

A TALE OF TWO LAKES

Lost Lake and Shannen Lake are only a few miles apart in southernmost Vilas County, in the town of St. Germaine. Though engulfed by the American Legion State Forest, both lakes are minutes from a bubble of development along State Highway 70 featuring Wisconsin Dells-style go-kart racing and miniature golf. Lost Lake is developed 360 degrees. Shannen Lake is in conservancy, surrounded only by trails and accessible via a single dirt road.

They are worlds apart, and the best place to see this is where water meets land and nature transacts some of her messiest and most important business. Biologists define the shoreland zone as running from about 500 feet inland out to a depth of about seven feet. Here, trees topple into the water while aquatic plants colonize the shallows. The prevailing winds often drive debris against the shore, where it decays into a spongy mat. All in all, it's a delightful place to be a critter, and this shoreland zone is a critical incubator for all manner of aquatic insects, fish, birds, amphibians and reptiles.

Not so on Lost Lake. Perhaps a third of the shoreline is traditional lawn, prime habitat for tacky lawn ornaments and not much else. My faux wildlife sightings for the morning: one duck on a stick, with legs that spin when the wind blows; a 10-point buck posing as a weather vane; garish pinwheel flowers; a wolf flag; another bird on a stick that looks like a roadrunner; and other plaster and plastic creatures like sea gulls, a bear, deer, and a family of loons. All of this (and more) inhabited only three lots.

This is the North Woods as caricature, but there is much more at stake than aesthetics because the changes don't stop at the lawn. Applications of fertilizer and pesticides can run into the lakes, contaminating the water. A single pound of phosphorous fertilizer can spawn 500 pounds of plant growth in the lake. Construction site erosion can cause the same problem, especially when a good thunderstorm washes out a steep site. And once construction is completed, water can run off of roofs and driveways with enough force that it goes straight to the lake without being filtered through the shoreland buffer. Let's not even think about the havoc wrought by septic failure. The Department of Natural Resources (DNR) is currently beginning a two-year research project to assess the extent of lake quality problems posed by development.

When lakes change, wildlife can also be hit hard. According to a DNR study, one in 10 of the undeveloped or sparsely developed lake in Wisconsin harbor threatened or endangered species. Eighty percent of these species spend all or part of their life cycle in the shoreland zone.

Even commonplace species are being crowded out. Mike Meyer is a DNR researcher and North Woods native who studies the effects of toxic metals and chemicals on wildlife populations, using the relatively pollution-free northern animals for a frame of reference. "I couldn't help but notice that habitat loss was potentially a much more dire threat than chemical pollution. I worked on about 150 lakes in four counties and I have the perspective of having grown up here," says Meyer. "I've seen dramatic changes. It wasn't really a discovery; it's very obvious."

Working with a biologist from Ashland College, Meyer set out to put some science behind his casual observation. They focused on the green frog, which is found in nearly all of the aquatic systems in the North Woods and prefers lake shores as breeding territories. It's a large frog, and you might know it as the loose banjo string in the summer's chorus.

The relationship was simple and dramatic: As shoreline dwelling density increased, green frogs disappeared. "They like a lot of fallen debris and stuff to hide in. Not surprisingly, as shoreline is developed and put into lawn, the amount of available habitat declines," says Meyer.

“Without the habitat, there are fewer breeding sites and I’m sure their predation rates are higher.” Matching the state’s minimal shoreland zoning requirements to his discovery produces a disturbing coda: If every lake were developed to its legal limit, the green frog would effectively be eliminated from Wisconsin lakes.

The story was a little more complex for songbirds. Developed lakes tend to have as many birds as undeveloped lakes, but the cast is different. Where human density is higher, common suburban birds such as blue jays, crows, goldfinches and grackles crowd out the less populous migratory songbirds such as the warbler, thrush, vireo and ovenbird.

Evidence that development affects eagles and loons, two signature species of the North, is harder to come by. Eagles are rebounding from historic lows, so while they don’t seek out crowds, it’s difficult to guess how they’ll adapt to more development in the long run.

Loons are even trickier. Mercury exposure in loons in northern Wisconsin is quite high, especially on lakes where acidic water chemistry releases the mercury into the food chain. Parsing this toxic impact and that from shoreline development isn’t easy. (There is also ongoing debate about how much of this mercury is naturally occurring and how much comes from human sources such as incinerators and coal-fired generators.) Preliminary data suggest that loons can accommodate shoreline development. On some lakes where the public is very conscientious, loons nest and raise young and can also grow accustomed to boating activity and other human disturbance – up to a point. Still, they steer clear of populous lakes around Minoqua, St. Germaine and Eagle River despite an abundance of food. Meyer doesn’t get it, so his research continues. “Before I give it an all-clear, I want to make sure that we’ve evaluated their success very closely.”

Data may be what science requires, but science seems somehow inadequate to fully explain the lusty, loopy undulating loon. So uncanny is their call that it’s not uncommon to ascribe a keen intelligence to these birds. Nor is it difficult to believe that they may vote with their wings. After an hour of comparative desolation of wildlife on Lost Lake, I move over to Shannen Lake and am immediately greeted by two young loons.

As I troll the shoreline, the difference is remarkable. The only sign of development here is my parked truck, and it seems sorely out of place. Here the seam between land and water is more diffuse, cluttered with the scaffolding of life. As a bumblebee patrols the creeping juniper, I hear chickadees as more birds dart through the underbrush. The loons are following me, perhaps obliging my desire to visit but more likely keeping an eye on me. Hundreds of small fish flash along the sandy bottom.

An eagle pirouettes into a large pine. Moving quietly toward it, I surprise a few turtles sunning themselves on a nesting platform installed for the loons. Suddenly, a mountain biker flushes the eagle before my eyes, no more than 50 feet away. As it climbs away, it is joined by another, then two more appear flying in tight formation, a breathless, swooning synergy.

In this moment, I hear the singing wilderness of North Woods evocateur and Wisconsin native Sigurd Olson: “Should we actually glimpse the ancient glory or hear the singing wilderness, cities and their confusion become places of quiet, speed and turmoil are slowed to the pace of the seasons and tensions are replaced with calm.”