

Appendix J – Indiana Bat Survey Methods and Results

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I. INTRODUCTION

Third Rock Consultants, LLC (Third Rock) was retained by the Tennessee Valley Authority (TVA) to conduct a survey for the federally endangered Indiana bat (*Myotis sodalis*) for the proposed Byrdstown Transmission Line, located in Pickett County, Tennessee and Clinton and Wayne Counties, Kentucky. The project begins northeast of Albany, Kentucky near the town of Gapcreek and ends east of Byrdstown, Tennessee.

Prior to conducting field surveys, a meeting between TVA, Third Rock, Lee Andrews of the Frankfort United States Fish & Wildlife Service (USFWS) field office, and Mary Jennings and Jim Widlak of the Cookeville USFWS field office (by phone) was conducted on July 12, 2010 at the TVA office to review maps and determine mist net requirements. Potential mist net locations were identified on aerial photographs. It was determined that 16 total sites would be required (10 sites in Kentucky and 6 in Tennessee).

II. STUDY AREA

The topography of the south and central portions of the project area is undulating to hilly and has mostly karst topography. The topography of northern portion of the project area, in eastern Clinton County, Kentucky, near the Wayne County border, is steep mountain side-slopes, benches, and narrow ridge-tops. The land use in the southern and central portions of the project area is predominantly agriculture, primarily pasture and hay with some crops (tobacco). The land use of the steeper northern portion of the project area is primarily forest. Throughout the project area are streams with forested riparian zones and scattered small forest blocks on hillsides. Residences are located throughout the project area, concentrated along roadways. Sinkholes are common in the area; wetlands are uncommon.

The northern portion of the project area crosses tributaries of Gap Creek in the watershed of Otter Creek, which flows to Lake Cumberland. The remainder of the project area, in the watershed of the Wolf River, which flows to Dale Hollow Lake, crosses Duvall Creek and tributaries, Hays Creek, Lick Creek, South Branch Lick Creek, Wolf River, and tributaries of Town Branch.

Summer habitat for the Indiana bat is common on the forested hillsides and riparian zones of the numerous streams. These forests are composed of mature trees, including species that have shaggy bark suitable for summer roosts, such as hickory. Snags with exfoliating bark occur frequently throughout these forests.

III. SURVEY METHODS

Surveying for Indiana bat was conducted from July 19 through August 12, 2010 in accordance to the guidelines established by the Frankfort field office of the USFWS (May 19, 2010).

A. Mist-net Survey

Mist-netting was conducted at 17 sites within the project area. Each site consisted of two net setups, and surveying was conducted for five hours each night, from approximately 9 p.m. EST to 2 a.m. EST. Nets were checked every ten minutes for bats.

Byrdstown Transmission Line; Clinton/Wayne Counties KY, Pickett County TN

Surveying at Site 1 was conducted on July 19 and 20, 2010 at Lick Creek and South Branch Creek, a tributary to Lick Creek. The streams have narrow riparian buffers but good corridors for bats. Mountains/ridges and side slopes are wooded, and most valleys are used for pasture or crops. Substrate of both streams consisted of bedrock, cobble and gravel. Net setup A consisted of stacked 9-meter nets spanning the width of Lick Creek. Net setup B was consisted of stacked 6-meter nets spanning South Branch Creek. The site had excellent foraging habitat but few snags. Canopy coverage at the site was 80 percent at both net setups, with the average diameter at breast height (DBH) of the canopy species of 10 inches. Dominant canopy species include green ash (*Fraxinus pennsylvanica*), sycamore (*Platanus occidentalis*), black walnut (*Juglans nigra*), American elm (*Ulmus Americana*) and boxelder (*Acer negundo*).

Surveying at Site 2 was conducted on July 19 and 20, 2010. Net setup A consisted of stacked 6-meter nets over an overgrown road through a forest leading to Lick Creek. Net setup B consisted of stacked 6-meter nets over a pool in Lick Creek near a boulder riffle. Canopy coverage at the sites ranged from 90 to 100 percent, with an average DBH of 6 to 12 inches. The forested road and perennial stream provide sheltered travel corridors and foraging areas. The perennial stream provides drinking water as well as numerous aquatic insects for food. The mature trees in the riparian zone include scattered summer roost trees (snags, dead limbs, broken limbs, cracks, etc.) Dominant canopy species are sycamore and green ash.

Surveying at Site 3 was conducted on July 21 and 22, 2010. Net setup A consisted of stacked 9-meter nets across a wooded road corridor surrounded by pasture just south of Wolf River. Net setup B was stacked 6-meter nets across the wooded road corridor south of Net setup A. Canopy closure was 85 percent with average DBH

of 10 to 12 inches. Dominant canopy species included sweetgum (*Liquidambar styraciflua*), red cedar (*Juniperus virginiana*) and tulip poplar (*Liriodendron tulipifera*). The site provided adequate foraging but poor roosting habitat. The surrounding area was believed to be a karst area with several caves and sinkholes.

Surveying at Site 4 was conducted on July 21 and 22, 2010. The site was located at the proposed transmission line corridor at a tributary of Town Branch, a perennial stream, in a grazed forest. Net setup A consisted of 6-meter nets stacked over a shallow pool. For Night 2, Net setup A was moved to an old road due to the presence of mules in the forest. Net setup B consisted of 9-meter nets stacked over a shallow bedrock pool of Town Branch and adjacent to a mule path through the forest. Substrate was bedrock with gravel and sand/silt. Canopy closure was 100% for both net sites, with an average DBH of 8 to 12 inches. Dominant canopy species included sugar maple (*Acer saccharum*) and beech (*Fagus grandifolia*). The stream through a mature forest provides a sheltered travel corridor and foraging area for Indiana bat. The forest through which the stream flows has scattered snags and other potential summer roost trees. No caves or cave-like habitats were observed.

Surveying at Site 5 was conducted on July 23 and 24, 2010. The site was at Hays Creek, a perennial bedrock stream within a forested riparian area. Both net setups consisted of stacked 12-meter nets over the stream. Net setup B was located near a large snag. Canopy closure was 85 percent at Net A and 100 percent at Net B, with average DBH of 10 to 14 inches. Dominant canopy species included ironwood, sugar maple, black walnut, and sycamore. The canopy covered stream channel provides a sheltered flyway and foraging area as well as a water source. The scattered snags in the riparian forest are potential summer roosts.

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For: Tennessee Valley Authority*

Surveying at Site 6 was conducted on July 26 and 27, 2010. Nine-meter nets were stacked over Town Branch near its confluence with Wolf River. Net A was set up just above the confluence; Net B was located approximately 200 yards upstream of Net A. Town Branch had a bedrock, cobble/gravel and sand substrate with an average depth of 8 inches. Canopy closure was 100 percent, with an average DBH of 12 inches. Dominant canopy species included sycamore, boxelder and black walnut. Many adult mayflies and other insects were observed, therefore the site had good foraging habitat. Roosting habitat was present in dead snags and limbs of trees adjacent to Town Branch. The stream could serve as a travel corridor to Wolf River.

Surveying at Site 7 was conducted July 26 and 27, 2010. Nets were set up over Town Branch, a perennial/intermittent stream with bedrock and cobble substrate. The stream was bordered on one side by a steep forested hillside and on the other by open field with riparian trees. Net setup A consisted of stacked 9-meter nets over a deep pool near a snag with exfoliating bark. Net setup B consisted of 6-meter nets stacked over a shallow pool/run of the stream channel. Canopy closure was 85-100%, with dominant species including tulip poplar, sugar maple, beech, and sycamore. The scattered snags in the riparian zone and in the mature forest on the hillside provide potential summer roost habitat. The forested stream channel provides a sheltered flyway, foraging area, and water source.

Surveying of Site 8 was conducted on July 28 and 29, 2010. The nets were set up over Hays Creek, which was flanked by a forested riparian zone and cliffs. Net setup A consisted of two 9-meter stacked nets over Hays Creek approximately 200 yards downstream from KY 1076. Net setup B consisted of two 9-meter stacked nets over Hays Creek approximately 200 feet downstream from Net A. Canopy closure was 100%, with dominant species including

sycamore, American elm, green ash, white oak (*Quercus alba*), and boxelder. The riparian area adjacent to the stream had several large dead snags with exfoliating bark. Additionally, large live shagbark hickories (*Carya ovata*) were observed. The stream represents travel corridor and foraging habitat. Numerous adult aquatic insects were observed, and mayflies were especially abundant.

Surveying of Site 9 was conducted on July 28 and 29, 2010. The nets were set up over Lick Creek, which had a forested riparian zone. Beyond the riparian zone was open pasture. Net setup A consisted of stacked 9-meter nets over a pool of the stream under overhanging willow tree branches. Net setup B consisted of 9-meter nets stacked over a shallow pool/run of the stream at overhanging branches and small buckeye trees. Canopy closure was 95%, with dominant species including black walnut, sycamore, and black willow (*Juglans nigra*). The open forest adjacent to the stream, and the forested hillside have scattered potential summer roost trees. The stream has a canopy of mature trees providing a sheltered flyway and foraging area.

Surveying of Site 10 was conducted on July 30 and 31, 2010. Net setup A consisted of two stacked 6-meter nets over Duvall Creek in a forested area. Net setup B consisted of two stacked 6-meter nets over an ATV trail through the adjacent forest over ruts filled with water. Canopy closure was 90-100%, with dominant species including sycamore, boxelder, tulip poplar, and sugar maple. The stream represents foraging habitat and a travel corridor. The ATV road and water filled ruts represent foraging habitat and serve as a travel corridor. Several large dead trees with exfoliating bark and crevices were observed adjacent to Duvall Creek and the forest adjacent to the ATV road.

Surveying of Site 11 was conducted on July 30 and 31, 2010. A perennial stream, Koger Creek,

flows between a pasture and hayfield, but had a forested riparian zone. Net setup A consisted of stacked 9-meter nets over a pool of the stream at a low overhanging branch. Net setup B consisted of stacked 9-meter nets over the stream channel near a snag. Canopy closure ranged from 90-100%, with dominant species including sugar maple, boxelder, black walnut, and American elm. Average DBH was 12-20 inches. The large diameter mature trees and snags in the riparian area of the stream provide potential summer roosts. The canopy covered perennial stream provides a sheltered travel corridor and foraging area.

Surveying of Site 12 was conducted on August 3 and 4, 2010. The site was an ATV trail in a ridge forest near a fire tower. Net setup A consisted of 6-meter nets stacked over the ATV trail at a water-filled rut. Net setup B consisted of 6-meter nets stacked over the ATV trail at a low hanging branch. Canopy closure ranged from 75-100%, with dominant species including sugar maple, red maple (*Acer rubrum*), and white oak. Average DBH was 14 inches. The forests on this mountain ridge have numerous snags and trees that may provide summer roosts. The ATV trails are possible travel corridors and foraging areas. Road ruts provide a water source.

Surveying at Site 13 was conducted on August 4 and 5, 2010. Both Net setup A and Net setup B included two 6-meter nets stacked over Gap Creek. Canopy closure was 100%, with dominant species including sycamore. The site had excellent foraging and summer roosting habitat.

Surveying at Site 14 was conducted on August 4 and 5, 2010. The site was a forested stream channel adjacent to a crop field just south of a powerline right-of-way. Net setup A consisted of stacked 6-meter nets placed perpendicular to the stream. Net setup B consisted of stacked 6-meter nets placed over a pool. Canopy closure was 100%, with dominant species including sugar

maple and black walnut. Average DBH was 10 inches. Several snags were located near Net B.

Surveying for Site 15A was conducted on August 9, 2010. The site was gravel and dirt roads in a heavily forested area near a fire tower. Net setup A and B consisted of stacked 6-meter nets placed over a dirt road. The road was bordered by forest on both sides. The forest on the southern side was comprised largely of sugar maple and white oak. This site was surveyed for one night then moved to an alternate location due to lack of bat captures. Surveying for Site 15B was conducted on August 10, 2010. Net setup A was approximately 100 yards east of a confirmed Indiana roost tree. No stream was present. Net setup B was placed over a dirt ATV trail that connects two agricultural fields, approximately 20 feet from a large cave known locally as "ice cave." Forested areas comprised largely of red oak (*Q. rubra*), shagbark hickory and sugar maple with snags. Canopy closure was 80%. Average DBH was 15 inches. There were many snags and shagbark hickory near the net sites.

Surveying of Site 16 was conducted on August 9 and 10, 2010. The site was an ATV trail bordered by forest on steep hillside opening to a cow pasture. Net setup A consisted of 6-meter nets stacked over the ATV trail. Net setup B consisted of 6-meter nets stacked over the ATV trail north of Net A. Canopy closure ranged from 80-100%, with dominant species including sugar maple and black walnut. The forested hillside has numerous potential summer roost trees. Caves and sinkholes are scattered throughout the hillside.

Surveying of Site 17 was conducted on August 11 and 12, 2010. This site was surveyed in response to recorded Indiana bat calls at Site 11. The site was located at the edge of a riparian forest beside a perennial stream next to an unmowed hayfield. Net setup A consisted of one

6-meter net under an overhanging tree branch near a gap in the riparian tree line on the edge of the hayfield. Net setup B consisted of stacked 6-meter nets under an overhanging tree branch in the hayfield. Canopy closure ranged from 75 to 85%, with dominant species including sycamore, boxelder, sugar maple, hackberry (*Celtis occidentalis*) and American elm. Average DBH was 14 inches. The trees in the riparian forest adjacent to the hayfield had some snags and other potential summer roost habitat. The hayfield is foraging habitat for bats near the perennial stream. Indiana bat calls were recorded along the tree line in the field (Site 11).

B. Acoustical Survey

Acoustical surveying was conducted in conjunction with mist net efforts using Anabat @ (Titley Enterprises, LLC) bat detector systems. Acoustical surveying was used to improve survey results and to determine if additional mist netting may be helpful in determining Indiana bat presence or absences. The acoustical surveying was conducted on the same nights as mist netting. The Anabat @ was contained in a water-resistant box with only the microphone protruding and affixed to a tripod. A field data sheet was completed by a Third Rock biologist.

Acoustical surveying for Site 1 was conducted on July 20 and 23, 2010. The site was a mowed field next to Lick Creek. The creek has narrow riparian buffer but is a good travel corridor for bats. Mountains/ridges and side slopes are wooded with valleys used for pasture or crops. The Anabat was placed at the edge of a wooded buffer and an open pasture facing north-northeast.

Acoustical surveying for Site 2 was conducted on July 19 and 20, 2010. The Anabat was placed in a powerline corridor that runs perpendicular to a perennial stream. The Anabat was near a small wetland at the edge of the tree line.

Acoustical surveying for Site 3 was conducted on July 21 and 22, 2010. The Anabat was placed in an old pasture with scattered large trees next to a sinkhole. Several pine snags were observed in the bordering woods.

Acoustical surveying of Site 4 was conducted on July 21 and 22, 2010. The Anabat was placed on a tripod approximately 3 feet off the ground, pointing straight up, in an opening in the forest near a roadway. The opening was created by an overgrown pasture with large clumps of mature trees scattered throughout. Several dead or partly dead trees were located in the area.

Acoustical surveying of Site 5 was conducted on July 23 and 24, 2010. The Anabat was placed at the edge of the canopy of a tree line in a tobacco field near the forested riparian area of a stream and woods near a barn. Snags were scattered in the forest.

Acoustical surveying of Site 6 was conducted on July 26 and 27, 2010. The Anabat was set up in a clearing on a trail and forest edge leading down to Wolf River. The trail could serve as a flight corridor to the river. The clearing and Wolf River represent foraging habitat.

Acoustical surveying of Site 7 was conducted on July 26 and 27, 2010. The Anabat was placed on a tripod pointing straight up, located in the corner of an open field near the edge of the forest. Several large trees and clumps of trees were located in the field near the Anabat.

Acoustical surveying of Site 8 was conducted on July 28 and 29, 2010. The Anabat was set up at 45° facing parallel to the forest edge and cornfield. The forest edge represents a travel corridor and foraging habitat.

Acoustical surveying of Site 9 was conducted on July 28 and 29, 2010. The Anabat was set up in a forest opening on an abandoned grassy road

through a wooded horse pasture. Several snags were observed near the Anabat.

Acoustical surveying of Site 10 was conducted on July 30 and 31, 2010. The Anabat was orientated toward the riparian forest edge of Duvall Creek. The adjacent land use was pasture. The forest edge could serve as a travel corridor and foraging habitat for bats.

Acoustical surveying of Site 11 was conducted on July 30 and 31, 2010. The Anabat was placed on a tripod approximately 3 feet from the ground facing nearly vertical (75°) at the edge of the canopy of a tree line along a stream in a hay field.

Acoustical surveying of Site 12 was conducted August 3 and 4, 2010. The Anabat was placed on a tripod, facing up, in an opening in the forest, on a ridge, adjacent to an ATV trail. Summer roost habitat is common in the surrounding forest.

Acoustical surveying of Site 13 was conducted August 4, 2010. The Anabat was placed on an ATV trail on a forested ridge with numerous snags and trees with potential summer habitat. An Indiana bat was captured at the mist-net site on August 4; therefore the Anabat was not deployed for a second night.

Acoustical surveying of Site 14 was conducted August 9 and 10, 2010. The Anabat was placed in an agricultural field facing a stream and powerline corridor.

Acoustical surveying of Site 15A was conducted August 9, 2010. On August 9, the Anabat was placed in a forest of white oak and sugar maple pointing toward a snag. On August 10 (Site 15B), the Anabat was placed facing a pasture next to a confirmed Indiana bat roost (snag). The forest next to the pasture contains many snags and shagbark hickory but primarily sugar maple and oak.

Acoustical surveying of Site 16 was conducted on August 9 and 10, 2010. The Anabat was placed on a tripod in a waterproof box facing straight up at the edge of a forest and cow pasture. Several snags were observed near the Anabat.

Acoustical surveying of Site 17 was conducted on August 11 and 12, 2010. The site is near the location of previous Indiana bat calls at Site 11. The Anabat was placed in the edge of the hayfield near a gap in the riparian tree line. Several snags were located in the riparian trees at this location.

C. Radio Telemetry and Emergence Counts

Indiana bats captured during the mist net survey were tracked using radio telemetry in order to identify roost trees and determine foraging areas. Each Indiana bat was fitted with a lightweight (0.37g) radio transmitter (Hohohil Sytems Ltd., Model LB-2N). Surgical adhesive (skin-bond) was applied to the back of the activated transmitter and placed on the back of the bat between the shoulder blades with the antenna facing the tail of the bat. The bat was released at the site of capture.

Daily radio telemetry searches for roost trees were conducted during daylight hours to track radio-tagged bats to their roosts. During the nights of the mist net survey, efforts were made to detect the radio-tagged bats from near mist net sites in order to determine foraging areas. Evening emergence counts at identified roost trees were conducted for each radio-tagged bat.

IV. SURVEY RESULTS

A. Mist-net Survey

The mist net survey resulted in the capture of 221 bats representing 10 species. Table 1 summarizes the results of the mist net survey.

TABLE 1 – NUMBER AND SPECIES CAPTURED AT MIST-NET SITES

Species	Mist Net Site #																	Total
	1*	2*	3*	4*	5	6*	7*	8	9	10	11	12	13	14	15	16	17	
<i>Corynorhinus rafinesquii</i>								1										1
<i>Eptesicus fuscus</i>		1			1		13	1	1			1		2			1	21
<i>Lasiurus borealis</i>	3	2	1	7	2	3	4	6	11	9	2	3	4				1	58
<i>Myotis grisescens</i>	9	1			14			6	4		9		1					44
<i>Myotis leibii</i>											1					1		2
<i>Myotis lucifugus</i>				3	2	1				1			1					8
<i>Myotis septentrionalis</i>			1							4		7	4	1		1		18
<i>Myotis sodalis</i>							1						2					3
<i>Nycticeius humeralis</i>						1	2							1				4
<i>Perimyotis subflavus</i>	4	1		2	10	1	5	6	6	5	8			12		2		62
Total	16	3	3	6	34	5	24	18	17	21	26	11	10	21	0	5	1	221

*Mist net sites located in Pickett County, Tennessee.

Field data sheets for each mist net site were completed.

Three Indiana bats were captured during the mist net survey. Table 2 summarizes the Indiana bat capture information.

TABLE 2 – INDIANA BAT CAPTURE INFORMATION

Species	<i>Myotis sodalis</i>	<i>Myotis sodalis</i>	<i>Myotis sodalis</i>
Identified by Biologists:	Rain Storm, Bert Remley	Brook Slack, Rain Storm, James Storm	Brook Slack, Rain Storm, James Storm
Capture Site	Site 7, Net B, Pickett Co., TN	Site 13, Net B, Wayne Co. KY	Site 13, Net B, Wayne Co. KY
Capture Site Coordinates	36.56896195080 -85.12271779860	36.74836063160 -84.99120624310	36.74836063160 -84.99120624310
Site Description	Stream	Stream	Stream
Capture Date	7/26/2010	8/4/2010	8/4/2010
Capture Time	1:24 am EST	11:15 pm EST	11:25 pm EST
Sex	Male	Male	Male
Age	Juvenile	Juvenile	Adult
Reproductive Condition	Non-reproductive	Non-reproductive	Non-reproductive
Right Forarm Length	41 mm	39.5 mm	34 mm
Weight	7 g	7.25 g	7 g
Height in Net	2.5 m	2 m	2 m
Photos?	Yes	Yes	Yes
Band Number	N/A	A15326	A15328
Transmitter Frequency	020	289	100

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B. Acoustical Survey

The analysis of collected calls resulted in the isolation of two or more separate files making it through the Indiana bat call filter ("MoreNet") at one acoustical sampling location during one

night, at two locations. Table 3 summarizes the results of the acoustical survey. Field data sheets for each Anabat site were completed.

TABLE 3 – ACOUSTIC SURVEY RESULTS

Anabat Location	Date	Start Time (EST)	Stop Time (EST)	Files Recorded	Bat Calls*	Indiana bat Calls**
Site 1***	7/20/2010	9:07 PM	2:21 AM	446	177	0
	7/23/2010	2:40 AM	9:44 AM	89	85	0
Site 2***	7/19/2010	8:16 PM	12:30 PM	160	115	0
	7/20/2010	8:51 PM	2:11 AM	46	23	0
Site 3***	7/21/2010	9:06 PM	2:09 AM	200	191	0
	7/22/2010	8:59 PM	2:24 AM	226	219	0
Site 4***	7/21/2010	8:04 PM	2:09 AM	109	93	0
	7/22/2010	8:16 PM	2:30 AM	228	213	0
Site 5	7/23/2010	7:56 PM	2:16 AM	56	52	0
	7/24/2010	8:06 PM	2:10 AM	77	74	0
Site 6***	7/26/2010	9:18 PM	3:05 AM	236	231	0
	7/22/2010	9:04 PM	2:25 AM	119	116	0
Site 7***	7/26/2010	8:03 PM	2:59 AM	112	98	0
	7/27/2010	8:06 PM	2:16 AM	154	148	0
Site 8	7/28/2010	9:15 PM	3:00 AM	158	147	0
	7/29/2010	8:57 PM	3:04 AM	109	70	0
Site 9	7/28/2010	9:14 PM	1:47 AM	194	101	0
	7/29/2010	8:06 PM	2:22 AM	102	75	0
Site 10	7/30/2010	9:10 PM	2:13 AM	264	261	0
	7/31/2010	9:06 PM	2:10 AM	117	115	0
Site 11	7/30/2010	10:11 PM	12:06 PM	321	362	7
	7/31/2010	8:18 PM	1:59 AM	132	124	0
Site 12	8/3/2010	9:23 PM	2:03 AM	71	66	0
	8/4/2010	8:48 PM	1:37 AM	294	103	0
Site 13	8/4/2010	9:13 PM	1:42 AM	206	198	0
Site 14	8/9/2010	8:59 PM	2:11 AM	121	119	0
	8/10/2010	7:24 PM	2:38 AM	213	212	0

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Table 3, Acoustic Survey Results, continued

Anabat Location	Date	Start Time (EST)	Stop Time (EST)	Files Recorded	Bat Calls*	Indiana bat Calls**
Site 15A	8/9/2010	9:23 PM	2:03 AM	165	40	0
Site 15B	8/10/2010	8:27 PM	1:40 AM	36	34	0
Site 16	8/9/2010	8:24 PM	2:15 AM	501	382	3
	8/10/2010	8:34 PM	2:16 AM	2028	1652	0
Site 17	8/11/2010	8:37 PM	1:57 AM	1909	1618	0
	8/12/2010	8:05 PM	1:54 AM	2825	2591	0
Total					10,105	10

*The number of files that passed the "NOISE" filter provided by USFWS, indicating that these are bat calls.

**The number of calls that passed the Indiana Bat Call ("MORENET") filter provided by USFWS, indicating that these are Indiana bat calls.

*** Acoustical Monitoring Sites Located in Pickett County, Tennessee

C. Radio Telemetry and Emergence Counts

Table 4, page 16, summarizes the results of the radio telemetry and emergence counts.

V. CONCLUSION

Three Indiana bats were captured during the mist net survey. A juvenile male Indiana bat was captured at Site 7 in Pickett County, Tennessee on July 26, 2010. A juvenile male Indiana bat and an adult male Indiana bat were captured at Site 13 in Wayne County, Kentucky on August 4, 2010. The telemetry effort was unsuccessful in identifying a roost tree for the Indiana bat captured in TN, but two roosts each were identified for the Indiana bats captured in Kentucky.

Evening emergence counts were conducted at one roost for the adult male and at two roosts for the juvenile male. One bat emerged from each tree at all roosts. The radio receiver was used during the emergence to confirm that the emerging bat was radio tagged.

Seven Indiana bat calls were recorded at Anabat Site 11. An additional mist net site (Site 17) was surveyed in response to the acoustical analysis results. No Indiana bats were captured at the mist net site. Three Indiana bat calls were recorded at Anabat Site 16. Because these calls were recorded within proximity to an Indiana bat capture site and Indiana bat roost trees, an additional mist net site was not conducted near this location.

REFERENCE

Indiana Bat Survey Guidance for Kentucky, U.S. Fish and Wildlife Service, Kentucky Field Office, Frankfort KY, and Kentucky Department for Fish and Wildlife Resources, Frankfort, KY, May 19, 2010.

TABLE 4 – SUMMARY OF RADIO TELEMETRY AND EMERGENCE COUNTS

Radio Transmitter Frequency	020	100		289	
Species	<i>Myotis sodalis</i>	<i>Myotis sodalis</i>		<i>Myotis sodalis</i>	
Sex	Male	Male		Male	
Age	Juvenile	Adult		Juvenile	
Capture Site	Site 7, Pickett Co., TN	Site 13, Wayne Co. KY		Site 13, Wayne Co. KY	
Capture Site Coordinates	36.56896195080 -85.12271779860	36.74836063160 -84.99120624310		36.74836063160 -84.99120624310	
Capture Date	7/28/2010	8/4/2010		8/4/2010	
Tracking Effort Dates	7/27/2010 - 7/31/2010	8/5/2010 - 8/13/2010		8/5/2010 - 8/13/2010	
Roost ID	N/A	100Roost1	100Roost2	289Roost1	289Roost2
Roost Coordinates	N/A	36.74246077070 -84.99405250510	36.75316671850 -84.99296143480	36.73005849270 -84.98157461960	36.72975582280 -84.98215020940
Date Roost Identified	N/A	8/5/2010	8/6/2010	8/6/2010	8/10/2010
Roost Description	N/A	tulip poplar snag (10" DBH) in forest block on hillside	unidentified snag (12" DBH) in tree line of old roadbed adjacent to pasture	shagbark hickory snag (10" DBH) on forested ridge top (grazed)	sugar maple snag (9" DBH) near 289 Roost1 on forested ridge top (grazed)
# of Bats observed during emergence	N/A	1	N/A	1	1
Emergence Time	N/A	8:55 pm EST	N/A	8:56 pm EST	8:33 pm EST
Notes	After the night it was released, this bat was never located during the tracking effort.	Bat never returned to this roost during tracking effort.	Bat never returned to this roost during tracking effort, but was detected foraging in the Otter Creek Valley on 8/9/2010 from mist net Site 16 (NE 15 degrees).	Bat returned to these roosts, or within close proximity of these roosts, on 8/7/2010, 8/11/2010, 8/12/2010, and 8/13/2010. Bat was detected foraging in the Otter Creek Valley on 8/9/2010 from mist net Site 16 (NE 15 degrees).	

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