



Late Summer / Early Fall 2023

UPEnvironment

"A TURNING POINT": WHAT'S NEXT FOR UPEC

Thoughts from our new president, Evan Zimmermann

2023 has been a turning point for UPEC. We returned to live events after two years of virtual programming with Celebrate the UP!, and I'm honored to have taken the position as UPEC president after many years of working with Horst Schmidt, who continues to be a top contributor to UPEC in every way. Horst and I and the rest of the board will continue to move forward with UPEC's mission to "preserve and enhance the unique cultural and natural resources of the Upper Peninsula."

A few years ago, we renovated our strategic priorities to focus on envisioning a resilient future, protected lands, energy, and sustaining human and ecosystem health. This year, we've added a special focus on energy toward the process of electrification. As infrastructure gradually moves away from fossil fuels, it's more critical than ever that we have an informed public able to make the right decisions to build our future. We plan to introduce even more educational content and live events in the coming year to hold public conversations with experts promoting a science-based approach to sustainable development.

To bring UPEC into the next generation, we'll focus more than ever on outreach and growth. We've thrived through collaborations with local schools, conservancies, and environmental advocates, as well as city, state, and tribal governmental organizations. You can expect even stronger partnerships and a wider variety of co-hosted events in the next year as we build the connections that keep us strong and effective.

This year, we introduced our first internally produced documentary content from board member Dave Aho. As media continues toward a video focus, we'll work with local talent to continue to produce more content as well as opening our archives for relevant content for ongoing critical issues. UPEC has decades of environmental insights gathered from a proactive membership that are more relevant than ever to the health of the UP environment.

To execute this agenda, we'll need a new generation of volunteers. One of my favorite things about UPEC is that we have a board and membership that works independently and brings together a diverse set of skills and interests. Each of us is stronger when we collaborate and lean on each other's expertise. I invite anyone who cares about their home to reach out to me about opportunities for volunteering or collaborating with us on whatever environmental projects you might be pursuing on your own. If you don't already have one, just ask how you can get involved. Whether you're a citizen scientist, an educator, a social media expert, or just a lover of nature, UPEC is the place for anyone who cares about our unique culture and natural resources to enhance each other's reach and capabilities, and I can't wait to see the resilient future we build together.

The best beginning is to learn about each other. Here are a few things about me. I fulfilled my life goal to move to the UP in 2010. I first came here for skiing, and I was instantly enamored by the natural environment. I've been a



A new focus of UPEC is the transition away from fossil fuels.

DEB NYSTROM / WIKIMEDIA

lifelong camper and hiker, and the UP is my favorite place to explore. If I had to name one environmental issue I'm most passionate about, it would be to protect our water. The Great Lakes are unique in the world, and we have countless examples of how lakes have been destroyed by negligence that we can't allow to happen here. Because of our unique northern climate and abundant natural resources, the UP has become a target for many climate refugees. If someone was going to move here, I would want them to know that this isn't just a place to escape alone into the woods but a place to find strong communities who care about their homes and need the support of more people passionate about the preservation of the land. For my day job, I work in IT for the Marquette Food Co-op. We're heavily involved in promoting local agriculture and sustainability, and I believe that the spirit of cooperatives is a perfect fit for the UP. Cooperative communities pool their talents and resources just like UPEC itself, and this model could work

in all sorts of areas where people have a vision but need each other's help to accomplish their goals. Co-ops are independent in spirit but interdependent in execution, and that's a powerful combination.

I also love poetry, and I'd like to close by sharing a bit of short perfection from the incomparable Keith Taylor, which to me captures some of the spirit of the UP.

Bushwhacking

Scratches on both arms
and a gouge across my head

I feel better
than I've felt in months!

Write to Evan at evan.zimmermann@upenvironment.org.

VLB: ANOTHER NON-LOCAL BEETLE IS HERE

Steve Garske

Viburnum leaf beetle larvae feed on European highbush cranberry leaves. PAUL WESTON, BUGWOOD.ORG

As many of you know, the **emerald ash borer is established and spreading across the northwoods, though (good news) more slowly than originally expected.** This is probably due to healthy populations of woodpeckers and other predators in the region, combined with a colder climate than further south. But non-local beings just keep coming, often with human assistance.

While the emerald ash borer has been eating its way through

the region's ash trees, another non-local being has been quietly spreading into the northwoods, munching highbush cranberries and other viburnum shrub species as it goes. The viburnum leaf beetle (scientific name *Pyrrhalta viburni*, or VLB for short) is an inconspicuous little brown insect that's barely a quarter of an inch (5–6 mm) long. The VLB was first reported in North America from Nova Scotia, Canada, in 1924, though breeding populations weren't reported until the 1970s. The first US report was in 1974 from Maine.

Since then, the VLB has spread across the northeastern US and adjacent Canada, reaching southern lower Michigan by 2003 and southern Wisconsin by 2009, where it's now well-established. In 2019, the VLB was reported from Hurley, Wisconsin, on Michigan's western border. Then last summer this writer was collecting leaves from a large European highbush cranberry (*Viburnum opulus*) population just east of Lake Gogebic in western Upper Michigan, for a University of Minnesota research project. The leaves of nearly all the highbush cranberry shrubs were riddled with small holes, revealing another VLB infestation.

With highly destructive non-local forest beings such as the emerald ash borer and Asian jumping worms spreading across the region, the VLB has moved into the Ceded Territory mostly unnoticed. But it can do a lot of damage to highbush cranberries and other viburnums. The small, caterpillar-like larva overwinter as eggs and usually hatch out in early to mid-May, when the weather starts to warm up. They chew lots of small holes in the leaves, sometimes damaging them so badly that only the veins are left. Around mid-June they crawl down to the ground and pupate just below the soil surface, emerging as adults in late June or early July.

The beetles spend the rest of the summer eating larger, oblong holes in the remaining leaves. The females chew pits in the twigs and lay several eggs in each pit, which they cover with bits of chewed wood, held together with a glue-like substance. Each female can produce around 500 eggs by the end of summer. The adults are good fliers, and often migrate to plants that haven't been infested yet.

In its native Europe, the VLB's favorite host is European highbush cranberry. (A popular horticultural form of this plant is called "snowball bush.") It also attacks a number of native viburnums, including downy arrowwood (Ojibwe wabanwe'ak; *Viburnum rafinesquianum*), southern arrowwood (*V. dentatum*), mapleleaf viburnum (aniib; *V.*

acerifolium), nannyberry (aditeminagaanwanzh; *V. lentago*), and the native highbush cranberry (aniibiminagaawashk; *V. trilobum*). Damage is usually heaviest on the lower leaves, and shaded plants are usually hit more heavily than those growing in full sun. This damage weakens the plants, and individuals that are repeatedly defoliated often die within two or three years.

As it spreads across North America, the VLB has the potential to seriously impact highbush cranberries and other viburnums. In a 2017 study in Pennsylvania, a severe drop in the abundance of southern arrowwood caused by the VLB was linked to a drop in insect and spider abundance, resulting in decreased fitness of migrating birds. Besides being an important source of food for a variety of wildlife, native highbush cranberries are an important traditional food, and make a delicious jelly.

Researchers are looking into how the European highbush cranberry coexists with the VLB in its native range. They're also looking for natural enemies of the VLB that could be introduced as biocontrols. Meanwhile, VLB populations can be locally suppressed by removing twigs with VLB egg masses and destroying them.



Viburnum leaf beetle egg masses on a European highbush cranberry twig. S. GARSKE



A viburnum leaf beetle adult. S. GARSKE

Ed. note: This article, which foregrounds an Ojibwe perspective on invasive species, is reprinted with permission from *Mazina'igan*, a publication of the Great Lakes Indian Fish & Wildlife Commission. The term "Ceded Territory" (used below) refers to the traditional territories of Indigenous people in the Upper Great Lakes that were ceded to the US through 19th-century treaties.

UPEC ENVIRONMENTAL EDUCATION GRANTS EMPOWER, INSPIRE STUDENTS ACROSS THE PENINSULA



We believe that one of the most important things we can do as a grassroots organization is to support teachers who want to inspire awareness of and concern for the environment among their students.

With so much negative news out there about climate change, species extinctions, and other environmental problems, it is critically important to enable students with both knowledge and hands-on experience so that they realize they are not powerless and things aren't hopeless. UPEC's Environmental Education grants do just that.

The four grants we approved this year showcase the geographic reach of the program. North Central Elementary School in Hermansville (Delta County) received money to create a pollinator garden on their school grounds—an idea the students came up with after becoming concerned about endangerment of monarch butterflies. Through a local greenhouse, the school was able to buy a mixture of annual and perennial plants specifically intended to increase butterfly habitats. They even planned to hatch their own butterflies. Fifth-graders installed the pollinator garden, and will be joined by 4th graders to maintain the garden year after year.



▲ Pickford students in the field setting up and measuring their plots. [PICKFORD SCHOOLS](#)

The West Iron County schools put together funding from several sources, including a UPEC grant, to help them build a greenhouse so they can grow food for their students all year. Their five-year plan includes a hydroponics system that is starting this year, the greenhouse build, a big kitchen garden that will start in spring of 2024, and orchard and pollinator gardens going in around the school campus. They will be using the space for the entire school to learn science, math, art, food preparation, and sustainable agriculture practices.

The Arvon Township School in Baraga County used a UPEC grant to teach kids about the whole process of maple sugar making (and its history in the local area) as well as to create a school garden. There, the pupils learned how worms help compost the soil and make it ready for planting, how certain kinds of soils are better for plants, and how to mix the soil with different types of matter to help it be ready for planting. Students also learned how to transplant seedlings into larger starter containers using the soil they mixed, and how to mark garden rows with string, read seed packets, and measure the depth and spacing for plantings.

► Arvon Township students dig into the basics of plant growth—literally!
ARVON TOWNSHIP SCHOOL



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PINE MARTEN IN MICHIGAN

Bill Ziegler

MARTEN HISTORY IN MICHIGAN

American or pine marten (more commonly called pine marten) are native to Michigan but essentially disappeared during the extensive original logging period in the state in the late 1800s and early 1900s. Historical records indicate marten were found in both the Upper and Lower Peninsulas. Marten were once found as far south as Allegan County in the Lower Peninsula. The last confirmed sighting of marten in the Lower Peninsula was in 1911 near Lewiston. The trapping season for marten was reportedly shut down in Michigan in the 1920s, although by then it was apparently too late to keep marten from disappearing from Michigan (habitat loss was also to blame). By the



Pine marten moving on top of deeper snow. Pine marten are a member of the weasel family that disappeared from Michigan in the 1930s. Pine marten were reintroduced to northern Michigan by the Department of Natural Resources and more recently by both the DNR and the US Forest Service between 1955 and 1992. Marten have re-established their population, especially in the deeper snow habitats in the UP. One quick distinguishing mark on the pine marten is the lighter buff color neck patch. **MATT SCHRODERUS**

1930s, marten were thought to have been extirpated from the state except for a remnant population that persisted in the Huron Mountains in the Upper Peninsula. The last marten was observed in the Huron Mountains in 1939.

The first attempt to re-establish marten in Michigan was by the Michigan Department of Conservation in 1955. They were first reintroduced to the Porcupine Mountains Wilderness State Park. That area was picked due to good marten habitat of mature hemlock and extensive stands of large conifers mixed with hardwoods. A limited number of martens for reintroduction were obtained from Canadian sources. It became evident that a larger reintroduction effort would be necessary to successfully establish marten in Michigan. After finding a better source to live-trap marten in Ontario, a second effort was initiated in 1969, placing the marten on the Hiawatha National Forest. Follow up reintroductions were made by the Michigan Department of Natural Resources at the Huron Mountains (western Marquette County), the McCormick Tract (western Marquette County and Baraga County), and two locations in northern Iron County on the Ottawa National Forest. The source of these marten was Ontario's Algonquin Provincial Park. Wildlife personnel took measures to try to vary the "brood source" marten to try to avoid a very limited gene pool.

The most recent effort to expand the range of marten occurred in the UP through a cooperative effort between the Michigan DNR and US Forest Service. Marten were live-trapped in locations where they were well established relatively close to the Tahquamenon Unit of Hiawatha National Forest and then moved there. A similar relocation was conducted moving marten from Houghton County to Keweenaw County. These efforts were made because marten were found to not have expanded their range naturally.

LOWER PENINSULA MARTEN REINTRODUCTION

Reintroduction of marten continued in 1985 and 1986 in the northern Lower Peninsula. Marten were transferred from Ontario Game Preserves to the Pigeon River State



Pine marten are excellent tree climbers and often prey on squirrels in the trees or small rodents under the snow cover. Marten populations disappeared in northern Michigan following intense logging of older-age conifer and deciduous tree habitat and heavy trapping pressure. [MATT SCHRODERUS](#)

Forest, Pere Marquette State Forest, and Manistee National Forest. Some of the martens were fitted with radio collars to track their movement. The Michigan DNR would have liked to move a much larger number (200) of marten to viable habitat areas in the northern Lower Peninsula. Unfortunately, this was thwarted by pressure on the Ontario Ministry of Natural Resources from the public and trappers' groups criticizing the removal of that many martens from viable live-trapping locations in Ontario.

CURRENT STATUS OF MARTEN

The goal of any animal re-establishment program is to create a self-sustaining population. Cody Norton, Michigan DNR furbearer specialist, indicated that marten are re-established in many prime habitats in the UP. The DNR started collecting marten population trend data when limited trapping was permitted beginning in 2000. Norton said "trend indicators suggest the population has been relatively stable. There have been some short periods since 2000 where the population appeared to be declining, but indicators returned to typical levels with some changes in season length or bag limit." Regarding the current status of marten in the Lower Peninsula, Norton said, "Eighty-five marten were re-introduced to the northern Lower Peninsula (Pigeon River Country State Forest, Manistee National Forest, and Pere Marquette State Forest areas) from Ontario, Canada during 1985–86. The northern Lower Peninsula populations haven't grown or expanded

much since then, so sightings and incidental catches remain rare and there is no open season in the NLP” Norton went on to say that “we are currently initiating a new research project to develop abundance estimates for marten. Marten abundance was estimated for the Upper Peninsula during 2000–2007 using statistical population reconstruction. During that time, estimated abundance ranged from about 1,200 to 1,700 martens.”

MARTEN HABITAT

Wildlife studies report that the preferred marten habitat is large conifer (hemlock, white pine) and mixed-conifer and hardwood forests. Marten are often found in older-growth forests. Norton said, “marten harvest, which likely reflects distribution, is generally greater in the northern half of the Upper Peninsula than the southern half. The northern portions of the Upper Peninsula are associated with higher snowfall. Marten hunt small mammals in the subnivean zone (beneath the snow) throughout the winter and can stay on top of the snow relatively easily, which means these high snowfall areas serve as good winter habitat and in other areas have been demonstrated to provide a competitive advantage over fisher where their distributions overlap.”

MARTEN PREY

Marten are an opportunistic predator. Marten prey on small rodents like mice, squirrels, and occasionally birds, and also eat carrion. Marten have been observed during chases in trees with a favorite prey item, red squirrels.

MARTEN DESCRIPTION

A male marten is slightly larger than a female. Typical males weigh between 1 to 2.9 pounds. The marten is a member of the weasel (mustelid) family. They somewhat resemble their larger relative, the fisher. Marten have a lighter (buff) color throat patch which makes them look different from fisher, in addition to their smaller size.

MARTEN REPRODUCTION

Marten lives their lives as solitary animals other than mating or the rearing of young. Wildlife studies have found the average number of young in a litter is 3, with a range from 1 to 5. Breeding season is June to August. Marten are polygamous.

MARTEN BEHAVIOR

Marten have been observed to be quite agile and speedy tree climbers. They are quite solitary and mostly nocturnal. They mark scent trails from tree to tree with their strong scent glands. In spite of this, they are reported

to do most of their hunting on the ground. Most hunting occurs at dusk and dawn, when prey species are most active. Home range sizes vary considerably with habitat and prey densities. Population densities of 0.6 martens per square mile are common in good habitat. Norton said, “marten also use areas along waterways to travel and for young animals to disperse from natal home ranges. A focus of habitat management on state lands is retaining large, contiguous riparian travel corridors for marten to allow this movement of individuals. Additionally, having stands of several cover types (coniferous, deciduous with coniferous understory, etc.) with diverse horizontal structure is important for marten, marten prey, and their ability to occupy a niche that differs from [that of] fisher. Mast (prey food—acorns, pine cones, seeds etc.) production may also indirectly influence marten abundance, as prey populations fluctuate in response to changes in mast production and marten respond to changes in prey abundance. Throughout much of their range, marten have a significant overlap in prey species and habitat requirements with fisher. Snow depth in winter may facilitate co-existence of these two species though. Fishers are heavier and may have to work harder to move around in deep, powdery snow. Additionally, they do not spend as much time as marten attempting to prey on small mammals in the subnivean (beneath the snow) environment.”

MARTEN TRAPPING

Michigan has a short trapping season for marten and a low bag limit. Marten have retained their fur value, which in turn maintains a trapping demand for this species.

SUMMARY

Re-establishment of pine marten is one of Michigan’s wildlife success stories. Re-establishment brought back this valued animal species of Michigan’s virgin forests—valued because, among other things, it is an effective red squirrel predator. Anyone who has ever been loudly scolded by a red squirrel while attempting to sit quietly while hunting deer, etc., can appreciate a red squirrel predator.

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MATT SCHRODERUS



In this issue, Bill Ziegler writes about one of the UP's most interesting mammal species: the pine marten.

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