<i>Myotis septentrionalis</i>	2150	Ad	F	PL	6.5	34	E	0	
7	D	<i>M. septentrionalis</i>	2210	Ad	F	PL	7.25	35	E	0	
8	A	<i>L. borealis</i>	2215	JV	F	NR	11.5	41	M	0	
9	A	<i>E. fuscus</i>	2220	Ad	M	↓	17.25	42	M	0	
10	A	<i>E. fuscus</i>	0610	Ad	F	PL	17	42	M	0	

<sup>1</sup> M = Monoflament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap; A = Anabat

\* Refer to table on the back

<sup>2</sup> Reproductive Condition: Female = NR/PG/L/PL; Male = ↑/↓





## BAT CAPTURE DATA (continued)

Date:

Site Name/#:

**Initials:**

### Beaufort Wind Scale

2010 Lunar Phases

New Month	First Quarter	Full Moon	Last Quarter
Feb 13	Mar 23	Mar 29	Apr 6
Mar 15	Apr 21	Apr 28	May 5
Apr 14	May 20	May 27	Jun 4
May 13	Jun 18	Jun 26	Jul 4
Jun 12	Jul 18	Jul 25	Aug 2
Jul 11	Aug 16	Aug 24	Sep 1
Aug 9	Sep 15	Sep 23	Sep 30
Sep 8	Oct 14	Oct 22	Nov 7
Oct 7	Nov 13	Nov 21	Nov 28

Score	Description
0	No damage. Fewer than 5 small scar spots are present on the membranes.
1	Light damage. Less than 50% of flight membrane is depigmented (spotching), which is often visible only with transillumination.
2	Moderate damage. Greater than 50% of wing membrane covered with scar tissue (spotching). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	Heavy damage. Deteleriated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding pteropigatium and/or other structures are evident.



# BAT CAPTURE DATA

Project #: 340.01 Date: 21 Jul 2011  
 Project Name: Republic  
 State: OH County: Seneca  
 Biologists: J. Basiger  
 Site name#: 2  
 GPS Unit #: BB1 4165670 Camera #: can 671

## MOON PHASE\*

☐ New moon ☐ Waxing crescent ☐ First quarter  
☐ Waxing gibbous ☐ Full moon ☐ Waning gibbous  
☐ Last quarter ☐ Waning crescent

## WEATHER DATA

Time (0000 h)	Temp (°C)	Wind Speed (estimated - see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
2100	31.9	—	—	—	
2130	31.3	—	—	—	
2200	30.7	—	—	—	
2230	30.0	—	—	—	
2300	29.7	—	—	—	
2330	29.4	—	—	—	
0000	29.0	—	—	—	
0030	28.6	—	—	—	
0100	28.4	—	—	—	
0130	28.1	—	—	—	
0200	27.9	—	—	—	

Net/Trap/Anabat #	Net/Trap Type <sup>1</sup>	Latitude	Longitude	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
A	N	41° 15' 56.4" N	83° 00' 26.9" W	9	6	2040	2000	970
B	N	41° 15' 56.5" N	83° 00' 24.7" W	6	6	2045	0205	971
C	N	41° 15' 57.1" N	83° 00' 30.2" W	12	9	2050	0210	972
D	N	41° 15' 56.9" N	83° 00' 31.7" W	6	6	2055	0215	973

## Net Placement/Site Description:

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (FIM/E)	Wing Index* (0-3)	Picture # (Guano/Hair Sample)	Comments
1		<i>Lasiopterus borealis</i>	2125	Ad	F	PL		39	E	0	882-883	
2		<i>Eptesicus fuscus</i>	2140	Ad	F	PL		45	M	0		
3		<i>E. fuscus</i>	2140	Ad	M	V	16.75	46	E	0		
4		<i>E. fuscus</i>	2140	Ad	F	PL	17	48	M	0		
5		<i>E. fuscus</i>	2150	Jv	F	NA	14	48	E	0		
6		<i>E. fuscus</i>	2210	Ad	F	PL	15.25	44	M	0	884	
7	A	<i>E. fuscus</i>	2245	Jv	M	A	15.5	44	E	0		
8	A	<i>E. fuscus</i>	2240	Ad	F	PL	16.5	45	M	1		
9	A	<i>E. fuscus</i>	2340	Jv	M	A	15	48	M	0		
10	A	<i>E. fuscus</i>	2340	Ad	F	PL	18.5	45	F	0		

\* M = Monofilament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap; A = Anabat

<sup>2</sup> Reproductive Condition: Female = NR/PG/LPL; Male = ↑/↓



## Project #:

Date:

Project Name:

Site Name/#:

**Initials:**

### Beaufort Wind Scale

2010 Lunar Phases

New Moon	First Quarter	Full Moon	Last Quarter
Feb 13	Mar 23	Mar 29	Apr 6
Mar 15	Apr 21	Apr 28	May 5
Apr 20	May 20	May 27	Jun 4
May 13	Jun 18	Jun 26	Jul 4
Jun 12	Jul 18	Jul 25	Aug 2
Jul 11	Aug 15	Aug 24	Sep 1
Aug 9	Sep 16	Sep 23	Sep 30
Sep 8	Oct 14	Oct 22	Oct 30
Oct 7	Nov 13	Nov 21	Nov 28

## Wing Index Key

Score	Description
0	<b>No damage.</b> Fewer than 5 small scar spots are present on the membranes
1	<b>Light damage.</b> Less than 50% of flight membrane is depigmented (spotching), which is often visible only with transillumination.
2	<b>Moderate damage.</b> Greater than 50% of wing membrane covered with scar tissue (spotching). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	<b>Heavy damage.</b> Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding pteroplagaquium and/or rhinostethium are evident



## NET SITE HABITAT DESCRIPTION

Project #: 340 Date: 7/21/11 Biologists: A. Kniewski, M. Farmer  
Project Name: Republic Site Name/ #: 3  
State: OH County: Sandusky? USGS Quad: Fireside

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Picture #	Waypoint #
<u>A</u>	<u>net</u>	<u>41° 14' 50.3" N</u>	<u>82° 57' 13.5" W</u>	<u>106-0664</u>	<u>340-3A</u>
<u>B</u>	<u>net</u>	<u>41° 14' 51.4" N</u>	<u>82° 57' 13.9" W</u>	<u>106-0665</u>	<u>340-3B</u>
<u>C</u>	<u>net</u>	<u>41° 14' 51.1" N</u>	<u>82° 57' 15.7" W</u>	<u>106-0663</u>	<u>340-3C</u>
<u>D</u>	<u>net</u>	<u>41° 14' 51.1" N</u>	<u>82° 57' 17.5" W</u>	<u>106-0666</u>	<u>340-3D</u>

Distance to closest water source (meters): 500m Type of water source: Stream  
Water source name: \_\_\_\_\_

### ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS): N/A

Bank Height: \_\_\_\_\_ meters Channel Width: \_\_\_\_\_ meters Stream Width: \_\_\_\_\_ meters  
Substratum: \_\_\_\_\_ Bedrock \_\_\_\_\_ Boulder \_\_\_\_\_ Cobble \_\_\_\_\_ Gravel \_\_\_\_\_ Sand \_\_\_\_\_ Silt/Clay  
Still Water Present (Y/N): \_\_\_\_\_ Average Water Depth: \_\_\_\_\_ m or cm Clarity (H,M,L): \_\_\_\_\_

### VEGETATION:

Dominant Canopy Species (> 40 cm/16" dbh) Subdominant Canopy Species (< 40 cm/16" dbh)  
Carya ovata Carya ovata  
Quercus alba

Estimated dbh range: Lg: 80 Sm: 40 Estimated dbh range: Lg: 50 Sm: 25

Relative abundance of dominant vs. subdominant (ratio): 1/4

Estimated canopy closure: \_\_\_\_\_ Closed ☒ Moderate \_\_\_\_\_ Open  
Roost tree potential consists of: ☒ Large Trees \_\_\_\_\_ Snags \_\_\_\_\_ Neither  
Roost tree potential for the area is: \_\_\_\_\_ High ☒ Moderate \_\_\_\_\_ Low  
Roost potential comments: lots of shagbark hickory  
Subcanopy clutter: \_\_\_\_\_ Closed ☒ Moderate \_\_\_\_\_ Open  
Subcanopy comprised largely of: \_\_\_\_\_ Lower Branches of Canopy Trees ☒ Saplings \_\_\_\_\_ Shrubs

Common Subcanopy Species: Acer saccharum

Habitat Description: Typical Oak/hickory upland woodlot  
AnaBat Habitat: \_\_\_\_\_

### Check all that apply:

☒ Mature Upland Forest ☐ Recently Logged Forest ☒ Crop/Pasture Land \_\_\_\_\_ Other \_\_\_\_\_  
☐ Young Upland Forest ☒ Forest Edge \_\_\_\_\_ Stream/River \_\_\_\_\_  
☐ Mature Lowland Forest ☒ Woodlot \_\_\_\_\_ Vernal Pool \_\_\_\_\_  
☐ Young Lowland Forest ☐ Old Field \_\_\_\_\_ Deepwater Lake/Pond \_\_\_\_\_

Herbaceous Cover: \_\_\_\_\_ Sparse ☒ Moderate \_\_\_\_\_ Dense

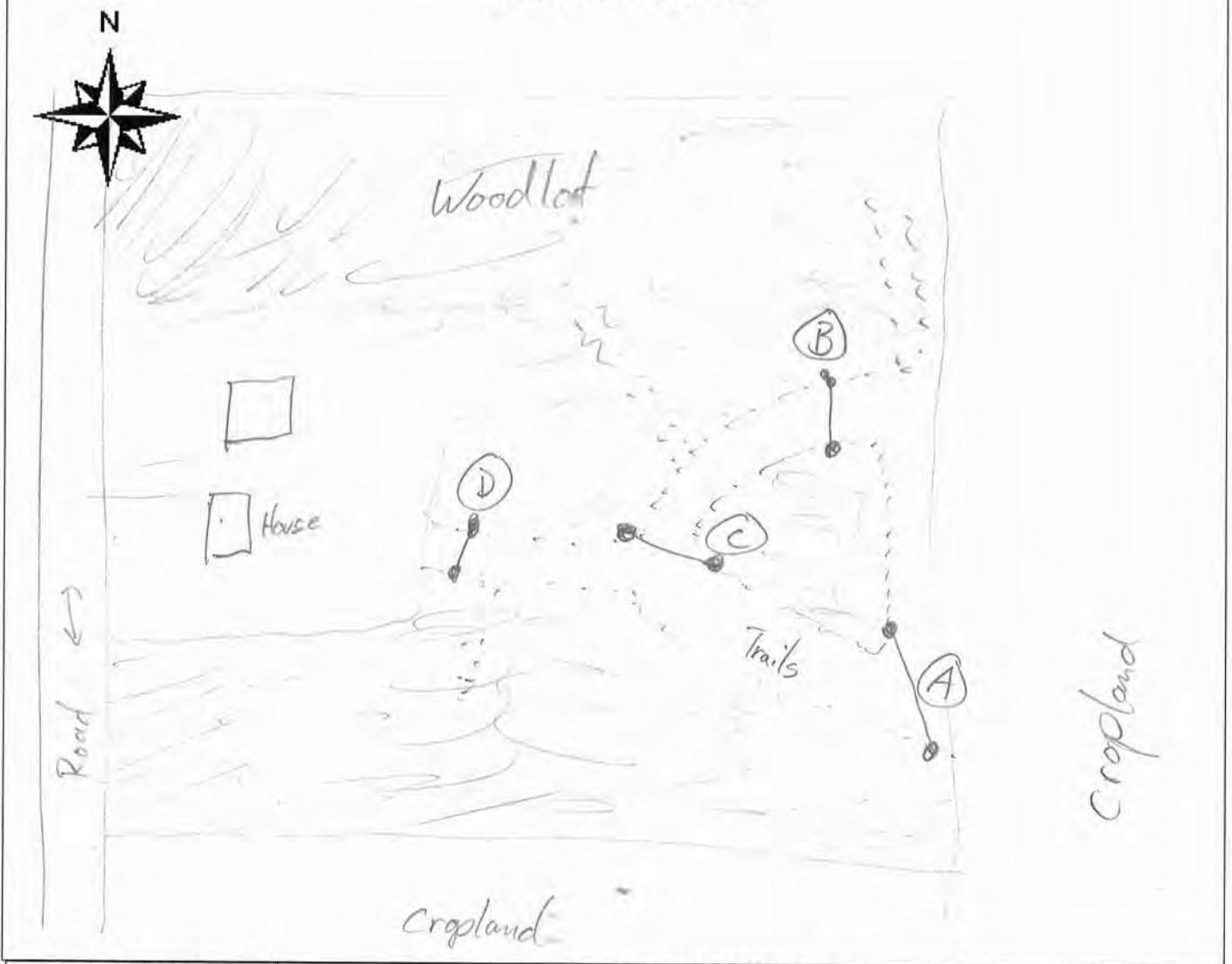




### NET SITE HABITAT DESCRIPTION (continued)

Project #: 340	State/County: OH / Sandusky	Site Name/#: 3	Initials: ABK
----------------	-----------------------------	----------------	---------------

SKETCH: NETS A and B  
and AnaBat (if used)



#### LEGEND

Nets: ● — ●

#### COMMENTS






# BAT CAPTURE DATA

Project #: 340 Date: 7/21/11  
 Project Name: Republic  
 Biologists: A. Kozlowski Site name#: 3  
M. Farmer  
 State: OH County: Sandusky  
 GPS Unit #: 7 Camera #: 11

## WEATHER DATA

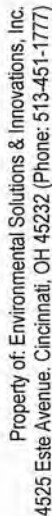
Time (xxxx h)	Temp (°C)	Wind Speed (estimated - see chart)*	% Cloud Cover (estimated)	Comments
2100	31.9	1-3	0	
2130	31.3	1-3	0	
2200	30.7	1-3	0	
2230	30.0	1-3	0	
2300	29.7	0	0	
2330	29.4	0	0	
0000	29.0	0	0	
0030	28.6	0	0	
0100	28.4	0	0	
0130	28.1	0	0	
0200	27.9	0	0	

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Length (m)	Height (m)	Time Up (xxxx h)	Time Down (xxxx h)	Picture #	Waypoint #
A	net	41° 14' 50.3" N	82° 57' 13.5" W	9	6	2104	206	106-0664	340-3A
B	net	41° 14' 51.4" N	82° 57' 13.9" W	9	6	2106	210	106-0665	340-3B
C	net	41° 14' 51.1" N	82° 57' 15.7" W	6	9	2100	203	106-0663	340-3C
D	net	41° 14' 51.1" N	82° 57' 17.5" W	6	6	2110	215	106-0666	340-3D

## Net Placement/Site Description:

Capt #	Net/ Trap	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Comments Picture # / Guano/Hair Sample
1	C	<i>Lasiurus borealis</i>	2125	JV	F	NR	10.3	42	E	✓	
2	A	<i>E. fuscus</i>	2215	Ad	F	PL	17.5	44	F	✓	
3	A	<i>E. fuscus</i>	2215	Ad	M	↑	14.7	44	M	✓	
4	A	<i>E. fuscus</i>	2218	Ad	M	↑	16.1	46	F	✓	
5	A	<i>E. fuscus</i>	2326	Ad	M	↑	16.0	45	M	✓	
6	D	<i>M. sept</i>	2335	JV	M	NR	6.0	34	E	✓	
7	D	<i>M. luc.</i>	2335	JV	M	↑	8.2	36	M	✓	
8	C	<i>E. fuscus</i>	2343	JV	M	↑	15.1	47	E	✓	
9	C	<i>E. fuscus</i>	0045	Ad	M	↓	19.5	46	F	✓	

<sup>1</sup> Reproductive Condition: Female = NR/PG/L/PL; Male = ↑/↓ \* Refer to table on the back



## BAT CAPTURE DATA (continued)

Project #: 340

Date: 7/2/11

Project Name:

Site Name/#:

**Initials:** \_\_\_\_\_

[illegible]

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face; leaves rustle; ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper; small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Breaks twigs off trees; generally impedes progress

Score	Description
0	<b>No damage.</b> Fewer than 5 small scar spots are present on the membranes.
1	<b>Light damage.</b> Less than 50% of flight membrane is depigmented (spotting), which is often visible only with transillumination.
2	<b>Moderate damage.</b> Greater than 50% of wing membrane covered with scar tissue (spotting). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	<b>Heavy damage.</b> Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagiopatagium and/or chironotarium are evident.



# BAT CAPTURE DATA

Project #: 340 Date: 7/25/11  
 Project Name: Republic  
 Biologists: A. Knows/ki Site name#: 3  
 State: OH County: Sandusky  
 GPS Unit #: 7 Camera #: 11

## WEATHER DATA

Time (xxxx h)	Temp (°C)	Wind Speed (estimated - see chart)*	% Cloud Cover (estimated)	Comments
2130	24.0	1-3	20%	
2200	23.7	0	10%	
2230	23.0	0	0%	
2300	22.8	0	0%	
2330	22.5	0	0	
0000	22.5	0	0	
0030	22.4	0	0	
1000	22.3	0	0	
1300	22.0	0	0	
2000	22.1	1-3	0	
2300	22.0	1-3	0	

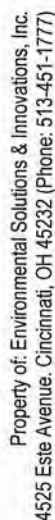
Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Length (m)	Height (m)	Time Up (xxxx h)	Time Down (xxxx h)	Picture #	Waypoint #
A	net	41° 14' 50.3" N	82° 57' 13.5" W	9	6	2129	238	0664	340-3A
B	net	41° 14' 51.4" N	82° 57' 13.9" W	9	6	2127	237	0665	340-3B
C	net	41° 14' 51.1" N	82° 57' 15.7" W	6	9	2125	228	0663	340-3C
D	net	41° 14' 51.1" N	82° 57' 17.5" W	6	6	2120	221	0666	340-3D

## Net Placement/Site Description:

Small wooded area surrounded by cropland - house yard

Capt #	Net/Trap	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # (Guano/Hair Sample)	Comments
1	C	L. borealis	2133	Jv	F	NR	9.6	40	E	0		
2	B	L. borealis	2150	Jv	F	NR	8.7	40	E	0		
3	C	E. fuscus	2155	Ad	M	A	16.2	45	M	0		
4	C	E. fuscus	2157	Ad	M	A	15.4	45	M	0		
5	C	E. fuscus	2235	Ad	F	PL	21.0	45	F	0		
6	A	L. borealis	2335	Jv	M	NR	9.0	43	E	0		
7	C	E. fuscus	2337	Jv	M	NR	13.2	44	M	0		
8	A	E. fuscus	031	Jv	M	NR	15.4	45	F	0		
9	C	L. borealis	040	Jv	M	NR	7.3	38	E	0		

<sup>1</sup> Reproductive Condition: Female = NR/PG/L/PL; Male = ↑/↓ \* Refer to table on the back



## BAT CAPTURE DATA (continued)

Date: \_\_\_\_\_

Site Name/#:

Initials:

[illegible]

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face, leaves rustle, ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper; small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavellets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Breaks twigs off trees; generally involves damage

Score	Description
0	<b>No damage.</b> Fewer than 5 small scar spots are present on the membranes.
1	<b>Light damage.</b> Less than 50% of light membrane is depigmented (spitching), which is often visible only with transillumination.
2	<b>Moderate damage.</b> Greater than 50% of wing membrane covered with scar tissue (spitching). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	<b>Heavy damage.</b> Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagiopategium and/or chironotaphium are evident.





## NET SITE HABITAT DESCRIPTION

Project #: 340

Date: 7/27/11

Biologists: Andrew Knibbski, Josiah

Project Name: Republic

Site Name/#: 4

State: Ohio County: Smoky?

USGS Quad: Fireside

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Picture #	Waypoint #
A	net	41° 14' 52.3"N	82° 56' 14.0"W	0672	340A4
B	net	41° 14' 51.5"N	82° 56' 14.9"W	0673	340B4
C	net	41° 14' 52.7"N	82° 56' 15.4"W	0674	340C4
D	net	41° 14' 55.0"N	82° 56' 14.8"W	0675	340D4

Distance to closest water source (meters): 400

Type of water source: Stream

Water source name: —

### ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS): N/A

Bank Height: — meters Channel Width: — meters Stream Width: — meters

Substratum: — Bedrock — Boulder — Cobble — Gravel — Sand — Silt/Clay

Still Water Present (Y/N): — Average Water Depth: — m or cm Clarity (H,M,L): —

### VEGETATION:

Dominant Canopy Species (> 40 cm/16" dbh)

Quercus rubra

Juglans nigra

Subdominant Canopy Species (< 40 cm/16" dbh)

Juglans nigra

Estimated dbh range: Lg: 70 Sm: 45

Estimated dbh range: Lg: 35 Sm: 10

Relative abundance of dominant vs. subdominant (ratio): 1/8

Estimated canopy closure: — Closed X Moderate — Open

Roost tree potential consists of: X Large Trees X Snags — Neither

Roost tree potential for the area is: — High X Moderate — Low

Roost potential comments: large dead snag on prop + snag hickories

Subcanopy clutter: — Closed X Moderate — Open

Subcanopy comprised largely of: — Lower Branches of Canopy Trees X Saplings — Shrubs

Common Subcanopy Species: Ulmus americana

Acer saccharum

Habitat Description: Small woodlot in cropland

AnaBat Habitat: N/A

Check all that apply:

X Mature Upland Forest

— Young Upland Forest

— Mature Lowland Forest

— Young Lowland Forest

— Recently Logged Forest

X Forest Edge

X Woodlot

— Old Field

X Crop/Pasture Land

— Stream/River

— Vernal Pool

— Deepwater Lake/Pond

— Other —

Herbaceous Cover: — Sparse

X Moderate

— Dense



# NET SITE HABITAT DESCRIPTION (continued)

Project #: 340 State/County: OH, Sandusky? Site Name/#: 4 Initials: ABK

## SKETCH: NETS A and B and AnaBat (if used)



### LEGEND

Nets: ● — ●

### COMMENTS

---

---

---

---

---



# BAT CAPTURE DATA

Project #: 340 Date: 7/27/11  
 Project Name: Republic  
 Biologists: Andrew - Sosich Site name#: 4  
 State: Ohio County: Sandusky  
 GPS Unit #: 7 Camera #: 11

## WEATHER DATA

Time (xxxx h)	Temp (°C)	Wind Speed (estimated - see chart)*	% Cloud Cover (estimated)	Comments
21:30	25.6	4-7	5%	
22:00	24.3	4-7	5%	
22:30	24.7	4-7	50%	
23:00	24.6	4-7	50%	
23:30	24.6	4-7	50%	light rain
00:00	24.1	4-7	100%	
00:30	24.1	4-7	100%	
1:00	24.2	4-12	100%	
1:30	24.3	4-12	100%	
2:00	24.4	4-12	100%	
2:30	25.0	4-12	100%	

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Length (m)	Height (m)	Time Up (xxxx h)	Time Down (xxxx h)	Picture #	Waypoint #
A	net	41° 14' 52.3" N	82° 56' 14.0" W	6	9	2135	240	0672	340A4
B	net	41° 14' 51.5" N	82° 56' 14.9" W	2.6	6	2125	225	0673	340B4
C	net	41° 14' 52.7" N	82° 56' 15.4" W	9	9	2127	230	0674	340C4
D	net	41° 14' 55.0" N	82° 56' 14.9" W	6	6	2130	237	0675	340D4

Net Placement/Site Description: woodlot near cropland

Capt #	Net/Trap	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Comments
1	C	E. fuscus	21:45	Jv	f	NR	17.7	46	M	0	
2	C	E. fuscus	21:45	Jv	m	NR	14.2	46	E	0	
3	C	E. fuscus	21:45	Ad	m	↓	15.2	45	E	0	
4	C	E. fuscus	21:45	Ad	m	↓	16.1	46	E	0	
5	C	E. fuscus	21:45	Ad	m	↓	16.2	45	E	0	
6	C	E. fuscus	21:45	Ad	m	↓	15.4	45	E	0	
7	A	L. borealis	22:15	Ad	f	PL	12.3	42	M	0	
8	A	L. borealis	22:15	Jv	f	NR	9.6	40	M	0	
9	C	E. fuscus	22:20	Ad	m	↓	15.6	45	E	0	

<sup>1</sup> Reproductive Condition: Female = NR/PG/L/PL; Male = ↑/↓ \* Refer to table on the back



# BAT CAPTURE DATA (continued)

Project #:

340

Date:

7/27/11

Project Name:

Site Name/ID:

4

Initials:

AK, ABK

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Comments
10	C	E. fuscus	22:20	JV	M	NR	14.7	45	M	0	
11	C	E. fuscus	22:20	Ad	F	PL	17.7	46	E	0	
12	D	E. fuscus	22:30	JV	M	NR	13.5	44	E	0	
13	C	E. fuscus	22:35	Ad	M	J	15.2	45	E	0	
14	C	E. fuscus	22:50	JV	F	NR	15.2	48	M	0	
15	C	E. fuscus	22:50	Ad	F	L	19.7	46	F	0	
16	C	E. fuscus	22:50	Ad	F	PL	18.4	46	F	0	
17	C	E. fuscus	22:50	Ad	M	PL	18.2	47	F	0	
18	C	E. fuscus	22:50	Ad	F	PL	20.5	48	F	0	
19	D	E. fuscus	22:55	Ad	F	PL	19.4	45	F	0	
20	C	E. fuscus	23:20	Ad	F	NR	20.6	46	F	0	
21	C	E. fuscus	23:20	Ad	F	PL	21.6	47	F	0	
22	C	E. fuscus	23:20	Ad	F	PL	17.6	46	M	0	
23	C	E. fuscus	00:25	Ad	M	J	17.1	44	F	0	
24	C	E. fuscus	00:25	JV	F	NR	15.8	46	F	0	
25	D	E. fuscus	1:10	JV	M	NR	15	46	M	0	
26	A	E. fuscus	1:40	JV	M	NR	14.9	46	F	0	Trans 172, 120S
27	A	M. Sep	2:00	JV	M	NR	5.9	33	M	0	
28	A	M. Luli	2:35	JV	F	NR	7.7	37	F	0	

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face; leaves rustle, ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper, small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Breaks twigs off trees, generally impedes progress

Score	Description
0	No damage. Fewer than 5 small scar spots are present on the membranes.
1	Light damage. Less than 50% of flight membrane is depigmented (spotting), which is often visible only with transillumination.
2	Moderate damage. Greater than 50% of wing membrane covered with scar tissue (spotting). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	Heavy damage. Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding pleuropatagium and/or chiroptagium are evident.





## BAT CAPTURE DATA

Project #: 340 Date: 7/29/11  
Project Name: Republic  
State: OH County: Sandusky?  
Biologists: A. Krawczyk, J. Klein, heinz  
Site name/#: 4  
GPS Unit #: 7 Camera #: 11

### MOON PHASE\*

☐ New moon ☐ Waxing crescent ☐ First quarter  
☐ Waxing gibbous ☐ Full moon ☐ Waning gibbous  
☐ Last quarter ☐ Waning crescent

## WEATHER DATA

Time (0000 h)	Temp (°C)	Wind Speed (estimated - see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
2100		1-3		50%	
2130		1-3		50%	
2200		1-3		50%	
2230		1-3		50%	
2300		1-3		50%	
2330		1-3		50%	
0000		1-3		50%	
0300		1-3		50%	
1000		1-3		50%	
1300		1-3		50%	
2000		1-3		50%	

Net/Trap/Anabat #	Net/Trap Type <sup>1</sup>	Latitude	Longitude	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
A	net	41° 14' 52.3" N	82° 56' 14.0" W	6	9	2050	150	0672
B	net	41° 14' 51.5" N	82° 56' 14.9" W	2.6	6	2053	202	0673
C	net	41° 14' 52.7" N	82° 56' 15.9" W	9	9	2057	203	0674
D	net	41° 14' 55.0" N	82° 56' 14.8" W	6	6	2100	220	0675

### Net Placement/Site Description:

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
1	C	L. Barroet	21:18	Ad	F	PL	14.4	42	M	0		
2	C	E. fuscus	21:28	Ad	M	↓	14.7	46	E	0		
3	A	E. fuscus	21:30	Ad	M	↑	20.3	46	M	0		
4	C	E. fuscus	21:50	Ad	M	↓	16.5	44	M	0		
5	C	E. fuscus	22:04	Ad	M	↑	15.5	46	M	0		
6	D	E. fuscus	22:35	Ad	M	↓	15.5	45	F	0		
7	C	E. fuscus	00:53	Ad	F	PL	20.0	47	F	0		
8	C	E. fuscus	01:55	Jv	M	NR	16.5	46	F	0		

\* M = Monofiliament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap, A = Anabat

\* Refer to table on the back

<sup>2</sup> Reproductive Condition: Female = NR/P/G/L/PL, Male = 1/4





## NET SITE HABITAT DESCRIPTION

Project #: 340 Date: 19-Jul-11

Biologists: E. Basiger, S. Captain

Project Name: Tetrahedral Republic

Site Name/#: 5

State: OH County: Seneca

USGS Quad: Watson

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Picture #	Waypoint #
<u>Net</u>	<u>A</u>	<u>41° 13' 41.8" N</u>	<u>83° 02' 38.6" W</u>	<u>2999</u>	<u>-</u>
<u>Net</u>	<u>B</u>	<u>41° 13' 44.5" N</u>	<u>83° 02' 40.0" W</u>	<u>3000</u>	<u>-</u>
<u>Net</u>	<u>C</u>	<u>41° 13' 32.1" N</u>	<u>83° 02' 41.5" W</u>	<u>3002</u>	<u>-</u>
<u>Net</u>	<u>D</u>	<u>41° 13' 41.4" N</u>	<u>83° 02' 44.1" W</u>	<u>3004</u>	<u>-</u>

Distance to closest water source (meters): 0 Type of water source: Creek

Water source name: -

### ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS):

Bank Height: 1 meters Channel Width: 2 meters Stream Width: 4 meters

Substratum: - Bedrock - Boulder - Cobble X Gravel X Sand - Silt/Clay

Still Water Present (Y/N): X Average Water Depth: 30 m or cm Clarity (H,M,L): M

### VEGETATION:

Dominant Canopy Species (> 40 cm/16" dbh)

Platanus occidentalis  
Populus deltoides

Subdominant Canopy Species (< 40 cm/16" dbh)

Fraxinus pennsylvanica, Alnus americana  
Tilia americana, Juglans nigra  
Acer saccharum, Aesculus glabra

Estimated dbh range: Lg: 100 Sm: 50

Estimated dbh range: Lg: 39 Sm: 20

Relative abundance of dominant vs. subdominant (ratio): 1:50

Estimated canopy closure: - Closed - Moderate X Open

Roost tree potential consists of: X Large Trees X Snags - Neither

Roost tree potential for the area is: X High - Moderate - Low

Roost potential comments: Many large snags w/ loose bark

Subcanopy clutter: - Closed X Moderate - Open

Subcanopy comprised largely of: X Lower Branches of Canopy Trees - Saplings - Shrubs

Common Subcanopy Species: Acer negundo

Habitat Description: Bipartisan through forested corridor surrounded by farmland

AnaBat Habitat: N/A

### Check all that apply:

- Mature Upland Forest - Recently Logged Forest X Crop/Pasture Land - Other -  
- Young Upland Forest - Forest Edge X Stream/River -  
X Mature Lowland Forest - Woodlot - Vernal Pool -  
- Young Lowland Forest - Old Field - Deepwater Lake/Pond -

Herbaceous Cover: - Sparse X Moderate - Dense



# NET SITE HABITAT DESCRIPTION (continued)

Project #: 340	State/County: OH/Seneca	Site Name/#: 5	Initials:
----------------	-------------------------	----------------	-----------

SKETCH: NETS A and B  
and AnaBat (if used)



Tr 32

Creek

old field

dirt path

## LEGEND

Nets: ● — ●

▨ Bridge

▨ forest

## COMMENTS

---

---

---

---





# BAT CAPTURE DATA

Project #: 340 Date: 17 July 2011  
 Project Name: Tetra Tech Republic  
 State: OH County: Seneca  
 Biologists: Erin Basiger; Alexa Grant  
 Site name/#: 5  
 GPS Unit #: 9524 Camera #: Erin

## MOON PHASE\*

☒ New moon ☐ Waxing crescent ☐ First quarter  
☐ Waxing gibbous ☐ Full moon ☐ Waning gibbous  
☐ Last quarter ☐ Waning crescent

## WEATHER DATA

Time (0000 h)	Temp (°C)	Wind Speed (estimated - see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
2100	26.8	0		0	
2130	26.2	0		0	
2200	25.8	0		0	
2230	25.2	0		0	
2300	24.7	0		0	
2330	24.1	0		0	
0000	24.1	0		0	
0030	24.0	1-3	E-W	0	
0100	24.0	1-3	E-W	0	
0130	24.0	1-3	E-W	0	
0200	23.9	1-3	E-W	0	
0230	23.8				

Net/Trap/Anabat #	Net/Trap Type <sup>1</sup>	Latitude	Longitude	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
A	Net	41° 13' 41.8" N	83° 07' 38.6" W	12	9	2035	07:10	2999
B	Net	41° 13' 44.5" N	83° 02' 40.0" W	6	6	2040	02:05	3000
C	Net	41° 13' 32.1" N	83° 02' 41.5" W	12	6	2045	02:05	3002

## Net Placement/Site Description: Both nets over stream

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # / Guano/Hair Sample
1	A	Eptesicus fuscus	2131	Ad	F	L	16.5	44	E	0	
2	D	Eptesicus fuscus	2145	Ad	M	X	15.5	45	E	0	
3	A	Myotis lucifugus	2155	Ad	M	X	7.5	35	E	0	3007 + 3008
4	A	Myotis lucifugus	2156	Ad	M	X	7.0	36	E	0	
5	A	Myotis lucifugus	2157	Jv	M	NR	6.5	35	E	0	
6	A	Myotis lucifugus	2158	Ad	F	PL	9.0	36	E	0	
7	A	Myotis lucifugus	2159	Ad	F	PL	8.0	36	E	0	
8	A	Myotis lucifugus	2200	Ad	F	PL	7.0	30	E	0	
9	A	Myotis lucifugus	2232	Ad	F	PL	9.5	36	M	0	
10	D	Myotis septentrionalis	2239	Ad	M	X	8.0	35	M	0	

<sup>1</sup> M = Monofilament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap; A = Anabat

\* Refer to table on the back for trap type

<sup>2</sup> Reproductive Condition: Female = NR/PL/JPL; Male = T/L

Longitudinal

Longitudinal

Longitudinal



# BAT CAPTURE DATA (continued)

Project #: 340 Date: 17 July 11 Initials: ELB  
Project Name: Republic Wind Site Name#: 50

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. 2	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Comments Picture # /Guano/Hair Sample
11	C	Myotis lucifugus	22:40	Jv	F	NR	4.0	34	M	0	
12	A	Eptesicus fuscus	22:42	Ad	M	↑	17.0	46	M	0	
13	A	Myotis lucifugus	22:48	Ad	F	PL	7.5	35	M	0	
14	A	Eptesicus fuscus	22:48	Ad	F	PL	21.0	50	M	0	
15	A	Myotis lucifugus	22:48	Ad	F	PL	8.0	36	M	0	
16	A	Myotis lucifugus	23:18	Ad	M	↑	8.0	38	M	0	
17	D	Eptesicus fuscus	23:20	Jv	F	NR	15.5	48	M	0	
18	D	Myotis septentrionalis	23:20	Ad	M	↑	16.5	35	M	0	
19	A	Eptesicus fuscus	23:57	Ad	F	PL	21.0	46	M	0	
20	A	Myotis lucifugus	24:03	Ad	F	PL	9.0	36	M	0	
21	A	Eptesicus fuscus	24:00	Ad	F	PL	20.0	50	M	1	
22	A	Myotis lucifugus	24:25	Ad	F	PL	9.0	36	M	0	
23	A	Eptesicus fuscus	24:25	Ad	M	↑	16.0	44	M	0	
24	C	Lasionycteris borealis	24:30	Jv	F	NR	10.0	44	M	0	
25	A	Myotis septentrionalis	01:20	Ad	F	PL	9.0	36	M	0	
26	D	Myotis lucifugus	01:25	Jv	F	NR	7.0	38	M	0	
27	A	Eptesicus fuscus	01:41	Ad	F	PL	22.0	49	M	0	
28	A	Eptesicus fuscus	01:42	Jv	M	NR	14.0	45	M	0	

## Beaufort Wind Scale

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face; leaves rustle; ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper; small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Breaks twigs off trees; generally impedes progress

## 2010 Lunar Phases

New Moon	First Quarter	Full Moon	Last Quarter
Feb 13	Mar 23	Mar 29	Apr 6
Mar 15	Apr 21	Apr 28	May 5
Apr 14	May 20	May 27	Jun 4
May 13	Jun 18	Jun 26	Jul 4
Jun 12	Jul 18	Jul 25	Aug 2
Jul 11	Aug 16	Aug 24	Sep 1
Aug 9	Sep 15	Sep 23	Sep 30
Sep 8	Oct 14	Oct 22	Oct 30
Oct 7	Nov 13	Nov 21	Nov 28

## Wing Index Key

Score	Description
0	No damage. Fewer than 5 small scar spots are present on the membranes.
1	Light damage. Less than 50% of flight membrane is depigmented (spotting), which is often visible only with transillumination.
2	Moderate damage. Greater than 50% of wing membrane covered with scar tissue (spotting). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	Heavy damage. Degenerated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagiopatagium and/or chiropatagium are evident.



## BAT CAPTURE DATA

Project #: 340 Date: 19-Jul-11  
 Project Name: Tetatech  
 State: OH County: Seneca  
 Biologists: E. B. Bisher, S. Captrone  
 Site name/ID: 5  
 GPS Unit #: 9528 Camera #: Edm

### MOON PHASE\*

☐ New moon ☐ Waxing crescent ☐ First quarter  
☐ Waxing gibbous ☐ Full moon ☐ Waning gibbous  
☐ Last quarter ☐ Waning crescent

### WEATHER DATA

Time (0000 h)	Temp (°C)	Wind Speed (estimated - see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
0100	24.9	1-3	—	10%	
0130	24.1	0	—		
0200	25.4	0	—	10%	
0230	26.9	1-3	—	10%	
0300	26.7	1-3	—	25	
0330	26.6	1-3	—	25	
0400	26.5	1-3	—	25	
0430	26.5	1-3	—	40	
0500	25.1	1-3	—	25	
0130	23.4	4-7	—	25	

Net/Trap/Anabat #	Net/Trap Type <sup>1</sup>	Latitude	Longitude	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
A	net	41° 13' 41.8" N	83° 02' 38.6" W	12	9	2038	0145	2999
B	net	41° 13' 44.5" N	83° 02' 40.0" W	6	6	2039	0150	3000
C	net	41° 13' 32.1" N	83° 02' 41.5" W	12	6	2045	0155	3002

Net Placement/Site Description: alt across creek

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # / Guano/Hair Sample
1	A	Myotis lucifugus	2145	Jv	F	NR	9.3	35	M	0	
2	A	Episcreotus fuscus	2145	Jv	M	↑	11.6	44	E	0	
3	A	E. fuscus	2119	Ad	M	↓	16.0	46	M	0	
4	A	E. fuscus	2150	Jv	M	↑	16.2	45	M	0	
5	C	Myotis lucifugus	2002	—	—	—	—	—	—	—	bag escape
6	A	Myotis lucifugus	2212	Jv	M	↑	9.1	36	F	0	
7	A	Episcreotus fuscus	2230	Jv	M	↑	16.1	45	F	0	
8	A	Myotis lucifugus	2305	Ad	F	PL	10.5	37	M	0	
9	A	E. fuscus	2310	Ad	M	↓	17.5	45	F	0	
10	A	E. fuscus	2335	Jv	F	NR	12.7	43	M	0	

\* M = Monofiliament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap, A = Anabat

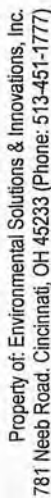
\* Refer to table on the back

<sup>2</sup> Reproductive Condition: Female = NR/PG/LPL; Male = ↑↓

Picture #

D net 41° 13' 41.4" 43° 02' 44.1" 946 2048 0200 3004





## Project #: 340

Date: 20-Jul-11

Project Name: TechTech Site Name/#: \_\_\_\_\_

Initials: EB/SL

Site Name/#:

Beaufort Wind Scale

## 2010 Lunar Phases

### Wing Index Key

Score	Description
0	No damage. Fewer than 5 small scar spots are present on the membranes.
1	Light damage. Less than 50% of flight membrane is depigmented (spolting), which is often visible only with transillumination.
2	Moderate damage. Greater than 50% of wing membrane covered with scar tissue (spolting). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	Heavy damage. Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagiopatagium and/or chirocatenium are evident





## NET SITE HABITAT DESCRIPTION

Project #: 340.02 Date: 19-Jul-11 Biologists: E. Pfeffer, S. Captain, S. Reeves  
Project Name: Tetatech Republic Site Name/#: Site 7  
State: OH County: Seneca USGS Quad: Fireside  
Camera #: Esia Picture #s: 3033-3036 GPS Unit #: E9529 Waypoint #: 3407  
Latitude: 41° 13' 32.8" N Longitude: 83° 01' 22.4" W  
Distance to closest water source (meters): 20m Type of water source: pond  
Water source name: unamed private pond

### ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS): N/A

Bank Height: \_\_\_\_\_ meters Channel Width: \_\_\_\_\_ meters Stream Width: \_\_\_\_\_ meters  
Substratum: \_\_\_\_\_ Bedrock \_\_\_\_\_ Boulder \_\_\_\_\_ Cobble \_\_\_\_\_ Gravel \_\_\_\_\_ Sand \_\_\_\_\_ Silt/Clay  
Still Water Present (Y/N): \_\_\_\_\_ Average Water Depth: \_\_\_\_\_ m or cm Clarity (H,M,L): \_\_\_\_\_

### VEGETATION:

Dominant Canopy Species (> 40 cm/16" dbh)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Subdominant Canopy Species (< 40 cm/16" dbh)

Prunus serotina, Acer saccharum  
Juglans nigra, Celtis occidentalis  
Fraxinus pennsylvanica, Populus deltoides

Estimated dbh range: Lg: \_\_\_\_\_ Sm: \_\_\_\_\_

Estimated dbh range: Lg: 35 Sm: 15

Relative abundance of dominant vs. subdominant (ratio): \_\_\_\_\_

Estimated canopy closure: \_\_\_\_\_ Closed \_\_\_\_\_ Moderate ☒ Open

Roost tree potential consists of: \_\_\_\_\_ Large Trees ☒ Snags \_\_\_\_\_ Both \_\_\_\_\_ Neither

Roost tree potential for the area is: ☒ High \_\_\_\_\_ Moderate \_\_\_\_\_ Low

Roost potential comments: Dead elms & other good snags

Subcanopy clutter: \_\_\_\_\_ Closed ☒ Moderate \_\_\_\_\_ Open

Subcanopy comprised largely of: \_\_\_\_\_ Lower Branches of Canopy Trees ☒ Saplings \_\_\_\_\_ Shrubs

Common Subcanopy Species: Ulmus rubra Juglans nigra  
Ulmus americana

Habitat Description: Young woodlot near oldfield and pond; ATV trails  
from campground nearby into woodlot

### Check all that apply:

☐ Mature Upland Forest ☐ Recently Logged Forest ☒ Crop/Pasture Land ☐ Shrub/scrub Swamp  
☐ Young Upland Forest ☐ Pine Plantation ☐ Stream/River ☐ Vernal Pool  
☐ Mature Lowland Forest ☒ Woodlot/Forest Edge ☐ Emergent Wetland ☒ Deepwater Lake/Pond  
☐ Young Lowland Forest ☒ Old Field ☐ Forested Swamp ☐ Other \_\_\_\_\_

Herbaceous Cover: \_\_\_\_\_ Sparse ☒ Moderate \_\_\_\_\_ Dense



Property of: Environmental Solutions & Innovations, Inc.  
781 Neeb Road, Cincinnati, OH 45233 (Phone: 513-451-1777)

## NET SITE HABITAT DESCRIPTION (continued)

Project #: 340.02	State/County: OH/Seneca	Site Name/#: Site 7	Initials: SR
-------------------	-------------------------	---------------------	--------------

SKETCH: NETS A and B

LEGEND	COMMENTS
<b>Nets:</b> ● — ● <b>RV's:</b> □ <b>Snags:</b> * <b>Picture Angle:</b> (###) ↓	<div style="font-size: 2em; text-align: center;">N/A</div> <hr/> <hr/> <hr/> <hr/>



# BAT CAPTURE DATA

Project #: 340.02 Date: 19-Jul-11  
 Project Name: Tetratich Republic  
 Biologists: E. Prinsinger, S. Kaplan Site name/ID: Site 7  
 State: Ohio County: Seneca  
 GPS Unit #: E 9528 Camera #: EB Kodak

## WEATHER DATA

Time (xxxx h)	Temp (°C)	Wind Speed (estimated - see chart)*	% Cloud Cover (estimated)	Comments
2030	26.5	0	15%	
2100	25.2	0	10%	
2130	25.4	0	10%	
2200	24.0	0	35%	
2230	23.6	0	0%	
2300	23.4	0	0%	
2330	23.0	0	0%	
0000	23.0	0	0%	
0030	22.9	0	0%	
0100	22.7	0	0%	
0130	22.4	0	0%	
0200	22.2	0	0%	

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Length (m)	Height (m)	Time Up (xxxx h)	Time Down (xxxx h)	Picture #	Waypoint #
Net	A	41° 13' 19.7" N	83° 01' 24.6" W	9	9.2	2045	0145	3035	050
Net	B	41° 13' 19.2" N	83° 01' 25.9" W	6	6.2	2050	0150	3034	049
Net	C	41° 13' 19.4" N	83° 01' 29.2" W	6	6.2	2055	0155	3033	048
Net	D	41° 13' 20.5" N	83° 01' 21.6" W	6	6.2	2100	0200	3036	047

Net Placement/Site Description: Nets A, B, & D on ATV trail in woodlot near oldfield & pond, N/A across parking to pond

Capt #	Net/Trap	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # (Guano/Hair Sample)	Comments
1	B	<i>Lasius borealis</i>	2110	Ad	F	PL	12.5	42	F	0	3041	
2	A	<i>Eptesicus fuscus</i>	2120	Jv	M	↑	12.2	43	F	0	3043	
3	B	<i>E. fuscus</i>	2125	Jv	M	↑	10.9	43	F	0	N/A	
4	B	<i>Myotis septentrionalis</i>	2125	Jv	M	↑	6.0	36	F	0	3045	
5	B	<i>M. septentrionalis</i>	2125	Ad	F	PL	7.0	37	F	0	N/A	
6	B	<i>E. fuscus</i>	2215	Ad	F	PL	19.9	46	M	1	eroded right wing 3046	
7	A	<i>E. fuscus</i>	2215	Ad	M	↓	13.7	44	M	0	N/A	
8	C	<i>E. fuscus</i>	2225	Jv	F	NR	15.8	40	F	0	N/A	
9	A	<i>E. fuscus</i>	2225	—	—	—	—	—	—	—	Escaped Net	

<sup>1</sup> Reproductive Condition: Female = NR PG L PL; Male = ↑ ↓ \* Refer to table on the back



# BAT CAPTURE DATA (continued)

Project #: 340.02 Date: 19 July 2011 Initials: EB, SC, SR

Project Name: Tennessee Republic Site Name: Site 7

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
10	D	<i>Eptesicus fuscus</i>	0000	Ad	M	✓	18.5	45	F	0	N/A	
11	A	<i>Myotis lucifugus</i>	0040	Jv	M	↑	6.6	36	M	0	347-3053	
12	C	<i>E. fuscus</i>	0045	Ad	F	PL	23.8	47	F	0	N/A	
13	C	<i>E. fuscus</i>	0045	Jv	F	NR	12.5	44	M	0	N/A	
14	C	<i>E. fuscus</i>	0050	Ad	F	PL	20.4	46	F	1	Spotting	
15	C	<i>E. fuscus</i>	0050	Ad	F	PL	20.7	44	F	0	N/A	

Score	Description
0	No damage. Fewer than 5 small scar spots are present on the membranes which is often visible only with transillumination.
1	Light damage. Less than 50% of flight membrane is depigmented (spotting). Moderate damage. Greater than 50% of wing membrane covered with scar tissue (spotting). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
2	Heavy damage. Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagiopatagium and/or chiroptagium are evident.
3	

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face, leaves rustle, ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion, wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper, small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway, crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion, telephone wires whistle, umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion, inconvenience in walking against wind
39-46	Fresh Gale	Breaks twigs off trees, generally impedes progress





## BAT CAPTURE DATA

Project #: 340 Date: 21 July 2011  
Project Name: Repubilis - 10260  
State: OH County: Seneca  
Biologists: E. Brown, S. Capron  
Site name #: 7  
GPS Unit #: E9528 Camera #: Enb

### MOON PHASE\*

☐ New moon ☐ Waxing gibbous ☐ Last quarter  
☐ Waxing crescent ☐ Full moon ☐ Waning gibbous  
☐ Waning crescent

### WEATHER DATA

Time (0000 h)	Temp (°C)	Wind Speed (estimated - see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
2100	28.2	0	—	0%	
2130	28.0	0	—	0%	
2200	27.3	1-3	E-W	0%	
2230	27.1	1-3	E-W	0%	
2300	26.9	1-3	E-W	0%	
2330	26.5	1-3	E-W	0%	
0000	26.3	1-3	E-W	0%	
0030	26.2	1-3	E-W	0%	
0100	26.0	1-3	E-W	0%	
0130	25.7	1-3	E-W	0%	

Net/Trap/Anabat #	Net/Trap Type <sup>1</sup>	Latitude	Longitude	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
A	NU	41° 13' 19.7" N	83° 01' 24.6" W	9	9	2030	2145	3035
B	NU	41° 13' 19.2" N	83° 01' 25.6" W	10	10	2035	2150	3034
C	NU	41° 13' 19.4" N	83° 01' 29.2" W	10	10	2040	2155	3033
D	NU	41° 13' 20.5" N	83° 01' 21.6" W	10	10	2045	2200	3036

### Net Placement/Site Description:

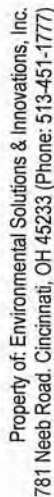
Notes over and past trees through canopy

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
1	B	<i>Myotis septentrionalis</i>	2230	Jv	F	NR	55	34	E	0		
2	B	<i>Eptesicus fuscus</i>	2230	Ad	F	PL	20.5	45	F	0		
3	B	<i>Myotis septentrionalis</i>	2300	Jv	F	NR	16.1	35	—	0		
4	A	<i>M. septentrionalis</i>	2330	Jv	M	NR	55	35	M	0		
5	C	<i>E. fuscus</i>	2330	Ad	F	PL	19.4	45	F	0		
6	C	<i>E. fuscus</i>	2330	Ad	M	↓	15.6	43	M	0		
7	B	<i>M. septentrionalis</i>	0000	Ad	F	L	7.8	36	M	0		
8	A	<i>E. fuscus</i>	0000	Ad	M	↓	17.0	43	F	0		
9	B	<i>E. fuscus</i>	0000	Jv	F	NR	14.7	44	M	0		
10	B	<i>E. fuscus</i>	0000	Ad	F	PL	21.3	47	F	0		

<sup>1</sup> M = Monofilament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap, A = Anabat

\* Refer to table on the back

<sup>2</sup> Reproductive Condition: Female = NR(PG)PL; Male = ↑↓



## Date: 21 Feb 2021

Project #: 320

Project Name: *Leontide-2nd* Site Name/ #:

Initials: EB[illegible]

## 2010 Lunar Phases

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face; leaves rustle, ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper; small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Breaks twigs off trees; generally, immediate precautions

New Moon	First Quarter	Full Moon	Last Quarter
Feb 13	Mar 23	Mar 29	Apr 6
Mar 15	Apr 21	Apr 28	May 5
Apr 14	May 20	May 27	Jun 4
May 13	Jun 18	Jun 26	Jul 4
Jun 12	Jul 18	Jul 25	Aug 2
Jul 11	Aug 16	Aug 24	Sep 1
Aug 9	Sep 15	Sep 23	Sep 30
Sep 8	Oct 7	Oct 22	Oct 30
Oct 7	Nov 13	Nov 21	Nov 28

### Wing Index Key

Score	Description
0	No damage. Fewer than 5 small scar spots are present on the membranes.
1	Light damage. Less than 50% of flight membrane is depigmented (spotting), which is often visible only with transillumination.
2	Moderate damage. Greater than 50% of wing membrane covered with scar tissue (spotting). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	Heavy damage. Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagioplatium and/or chiroplatium are evident.





## NET SITE HABITAT DESCRIPTION

Project #: 340-01 Date: 29-Jul-11 Biologists: J. Basiger  
Project Name: Republic Site Name/#: 8  
State: OH County: Seneca USGS Quad: Watson  
Camera #: Cam671 Picture #s: 985-989 GPS Unit #: 465670 Waypoint #:       
Latitude: 41° 13' 42.7" N Longitude: 83° 0' 53.6" W  
Distance to closest water source (meters): 50m Type of water source: Pond  
Water source name: N/A

### ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS): N/A

Bank Height:      meters Channel Width:      meters Stream Width:      meters  
Substratum:      Bedrock      Boulder      Cobble      Gravel      Sand      Silt/Clay  
Still Water Present (Y/N):      Average Water Depth:      m or cm Clarity (H,M,L):     

### VEGETATION:

Dominant Canopy Species (> 40 cm/16" dbh)

Carya ovata  
Acer rubrum  
Quercus palustris

Subdominant Canopy Species (< 40 cm/16" dbh)

Acer rubrum  
Fagus grandifolia  
Carya ovata

Estimated dbh range: Lg:      Sm:     

Estimated dbh range: Lg:      Sm:     

Relative abundance of dominant vs. subdominant (ratio): 1:50

Estimated canopy closure: ✓ Closed      Moderate      Open

Roost tree potential consists of: ✓ Large Trees      Snags      Both      Neither

Roost tree potential for the area is:      High      Moderate ✓ Low

Roost potential comments: Large trees are tight bark

Subcanopy clutter:      Closed ✓ Moderate      Open

Subcanopy comprised largely of: ✓ Lower Branches of Canopy Trees ✓ Saplings      Shrubs

Common Subcanopy Species:     

Habitat Description: mowed yard, sloped forest down to pond and stream

### Check all that apply:

<u>    </u> Mature Upland Forest	<u>    </u> Recently Logged Forest	<u>    </u> Crop/Pasture Land	<u>    </u> Shrub/scrub Swamp
<u>✓</u> Young Upland Forest	<u>    </u> Pine Plantation	<u>✓</u> Stream/River	<u>    </u> Vernal Pool
<u>    </u> Mature Lowland Forest	<u>✓</u> Woodlot/Forest Edge	<u>    </u> Emergent Wetland	<u>✓</u> Deepwater Lake/Pond
<u>    </u> Young Lowland Forest	<u>    </u> Old Field	<u>    </u> Forested Swamp	<u>    </u> Other <u>    </u>

Herbaceous Cover:      Sparse ✓ Moderate      Dense

340.01

OH/Seneca

Site # 8

29-Jul-11





# BAT CAPTURE DATA

Project #: 340,01 Date: 29 July - 11  
 Project Name: Republic  
 State: OH County: Seneca  
 Biologists: J. Basgel  
 Site name/#: 8  
 GPS Unit #: 465670 Camera #: 5671

## MOON PHASE\*

☐ New moon ☐ Waxing crescent ☐ First quarter  
☐ Waxing gibbous ☐ Full moon ☐ Waning gibbous  
☐ Last quarter ☐ Waning crescent

## WEATHER DATA

Time (0000 h)	Temp (°C)	Wind Speed (estimated - see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
2100	24.6	—	—	0	
2130	24.1	—	—	0	
2200	23.7	—	—	0	
2230	23.4	—	—	0	
2300	23.2	—	—	0	
2330	22.9	—	—	0	
0000	22.5	—	—	0	
0030	22.1	—	—	0	
0100	22.2	—	—	0	
0130	21.9	—	—	0	
0200	21.9	—	—	0	

Net/Trap/Anabat #	Net/Trap Type <sup>1</sup>	Latitude	Longitude	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
A	N	41° 13' 42.7" N	83° 0' 53.6" W	6	6	2035	0200	985
B	N	41° 13' 43.8" N	83° 0' 53.3" W	6	6	2040	0205	988
C	N	41° 13' 44.4" N	83° 0' 52.2" W	9	9	2045	0210	986
D	N	41° 13' 46.8" N	83° 0' 52.7" W	12	6	2050	0215	987

## Net Placement/Site Description:

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # Guano/Hair Sample	Comments
1	D	<i>Myotis septentrionalis</i>	2205	Ad	F	PL	72.5	35	M	0	953	
2	A	<i>Eptesicus fuscus</i>	2215	Ad	M	NA	17.5	46	F	0	954-955	
3	B	<i>E. fuscus</i>	2250	Jv	F	NA	17.25	46	F	0		
4	B	<i>E. fuscus</i>	2250	Ad	M	NA	17.5	43	M	0		
5	D	<i>Las. v. borealis</i>	0200	Ad	F	PL	16.50	41	M	0	962-967	

\* M = Monoflament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap, A = Anabat

<sup>1</sup> Refer to table on the back

<sup>2</sup> Reproductive Condition: Female = NR/P5/LPL, Male = 1/L



## BAT CAPTURE DATA

Project #: 347 Date: 31-Jul-11  
Project Name: Republic  
State: OH County: Seneca  
Biologists: J. B. Briggs, M. Farmer  
Site name#: 8  
GPS Unit #: 465670 Camera #: Can671

### MOON PHASE\*

☐ New moon  
☐ Waxing gibbous  
☐ Last quarter  
☐ Waxing crescent  
☐ Full moon  
☐ Waning gibbous  
☐ Waning crescent  
☐ First quarter

### WEATHER DATA

Time (0000 h)	Temp (°C)	Wind Speed (estimated - see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
0100	27.2	—	—	0	
0130	26.8	—	—	0	
0200	25.2	—	—	0	
0230	24.1	4.7	—	0	
0300	24.0	1.3	—	0	
0330	23.9	1.3	—	0	
0400	23.7	1.3	—	0	
0430	23.6	—	—	—	
0500	23.4	—	—	—	
0530	23.1	—	—	—	

Net/Trap/Anabat #	Net/Trap Type <sup>1</sup>	Latitude	Longitude	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
A	N	41° 13' 42.7" N	83° 0' 53.6" W	6	6	2030	0150	985
B	N	41° 13' 43.8" N	83° 0' 53.3" W	6	6	2035	0155	988
C	N	41° 13' 44.4" N	83° 0' 52.2" W	9	9	2040	0200	986
D	N	41° 13' 46.8" N	83° 0' 52.7" W	12	6	2045	205	987

Net Placement/Site Description:

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # Guano/Hair Sample	Comments
1	C	<i>Myotis septentrionalis</i>	2130	Jv	F	NA	5.75	36	M	0		
2	D	<i>Eptesicus fuscus</i>	2200	Jv	F	NR	7.2	27	F	0		not enough
3	C	<i>Myotis lucifugus</i>	2245	Jv	F	NR	5.8	34	M	0		113-0991-0999
4	B	<i>Perimyotis subflavus</i>	2300	Jv	M	↑	15.3	46	F	0		113-0989, 0990
5	D	<i>E. fuscus</i>	2345	Jv	M	↑	15.3	46	F	0		
6	D	<i>Myotis septentrionalis</i>	0155	Jv	F	NR	6.2	47	M	0		

<sup>1</sup> M = Monofilament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap, A = Anabat

\* Refer to table on the back

<sup>2</sup> Reproductive Condition: Female = NR/PG/LPL, Male = 1/4





## NET SITE HABITAT DESCRIPTION

Project #: 340.02 Date: 17 July 2011 Biologists: V. Barack, J. Reeves  
Project Name: Tatavatch Republic Site Name/ #: Site 9  
State: OH County: Seneca USGS Quad: Fireside  
Camera #: can 671 Picture #: 874-877 GPS Unit #: ESN 6500 Waypoint #:       
Latitude: 41 ° 14 ' 0.8 "N Longitude: 82 ° 59 ' 49.5 "W  
Distance to closest water source (meters): 150 Type of water source: creek  
Water source name:     

### ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS):

Bank Height: N/A meters Channel Width: N/A meters Stream Width: N/A meters  
Substratum: N/A Bedrock      Boulder      Cobble      Gravel      Sand      Silt/Clay  
Still Water Present (Y/N): N/A Average Water Depth: N/A m or cm Clarity (H,M,L): N/A

### VEGETATION:

Dominant Canopy Species (> 40 cm/16" dbh)	Subdominant Canopy Species (< 40 cm/16" dbh)
<u>Tilia americana</u>	<u>Carya ovata</u>
<u>Acer rubrum</u>	<u>Acer rubrum</u>
<u>Carya ovata</u>	<u>    </u>

Estimated dbh range: Lg: 55 Sm: 40 Estimated dbh range: Lg: 39 Sm: 10

Relative abundance of dominant vs. subdominant (ratio): 1:50

Estimated canopy closure:      Closed      Moderate      Open  
Roost tree potential consists of: ✓ Large Trees ✓ Snags      Both      Neither  
Roost tree potential for the area is: ✓ High      Moderate      Low  
Roost potential comments: Large Carya ovata  
Subcanopy clutter:      Closed      Moderate ✓ Open  
Subcanopy comprised largely of: ✓ Lower Branches of Canopy Trees      Saplings      Shrubs

Common Subcanopy Species:     

Habitat Description: Mature mesic woodlot

### Check all that apply:

<u>    </u> Mature Upland Forest	<u>    </u> Recently Logged Forest	<u>    </u> Crop/Pasture Land	<u>    </u> Shrub/scrub Swamp
<u>    </u> Young Upland Forest	<u>    </u> Pine Plantation	<u>    </u> Stream/River	<u>    </u> Vernal Pool
<u>    </u> Mature Lowland Forest	<u>✓</u> Woodlot/Forest Edge	<u>    </u> Emergent Wetland	<u>    </u> Deepwater Lake/Pond
<u>✓</u> Young Lowland Forest	<u>✓</u> Old Field	<u>    </u> Forested Swamp	<u>✓</u> Other <u>low m. grass</u>

Herbaceous Cover:      Sparse ✓ Moderate      Dense



Property of: Environmental Solutions & Innovations, Inc.  
781 Neeb Road, Cincinnati, OH 45233 (Phone: 513-451-1777)

## NET SITE HABITAT DESCRIPTION (continued)

Project #: 340.02	State/County: OH/Seneca	Site Name/#: 9	Initials:
<b>SKETCH: NETS A and B</b>			
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;"> <p>N</p> </div> <div style="text-align: right;"> <p>CR 34</p> </div> </div> <div style="margin-top: 20px;"> <p style="text-align: center;">Crops</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Woodlot</p> </div> <div style="text-align: center;"> <p>Mowed Yards</p> </div> </div> <p style="text-align: right; margin-top: 20px;">Crops</p> </div>			
<p><b>LEGEND</b></p> <p>Nets: ● — ●</p>	<p><b>COMMENTS</b></p> <hr/> <hr/> <hr/> <hr/> <hr/>		





# BAT CAPTURE DATA

Project #: 340.02 Date: 17 July 2011  
 Project Name: Tetratich Republic  
 Biologists: V. Barack, S. Reeves Site name#: Site 9  
 State: Chin County: Seneca  
 GPS Unit #: G7406 Camera #: C6209

## WEATHER DATA

Time (xxxx h)	Temp (°C)	Wind Speed (estimated - see chart)*	% Cloud Cover (estimated)	Comments
2100	80.5	0	0%	
2130	79.2	0	0%	
2200	79.1	1-3	0%	
2230	79.2	1-3	0%	
2300	79.0	1-3	0%	
2330	78.8	1-3	0%	
0000	78.1	1-3	0%	
0030	77.6	1-3	0%	
0100	76.5	1-3	0%	
0130	76.7	1-3	0%	
0200	76.5	1-3	0%	

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Length (m)	Height (m)	Time Up (xxxx h)	Time Down (xxxx h)	Picture #	Waypoint #
Net	A	41° 14' 08" N	82° 59' 49.5" W	6	6	2100	0200	874	09A
Net	B	41° 14' 08" N	82° 59' 53.5" W	9	9	2055	0155	875	09B
Net	C	41° 14' 09.2" N	82° 59' 54.2" W	0	0	2050	0150	876	09C
Net	D	41° 14' 07" N	82° 59' 55.3" W	9	0	2045	0145	877	09D

Net Placement/Site Description: Nets across canopyed out + road (A+B), Nets CaD across ATV/walking trails in woodlot

Capt #	Net/Trap	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # / Guano/Hair Sample	Comments
1	D	Perimyotis subflavus	2125	Ad	M	↑	5.3	32	E	0	N/A	
2	D	Myotis septentrionalis	2125	Jv	M	↓	6.9	35	E	0	0217	
3	D	Perimyotis subflavus	2125	Ad	M	↑	6.5	32	E	0	0216	
4	C	M. septentrionalis	2125	Ad	F	PL	6.5	36	E	0		notes on wing & body
5	C	Eptesicus fuscus	2130	Ad	M	↓	17.1	45	M	0	0218	
6	B	E. fuscus	2150	Ad	F	PL	15.2	44	E	1	N/A	
7	A	E. fuscus	2150	Ad	F	PL	18.1	46	F	2		many healed spots (Sandy)
8	A	E. fuscus	2150	Ad	M	1/2	17.3	45	M	0	N/A	
9	A	E. fuscus	2150	Ad	M	1/2	17.2	45	F	0	N/A	

<sup>1</sup> Reproductive Condition: Female = NR PG L/PL; Male = ↑ ↓ \* Refer to table on the back



# BAT CAPTURE DATA (continued)

Project #: 340.02

Date: 17 July 2011

Project Name: Tetratich Republic

Site Name#: S-109

Initials: VB, SR

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. 2	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
10	A	Eptesicus fuscus	2200	Ad	M	↑	18.2	45	F	0	N/A	
11	A	E. fuscus	2210	Ad	F	L	18.6	45	M	0		Small tear on left wing
12	A	E. fuscus	2210	Ad	F	PL	24.9	48	F	1		scarring and spots
13	A	E. fuscus	2220	Ad	F	PL	19.8	45	F	1		hatched scars
14	B	E. fuscus	2220	Ad	F	L	19.0	44	M	1		mangle 0220-0221
15	B	E. fuscus	2220	Ad	F	PL	17.7	47	F	0		few spots
16	B	Perimyotis subflavus	2220	Jv	F	NR	5.1	32	E	0	N/A	
17	B	E. fuscus	2230	Ad	M	1/2 J	16.0	46	F	0	N/A	
18	C	E. fuscus	2250	Jv	M	↑	15.5	45	M	0	N/A	
19	C	E. fuscus	2330	Ad	F	L	19.6	46	F	0	N/A	
20	C	E. fuscus	2330									Escaped Net
21	B	Myotis septentrionalis	2330	Ad	F	PL	6.8	37	E	0	N/A	
22	B	E. fuscus	2330	Ad	F	L	18.1	46	F	0	N/A	
23	A	E. fuscus	2335	Ad	F	PL	20.1	46	F	2		scarring & spots
24	A	E. fuscus	2335	Ad	M	1/2 J	15.6	44	F	0	N/A	
25	A	E. fuscus	2340	Jv	F	NR	17.9	45	F	0	N/A	
26	D	M. septentrionalis	0000	Jv	F	NR	7.0	37	M	0	N/A	
27	B	E. fuscus	0010	Ad	F	L	20.2	47	F	1		adverse spotted on wings
28	C	M. septentrionalis	0045	Ad	F	PL	6.7	36	E	1		scarring & spots

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face; leaves rustle, ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion, wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper; small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Breaks twigs off trees; generally impedes progress

29 A  
30 A

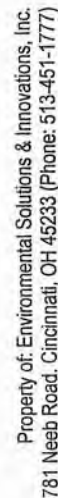
E fuscus  
E fuscus

0200 Ad M  
0200 Ad F

↓  
L

16.3 47  
17.8 46

E 0  
E 0



## WEATHER DATA

MOON PHASE\*

First quarter  
Waning gibbous

Net/Trap/Anabat #	Net/Trap Type <sup>1</sup>	Latitude	Longitude	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
A	net	41° 14' 08.6"N	82° 59' 49.5"W	6	6	2100		874 / wpt 09A
B	net	41° 14' 08.0"N	82° 59' 53.5"W	9	9	2100		875 / 09B
C	net	41° 14' 09.2"N	82° 59' 54.2"W	6	6	2100		876 / 09C

20 59' 55.3" <sup>2000</sup> 9 + 0 8 cross trails in wood 877, 09 D  
div + col (A+B)

<sup>1</sup> M = Monofilament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap; A = Anabat

<sup>2</sup> Reproductive Condition: Female = NR/PG/L/PL; Male = ↑/↓

\* Refer to table on the back





## BAT CAPTURE DATA (continued)

Project #:

Date:

Project Name:

Site Name#:

Initials:

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. 2	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
11	B	<i>E. fuscus</i>	22:10	Ad	M	↑	19.0	46	F	0		
12	B	<i>E. fuscus</i>	22:10	Jv	M	↑	13.0	42	E	0		
13	B	<i>E. fuscus</i>	22:10	Ad	M	↓	18.0	45	F	0		B+del. in bag
14	A	<i>E. fuscus</i>	22:20	Ad	F	PL	18.75	50	M	0		
15	A	<i>E. fuscus</i>	22:20	Ad	F	PL	21.25	49	F	0		
16	A	<i>E. fuscus</i>	22:20	Ad	F	PL	18.0	48	M	0		Keep from right hand
17	A	<i>E. fuscus</i>	22:20	Ad	M	↑	18.5	47	M	0		
18	A	<i>E. fuscus</i>	22:30	Jv	M	↑	13.0	43	M	0		
19	B	<i>Myotis septentrionalis</i>	22:40	Ad	F	PL	7.25	34	M	0		
20	A	<i>E. fuscus</i>	22:50	Ad	M	↑	15.5	47	F	0		
21	A	<i>E. fuscus</i>	22:50	Ad	M	↓	16.0	45	M	0		
22	A	<i>E. fuscus</i>	23:40	Ad	M	↑	19.25	49	F	0		
23	C	<i>Perimyotis subflavus</i>	01:10	Jv	M	↑	4.0	32	M	0		
24	B	<i>E. fuscus</i>	01:10	Ad	F	PL	18.75	46	F	0		
25	B	<i>M. septentrionalis</i>	02:00	Jv	M	↑	-	-	E	0		

### Beaufort Wind Scale

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face; leaves rustle; ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper; small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Breaks twigs off trees; generally impedes progress

### 2010 Lunar Phases

New Moon	First Quarter	Full Moon	Last Quarter
Feb 13	Mar 23	Mar 29	Apr 6
Mar 15	Apr 21	Apr 28	May 5
Apr 14	May 20	May 27	Jun 4
May 13	Jun 18	Jun 26	Jul 4
Jun 12	Jul 18	Jul 25	Aug 2
Jul 11	Aug 16	Aug 24	Sep 1
Aug 9	Sep 15	Sep 23	Sep 30
Sep 8	Oct 14	Oct 22	Oct 30
Oct 7	Nov 13	Nov 21	Nov 28

### Wing Index Key

Score	Description
0	No damage. Fewer than 5 small scar spots are present on the membranes.
1	Light damage. Less than 50% of flight membrane is depigmented (spotting), which is often visible only with transillumination.
2	Moderate damage. Greater than 50% of wing membrane covered with scar tissue (spotting). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	Heavy damage. Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagiopagium and/or chiroptagium are evident.



## NET SITE HABITAT DESCRIPTION

Project #: 340

Date: 7/19/11

Biologists: A. Krolowski, M. Farmer

Project Name: Republic

Site Name/#: 10

State: OH County: Soucia

USGS Quad: Fireside

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Picture #	Waypoint #
<u>A</u>	<u>Net</u>	<u>41° 13' 47.8" N</u>	<u>82° 59' 41.8" W</u>	<u>869</u>	<u>10a</u>
<u>B</u>	<u>Net</u>	<u>41° 13' 48.0" N</u>	<u>82° 59' 42.8" W</u>	<u>870</u>	<u>10b</u>
<u>C</u>	<u>Net</u>	<u>41° 13' 48.5" N</u>	<u>82° 59' 44.3" W</u>	<u>871</u>	<u>10c</u>
<u>D</u>	<u>Net</u>	<u>41° 13' 48.9" N</u>	<u>82° 59' 46.0" W</u>	<u>872</u>	<u>10d</u>

Distance to closest water source (meters): 0

Type of water source: stream

Water source name: —

### ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS):

Bank Height: 2 meters Channel Width: 6 meters Stream Width: 4 meters

Substratum: — Bedrock — Boulder X Cobble — Gravel — Sand — Silt/Clay

Still Water Present (Y/N): Y Average Water Depth: 10 m or cm Clarity (H,M,L): M

### VEGETATION:

Dominant Canopy Species (> 40 cm/16" dbh)

Acer saccharinum  
Juglans nigra

Subdominant Canopy Species (< 40 cm/16" dbh)

Ulmus rubra

Estimated dbh range: Lg: 70 Sm: 15

Estimated dbh range: Lg: 40 Sm: 10

Relative abundance of dominant vs. subdominant (ratio): 1/5

Estimated canopy closure: X Closed — Moderate — Open

Roost tree potential consists of: X Large Trees — Snags — Neither

Roost tree potential for the area is: — High — Moderate X Low

Roost potential comments: Tight bark

Subcanopy clutter: — Closed X Moderate — Open

Subcanopy comprised largely of: — Lower Branches of Canopy Trees X Saplings — Shrubs

Common Subcanopy Species: Ulmus rubra

Habitat Description: Typical small Ohio stream/lowland forest strip

AnaBat Habitat: N/A

### Check all that apply:

— Mature Upland Forest — Recently Logged Forest — Crop/Pasture Land — Other —  
— Young Upland Forest — Forest Edge X Stream/River —  
X Mature Lowland Forest — Woodlot — Vernal Pool —  
— Young Lowland Forest — Old Field — Deepwater Lake/Pond —

Herbaceous Cover: — Sparse X Moderate — Dense

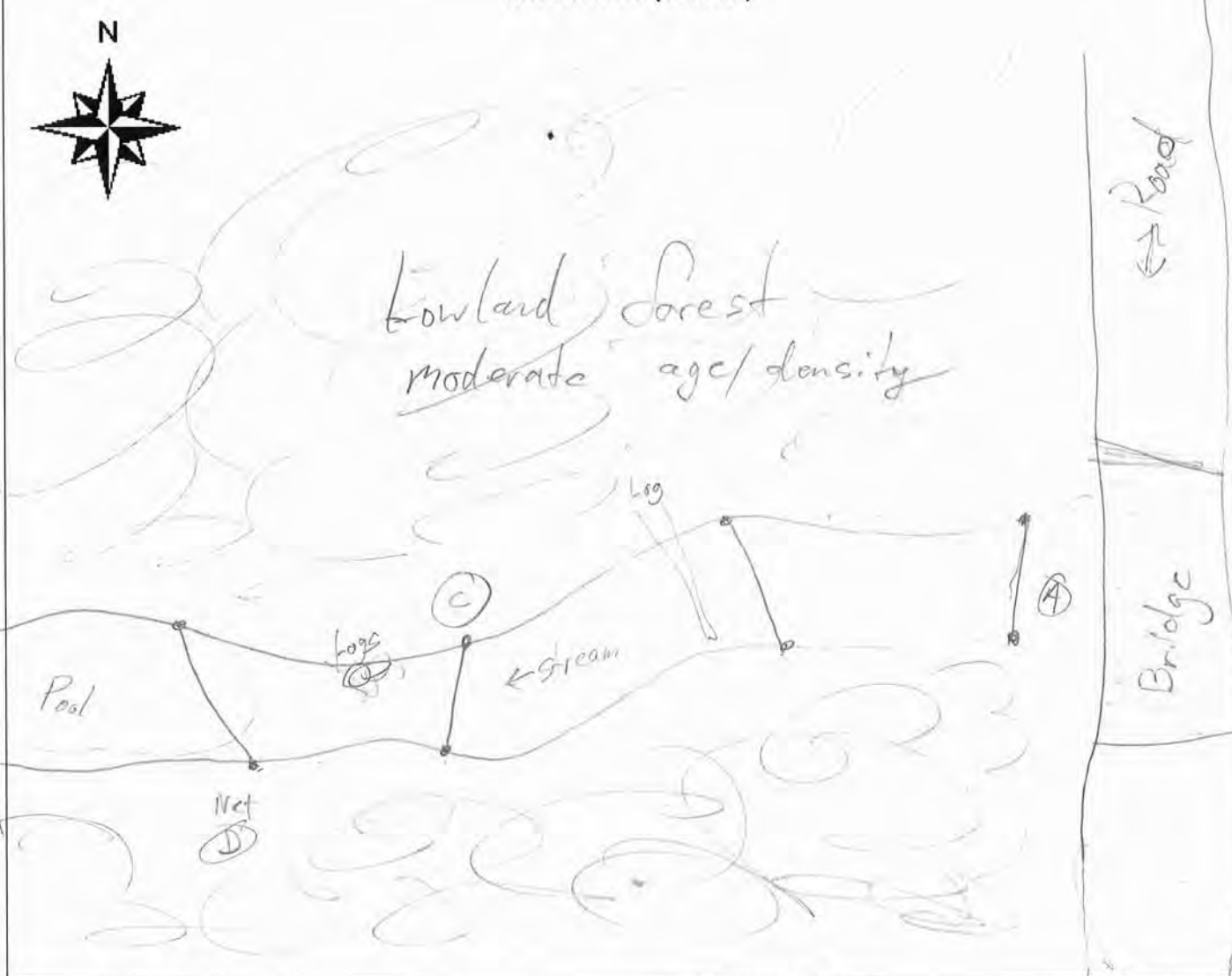




### NET SITE HABITAT DESCRIPTION (continued)

Project #: 340.01 State/County: OH/Seneca Site Name/#: 10 Initials: \_\_\_\_\_

#### SKETCH: NETS A and B and AnaBat (if used)



#### LEGEND

Nets: ● — ●

#### COMMENTS

---

---

---

---



## BAT CAPTURE DATA

Project #: 340.01 Date: 17 July 11  
Project Name: Republic  
State: OH County: Seneca  
Biologists: J. Basinger & M. Flynn  
Site name#: 10  
GPS Unit #: BS1405071 Camera #: can 671

### MOON PHASE\*

☐ New moon ☐ Waxing crescent ☐ First quarter  
☐ Waxing gibbous ☐ Full moon ☐ Waning gibbous  
☐ Last quarter ☐ Waning crescent

### WEATHER DATA

Time (0000 h)	Temp (°C)	Wind Speed (estimated - see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
2100	26.9	—	—	0	
2130	26.5	—	—	0	
2200	26.4	—	—	0	
2230	26.2	—	—	0	
2300	26.0	—	—	10	
2330	25.9	—	—	15	
0000	25.9	—	—	0	
0030	25.7	—	—	0	
0100	25.4	—	—	0	
0130	25.1	—	—	0	
0200	24.8	—	—	0	

Net/Trap/Anabat #	Net/Trap Type <sup>1</sup>	Latitude	Longitude	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
A	Net	41° 13' 47.8" N	82° 59' 41.8" W	6	6	2045	0200	869
B	Net	41° 13' 48.0" N	82° 59' 42.8" W	6	9	2050	0205	870
C	Net	41° 13' 48.5" N	82° 59' 44.3" W	9	6	2055	0210	871
D	Net	41° 13' 48.9" N	82° 59' 46.0" W	9	6	2100	0215	872

### Net Placement/Site Description:

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (FIM/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
1	A	<i>Eptesicus fuscus</i>	2230	Ad	M	✓	18.25	46	E	0		
2	C	"	2230	Ad	F	PL	21.5	47	M	0		
3	C	"	2230	Ad	M	✓	17.25	43	M	0		
4	C	"	2230	Ad	F	PL	21.75	46	F	0		
5	C	<i>Lasurus cinereus</i>	2230	Jv	M	✓	22.75	55	M	0		pic# 843, 844
6	D	<i>Myotis lucifugus</i>	2230	Ad	M	✓	35	35	M	0		
7	D	<i>M. lucifugus</i>	2230	Ad	M	✓	7.5	35	M	0		pic# 850, 851
8	D	<i>E. fuscus</i>	2230	Ad	F	PL						
9	D	<i>E. fuscus</i>	2230	Ad	F	PL						
10	D	<i>E. fuscus</i>	2230	Ad	F	PL						

<sup>1</sup> M = Monofilament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap; A = Anabat

\* Refer to table on the back

<sup>2</sup> Reproductive Condition: Female = NR/PG/PL; Male = ↑/↓

<u>date</u>	<u>net #</u>	<u>sp</u>	<u>time</u>	<u>age</u>	<u>sex</u>	<u>repro</u>	<u>wt.</u>	<u>RFA</u>	<u>belly</u>	<u>wing index</u>	<u>comment</u>
11	A	E. fuscus	2330	Ad	F	PL	26.5	46	F	0	
12	D	E. fuscus	2330	JV	M	↑	16.5	44	M	0	
13	D	E. fuscus	2330	Ad	M	↑	17	47	M	0	
14	A	M. septentrionalis	0030	JV	F	NR	6.25	35	M	0	
15	A	M. septentrionalis	0030	Ad	F	PL	7.25	34	E	0	pic # 853
16	D	E. fuscus	0030	Ad	F	PL	22.25	48	F	0	pic 854-856
17	D	E. fuscus	0030	Ad	F	PL	20.25	47	F	0	
18	D	E. fuscus	0142	Ad	F	PL	19.5	44	F	0	



# BAT CAPTURE DATA

Project #: 340 Date: 7/19/11  
 Project Name: Republic  
 Biologists: A. Krawski Site name#: 10  
 State: OK County: Sevier  
 GPS Unit #: 465671 Camera #: 671

## WEATHER DATA

Time (xxxx h)	Temp (°C)	Wind Speed (estimated - see chart)*	% Cloud Cover (estimated)	Comments
2120	26	1-3	30%	
2150	24.9	0	30	
2220	24.3	0	10	
2250	23.9	0	20	
2320	23.5	0	20	
2350	23.2	0	20	
0200	23.1	0	20	
0500	22.7	0	0	
1200	22.4	0	0	
1500	22.8	0	0	
2200	21.9	0	0	

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Length (m)	Height (m)	Time Up (xxxx h)	Time Down (xxxx h)	Picture #	Waypoint #
A	net	41° 13' 47.8" N	82° 59' 41.8" W	6	6	2115	235	869	
B	"	41° 13' 48.0" N	82° 59' 42.8" W	6	9	2115	230	870	
C	"	41° 13' 48.5" N	82° 59' 44.3" W	4	6	2105	215	871	
D	"	41° 13' 48.9" N	82° 59' 46.0" W	9	6	2105	210	872	

## Net Placement/Site Description:

Capt #	Net/Trap	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # / Guano/Hair Sample	Comments
1	D	P. sub	2130	Jv	M	MR	4.4	31	E	0		
2	D	E. fus	2110	Ad	F	FL	17.3	47	M	0		
3	D	E. fus	2220	Ad	F	PL	19.2	46	F	0		
4	D	P. sub	2220	Ad	F	PL	8.5	34	F	0		
5	C	M. luc	2230	Jv	M	NR	7.9	36	M	0		
6	B	E. fus	2230	Ad	F	PL	17.5	48	M	0		
7	D	E. fus	2245	Ad	F	L	20.3	46	F	0		
8	A	M. sep	2245	Ad	F	PL	6.5	35	N	0		
9	B	M. sub	2320	Jv	F	NR	5.5	35	N	0		

<sup>1</sup> Reproductive Condition: Female = NR/PG/L/PL; Male = ↑/↓ \* Refer to table on the back







## NET SITE HABITAT DESCRIPTION

Project #: 340.02 Date: 21 July 2011 Biologists: D Jeffcott, S Reeves  
Project Name: Tetrach Republic Site Name/#: Site 11  
State: Oh County: Semeca USGS Quad: Fireside  
Camera #: C4831 Picture #s: 100-101 thru 108 GPS Unit #: E6896 Waypoint #: 028  
Latitude: 41° 13' 3.7" N Longitude: 82° 58' 5.4" W  
Distance to closest water source (meters): 500 m Type of water source: stream  
Water source name: Albright Ditch

### ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS): N/A

Bank Height: N/A meters Channel Width: N/A meters Stream Width: N/A meters  
Substratum: N/A Bedrock    Boulder    Cobble    Gravel    Sand    Silt/Clay  
Still Water Present (Y/N): N/A Average Water Depth: N/A m or cm Clarity (H,M,L): N/A

### VEGETATION:

Dominant Canopy Species (> 40 cm/16" dbh) Subdominant Canopy Species (< 40 cm/16" dbh)

Acer saccharum

Acer saccharum

Ulmus americana

Ulmus americana

Prunus serotina, Juglans nigra

Estimated dbh range: Lg: 100 Sm: 40

Estimated dbh range: Lg: 39 Sm: 5

Relative abundance of dominant vs. subdominant (ratio): 1:8

Estimated canopy closure:    Closed    Moderate    Open

Roost tree potential consists of:    Large Trees    Snags    Both    Neither

Roost tree potential for the area is:    High    Moderate    Low

Roost potential comments: snags mostly under the canopy

Subcanopy clutter:    Closed    Moderate    Open

Subcanopy comprised largely of:    Lower Branches of Canopy Trees    Saplings    Shrubs

Common Subcanopy Species: Acer saccharum

Habitat Description: mesic mature woodlot near cornfields and barn structure

### Check all that apply:

   Mature Upland Forest    Recently Logged Forest    Crop/Pasture Land    Shrub/scrub Swamp  
   Young Upland Forest    Pine Plantation    Stream/River    Vernal Pool  
   Mature Lowland Forest    Woodlot/Forest Edge    Emergent Wetland    Deepwater Lake/Pond  
   Young Lowland Forest    Old Field    Forested Swamp    Other   

Herbaceous Cover:    Sparse    Moderate    Dense



Property of: Environmental Solutions & Innovations, Inc.  
781 Neeb Road, Cincinnati, OH 45233 (Phone: 513-451-1777)

## NET SITE HABITAT DESCRIPTION (continued)

Project #: 340.02	State/County: OH / Seneca	Site Name/#: Site 11	Initials: SR
-------------------	---------------------------	----------------------	--------------

**SKETCH: NETS A and B**

The sketch map depicts a landscape with a large woodlot in the upper left, a cornfield in the lower right, and a gravel road running horizontally across the middle. A north arrow is located in the top left corner. Two nets, labeled A and B, are marked with dots. A 'JEEP trail' is shown winding through the woodlot. 'Vernal pools' are indicated near the top center. An 'Albright Ditch' runs along the bottom edge. A 'cornfield' is labeled on the right side. A 'gravel road' is labeled at the bottom right. A 'TO County Road 21' label with an arrow points left on the far left. A 'TO County Road 32' label with an arrow points down at the bottom center. A small building or structure is drawn near the gravel road.

LEGEND	COMMENTS
Nets: ● — ●	N/A
Semi Trailers:	
Barn:	



# BAT CAPTURE DATA

Project #: 340.02 Date: 21 July 2011  
 Project Name: Tetralix Republic  
 Biologists: Duffcoat, S. Rivers Site name/ID: Site 11  
 State: Ohio County: Seneca  
 GPS Unit #: EL0846 Camera #: 04834

## WEATHER DATA

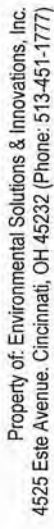
Time (xxxx h)	Temp (°C)	Wind Speed (estimated - see chart)*	% Cloud Cover (estimated)	Comments
2100	29.6	0	70%	---
2130	29.7	0	0%	---
2200	29.6	0	0%	---
2230	29.3	0	0%	---
2300	28.1	0	0%	---
2330	27.6	0-1	0%	---
0000	27.8	0	0%	---
0030	27.6	0	0%	---
0100	27.3	0	0%	---
0130	26.9	0	0%	---
0200	26.6	0	0%	---

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Length (m)	Height (m)	Time Up (xxxx h)	Time Down (xxxx h)	Picture #	Waypoint #
Net	A	41° 13' 3.7" N	82° 58' 5.4" W	10	6.2	2050	0150	101-106	028
Net	B	41° 13' 4.3" N	82° 58' 2.6" W	18	9.2	2055	0155	107	030
Net	C	41° 13' 7.0" N	82° 58' 2.4" W	10	6.2	2100	0200	109	029
Net	D	41° 13' 5.8" N	82° 58' 0.8" W	10	6.2	2105	0205	106	027

Net Placement/Site Description: Nets placed on woodlot access roads/corridors

Capt #	Net/ Trap	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
1	B	<i>Eptesicus fuscus</i>	2140	Ad	M	↑	14.7	45	M	0	3708	---
2	B	<i>E. fuscus</i>	2140	Ad	M		16.8	46	M	0	N/A	---
3	B	<i>E. fuscus</i>	2140									Escaped Net
4	B	<i>Myotis septentrionalis</i>	2145									Escaped Hand/Bag
5	D	<i>E. fuscus</i>	2155	Ad	F	L	17.4	46	M	0	N/A	---
6	C	<i>E. fuscus</i>	2225	Ad	F	L	19.5	45	M	0	N/A	---
7	A	<i>E. fuscus</i>	2300	Ad	F	L	17.8	47	M	0	N/A	---
8	D	<i>E. fuscus</i>	0010	Ad	F	NR	19.7	44	M	0	N/A	---
9	C	<i>M. septentrionalis</i>	0010	Jv	F	NR	5.7	34	M	0	3711	---

<sup>1</sup> Reproductive Condition: Female = NR/PG/L/PL; Male = ↑/↓ \* Refer to table on the back



Initials: DJ SP

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face; leaves rustle; ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper, small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Breaks twigs off trees; generally impedes progress

Score	Description
0	<b>No damage.</b> Fewer than 5 small scar spots are present on the membranes.
1	<b>Light damage.</b> Less than 50% of flight membrane is depigmented (spotting), which is often visible only with transillumination.
2	<b>Moderate damage.</b> Greater than 50% of wing membrane covered with scar tissue (spotting). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	<b>Heavy damage.</b> Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagiopatagium and/or chiroptagium are evident.





# BAT CAPTURE DATA

Project #: 340.02 Date: 25 July 2011  
 Project Name: Tetra Tech / Republic  
 Biologists: D. Jeffcott Site name#: 11  
 State: OH County: Seneca  
 GPS Unit #: E 6846 Camera #: 6-1

## WEATHER DATA

Time (xxxx h)	Temp (°C)	Wind Speed (estimated - see chart)*	% Cloud Cover (estimated)	Comments
2100	23.7	—	20%	—
2130	23.4	—	20%	—
2200	23.0	—	0	—
2230	22.5	—	0	—
2300	22.1	—	0	—
2330	22.0	—	0	—
0000	21.5	—	0	—
0030	21.2	—	0	—
0100	21.0	—	0	—
0130	21.0	—	0	—
0200	19.8	—	0	—

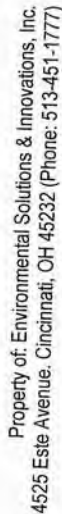
Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Length (m)	Height (m)	Time Up (xxxx h)	Time Down (xxxx h)	Picture #	Waypoint #
Net A	N	41° 13' 3.7" N	82° 58' 5.4" W	6.3	6.2	2040	0200	101-105	028
Net B	N	41° 13' 4.3" N	82° 58' 2.6" W	18	9.2	2045	0215	107	030
Net C	N	41° 13' 7.0" N	82° 58' 2.4" W	6	6.2	2055	0240	108	029
Net D	N	41° 13' 5.8" N	82° 58' 0.8" W	6	6.2	2100	0250	106	027

Net Placement/Site Description: Nets placed on roads through woodlot

Capt #	Net/Trap	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # (Guano/Hair Sample)	Comments
1	D	Eptesicus fuscus	2145	Jv	M	↑	15.6	45.0	M	0	—	—
2	D	E. fuscus	2145	Ad	M	↑	15.1	45.0	M	0	—	—
3	A	E. fuscus	2200	—	—	—	15.3	—	M	0	—	Escaped
4	B	E. fuscus	2215	Jv	F	NR	14.7	45.0	M	0	—	—
5	D	E. fuscus	2230	Jv	F	NR	19.5	44.0	M	0	—	—
6	D	E. fuscus	2235	Ad	F	PL	17.0	43.0	M	0	—	—
7	B	M. septentrionalis	2300	Jv	F	NR	6.1	35.0	M	0	—	—
8	B	Eptesicus fuscus	0000	Jv	F	NR	19.7	46.5	M	0	—	—
9	B	E. fuscus	0030	Ad	F	PL	19.4	46	M	0	—	—

<sup>1</sup> Reproductive Condition: Female = NR/PG/L/PL; Male = ↑/↓ \* Refer to table on the back





## BAI CAPTURE DATA (continued)

July 2011

Site Name/#:

Initials:

[illegible]

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face; leaves rustle; ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper; small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Breaks twigs of trees; generally impedes progress

Score	Description
0	No damage. Fewer than 5 small scar spots are present on the membranes.
1	Light damage. Less than 50% of flight membrane is depigmented (spotting), which is often visible only with transillumination.
2	Moderate damage. Greater than 50% of wing membrane covered with scar tissue (spotting). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	Heavy damage. Delaminated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagioplagium and/or chironotarium are evident.



## NET SITE HABITAT DESCRIPTION

Project #: 390.01 Date: 30 July 11 Biologists: J. Basgel  
Project Name: Republic Site Name/#: 12  
State: OH County: Seneca USGS Quad: Fireside

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Picture #	Waypoint #
<u>A</u>	<u>N</u>	<u>41° 13' 11.3" N</u>	<u>82° 56' 25.8" W</u>	<u>978</u>	
<u>B</u>	<u>N</u>	<u>41° 13' 14.7" N</u>	<u>82° 56' 27.7" W</u>	<u>979</u>	
<u>C</u>	<u>N</u>	<u>41° 13' 14.5" N</u>	<u>82° 56' 30.7" W</u>	<u>980</u>	
<u>D</u>	<u>N</u>	<u>41° 13' 12.5" N</u>	<u>82° 56' 30.5" W</u>	<u>981</u>	

Distance to closest water source (meters): 0 Type of water source: Vernal Pool  
Water source name: \_\_\_\_\_

### ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS):

Bank Height: .5 meters Channel Width: 9 meters Stream Width: 12 meters  
Substratum: \_\_\_\_\_ Bedrock \_\_\_\_\_ Boulder \_\_\_\_\_ Cobble \_\_\_\_\_ Gravel \_\_\_\_\_ Sand ☒ Silt/Clay  
Still Water Present (Y/N): ☒ Average Water Depth: 50 m or cm Clarity (H,M,L): L

### VEGETATION:

Dominant Canopy Species (> 40 cm/16" dbh) Subdominant Canopy Species (< 40 cm/16" dbh)  
Acer rubrum Acer rubrum  
Carya ovata Carya ovata

Estimated dbh range: Lg: 75 Sm: 40 Estimated dbh range: Lg: 39 Sm: 12

Relative abundance of dominant vs. subdominant (ratio): 1:50

Estimated canopy closure: \_\_\_\_\_ Closed ☒ Moderate \_\_\_\_\_ Open  
Roost tree potential consists of: ☒ Large Trees ☒ Snags \_\_\_\_\_ Neither  
Roost tree potential for the area is: ☒ High \_\_\_\_\_ Moderate \_\_\_\_\_ Low  
Roost potential comments: large snags and live tree w/ loose flakey bark  
Subcanopy clutter: \_\_\_\_\_ Closed ☒ Moderate \_\_\_\_\_ Open  
Subcanopy comprised largely of: ☒ Lower Branches of Canopy Trees ☒ Saplings \_\_\_\_\_ Shrubs

Common Subcanopy Species: \_\_\_\_\_

Habitat Description: Large wood lot surrounded by crop fields  
AnaBat Habitat: N/A

### Check all that apply:

☐ Mature Upland Forest ☐ Recently Logged Forest ☒ Crop/Pasture Land \_\_\_\_\_ Other \_\_\_\_\_  
☐ Young Upland Forest ☒ Forest Edge \_\_\_\_\_ Stream/River \_\_\_\_\_  
☐ Mature Lowland Forest ☒ Woodlot ☒ Vernal Pool \_\_\_\_\_  
☒ Young Lowland Forest ☐ Old Field \_\_\_\_\_ Deepwater Lake/Pond \_\_\_\_\_

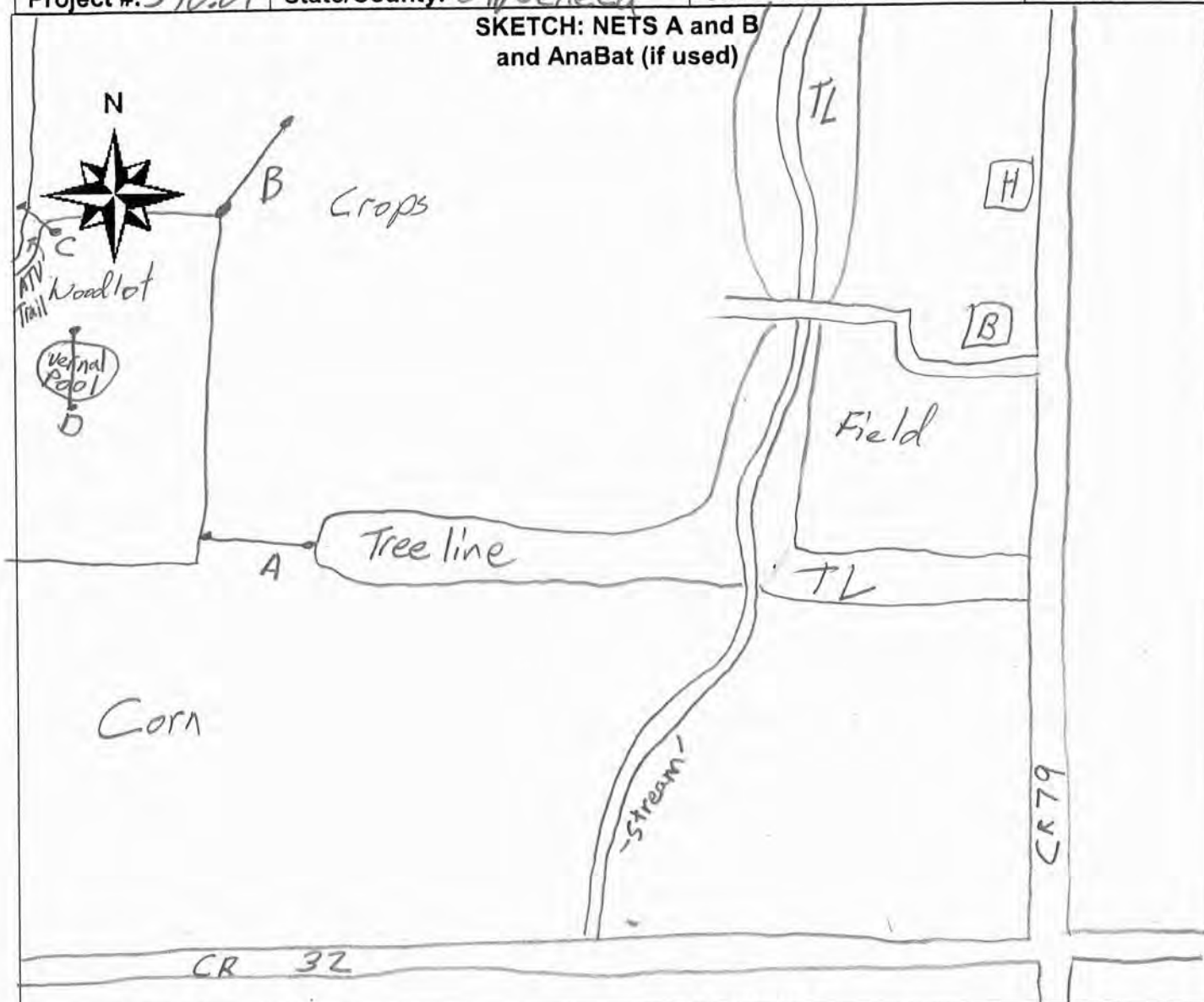
Herbaceous Cover: \_\_\_\_\_ Sparse ☒ Moderate \_\_\_\_\_ Dense



### NET SITE HABITAT DESCRIPTION (continued)

Project #: 340.01	State/County: OH/Seneca	Site Name/#: 12	Initials:
-------------------	-------------------------	-----------------	-----------

SKETCH: NETS A and B  
and AnaBat (if used)



#### LEGEND

Nets: ● — ●

#### COMMENTS




## BAT CAPTURE DATA

Project #: 340.07 Date: 28 Jul 11  
Project Name: Republic  
State: OH County: Seneca  
Biologists: J. Baggett  
Site name/ID: 12  
GPS Unit #: ES1 4000 Camera #: 0000

### MOON PHASE\*

☐ New moon ☐ Waxing crescent ☐ First quarter  
☐ Waxing gibbous ☐ Full moon ☐ Waning gibbous  
☐ Last quarter ☐ Waning crescent

### WEATHER DATA

Time (0000 h)	Temp (°C)	Wind Speed (estimated - see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
2130	26.9	—	—	25	
2200	25.6	—	—	25	
2230	24.9	—	—	5	
2300	24.6	—	—	5	
2330	24.5	—	—	5	
0000	24.2	—	—	5	
0030	24.1	1-3	—	—	
0100	24.0	1-3	—	—	
0130	23.6	1-3	—	—	
0200	23.4	1-3	—	—	

Net/Trap/Anaba: #	Net/Trap Type <sup>1</sup>	Latitude	Longitude	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
A	N	41° 13' 11.3" N	82° 56' 25.8" W	18	9	2035	2000	978
B	N	41° 13' 14.7" N	82° 56' 27.7" W	18	9	2040	2005	979
C	N	41° 13' 14.5" N	82° 56' 30.7" W	6	6	2045	2010	980
D	N	41° 13' 12.5" N	82° 56' 30.7" W	9	6	2050	2115	981

### Net Placement/Site Description:

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guanol/Hair Sample	Comments
1	D	Lasius borealis	21:41	JV	F	NR	11.00	41	M	0		
2	A	f.	22:17	JV	F	NR	16.00	46	M	0		
3	E	Lasius borealis	22:18	AD	F	PL	14.00	39	M	0		
4	P	f.	22:20	JV	F	NA	15.50	45	M	0		
5	A	f.	22:27	JV	F	NR	17.00	47	M	0		
6	A	b.	22:23	JV	M	+	9.00	38	M	0		
7	D	b.	22:45	AD	F	PL	14.25	42	M	0		
8	C	f.	22:27	V	M	+	16.00	47	M	0		
9	C	f.	22:30	AD	F	PL	18.00	117	M	0		
10	A	B.	23:00	JV	F	NR	9.00	41	F	0		

<sup>1</sup> M = Monofilament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap, A = Anabat

\* Refer to table on the back

<sup>2</sup> Reproductive Condition: Female = NR/PG/LPL; Male = ↑/↓



	TM	Age	Sex	Radio	WT	RFA	Belly	WT
11	E. fuscus 22:30	AD	M	+	18.25	47	F	0
12	E. fuscus 22:35	JV	F	NR	16.5	46	M	0
13	E. fuscus 22:36	JV	F	NR	15.5	45	F	0
14	E. fuscus 23:10	AD	F	PL	21.5	49	M	0
15	E. fuscus 23:13	AD	F	PL	20.25	47	M	0
16	E. fuscus 23:37	JV	M	+	14.25	42	M	0
17	E. fuscus 23:53	JV	F	NR	17.25	45	F	0
18	E. fuscus 23:56	AD	F	PL	22.50	48	F	0
19	Evening Bat 23:56	JV	F	NR	9.75	35	M	0
20	E. fuscus 23:59	AD	F	PL	18.00	44	F	0
21	E. fuscus 00:26	JV	M	+	15.50	46	M	0
22	E. fuscus 00:31	AD	M	+	16.75	42	M	0
P# 922-940								
23	E. fuscus 01:00	JV	F	NR	14.25	47	M	0
24	E. fuscus 01:01	JV	F	NR	17.50	48	F	0
25	E. fuscus 01:04	JV	F	NR	16.75	47	F	0
26	Nycticeius 01:50	JV	F	NR	20	47	F	0
27	Myotis 02:30	AD	F	PL	17.25	47	F	0
	E. fuscus 02:35	JV	F	NR				
	E. fuscus							

P# 41-43  
Escaped





# BAT CAPTURE DATA

Project #: 340.D1 Date: 30 Jul 11  
Project Name: Republic  
State: OH County: Seneca  
Biologists: J. Basiger  
Site name#: 12  
GPS Unit #: 465670 Camera #: Can671

MOON PHASE\*  
☐ New moon  
☐ Waxing crescent  
☐ Full moon  
☐ Waning gibbous  
☐ Last quarter  
☐ Waning crescent

☐ First quarter  
☐ Waning gibbous

## WEATHER DATA

Time (0000 h)	Temp (°C)	Wind Speed (estimated - see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
2100	22.9	1-3	W → E	—	
2130	22.7	1-3	W → E	—	
2200	20.9	2-5	W → E	—	
2230	20.9	1-3	W → E	—	
2300	20.1	—	—	—	
2330	20.1	—	—	—	
0130	19.5	1-3	W → E	10%	
0200	19.5	—	—	—	

Net/Trap/Anabat #	Net/Trap Type <sup>1</sup>	Latitude	Longitude	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
A	N	41° 13' 11.3" N	82° 56' 25.8" W	18	9	2030	200	978
B	N	41° 13' 41.7" N	82° 56' 27.7" W	18	9	2035	203	979
C	N	41° 13' 14.5" N	82° 56' 30.7" W	6	6	2040	210	980
D	N	41° 13' 12.5" N	82° 56' 30.7" W	9	6	2045	213	981

## Net Placement/Site Description:

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
1	D	Lasiurus borealis	2145	Jv	F	NA	12	41	M	0		
2	D	L. borealis	2200	Jv	M	PL	8.5	40	M	0		
3	D	Eptesicus fuscus	2200	Ad	F	PL	16	47	M	0		
4	D	E. fuscus	2245	Ad	F	PL	21	49	F	0		
5	A	E. fuscus	2255	Jv	M	NR	15	43	F	0		
6	A	L. borealis	2258	Ad	F	NR	20	45	F	0		
7	D	E. fuscus	2259	Ad	F	PL	16.5	46	F	0		
8	D	L. borealis	2300	Ad	F	NR	10	45	F	0		
9	D	E. fuscus	2315	Jv	F	NA	19.5	46	F	0		

<sup>1</sup> M = Monofilament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap, A = Anabat

\* Refer to table on the back

Reproductive Condition: Female = NR/PS/LPL, Male = 1/1



## NET SITE HABITAT DESCRIPTION

Project #: 346

Date: 7/20/11

Biologists: A. Kniewski, M. Farmer

Project Name: Republic

Site Name/#: 14

State: OH County: Seneca

USGS Quad: Fire side

State: OH	County: Seneca	2000 Census Tract: 2202			
Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Picture #	Waypoint #
A	Net	41 ° 13 ' 02.6 "N	82 ° 53 ' 37.4 "W	106-0662	34014A
B	Net	41 ° 13 ' 04.6 "N	82 ° 53 ' 41.2 "W	106-0661	34014B
C	Net	41 ° 13 ' 02.9 "N	82 ° 53 ' 43.5 "W	106-0660	34014C
D	Net	41 ° 13 ' 05.6 "N	82 ° 53 ' 44.4 "W	106-0659	34014D

Distance to closest water source (meters): 500 m

Type of water source: stream

Water source name: \_\_\_\_\_

## ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS):

Bank Height: \_\_\_\_\_ meters    Channel Width: \_\_\_\_\_ meters    Stream Width: \_\_\_\_\_ meters

Substratum:    Bedrock    Boulder    Cobble    Gravel    Sand    Silt/Clay

Still Water Present (Y/N): \_\_\_\_\_ Average Water Depth: \_\_\_\_\_ m or cm Clarity (H,M,L): \_\_\_\_\_

VEGETATION:

Dominant Canopy Species (> 40 cm/16" dbh)

Subdominant Canopy Species (&lt; 40 cm/16" dbh)

Quercus alba

Prunus serotina

Carya ovata

---

Estimated dbh range: Lg: 65 Sm: 35

Estimated dbh range: Lg: 40 Sm: 15

Relative abundance of dominant vs. subdominant (ratio): 1/10

Estimated canopy closure: ✓ Closed      \_\_\_ Moderate      \_\_\_ Open

Roost tree potential consists of: ~~X~~ Large Trees ~~X~~ Snags      Neither

Roost tree potential for the area is:      High   1   Moderate      Low

Roost potential comments: Trees w/ loose bark

Subcanopy clutter:      Closed   X   Moderate      Open

Subcanopy comprised largely of: ☐ Lower Branches of Canopy Trees ☒ Saplings ☐ Shrubs

Common Subcanopy Species: Prunus serotina

Habitat Description: Woodlot near cropland / farm

AnaBat Habitat: N/A

Check all that apply:

☒ Mature Upland Forest    ☐ Recently Logged Forest    ☒ Crop/Pasture Land    ☐ Other \_\_\_\_\_

Young Upland Forest      Forest Edge      Stream/River

— Mature Lowland Forest     Woodlot    — Vernal Pool    \_\_\_\_\_

Young Lowland Forest      Old Field      Deepwater Lake/Pond

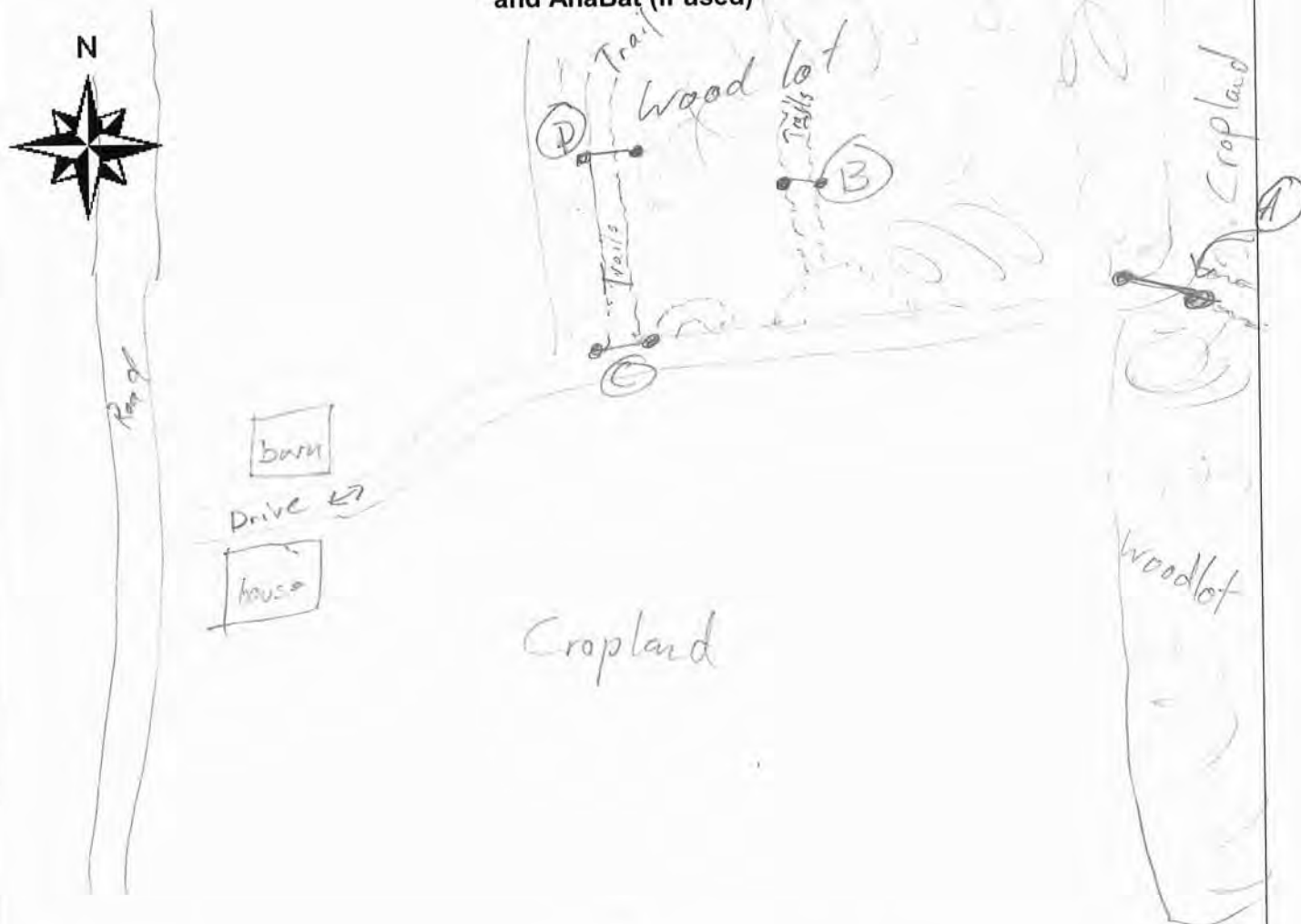
Herbaceous Cover:    Sparse     Moderate    Dense



## NET SITE HABITAT DESCRIPTION (continued)

Project #:	State/County:	Site Name/#:	Initials:
------------	---------------	--------------	-----------

SKETCH: NETS A and B  
and AnaBat (if used)



### LEGEND

Nets: ● — ●

### COMMENTS






# BAT CAPTURE DATA

Project #: 340 Date: 20 Jul 2011  
 Project Name: Republic  
 Biologists: A. Krawski & M. Farmer Site name#: 14  
 State: OH County: Seneca  
 GPS Unit #: 7 Camera #: 11

## WEATHER DATA

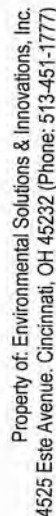
Time (xxxx h)	Temp (°C)	Wind Speed (estimated - see chart)*	% Cloud Cover (estimated)	Comments
2100	28.2	1-3	30%	
2130	27.5	4-8	30%	
2200	27.3	1-3	30%	
2230	27.0	1-3	0	
2300	27.1	4-6	0	
2330	27.0	4-8	0	
0000	27.3	4-8	0	Wind gusts 13-18 mph
0030	27.0	8-12	0	
0100	26.9	8-12	0	
0130	26.5	8-12	0	
0200	26.3	13-18	10%	

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Length (m)	Height (m)	Time Up (xxxx h)	Time Down (xxxx h)	Picture #	Waypoint #
A	1101	41° 13' 02.6"N	82° 53' 37.4"W	12	9	2105	224	106-0662	34014A
B	1101	41° 13' 04.6"N	82° 53' 41.2"W	6	6	2105	217	106-0661	34014B
C	1101	41° 13' 02.9"N	82° 53' 43.5"W	6	6	2100	207	106-0660	34014C
D	1101	41° 13' 05.6"N	82° 53' 44.4"W	6	6	2100	201	106-0659	34014D

Net Placement/Site Description: At 4 vato sat across ATV trails in wooded area adjacent to agriculture fields

Capt #	Net/Trap	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. 2	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
1	A	E. fus	2148	Jv	M	NR	16.0	46	M	0		
2	A	L. bor	2220	Jv	M	NR	9.0	38	E	0		
3	A	L. bor	2220	Jv	M	NR	8.5	38	E	0		
4	D	M sep	2230	Jv	M	NR	6.4	34	E	0		
5	A	E. fus	2315	Ad	M	NR	17.0	46	E	0		
6	A	E. fus	2315	Ad	F	L	17.5	43	M	0		old back on wing
7	A	E. fus	2318	Jv	M	NR	15.6	44	M	0		
8	A	E. fus	2318	Ad	M	NR	16.0	45	M	0		
9	A	E. fus	2318	Jv	F	NR	13.4	46	F	0		

\* Reproductive Condition: Female = NR/PG/L/PL; Male = 1/4 \* Refer to table on the back



## Project #: 340

Date: 7/20/11

Project Name:

Site Name/#:

**Initials:**

[illegible]

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face; leaves rustle; ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper; small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Branches break off trees; general inconvenience

Score	Description
0	<b>No damage.</b> Fewer than 5 small scar spots are present on the membranes.
1	<b>Light damage.</b> Less than 50% of flight membrane is depigmented (spotching), which is often visible only with transillumination.
2	<b>Moderate damage.</b> Greater than 50% of wing membrane covered with scar tissue (spotching). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	<b>Heavy damage.</b> Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagiopalgium and/or chiroptalgium are evident.



# BAT CAPTURE DATA

Project #: 340 Date: 7/22/11  
 Project Name: Republic  
 Biologists: A. Kniewski Site name#: 14  
 State: OH County: Seneca  
 GPS Unit #: 7 Camera #: 11

## WEATHER DATA

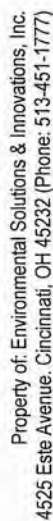
Time (xxxx h)	Temp (°C)	Wind Speed (estimated - see chart)*	% Cloud Cover (estimated)	Comments
2100		1-3	40	
2130		4-7	40	
2200		4-7	50	
2230		8-12	50	
2300		4-7	10	
2330		8-12	10	
0000		8-12	15	
0030		4-7	Thunder Rain	
Nets down! lots of lightning & Rain				
- Rained out				

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Length (m)	Height (m)	Time Up (xxxx h)	Time Down (xxxx h)	Picture #	Waypoint #
A	net	41° 13' 02.6"N	82° 53' 37.4"W	12	9	2102	0000	106-0662	34014A
B	net	41° 13' 04.6"N	82° 53' 41.2"W	6	6	2108	0000	106-0661	34014B
C	net	41° 13' 02.9"N	82° 53' 43.5"W	6	6	2104	0005	106-0660	34014C
D	net	41° 13' 05.6"N	82° 53' 44.4"W	6	6	2105	0005	106-0659	34014D

Net Placement/Site Description: Nets across small trails in woodlot except Ac which are at field edge

Capt #	Net/Trap	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
1	A	<i>E. fuscus</i>	2205	Ad	F	PL	16.8	46	M	0		
2	D	<i>E. fuscus</i>	2212	Ad	F	PL	18.9	44	F	0		
3	A	<i>E. fuscus</i>	2220	Ad	F	L	18.0	47	M	0		
4	A	<i>L. borealis</i>	2220	Jv	M	NR	9.5	40	E	0		
5	B	<i>E. fuscus</i>	2227	Ad	F	PL	19.1	47	F	0		
6	A	<i>L. cinereus</i>	2240	Jv	M	NR	17.5	52	M	0		
7	B	<i>E. fuscus</i>	2249	Ad	M	↓	17.5	43	M	0		
8	A	<i>E. fuscus</i>	2300	Jv	M	NR	13.3	43	M	0		
9	A	<i>E. fuscus</i>	2300	Ad	F	L	21.4	47	F			

<sup>1</sup> Reproductive Condition: Female = NR/PG/L/PL; Male = ↑/↓ \* Refer to table on the back

Project #: 240

Project #: 240

Date: 7/22/11

Project Name:

Site Name/#:

**Initials:** \_\_\_\_\_

[illegible]

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face; leaves rustle; ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper; small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Breaks twigs off trees; generally impedes progress

Score	Description
0	<b>No damage.</b> Fewer than 5 small scar spots are present on the membranes.
1	<b>Light damage.</b> Less than 50% of flight membrane is depigmented (spotching), which is often visible only with transillumination.
2	<b>Moderate damage.</b> Greater than 50% of wing membrane covered with scar tissue (spotching). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	<b>Heavy damage.</b> Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagiopategium and/or chirocatenium are evident.





# BAT CAPTURE DATA

Project #: 340 Date: 24-Jul-2011  
 Project Name: Honey Creek and resource area  
 Biologists: A. Kniewski  
M. Farmer Site name#: 14  
 State: OH County: Seneca  
 GPS Unit #: 7 Camera #: 11

## WEATHER DATA

Time (xxxx h)	Temp (°C)	Wind Speed (estimated - see chart)*	% Cloud Cover (estimated)	Comments
2100	24.9	1-3	100%	
2130	24.5	1-3	100%	
2200	24.1	1-3	100%	
2230	23.6	1-3	100%	
2300	23.4	1-3	100%	
2330	23.4	1-3	100%	
0000	23.3	1-3	100%	
0030	23.2	1-3	100%	
0100	23.2	0	100%	
0130	22.9	0	100%	
0200	23.1	0	100%	

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Length (m)	Height (m)	Time Up (xxxx h)	Time Down (xxxx h)	Picture #	Waypoint #
A	Net	41° 13' 02.6"N	82° 53' 37.4"W	12	9	2100	200	0662	34014A
B	Net	41° 13' 04.9"N	82° 53' 41.2"W	6	6	2115	230	0661	34014B
C	Net	41° 13' 02.9"N	82° 53' 43.5"W	6	6	2105	220	0660	34014C
D	Net	41° 13' 05.6"N	82° 53' 44.4"W	6	6	2106	225	0659	34014D

Net Placement/Site Description: nets across small trails in woodlot except net A & C which are adjacent to field edge.

Capt #	Net/ Trap	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
1	A	<i>Lasiurus borealis</i>	2110	JV	F	NR	8.5	38	E	0		
2	A	<i>E. fuscus</i>	2203	JV	F	NR	16.2	47	F	0		
3	A	<i>E. fuscus</i>	2225	JV	F	NR	13.8	46	M	0		
4	A	<i>E. fuscus</i>	2250	JV	M	NR	15.7	46	M	0		
5	A	<i>E. fuscus</i>	2255	JV	M	NR	13.7	43	M	0		
6	A	<i>Lasiurus cinereus</i>	2255	JV	M	NR	18.6	51	F	0		
7	A	<i>E. fuscus</i>	2255	Ad	F	PL	15	44	M	0		
8	A	<i>E. fuscus</i>	2255	JV	M	NR	19.2	46	F	0		
9	A	<i>E. fuscus</i>	2315	JV	M	NR	11.5	43	F	0		

<sup>1</sup> Reproductive Condition: Female = NR/PG/L/PL; Male = 1/2 \* Refer to table on the back



## BAT CAPTURE DATA (continued)

Project #: 340

Date: 7/24/14

Project Name:

Site Name/ID: 14

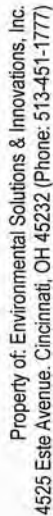
Initials:

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Comments Picture # /Guano/Hair Sample
10	A	E. fuscus	2315	Ad	F	PL	20.4	47	F	0	
11	A	E. cinereus	2320	Jv	F	NR	24.2	54	F	0	
12	A	E. cinereus	2320	Jv	F	NR	23.9	56	F	0	
13	A	E. fuscus	2340	Jv	F	NR	15.2	30	F	0	
14	A	E. fuscus	2340	Jv	M	NR	15.8	44	F	0	
15	A	E. borealis	2340	Jv	M	NR	9.3	40	M	0	
16	C	Myotis septentrionalis	0010	Jv	F	NR	6.3	35	M	0	
17	C	Myotis septentrionalis	0010	Jv	M	NR	5.8	34	E	0	
18	A	E. fuscus	0030	Jv	M	NR	17	44	F	0	
19	A	E. fuscus	0030	Jv	M	NR	15.5	46	F	0	
20	A	E. fuscus	0030	Jv	M	NR	14.9	45	F	0	
21	A	E. fuscus	0030	Ad	F	PL	19.1	45	F	0	
22	A	E. fuscus	0030	Jv	F	NR	19.3	46	F	0	172-580 Spot/Hair sample
23	A	E. fuscus	0030	Jv	F	NR	15.8	46	F	0	
24	A	E. fuscus	—	—	—	—	—	—	—	—	Escape
25	A	E. fuscus	0115	Ad	F	PL	22.1	45	F	0	
26	A	E. fuscus	0117	Jv	M	NR	16	46	M	0	
27	A	E. fuscus	0120	Jv	M	NR	16.8	45	F	0	
28	A	E. fuscus	140	Ad	F	PL	21.0	40	F	0	

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face, leaves rustle, ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper; small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Breaks twigs off trees; generally impedes progress

Score	Description
0	No damage. Fewer than 5 small scar spots are present on the membranes.
1	Light damage. Less than 50% of flight membrane is depigmented (spotting), which is often visible only with transillumination.
2	Moderate damage. Greater than 50% of wing membrane covered with scar tissue (spotting). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	Heavy damage. Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagiopatagium and/or chiroptagium are evident.

\* Transferred



## Project #: 340

Date: \_\_\_\_\_

$$11/15/17$$

Project Name:

Site Name/#:

151

11

[illegible]

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face; leaves rustle; ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper; small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Breaks winds off trees; generally impedes progress

Score	Description
0	No damage. Fewer than 5 small scar spots are present on the membranes.
1	Light damage. Less than 50% of flight membrane is depigmented (spotching), which is often visible only with transillumination.
2	Moderate damage. Greater than 50% of wing membrane covered with scar tissue (spotching). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	Heavy damage. Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagiopatagium and/or chironotarium are evident.







## NET SITE HABITAT DESCRIPTION

Project #: 340 Date: 7/26/11 Biologists: A. Kiowski, J. Keinhenz  
Project Name: Republic Site Name/#: 15  
State: OH County: Seneca USGS Quad: Watson

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Picture #	Waypoint #
<u>A</u>	<u>net</u>	<u>41° 12' 02.9"N</u>	<u>83° 00' 54.7"W</u>	<u>0668</u>	<u>340A15</u>
<u>B</u>	<u>net</u>	<u>41° 12' 04.1"N</u>	<u>83° 00' 56.6"W</u>	<u>0671</u>	<u>340B15</u>
<u>C</u>	<u>net</u>	<u>41° 12' 02.6"N</u>	<u>83° 00' 57.6"W</u>	<u>0669</u>	<u>340C15</u>
<u>D</u>	<u>net</u>	<u>41° 12' 02.7"N</u>	<u>83° 00' 59.4"W</u>	<u>0670</u>	<u>340D15</u>

Distance to closest water source (meters): 15m Type of water source: creek  
Water source name:                     

### ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS):

Bank Height: 2 meters Channel Width: 4 meters Stream Width: 3 meters  
Substratum:    Bedrock    Boulder    Cobble ☒ Gravel    Sand    Silt/Clay  
Still Water Present (Y/N): N Average Water Depth: 15 m or cm Clarity (H,M,L): L

### VEGETATION:

Dominant Canopy Species (> 40 cm/16" dbh) Juglans nigra Subdominant Canopy Species (< 40 cm/16" dbh) Acer saccharinum

Estimated dbh range: Lg: 75 Sm: 50 Estimated dbh range: Lg: 40 Sm: 15

Relative abundance of dominant vs. subdominant (ratio): 1/6

Estimated canopy closure:    Closed ☒ Moderate    Open  
Roost tree potential consists of: ☒ Large Trees    Snags    Neither  
Roost tree potential for the area is:    High    Moderate ☒ Low  
Roost potential comments: Tight bark

Subcanopy clutter:    Closed ☒ Moderate    Open  
Subcanopy comprised largely of:    Lower Branches of Canopy Trees ☒ Saplings    Shrubs

Common Subcanopy Species: Acer negundo

Habitat Description: Woodlot near creek / cropland  
AnaBat Habitat: N/A

### Check all that apply:

   Mature Upland Forest    Recently Logged Forest ☒ Crop/Pasture Land    Other     
   Young Upland Forest ☒ Forest Edge ☒ Stream/River     
☒ Mature Lowland Forest ☒ Woodlot    Vernal Pool     
   Young Lowland Forest ☒ Old Field    Deepwater Lake/Pond   

Herbaceous Cover:    Sparse    Moderate ☒ Dense

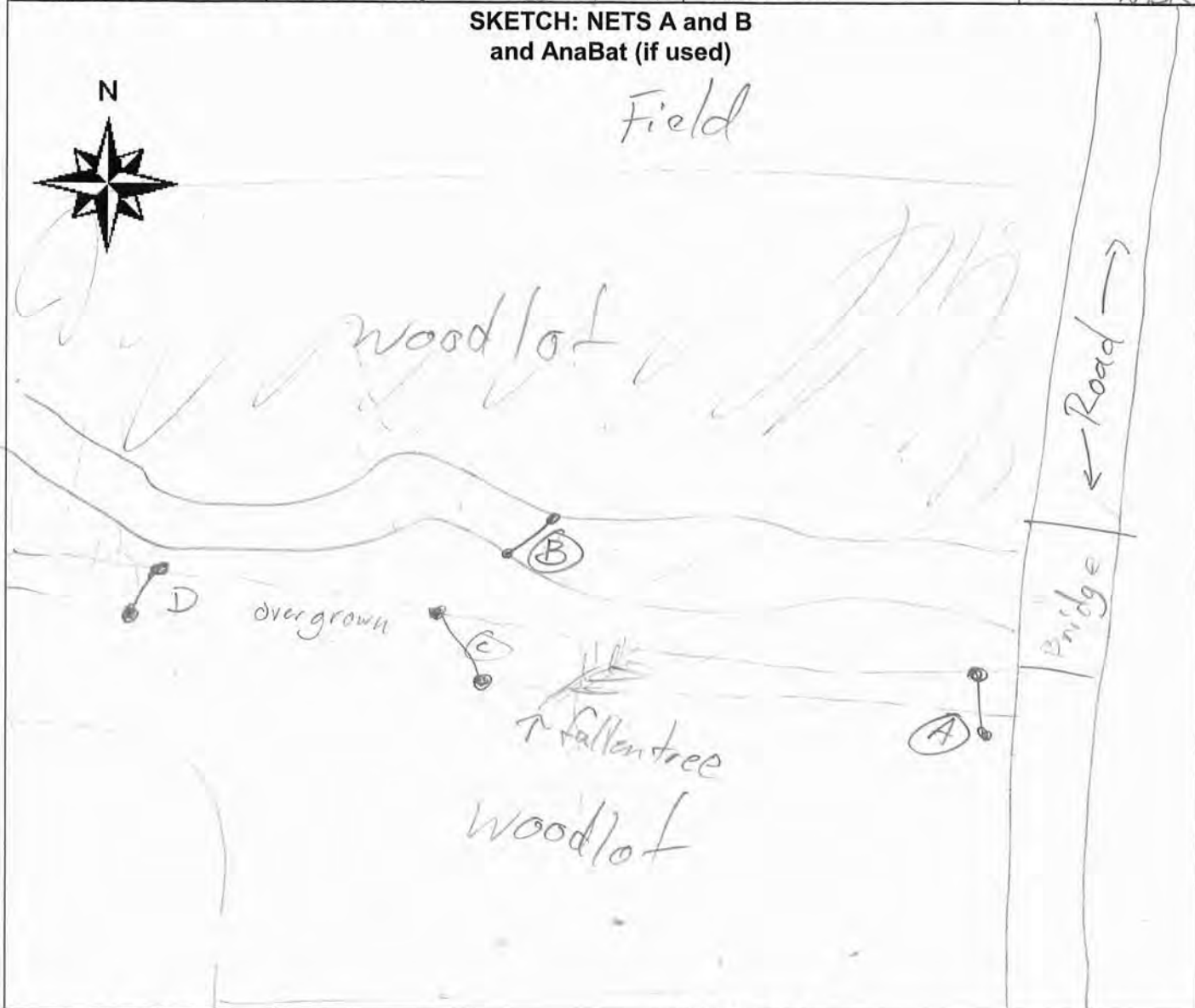


Property of: Environmental Solutions & Innovations, Inc.  
4525 Este Avenue, Cincinnati, OH 45232 (Phone: 513-451-1777)

# NET SITE HABITAT DESCRIPTION (continued)

Project #: 340 State/County: Seneca, OH Site Name/#: 15 Initials: ABK

SKETCH: NETS A and B  
and AnaBat (if used)



## LEGEND

Nets: ● — ●

## COMMENTS

---

---

---

---

---



# BAT CAPTURE DATA

Project #: 340 Date: 7/26/11  
 Project Name: Republic  
 Biologists: A. Kryniski, J. Klempner Site name/ #: 15  
 State: OH County: Seneca  
 GPS Unit #: 7 Camera #: 11

## WEATHER DATA

Time (xxxx h)	Temp (°C)	Wind Speed (estimated - see chart)*	% Cloud Cover (estimated)	Comments
2030	24.1	1-3	40%	
2100	22.7	1-3	20%	
2200	22.2	1-3	20%	
2230	21.6	1-3	15%	
2300	20.9	1-3	10%	
2330	20.6	1-3	5%	
2400	20.3	1-3	5%	
0030	19.8	1-3	5%	
1:00	19.3	1-3	5%	
1:30	19.1	1-3	5%	
2:00	18.9	1-3	6%	

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Length (m)	Height (m)	Time Up (xxxx h)	Time Down (xxxx h)	Picture #	Waypoint #
A	net	41° 12' 02.9" N	83° 00' 54.7" W	9	6	2050	0156	0665	340A15
B	net	41° 12' 04.1" N	83° 00' 56.6" W	6	6	2100	202	0671	340B15
C	net	41° 12' 02.6" N	83° 00' 57.6" W	9	7	2107	209	0669	340C15
D	net	41° 12' 02.7" N	83° 00' 59.4" W	6	6	2110	220	0670	340D15

Net Placement/Site Description: Nets placed over overgrown trail except B which is over creek

Capt #	Net/Trap	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
1	B	M, Luc	21:30	Ad	M	↓	7.2	27	E	0		
2	B	M, Luc	21:30	Ad	M	↓	8.7	38	E	0		
3	B	M, Luc	21:30	Jv	M	NR	7.4	37	E	0		
4	B	M, Luc	21:30	Jv	M	NR	5	38	E	0		
5	B	M, Luc	21:30	Jv	M	NR	6.8	36	E	0		
6	B	M, Luc	21:35	Ad	M	↓	8.4	36	E	0		
7	B	M, Luc	21:35	Ad	M	↓	7.3	37	E	0		
8	B	M, Luc	21:35	Ad	M	↓	6.5	34	E	0		
9	B	M, Luc	21:35	Jv	M	NR	6.5	36	E	0		

<sup>1</sup> Reproductive Condition: Female = NR/PG/L/PL; Male = ↑/↓ \* Refer to table on the back

## BAT CAPTURE DATA (continued)

Project #: 340

Date: 7/25/11

Project Name:

Site Name#: 15

Initials: ABK

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture #/Guano/Hair Sample	Comments
10	C	M. SEP	22:20	Ad	F	PL	6.2	34	M	0		
11	D	M. SEP	22:22	Ad	F	L	6.3	34	M	0		
12	D	M. SEP	22:47	Ad	F	PL	6.6	35	F	0		
13	B	E. fuscus	22:42	Ad	F	PL	19.3	47	F	0		
14	B	M. SEP	22:10	Ad	F	PL	6.3	34	M	0		
15	A	E. fuscus	22:47	Ad	M	↓	13.2	45	F	0		
16	B	M. SEP	00:21	Ad	F	PL	6.2	36	M	0		
17	B	E. fuscus	00:40	Ad	M	↓	16.8	46	M	0		
18	D	M. SEP	1:00	Ad	F	NR	5.3	34	E	0		
19	B	M. luc.	1:50	Ad	M	↑	4.4	37	M	0		
20	D	M. SEP	1:48	Jv	F	NR	7	35	M	0		
21	C	M. SEP	2:05	Ad	F	PL	6.3	36	F	0		
22	C	M. SEP	2:05	Ad	F	PL	7.4	36	E	0		

Score	Description
0	No damage. Fewer than 5 small scar spots are present on the membranes.
1	Light damage. Less than 50% of flight membrane is depigmented (spotting), which is often visible only with transillumination.
2	Moderate damage. Greater than 50% of wing membrane covered with scar tissue (spotting). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm.
3	Heavy damage. Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagiopatagium and/or chiroptagium are evident.

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face; leaves rustle; ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper; small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Breaks twigs off trees; generally impedes progress





## BAT CAPTURE DATA

Project #: 340 Date: 7/28/11  
Project Name: \_\_\_\_\_  
State: Oh County: Sarcel  
Biologists: A. Kniouiski, J. K. Kneher  
Site name#: 15  
GPS Unit #: 7 Camera #: 11

### MOON PHASE\*

\_\_\_ New moon  
\_\_\_ Waxing gibbous  
\_\_\_ Last quarter  
\_\_\_ Waxing crescent  
\_\_\_ Full moon  
\_\_\_ Waning gibbous  
\_\_\_ Waning crescent  
\_\_\_ First quarter

## WEATHER DATA

Time (0000 h)	Temp (°C)	Wind Speed (estimated - see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
21:30	25.9	1-3		25%	
22:00	25.6	1-3		25%	
22:30	24.9	1-3		5%	
23:00	24.6	1-3		5%	
23:30	24.5	1-3		5%	
0:00	24.2	1-3		5%	
0:30	24.1	1-3		5%	
1:00	24.0	1-3		0%	
1:30	23.6	1-3			
2:00	23.4	1-3			

Net/Trap/Anabat #	Net/Trap Type <sup>1</sup>	Latitude	Longitude	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
A	net	41° 12' 02.9" N	83° 00' 54.7" W	9	6	2110	215	340A15
B	net	41° 12' 04.1" N	83° 00' 56.6" W	6	6	2105	205	340B15
C	net	41° 12' 02.6" N	83° 00' 57.8" W	9	9	2107	210	340C15
D	net	41° 12' 02.7" N	83° 00' 58.0" W	6	6	2115	225	340D15

### Net Placement/Site Description:

Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
1	B	M. Lucif	21:14	Jv	M	NR	7.3	34	F	0		
2	B	M. Lucif	21:18	Jv	F	NR	7.9	37	E	0		
3	A	M. Lucif	21:40	Ad	F	PL	6.5	36	M	0		
4	B	E. fuscus	23:05	Ad	M	↓	14.1	43	F	0		

<sup>1</sup> M = Monofilament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap, A = Anabat

\* Refer to table on the back

<sup>2</sup> Reproductive Condition: Female = NR/PG/LPL; Male = ↑/↓







## NET SITE HABITAT DESCRIPTION

Project #: 340.07 Date: 20 July 2011 Biologists: D Jarratt, S Reeves  
Project Name: Tetratech Republic Site Name/#: Site 16  
State: OH County: Seneca USGS Quad: Fireside  
Camera #: C4834 Picture #s: 3227 - 3732 GPS Unit #: E6846 Waypoint #: 023  
Latitude: 41° 12' 27.6" N Longitude: 82° 57' 7.2" W  
Distance to closest water source (meters): 250 m Type of water source: pond  
Water source name: private pond (Reed, Mary)

### ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS):

Bank Height: N/A meters Channel Width: N/A meters Stream Width: N/A meters  
Substratum: N/A Bedrock    Boulder    Cobble    Gravel    Sand    Silt/Clay  
Still Water Present (Y/N): N/A Average Water Depth: N/A m or cm Clarity (H,M,L): N/A

### VEGETATION:

Dominant Canopy Species (> 40 cm/16" dbh)

Ulmus americana  
Acer saccharinum

Subdominant Canopy Species (< 40 cm/16" dbh)

Fraxinus pennsylvanica  
Juglans nigra, Carya ovata  
Ulmus americana, Acer saccharinum

Estimated dbh range: Lg: 100cm Sm: 40cm

Estimated dbh range: Lg: 39cm Sm: 20cm

Relative abundance of dominant vs. subdominant (ratio): 1:25

Estimated canopy closure:    Closed    Moderate    Open

Roost tree potential consists of:    Large Trees    Snags    Both    Neither

Roost tree potential for the area is:    High    Moderate    Low

Roost potential comments: many snags; Carya sp., Ulmus sp., Acer sp.

Subcanopy clutter:    Closed    Moderate    Open

Subcanopy comprised largely of:    Lower Branches of Canopy Trees    Saplings    Shrubs

Common Subcanopy Species: Juglans nigra Ulmus americana  
Carya ovata

Habitat Description: Mature woodlot near soyfield with grass air-strip  
near 2 ponds

### Check all that apply:

   Mature Upland Forest    Recently Logged Forest    Crop/Pasture Land    Shrub/scrub Swamp  
   Young Upland Forest    Pine Plantation    Stream/River    Vernal Pool  
   Mature Lowland Forest    Woodlot/Forest Edge    Emergent Wetland    Deepwater Lake/Pond  
   Young Lowland Forest    Old Field    Forested Swamp    Other   

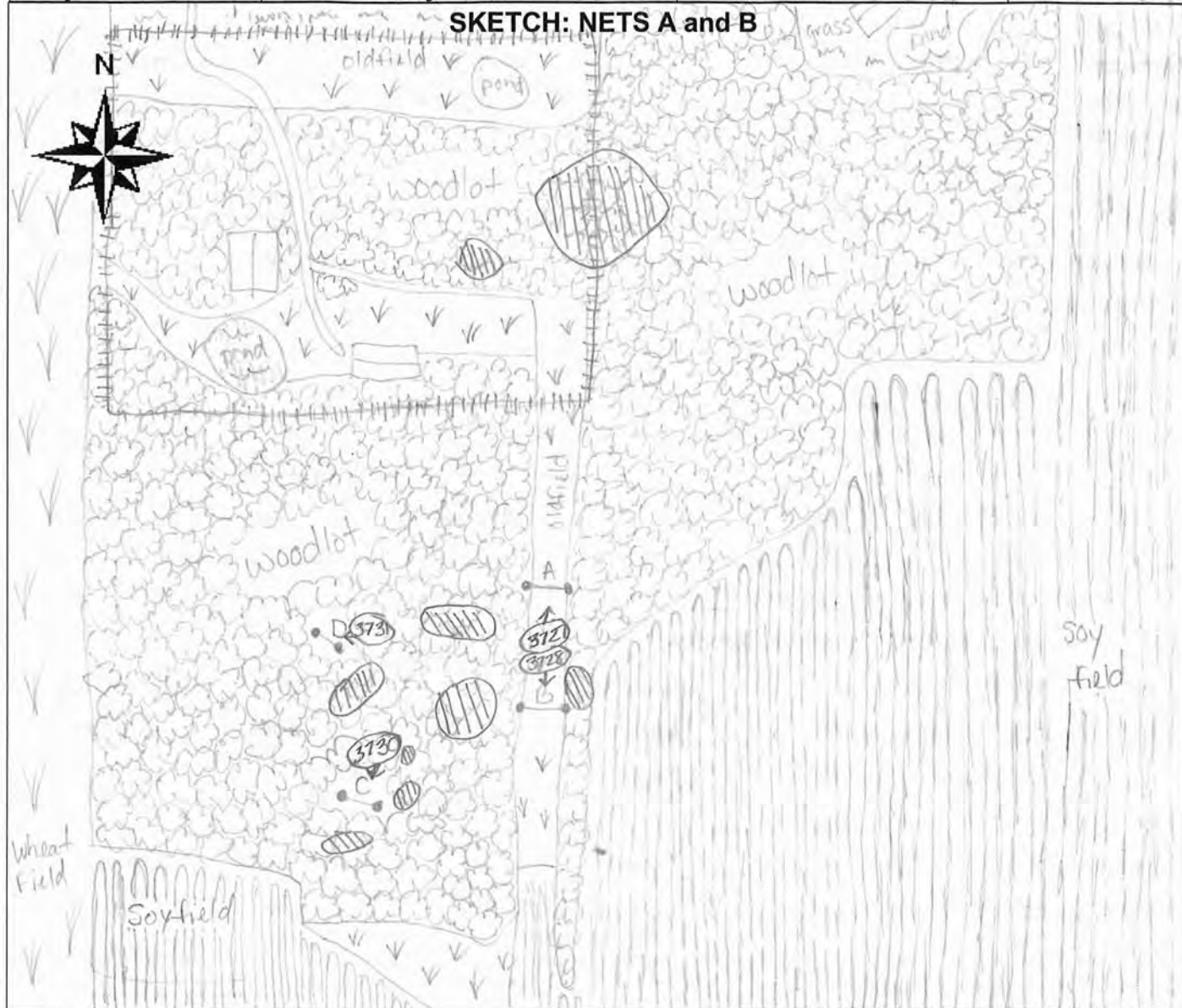
Herbaceous Cover:    Sparse    Moderate    Dense



Property of: Environmental Solutions & Innovations, Inc.  
781 Neeb Road, Cincinnati, OH 45233 (Phone: 513-451-1777)

## NET SITE HABITAT DESCRIPTION (continued)

Project #: 3410.02	State/County: OH/Seneca	Site Name/#: Site 116	Initials: SR
--------------------	-------------------------	-----------------------	--------------



LEGEND	COMMENTS
<p>Nets: ● — ●</p> <p>Fence: + + + +</p> <p>House: □</p> <p>Wet Area: ○ (diagonal lines)</p> <p>Photo Angle: ○ (line pointing right)</p>	<p>woodlot has ephemeral wet areas (4-5) and is burned every 5-10 yrs. for brush control; last burn 2+ yrs; Many snag in varying stages of death</p>



# BAT CAPTURE DATA

Project #: 340.02 Date: 20 July 2011  
 Project Name: Tetratich Republic  
 Biologists: D. J. Smith, S. R. Vries Site name#: Site 16  
 State: Ohio County: Seneca  
 GPS Unit #: E6846 Camera #: 04834

## WEATHER DATA

Time (xxxx h)	Temp (°C)	Wind Speed (estimated - see chart)*	% Cloud Cover (estimated)	Comments
2106	28.2	1-3	30%	
2130	27.5	0	30%	
2200	27.3	1-3	30%	
2230	27.0	0	0%	
2300	27.1	0	0%	
2330	27.0	1-3	0%	
0000	27.3	4-7	0%	
0030	27.6	4-7	0%	
0100	26.9	8-12	0%	
0130	26.5	8-12	0%	
0200	26.3	8-12	10%	

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Length (m)	Height (m)	Time Up (xxxx h)	Time Down (xxxx h)	Picture #	Waypoint #
Net	A	41° 12' 27.6" N	82° 57' 07.2" W	12	9.2	2050	0150	3727	023
Net	B	41° 12' 26.5" N	82° 57' 07.2" W	12	9.2	2055	0155	3728	024
Net	C	41° 12' 25.2" N	82° 57' 10.3" W	6	6.2	2100	0200	3730	025
Net	D	41° 12' 27.2" N	82° 57' 10.8" W	6	6.2	2105	0205	3731-32	026

Net Placement/Site Description: Nets A-D in old landing strip bordered by woods. Nets C & D in open wooded area - controlled

Capt #	Net/Trap	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # (Guano/Hair Sample)	Comments
1	C	Eptesicus fuscus	2200	Ad	F	PL	18.1	44	M	0	N/A	
2	C	E. fuscus	2200	Ad	F	PL	19.9	49	M	0	N/A	
3	C	E. fuscus	2200	Jv	M	↑	14.4	44	M	0	N/A	
4	B	E. fuscus	2215	Jv	M	↑	11.8	42	M	0	N/A	small hole in left wing
5	B	E. fuscus	2215	Jv	F	NR	10.3	40	M	0	N/A	
6	B	E. fuscus	2215	Ad	M	↑	18.8	45.5	M	0	N/A	
7	B	E. fuscus	2215	Ad	F	PL	21.4	46	M	0	N/A	
8	A	E. fuscus	2220	Ad	F	PL	16.7	43	M	0	N/A	
9	B	E. fuscus	2240	Jv	F	NR	14.9	45	M	0	N/A	

<sup>1</sup> Reproductive Condition: Female = NR PG/L/PL; Male = ↑/↓ \* Refer to table on the back





# BAT CAPTURE DATA (continued)

Project #:	340.02	Date:	20 July 2011	Initials:	DJ, SR							
Project Name:	Tetrahatch Republic	Site Name#:	Site 110									
Capt #	Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
10	B	Eptesicus fuscus	2245	Ad	F	PL	22.6	43	M	0	N/A	
11	B	E. fuscus	2245	Ad	F	L	20.5	46	M	0	N/A	
12	B	E. fuscus	2300	JV	M	↑	13.5	44.5	M	0	N/A	
13	C	E. fuscus	2320	Ad	M	↑	22.4	44.5	M	0	N/A	
14	C	E. fuscus	2320	Ad	M	↑	16.7	41.5	M	0	N/A	
15	C	E. fuscus	2320	Ad	F	PL	20.2	45	M	0	N/A	
16	C	E. fuscus	2320	Ad	M	↑	16.6	44	F	0	N/A	
17	A	E. fuscus	2330	JV	M	↑	13.5	43	M	0	N/A	
18	A	E. fuscus	2340	Ad	M	↓	16.0	44	M	0	N/A	
19	B	E. fuscus	2350	JV	F	NR	14.8	43.5	M	0	N/A	
20	A	E. fuscus	0015	Ad	M	↑	21.8	48	M	0	N/A	
21	C	E. fuscus	0030	Ad	F	PL	20.0	45.5	M	0	N/A	hole in right wing, 3707
22	D	Myotis septentrionalis	0030	Ad	M	↑	6.4	35	M	0	N/A	
23	B	E. fuscus	0045	Ad	F	PL	20.9	44.5	M	0	N/A	
24	C	E. fuscus	0115	JV	M	↑	14.0	41	M	0	N/A	
25	A	E. fuscus	0140	Ad	M	↑	18.0	34.5	M	0	N/A	

Wind Speed (mph)	Description	Visible Condition
0	Calm	Smoke rises vertically
1-3	Light Air	Direction of wind shown by smoke but not by wind vanes
4-7	Light Breeze	Wind felt on face; leaves rustle; ordinary wind vane moved by wind
8-12	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate Breeze	Raises dust and loose paper; small branches are moved
19-24	Fresh Breeze	Small trees in leaf begin to sway; crested wavelets on inland water
25-31	Strong Breeze	Large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate Gale	Whole trees in motion; inconvenience in walking against wind
39-46	Fresh Gale	Breaks twigs off trees; generally impedes progress

Score	Description
0	No damage. Fewer than 5 small scar spots are present on the membranes
1	Light damage. Less than 50% of flight membrane is depigmented (spotting), which is often visible only with transillumination
2	Moderate damage. Greater than 50% of wing membrane covered with scar tissue (spotting). Scarring is visible without transillumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may be flaking and discolored along the majority of the forearm
3	Heavy damage. Deteriorated wing membrane and necrotic tissue. Isolated holes >0.5 cm are present in membranes. Necrotic or receding plagiopatagium and/or chiroptagium are evident



## BAT CAPTURE DATA

Project #: 3410.02 Date: 22 July 2011  
Project Name: Totomtech Republic  
Biologists: D. Joffe, S. Stevens Site name/ID: Site 11c  
State: Ohio County: Seneca  
GPS Unit #: E6844 Camera #: C4834

## WEATHER DATA

Time (xxxx h)	Temp (°C)	Wind Speed (estimated - see chart)*	% Cloud Cover (estimated)	Comments
2100	24.3	0	30%	
2130	23.1	0	30%	
2200	22.9	0	30%	
2230	23.3	1-3	10%	
2300	23.2	4-7	60%	
2330	23.1	4-7	60%	Thunder
0000	23.2	1-3	60%	Thunder
0030				
0100				
0130				
0200				

Net/Trap/ or AnaBat	Net/Trap/ AnaBat Serial #	Latitude	Longitude	Length (m)	Height (m)	Time Up (xxxx h)	Time Down (xxxx h)	Picture #	Waypoint #
Net F	A	41° 12' 27.6"N	82° 57' 7.2"W	12	9.2	2050	0150	3727	023
Net	B	41° 12' 26.5"N	82° 57' 7.2"W	12	9.2	2055	0155	3728	024
Net	C	41° 12' 25.2"N	82° 57' 10.3"W	6	6.2	2100	0200	3730	025
Net	D	41° 12' 22.2"N	82° 57' 10.8"W	6	6.2	2105	0205	3731-2	026

Net Placement/Site Description: Nets A & B in old landing strip within woodlot, Nets C & D in open area in woodlot

Capt #	Net/Trap	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. <sup>2</sup>	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture # /Guano/Hair Sample	Comments
1	B	Eptesicus fuscus	2125	Jv	M	↑	11.2	44	M	0	N/A	
2	A	E. fuscus	2130								Escaped/Net	
3	B	E. fuscus	2135	Ad	F	L	18.9	41	M	0	N/A	
4	A	Lasionycter noctule	2150	Ad	F	NR	13.5	40	M	0	3735	
5	A	E. fuscus	2200	Ad	F	L	19.1	45.5	M	0	N/A	
6	C	E. fuscus	2200	Ad	M	↑	19.1	40	M	0	N/A	
7	B	E. fuscus	2220	Jv	M	↑	12.3	43	M	0	N/A	
8	B	E. fuscus	2220	Jv	M	↑	14.0	44	M	0	N/A	
9	A	E. fuscus	2220	Ad	M	↑	18.5	46	M	0	N/A	Recaptured from 20 July 2011

<sup>1</sup> Reproductive Condition: Female = NR/PG/L/PL; Male = ↑/↓ \* Refer to table on the back

\* Transmitter bat (172.118)

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**12/26/2018 1:00:07 PM**

**in**

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

Summary: Affidavit Exhibit J Part 9 of 33 electronically filed by Teresa Orahod on behalf of Dylan F. Borchers