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Partners News

September/October 2020

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Landowner Cooperative

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Conover, WI 54519

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715-479-8528

PIF's Website:
www.partnersinforestry.com

Have you paid your PIF dues?

WELCOME NEW MEMBER(S)

Tom Duffy

Inside this issue:

WILDCAT FALLS PRESS RELEASE

Wildcat Falls protected as a Community Forest

Following more than ten years of efforts by Northwoods Alliance (NWA) and Partners in Forestry Cooperative (PIF) to protect Wildcat Falls, this project is now celebrated as a success. This conservation acquisition was completed with the help of the USFS Community Forest and Open Space Conservation Program, and wide community support.

The 160-acre project is an ecological marvel, even for the Upper Peninsula where natural bounty is plentiful. A challenging but short hike of less than a mile showcases old-growth forest, a 25' waterfall on a trout stream with steep canyon walls, magnificent rock outcrops formed a billion years ago, and a plethora of understory flora and fauna including rich seasonal wildflowers. As described by PIF native plant guide Rod Sharka, *"The synergistic combination of unusual plants, a waterfall on a pristine trout stream, rock outcrops, old growth forest, vernal pools and more make a visit to Wildcat Falls a special experience".*

Long considered a special place by generations of visitors, the property was an isolated part of the Ottawa National Forest for decades. About twelve years ago, the Forest Service initiated a land trade that included this tract. Justified by its isolated location, this property was to be swapped for increased acreage to help simplify forest boundaries. Conservationists opposed the trade over a period of years, and also developed a strategy to protect the ecological features and preserve access for the public. An interim conservation buyer negotiated a purchase with the trade recipient, and approached NWA about finding a permanent and publicly beneficial conservation solution.

Previously, NWA had experience with the USFS Community Forest Program and identified this program as a possible avenue to establish a Wildcat Falls Community Forest. NWA immediately began fundraising for the 50% financial match to the Community Forest Program. In very early 2018, the first of several significant grant awards was secured to complete the project. In spring of 2019, the USFS Community Forest Program ranked the Wildcat Falls proposal number 4 in the nation out of 15 funded projects, assuring 50% of the required budget. This grant paved the way for further necessary funding.

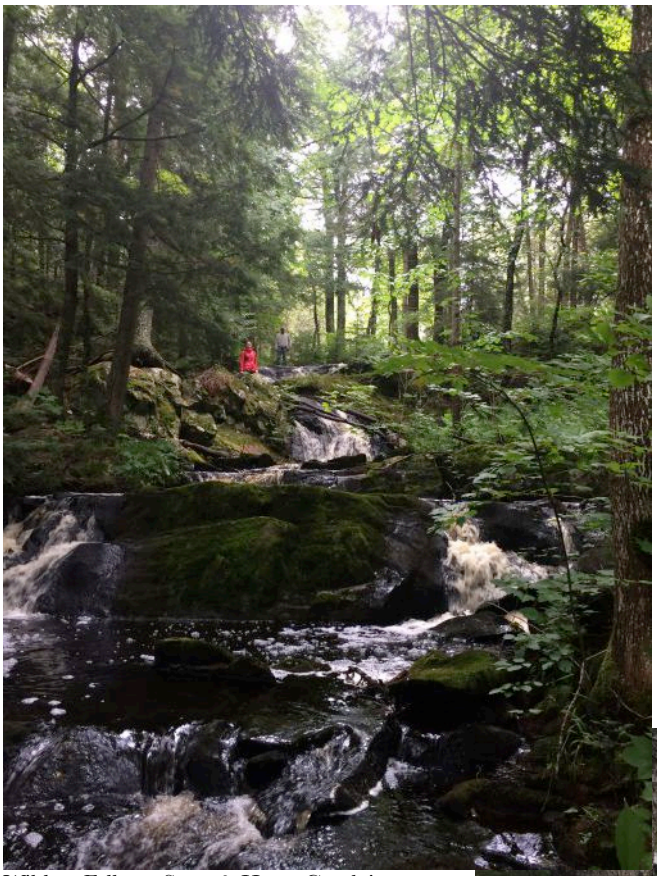
By mid-year 2020, the Wildcat Falls fundraising effort wrapped up with over 100 individual donations ranging from $10 up to $30,000. The project gained financial grant support from Friends of Sylvania Wilderness, John C Bock Foundation, James D & Jane P Watermolen Foundation, Upper Peninsula Environmental Coalition, James E Dutton Foundation, Community Foundation of the Upper Peninsula, Copper Country Trout Unlimited, Johnson Foundation at Wingspread and the Weyerhaeuser Community Fund. As summarized by NWA president Casey Clark, *"We are very grateful to the community and all contributors who have assisted in bringing this incredible project to conclusion. As a next step, we now encourage public input into developing the Wildcat Falls Community Forest management plan".*

Joe Hovel led the conservation effort by PIF & NWA for years, and acknowledged the dedication necessary to achieve this success*. "We have had a long history on this project. Over a decade on one conservation project may seem daunting. However; ten years is insignificant in the life of 150-year old trees and billion-year old rock. Protecting this special place for future generations was well worth the effort"* said Hovel.

At the time of this writing, Northwoods Alliance is seeking community input into the final decisions in the Community Forest Plan. Under the Community Forest program, a project must display community benefits, thus it is essential to develop a plan which defines these uses while protecting the unique ecological resources of this project. This makes the community input important in establishing the guidelines of the Community Forest. For more information and to comment on the Plan, please see www.northwoodalliance.org

Wildcat Falls

We did it. After this long saga, Wildcat Falls is now a Community Forest under the ownership of Northwoods Alliance Inc. We are very grateful to all who have contributed to this remarkable effort, assuring future generations the opportunity to connect to this special place. While we have met our acquisition goal and completed the purchase, we still need to raise funds for additional expenses such as a survey, and we need to establish an endowment fund for future holding costs. If you have not yet donated to this great effort, please do so. Your support is much appreciated.



Wildcat Falls on Scott & Howe Creek in summer. Photo: Casey Clark

Wildcat Falls Spring vernal pool on the Community Forest provide habitat for special aquatic critters such as Fairy Shrimp. Photo: Dan Dumas, Swisher Communications

Wildcat Falls with high flow in spring. Photo: Ben Meyer, WXPR

Wildcat Falls outcrops, distinct rock mounds jump off the landscape in the Community Forest.
Photo: Rod Sharka

Wildcat Falls outcrops, winter ice formations hand dearly to the rock outcrops on the Wildcat Falls Community Forest..
Photo: Rachel Hovel

Developing old growth on hills at Wildcat Falls Community Forest.
Photo: Casey Clark

Old age Hemlock with craggy root masses grip the rocks at Wildcat Falls Community Forest.
Photo: Ardis Berghoff

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Northwoods Forest Conservation: A Handbook

In the coming weeks we hope to release the handbook to all PIF members. In fact, we would like to get you a copy for each of your offspring who are involved in your land management or decisions. Please let us know how many copies your family can use. The book itself will be free of charge to PIF members, for additional copies we would appreciate a donation to help with shipping costs.

This project was a joint effort of PIF and NWA to encourage, inspire and assist landowners in their conservation goals. In the Handbook, we expose 12 stories from strident conservationists in our network, celebrate past successes, give details on many conservation program opportunities, offer guidance on important topics and provide you a visitor guide to a couple of select projects. We are excited by this large effort, inspired by the needs we all face on the landscape. Once again, the UW Center for Coops has stepped up to help PIF & NWA, this time with vital funds for printing, to benefit landowners and readers.

Just this week we released a sneak preview of the manuscript to two distinguished icons in the world of conservation. We share their response with you here.

> "No matter where we live, we [humans] depend on forests; for the oxygen we breath, for the water we drink, for the many products we use every day, for the diversity of plants and animals they sustain, for the beauty, tranquility, recreation, solitude and spirituality forests provide to make our lives better. I have not seen a more inspiring, practical, and easy to read "how-to" guide to common sense sustainable forest land conservation practices. **Northwoods Forest Conservation: A Handbook** is an must read for all who depend upon and care about forests."
> *Mike Dombeck, PhD*
> *Retired UW System Fellow and Professor of Global Conservation, University of Wisconsin-Stevens Point and former Chief of the U.S. Forest Service. Mike grew up in Northern Wisconsin where he spent eleven summers as a fishing guide.*
>
> "Poignant and practical, Northwoods Forest Conservation: A Handbook eclipses all the how-to, cookie-cutter manuals ever written on the topic. Its contributors reflect some of the myriad nuances of conservation in cogent, heartfelt voices informed by decades of experience. Looking to the future with a tone neither bleak nor jubilant, Handbook is a testament to the power of collaboration and of seemingly trivial acts; it is a universal call to action."
> *Paul Hetzler*
> *Author, natural resource educator and ISA-Certified Arborist*

If you have not had the opportunity, there are 2 episodes on 906 Discovering to view
http://www.906outdoors.com/Discovering.shtml
- On the August 10 program PIF plant guide Rod Sharka gives a tour of the bog life at Hilltop-Trail Lakes. More on Hilltop to be in the Handbook.
- On the June 22 program Rod and Joe tour the Wildcat Falls Community Forest project.

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Future Articles

We always enjoy member feed back. Let us hear from you!

If you have questions that you would like to see addressed in the newsletter, suggestions for, or have articles for, future newsletters, please contact us at partnersinforestry@gmail.com or by mail:

Partners In Forestry
6063 Baker Lake Rd
Conover, WI 54519

Float Copper, the value of Forest Legacy and good neighbors, and a bit of landowner woes

Joe Hovel

I have written pages about how important the Forest Legacy Program is, as well as about the model and enviable partnership the Pilgrim River Watershed Project has displayed. We all are aware as landowners to expect a little grief on occasion, either from nature or other people. This story kind of blends it all together. In my memoir I will release a story titled Idiots & A—holes, which is a much more serious landowner disturbance than this story, however the lesson in this one is worth sharing.

At dusk on a Sunday night in mid -July I was alerted to a theft happening on the Pilgrim River Headwaters tract. A diligent young neighbor overheard several men, who had parked by the river, talking about their plan to go up river and get their finding. The diligent neighbor was accustomed to folks chatting while they enter the river for trout fishing, however this evening he was hearing something amiss. He then called John, an older neighbor who was not only grateful for the Pilgrim conservation, but was a big part of making it a success.

In 2018 the severe Father's Day flooding event scoured the river banks in the Pilgrim region, exposing additional float copper otherwise deeply buried for years. John, having been born and raised in the neighborhood was well aware of how some people go into the river for reasons other than fishing at times. Well, the crew of three, RM and 2 sons had embarked up river with a large wheeled dolly cart. When they returned to their vehicle with an approximate 200# plus chunk of float copper, John and a deputy sheriff were awaiting. RM reasoned, I should say unreasoned, that the copper was in the river bed, and since the river bed was public, that they have claim to it. John stated it was simple theft. The deputy was not fully convinced of either view point, but was wise enough not to allow RM to take the copper "back to my business in Marquette until this is settled" as he wanted to do. The next morning, I received a call from RM who said his kids really needed to have the copper they found in the river. We had a respectful conversation, but agreed on nothing as I allowed him to vent as he talked of other smaller copper they also took with no known objection.

When it was time to wind down the phone chat, RM asked "how do we settle this"? I simply replied "you need to relinquish any idea of claim that you have to the copper you have taken from the property; return all the small copper you also took and give a sincere apology to all involved". I then sincerely suggested, father to father, that he straighten out his sons misguided viewpoints about what is theirs, before it destroys his business and reputation. I also suggested he make a donation to our conservation work. I firmly stated to RM that the Pilgrim project was about resource conservation, one of the resources being minerals, as I emphatically refused his offer to purchase the copper at any price, and denied the $3 to $4 pound price he suggested as irrelevant because no one has any intention of selling this.

Research demonstrated float copper selling for much more than his offer; that however is not the point, as it was not for sale. Legal opinions confirmed they had no claim to copper from the river bed any more than they do claim to a chair from a public court room or a veneer sugar maple from the Copper Country State Forest. A few weeks passed when the deputy contacted me stating that she had received a small bag of copper with a note enclosed from the RM crew. She also asked that I come and retrieve the large copper, and asked if perhaps I could get it weighed, as that information would finish the report.

On a comfortable Sunday in mid -August, we made an overdue trip to the Pilgrim Valley, claimed the copper, including the paltry number of small pieces which were likely a small part of what they had taken. We also reiterated the tremendous value of land conservation to the public. We had a 1 ½ hour visit with several friends who were part of the project success, at the large picnic table off Boundary Road that morning. In that time informally chatting with several of the dozen or more folks coming and going for a hike on the trails, we were

reminded of this project's very importance to the public. The incredible scenery of the river and forest at the Pilgrim River is rewarding to any user, be it hiking or fishing. This public value far outweighs the encumbrance of one bad apple. On the way home we made a short visit to Wildcat Falls, where we also found good people enjoying the outdoors in a positive way.

In summary, we want people to use these projects, enjoy the features and take only what is allowed, for example fish with a license, berries or fungi. Equally important is to respect the amount of effort folks with vision have extended in making these projects successful. Programs like Forest Legacy and Community Forest, along with our Knowles-Nelson Stewardship, will give our kids and future generations the opportunity to experience the places we are grateful for.

No one picks the day they arrive on earth, or the day they leave. However, the folks who have worked to protect special natural places for future generations have made the best of the time in between.

As for the RM crew, we are still awaiting the donation!

For more on the Pilgrim Watershed success story see the upcoming Northwoods Forest Conservation; a handbook, **which** ***we hope to provide at no cost to current members.***

****

LIMITED PUBLIC ACCESS

PERMITTED USES

hiking	mountain biking	berry picking
mushroom gathering	skiing	snowshoeing
kayaking	nature observation	canoeing
birdwatching	picnicking	swimming
educational use	dog walking	
hunting	fishing	

PLEASE LEAVE NO TRACE

Pack it in; pack it out. Dig a cat hole to dispose of human waste. Leave what you find. Be considerate of others. Protect and enjoy this forest.

NO:

Motorized vehicles of any type

Removal of float copper or any other minerals

Removal of wood of any kind

The Pilgrim River Forest is privately owned land with public access rights defined by a Conservation Easement between the landowner and the State of Michigan. Funding was provided by the US Forest Service Forest Legacy Program through the Land and Water Conservation Fund and local donations.

The land remains on the property tax rolls and periodic timber harvests contribute to the local economy. Areas undergoing timber harvest may be temporarily closed to public access.

THANK YOU FOR YOUR COOPERATION

Signage at Pilgrim River Watershed Project

FOREST ETHICS RENEGADES

PIF note: To demonstrate that many of this user's issues are much more widespread than our own back yard, this question asked of the Forest Ethicist fits our region as well.

I am a forester with the Connecticut Department of Energy and Environmental Protection, Division of Forestry where we manage about 175,000 acres of State Forests for wood products, wildlife habitat, and outdoor recreation (which used to be mostly hiking and hunting). Lately, mountain biking and ATVs have become more popular and they are doing a lot of damage to the land. We try to work with responsible organizations such as the New England Mountain Biking Association (NEMBA) in the case of mt. biking, but most bikers do not belong to NEMBA, and continue to build trails and jumps without permission. The ATV riders are worse. They will run you over if you try to stop them. How can we get these people to do the right thing? -- Gerard Milne, Pleasant Valley, CT

The challenges associated with managing mountain bike renegades and ATV desperados running roughshod over the landscape can best be addressed by the 4th Century philosopher Aristotle, who wrote a book on the subject called Rhetoric. Here he provides clear guidance and offers effective strategies to persuade rogue sportsmen against playing fast and loose with regulations, disregarding the ecological impact of soil erosion, to say nothing of mowing down Sunday strollers like myself. Aristotle is responsible for a good deal of what informs the western intellectual tradition and I'm always one to go to the source, so I will turn to him first before seeking guidance from the 15th Century French physicist, philosopher, inventor, and mathematician Blaise Pascal.

Aristotle breaks a persuasive argument like the one you'll need into three essential parts or "modes" which are 1) the character of the speaker and how effectively it is conveyed to the listener, 2) whether the listener is willing and able to consider what is being said and 3) the strength of the argument itself and whether it shows *or seems to show* something. Interesting that his last point allows for the *appearance* of good reasoning or logic, suggesting that flawed reasoning that passes for valid is sometimes sufficient. You might wonder who's playing fast and loose now: our wheeled cowboys or Aristotle himself. But fear not, a reading of the whole text shows that Aristotle is simply warning against being persuaded by deceptive arguments, a crooked character or unethical motives. To guard against this and to guarantee rhetorical success, you must satisfy each of Aristotle's three modes, they must coexist in any successful argument or plea.

Simply put, the rubber meets the road (or the trail, as the case may be) by dialing down these three modes into *ethos*, *pathos* and *logos*. First establish your credibility; why should these outlaw trailblazers listen to you? Then, tell a story that draws our backcountry bandits into sympathetic league with you; perhaps you've seen children on that trail who have been startled by this kind of activity or you yourself have felt crowded out by the speed, the sudden approach of an ATV or the sound. And finally provide the data; explain the damage to soils and systems and to Sunday strollers in simple irrefutable terms. It is tempting for someone who already understands the impact of a behavior to drive straight to information or education, but persuasion requires a warming up period and you have to do that work on the front end before you get into the business end of the argument. If the appeal is in written form or given as a talk at a town or organizational meeting you have more of an opportunity to weave these three modes together, moving back and forth between them to create a convincing and compelling fabric.

Having now considered Aristotle's approach, you'll notice that Pascal's guidance is familiar and overlays Aristotle's modes nicely to both strengthen and provide further insight into the method. Consistent with Aristotle, Pascal writes:

> "When we wish to […] show another that he errs, we must notice from what side he views the matter, for on that side it is usually true, and admit that truth to him, but reveal to him the side on which it is false. He is satisfied with that, for he sees that he was not mistaken, and that he only failed to see all sides. Now, no one is offended at not seeing everything; but one does not like to be mistaken."

Pascal translates Aristotle's notion of pathos or storytelling into "eloquence" which he says:

> "Eloquence is an art of saying things in such a way that those to whom we speak may listen to them without pain and with pleasure; that they feel themselves interested, so that self-love leads them more willingly to reflection upon it. "

He describes persuasion as "a correspondence which we seek to establish between the head and the heart of those to whom we speak on the one hand, and, on the other, between the thoughts and the expressions which we employ." The head and the heart, or in Aristotle's terms, the logos or the logic and the pathos or the storytelling that draws a connection between the speaker and the audience into an emotional appeal. Aristotle gives it to us straight and Pascal tells a similar story in a distinctly French way with just a touch of revolutionary flourish at the end:

> "We must put ourselves in the place of those who are to hear us, and make trial on our own heart of the turn which we give to our discourse in order to see whether one is made for the other, and whether we can assure ourselves that the hearer will be, as it were, forced to surrender."

En garde!

Work Cited:

Aristotle. "Rhetoric" The Rhetorical Tradition: Readings from Classical Times to the Present. Eds. Patricia Bizzell and Bruce Herzberg. New York: Bedford/St. Martin's, 2001. 179-242.

Blaise Pascal. Pensées. Harmondsworth: Penguin Books, 1966.

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As a service to PIF members, contact Joe for special pricing in your needs for:

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Have you checked out PIF's website? www.partnersinforestry.com

The website is for members to expose your business, service or tree farm, share thoughts, ideas, articles, photos, and links. This is your COOP, we need your input as much or more than your dues.

The Forest Ethicist, in cooperation with the Northern Logger Magazine & the author

No Farms, No Food. No Forests, No …?

By Marianne Patenelli-Dubay

It would be impossible to take up the topic of farms, forests and borderlands without recalling the contemplative prose of philosopher, naturalist and land surveyor Henry David Thoreau. Henry writes "When I was four years old, as well I remember, I was brought from Boston to this my native town, through these very woods and this field, to the pond. It is one of the oldest scenes stamped in my memory." These few lines from Walden written in 1854 set a dreamy stage that persists still in our mythic and lived impressions of the quilted New England landscape. Farms, forests, their site characteristics and the boundaries that define them are all of a piece. In fact, the landscape edges that define transitions from one type of area into another are as interesting to natural resource professionals as they are to philosophers.

Field yields to forest; a stand of spruce, balsam and fir becomes yellow birch, maple and beech; a fast inlet runs into the still, wide globe of a lake. Natural and philosophical boundaries are robust, dimensional and rich. And often, as is the case in a field to forest transition, boundaries are manufactured for the purpose of ownership, their particular contour was originally decided based on the actual lay of the land, to accommodate its slope, a rocky grade or a wetland. Different from the rectangular land survey system used in all states except for the original 13 colonies, the states created from these colonies and Kentucky, West Virginia and Texas, land surveying here in the northeast adheres to metes and bounds that follow rivers, valleys, fence line and roads.

I had been thinking along these lines when a forester told me about a State Forest in Connecticut that was scheduled to proceed with a harvest until an organization of concerned citizens protested the plan and the contract with the logger was dissolved. Among other things, the group argued to adopt a regional rather than state-wide approach to natural resources which in turn provided a rationale for harvesting and importing Maine wood for use in Connecticut. They advocated to preserve the local forest and instead to mine their needed resources elsewhere. Fortunately, the logger will be compensated for wood purchased up front along with lost wages and expenses, though it raises questions about the future of local harvests by local loggers for local needs not to mention the self-sufficiency of states and whether certain professions can continue to exist there.

The details and history of this particular situation are beyond the scope of this column and the qualifications of its author, but for the purpose of this essay, it provides interesting context within which to consider boundaries and when we use them to push what some deem to be undesirable beyond our field of view. Thoreau asks "*What are the natural features which make a township handsome? A river, with its waterfalls and meadows, a lake, a hill, a cliff or individual rocks, a forest, and ancient trees standing singly. Such things are beautiful; they have a high use which dollars and cents never represent. If the inhabitants of a town were wise, they would seek to preserve these things, though at a considerable expense; for such things educate far more than any hired teachers or preachers, or any at present recognized system of school education.*" And yet, forest products are a necessary part of life from the paper Thoreau wrote on, to the timber frame cabin he built on Walden Pond.

A well-managed forest is a flourishing testament to the good work of natural resource professionals. At the same time the contest between a pastoral aesthetic like the one Thoreau sketches, and the slow regeneration of a woodlot following a harvest is often at the root of a desire for beauty at the expense of management. Thoreau the surveyor made a career of parceling the New England countryside into woodlots, farm fields and village centers. Thoreau the naturalist worried about the ecological impacts of a fragmented landscape. He believed that proximity to the natural world among "Fishermen, hunters, woodchoppers, and others, spending their lives in the fields and woods, in a peculiar sense a part of Nature themselves, are often in a more favorable mood for observing her, in the intervals of their pursuits, than philosophers or poets even, who approach her with

expectation." Yet it is often the "woodchopper" or logger who bear the burden of resistance to their profession. Thoreau's conflict and the one over where to harvest what we need, whether at home or out of sight, is indicative of our human impulse to prioritize our field of view and to preserve the nature that we can see now, at the expense of good management practices, future flourishing and the ability for our neighbors to live well.

That same Connecticut forester asked, "why is it important to support your local farmer but not your local logger?" I don't think I've ever heard the issue and the tension between different and preferred types of land use put in such clear terms. I thought of the bumper sticker that reads *no farms, no food* and I realized that it isn't so simple to substitute farms for forests and to complete the phrase, if it is managed forests that we are after. Agriculture is written into the language of farming, but management is not written into the common language of forests which makes advocating for good management seem in conflict with the purpose and the existence of forests. Perhaps as an industry, loggers and foresters can consider what that statement might be without exception, in order to bind our cultural imagination of forests with the practical necessity of good management.

Work Cited:

From Ronald E. Grim in *Our American Land* at https://naldc.nal.usda.gov/download/IND88053405/PDF

Journal (3) XIV: August 1, 1860 – November 3, 1861at https://www.walden.org/work/journal-xiv-august-1-1860-november-3-1861/

Marianne Patinelli-Dubay, PhD, SUNY College of Environmental Science and Forestry

PIF note: Does not the Thoreau quote in this story summarize our mission with land conservation?

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Enjoy the Fall Colors –

Thank you Hans Schmitt for the beautiful photos, the two here, one more on Page 15, one more on Page 17)

PIF suggestion in the far north for a great fall color hike. Thanks to John Bates 'Our Living Ancestors' and to the Friends of Van Vliet for a trail to hike.

Van Vliet Hemlocks SNA

Location and Directions:

Vilas County within the Northern Highland-American Legion State Forest. T43N- R6E, Section 16
To reach the east-side trailhead, begin from the intersection of Cty. Highway B and Crab Lake Road in Presque Isle, then take Crab Lake Road south 3.7 miles to East Van Vliet Road. Turn right and go 0.9 miles to the very small parking area and signed trailhead.

Size: 412 acres
Forest Type: Hemlock-hardwoods
Status: Owned by the WDNR, designated as SNA in 2013

Photo: John Bates

The Van Vliet Hemlocks contains an old-growth, northern hemlock-hardwood forest that has had several light selective cuts take place within it over the last 50 years. A few super-canopy white pine remain, but most appear to have been high-graded out. The last advance of glacial ice reached here 12,000 years ago, where it deposited the loamy sands of the Winegar Moraine. At around 1,700 feet, this moraine marks a sub-continental divide where all waters north of here flow into Lake Superior, and all waters south of here flow into the Mississippi River.

While hemlock reproduction is vigorous in some areas, it's virtually nonexistent in others, making deer monitoring essential on this site. The forest-floor duff layer on the west side of Van Vliet Lake has been adversely impacted by exotic earthworm invasion.

Located in Section 16, this land was protected upon the creation of Wisconsin's Common School Fund. Nearly 1.5 million acres of land were originally set aside for the support of public schools.

Van Vliet White Pine.
Photo: John Bates

Van Vliet Yellow Birch.
Photo: John Bates

In the years since 1848, the Board of Commissioners of Public Lands sold over 99% of these lands to create the principal of the Common School Fund. Van Vliet Hemlocks was a part of the 5,500 acres that remained of the Common School lands. However, on November 15, 2011, the BCPL approved the sale of the Van Vliet Hemlocks to the Wisconsin Department of Natural Resources in order for the land to be designated as a State Natural Area and to receive permanent protection.

The Friends of Van Vliet Lake have created several well-marked, loop trails with some interpretive signage within the SNA. It's now a favorite of locals for hiking and snowshoeing.

BOARD OF COMMISSIONERS OF PUBLIC LANDS
1848
bcpl.wisconsin.gov
Managing Wisconsin's trust assets for public education.

Van Vliet Hemlocks Trail Map

Hiking • XC Skiing • Snowshoeing

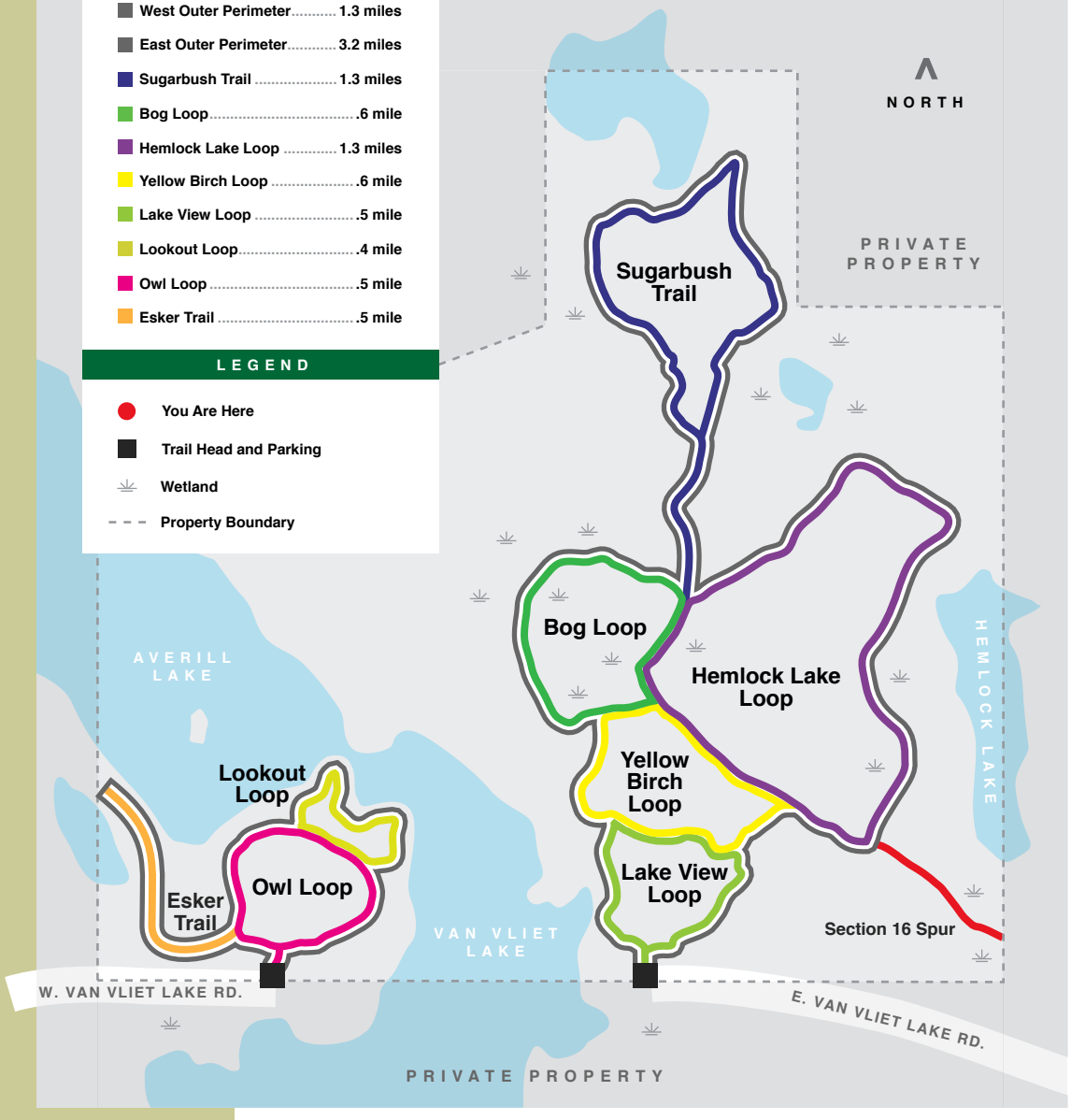
Vilas County
Presque Isle, Wisconsin

TRAIL DISTANCES

West Outer Perimeter	1.3 miles
East Outer Perimeter	3.2 miles
Sugarbush Trail	1.3 miles
Bog Loop	.6 mile
Hemlock Lake Loop	1.3 miles
Yellow Birch Loop	.6 mile
Lake View Loop	.5 mile
Lookout Loop	.4 mile
Owl Loop	.5 mile
Esker Trail	.5 mile

LEGEND

- You Are Here
- Trail Head and Parking
- Wetland
- Property Boundary



Signs developed and sponsored by Friends of the Van Vliet Hemlocks, an affiliate of the North Lakeland Discovery Center, Manitowish Waters,Wisconsin.

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FALL COLOR CONSPIRACY

Paul Hetzler, ISA Certified Arborist

Photo: Hans Schmitt

Conspiracy hypotheses (or theories, as we like to call them, since "hypotheses" cannot be uttered without a lisp) seem to multiply unfettered these days, so I feel awkward birthing yet another. But you may be intrigued to learn that the wide spectrum of color in the region's fall foliage is largely the result of a Depression-era project implemented by the Hoover Administration.

We live in one of the few places on Earth where trees produce such a phantasmagoria of color. If you've been to Europe in autumn, or even out West, you know that the range of color is much more limited than here. Most green plants have varying amounts of yellow (xanthophylls) and orange (carotenoids) molecules, but you'd have to visit northern China to see anything close to the mélange of anthocyanins – that is to say, the burgundy, coral, crimson, raspberry, ruby, salmon, and scarlet hues – that the Northeast offers.

We're taught in school that green chlorophyll masks pigments already within leaves. In fall, trees deposit wax between twigs and leaves to seal the vascular links. This kills chlorophyll, exposing underlying colors. But reds and purples are definitely not hiding beneath green chlorophyll.

Here's my theory or hypotenuse or whatever:

For millennia, fall leaves were mainly orange, with little red or yellow. During the Depression, President Herbert Hoover tried to attract wealthy European tourists, tasking the National Science Foundation with augmenting the leaf-color palette of New England. This partly successful initiative was called the Hoover Omnibus Anthocyanin and Xanthophyll project, or HOAX.

OK, to my knowledge, governments haven't manipulated leaf color. But anthocyanins – reds and purples –don't lurk inside green leaves, waiting for the big reveal when chlorophyll croaks.

Anthocyanins are large, complex organic molecules which take a lot of energy for a plant to synthesize. While relatively few tree species produce red fall colors, sugar and soft maples are renowned for their ruddy foliage. Some oaks produce deep scarlets, and dogwood and white ash can make intense red-purple hues.

Plants often invest in these compounds to protect emerging leaves in spring, as young chlorophyll is vulnerable to UV-light damage in cool conditions. It's chlorophyll suntan lotion. As foliage matures, plants quit making these expensive molecules. Early-season outlays make sense. But why do some trees spend energy when they should be hoarding it for springtime?

Notorious for being frugal and pragmatic, trees don't dip into their savings without good cause. Few hypotheses (theories are evidence-based, e.g. the theory of gravity; hypotheses jam the Internet) exist on why trees use precious reserves to shield dying chlorophyll while they're hard at work making abscission layers to kill said chlorophyll. "Fall suntan lotion" seems absurd.

Another idea is that a maple's (for instance) red leaves change soil conditions to favor its species. Certain plant-made chemicals can inhibit growth rates or seed germination of competitors, something known as allelopathy. Problem is, anthocyanins aren't very good at this. A truly convincing explanation has yet to be found.

I don't know why trees make red in the fall, and an honest biologist will admit they're not quite sure either. Conspiracy or mystery, I'm just grateful for our autumn display.

An ISA-Certified Arborist since 1996, Paul Hetzler cooks up wild hypotheses in his spare time.

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GLOBAL TRANSPLANTS

Paul Hetzler, ISA Certified Arborist

Since the first heart transplant, which took place in South Africa in 1967, replacing defective hearts, lungs, livers and kidneys with donated organs has become ever more successful and common. For some reason, I find the idea of face transplants, pioneered in France in 2005, even more incredible. And although fecal transplantation has been around a long time, I have to admit to being surprised when I learned of it a few years ago. I'm pretty sure a recipient's body would eventually reject a transplanted stool no matter how good the medical team was. But maybe that's the point.

There is probably no limit to what sorts of living tissue can be relocated. For example, moss transplants have become all the rage in high-latitude regions of the world. When this made the news in the summer of 2020, my ears perked up. Then I realized it wasn't being done on humans and it didn't seem as remarkable anymore.

I'm sure many rock gardens contain "borrowed" moss, but transplanting sphagnum moss on a larger scale is an important way to help slow the rate of climate change. The reason that biologists had to dream up this procedure a few years ago is that vast swaths of Arctic and subarctic peatlands have caught fire for the first time in recorded history.

You've likely heard that peat – compacted, partly decayed sphagnum moss which has built up over millennia – is a type of fuel. High in carbon, peat is widely used for heating in rural parts of Ireland and the UK. It's the stuff that gives top-shelf Scotch whiskey its characteristic smoky flavor. Given peat's high carbon content (roughly 50% dry weight), it represents a massive storehouse of carbon. Of course we need as much carbon as possible to remain in solid form and not be converted through decay or fire to carbon dioxide, the gas largely responsible for warming our planet.

Much effort is aimed at planting trees and preventing deforestation because we know trees act as carbon sinks, taking CO_2 from the air and converting it to a long-lasting solid. However, as important as forests are in storing carbon, peat is far more significant.

Peatlands, as the term suggests, are regions characterized by an abundance of living peat – sphagnum moss. They make up only three percent of the Earth's land mass, mainly in the northern hemisphere, with some in southeast Asia, but they store twice as much carbon as all the forests on Earth. That's right. According to a 2009 Scientific American article, around 500 billion metric tons of carbon now reside in peatlands, two times the carbon in all the world's trees.

While warmer climates are home to forested peatlands, the majority of peat is found in North America and northern Europe in the form of permafrost tundra and bogs. By definition these are wet ecosystems, as sphagnum requires ample moisture. In the past, bogs and tundra often acted as natural breaks for wildfires. Historically, when sphagnum tops partially dry in late summer, superficial fires might skirt across the tundra surface. But now peatlands are desiccating to the point that they fuel a much more intense wildfire, one able to burn deeply and persist under the snow pack into the next season.

A record-breaking heat wave blanketed the Russian far north throughout the summer of 2020, melting permafrost and parching the moss. As a result, mammoth Siberian wildfires have burned for months, releasing thousands of tons of CO_2. Clouds

of ash from Arctic fires have swept the globe and contributed to spectacular sunsets and sunrises.

Alaska and northern Canada have suffered peat fires in recent years as well. The historic 2018 Alkali Lake fire in British Columbia, which ravaged Telegraph Creek, home to Tahltan First Nation, was a wake-up call to the devastating effects of peat fires. That one burned through the following winter and into 2019 season. So far in in 2020, a number of Canadian peat fires threaten to rival the Alkali Lake tragedy.

In an August 1, 2020 Canadian Broadcasting Corporation Radio story, Guillermo Rein, a UK professor of fire science, said that while a peat fire does not have the dramatic tall flames of a forest conflagration, it was nonetheless "a monster in the damage that it can produce." The news article cited Dan Thompson, a Natural Resources Canada forest fire research scientist, as saying that peat fires are still not well understood, but that unlike forest fires, it may be 30 years before a scorched peatland ecosystem begins to recover.

With that in mind, biologists are transplanting large chunks of sphagnum from healthy sites to burned-out ones. The CBC story also featured Sophie Wilkinson, a McMaster University postdoctoral fellow, who indicated that the transplant trials look promising so far. "We want to restore these peatlands to a wildfire-resistant state," she said, "so that ... these peatlands could act as a fire break ... rather than propagate that fire across the landscape."

Here's hoping moss transplants establish well so that every season doesn't bring a fiery repeat.

Paul Hetzler is a naturalist, arborist, and former Cornell Extension Educator. He claims that any puns in his work are unintentional.

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Photo: Hans Schmitt

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AQUIFERS

Paul Hetzler, ISA Certified Arborist

Roughly thirteen percent of the US population and nearly a third of all Canadians depend on a vast, dark underground network for survival. The proportion is even higher in some areas – in fact, the entire populace of Prince Edward Island is reliant on this murky underworld. It's not the black market to which I refer, however. It's a layer under our feet that is saturated with groundwater: an aquifer.

Aquifers comprise an unseen, vital resource which provides water to some 60 million acres of North America's cropland, and slakes the thirst of more than 50 million of its inhabitants. Cities like Toronto and Kingston use Lake Ontario for their drinking water, but honestly, there isn't much water in the Great Lakes compared to what's out of sight below us.

If you tallied all the water in the mighty rivers and lakes of the world, plus every pond and puddle on the planet, it would account for just 0.4% of the freshwater reserves on the planet. Wow, right? Groundwater, on the other hand, represents 30.9% of Earth's fresh water. (The rest is locked in snow and ice, although that is rapidly changing.)

I've heard people use the image of an underground lake or river which feeds their well. Although literal underground streams and pools do exist, they are rare. Most wells produce water because we have poked a hole in saturated rock, sand or gravel, and water seeped into the void. If you've ever dug a hole on a sandy beach and had it fill with water, technically you have made a well. Just don't drink from it.

It stands to reason that aquifers are not the same everywhere. In areas where deep glacial deposits exist, you might have a well in sand or gravel. This is like the "well" a child might dig at the beach. Except it's not salty and polluted. But usually wells must extend deep into bedrock to provide adequate water.

Underground water is always moving, though this varies greatly. In porous material on a slope it could be a foot or more per week, whereas if the terrain is flat and the material not very permeable, it may creep an inch or two each century. In those rare cases where water has dissolved some of the bedrock and created channels, water might zip along at miles per day.

A crack rock is bad, but cracked rock is good. No one wants a well drilled into "solid" rock, because by definition that would be a dry hole in the ground. Some rock formations, such as limestone or sandstone, are porous, shot through with myriad horizontal and vertical cracks. This kind of formation holds a lot of water, like a sponge. Igneous and highly metamorphosed rock, on the other hand, has a crystalline structure, with few and irregular cracks. This formation is very stingy about yielding water, like trying to wring out a diamond. Sort of.

The surface of an aquifer, which we refer to as the water table, fluctuates with the seasons. It's not uncommon for the water table to vacillate ten or twenty feet each year. That's one reason wells are drilled as deep as they are. That, and the fact the crew is likely being paid by the foot. Actually, in low-yielding formations such as found in most of the Canadian Shield, wells are slow to fill, and a deep borehole is a form of water storage so you don't run out halfway through your shower. But deeper is not always better, as water tends to be increasingly saline at greater depths.

When you fill the kiddie pool or irrigate the lawn, it lowers the water table around your well. Generally it declines in a cone shape, with water sloping toward the well from all sides equally. This is called the cone of depression. It's like the cone of silence, only sadder. How far the cone extends from your well depends on the formation, but largely on water usage. It's possible to pump so much water from a very deep well that it dries out a neighbor's well. Please don't do that.

What I've described thus far are examples of unconfined aquifers. These tend to be relatively shallow, and they fill back up, or recharge, from rain and snow that falls to the ground directly over them. But let's say you drill a well into a porous rock formation which is overlain by one of low porosity. The spongy, high-yielding layer on the bottom from which you get water is called a confined aquifer.

When bedrock is tilted in such a way that this confined layer is recharged some distance away and at a higher elevation you get an artesian well, not to be confused with artesian bread, which is overpriced. The water in an artesian well rises above the surrounding water table, but does not always flow. A flowing artesian well can be dramatic – I had a neighbor who had to dig a pond to corral the veritable geyser coming from his well.

It's also conceivable to pump water from the ground faster than it recharges. This is called overdraft, and no one likes it. Especially banks. In the Great Plains region, the aquifer has been in a state of overdraft for decades. The risk is that the water is no longer accessible, and/ or becomes so saline at depth that is no longer potable. Or drinkable, which I believe is the same.

Although it sounds like aquifers are safe tucked away deep in their underworld, but in reality they are extremely fragile. Unconfined aquifers, such as we have in most of eastern Canada and the northeastern US, are especially vulnerable. Surface spills of petroleum or chemicals, floor drains, agricultural chemicals, and excessive manure applications can seep down into the aquifer. Gasoline and diesel dissolve in water to a small extent, more than enough to be a health hazard.

Remember that unconfined aquifers recharge directly above them from precipitation. If rain can soak in, so can anything else. Another thing to bear in mind is the cone of depression which pulls water from a distance away. In addition, groundwater is always moving, so what your neighbor spills on the ground may show up in your well in a few years, or vice-versa.

A water pollutant will be smeared vertically through many feet of the formation as the water table fluctuates, and will adhere to every nook and cranny of the rock or sand. Gross contamination can be removed to an extent, but there is no way to clean up a contaminated aquifer. It's gone forever, which is why hydraulic fracturing or fracking is so ill-advised. Protect your well and keep it feeling well, because if an aquifer is compromised, you can't get it back.

A resident of Val-des-Monts, Québec, Paul Hetzler is a naturalist, arborist, and former Cornell Extension educator.

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Logging and lakeshore preservation should go hand-in-hand

PIF has heard from several parties about managing timber versus lakeshore preservation. We see some concerning trends, especially where logging comes close to shorelines. Tom Shockley, team leader of the Northern Highland-American Legion State Forest (NHAL), asked us to share information about timber management with PIF members. Realizing that timber harvests and lakeshore protection should work together, we have asked PIF member, Ardis Berghoff, to present the lakeshore point of view. (Ardis's piece about logging at Whitney Lake in Boulder Junction was in our last issue.)

PIF is very fond of the NHAL, and we strive to see the best management. We hope that all realize that no matter what we have at odds over this issue we have way more in common. We encourage everyone to become informed on these critical issues and form an opinion.

We have included information from both sides of the lakeshore issue here, edited for length.

Shockley: The 235,000-acre NHAL is Wisconsin's largest state forest. There are over 900 lakes and 300 miles of rivers and streams within its borders. A timber management program provides wood products and contributes to the state's forest products industry. The DNR works with the Forest Stewardship Council and the Sustainable Forestry Initiative. Their third-party certification means the NHAL state forest meets standards and goals for ecological, social, and economic sustainability.

Berghoff: Areas within the NHAL carry designations, including "Forest Production." There are many lakes in Forest Production areas, and the DNR is required to follow standards to protect them. In turn, the third-party certifiers are supposed to evaluate logging based on the DNR's actual upholding of those standards. It is my understanding they do this at a high level. Certifiers do not visit each tract or the lakes in them and rely on DNR documents instead.

Shockley: DNR foresters manage about 3,800 acres of NHAL timber harvesting each year. Department staff use Wisconsin State Statute 28.04, which defines state forests and serves as the cornerstone for the department's forest management. They also rely on the NHAL master plan, which defines management areas, and goals and objectives for each. They have different target levels depending on forest cover types, management classification, and the goals.

Berghoff: State Statute 28.04 defines state forest but does not detail how to log it. It requires the DNR assure benefits, including soil protection, water quality, production of forest products, biological diversity, and aesthetics. The NHAL master plan addresses forest management, including the preservation of old growth trees, timber harvests and lakeshores, saying "The scenic quality of all shorelines and primary roadways will be maintained and enhanced through the application of aesthetic management techniques."

Shockley: Timber harvests are important tools for regenerating healthy, diverse, and resilient forest ecosystems and for providing critical habitat for wildlife species. The NHAL's timber management process relies on accurate forest reconnaissance information which describes the current condition of forest resources. Department foresters use this information to determine which stands of trees are due for forest

management each year. State Statute 28.025 directs the DNR to establish an annual allowable harvest based on the data and to manage the timber resource within +/- 10% of that goal.

Berghoff: We are not referring to the DNR's inland forestry, but when we asked why a quota would require cutting lakeshore trees, Mr. Shockley and his colleagues repeated the above points. There is a disconnect here. No law requires that lakeshores be logged. On Whitney and other lakes, the DNR is applying its silviculture – intended for inland forests – to the lakeshore, which has a separate set of DNR standards.

Shockley: When forested stands are identified for management, department staff are required to follow the guidance in several department handbooks. The Wisconsin DNR Silviculture Handbook provides detailed ecological tools and silvicultural methods. Staff also follow Wisconsin's Best Management Practices for Water Quality Field Manual, particularly near water bodies and wetlands. This manual was developed by a broad stakeholder group to protect water quality while allowing flexibility based on specific site conditions. Department foresters have successfully managed timber stands adjacent to hundreds of lakes.

Berghoff: We were also told these things, but the DNR is breaking its own minimum standards for lakeshore buffers on Whitney, which should be at least 100 feet deep and 60 sf basal area of evenly distributed trees. Our survey showed they are leaving 50-75 feet in many places and just 32 sf basal area behind the buffer. There will be a skimpy to non-existent screen of trees to shield heavy cutting along a mile-plus of pristine shore. This does not reflect flexibility for specific site conditions. It does not comply with DNR standards, the master plan, or the DNR's Forest Aesthetics Handbook. Moreover, we found the west shore of Little John Lake will be similarly logged and believe there are more examples. It is a matter of measuring lake buffers in person, which no one – aside from the DNR forester who marked the trees – has done with regularity.

Shockley: Prior to establishing a timber sale, staff prepare a "presale." This document includes a map and management prescription. Presales are placed on the department's website two years before the timber sales are finalized and offered for bids (https://dnr.wi.gov/topic/TimberSales/salesNHAL.html). The NHAL also completes an Annual Property Implementation Plan that provides the public with the major scheduled and completed forest and habitat management treatments, recreation and infrastructure development projects, and other property management actions (https://dnr.wi.gov/topic/lands/APIP/expanded.html).

Berghoff: The DNR's links are good to consult. People have the best chance of ensuring adequate buffers if they contact the DNR before a timber sale is marked and sold, although the timber contract allows amendments. Still, it would be better if adequate buffers (100-200 feet deep) were there to begin with.

Shockley: While managing the timber resources via harvesting is an important aspect of the state forest program, there are areas managed in other ways. There are more than 20,000 acres within the NHAL that afford visitors a glimpse of unmanaged lands, where no timber harvests will occur.

Berghoff: With so many lakeshores highly developed, why wouldn't we preserve what unmanaged, wild shoreline remains, rather than logging it so heavily it takes decades to recover?

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