

The Heralds of Spring

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I know spring has finally arrived each year when I start hearing the peepers. Late April evenings have an endless, ethereal sort of potential to them: in the crisp, wet air I can smell the promise of summer, with its blue skies that morph into pink sunsets, lush green hay fields, shady emerald forests, and orchards bursting with ripe summer fruit. As the days grow steadily longer though May, it feels as if I could stand on the precipice of summer forever. All the while I delight in the near constant soundtrack to the spring, the chorus of spring peepers.

At only 1-1.5 inches in length, the spring peeper is Michigan's smallest frog species. Peepers breed between April and early June, when they gather in reedy marshes or piles of leaf litter surrounding ponds to shout their melodic "PEEP PEEP PEEP" mating calls. One little peeper sounds like hardly more than a squeak, but in the neighborhood where I grew up, practically built upon a marsh, the sound at the height of peeper season is deafening. Once, during the first spring of the pandemic, my mom and I went biking on the Border to Border trail near our house and ended up on a boardwalk through a dense cattail stand. There, the peepers were so abundant and loud that we couldn't hear each other talking over the sound. That moment, both of us brimming with laughter that the other couldn't hear, is one of the brightest moments I can recall from the months of lockdown and social distancing.

Peepers are indicators of spring, natural thermometers which announce rising temperatures with their voices, bringing hope to those who have endured another year's worth of weary gray skies and bare stick branches. Peepers do more than boost morale though: their presence or absence can indicate general trends in water contamination and ecosystem health.

Globally, amphibians (a category that includes frogs, toads, salamanders, and snakelike creatures called caecilians which lay their eggs in water and experience an aquatic larval phase before maturing into terrestrial adults) are considered indicator species, organisms whose

presence, absence, or abundance reflects a specific environmental condition. Amphibians are unique from other animals in that they absorb moisture and chemicals through their skin rather than just their lungs. Some amphibians, like salamanders, have lost lungs entirely through evolution and only “breathe” through their skin. As a consequence of this delicate skin and tendency to absorb chemicals directly into the bloodstream from the surfaces they come in contact with, amphibians are typically the first to suffer adverse effects when habitats become contaminated with chemicals like pesticides and road salt. A decline in amphibian populations is a warning sign that something is very wrong in an ecosystem.

Despite the constant presence of peepers in my life, I’m a little embarrassed to admit that I’ve never actually seen one of the tiny, nocturnal, brownish gray frogs - I’ve only ever heard them. Peepers, as with most wild animals, don’t particularly want to be found. A singular frog will go silent the moment it feels the vibrations of approaching footsteps. Though I caught frogs with my bare hands all the time growing up, I’ve learned that it’s not very safe for wild amphibians to come into contact with the skin oils and cosmetic products on human hands. Luckily, frogs like the spring peepers have distinctive calls that can be used to easily and noninvasively identify who is calling where. For as long as I can remember, my Grandma volunteered with the Friends of the Rouge conservation group focused on protecting the Rouge River watershed (which stretches across Wayne, Washtenaw, and Oakland counties). Volunteer listeners are trained to distinguish the breeding calls of the eight species within the watershed and simply have to go out on warm spring nights and record the different calls they heard. Even before I knew what any of the frog species looked like, my grandma taught me to identify them: the chorus frogs make a sound like running your finger across the end of a fine-toothed plastic comb. Wood frog calls sound like a chicken clucking. Green Frogs have a call that sounds like

plucking a rubber band. American Bullfrogs emit a low-pitched drone that some say sounds like a cow mooing - though I think it sounds more like the hum of a propeller.

I can't hear the frogs from my apartment on campus, making listening for them all the more special as each year of college. As I've gotten older, the frogs have become more than an indicator of springtime or ecosystem health to me: they are cherished treasures, making me feel giddy all throughout my chest and belly the first few times each year that I'm surrounded by their sound on a visit home or a trip out to the horse barn where I take lessons. When I hear the spring peepers from the car, I have to roll down the windows and slow down. I beam at the symphony.

Frogs, for all their ecological sensitivity, really, really liked the Scio Township subdivision I grew up in. To be fair, the frogs were probably there first. But I always found it a little surprising that the asphalt and the golf course and the lawnmowers and the dogs never seemed to deter them. Though the nearest access to the marsh was at least a quarter mile down the road, we would throw open the kitchen window on spring evenings and hear the frogs as clearly as if they were just out in the backyard.

But spring peepers were not the only frogs. I can only guess at their species now, though they were likely Green Frogs - as my siblings and neighborhood playmates and I didn't have any use for scientific names. Instead, there were the "ditch frogs," green or gold with big prominent eardrums that lounged in the drainage ditches at the bottom of sloped lawns and culvert pipes that directed water under driveways when they filled up with standing water at the beginning of each summer. When our yellow labrador was still a puppy, she'd drag us to those culverts on each street corner to nose around for frogs. We'd sometimes let her send them splashing away,

but usually we sympathized with the frogs and pulled the dog back before she could scare them too far away.

There were the “tiny frogs,” probaby American Toad toadlets (toads which have recently metamorphosed from a tadpole) that practically carpeted our lawns for a week each spring. We’d pay careful attention come April, and when the toadlets descended, we’d run around trying to scoop them all up into buckets to “protect” them. I remember begging my dad not to mow the lawn for fear that he might run over a toadlet.

Then there were the tree frogs. These were the most elusive, and I still haven't seen one for probably five years. But sometimes, on cloudy, misty May or June mornings, they’d turn up on the screen of the big kitchen windows overlooking the backyard. They were gray tree frogs - whether they were Eastern or Cope’s are impossible for me to know now. Maybe it would still be - they are pretty much impossible to tell apart by appearance, as both appear in variable shades of green to brown to gray, and the only difference between species are their call and the fact that Eastern Gray Tree Frogs have double the number of chromosomes. Coming downstairs in the morning and having my mom or dad tell me there was a tree frog sticking to the window was basically like walking up to learn there was a fairy sitting outside. The quiet, still, lumpy blob of their bodies nearly melted into the color of the house, the only giveaway that a frog was present was the tiny, round, perfect toe pads..

My parents were certainly aware of these frogs, especially my fellow animal-loving mom. I always imagined the frogs were of as much importance to them as to my siblings and I, but now I’m guessing their lives did not revolve around the frogs as much as mine did. I wonder how many people in that subdivision don’t know that there are any frogs living in their backyards, let alone at least five different species. I wonder if everyone recognizes that the

rhythmic, droning noises echoing through their backyards are frog calls. I wonder if the neighborhood kids of today are still out there keeping tabs on the frogs.

Is a thriving population of native frogs important to the function of a neighborhood? Perhaps not immediately. But consider the billions of insects frogs consume each year (including the perpetual suburban pestilence that is mosquitos). More importantly, if there are healthy frogs for kids to play with, it also means that the rivers and puddles in drainage ditches, the soils and plants in backyard gardens, the ponds and marshes on the golf course are clean and safe. I can't remember a year that my grandma didn't come over for dinner after some spring recital of my siblings' or mine and note the peepers calling, the healthy ecosystem they boasted of.

Hearing a chorus of peepers in the spring warms me to my very core and reminds me of the people I love. I sometimes report the frog calls to my Grandma, I think as my way of letting her know that I still remember what she taught me, and that hearing the frogs still made me think of her. I cherish those lessons in careful observation, some the first times I experienced the delight of understanding how the world around me works. I don't know whether I would've gone into science without that encouragement, but I'm pretty sure I wouldn't have become so curious about frogs as to become my family's "resident expert on all things amphibian."

I stand on the precipice of two springs as the peepers sing this year: one literal as the trees bloom and the temperature warms, and one metaphorical as I finish undergrad and strike off towards a lifetime of careful observation in a scientific research career.

When I text her about my latest frog observations, my grandma simply responds with "You go girl. These are the best signs of spring that show the universe is still working but most people are not paying attention."

