Partners News

June 2018

Protecting your wooded land for the future is essential to clean water, clean air, wildlife habitat, sustainable wood supply...all things that are necessary to society and health, and that are gone forever if the land is developed.

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WATCH FOR SPRING WILDLIFE

Inside this issue:

BIO-BLITZ at Wildcat Falls first in series titled Appreciate Our Common Lands: A hands-on celebration of the benefits of forest land conservation.

Partners in Forestry, with help from the Northwoods Alliance and the UW Center for Cooperatives has embarked on a series of events highlighting forest land conservation. The first event in this series was held at Wildcat Falls on Saturday May 19, 2018. A group of natural resource experts and amateurs alike gathered to conduct an informal biological inventory of flora, birds, and aquatic organisms on the property.

The survey started at 10 am and by mid-day over 40 bird species were identified including the Olive Sided Flycatcher. John Schwarzmann and Bob Evans lead the birding interests though many others helped to add to the list. The habitat on the Wildcat Falls parcel is very diverse with upland cedar and hemlock, old growth features, brushy trout stream frontage, rock outcrops and mounds, impressive stands of northern hardwoods, and of course the charming falls. It was biologist Ron Eckstein first time to the falls, and when asked what he thought of the property, he replied, "I am convinced." Led by Rod Sharka and Steve Garske, numerous ground cover was identified in the under-story, the Spring Beauty was flowering in abundance along with Canada Mayflower, Trout Lily and Trillium as were the Marsh Marigolds in the low spots.

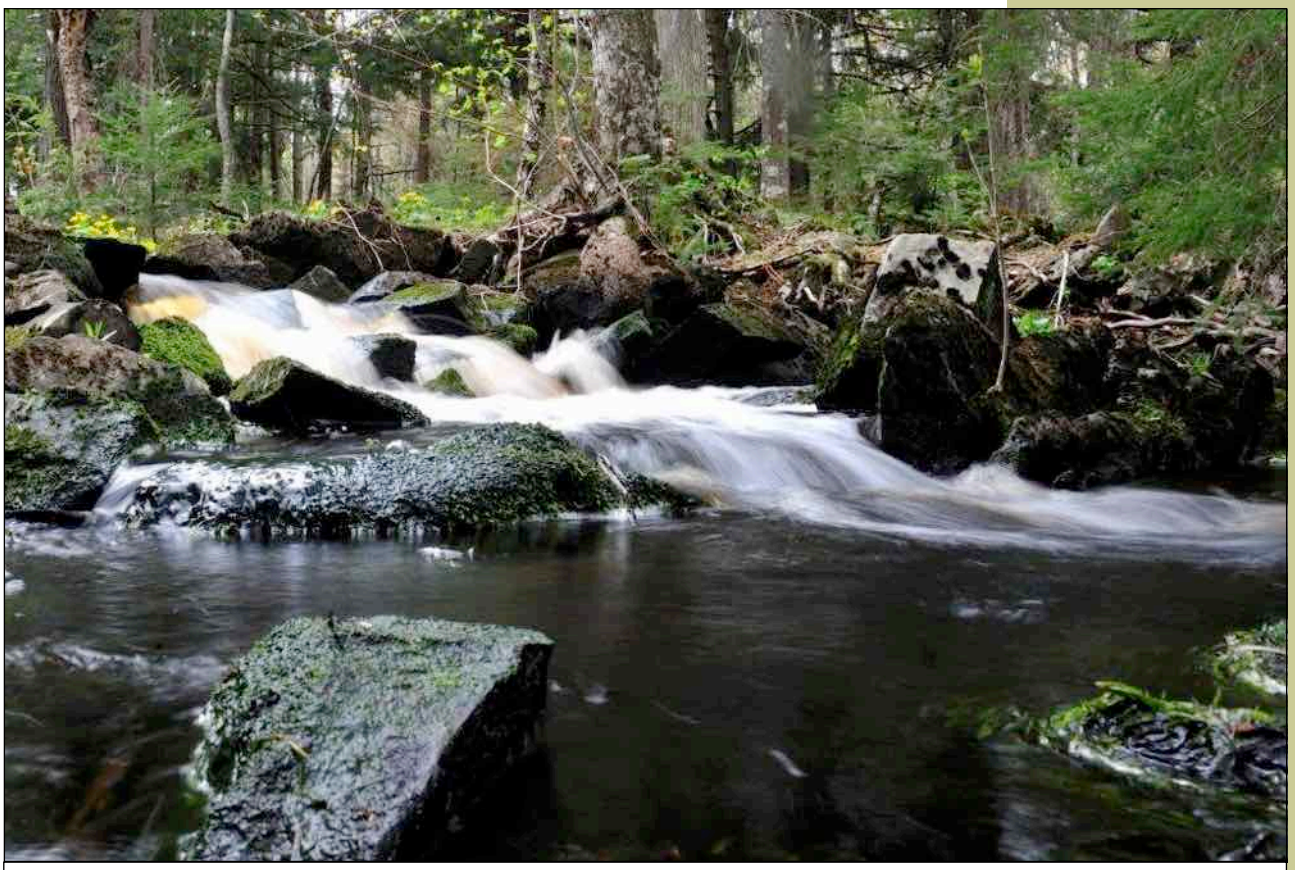
Aquatic biologists Casey Clark and Rachel Hovel analyzed numerous aquatic creatures in front of curious minds eager to learn more of the connection of Stone Flies, vernal pond fairy shrimp, Eastern Red Backed Salamander, Caddies Flies and May Flies to this intriguing ecosystem. In addition to the falls, Scott & Howe Creek has impressive trout structure with meanders, pools, and downed logs in the creek bed. The creek has been interrupted at more than one point by beaver activity, adding yet more interest. Rich Sloat recruited help to determine the elevation of the falls at just over 25 feet, and he took elevations similarly of several rock outcrops.

With a long list of plants and animals now documented on the property, the conservation partners will continue efforts to raise the needed funds to match potential grants. We appreciate any contributions to the project. Donations can be made to Northwood Alliance Inc. with Wildcat Falls in the subject line. Please see the documents concerning this project at the PIF website or ask us for a copy of the document Wildcat Falls: A Community Forest Concept. Either through donations or your time, your help is essential to make this project reality.

The next event in this series is scheduled for July 9, when Quita Sheehan and Mike Peczynski will be leading a tour of the Upper Wisconsin River Legacy Forest. Further details will be announced soon. Other events in the planning stage include a paddle-hike to the Tenderfoot Reserve with Rod Sharka, to see old growth hardwood. Tenderfoot Reserve is 971 acres on the north border of Vilas County and was protected by a grant from the Knowles-Nelson Stewardship Fund to the Nature Conservancy in 2005.

A discussion and view of the Tip Mounds featured by John in the April 2018 issue at Kemp Natural Resource Station in late summer and a fall event on the Northern Highland State Forest will round out our series in the woods, with an indoor session or two for the coming winter. Stay tuned and please participate in these worthy programs.

PHOTOS FROM BIO-BLITZ AT WILDCAT FALLS



The lower stretch of Wildcat Falls as captured by Rick Plonsky during the bio-blitz. Among many other things that day, numerous aquatic creatures were found and released attesting to the wonder and complexity of this project.

Katie Thoresen from News Watch 12 showed up for the bio-blitz and is filming Rachel Hovel and Casey Clark taking aquatic inventory in the falls. Photo: Rick Plonsky

Taking a break and listening to the falling water during the bio-blitz were Steve Garske and Ron Eckstein top, Joe Hovel and Rod Sharka bottom. Photo: Rick Plonsky

Photos on this page:
Rachel Hovel

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CONFESSIONS OF A NEW BUT PASSIONATE MAPLE SAP PRACTITIONER!

By JOEL DEANGELO

WHEN I RETIRED 5 YEARS AGO, I DECIDED IT WAS TIME TO HAVE SOME FUN AND TRY NEW THINGS. THAT FIRST SPRING AFTER BUYING OUR HOME TWO YEARS PRIOR TO RETIREMENT, I CONTACTED THE GUY THE PRIOR OWNER HAD USED FOR PUTTING IN AND TAKING OUT OUR BOAT LIFT. WHILE MAKING THE ARRANGEMENTS BY PHONE HE INVITED MY WIFE AND I TO COME OVER AND SEE HOW HE MADE MAPLE SYRUP.
THE SEED WAS PLANTED.

NORMALLY WHEN THE SAP BEGINS TO FLOW, SNOWMOBILING AND ICE FISHING HAVE ENDED AND THERE JUST ISN'T A LOT TO DO AS WE WAIT FOR THE FULL ARRIVAL OF SPRING. MAKING MAPLE SYRUP IS THE PERFECT FILLER FOR THAT SEASON AND GETS ME OUTSIDE, ALBEIT NEAR A WARM STOVE.

DURING THOSE TWO YEARS PRIOR TO RETIREMENT, MY WIFE AND I CAME NORTH EVERY
OTHER WEEKEND FOR FOUR DAYS. WE ACQUIRED A GOOD FEEL FOR ALL THE SEASONS
THE NORTHWOODS HAVE TO OFFER AND I BEGAN LEARNING ALL I COULD ABOUT MAKING MAPLE SYRUP. WENT TO THE PHELPS MAPLE SYRUP FEST, TALKED TO PRODUCERS LARGE AND SMALL AND READ EVERYTHING I COULD GET MY HANDS ON. BY THE TIME I WAS UP NORTH FULLTIME I WAS READY TO TRY MAKING MAPLE SYRUP ON MY OWN.

THROUGH VOLUNTEERING AT THE KALMAR CENTER DOING TAXES FOR THE ELDERLY AND LOW INCOME FAMILIES I MET A WOMAN WHO HAD OWNED A NURSERY. I TOLD KATHY ABOUT MY INTEREST IN MAKING SYRUP AND SHE OFFERED TO COME TO MY CONOVER PROPERTY AND HELP ME IDENTIFY MY SUGAR MAPLE TREES. FROM WHAT I HAD READ, SUGAR MAPLES WOULD GIVE ME A RATIO OF 40 GALLONS OF SAP TO 1 GALLON OF SYRUP. RED MAPLES SAP WOULD BE CLOSER TO 50 TO 1. TODAY I TAP A MIX OF RED AND SUGAR MAPLES AND FIND THAT EARLY SEASON GIVES ME A 50 - 1 RATIO WHICH BECOMES 40 - 1 AS THE SEASON PROGRESSES. I WILL STATE UP FRONT THAT I AM HAVING FUN MAKING SYRUP, BUT WHAT I DON'T KNOW COULD PROBABLY FILL A BOOK.

THAT FIRST SEASON I TAPPED ABOUT A DOZEN SUGAR MAPLES. I BORROWED TWO STAINLESS STEEL PANS FROM A FRIEND AND TOOK A DOZEN CINDER BLOCKS FROM A NEIGHBOR THAT WAS TRYING TO GET RID OF THEM. TWO PANS OVER A U SHAPE OF CINDERBLOCKS, THROW A BUNCH OF WOOD UNDER THE PANS, DUMP SAP INTO THE PANS AND HOPE FOR SYRUP. THIS IS ACTUALLY A GOOD WAY TO START LEARNING ABOUT MAKING MAPLE SYRUP. I OFFSET THE INEFFICIENCIES OF MY FIRE CONTAINMENT SYSTEM BY SITTING NEXT TO THE FIRE AND FEEDING IN WOOD CONSTANTLY. THAT FIRST YEAR I MADE ABOUT A GALLON OF SYRUP AND I JUST HAD A LOT OF FUN. SOME NEIGHBORS AND FRIENDS CAME OUT THAT FIRST YEAR TO KEEP ME COMPANY WATCHING SAP EVAPORATE, WHICH IS AS EXCITING AS WATCHING GRASS GROW. MY BOIL RATE WAS ABOUT 2 GALLONS OF SAP AN HOUR, SO ONE GALLON OF SYRUP TOOK ABOUT 20 HOURS OF BOILING SAP.
THE SECOND YEAR MY FRIEND JACK SAID HE'D LIKE TO JOIN ME AND HE WANTED TO BUILD A STOVE. HE BOUGHT A KIT AND GOT A USED 55 GALLON DRUM AND NOW WE HAD A FANCY STOVE. TWO PEOPLE ALTERNATING ON CHECKING BAGS AND DUMPING SAP IS ALWAYS BETTER THAN ONE. WE PROBABLY EXPANDED TO HANGING 20 BAGS OR SO THAT YEAR, BUT OUR SAP BOIL RATE WAS STILL ABOUT 2 GALLONS AN HOUR. ALL OUR BAGS WERE HUNG ON THE SOUTH SIDE OF MY PROPERTY IN THE WOODS THAT DIDN'T GET MUCH SUN. SO THE SAP FLOWED SLOW FOR MOST OF THE SEASON AND WOULD THEN GUSH THE LAST WEEK. WE MADE ABOUT

3 GALLONS OF SYRUP THAT YEAR. WE TOOK TURNS WATCHING SAP EVAPORATE WHICH MADE THE LONG HOURS OF A SLOW PROCESS BEARABLE.

THE THIRD YEAR JACK MADE SOME IMPROVEMENTS TO OUR STOVE AND WE GOT OUR SAP RATE UP TO 2.2 GALLONS AN HOUR. WE ADDED MORE BAGS TO MORE TREES INCLUDING SOME TREES TOWARDS THE NORTH SIDE WHICH GOT MORE SUN. THOSE BAGS FLOWED BETTER RIGHT FROM THE BEGINNING OF THE SEASON. WHILE OUR REVELATION MIGHT SEEM LIKE COMMON SENSE, THE DOWNSIDE WAS THAT THE NORTH SIDE TREES WERE FURTHER FROM THE STOVE AND WHEN YOU ARE HAND CARRYING BAGS OR CONTAINERS OF SAP, EVERY STEP COUNTS. WE DID MAKE SOME BIG STRIDES THIS YEAR IN OUR FILTERING PROCESS AND ELIMINATED A LOT OF THE SUGAR SAND THAT WAS SETTLING ON THE BOTTOM OF OUR SYRUP JARS. OUR SEASON ENDED ON APRIL 8TH LAST YEAR AND WE HAD JARRED 4 GALLONS OF SYRUP. UR BIG BREAK CAME WHEN JACK ATTENDED MAPLE SYRUPF EST LAST YEAR AND WON A NEW PAN. THAT PAN HAD MORE SURFACE AREA THAT OUR TWO OLD PANS COMBINED. JACK NOW STARTED DREAMING OF A NEW STOVE.

SOME OTHER FACTS ABOUT OUR PROCESS. SAP BEGINS TO FLOW AS DAYTIME HIGHS ARE ABOVE FREEZING WHILE NIGHTS ARE STILL BELOW FREEZING. SUN CAN MAKE A HUGE DIFFERENT IN HOW THE SAP FLOWS. WE DON'T LIKE STORING SAP MORE THAN 3 - 5 DAYS DEPENDING ON DAYTIME TEMPS. WE HAVE TO GET ENOUGH SAP TO MAKE THE BOIL WORTHWHILE, BUT SOMETIMES AS THE SPRING WEATHER SHIFTS WE END UP DUMPING SAP BECAUSE IT'S GETTING TOO OLD BEFORE WE HAD ENOUGH TO BOIL. WE FINISH OUR BOILS ON A PROPANE FISH BOILER. OUR WHOLE PROCESS IS DONE OUTSIDE. SOME PEOPLE WILL FINISH ON THEIR HOME STOVES. YOU PRETTY MUCH NEED TO DO MOST OF YOUR BOILING WITH WOOD AS PROPANE CAN JUST GET TOO EXPENSIVE. SEASON ENDS AS NIGHT TIME TEMPS ARE ABOVE FREEZING AND THE TREES BEGIN TO BUD.

THIS YEAR WAS MY FOURTH AND JACK'S THIRD AND WE HAD ANEW STOVE. JACK'S STOVE INCLUDED THE PAN HE HAD WON PLUS THE TWO OLD PANS. WE INCREASED OUR SURFACE HEATING AREA BY MORE THAN TRIPLE. THE SEASON STARTED OUT WITH A LOT OF SNOW ON THE GROUND AND WE HAD TO SHOVE AND SNOW-SHOE OUR WAY TO THE TREES. GETTING SAP TO THE STOVE WAS A CHORE. A NEW STOVE COMES WITH A LEARNING CURVE. OUR FIRST BATCH OF 17 GALLONS OF SAP BURNED ON US. THIS STOVE WAS SO MUCH MORE EFFICIENT AND BURNED SO MUCH HOTTER.

THEN THE NEXT BATCH WE SPILLED ABOUT A GALLON OF SAP WE WERE MOVING FROM THE BIG PAN TO THE FINISHING POT. THAT WAS EQUIVALENT TO ABOUT A 1/2 GALLON OF SYRUP. WE FOUND THAT 40 GALLONS OF SAP WAS THE IDEAL SIZE FOR OUR STOVE AND FINISHING CAPABILITIES. WE TRIED 60 GALLONS AND FOUND OUR FILTERS GOT CLOGGED UP AS WE TRIED TO MOVE TO THE FINISHING STAGE. WE HAD NEVER HAD THAT PROBLEM BEFORE SO WE FUMBLED OUR WAY THROUGH THAT BATCH. THAT 60 GALLONS TOOK US ABOUT 10 HOURS WHILE LAST YEAR WOULD HAVE TAKEN 30 HOURS. LAST YEAR OUR LARGEST BATCH WAS 26 GALLONS OF SAP WHICH TOOK 13 HOURS AND WE FINISHED IN THE DARK. NOW A 40 GALLON BATCH IS OUR SWEET SPOT AND TAKES US MAYBE 8 HOURS. WHILE WE MAKE A LOT MORE SYRUP IN LESS TIME WE NOW NEEDED MORE SAP. WE EXPANDED TO 43 TREES BY THE END OF THE SEASON AND CONCENTRATED ON THE SUNNY NORTH SIDE. THAT BIG MID APRIL SNOW STORM SHUT US DOWN FOR ABOUT 10 DAYS AND THE SNOW PROBLEMS WERE WORSE THAT WHAT WE DEALT WITH AT THE BEGINNING OF THE SEASON.

WE WERE PUSHING CONTAINERS OF SAP IN SLEDS TO GET IT BACK TO OUR STOVE.

EVERY YEAR SEEMS TO PRESENT NEW CHALLENGES.

JACK FINISHED BOILING ON APRIL 30 AND WE ENDED OUR SEASON WITH 7 1/4 GALLONS OF SYRUP. JACK ALREADY HAS SOME EQUIPMENT MODIFICATIONS IN MIND FOR NEXT SEASON AND WE WILL MOVE MAYBE 8 TAPS FROM THE SOUTH SIDE TO THE NORTH SIDE TO INCREASE EARLY SEASON SAP FLOW.

IT'S A LOT OF WORK AND FRUSTRATING AT TIMES, BUT ALSO A LOT OF FUN. OUR SYRUP SELLS FOR $85 A PINT. ALTHOUGH WE HAVE YET TO SELL A JAR, WITH OUR PANTRIES FILLED WITH JARS OF SYRUP, OUR NET WORTH ON PAPER HAS DOUBLED!

WE THEN PUT THAT POT ON A PROPANE STOVE UNTIL WE HAVE SYRUP. Joel DeAngelo

FEEL FREE TO CALL OR EMAIL ME IF YOU HAVE ANY QUESTIONS OR WOULD LIKE TO VISIT OUR SUGAR SHACK NEXT SPRING. OUR SPECIALTY IS IN BEING ABLE TO TELL YOU WHAT NOT TO DO SINCE WE'VE MADE SO MANY MISTAKES ALONG THE WAY.

JOEL DEANGELO SMOKE-POLE HOLLOW
715-545-3579 joeldeangelo@yahoo.com

PINT JAR OF OUR SYRUP. JACK AND I ARE JUST A COUPLE OF OLD HUNTERS SITTING AROUND THE FIRE MAKING SYRUP. Joel DeAngelo

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MAPLES OF WISCONSIN

Scott Bowe

Wisconsin has seven native maple trees and many more non-native ornamental maples, with some of these considered invasive. We all know the sugar maple, our state tree, but the others are less well known. Let's look at Wisconsin's maples and how they are used in our daily lives.

I've already mentioned sugar maple, *Acer saccharum*. Our state tree and most abundant tree species by volume in all of Wisconsin, boasting 2.8 billion cubic feet in live trees. Sugar maple is popular in sugar bushes around the state. It's not the only maple that can be tapped for maple syrup production, but it does have the highest sap sugar content of our native maples. From a production perspective, sugar maple is called hard maple in the hardwood lumber industry. It is hard and dense, equal to red oak in density. Hard maple has a diffuse porous cell structure, which means the cell diameters are relatively small, which produces a closed and subtle grain pattern. Hard maple has been popular for years for kitchen cabinets and in solid strip wood flooring, especially sports flooring applications.

Red maple, *Acer rubrum*, is the second most abundant tree species by volume in all of Wisconsin with 2.7 billion cubic feet of live trees. Red maple can also be used for maple syrup production, but its sap sugar content is less than sugar maple. In the sawmill industry, red maple is called soft maple. Despite its name, soft maple is still relatively hard and dense, but less dense than sugar maple. Soft maple has a diffuse porous cell structure like hard maple and looks very similar in appearance.
Soft maple is a less expensive substitute for hard maple lumber and is also used for kitchen cabinets usually in painted applications. Both hard and soft maple are important pulpwood species supplying our pulp and paper industry.

Silver maple, *Acer saccharinum*, is a maple species that likes to keep its feet wet. Growing in creek bottoms and wet areas, it is fast growing and less dense than sugar or red maple. Silver maple is grouped into the soft maple lumber group by the sawmill industry. Silver maple lumber is similar in appearance to red maple, but cannot be used interchangeably. If you were to glue up a solid door panel with a mixture of red and silver maple staves, you would see a clear difference. Especially when the door panel is stained, the staves will not match.

Boxelder, *Acer negundo*, is sometimes called boxelder maple or Manitoba maple by our friends to the north. It is often thought to be another species because it has a compound leaf with three leaflets. Not considered a commercial species, it is common flood plains and other disturbed areas. Fast growing, it will pop up along fence lines and alley ways. If you want a fast-growing tree in your yard, plant a boxelder. If you want two trees, cut a branch and stick it in the ground, it will grow. Even though boxelder is not a commercial lumber species, its wood can have a pinkish color, which makes for interesting paneling.

A Little Basic Talk About Maple Trees!
See Partners News April '17 for details on Sugar Maple.
We have also thoroughly covered the maple die back issue in recent years.

The last three native maples are less well known. They are striped maple, *Acer pensylvanicum*, mountain maple, *Acer spicatum*, and finally black maple, *Acer nigrum*, which some people believe to be a subspecies of sugar maple.

Norway maple, *Acer platanoides*, is very common in Wisconsin, but it is an exotic species brought over from Europe in the 1700s. It became a popular yard tree and street tree because of its dense foliage, ease of transplanting, and fast growth rate. Norway maple is well suited to the urban environment because it tolerates road salt, concrete, and a variety of soil types. Norway maple was a popular replacement for the American elm after the wave of Dutch elm disease. Norway maple is not a commercial lumber species and is considered an exotic invasive since it has made its way into native forests throughout the eastern US.

There are more than a dozen ornamental maples that can survive Wisconsin winters. These varieties were bred for size, shape, and color for ornamental design applications. Many are exotic and considered invasive but make up a large part of our urban landscape. They go by names such as Amur Maple, Autumn Blaze, Indian Summer, Crimson King, Japanese Maple, and many more.

From a wildlife perspective, maples are important nesting trees for birds and small mammals. The flowers are an important food source for pollinating insects, while the seed mast is an important food source for small mammals and birds.

Maples make up a large part of our forests with sugar and red maple being the two most abundant species in Wisconsin. Both are important lumber and pulpwood species. Wisconsin supports dozens of other maples that make our state a great place to live and work.

Scott Bowe is a Professor of Wood Products and Director of the University of Wisconsin-Madison's Kemp Natural Resources Station.

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READERS' COMMENTS

Readers are encouraged to comment, criticize, or praise our work as they see fit. We appreciate hearing from you and sharing with you, that is the COOP spirit.

In response to our mention of Frac Sand mining in the April 2018 issue one reader wrote, "If he were alive today, Aldo Leopold would be writing A Sand County Armageddon."

In other comments folks enjoyed the diversity of the April 2018 issue. We appreciate hearing from you, this is your Coop, be involved.

PIF note:
With all the recent changes to the Managed Forest Law program as well as all the restructuring at WDNR, PIF went direct to the source and talked to a new Forest Tax Law Forester Chuck Abitz. Any one with an interest in the MFL program wants to read this interview.

PIF: Thank you Chuck, for taking time to inform our readers of the new structure at DNR, especially in regard to MFL and other tax law issues.

First off, please tell us a little about your back ground and experience leading up to your new position.

I graduated from UW-Stevens Point in 2012 with a bachelor's degree in Forest Management and Urban Forestry. I was then hired as a Limited Term Employment (LTE) Forester on the Northern Highland American Legion (NHAL) State Forest in the summer of 2013. While working on the NHAL and the Willow Flowage Scenic Waters Area, I established and administered timber sales to help meet the allowable harvest. When I wasn't establishing timber sales, I also updated recon, monitored regeneration efforts and assisted the local forestry staff.

My next opportunity with the DNR came in the fall of 2015 when I assisted with the startup of the Good Neighbor Authority (GNA) program resulting in my move to Crandon, WI. The focus of Wisconsin's GNA Program is to assist in implementation of the Chequamegon-Nicolet National Forest Plan, which provides forest products to the local economy. The result is a collaboration between federal, state and county forest managers to improve health and resiliency of forestlands and watersheds within northern Wisconsin.

The following May of 2016, I became the full-time Senior Forester in Ellsworth Wisconsin. Ellsworth is located on the western edge of Wisconsin and is known as the cheese curd capital of Wisconsin. I stopped frequently on the drive home for fresh curds! Here I became the sole DNR contact for Pierce County and the job duty was mostly the administration of the MFL program. Ellsworth was a one man office and I had to learn the MFL program quickly as I was trying to fill the shoes of a retired DNR forester who spent almost his entire career in that location.

A little over a year later, the Oneida and Vilas County Tax Law Forestry Specialist position was created through the DNR realignment process. After applying and competing for the position, I accepted their offer with my first day beginning in July of 2017 out of the Woodruff Ranger Station.

PIF: How did your experience lead to your interest in the Tax Law, and resulting in your new position?

I feel that my time spent in Pierce county played the biggest role in my ability to compete and accepting the new position. Working almost exclusively with the MFL program and private landowners set me apart from those that had MFL as a much smaller portion of their job duties.

Working with landowners can be very rewarding, when you can help a person achieve or take the necessary steps to make their dreams a reality. As we all know it's not without its own trials and tribulations but those are the minority and you'll have that with any job or position. I would be lying if I didn't say the location of the job played a big role in my desire for the position. I grew up spending countless hours fishing on these northern lakes and enjoying the great Northwoods. I like the timber types, the variety that is located within the two-county area, the recreational opportunities and overall hospitality of the residents.

PIF: Specifically, please inform us about what forestry issues we should contact you or contact our long time DNR forestry staff? This is a big change for woodland owners enrolled in MFL and it is great to talk to you about this.

No problem, the DNR has gone through a lot of changes within the last year and a half, with the biggest change being the specialization of positions, especially within the Forestry Division. There are now Integrated Field Foresters and Tax Law Forestry Specialists.

With continual MFL rule changes through legislation, the program complexity has increased since MFL's inception in 1985. By creating Tax Law Forestry Specialists, like myself, who deal exclusively with the MFL program, the MFL partners and landowners will get the specialized attention they require. If you are enrolled in MFL or have MFL questions, you should contact your local Tax Law Forestry Specialist as we will be processing all MFL related forms and contacts.

This change also allows the Integrated Foresters to focus on other forestry tasks that were becoming increasingly difficult to juggle as the MFL program demanded more time. The Integrated Foresters will continue to manage our public forest lands, outreach and wildfire program. Trading in their MFL responsibilities have allowed Integrated Foresters the time to engage with private woodland landowners who aren't currently enrolled in the MFL program and assisting them with their forestry needs including identifying cost sharing programs like WFLGP or EQIP to list a few.

The MFL program isn't the right program for everyone, but helping landowners achieve their management goals is the DNR's overall goal. This focus on non-MFL lands will provide Wisconsin landowners another opportunity to receive guidance and professional help in managing their lands. If you are this landowner and want to begin the journey of achieving your management goals, don't hesitate to call your local Integrated Forester for a FREE property walkthrough and consultation.

The DNR forestry division is here to serve the public and we all strive to answer your questions to the best of our abilities in a timely manner. If we can't answer your question, we will get you in contact with a person who can, and that's true for all DNR staff.

To find out additional MFL information or your local DNR Tax Law Specialist or Integrated Forester, go to dnr.wi.gov, keyword "MFL"

PIF: We have covered the main changes to MFL over the past couple years. Are there any of these changes which are causing any grief with your end of the work?

I would say the biggest issue is the misconception in MFL is around the term "renewal." A renewal is a new plan for lands currently enrolled in MFL that will be expiring. Both a renewal and a new plan must go through the exact same process to be enrolled into the MFL program for another 25 or 50 years. I have had landowners express interest in "simply renewing their MFL" because they liked how the program was during their previous contract period, but I must inform them that they can't renew under the old terms of the law and are subject to the new rules and regulations.

Another area of concern is for landowners currently enrolled in MFL that own between 10 and less than 20 acres. The new minimum standard for MFL entry is 20 acres but the law allows for a "one-time renewal" of those lands between 10 and less than 20 acres. This situation requires a different set of steps that must be taken before a plan can be approved to ensure compliance with the new regulations. Therefore, it is very important for landowners that are in this situation to be working with their Tax Law Forestry Specialist, or Certified Plan Writer sooner rather than later to ensure their lands will meet the eligibility requirements so that they can take advantage of the one-time renewal.

While we're on the subject of MFL renewals, landowners must be in compliance with their existing MFL plan and mandatory practices to be eligible for a renewal. If you have any concerns with program compliance, please contact your local Tax Law Forestry Specialist right away. We will work with you to begin the steps to return those lands back into compliance. I assure you most of the time, it's an easier process than one would think and we want landowners to achieve their goals.

PIF: Please, in a short summary, inform our readers of the time frame and process in entering a new parcel into MFL? At what point do you see the MFL proposal from the Certified Plan Writer?

To enroll into the MFL program, the landowner(s) need to hire a Certified Plan Writer (CPW) to write their MFL plan and submit an MFL application form with application fee. All applications and must be submitted to the DNR MFL database (WisFIRS) by 11:59 PM on June 1st. The application fee and remittance form must be received by the department within 14 days of when the application is submitted. Once submitted, the local Tax Law Forestry Specialist works to review and approve the MFL plans.

The Tax Law Forestry Specialists are notified as soon as an MFL plan is submitted for review and we have 45 days to review each plan. One of the most important parts of the plan review process is making sure the deed(s) are correct and show 100% ownership. If during our review we discover something needs to be changed in the plan, we will work with the CPW to make sure the plan is approvable by our October 1st deadline.

In November the department issues orders to designate land as MFL for all the applications that were approved during the application season. These lands will become MFL lands on January 1st.
A list of certified plan writers can be found at: dnr.wi.gov, keyword "CPW"

PIF: Assuming a member or his forester sends you a cutting notice, please tell us which jobs you will inspect and which ones are the responsibility of another forester?

I'll answer the 2nd part first, all MFL cutting notices and any other MFL-related documents should be sent to your local Tax Law Forestry Specialist for processing. Tax Law Forestry Specialists are the DNR foresters assigned to all MFL work. Tax Law Forestry Specialists cover specific areas across the state, so it is easy to locate your local Tax Law Forestry Specialist on the DNR website (dnr.wi.gov, Keyword: Forester).

At least 30 days prior to harvesting on lands enrolled in MFL, a cutting notice must be submitted. When submitted, the Tax Law Forestry Specialist will review the notice to determine if it requires approval or not. There are a few things that trigger DNR approval needed on a cutting notice, including: (1) the submitter is not a Wisconsin Cooperating forester, a forester accredited by the Society of American Foresters, Wisconsin Consulting foresters, of the Association of Consulting Foresters, or a person with at least 5 years of experience engaged in the full time profession of managing forests, (2) the harvesting proposal on the notice does not match the management plan or does not follow sound forestry, or (3) the landowner requests DNR approval.

On the cutting notice, above the landowner signature portion there is question stating, "Landowner requests DNR review and approval Yes or No". If the landowner wants DNR approval of the cutting notice, they must select "Yes". If the landowner selects "No" and the cutting notice adheres to the management plan and is submitted by a person not requiring approval, then the DNR has no approval authority and simply reviews the notice for completeness before uploading to our tracking system. If the landowner selects "No" but the person submitting the cutting notice requires approval, then the Tax Law Forestry Specialist has the authority to approve after reviewing the cutting notice and sale area.

Even though the Tax Law Forestry Specialist won't be approving all of the cutting notices on the front end, we will be field checking the completed practices to ensure landowners and their agent followed the MFL plan and completed what they said they would do on the cutting notice.

The Division of Forestry puts trust in our private sector partners, landowners included, to follow the rules and regulations of the MFL program. Ultimately the landowner is responsible for what happens on their MFL

lands. If an issue arises after the harvesting is complete, it is the landowner's responsibility to rectify the issue to come back into compliance with MFL regulations.

PIF: Tell us a little about yourself. What are your outdoor interests? What is your favorite natural feature in this area?

I grew up in the Wausau area at the foothills of Rib Mountain and spent a lot of my childhood weekends out at the family land with my Dad. I built many forts and chopped a lot of dead trees with my trusty hatchet. I would say that this early exposure to the forest is what fueled my passion for forest management and learning more about the different trees that grew out there. My grandparents have a cottage on a small lake south of Hazelhurst, where I spent many summer days catching largemouth bass and tiny bluegills. As I grew older, I caught the musky bug and life hasn't been the same since.

After my stay in Ellsworth, I have grown to appreciate trout fishing and I'm looking forward to spending some late spring/early summer weekends making a mini road trip across the state to the famed Coulee country rivers again. I will spend much of the summer and early fall chasing the elusive musky from dawn till dusk and was rewarded with my new personal best measuring in at 45 inches caught this past year. I also spend summer weekends working in the woods prepping for the upcoming bowhunting season. Once the temperature begins to drop late October I switch over to bowhunting and try to add another buck to my wall or doe for the freezer. Fall is a difficult time to decide which activity I should pursue relating to bowhunting or musky fishing – good thing it's an excellent time for both.

I can foresee an empty spot on the wall where a 50-inch musky should be and that's the day I put down the bow and I'm musky fishing while it's snowing on me. After the lakes freeze, I spend most of the winter jigging for gills or crappies, and catching northerns on tip-ups. My interests revolve around the seasons.

My favorite natural feature would have to be all the lakes in the area (especially those that hold muskies!) I feel blessed to be working and living in an area that has so much to offer and a new water feature around every bend.

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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.

TAKE FEWER LEEKS

By Paul Hetzler, Cornell Extension

Friends and family understand that some of my dinners can be pretty wild. For example, right now they may include mashed sunchoke or "Jerusalem artichoke" tubers that escaped the voles and mice over the winter, as well as a steaming plate of tender, sweet nettles. (When cooked, the latter lose their sting, becoming tame as kittens. Better even, because they don't shed.)

But the tastiest wild food around in very early spring is our native wild leek, *Allium tricoccum*, a.k.a. wild garlic, spring onion, or ramp (from "ramson," a name for a similar European species). It pushes its light green leaves up through the leaf litter in hardwood forests along eastern North America, from Québec and Ontario south to South Carolina, in very early spring. They grow in clumps, occasionally forming large colonies which in some places carpet the forest floor. They last for only a few weeks, fading away by late June.

In terms of evolution, early-spring plants such as wild leeks and trout lilies, and to a lesser extent trilliums, have found a handy niche in the hardwood forest ecosystem. By emerging first they get their pick of nutrients contained in the melted snow before the competition wakes up. They are also assured of ample moisture before they become dormant. And because there are no leaves on over-story trees, they get lots of sunlight. Which is lucky for us, as a large swath of emerald-green wild leeks in full sun is really a marvel to behold.

The flavor of wild leeks is described as a mix of garlic and onion. The whole plant is typically dug up, roots included, and all parts of it are used. Its modest bulb is absent on young plants which are just emerging, but it matures by the time the plant fades. The bulb is used like garlic or onion, and some like it pickled. The broad leaf, similar in size and shape to those of lily or tulip, can be chopped fresh and used in salads, but it is usually cooked along with the scallion-like stem in a soup, stir-fry, omelet or other savory dish.

Allium tricoccum has a long history of being harvested from the wild, and sold at markets or in grocery stores. With the advent of the "locavore" and "foodie" movements, wild leeks are in higher demand than ever. Unfortunately, this has put them at increased risk of being over-harvested at the same time their populations are fast dwindling.

One of the problems is that wild leeks reproduce very slowly, taking 5-7 years to fully mature and make seeds to complete their life cycle. Even the seeds take 2 years to germinate. In the words of Jacob Richler, writing for Maclean's magazine in May 2014, "…wild leeks mature and breed about as efficiently as sharks." The same article says that according to researchers in Quebec, harvesting more than 5% of the leeks annually in any given area is unsustainable.

In the province of Québec, wild leeks were nearly wiped out over large regions. Leeks are now listed as a threatened plant there, and a ban on commercial harvesting has been in place since 1995. Québec residents are only allowed to pick 50 plants a year for personal use. According to Andrée Nault, a researcher at the Montréal Biodôme, authorities seized 444,000 bulbs from poachers in 1999, which were (bulbs, not poachers) all planted by volunteers.

Portions of Tennessee and South Carolina are also subject to harvest bans as of 2004. On Federal forest land, a harvest permit is required to pick any amount of leeks. In New York State, it is legal to harvest wild leeks on NYS land, with the exception of a sub-species (so-called "Burdick's leek") in Chautauqua County.

However, a growing number of people are calling on officials to take steps to limit the harvest of wild leeks. Many conservation groups recommend not only limiting the harvest to 5% of a patch, but only taking the greens, which leaves the bulb to continue maturing the next year.

I do advocate enjoying wild foods, but when you're out in the woods this spring, please think twice before taking a leek.

Note from Joe: Having planted some leek seeds in Vilas County under Sugar Maple last fall this story caught my attention. We should enjoy and remain diligent about all these more subtle benefits from our forests, and forest farming is a very worthy benefit.

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WHITE BIRCH BARK, FROM NORTHERN WOODLANDS.

By Michael Snyder

PIF note: It is worthy to discuss White Birch in Partners News. Once an icon of the north, it is now a much reduced part of the landscape. A shorter lived tree, it did cover the north along with aspen, following the large cutover era of a century ago. Birch is extremely sensitive to deer browse, its stump sprouts eaten off as they grow. It also suffered greatly from the drought years. Most of us hope white birch remains a part of the landscape, a consideration in your management

Paper birch trees are also known as white birch (Betula papyrifera).

Ecologists marvel about how adaptable they are, growing natively over a transcontinental range and doing so in all types of soil and topographic situations. Generations of happy homeowners rave about paper birch's value as beautiful veneer and as solid-wood furniture and cabinetry. Even Robert Frost famously extolled their flexibility and capacity to provide gymnastic thrills to young boys and other "swingers of birches" in his poem, Birches.

But really, which among its many traits and features can rival paper birch's bark, with its great, peeling, papery sheets of white? Paper birch trunks stand out in such bright contrast to their darker neighbors – be they maple and cherry or spruce and fir – that one has to wonder: why so white? And does it do the tree any good?

White is what we see when an object absorbs no visible light but instead reflects back to our eyes all colors in equal proportion. Paper birch trees appear white to us because they reflect most of the sun's rays. In contrast, dark-barked trees – which is to say, pretty much all other trees – reflect very little but instead absorb nearly all colors. This is key: dark trees absorb light, white trees reflect it.

It turns out that the high reflectivity of paper birch bark may be related to the transcontinental distribution of the species that so excites ecologists. Consider that with light from the sun also comes heat. Absorption of sunlight by a tree's bark causes heat gain. Oddly enough, in northern climates, mid-winter warming of a tree's bark is not a good thing. Such warming may cause rapid fluctuations in the temperature of the cambium, that all-important, thin veil of regenerative cells between the bark and the wood. Extreme fluctuation in the temperature of these cells, especially from warm back to really cold, commonly results in cell death and severe injury to the stem and bark. Sunscald, frost cracks, loss of sap conduction, and sometimes even the death of the tree are all possible outcomes. Could it be that being white helps paper birch trees avoid such dangers? Is whiteness an adaptation for living in cold environments and avoiding midwinter heat gain and its potential harm?

It sure would seem so. Paper birch is one of just four deciduous tree species that reach the northern limits of tree growth in North America. The others are Alaska white birch, trembling aspen, and balsam poplar. What else do these species have in common, besides being the northernmost survivors? You got it: they all have thin, light-colored bark. Researchers have hypothesized that light-colored bark reduces the risk of winter injury and may explain why the northernmost deciduous trees are those with highly reflective bark.

In one study, researchers painted paper birch trees brown and noted that mid-winter cambium temperatures were higher in the artificially darkened stems. The brown-painted trees also cooled more rapidly than their lighter-colored counterparts. This same study found that after two years, brown-painted aspen stems in the Yukon had higher incidence of wounding than did white-painted and natural trees. The researchers suggest a real and meaningful connection between bark color and tree survival in northern environments.

Still, what makes paper birch bark white? What makes it so highly reflective and conceivably more suitable for northern climates? Evidently, birch bark is white because it is rich in betulin (the name having been derived from Betula, the birch genus.) A triterpene to your chemist friends, betulin occurs as crystalline deposits in cells in the outer layers of the bark. These betulin crystals are physically arranged in such a way (not unlike snow) as to appear white. This admittedly dry fact comes to life when we consider that betulin has great pharmacological and therapeutic promise for humans as well. It is said to be bactericidal, fungicidal, antiviral, analgesic, spermicidal, anti-allergenic: it may even prevent cancer. How fitting, then, that the very whiteness that evidently helps paper birch trees to live at the northern limit of trees just may also help us live to enjoy them.

Michael Snyder is the Chittenden (Vermont) County Forester.

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VARIOUS WHITE BIRCH FACTS AND ARTICLES

Paper Birch, White Birch or Canoe Birch, a relatively short lived successional species was once an icon of the north-woods. The paper birch can be expected to grow in Hardiness Zones 2-7. This tree is considered both a shade tree and an ornamental tree as well as an important timber tree*. It features a spreading canopy capable of blocking sunlight and adds visual interest and beauty to landscape settings.

The paper birch grows to a height of 50-70' and a spread of around 35' at maturity. White Birch experiences a medium to fast growth rate, with height increases of anywhere from 13" to more than 24" per year. Full sun and partial shade are best for this tree, meaning it prefers a minimum of four hours of direct, unfiltered sunlight each day.

The paper birch grows well in acidic, loamy, moist, sandy, well-drained and clay soils. While it prefers normal moisture, the tree has some drought tolerance.

Attributes of White Birch

- Develops a smooth white bark that curls and peels (once mature).
- Provides bright yellow fall color.
- Features simple leaves that are 2-4" long, borne on leaf stems about 1" in length and medium green in color. Margins are double-toothed and leaves are arranged alternately.

- Produces brown or green catkins in April and May.
- Grows in an oval shape.
- Yields very small seeds that are smooth and oval or elliptical in shape, nestled between two wings.

Wildlife Value

Wintering moose find the sheer abundance of paper birch in young stands important, despite the poor nutritional quality. White-tailed deer eat considerable amounts of paper birch leaves in the fall and browse aggressively on young saplings, seedlings and stump sprouts, hampering birch regeneration.

Snowshoe hares also browse paper birch seedlings and saplings, beavers find
it a good second choice food and porcupines feed on the inner bark. Voles, shrews, Redpolls, siskins and chickadees eat the seeds. Numerous cavity-nesting birds nest in paper birch, including woodpeckers, chickadees, nuthatches and swallows. Pecking holes in the bark, the yellow-bellied sapsucker finds the paper birch a favorite tree. Hummingbirds and red squirrels then feed at sapwells created by sapsuckers. Ruffed grouse eat the catkins (flowers) and buds.

History/Lore

The paper birch received its name from the nature of its bark. Long ago, people would peel layers of the thin, paper-like bark and write on it as a way to send messages. More descriptive names include white birch and canoe birch—recalling its favor among Native Americans and early fur trappers as a resource for sleek, sturdy, and lightweight watercraft.

** Note from Joe:*
When I first moved to Vilas County in the early 80's I befriended a wonderful old wood worker named Milo Denton. Milo made turnings on a lathe and used only white birch. He boasted of the strength to weight ratio of birch as well as its ability to hold stains, by which he said he could mimic most any other hardwood. I was a fan of making white birch plank wood floors.

Read this fact sheet from the United Nations on the state of the world's forests. This parallels our reasons for conserving forest land.

Forests are much more than trees-they are an entire ecosystem unto themselves. They are composed of trees, herbs, fungi, micro-organisms, animals, soils and numerous plant species. All these interact to influence everything from the availability of fresh water to a regions climate. Forests provide shade to the traveler, food for the hungry, medicine for the sick and construction material for shelter. The also absorb carbon from the atmosphere, which can help offset global warming trends.

Though only of a component of the forests, it is the sustainability of trees that determines the longevity of a forest. A renewable resource, trees replace themselves when harvested in a sustainable fashion from the forest. A forest can expand at a rate of per cent or more each year, which can mean that much growth can be harvested annually in a sustainable fashion with the forest replacing them. Many people who depend on trees for their daily needs, however, are harvesting them faster than they are able to grow back, severely diminishing the resource in some areas.

We should act locally but we must be concerned globally, thus it is disturbing that more than 1.8 million hectares of dry deciduous forest disappear every year, 40 % of which is lost in the Sudan, Paraguay, Brazil and India. Annual loses of very dry forest total some 341,000 hectares. Sudan loses 81,000 hectares of this type of forest each year, followed by Botswana, with 58,000 hectares. Global annual deforestation for desert forest stands at an estimated 84,000 hectares of which 60% is in Mexico and Pakistan. Hills and mountain terrain lose about 2.7 million hectares of forest annually, 640,000 of which is lost in Brazil, 370,000 in Mexico and 150,000 hectares in Indonesia.

More Paper Birch facts.

- **When used for syrup, birch is tapped at a later date than is maple, and yields only .9% sugar compared to 2.5% in sugar maple.**
- **It is a medium dense wood for fuel weighing in at 37.4 lbs. cu./ft. and 20,300,000 BTUs per cord.**
- **Betula papyrifera readily hybridizes with other birch species, which may account for its survival out side its normal range at times.**
- **Intolerant of heat, the species does best in zones 2-4 and stretches into zone 5 and 6. Paper birch has become rare in Illinois and Indiana.**
- **Flambeau Paper Co. in Park Falls, Wisconsin, was a user of primarily birch pulp wood for years. In 2015 Flambeau Paper sold their Lignan division to Borregaard, a Norwegian company with operations in the US. Flambeau Paper has long been a solid part of the northern Wisconsin economy, reopening under the guidance of Butch Johnson after a brief closure about 12 years ago. Sadly, they laid off 82 employees and closed a paper line in January 2018.**

Threatened by climate warming and over-browsing by deer the paper birch is also being poached for home decorations.

Poaching of young Paper Birch threatening an already delicate resource.

Reprinted from the Wisconsin Farmer: by Scott Gordon.

An ongoing rash of illegal harvesting in northern stretches of Minnesota and Wisconsin is helping hasten the decline of the region's paper birch trees.

In Washburn County alone, officials say thousands of birch trees have been illegally cut since fall 2016 alone, a response to the trees' popularity as decor. This poaching follows decades of natural and human blows to the species. The volume of birch trees in Wisconsin has decreased 54 percent since 1983, according to a 2016 report from the Wisconsin Department of Natural Resources Division of Forestry. Now, these trees are dying faster than they are reproducing.

In a historical context, it's an intriguing twist that human activity is putting new pressure on birch in the ever-changing North Woods, because they were once an indirect beneficiary of pervasive logging.

As loggers clear-cut wide swaths of the region's ancient pine and hemlock forests in the late 19th and early 20th centuries, they left behind massive amounts of fallen trees and branches. This material, called "slash," dried out and made the region more susceptible to forest fires. These fires harmed some tree species' ability to reproduce, but created favorable soil conditions for birch — which, thanks to the clear-cutting, had plenty of light and room to spread.

Most of the paper birch losses have taken place since the late 90s and early 2000s, when the trees experienced about eight years of drought, many of them dying without spreading their seeds. They've also suffered from insects and diseases, and struggled to compete with other tree species including the aspen and red maple, said Colleen Matula, an Ashland-based forest ecologist with the Wisconsin Department of Natural Resources. The North Woods are also seeing a lot less of those fires common more than a century ago.

"Typically birch was maintained and generated by fire, and most of that is suppressed now so foresters resort to site scarification and other measures," Matula said. (Scarification is a process through which plant seed coats require alteration, in some cases through fire, to allow germination.) She added that climate change can aggravate some of these challenges to birch, but that the trees in Wisconsin would likely be struggling even absent its effects.

Paper birch poaching is attracting more attention, but in places like Douglas County it's been going on for more than a decade, found Wisconsin Public Radio reporter Danielle Kaeding. In an April 6, 2017 interview on WPR's Central Time, she noted how the poaching is contributing to the ongoing decline of the species in the region.

"If you combine the lack of birch trees with what we're seeing right now in illegal harvesting, or illegal harvesting and efforts to grow it, it's kind of leading to a lot of concerns about the sustainability of the resource," she said.

The problem isn't just in how much birch people are illegally cutting, but how they're going about it.

Just about all the poaching has focused on younger trees, because people make decorations out of branches and slim trunks, not mature trees with a larger diameter.

"A lot of people want to have that clean young birch tree look in their homes," Kaeding explained on Central Time.

For poachers, the sweet spot for birch are trees between 6 and 15 years old, Matula said. This age means fewer birch will grow old enough to reproduce.

"We need seed-producing trees, and that entails for the tree to get about 45 to 50 years old before it produces seed," she said.

Birch tree trunks that have been cut down can sprout anew from stumps, but even here, the poachers' actions are damaging. Cutting a tree lower to the ground creates the best conditions for sprouting, because it helps to stimulate hormones in the stump, Matula said. But illegal harvesters, perhaps trying to spare themselves more back pain, are cutting birch trunks higher from the

ground, leaving stumps about 3 or 4 feet tall. That height is less conducive to sprouting.

These thefts also stymie the efforts northern Wisconsin environmental officials have made over the years to manage birch, as Washburn County forester Mike Peterson explained in an April 14, 2017 interview on Wisconsin Public Television's Here And Now.

"When we harvest white birch, we make a very concerted effort to get white birch started, regenerated, and regrown before we harvest," Peterson said. "We've got hundred and hundreds of hours and a lot of money invested into disturbing the soil underneath these stands so we can get white birch to regrow, and then to come back to look at some of these these sites and see that they've stolen all the one-inch, two-inch, three-inch-diameter material off of this, it's bothersome, because in a lot of ways they're stealing the future off of these young forests."

Authorities are weighing a variety of possible solutions, from increasing forest patrols to conducting a "zoned harvest" of birch in order to improve management of the resource.

PIF note: Birch limbs have long been a décor item, and for years was sustainably harvested from tops of trees following harvest of older trees. An ambitious entrepreneur from Vilas County used to haul trailer loads to California after cleaning tops from logging jobs. The theft of younger birch trees is a very troubling situation.

On the Upper Wisconsin River Legacy Forest the mature large paper birch was protected from deer by a balsam blowdown and sent out two young stump shoots. Photo: Casey Clark

CHAGA; ANOTHER BENEFIT FROM OUR FORESTS AS A NON TIMBER FOREST PRODUCT.

COMPILED BY RACHEL HOVEL

Inonotus obliquus, commonly known as chaga mushroom, is a fungus in the family Hymenochaetaceae that is found most commonly in the circumboreal region of the Northern Hemisphere. This fungus is parasitic on birch and other trees, usually appearing on aging trees and remaining after the host tree is dead. The chaga spores enter the tree through wounds, and causes a white heart rot to develop in the host tree and spread throughout the heartwood. During the infection cycle, penetration of the sapwood occurs only around the sterile exterior mycelium mass. The chaga fungus will continue to cause decay within the living tree for 10-80+ years, and while the tree is alive only sterile (non-reproductive) mycelial masses are produced (the black exterior conk). This visible portion of the fungus, the mushroom conk, is irregularly formed with the appearance of burnt charcoal due to large amounts of melanin. The sexual stage begins after the tree, or some portion of the tree, is killed. Chaga will begin to produce whitish fertile fruiting bodies underneath the bark. These fruiting bodies produce basidiospores which spread the infection to other vulnerable trees, and since the sexual stage occurs almost entirely under the bark, the fruiting body is rarely seen. Generally found growing on Birch trees, chaga has also been found on Alder, Beech, Oak and Poplar. In species other than birch, the fungus often appears as buried stem cancer, instead of the charcoal like mass found on birch trees.

Chaga has been used as a folk remedy in North-European countries for centuries. In alternative medicine, it is thought to be a cancer therapy and anti-inflammatory, and some research has been conducted to evaluate its effectiveness. It appears that only the chaga from live birch has a medicinal food value. Attempts at cultivating this fungus on potato dextrose agar and other simulated mediums resulted in a reduced and markedly different production of bioactive metabolites, and the bioactive triterpene betulinic acid is completely absent in cultivated chaga. In nature chaga grows predominantly on birches, and birch bark contains up to 22% of betulin. Betulin is poorly absorbed by humans, and even when administered intravenously its bioavailability is very limited. However, the chaga mushroom converts betulin into betulinic acid, and some research suggests that chaga's betulinic acid is bioavailable, even when taken orally.

Chaga on a white birch near the Upper Wisconsin River.

Chaga crust is charcoal appearing while the inside is golden brown.

Chaga is marketed as a medicinal food, this bag from Maine paper birch.

Photos: Casey Clark

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And an opinion from the expert, PIF friend and Mycologist Dana Richter from the Michigan Tech forestry school.

Chaga is all the rage these days. Inonotus obliquus. It is a mycelial mass of a fungus that causes a heart rot of primarily birch, rarely on other species. I've seen it on ironwood on my property. Since it exists with a living host it is a true parasite. It is characteristic of poor birch sites and stressed trees -- poor sites in general. In courses in forest pathology it is taught as a culling rot -- drop the tree or use for firewood, etc., because the tree will eventually die -- let other hardwoods have the space. It causes a white rot, so a little bit is tolerated in pulp, I've read.

The mycelial mass is sterile, meaning it does not produce spores, only rarely at the very bottom of the mass, from reddish-brown pores. The mass is a mixture of fungus and birch components. A little piece in hot water makes the water black and bitter. Supposed to be great for a person if used daily; very popular in Russia. Lots of information is available on the compounds in it, but little or none on the health affects. Doesn't seem to hurt, so go ahead and try it, I tell people.

This spring I made a little birch syrup. It was black and had the slightly sharp and bitter birch flavor. So I put a teaspoon in tea once in awhile and I like it better than chaga.

I heard that in the last mushroom certification course that was held in Marquette a couple weeks ago, most people were there to be able to collect and sell chaga, because it brings a lot of money.

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Diseases spread through the bites of ticks and mosquitoes have become three times as common in the last dozen years, according to the CDC.

From A Peoples Pharmacy

The Centers for Disease Control and Prevention (CDC) report that diseases carried by ticks and mosquitoes are becoming far more common. New data from 2004 to 2016 shows that such vector-borne diseases have more than tripled (Rosenberg et al, MMWR May 1, 2018).

What Diseases Do Ticks and Mosquitoes Carry?

In 2004, the CDC noted over 27,000 cases of Lyme disease, Rocky Mountain spotted fever, and West Nile, dengue and Zika virus disease. Lyme disease and Rocky Mountain spotted fever are transmitted by ticks. West Nile, dengue, chikungunya and Zika viruses, on the other hand, are transmitted by mosquitoes. In 2016 the agency had received reports of more than 96,000 cases of these diseases.

Such official numbers do not represent the actual number of people who were infected. That’s because many people go undiagnosed and not all

cases are reported. As many as 300,000 Americans get Lyme disease each year, according to estimates. However, only 36,429 cases were reported in 2016.

Where Are These Diseases Most Common?

Tick-borne disease are most common on the Atlantic and Pacific coasts. Mosquito-borne diseases are mostly found in tropical areas such as American Samoa, Puerto Rico and the US Virgin Islands. As climate change progresses, however, both ticks and mosquitoes are expanding their range. The diseases they carry will come with them. New vector-borne diseases have also been discovered, such as Bourbon, Heartland and Powassan viruses transmitted by ticks. The increase in diseases traced to bites from ticks and mosquitoes will probably continue.

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ARE YOUR TREES OVER THE HILL?

Paul Hetzler, Cornell Extension

Senescence is the decline in vigor that happens to all creatures great and diminutive as they close in on the life expectancy of their species. People my age suddenly find they require reading glasses to see the phone book. Though I suppose by definition anyone still using a phone book is old enough to need glasses, right?

The onset of this process varies—you probably know of families whose members frequently retain good health into their 90s, and other families where that is not the case. Of course environment is important. Eating and sleeping well, cultivating gratitude, and laughing a lot will help keep us healthier longer. But there comes a point at which even the best-preserved specimen can't avoid the end of life.

Trees also go through senescence at different rates. Each species has an approximate lifespan after which no amount of TLC can keep them alive. One of the more popular white-barked birches for landscape planting is the native gray birch. You may love your birch clump, but those trees are old at thirty years, ancient at forty—by the time they double over and kiss the ground in heavy snow or an ice storm, they may be on their way out anyway.

Many of us are aware that poplars as a genus are short-lived. Lombardy poplar, an import, barely makes it out of its teens. Trembling aspen is usually decrepit at fifty, but its close cousin big-tooth aspen might reach eighty, and eastern cottonwoods, our largest poplar, can live more than a hundred years. Pin cherry declines after twenty to thirty years, but black cherry lives much longer, often more than a hundred. Paper birch in a good location (i.e., not in a landscape setting) may approach 80 or 90.

At the other end of the spectrum are oaks. Bur oak is a massive and picturesque tree which can live eight centuries or more. White oak has similar potential. By comparison, red, pin and black oaks are lightweights, rarely living past four hundred. Beech trees, close relatives of oaks, can also live hundreds of years. Unfortunately, a tiny invasive scale insect coupled with a native fungus are killing beech before they reach mature size. Sugar maples and hickories other long-lived species.

With a few exceptions, short-lived tree species tend to be shade-intolerant, and are usually pioneer, or early succession, trees. In temperate parts of the world with decent rainfall, just about every piece of open land wants to become a forest.

But woods go through many phases as they move toward a stable system. Succession is the permutation of woodlands as they mature from a beaver meadow or pasture to an endpoint, or climax, community. Once the beavers' pond drains as they move to better feeding grounds, or the farm field is abandoned, a natural order of plant life begins to shape the landscape like a living symphony.

The first trees on the scene are often the fast-growing poplars, whose cottony seeds fly many miles. Birch pips, airy and papery as insect wings, blow in as well. White-footed mice cache pin cherry seeds; deer deposit hawthorn and viburnum in their droppings. As the new canopy matures at seventy feet and blocks out the sky, the forest floor becomes too shady for poplar and cherry seedlings to survive.

Into our intrepid pioneer forest of birch, poplar, cherry and hawthorn fly the helicopter samaras (winged seeds) of sugar, soft, and striped maples. Red squirrels cache acorns and conifer seeds. These are long-lived, shade-tolerant species. Seeds germinate, and saplings bide their time in the understory, sometimes for decades, waiting for senescence to play out.

Forty years on, many pioneer trees are in decline, and succumb to insects, stem cankers, root rots, or storm damage. Every time a trembling or big-tooth aspen goes down, a patch of sunlight illuminates the forest floor, allowing a patient, shade-tolerant maple, oak or hemlock to quickly stretch for the sky.

Eventually a stable mix of long-lived, relatively shade-tolerant trees develops, a climax community. The species composition will vary depending on elements such as soil type, slope and climate. Elders will topple every so often, allowing the youngsters a chance at the sun, but the makeup of the forest will remain roughly the same until the next ice age, bulldozer or beaver dam wipes the slate clean.

Neither person nor plant can avoid senescence, which has the same Latin root, *senex*, or old, as senility. In that sense I envy trees. The decline of individual trees is a critical part of the forest life cycle, and they don't have to worry about remembering where they left the car keys, or the car for that matter.

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Future Articles

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:

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- More from our own John Schwarzmann, who is involved in ongoing silviculture research, as Forest Supervisor of the Board of Commissioners of Public Lands.
- We have asked the UW Center for Cooperatives to assist our partnership with Northwoods Alliance in hosting a series of field days with which we hope to highlight all the values of land protection. Plan on attending these valuable sessions. **Tentative date for Quita Sheehan and Mike Peczynski to lead an excursion of the Upper Wisconsin River Legacy Forest is July 9, when there could be some active young Spruce Grouse chicks**. We also hope to put together events for the Tenderfoot Reserve to see magnificent old growth, the NHAL to discuss silviculture and wildlife, a site to see the Tip Mounds, and more. We will try to have a full schedule next month.

WRAPPING UP THE NORTHERN GUM CROP, OR ANOTHER BENEFIT OF BIRCH.

By Paul Hetzler, Cornell Extension

Recently I was told that gum trees abound in the northern states. I couldn't believe it until the person making this claim produced a pack of gum that was "made from northern hardwoods," according to its label. There it was in writing, and they wouldn't print it if it wasn't true, right?

These days commercial chewing gum is made from butadiene-based synthetic rubber, which sounds yummy, not to mention healthful. Until the 1960s, though, it was derived from the sapodilla tree, native to Central America. But what about locally grown gum?

Years ago I used to indulge occasionally in spruce gum, a substance which, while making your mouth taste like turpentine for a week, will pull out your fillings if chewed for longer than three seconds. It's an acquired taste, let's say.

The sour gum or black gum, *Nyssa sylvatica*, a tree known for its intensely red fall foliage, can be found as far north as into Illinois, however not this far north. But *Nyssa sylvatica* is not used to make chewing gum.

In addition to medicinal uses, the resin of the sweet gum tree, *Liquidambar styraciflua*, was once used to make chewing gum. But sweet gum is primarily a southern species. It can survive further north however, but it is not here either.

Further inspection of the label in question revealed it wasn't the gum that was made from birch trees, it was the sweetener it contained, xylitol. Xylitol is derived from the same Greek root as xylem, which is what normal people refer to as "wood." So it's not a surprise this naturally-occurring sweetener is found in birch sap.

Turns out that Xylitol is more than just sweet. It's effective at cutting the frequency of childhood ear infections, and possibly in reducing the severity and duration of same. Research suggests that gum is better than xylitol-based candy in this regard.

And it may improve oral health. The Journal of the American Dental Association recently cited a study that found "Xylitol is an effective preventive agent against dental caries." Six to seven grams of xylitol per day is reportedly an ideal quantity for cavity prevention.

Because it has a low glycemic index (a scale ranking carbs on how fast we convert them to glucose) of 7 (compared to 68 for sugar), xylitol is safe for diabetics. Plus, it has one-third fewer calories than sugar. Wow, what's not to like about this birch-based miracle?

With the exception of a few small health-food companies, most commercial xylitol is made in an industrial lab. Xylan, a precursor compound found in hardwood fiber, corn cobs and other plant material, is transformed to xylose. This in turn is hydrogenated to form xylitol using a nickel-aluminum alloy. (Someone is probably checking for metals residue in commercial xylitol from overseas. On a regular basis. That's a safe assumption, isn't it?)

In addition to its dubious source, Xylitol can cause bloating and gas in some people. Oh, and it's extremely toxic to dogs. Well, nothing's perfect, I guess.

My evaluation? If it contains xylitol, gum from trees is probably good. Gum (or candy) from heavy metals catalyst-driven chemistry labs, though? Let me think about that for a bit while I chew some spruce gum.

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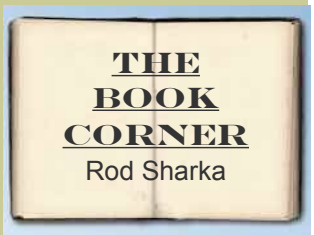


For this issue of the PIF newsletter, may I suggest the following book for your reading pleasure:

Our Living Ancestors; The History and Ecology of Old-growth Forests in Wisconsin and Where to Find Them,

by John Bates. Manitowish River Press.

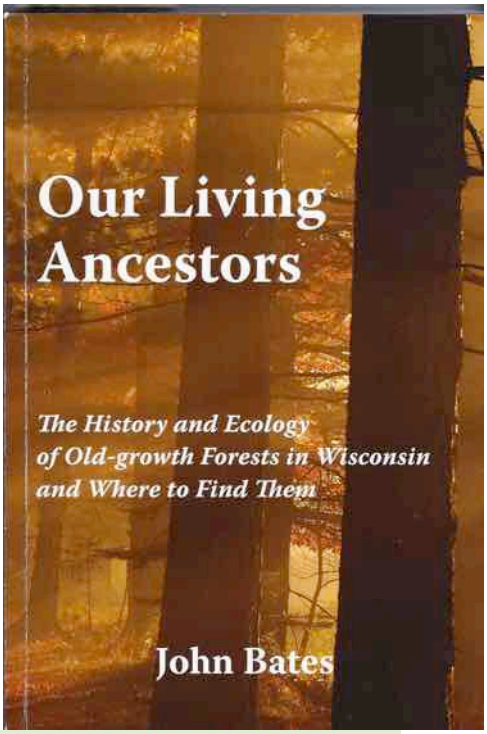
Old-growth forests touch the soul of many people. Some hear the echoes of Native Americans or the first settlers. Some feel the great age of the trees and revere them, while others feel they are in the presence of an overwhelmingly rare beauty. Still others understand the profound scientific value of old-growth forests as reference systems for what forests can be. Despite the remarkable emotional appeal and scientific value of old-growth forests, they are rare in Wisconsin. Only 0.3% of Wisconsin's Old-growth forests remain, but these scattered, small parcels still retain their ability to amaze hikers with their size, beauty, and elegance.

The newly published book: *"Our Living Ancestors; The History and Ecology of Old-growth Forests in Wisconsin and Where to Find Them",* by local author and naturalist John Bates, has been a work in progress for over 15 years and, in my humble opinion, is a work of art. It is an extremely well researched and masterfully written resource that is a must read for the natural history enthusiast and professional land manager alike. The publication is a veritable goldmine of information about Wisconsin's old-growth forests and yet has turned what could potentially be a dry subject into a lively and fascinating work. The book is written for a general audience, but its wealth of rigorously researched and profusely illustrated data including both current and historical photographs may also serve as a general reference for professional ecologists, conservationists, and nature lovers alike.

The first half of the book covers in depth the history of how Wisconsin's forests have gotten to where they are, how old-growth works, the values of Old-growth, and a vision for the future of Old-growth in Wisconsin. Then the second half provides an inventory of the 50 best remnant Old-growth sites in Wisconsin, including detailed maps and directions, descriptions of what one can expect to see, and interesting stories of how these areas were preserved. Not to end there, this section is followed by a description with similar provided information, of the 50 "Best-of-the-Rest". In short, the book provides enough information to keep one exploring for years without ever leaving the state of Wisconsin.

If interested in purchasing a signed copy of this self-published book, contact John Bates at manitowish@centurytel.net, or snail-mail at 4245 N Hwy. 47, Mercer, WI.
Website: www.manitowishriverpress.com.

Note that John has donated a limited number of signed copies to provide as a premium gift to anyone who donates $200.00 or more to the Wildcat Falls Community Forest Fund managed by its conservation partner - Northwood Alliance.



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BITS AND PIECES

The news media was active today regarding the good news surrounding the judge's decision to deny the DNR's approval of permits to fill in nearly 16.25 acres of wetlands located in the Town of Grant in Monroe County.
From: Frac Sand Sentinel May 5, 2018

Save the date:

The Michigan Department of Natural Resources, in unison with the Pilgrim River conservation partners, is hosting a celebration of the completion of the ***Pilgrim River Forest project in Houghton County Michigan at 11 AM Eastern Time, on Tuesday July 24****. Details will follow. If you have not yet seen the Pilgrim Legacy Forest or Pilgrim Community Forest, this could be a great opportunity to visit. The Pilgrim Forest is just a few miles south of Houghton Michigan and this conservation effort has permanently protected over 1500 acres with public access. Why, consider a morning trout fishing adventure prior to the celebration. PIF is proud to have been an integral part of this conservation success story.*

WILDCAT FALLS:
A Community Forest in the making?

Please consider a donation to the Northwood Alliance Inc.; to help establish 160 acres including Wildcat Falls, as a Community Forest. Information can be found at both www.partnersinforestry.com and www.northwoodalliance.org or contact PIF or Casey Clark the Conservation Coordinator for the project at caseyporterclark@gmail.com