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**“Road Maps”
to Natural Diversity**

“You should be a salesman for those books!”



Amassing a whole library of field guides is mandatory for anyone who is serious about understanding life and the environment. Every school classroom should have them!

I had just finished a library presentation to an audience comprised mostly of children and their parents. The comment was made by the librarian. The books to which she was referring? Nature field guides.

Over 28 years I’ve related to countless audiences - mostly kids – my discovery of field guides as a young child growing up in inner Chicago. They quickly became my favorite books.

I tag alongside one of my older sisters to the library, about a half mile walk from home. When we arrive I make a beeline to the science and nature shelves while she goes elsewhere to pursue her own preferred reading. When it is time to go, she knows where to find me. On this particular day I check-out and take home the little *Golden Guide to Reptiles & Amphibians of North America* and the *Peterson Field Guide to Birds of North America*. Upon returning home to a busy house with six other kids - five older than me, and none particularly interested in nature - I don’t want to be disturbed. I go to my bedroom, close the door and sprawl on the bed to immerse myself in the wonderful diversity of life that exists in a world that is, as yet, largely out of my grasp.



The crow-sized Pileated Woodpecker shows a lot of white in flight. Photo © Greg Smith

I marvel at the reproduced painting in the reptile guide of a Corn Snake neatly coiled around a freshly-caught mouse atop the wooden-planked stoop of a barnyard shed. A bucket stands next to it. A pitchfork is propped against the wall in the background. The image elicits an intense yearning to be there - to experience it firsthand: *Someday I’m going to see this in real life.* A turn of the page reveals a new snake, turtle, lizard, frog or salamander that prompts similar excitement and musing.

I peruse the pages of the bird guide replete with illustrations and text of many hundreds of species exhibiting an array of sizes, shapes and colors. Then, my attention settles on one particularly eye-popping illustration – a majestic Pileated Woodpecker. With

eyes boring into the image I allow myself to be swept away from the bland cityscape of sparrows, starlings and pigeons, instantly teleported beneath the canopy of a utopian deciduous forest. I don't have to wait long for the inevitable. The words printed in the field guide to describe its call - *wick-wick-wick-wick-wick...* - suddenly echo over my fantasy forest. The huge woodpecker comes into view, its distinctive, black-and-white wings beating in smooth, undulating fashion. It abruptly drops through the canopy and zigzags between the massive trunks toward me. Appropriately oblivious to my presence, it swoops upward, clings in perfect view to the vertical surface of the closest trunk, displaying its bright red crest plus every other aspect of its brilliance *exactly* as shown in the guide.

Only years later looking back from a grown perspective do I realize that, as a child, I had been anticipating – even *planning* the course of my life as I immersed myself head-first into the content of those field guide pages.

While presenting to audiences of any age I often refer to a page in a field guide. It may be an identifying mark on an illustration, like the transverse black line that cuts across the radiating black veins on the hind wing of the Viceroy Butterfly to differentiate it from the Monarch; a description of some idiosyncratic behavior, like the tail-pumping that identifies an otherwise nondescript Eastern Phoebe when perched; or the range map of the Mink Frog, a Canadian species whose southern limit reaches the U.P. but no further south. A warming climate may at least partially explain the erosion of once stable populations here.



If becoming aware of the myriad components of our naturally-diverse surroundings is the means by which any person of any age can develop a deep personal connection to the environment, field guides are the road maps to get you there. But wait...

Like the decline in usage of paper road maps in the age of GPS and mapping apps, are printed field guides becoming obsolete? The accessibility of such information via the internet has immeasurably supplemented, if not, replaced information found in printed guides.

For instance, the iBird app is superior to a printed guide in a number of ways. It is able to offer a wider range of photos for each species than a printed guide, which is forced to limit content because of the size restraints of the physical page. The app also provides instant access to audio recordings of the bird in question – a critical aspect of bird identification in the field.

Interactive sites, like www.bugguide.net not only help you systematically navigate through thousands of archived insect and invertebrate photos. Experts are at the ready to help you identify the mini-creature in a photo you submit.

Despite technological evolution, basic, field guide-type information in any form is invaluable in aiding a curious individual's quest to recognize and appreciate natural diversity. However, again, like navigating a road trip there is a means, better yet, to find your way around than relying on a road map, a mapping app, or GPS: having a person next to you who knows how to get there! Same goes for the "road maps" to natural diversity. Having an accomplished birder, bugger or botanist in your company saves you the trouble and time of having to access and wade through the appropriate book, app or website when encountering an unfamiliar bird, beetle or buttercup. The human one is, by far, the most efficient field guide of all. That's where we come in!

Want to get to know and understand the diverse insect life around your yard, as opposed to pesticide-bombing it indiscriminately? Watch for our Sunday programs, like *Finding & Rearing Giant Silk Moths*

in June. We'll set you up to raise the larvae of some of the largest moths on the continent over the summer. The need to understand not just the life cycle of the moths, but of their entire ecology comes into play out of necessity if you are to keep them alive. Tree identification and predatory insect identification, for two.



You can watch a Northern Ribbon Snake down a Wood Frog at our nature center.

Want to get to know some of the nearly 400 species of birds that can be found in the state? Watch for one of our Sunday programs on topics like Michigan owls, hawks & eagles, winter birds, making a winter bird-feeding station (this month!), cavity-nesting birds, and more. Enroll for a day-long or multiple-day guided birding trip (We're planning a weekend winter birding trip to the U.P. for adults in mid-January.).

Want to get to know your Michigan snakes, turtles, frogs and salamanders? There may be no better place in the state to visit than Nature Discovery's huge zoo of them. Here's how we make the experience superior to what you get when visiting a public zoo: A staff person is at your side to help you identify individuals, answer any questions on the spot, and even turn your encounter into an interactive one by feeding the animal in front of you, taking it out of its tank for closer inspection, or allowing you to personally handle it. As a bonus - as we say in our promotion - photo ops galore!

Finally, you can get your children immersed in nature through regular weekly lessons where we teach. Contact Montessori Children's House in Lansing, Stepping Stones Montessori in East Lansing or Okemos Nursery School for more information. The school staff would be happy to relate the impact these lessons have on the children, and the respect for a healthy environment that blossoms as a result.

- Jim McGrath



The state-threatened Sharp-tailed Grouse is nearly automatic south of The Soo. Photo © Barb Meining

Join Our Guided UP Winter Birding Trip January 13-16

Winter birding in the Upper Peninsula is fantastic! See birds here that are rare or impossible to see near home. These include: the state-threatened Sharp-tailed Grouse, Evening and Pine Grosbeak, Northern Shrike, Gray Jay, Boreal Chickadee, Bohemian Waxwing, Black-backed Woodpecker, Rough-legged Hawk and Snowy Owl. There is also potential for Gyrfalcon, Great Gray Owl and Northern Hawk-owl, plus unexpected surprises!

We'll drive up Friday afternoon while making a few brief birding stops along the way. We will spend the first night near St. Ignace then bird extensively through the day Saturday south of The Soo. Hulbert Bog, Whitefish Point and Taquamenon Falls round out the weekend. Concerned about the cold? Don't be. The majority of time is spent within or near the warmth of the van. Cushy winter car-birding at its best! We'll depart around noon on Friday and return by early Monday evening.

FEE: \$400 (\$200 non-refundable deposit), includes all transportation from Nature Discovery and three nights lodging. Enrollment maximum, 5 participants. Contact us to reserve your spot!

***Making the Ultimate
Winter
Bird Feeding
Station
for Maximum Birds
& Enjoyment
Sunday, December 11
1 to 5pm; \$5/person***



What's the secret to attracting the greatest abundance and variety of birds to the feeders outside your winter window? Think of them as customers at a "bird restaurant" – with you as the manager! When you consider the preferred menu of your potential guests in addition to the most comfortable "seating" and overall ambiance, you'll turn your feeding station into the squawk of the town.



At 2pm sit-in on this lively 90-minute Powerpoint presentation traversing all aspects of attracting winter birds through the correct management of your own upscale avian eatery. Does offering a mix of seeds attract the most birds? Not necessarily... How does hanging only one style of feeder limit the number of visiting birds? Participants will view beautiful color images while learning the preferences and behaviors of familiar year-round backyard residents as well as a host of songbirds from the far north that would like to adopt your yard as their winter getaway. Seeds, feeders and other considerations discussed in the presentation will be available for inspection during and after the program.

Come early or stay late to visit, and interact with our huge zoo of Michigan reptiles & amphibians. Take in the action at bird feeders right outside our windows, too. Knowledgeable staff is on hand throughout the day to help visitors of all ages make the most of their visit.

Catch Jim on Coffee Break Dec 15

Jim is scheduled to appear on Thursday, December 15 at 9:30am, discussing the annual Christmas Bird Count and other wildlife topics. The show airs weekdays from 9 to 10am on 89.7 FM. Listen live online at lcc.edu/radio/onair/ or watch it live (or later in the day at 6pm) online at lcc.edu/tv/watch.



Holiday Break Day Camps

Monday & Tuesday, December 19-20; 9am-3pm

Recommended for students, K & older. Enroll for either or both days of hands-on Michigan nature. Participants will interact with over 100 animals within our Michigan reptiles & amphibians zoo! Identify, handle and feed many of our 11 species of snakes, 10 species of turtles, 9 species of frogs and 8 species of salamanders. We'll watch and identify birds at our busy feeders and check them off on personal checklists. Lots of time outside and on the trails, as well! A photo of your student in action will be emailed to you. Hot lunch, hot chocolate and snacks provided.

\$55/student/day. Advance enrollment required.



Holiday Birding Day Camp

Wednesday, December 21 8:30am to 3:30pm

For 4th grade students and older. Join Jim for a whirlwind day of seeing how many bird species we encounter in a 7-hour span. We'll drive to Maple River State Game Area, then visit a number of natural areas around Lansing. Bald eagles, peregrine falcons, shrikes, snow buntings and many, many more. Each student will be provided with a personal Michigan Birds checklist to keep a running tally species through the day. At day's end, arrange for your student to be dropped right at your door! Pack a bag lunch, binoculars and warm clothes. Limited to 5. COST: \$65/student. Contact us to register.



Give a GIFT CERTIFICATE

***“VISIT NATURE DISCOVERY” GIFT CERTIFICATE:
For adults, families. Base price is \$25, or only
\$5/person/hr. Upon payment we will email you a
certificate to print and present to the recipient. Gift
certificates also available for Owling Nights, Birthday
Parties and other ND functions. Contact us for more
information!***



Michigan Owls & Owling

Monday, December 26; 7-9pm

The evening begins with a Powerpoint presentation over hot beverages and a snack. We'll present *Michigan Owls Up Close*, featuring all 10 species found in the state, covering identification, vocalizations, behavior and ecology of various species. Weather-permitting, we will then go out and attempt to "call one in" with audio recordings. Dress warmly, and don't forget your binoculars and camera! Advance registration required. Maximum 10 participants, so sign up

early. Not recommended for small children. Fee: \$12/person. Do you have a small group of family/friends that would like to get together for an owling night? Contact us to make your own special appointment!

Our Stand Against a Climate Denying President

We will never deny any cause that aligns with our mission statement, "...dedicated to enhancing awareness and sensitivity toward Michigan's diverse living resources through natural science education." Additionally, therefore, we would be hypocritical to condone any statements or actions - local, national or global - that threaten or undermine the deepest values from which our life endeavor has grown: to strive for a healthy and sustainable planet to all life now and into future generations.

Among too many personal and professional transgressions to keep track of, President-elect Donald Trump - winning on a simple platform of demagoguery - has always been a vocal-stalwart for the corporate, climate change-denying machine that has bought its way into our government. You get what you vote for. One of his very first orders of business? To appoint a fellow climate change denier, Myron Ebell, to head (*read* "dismantle") the federal scientific agency most responsible for keeping big business from running rough-shod over your land, air and water in the name of Profit. http://www.nytimes.com/2016/11/12/science/myron-ebell-trump-epa.html?_r=0

The November endorsement (only their third in 160 years) by the editors of the Atlantic Monthly, is thoughtful, accurate, and haunting in what has now become reality.

<http://www.theatlantic.com/magazine/archive/2016/11/the-case-for-hillary-clinton-and-against-donald-trump/501161/>

Bernie Sanders was a guest on Conan O'Brien last week. The only candidate with a *legitimate* plan to "drain the swamp" - through campaign finance reform - mentions the issue of addressing climate change five times in the brief interview. Here is a link to the show: <http://teamcoco.com/video/full-episode-tues-11-29-senator-bernie-sanders-pete-holmes-musical-guests-shovels-rope>

Scroll forward to 9:20 for the start of this segment.

-JM

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Concerned Scientists**
Science for a healthy planet and safer world

350.org

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