Nature Discovery WILD TIMES

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THIS ISSUE

Keepers of the Brown House Flyer

This page from the *Animal Diversity Web*, a site compiled and maintained by the University of Michigan Museum of Zoology, offers a thorough synopsis of the biology, ecology, human interaction concerns and conservation issues surrounding the Big Brown Bat (*Eptesicus fuscus*); a good supplemental read to this column: https://animaldiversity.org/accounts/Eptesicus_fuscus/.

Among other informational morsels, I learned that the binary scientific name translates from Greek and Latin origins as “brown house flyer” - an apt descriptor for both, the bat and this essay…

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When we moved into this old, unattractive country edifice north of Williamston in late December of 1988 it consisted of the original, simple, one-and-a-half story crackerbox structure erected in 1889, and later, an additional single story attached to the back wall. This extension had surely existed for quite a few decades prior to our occupancy, too.

We discovered in short order that we were not the only occupants of these worn premises. I’m not talking about the ghost - a woman in a light-colored nightgown who has been seen at various points over many years by all members of our family. Starting after sunset, then on-and-off throughout the night, the rapid skitter of tiny quadruped footfalls was often heard in the walls and across the ceiling. We got used to it.

However, not until their arousal with the advance of that first spring did we become aware of the sizeable colony of Big Brown Bats that resided in the crawl-space attic in this old, front portion of the house. Weather-permitting, beginning shortly after sunset, they exited the slots of the slatted vent situated high on the north wall under the peak of the roof.

Conversely, as the eastern sky brightened, we could peer out the window situated halfway up the stairs inside this wall and watch them return to roost. Since bats can’t fly directly at a perch but need to swoop up to it from below, this window - the top of which is a mere four feet beneath the vent - offers the perfect eye-level vantage to watch their arrival. Good luck trying to follow the flight path though. The swiftly incoming chiropterid materializes from the dim background, rises in front of the pane and out of view

directly overhead in a fraction of a second. A light, scratchy thud indicates landfall as it contacts the vent and squeezes between the slats.

While any single Big Brown Bat can potentially live close to twenty years, it is somewhat humbling to consider that this colony has probably existed across so very many bat generations far longer than any one set of the human occupants. It is likely that it originated shortly after the very first humans built it - and has thrived here, uninterrupted, for over 135 years! Who are we to deny its continuance because of some nonsensical fear or other staunchly anthropocentric perspective?

In this light it feels disingenuous to refer to ourselves as the bats' 'landlords' or to them as 'our' tenants. We merely consider ourselves temporary guardians or 'keepers of the colony' over this particular leg of its century-long life. We value its right to exist and will do what we can to support its dynamic components as they fulfill their keystone roles within the complex natural community that functions in all directions beyond these walls.

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This is a maternal colony.

One summer day a couple of decades ago, shortly after sunset, Carol decided to stand outside the door facing the attic vent. She remained for the next forty-five minutes counting the bats as they took wing above her to start their night of insect-foraging. Occasionally an individual would re-enter the vent and she took care to subtract one. By the time darkness had fully advanced she determined that fifty-four bats had exited the vent!

Ensuing reading revealed that especially large Big Brown Bat colonies are invariably comprised of females over the warm months of the year. Each gives birth to a single offspring which is left at the roost while the mother exits to forage. Females will consume their body weight in insects each night in order to sustain the energy demand required to nurse their young.

Male Big Brown Bats roost separate from the maternal colony during the reproductive months, either singly or in groups of not more than a handful. Then, late in the summer when young are grown and self-sustaining, males reoccupy roosts with females and will eventually hibernate within a mixed-sex community.

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The Big Brown Bat consumes a wide range of insect species. Around our property, unquestionably, an outsized percentage rises from the biologically-rich vernal ponds out back. Many grow in their respective larval or nymphal stages, mature, then exit the water as winged diurnally-active adults (i.e., dragonflies, damselflies, deer flies, horse flies, soldier flies, etc.). I would surmise though, that insects which exhibit more nocturnal tendencies (i.e., mosquitoes and midges, caddisflies, mayflies, fishflies, backswimmers, water bugs, diving and scavenging beetles, etc.) take to the air in even greater abundance. After sunset, therefore, these insects are the more common bat targets. Studies of the Big Brown Bat diet indicate that flying beetles are especially prevalent on the menu.

A small cloud of midges gathering to mate hovers over the yard at dusk.

During another summer, post-sunset, I happened to walk down the driveway while the bats were exiting the vent. Suddenly I felt a hard object ricochet off the top of my head. It was not heavy like a stone, however. It bounced from my head to the ground, buzzed open-winged on its back for a second, then flipped upright onto its legs and started scurrying; a large Predaceous Diving Beetle.

A Predaceous Diving Beetle from our pinned insect collection arranged on a bed of Pignut Hickory nuts.

Apparently, as an evasive maneuver after sensing the echolocation pulses from one or more of the bats, the flying beetle folded its wings and allowed itself to freefall to the ground. My noggin was in the way.

In a similar circumstance, we arrived home one summer evening, incidentally pulling onto the driveway right at dusk. When I opened the driver's side door and stood, an adult Backswimmer bounced onto the car's roof next to me. The insect – clumsy on legs meant for swimming, not walking – spastically flipped and stumbled across the top of the car then fell to the ground.

Speaking of falling objects…

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When our kids were young, I fashioned an experience with them that many mothers might label a definite 'dad game.' After all I think most would agree that a typical mom tends to take more care to keep her children out of harm's way than, say, a dad looking to provide a thrill for them.

The game involved fooling the bats that foraged high in the dusky airspace over the yard into a close, swooping encounter toward the kids. We started by picking about a dozen ripening, green hickory nuts from the low limbs of the tree on the front of the driveway.

With foraging bats fully-engaged in the airspace over the yard, we moved to the center of the lawn, then sat, or better yet, lay on our backs for the best skyward view. Before long one would fly directly above us. Then, I would whip a nut into the air as straight over our heads as I could. At some point as the nut reached its apex then began to fall, the bat would detect it through echolocation then swiftly pursue it toward the ground.

If the alignment of the throw was true, the nut would rise thirty-or-so feet into the air and fall directly back upon us. Yes, the kids were in definite danger of getting beaned. Meanwhile, the bat's echolocation would lock on the same object. It stooped into its dive a very short distance behind the plummeting nut, also right at us. At the last seeming instant the bat would peel away just a few feet over our heads and swoop upward.

The kids sometimes shrieked but mostly 'oohed' over how close it had come. Usually, the nut hit the ground harmlessly next to us, but every now and then a single startled '*ow!*' accompanied the other exclamations.

I don't remember any of them being moved to tears over the sting of the nut. Instead, I was immediately met with a chorus of 'Dad, throw another one,' and 'Dad, do it again.' I needed no further encouragement.

This circumstance conjures a couple of worthwhile points of discussion. First is a matter of perception. When you watch the silhouette of an airborne Big Brown Bat as it flaps way up, some forty or fifty feet over your head, you're likely to underestimate its wingspan. Eight or so inches? Nope. Field guides list it at twelve to sixteen inches. When you hold a raised finger on each hand this far apart in front of your face it is hard to fathom that this tiny flapping entity viewed against the dimming sky can possibly be that big. When one banks sharply with wings spread as close to your face as we experienced, though, the

misperception is laid to rest. Of Michigan's nine bat species, only the solitary-roosting Hoary Bat has a wider wing span than the Big Brown.

Secondly, if bat echolocation is so fine-tuned why would one be tricked into mistaking a falling nut for an insect? My encounter with the diving beetle on the driveway offers a possible explanation. When a flying beetle senses the echolocation pulses, it performs the evasive close-and-drop maneuver, but as it falls it may not be completely safe until it actually makes contact with the ground. Likely, the bat still recognizes it as a prey item and continues to pursue it in the freefall state. A Pignut Hickory nut happens to be very close in size to the large Predaceous Diving Beetle that conked me in the head.

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Listed predators of bats - and Big Browns in particular - include hawks, owls, raccoons and snakes. The former pair, no doubt, take them primarily in flight; the latter two find stationary individuals.

In late winter of 2011 we hired a company to blow extra insulation into the walls and into the attic crawl space. We kept our fingers crossed that the energy-efficiency upgrade would not negatively affect the bats.

As they assessed what specific hollows and by what means they were going to spread the insulation, the crew set up a ladder under the ceiling hatch in an upstairs bedroom through which they could access the attic space. As one of them started to climb the ladder and lift the panel I remembered to inform him that a good sized bat colony roosted up there, just to make him aware.

He laughed it off and said they encounter bats all the time in their business. I made sure he also knew that we were fine with the bats residing there… should he have an inclination to 'do something' about it. However, it never occurred to me that I should mention anything about the six-foot Black Ratsnake that had gotten out of its tank in the nature center the summer before, which we had never found.

A Black Ratsnake will constrict and devour any mammal or bird small enough to subdue.

His crew mates steadied the ladder as he climbed, then disappeared with his flashlight into the dimness. We could hear his movements in one direction then the other. Suddenly, the low, panicked, primordial scream of an adult male primate echoed down through the opening. A second later he scrambled backward out of the dark rectangle, his boots struggling to find the steps of the ladder, muttering "I don't do snakes, uh uh, I don't do snakes!"

In the winter, I couldn't believe it was true. "You saw a snake up there?" I asked.

"No," he replied, still shaken, "but there's a *huge* skin!"

His crew buddies laughed, and ribbing ensued. Another guy went up the ladder, found the skin and dropped it down. The scared one recoiled, and the others laughed again. I took the skin away, so as to let him regain his composure and get back to work.

I couldn't help but notice how ecologically fitting it was. Here, a large climbing constrictor, having attained free-rein within a large, enclosed but structurally-complex area, had demonstrated an ability to gravitate to the most dense source of applicable prey on the premises. How many bats had it consumed before finally moving out and into the trees, where it innately belonged?

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A higher incidence of rabies appears in bats than in any other mammal order. Therefore, if a bat finds its way into your house and you consult, say, the Centers for Disease Control website for guidance you may be frightened into actions that we would deem from our experience as unnecessary or overcautious.

To give the CDC the benefit of the doubt, disease prevention is, after all, supposed to be a primary focus. However, discussion in the *Animal Diversity Web* link provided above states that "the risk of contracting rabies from bats is exaggerated." As a result, I suspect that many thousands of healthy bats which accidently stumble into human living quarters are purposely and quite needlessly killed every year.

In the winter months a healthy bat hibernating between the walls may become too warm or too cold, and be prompted to creep around the cavity seeking a more amenable temperature. It might find and squeeze through a particular hidden gap that inadvertently leads it to the human-occupied side of the wall.

Every now and then in the warmer months one may enter our house, too; sometimes, we assume, because we left the back door to the nature center open too long after sunset. For example, one might pursue a flying insect that was attracted to the lights right through the opening.

Over thirty-eight years here a bat has found its way into our living space so many times, we've lost count. The confused individual, experiencing the same predicament as any of the many birds that have wandered into our house, wants nothing more than to get out as soon as possible. We're quick to help it.

Carol would rather that I handle the 'situation.' When I do, rarely does it take more than ten minutes to get it safely back outdoors; this, with fairly minimal fuss, while posing no danger to me or to anyone else.

I never swing one of our insect nets at an airborne bat as it circles the room. One of its toothpick-thin wing bones could easily be broken if contacted by the rim. Rather, when the bat flies into a specific room, I close the door to confine it then open the window, or in some cases, the door leading outside and then wait until it eventually finds the opening.

If the bat lands on a picture frame, window moulding or a curtain, I carefully pin it against the surface with my palm over a hand-towel then wrap my fingers around its tiny body. The bat's struggles are so weak there is no risk of it squirming out of a gentle grip like a mouse may do. Over many times securing one in this way I've never been able to discern whether it may be biting the towel on the other side. If it is, the sharp, short teeth made for chomping through chitinous exoskeletons are apparently no match for a standard layer of terry cloth. I then carry the bat wrapped in the towel outside for release.

During a home improvement project we found this Big Brown Bat skull inside a wall then cleaned and prepared it for display.

Over so many instances of freeing various bats from the house in these ways, my skin has never come in contact with one.

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Although so many other bat species are known to be experiencing some state of decline – like the endangered Indiana Bat and the state-threatened Northern Long-eared and Tricolored bats – due to habitat loss or, increasingly, to the fungal disease, White-nose Syndrome – the Big Brown Bat has a conservation status of 'least concern.' Populations appear relatively stable for now.

We know better than to take its commonality for granted, though, in light of the many instances of environmental degradation that persist around us. For instance, hibernating bats require a minimum

percentage of fat reserves accumulated in their body mass prior to winter in order to survive to spring. Yet, many scientific studies corroborate one another, citing significant declines in insect abundance over recent years, virtually everywhere due to human activities and land-use practices detrimental to their survival. At what degree of decreasing aerial insect abundance will a threshold be reached whereby a late season foraging bat cannot locate and consume enough insects to adequately build these reserves?

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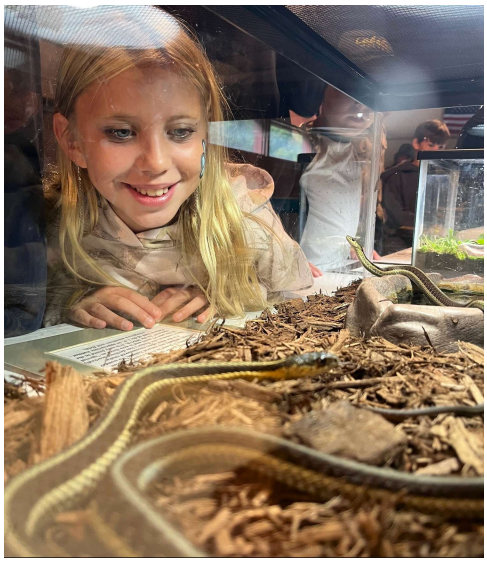
Would you like to witness dozens of bats as they leave their day roost to forage? Simply make an early evening appointment to visit us. Better hurry and watch the weather forecast, though. The bats will not exit to forage if the temperature drops below the mid-fifties.

How would you like to accommodate bats on your own property? Erecting a roosting box! Nature Discovery has had three sturdy boxes donated to us - built according to specifications recommended by the Organization for Bat Conservation – that we will make available to anyone who would like one. Just contact us to reserve yours, then make arrangements to pick it up.

- Jim McGrath



Around the State in September

- ***<u>Friday, September 5</u>: 5-7:30pm. MI Reptiles & Amphibians Exhibit; Washtenaw Promise Block Party, Ypsilanti.***
- ***<u>Saturday, September 6</u>: 9am-3pm. MI Reptiles & Amphibians Exhibit; Sportsmen for Youth, Muskegon.***
- ***<u>Sunday, September 7</u>: 10am-2pm. Michigan Snakes Exhibit; Williamston Farm & Artisan Market.***
- ***<u>Friday, September 19</u>: 4-6pm. MI Reptiles & Amphibians Exhibit; Stepping Stones Montessori, East Lansing.***

Nature Discovery

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Visit Our Nature Center by Appointment

Suggested Minimum Donation: $5/person/hour

See two color phases of the Northern Leopard Frog.

The sky's the limit for natural science learning here – with a Michigan twist! Adults, couples and individual families are welcome to schedule an intimate indoor or outdoor visit to what we call "The Biggest Little Nature Center in Michigan," and "Home to the Largest Zoo of Michigan-native Reptiles and Amphibians." The unique, in-person, hands-on experiences here are unrivaled at any other nature center or zoo! We will bring snakes, turtles, frogs and salamanders out of tanks to interact with adults or students of any age or grade-level.

Hold our Eastern Milksnake.

Identify and feed "the grand slam of Michigan turtles" - all ten species native to our state as they swim and bask in pools on the patio! Meet, pet and feed "Milberta", our hungry Red-footed tortoise.

Handle nearly any of our many Michigan snakes while learning how to tell them apart, then watch them gobble up worms, fish, frogs or mice. Hold or "wear" a gentle 6-foot Black Ratsnake – the largest in the state!

Frogs and salamanders, too!

Identify birds at the feeders. Take a guided walk on our trails to identify birds, bugs, insect and plant life.

Ask about special guided birding outings and nature walks at a natural area of your or our choosing!

Inquire about indoor and outdoor volunteer opportunities for high school students, adults, retirees.

More Reading/Listening for the Environmentally-concerned

E.P.A to Stop Collecting Emissions Data from Polluters
https://www.nytimes.com/2025/09/12/climate/epa-emissions-data-collection-halt.html?campaign_id=9&emc=edit_nn_20250913&instance_id=162487&nl=the-morning&regi_id=97652655&segment_id=205834&user_id=e2b8dd8c9b543fb8c35d5dd30658067e

An Energy Dept Climate Change Report 'Completely Ignored' Adaptation, Rutgers Professor Says
https://insideclimatenews.org/news/10092025/pamela-mcelwee-energy-department-greenhouse-gas-report/?utm_source=InsideClimate+News&utm_campaign=1858b118ec-EMAIL_CAMPAIGN_2025_09_13_10_12&utm_medium=email&utm_term=0_29c928ffb5-1858b118ec-327904609

Sustainability in Your Ear: Author and Activist Bill McKibben Brings the Sun
https://earth911.com/podcast/sustainability-in-your-ear-author-and-activist-bill-mckibben-brings-the-sun/

Ten Things Worth More than a Pound of Gold
https://www.youtube.com/watch?v=6wUntJ1OTmw

-JM

The next generation would be justified in looking back at us and asking, "What were you thinking? Couldn't you hear what the scientists were saying? Couldn't you hear what Mother Nature was screaming at you?" – Al Gore

I don't want you to be hopeful. I want you to panic. I want you to feel the fear I feel every day. I want you to act. I want you to act like you would in a crisis. I want you to act like your house is on fire, because it is. – Greta Thunberg

The personal actions that cut climate pollution fast are to go flight-, car-, and meat-free. Start with the one that feels most feasible for you; if you can't totally go without, aim to cut your consumption today at least in half. – Kimberly Nicholas, Under the Sky We Make

What if we had storytelling mechanisms that said it is important that you know about the well-being of wildlife in your neighborhood? – Robin Wall Kimmerer

Study nature, love nature, stay close to nature. It will never fail you. – Frank Lloyd Wright

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Science for a healthy planet and safer world

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PLEDGE TO FLY LESS & SAVE MORE
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