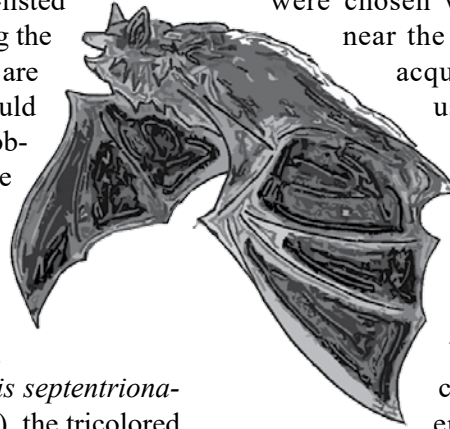


BAT ACOUSTIC MONITORING AT THE WAYNE CAVE PRESERVE

by Goni Iskali

In the September *IKC Update*, we reported on the bat surveys that the IKC completed at our six largest preserves this past summer. These surveys included passive acoustic transects to get a snapshot of what bats may be using our properties during the summer maternity season. However, we also completed a more intensive acoustic survey at the Wayne Cave Preserve from August 19 to 22, 2023. The purpose of this survey was to try to detect if federally and/or state-listed bats use the Wayne property during the summer. If these sensitive species are detected at our preserves, this could help boost the IKC’s chances of obtaining grants/funding and guide us on how to better customize our management plan. The four focus species for this survey were the Indiana bat (*Myotis sodalis*; federally and state endangered), the northern long-eared bat (*Myotis septentrionalis*; federally and state endangered), the tricolored bat (*Perimyotis subflavus*; federally proposed as endangered and state endangered), and the little brown bat (*Myotis lucifugus*; being considered for federal listing and state endangered).



let us borrow and use their most cutting-edge acoustic recorders that are available for professional bat surveys: The Wildlife Acoustic Song Meter SM4 Acoustic Recorder. He also helped deploy the detectors, with one detector placed in the dry creek bed near the trail on the west side of the property and the other detector placed at the edge of the sinkhole swamp. The reason why these two locations were chosen were because 1) they are both near the expansion property the IKC is acquiring and this data would give us info on whether the bats were using both the Wayne and the expansion, 2) they are most likely to attract bats due to available water and flight corridors (e.g. trails and creek), and 3) they are somewhat open because bat calls can be difficult to ID to species when bats emit calls in a cluttered environment. The detectors were programmed to record 30 minutes before sunset and 30 minutes after sunrise for four nights. The acoustic calls were processed and verified by Ashley Reed, a qualified acoustic bat biologist and previous employee of WEST. She processed the data by first running it through an automated identification program (Kaleidoscope) and then qualitatively identifying every

The two survey stations were made possible with the help of bat biologist Aaron McAlexander from Western Ecosystems Technology, Inc (WEST), a consulting firm in Bloomington and my previous employer. Aaron generously

Table 1. Summary of Data Collected on the Indiana Karst Conservancy Wayne Cave Property, Monroe County, Indiana between August 18 – 22, 2023. Kaleidoscope Pro 5.4.0 was used to classify bat echolocation calls. Manual review was completed for little brown bat, northern long-eared bat, Indiana bat, and tricolored bat echolocation calls. The number of manually review confirmed bat echolocation calls is given in parentheses. Manual review was not completed for any other bat species nor the NOID or noise files.

Site	Date	Species ¹											
		EPTFUS	LASBOR	LASCIN	LASNOC	MYOLUC	MYOSEP	MYOSOD	NYCHUM	PERSUB	NOID	NOISE	
1 (Dry Creek)	20230818	95	82			51 (2)		10 (0)		7	4 (0)	186	320
	20230819	122	271			23 (0)		2 (0)	41	12 (3)	202	238	
	20230820	118	62			14 (0)		1 (0)	13	2 (1)	68	716	
	20230821	164	49	1	3	42 (2)			7	2 (1)	116	50	
	20230822	93	10			11 (1)				4 (3)	25	329	
	Total	592	474	1	3	141 (5)		13 (0)	68	24 (8)	597	1,653	
2 (Sink-hole Pond)	20230818	37		1	9	27 (1)	15 (2)	34 (2)	1	2 (0)	116	388	
	20230819	139	4	3	17	15 (0)	5 (0)	19 (0)	7	5 (0)	109	762	
	20230820	142	2	2	15	10 (0)		5 (0)	9	6 (2)	71	1,193	
	20230821	73		1	9	8 (2)		10 (1)	14	3 (0)	79	2,016	
	20230822	50	3		16	13 (3)	2 (1)	18 (5)	2	5 (1)	112	2,375	
Total	441	9	7	66	73 (6)	22 (3)	86 (8)	33	21 (3)	487	6,734		
Total		1,033	483	8	69	214 (11)	22 (3)	99 (8)	101	45 (11)	1,084	8,387	

¹ EPTFUS = big brown bat, LASBOR = eastern red bat, LASCIN = hoary bat, LASNOC = silver haired bat, MYOLUC = little brown bat, MYOSEP = northern long-eared bat, MYOSOD = Indiana bat, NYCHUM = evening bat, PERSUB = tricolored bat

² NOID = no identification by Kaleidoscope

³ NOISE = classified as non-bat noise by Kaleidoscope



bat call that was labeled by Kaleidoscope as one of the four focus species.

The results of the acoustic surveys are reported in Table 1, with the parenthesis representing the number of calls that were manually confirmed by Ashley as belonging to one of the four focus species. ***The thrilling news is that all four of the focus species were confirmed to occur at the Wayne Preserve!*** This is extremely rare and surprising, especially for an area that's somewhat removed from any known major hibernacula for these four species. Wayne Cave is not a major hibernaculum for bats in general or these species, although the occasional tricolored bat is seen there in the winter, as is the case with a lot of Indiana caves. Most of the calls from the focus species were recorded near the sinkhole swamp, which is not surprising because the creek bed was very dry in August and less likely to attract bats. The results of this survey indicate that the management of the Wayne Cave Preserve is clearly benefiting bats, including federally and/or state listed species. The heterogeneity of habitats including the availability of water sources, undisturbed and connected forest patches, and a fairly uncluttered environment that's free of invasive plants are likely some of the reasons why the bats are attracted to this preserve (huge thanks to Dany-



photo courtesy Goni Iskali

ele Green and all the volunteers who help manage the preserve!). Our goal for the future is to survey our other IKC preserves in a similar way through the help of university research, state or federal research, and/or volunteers, so that we can learn about what sensitive bat species may be using our properties, which can help us cater our management plans to these species.

WHAT'S UP IN 2024 WITH OUTREACH AND EDUCATION

by Carla Striegel-Winner

We did a lot in 2023 and our goal for 2024 is to continue engaging with you, our members, and to introduce new supporters and potential members to our work. We will keep up with the quarterly field events, starting with a spring hike at Henderson Park, with our new Cave Access Coordinator, Scott Frosch, who is a nature guy in general and loves that property. In early summer we are looking at a botany hike (location TBD) since that has been a requested topic. Fall will bring our third annual Big Day birding hike and the winter event is still up in the air.

In addition to the field events, we will host stewardship opportunities as stand alone events, or in conjunction with a quarterly meeting or field day. We will also work alongside the Indiana Cave Survey to hold the annual Indiana Cave Symposium on April 20 at the Orange County Community Center in Paoli, with plans to again hold a pre-symposium workshop or tour. Also in 2024 we are hoping to

sponsor another Orientation to Cave Rescue (OCR) class with discounts for our members.

We also want you to know that if you have a group, cavers or not, that you would like us to present to on caves or karst and conservation, please reach out to me to see if we can make that happen. There are several Board members who can present via Zoom, or in some circumstances we can make an in-person appearance.

Our IKC website homepage (ikc.caves.org) typically lists our upcoming events with links for more info, and of course our Facebook page (www.facebook.com/IndianaKarstConservancy) is a great place to check out to see what is going on in the IKC world.

Members who have ideas, suggestions, or comments regarding outreach can contact any Board member or reach out to me at IndianaKarstConservancy.info@gmail.com.