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Thank you, Donors!

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AFFEW: Good Snakes

You *can* handle the truth. Unfortunately for people and for wild snake populations, systematic education delivered by qualified educators about these uniquely-adapted reptiles is sorely lacking.

To mainstream such a program in all of our schools would be a win for students. They would not live with discomfort or suspicion of snakes as are so many others they know - and from whom they may have received erroneous impressions. Snake populations would win since educated people would not have the impetus to rid their neighborhood of snakes either through direct persecution or through purposeful habitat destruction so as to discourage them. Perhaps most importantly, the environment wins. From an ecological perspective destruction of snakes or the habitat that supports them mars the entire ecosystem within which so many other organisms are intricately connected.

Others agree and support our effort to bring broad scale Michigan-specific snake education to schools. That's why you'd be hard pressed today to find a fourth grader in the Ludington area who has anything bad to say about snakes. In fact, in conversation the content is likely to be overwhelmingly positive..., although most of these kids did not feel this way as little as a month ago.

What happened in the interim? *Michigan Snakes Alive.*

If you've seen any of our past columns about this particular Nature Discovery presentation, Straits Area Audubon Society figures prominently in the discussion. The club has been steadfastly dedicated to delivering the experience annually for the past twelve years to mostly fifth grade students in Northern Michigan communities, including Cheboygan, Pellston, Mackinaw City, Indian River, Wolverine, Petoskey, Harbor Springs, and others.

Like late SAAS member, Kathy Bricker, Julia Chambers is the epitome of the impact one dedicated individual can have in changing attitudes and instilling action for the betterment of the community and the world. Julia is the founder and executive director of Ludington-based non-profit, A Few Friends for the Environment of the World. The mission statement:

AFFEW nurtures a healthy planet for all by creating experiences that show people their connection to the environment, engage next generations, educate people on what they can do, and inspire everyone to take action.

The organization may be based in Mason County and involved in many local projects around the Ludington area, however, a visit to the website or Facebook page reveals useful news, information, and sustainable-living ideas for environmentally-concerned citizens no matter where you live:

<https://www.affew.org/>

<https://www.facebook.com/groups/affew>

In 2022 Julia was a national finalist for Cox Enterprises' Conserve Hero Award (<https://www.coxenterprises.com/about-us/our-purpose>) and earned a cash prize to be implemented

toward future conservation-themed endeavors. She used a portion of the award to fund Nature Discovery's *Michigan Snakes Alive* presentations in schools last month. In addition, AFFEW organized an Earth Day event in which, among many other activities, we presented and exhibited Michigan snakes to attendees.



Julia Chambers gives fourth graders an up-close encounter with a Northern Watersnake during a Michigan Snakes Alive presentation.

In most wildlife presentations I am able to delve right into the 'meat and potatoes' regarding a featured species, i.e., identification, range, habits, habitat needs, conservation issues, etc. – useful information that everyone should know, ultimately, for the betterment of that organism's chance to survive amid ever-looming humanity and its associated infrastructure.

Not so easily done with snakes. Why? When I first pull, say, a ratsnake out of the bag, a scan across the faces in the audience reveals scattered expressions (and sometimes comments) of dislike, disgust, fear, and even terror. I make a concerted effort to clear this hurdle before we even begin to delve into the various native species I brought to show and discuss.

The audience's ambivalence is addressed right out of the gate by merely asking, *How many of you are willing to admit that you might be at least a little uncomfortable with snakes?* A significant number of hands go up. I then assure them that they are going to walk out of the presentation feeling some level better about snakes than they did walking in.

Over decades of teaching on the topic, Carol and I know what questions to expect from the audience. There is one question, by far, that is asked the most when we show a live snake. Can you guess it?

Yup, it's the 'bite question' in one form or another: *Does it bite? Will it bite? Why isn't it biting?* Indeed, some seem incredulous that the snake-in-hand is not, as if bites go with snakes as automatically as jelly goes with peanut butter.

The reality: A snake is no more likely to bite than any other animal. After over thirty years of keeping a variety of state-native snakes for education, we can unequivocally state that a snake unafraid of people is among the most gentle creatures you will ever encounter. Conversely, a wild snake may bite for the same reason any non-snake species would – because it is feeling threatened by a large mammal's advance. To put it into perspective considering our more benign regard toward other backyard wildlife...

Many times over the years a chickadee has made a miscalculation and flown through the open door and into our nature center. It usually ends up fluttering against the window trying to find its way out. When I wrap a hand around it to take it out the door the little bird bites repeatedly at my flesh with its sharp little beak. I've rescued cardinals, titmice and nuthatches in similar circumstances and received the same treatment. It is clear with all of them, capable or not, that they intend to do their best to inflict pain in order to make the large mammal release them.

The bite from a mammal is more serious. Get your hands on a wild rabbit, chipmunk, or even a deer mouse and you will incur a wound far worse than that of any Michigan snake (except a Massasauga Rattlesnake - the only venomous one here). Of course, these animals are physiologically equipped to elude you; a snake, not nearly as much. Thus, it is easier to get close to a wild snake and, if inclined, to reach for it whereby it may be induced to defend itself.

Of all the wild snakes Carol and I have encountered through our lives we have yet to encounter one that we would label 'aggressive.' Yet, through countless snake stories relayed to us over decades in this field we're ever surprised at how often the word pops up. We hear the details and are then inclined to correct the choice of words. In nearly every case the snake responded to their advance - advertent or not - in a *defensive* manner.

Naturally, when someone relays a story and uses the word 'aggressive,' it induces in the recipient some degree of negative feelings toward the snake; still one more means with which people, young and old, can become inculcated to disliking them. Like the above-mentioned feathery/furry backyard denizens, snakes are concerned about merely staying alive and will gladly get out of any large mammal's way if given a chance.



An Eastern Hognose that flattens and hisses when you approach is acting defensively. It is 'all bluff and no bite.'

They may be predators, but interestingly and surprisingly to many, snakes are wholly incapable of killing prey with their teeth. I lead into this discussion by highlighting the three basic methods by which all snakes in the world secure their prey.



A Black Ratsnake constricts a Deer Mouse.

By far, the least common method generates the most discussion – envenomation. Of Michigan's seventeen snake species we have only one that is venomous, the above mentioned Eastern Massasauga Rattlesnake. The specialized hollow fangs in a viper don't kill the prey, of course; the venom being injected through them does.

Constriction is the second method by which snakes secure prey. It is more common than envenomation but far from representative of snakes in general. Only three Michigan species - the Black Ratsnake, Foxsnake and Eastern Milksnake - are true constrictors.

Overwhelmingly, the most common method by which snakes secure the prey can slangily be called ‘grab then hold on for the ride.’ Roughly seventy percent of species worldwide have no means by which to kill their prey; they simply swallow it alive.

In Michigan, thirteen out of seventeen species secure prey in this way. However, I find it quite telling that when the question is posed to an audience – adults or kids – *What are the three methods by which snakes secure their prey?* – they answer correctly with envenomation and constriction, but more often than not fail to come up with this third, but overwhelmingly most common means.

An arc of short but very sharp, recurved teeth on the snake’s upper and lower jaw fill the same role as the barb on a fish hook – to snag in the skin of the victim. The basic role of such simple dentition is merely to *grip* – not kill – the prey. The smaller the snake, the smaller the barb-teeth. Even the necessarily larger gripping teeth of the Black Ratsnake - Michigan’s largest – are only capable of holding a kicking, squirming, scratching, biting chipmunk for a second. This is all the time necessary for it to deploy its muscular coils. Indeed, a bite to the human hand with even these teeth produces no more than a skin wound.

Some research indicates that the saliva of a few common species which swallow prey alive contains chemical properties that serve to some degree to subdue the victim in their grip. In fact, we often notice that a frog fed to a gartersnake may initially struggle, but seems to settle down within a minute or so. The snake then stretches and ‘walks’ its mouth around it while it is still very much alive.

Whereas these chemicals can technically be classified as toxins, they appear to merely stun or anesthetize the small prey item and should be regarded as inconsequential were the snake to bite you. Surely, members of our family have been cumulatively bitten more than hundred times over decades, yet, none have suffered as much as an infection or any other lasting effect from the resultant skin wound.

In a presentation I parse facts from fiction while holding one of our impressively large six-foot ratsnakes so audience members can observe its calm demeanor. I or an assisting presenter will then walk with one among the audience for closer inspection, and even for optional touches and pets according to each individual’s comfort level.



The high-strung, sight-oriented Blue Racer acts and reacts strongly to movements around it.



A Northern Ribbonsnake swallows a frog alive.

After discussion specifically about the Black Ratsnake the presentation advances to other species, including choice informational nuggets that are important for everyone to know, such as...

The harmless minnow-eating Northern Watersnake should not be mistaken for a Water Moccasin – a venomous southern species, the range of which comes nowhere close to the Michigan border.

The Eastern Hognose is a stout-bodied, toad-eating snake that is quite literally all bluff and no bite. With this knowledge an observer can approach the wild subject and marvel at its ability to flatten out, rear up, inflate with air

and hiss quite loudly when feeling threatened... without feeling threatened themselves.

The Blue Racer is a large, especially high-strung, sight-oriented species that acts and reacts quickly to movements of small animals, like, frogs, mice, small snakes, small birds, crickets (to eat them by the grab-and-hold method) and of large mammals (to flee from them). Although its sudden movements can be intimidating to some, it is of no danger to anything bigger than the above-mentioned creatures.

At the presentation's conclusion, students are given about ten minutes to freely mingle while handling and passing a half dozen or so species of native snakes among them. Most are the very species they are likely to encounter in the wild in their area - but now with a fresh and empowered perspective.

After we gather the snakes, I lead the students in reciting a pledge with right hand raised – to promise to never harm or kill a wild snake and to never allow anyone in their company to harm or kill one. As an 'I Took the Pledge' sticker is distributed to each, they are encouraged to share what they learned with family and friends.



How effective is the presentation? We will never know how most attitudes and actions will be altered, but tidbits of feedback do sprinkle in.

Several days after the AFFEW Earth Day event we received an email from a parent who attended with children, including a fourth grader who had seen the presentation in school the week before. A photo and short video were attached in which a large dark Hognose Snake, found while they were driving as it crossed the road, was rearing up in its typical defensive posture at their approach:

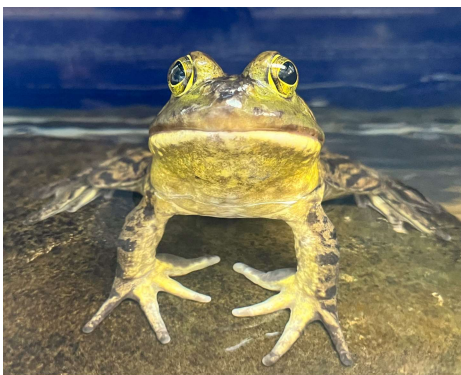
Your Snakes Alive presentation last Saturday in Ludington definitely kept this snake alive today! I would have aimed his way for sure.

Thank you to Julia Chambers and AFFEW for this special gift to Mason County's human *and* wild inhabitants.

https://www.masoncountypress.com/2023/04/16/learning-about-snakes/?fbclid=IwAR2wMNuq-voEEDR5G_zP6K0RIzyUkGfFbiDwa81PMG43bjk56qvo4rFY_FY

Contact us to arrange for the Michigan Snakes Alive experience in your community's schools, or make a special appointment here for your own tutorial on Michigan snakes. We offer the most benign setting you'll ever find to combat any consternation.

-Jim McGrath



Around the State in May

***Sunday, May 21: 10am-2pm. Michigan Turtles Exhibit;
E. Ingham Farmers Market, Williamston.***

***Wednesday, May 24: 6-7:30pm. Michigan Reptiles &
Amphibians Exhibit; Emerson Elementary, Ann
Arbor.***

Nature Discovery

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Visit Our Nature Center by Appointment

Suggested Minimum Donation:
\$5/person/hour

The sky's the limit for natural science learning here – with a Michigan twist! Individual adults, couples, individual families and small groups are welcome to schedule an intimate indoor/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 hands-on experiences here are unrivaled in any conventional zoo or nature center! We will bring snakes, turtles, frogs and salamanders out of tanks to interact with adults or students of any age or grade-level.

Identify and feed “the grand slam of Michigan turtles,” all ten species native to our state, as they swim in pools at your feet! Meet, pet and feed “Milberta”, our always hungry Red-footed tortoise.



Handle any or all of Michigan's three species of garter snakes while learning how to tell them apart, then watch them gobble up worms and live frogs. Hold or “wear” a gentle 6-foot Black Rat Snake – the largest in the state!

Many more snakes, turtles, frogs and salamanders to identify and feed. Take a guided walk around the yard and on our trails to identify birds, insects, trees, vines, and invasive plants.

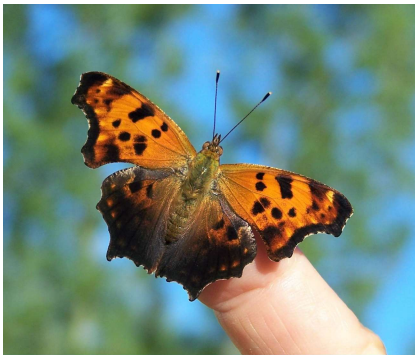
Contact us for more info or to make an appointment.

Summer Day Camp Updates

Field Birding Day Camp

June 19-22; 8am to 2pm; 5th gr & older

Enroll your student in this whirlwind 4-day adventure - the focus, to encounter as many birds as possible in a variety of locations and habitats. Each day we'll head in a different direction within an hour drive to see up to 90 bird species, many of which you can't find just anywhere. Birders will keep their own personal checklists. Bring a good pair of binoculars. We can lend you some, too. **FEE: \$325 (\$150 deposit).**



Other Day Camp Openings

A two-day 'mini' day camp is now scheduled for Monday and Tuesday, July 24 & 25, 9am to 3pm, for 7-9 year-old students. Currently there are two spaces remaining. COST: \$160/student (\$80 NR deposit). Contact us for more details or to reserve a spot.

Monday-Thursday, August 7-10, 9am to 3pm, for 9-12 year-old students. COST: \$300/student (\$150 NR deposit). Contact us for details or to reserve a spot.

We are grateful for all our supporters, including these generous donors this past month...



*Cedar Creek Veterinary Clinic * Carol Ducat * Jan Heminger
Gregg & Tiller Landick * Mads Norman * Chris Paige
Tip of the Mitt Watershed Council*

Recommended Reads

Bumblebees, Bates, Birds and More Added to Michigan's Threatened and Endangered List
<https://www.mlive.com/public-interest/2023/05/bumblebees-bats-birds-and-more-added-to-michigans-threatened-endangered-species-list.html>

Are Butterflies Wildlife? Depends Where You Live
https://www.nytimes.com/interactive/2023/03/04/climate/insects-wildlife-us.html?campaign_id=9&emc=edit_nn_20230306&instance_id=86975&nl=the-morning®i_id=97652655&segment_id=127013&te=1&user_id=e2b8dd8c9b543fb8c35d5dd30658067e

Private Jet Travel is Booming. And Shameful. And We're All Paying for It.
https://www.nytimes.com/2023/05/05/opinion/private-jet-travel-environment.html?action=click&algo=bandit-all-surfaces-variants-shadow-lda-unique-diversify-time-cutoff-30&alpha=0.05&block=trending_recirc&fallback=false&imp_id=890768804&impression_id=65f2b9ba-eb3a-11ed-a182-094508077dd3&index=5&pgtype=Article&pool=published-assets-db-4-ls®ion=footer&req_id=450025271&shadow_vec_sim=0.11556437787596825&surface=eos-most-popular-story&variant=0_pers_bandit_diversified

-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

Become a fan of *Nature Discovery* on Facebook!

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