Partners News

July 2011

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WELCOME NEW PIF MEMBERS:

- Jeffrey and Cynthia Bachmann
- Tuck Daniels and Susan Sommer
- Rory Dunne
- Thomas Lavalle

UPCOMING EVENTS

Partners In Forestry is Participating in FOREST FEST in recognition of the International Year of Forests.

What is the International Year of Forests?

The United Nations General Assembly (UN) declared 2011 the International Year of Forests. IYOF is a global platform to celebrate people's actions to sustainably manage the world's trees and forests. Well within the mission of Partners in Forestry (PIF), the objectives include reversing loss of forest cover, enhancing economic, social and environmental benefits, increasing area of sustainably managed forests and mobilizing increased financial resources. The old adage, 'think globally, act locally.

About the U.S. Celebration

The overarching goals of the campaign are to increase awareness of and elevate the conversation about the importance of trees and forests in the U.S. and the benefits they provide. What better way than a celebration of the forest?

Forest Fest

In recognition of this being the International Year of Forests PIF will be partnering with Trees For Tomorrow as they are hosting a major community event to celebrate all the forest has to offer. This FREE one-day, family oriented event, to be held on the TFT campus in Eagle River, will provide numerous educational and entertainment activities including but not limited to nature tours, a self-guided tree identification course, live bird of prey demonstrations, historical interpreters, horse drawn wagon rides, logging equipment, chainsaw safety training, forest health specialists, crafts & fine art exhibits, log home builders, a Ponsse harvester simulator, chainsaw carving, woodturning demos, papermaking, live music, food, and much more.

Partners in Forestry's involvement

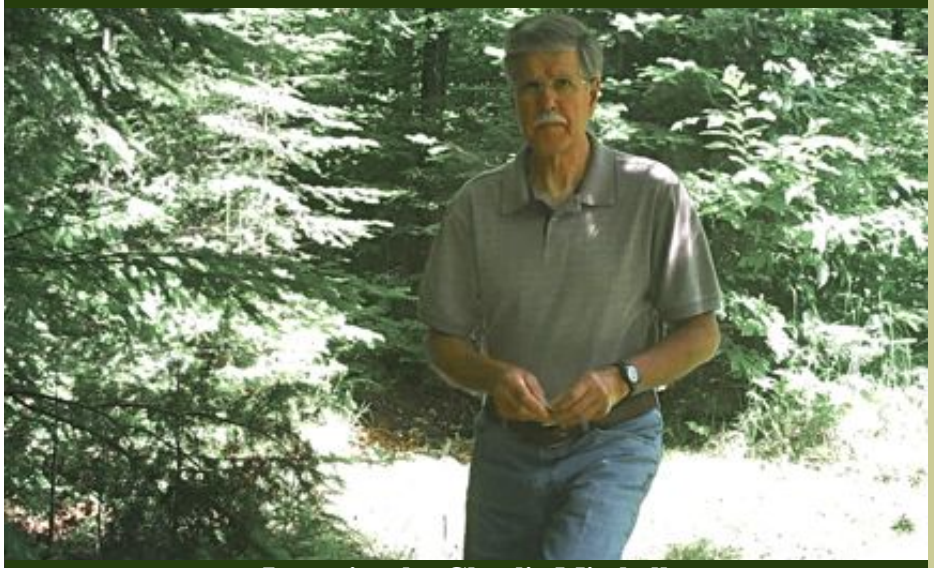
Your PIF board has been very involved partnering with TFT to plan and promote this event. On the day of Forest Fest, in addition to providing and manning a PIF booth, we will be

UPCOMING EVENTS *continued*

offering two, one hour *"managed forest"* tours, led by our senior forester John Schwarzman, visiting two different parcels of land just minutes from Eagle River. The objective will be to provide basic information about modern, sustainable forest management practices used in our local forests today. These tours promise to be informative and enlightening to all interest levels from total novice to experienced woodland owners alike. So, be sure to plan to attend FOREST FEST on August 6th, and bring the whole family. Also, if you would be willing to help out in some capacity for a couple of hours (and earn a TFT tee-shirt), please contact Rod Sharka: resharka@gmail.com or 715-547-6493. This could be anything from helping to direct traffic, to manning the PIF booth, to helping to lead tours, to helping to serve *Maple Sundaes*…whatever your comfort level. But, whatever you do, don't miss this celebration *Of All the Forest Has to Offer!*

ROD SHARKA

Northwoods naturalist leads the battle against invasive plants



Interview by Charlie Mitchell

Rod Sharka is a man who loves the northern forest and has a passion for conservation. He appreciates the beauty of the woods, the bogs and the wildflowers. Rod perceives that the great majority of people don't realize what a treasure exists here in Northern Wisconsin and they don't understand how fragile it is. This perception motivates Rod to take action to inform and educate people, and to take a leadership role in organizations and programs that encourage good stewardship of the natural environment.

Rod is well suited to his mission. Although his formal educational in biology was specialized in the areas of microbiology and biochemistry, he has always had a special fascination with the other extreme of biology, namely ecology. This was perhaps due to spending recreational time in the woods during most of his life. In an effortless and natural way during his adult life, he observed the trees and built his knowledge about them and he came to notice the wildflowers and to love them. He also noticed the invasion of alien plants that spread and displace native plants.

Rod has developed an outstanding presentation about Northwoods wildflowers. He educates and entertains his audience with brilliant close-up photos of a variety of species of native flowers found in the Northwoods, all accompanied by an informative narrative. He intertwines the narrative with the reality of invasive species, letting the audience know that they need to take some responsibility if they want to continue to enjoy the flowers.

* * * * * *

Rod began his career in 1969 as a biology teacher, after studying microbiology and biochemistry at the Illinois Institute of Technology where he received a master's degree. He taught at Lyons Township High School in LaGrange, Illinois, and he began taking pictures of wildflowers very early in his career. It was a hobby that filled his evenings and summer days. In 1970 he joined a newly formed conservation club in Lemont, Illinois, and attended a program at Camp Sagawau that solidified his interest in wild and native flora.

In 1983 he had his first experience in northern Wisconsin – a fishing trip on Palmer Lake in Land O' Lakes with a buddy of his. Rod thoroughly enjoyed it and he went back "up north" practically every year thereafter.

In 1969 Rod met Myrtle Resler, a young woman who was to become Rod's wife and lifelong companion. She understood Rod's passion for the forest and supports his efforts to preserve and protect it. She has said, good-naturedly, "Rod would rather be lost in the woods than found at home."

Rod retired from teaching in 2001, and moved to Land O' Lakes, Wisconsin, in 2002. He and Myrtle built a comfortable home on 11 wooded acres near Palmer Lake in the scenic country north of Highway B, and moved there in 2002. He immediately joined the North Woods Native Plant Society and began taking photos of local plants.

Rod was first introduced to Partners in Forestry as a result of attending a forest management workshop put on at the Hovel property, and was so impressed with the people and their similar passion for northern forests and conservation issues that he joined the organization immediately. Not knowing much about modern, sustainable forestry practices at the time, learning about management of the forest for sustainable harvesting of the wood was a new experience. Rod always hated to see trees cut down, but with PIF, he became comfortable with the concept that forests could be cut in a planned and selective way that would actually benefit the quality of the forest for the future.

It happened that forest crop land in the vicinity of Palmer Lake, and Big Lake of the Cisco Chain near where Rod lives was purchased by the Wisconsin Board of Commissioners for Public Lands. Rod noticed timber survey activity being carried out by professional forester Jeff Niese, so stopped to inquire what their plans were for this land. Rod made friends with Jeff and let Jeff know that he was available to work in the woods as a volunteer. Soon after, he was organizing volunteer crews to help in tree planting and invasive honeysuckle control work. In 2004, Rod learned that The Nature Conservancy was negotiation the purchase of a large tract of old growth forest nearby. It seemed like a no brainer that he would have to attempt to become the registered stewardship volunteer of this newly established Guido Rahr's Tenderfoot Forest Reserve which borders on Tenderfoot Lake. The Reserve encompasses 971 acres, about half of which is pristine old-growth hemlock hardwood forest that had escaped the axes of the early, brutal logging days of old. In the spring of 2006, Rod finally connected with Matt Dalman, Director of Conservation of TNC, and was granted stewardship volunteer status for this property. He has since spent many rewarding hours maintaining the trails and controlling invasives, as well as helping to lead tours for groups such as the Northwoods Native Plant society and the North Lakeland Discovery Center.

Rod soon became aware of invasive Eurasian honeysuckle bushes on the Reserve and the neighboring BCPL Trust lands managed by John Schwarzmann and Jeff Niese. This led to a mutual partnership between Rod and the Board of Commissioners of Public Lands. With Rod organizing volunteer work crews and the BCPL providing the necessary herbicides and expertise, a great deal of bush honeysuckle control work has been accomplished on both the state trust lands around Palmer Lake and the TNC Tenderfoot Reserve.

Rod has influenced PIF to make education and control of invasives an important objective of the organization. Rod writes frequent articles about invasives for the PIF newsletters. He also continues to organize and lead expeditions of "weed warriors" that will spend a day in the forest cutting and treating invasive plants in north central Vilas County.

Rod searches for flowers and takes pictures from his kayak in a bog lake located in Vilas County.

Rod warms up the audience before his presentation Wildflowers of the Upper Great Lakes in Land O' Lakes in June.

Pair of rare, Dragon-Mouth Orchids photographed by Rod.

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Since 2009, Rod has served as a member of the steering committee that founded the Wisconsin Headwaters Invasives Partnership. WHIP is a partnership of government agencies and private organizations that are striving to educate the public in Vilas and Oneida Counties about terrestrial invasive species. Included are PIF, The Nature Conservancy, US Forest Service, Wisconsin DNR, GLIFWC, local tribes, Lumberjack RC & D, Conserve School and Trees for Tomorrow. The stated goal of WHIP is to foster public awareness and implement programs to control invasive species. WHIP is putting on "workshops" and informational meetings about terrestrial invasives.

Rod is at peace in the forest and he has a desire to have others feel that peace.

At the same time, he is alarmed by the threat of invasive species and continues in his mission to educate the general public as well as to fight infestations that are already present.

Between the Lines...

Land Values?

I often am asked by members and associates how the value of our wooded land investment in general is faring in light of the long recession. I posed a couple questions to Ed Steigerwaldt, as Steigerwaldt Land Services is continuously involved in appraisals on forestry land and recently assisted a member I was working with. Here are Joe's questions and Ed's response.

Questions from PIF:

- In a general sense it seems like forest land values with or without riparian features has at least flattened following years of close to double digit annual inflation.
- When did this flattening begin to occur?
- I know that some distressed properties have invited some very low sales prices, but in a general sense, have you experienced substantial annual overall decreases?
- Has this "flattening" remained even in the first 6 months of 2011?
- Do you have any advice for a diligent buyer interested in purchasing forest land at the bottom of the market?

Hello Joe,

Here is my opinion on land values.

Generally speaking, values started to level off in 2008 and since then, have stabilized with some exceptions. We believe good quality timberland such as productive hardwood pole or sawtimber has held up. There are not as many sales taking place, but not many people are selling excellent land for much lower values than we saw in 2008. Pine still is a very good forest type to own and this spring brought a significant stumpage price increase for pine. Pine land values have held steady.

Unfortunately, we believe there have been declines in the value of lower quality land. For example, land with low productivity, poor timber, and poor access has, in our opinion, declined.

We still feel that good quality timberland remains a good investment. Pick good parcels, manage appropriately, and get a personal recreation return on your investment by using it (hunting, fishing, cross country skiing, etc.).

Edward F. Steigerwaldt, ACF
Steigerwaldt Land Services, Inc.

LAND AND WATER CONSERVATION FUND

Introduction from Joe:
Many of you are aware of the valuable partnerships PIF enjoys on land conservation issues. Recently a very valuable conservation fund has come under attack by congress. A vivid example of the results came to my inbox recently, when a landowner with precious riparian features, whom I had referred to a major conservancy over a year ago, gave me some upsetting news. The conservancy spent more than $65,000 to purchase the option and appraisals to conserve this land in Forest Service ownership. Unfortunately, without the LWCF funding, this is not possible. The conservation community has suffered a devastating loss, as the option and the cost of appraisals was over 10% of the project cost. These costs now appear all in vain. Knowing that a good conservation associate of mine, Nancy Warren, had recently been to Washington DC to lobby for the fund, I asked for her analysis of the Land and Water Conservation Fund.

Nancy is the Secretary of The Northwood Alliance Inc., and has walked the walk by donating a major conservation easement on their land along the Ontonagon River.

Nancy's analysis:
Many of us choose to live in this region because we enjoy a rural community surrounded by boundless outdoor activities. Whether it is camping or hunting, fishing our favorite stream, or hiking a trail, the lure of the great outdoors calls us home. It is easy to take public access and recreational activities on public lands for granted and only rarely do we consider how these precious public lands were acquired.

I recently returned from Washington, DC, where I visited the offices of a dozen US Congressmen and Senators to talk about the importance of protecting recreational lands and forests through a program called the Land and Water Conservation Fund (LWCF).

Since 1965, LWCF has provided funding to help protect our outdoor heritage including 31,000 acres of land along the Ontonagon River, nearly 2000 acres within the Sturgeon River Gorge Wilderness area and funded more than one million dollars in grants in Ontonagon County and $282,708 in Gogebic County. One and one-half million dollars was spent on 61 Wisconsin projects in Oneida, Vilas and Iron County for land acquisitions and improvements to county parks, boat ramps, pavilions and campsite development.

The U.S. Forest Service's Forest Legacy Program is also funded with LWCF dollars and has helped conserve over 150,000 acres in Michigan and 70,337 acres, encompassing four north-central Wisconsin counties with working forest easements. This helps keep forest products jobs in Michigan and Wisconsin while enhancing wildlife habitat, water quality, and recreation.

These are not tax dollars. LWCF is funded from a small portion of the proceeds the government receives from federal offshore oil and gas lease royalties and not from our taxes. However, each year, $900 million dollars of the more than $6 billion that oil and gas companies pay to the federal government each year is supposed to go to LWCF. Instead it is raided for other government purposes, breaking the promise to the American people established 45 years ago.

Congress slashed the program to only one-third of what it is supposed to receive in the recently enacted federal budget. Now, the House passed budget plan for this year proposes to eliminate it altogether. Congress hasn't yet made a final decision, and we still have the opportunity to protect this program that has done so much for our state and our local community.

Those of us who have spent time outdoors in northern Wisconsin and the UP know that our outdoor recreational economy is vital to survival of many residents. Each year 4.9 million people hunt, fish or watch wildlife spending $5.1 billion on wildlife-associated recreation in Michigan alone. LWCF has ensured that the Northwood's forests, lakes, streams and recreational attributes including trails are protected for our enjoyment and future generations through conservation easements and sales initiated by willing private land owners who choose to leave a legacy of conservation.

Today, local citizens are working together in support of LWCF funding to protect special lands in

the Ottawa and Hiawatha National Forests. This conservation opportunity could permanently protect stretches of the North Country National Scenic Trail and its view shed. The ability to protect these properties and the trail depends on a robust and committed LWCF program, and not one that continuously gets raided.

While there is a need to trim the federal budget, LWCF is a program that is structured to give back natural resource protection as our natural resources offshore are depleted. It is, pure and simple, a mitigation fund to balance resource damage caused by extraction.

We must urge our U.S. Representatives and Senators to join with us to ensure the protection of our great lands. It is our duty and responsibility to leave a legacy of clean water and clean air for future generations to live and recreate in the great outdoors of Northern Wisconsin and Michigan.

For more information about LWCF and learn what you can do to support our efforts go to www.lwcfcoaliton.org.

Nancy Warren
Ewen, MI

About the Author:
Nancy has been a proponent of conservation issues for over 25 years, serving on several local environmental boards. She was one of three Michigan residents sponsored by the Land and Water Fund Coalition to participate in the DC Lobby Day Fly-in.

June 11th Birding Workshop

What began as a cool, misty morning following a rainy night turned out to be a lovely, sunny day. As 13 PIF members and guests gathered at Lee and Margo Popovich's property early in the morning on Saturday, June 11th, the sun broke through the clouds and an unmistakable, distant howl of a wolf could be heard coming from the Sylvania Wilderness Area just to the north.

While walking the grassy trails around Lee and Margo's property which consists mostly of regenerating jack pine, Joe Kaplan, expert birder from Escanaba, MI, helped the group to identify a variety of birds including brown creepers, chickadees, white-throated sparrows, chipping sparrows, pine warblers, Tennessee warblers, and ovenbirds. Joe was able to call in most of the birds we heard by playing their songs using a bird ID application on his i-phone. It was rather amazing how close the birds came in when their songs were played. We were treated to exquisite views from just a few feet away of many of the species listed above. Perhaps the most spectacular display was that of a pine warbler that perched in a dead tree just above us and sang its little heart out for more than 5 minutes while we were able to study it with our binoculars. This was indeed a rare treat as the warblers are often heard but rarely seen due to their small size, and habit of constantly flitting from branch to branch high in the treetops.

Following the walk, everyone hung around conversing on the patio and enjoying refreshments provided by Margo, or touring their unique, new log home built entirely out of locally harvested materials by our own Joe Hovel. A hearty thank you goes to Lee and Margo for their gracious hospitality and to Joe Kaplan for coming all the way from Escanaba to share his expertise. It was a very enjoyable and enlightening morning indeed.

WOOD DECAY AND PRESERVATION INTERVIEW WITH DANA RICHTER

by **JOE HOVEL**

Introduction by Joe: I met Dana last year on the Pilgrim River project. Dana heads a partner organization, Copper Country chapter of Audubon, so he loves the woods and the critters, especially birds. I had just finished my consulting work on a log house which had decay issues, so when I learned of Dana's occupation I knew we could learn about more than birds from him. Wood from seedling to it's final use is important to PIF's mission, thus I felt this could be valuable information to our members.

PIF: Two years ago I was consulted by a legal firm in southern Wisconsin to inspect and give testimony in a water damage suit involving a log house. The home was in the Kickapoo Valley, and unfortunately had inferior overhangs, and several other design flaws. After 15 years, there were substantial decay issues, which aroused my curiosity. After almost 40 years experience in construction, using treated wood for foundations, decks, sills, etc. I felt I needed to learn more in order to share with others. Please tell us about your work on wood decay and the facility which houses your research at Michigan Tech.

DR: *The world of wood decay, wood stain and wood preservation is vast -- a multi billion dollar industry. There are numerous aspects and anybody dealing with wood exposed to the elements has to have some familiarity with it. My specialty is the fungi and how these organisms interact with wood. I am a mycologist with an emphasis in wood decay and tree diseases (pathology). I'll answer what I can and direct you to other specialists for the ones I cannot answer. By the looks of your questions, it appears you already know quite a bit about the subject. A careful observer can learn a lot on their own -- as they say. You can see more about our Wood Protection Group at www.forest.mtu.edu/research/woodprotection.*

I run a wood decay testing laboratory. Basically there are three levels of testing that is required for new wood products or new wood preservatives: 1) accelerated laboratory testing (I do), 2) soil bed fungus cellar testing, 3) field testing. The latter involves placing specimens at various locations around the US that are known for their decay severity; strength loss is evaluated over time. Soil beds is where specimens are placed in controlled conditions and monitored for strength loss over time. Laboratory soil block testing is done with pure cultures of fungi, which I do.

Basically, small blocks of wood are treated with various levels of chemical, dried, weighed, exposed to an individual fungus for eight to twelve weeks, re-dried and weighed again to determine weight loss. Weight loss is proportional to decay. A chemical (wood preservative) or product that results in low or no weight loss is a good preservative or product; one that allows decay over 2- 5% is not a good preservative. Of course there are many iterations and variations that can be incorporated in the test, involving solvents, surface vs pressure treating, level of active ingredient, amount of retention, wood type, rot type (brown rot, white rot), species of fungi, and number of replicates or controls. It is a costly process for any company to undertake and has kept me employed for the past 20 years. Our testing conforms to the American Wood Preservers Association standards.

We can get up to 80% weight loss in twelve weeks -- which is a good challenge to a product or preservative. I try to get things to decay. I keep a culture collection of hundreds of decay fungi, which is a challenge in itself and I have a lot to work with. There are thousands of wood decay fungi. For structural wood in use there are only a few bad actors that show up a good percentage of the time, but it can vary depending on site, location, wood type, and environmental conditions.

PIF: With emphasis on local species, which woods are most naturally decay resistant?

DR: *White cedar, juniper and locust are the most resistant; aspen and birch the least resistant. Other woods are somewhere in between. Chestnut and black walnut tend to be next in resistance; the oaks tend to be slightly more resistant than maple. Maple is not much better than birch. The hard pines (two-needle) are more resistant than the soft pines (white pine). They are all resistant if you keep them dry! One of the reasons birch decays so quickly is that its tight bark holds in moisture. Everybody has seen the stove-pipes of birch bark in the woods.*

PIF: What similarities exist between Locust and Cedar – Juniper? They are the rot resistant species, I always understood that cedar had a natural 'phenol' of sorts and Juniper is similar, but what makes locust rot resistant?

DR: *I think all are rot resistant due to toxic phenolics, but probably different kinds.*
Chemically these are related to lignin, or at least the precursors of lignin.

PIF: Is wood decay most always fungal related? Are these fungal components air borne and infectious to other woods, awaiting the right temperature and moisture content to grow?

DR: *Wood decay is exclusively caused by microscopic fungi; it is mysterious because we cannot see it taking place; by the time we see the 'mushroom' the work of the fungus is already done. I've seen people scraping off fruiting bodies (mushrooms) as if this will prevent decay; the fruiting bodies of a fungus are the result of the fungus successfully decaying the wood. The fruiting bodies make the air-borne spores, wafting in the wind, waiting to find a susceptible fresh surface to land on and germinate. Some fungi are specific to particular woods and some fungi will attack any wood.*

PIF: What are the ideal temperature and moisture contents for these organisms to grow, and destroy wood? From experience I suspect lumber above 20% MC and temperature above 55 degrees F., but I await your research results, as excess moisture may actually hamper the process (as in keeping raw logs wet), and I suspect an excess temperature also is destructive.

DR: *Wood will begin to decay at moisture content above about 25% and a temperature of about 40 F; ideal conditions vary among fungi, generally 50-80% MC and 80-90 F. Those conditions are what we use in our wood decay testing to cover a range of fungi. True, at 100% MC decay is suppressed by excluding oxygen; fungi are aerobic organisms. Temperature upwards of 140 F is also inhibitory to fungi.*

PIF: I have always been puzzled by an apparent anomaly in nature. In our native White Cedar, it is almost difficult to not experience heart rot when a tree is harvested, yet in its final use the heart wood is more resistant to decay than the sapwood. Is heart rot in growing trees a similar process to wood decay in this conversation?

DR: *The fungi that are heart rot of living trees are not the same as the fungi that decay wood in use. I don't know the reasons why, but many heart rot fungi can't be induced to decay wood in laboratory testing. There must be something in the living tree that creates the exact conditions for these fungi to grow and decay the heartwood.*

PIF: Is decay a steady process of a weakening structural integrity of wood? Is the wood often weakened prior to the decay becoming apparent?

DR: *Causing a decrease in structural integrity varies among fungi, but generally it happens very quickly after infection if conditions are optimum for decay -- sooner than weight loss; this is especially true for the brown rot fungi -- the ones that primarily decay softwoods; you can have a 10% weight loss and 80% strength loss after a given length of time.*

PIF: You have mentioned 'brown rot' and 'white rot.' Please elaborate.

DR: *To explain brown rot and white rot simply ----- wood is made of principally two things. Cellulose and lignin.*

The type of rot is described based on what is left over after a fungus takes the wood apart. Brown rot is lignin left over and the fungus used the cellulose. White rot is some of the cellulose left over and the fungus used the lignin (and cellulose). It is a lot more complicated than this, and the white rot residue is more than left over cellulose, but those are the basic concepts to describe brown rot vs white rot.

A fungus species will do one or the other. Usually softwoods are decayed by brown rots and hardwoods are decayed by white rots.

Wood preservatives must be effective against both decay types.

PIF: Is mold and mildew the beginning of a decay process, or is it that both thrive in similar conditions?

DR: *There is a succession of fungi that colonize wood, and generally molds and mildews are the first; they indicate that conditions are becoming right for decay fungi. Molds and mildews are stain fungi and generally do not cause structural loss -- but there are exceptions based on conditions, fungi and length of time of exposure.*

PIF: There has been quite an evolution in wood preservation in recent decades. From the older oil base treatments using creosote and pentachlorophenol (Penta or PCP), the ever common (in the 70's-90's) CCA containing arsenic compounds, and now the newer language of micronized copper azole. Please tell us a bit about the efficacy of certain applications of the different common preservatives as well as the safety concerns with these treatments, which I suspect contribute to the continuing evolution. I have a friend who is a structural engineer, and he designed the 'Trestle Project' at Kirkland Air Base. After several visits there to inspect construction he became very ill, eventually being diagnosed as Penta poisoning.

DR: *I am less knowledgeable in this area. PCP is an excellent wood preservative but accumulates in ground water and the environment and so has been banned; I understand some of the large EPA Superfund Sites are old PCP treating areas. PCP is often the standard we compare other wood preservatives to in our decay testing. The toxic metals in CCA -- chromium and arsenic -- can accumulate in the environment, in lakes from structures in the water and in landfills when it is disposed; CCA is fixed in the chemical structure of the wood and lends a brittleness to the wood. I know little about micronized copper, except that it is effective as a wood preservative and there are problems with it causing corrosion to metal fasteners.*

PIF: What, basically, is 'pressure treating'?

DR: *Pressure treating is the process of impregnating wood preservatives deep into the wood using large chambers and pressure, sometimes heat also. Some of these pressure tanks are as big as a railroad car; we have a small one to use in our testing.*

PIF: Please explain what is meant by the term 'retention' in pressure treated wood. I note foundation lumber is .60 of CCA, while some deck boards are only .06 of micronized copper. Is .60 an extreme degree of treating? It seems I recall salt water pilings require 2.2 retention. Would this suffice for deep construction site pilings? What life span of the wood product is the goal strived for when determining the degree of treating for different uses?

DR: *Retention is the amount of chemical retained within the wood, usually expressed as PCF, pounds per cubic foot. Wood meant for ground contact is required to have a higher retention than wood meant for above ground use. As you state, the amount of retention will vary depending on the type of wood preservative and application. I think salt water pilings are the extreme. Wood Foundations have enjoyed success for several decades.*

PIF: We must also talk about species which can be properly treated. Common knowledge is that southern pine treats extremely well, and that our red pine treats very well, but I am certain there is more to the equation than this. With our

emphasis on local resources, I would especially like to know which of our native local species treat satisfactorily for certain applications.

DR: *Our red pine will treat essentially the same as the southern pines -- they are all two-needle pines, or hard pines. Softwoods treat much more easily than hardwoods.*

PIF: From my career as a woodworker and consultant I understand the complexity of wood decay and mold and mildew concerns in lumber. Are the common wood preservatives protective against decay as well as mold and mildew?

DR: *Generally, yes, the wood preservatives that are put in to prevent decay will also hold off mold; but there are a range of other chemicals to specifically treat fresh cut lumber against mold and sapstain.*

PIF: I have stressed for years that treated wood still needs UV and water repellent protection as well as the coating acting as a barrier from potential leaching. Can you shed any light on this?

DR: *Probably doesn't hurt to put a water repellent or UV treatment on exterior exposed wood; but I have found that these treatments don't last long and the wood will eventually darken due to mold and weathering as it wears off, so retreatment on a timely basis is recommended.*

PIF: Is there any adverse structural or safety factors with wood after it is treated?

DR: *I mentioned above that CCA wood is brittle and hard and micronized copper is corrosive to metal. Creosote treated wood stinks and can cause rashes. Any treated wood should be treated like any toxic chemical -- wash hands and don't breath sawdust from treated wood.*

PIF: What are the corrosion issues on metal fasteners with these different treatments?

DR: *Micronized copper is the worst -- that's all I can offer.*

To complete our research on wood preservation, and to compliment Dana's interview, watch for the next issue as we will have an industry perspective from Brian Trimble with Biewer Lumber Company. Biewer has been an industry leader and I hope to learn about their new Thermal Guard, chemical free, heat treated wood.

Congratulation to Lee, Margo and Charlie. Charlie's story on the Popoviches is going to be reprinted. "Popoviches Preserve Their Land For Posterity" article will be in the USFS Northeastern Area Forest Stewardship newsletter entitled "Forest Matters." Forest Matters is produced by the Northeastern Area to share private forest management related information from around the area with state partners. This is great recognition for PIF as well as Lee, Margo and Charlie. And just 3 years ago Lee and Margo were new to forestry!

Good work folks.

Terrestrial Invasive Species Survey Report

by Callie Bertsch

Callie surveying Rod Sharka's property. She was showing him a garden escape that is potentially invasive.

The search for terrestrial invasive species is well underway in Vilas County, and I'm happy to report that only small, localized incidences of specific invasive species have been found so far. When I complete a forest health survey I'm looking for five main invasive species that have been identified as the most detrimental to the health of forests. They include: garlic mustard, honeysuckle, buckthorn, Japanese barberry, and Japanese knotweed. I have found some small infestations of honeysuckle as well as some localized areas where one or two young plants have grown up on old logging roads. I'm always on the lookout for any forest health issues, including diseased trees and other invasive species. A majority of the properties I've looked at do have invasive species such as thistles, raspberries, blackberries, and the always beautiful escaped garden flowers such as forget-me-nots and ox-eye daisies.

At this point in the summer I am over halfway finished completing surveys for the people who have signed up to be a part of the project. I have enjoyed meeting all of the landowners, or communicating with them via telephone or email. I have been very impressed with the forest management that has occurred on these properties and the landowner's willingness to be educated about invasive species in order to maintain a healthy forest ecosystem. Everyone is more than willing to eradicate the invasive species on their property, even if it includes removing plants such as barberry and honeysuckle that are a part of their landscaping around their home. Controlling invasive species in Vilas County and northern Wisconsin is vital for preserving our natural ecosystem which is vital to the health of wildlife, maintaining a desirable tourist destination, and ensuring the overall economic value of our forests. As the summer continues, I will be sending out reports to each of the landowners participating in the forest health surveys as well as publishing a larger report including maps of where invasive species have been found in Vilas County on private property. I'd also like to thank everyone who is participating in this project, as their willingness and positive attitudes have made my job quite enjoyable!

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

- Napoleon wood stoves
- wood finishes and preservatives
- garden and tree amendments
- grass seed for trails

A WALK IN KOEHLER'S WOODS- Wendy and Joe Koehler

On June 11, The Central Sands Chapter Wisconsin Woodland Owners Association (WWOA) sponsored their Spring Field Day in our Waushara County oak woods. Marcia Frost Vahradian, Waushara County Forester & Central Sands WWOA Secretary and Buzz Vahradian, Forestry Consultant & Lead Author of the WDNR Oak Chapter were our guides for the event. We viewed the outcome of our 2008 clear cut and the progress of 1993 and 1998 clear cuts on parcels of adjoining land. The transition is amazing.

We purchased our first parcel of land, 12 acres, in 1990. We added 80 acres in 1993, 10 acres in 2004 and 20 acres in 2007. Our intention for all the land with the exception of about 3 acres is to keep it green and provide a place for wildlife, hiking, skiing, hunting, and firewood.

The 80 acre parcel had undergone a select cut of oaks about 25 years prior to our 1993 purchase. Our oak stand is 70-90 years old, the rotation age for an oak forest. The average age of an oak tree is 80 though an individual tree can live much longer. An adjoining piece of land had just undergone a clear cut of oaks. We looked out on the devastation and said, "This won't happen in our woods." Then we put the land in a Managed Forest Plan. That plan required us to do a clear cut of 10-15 acres in 2008 in order to regenerate oak forest products. For a number of years we fully planned to do the cutting on our own to control the outcome. This proved to not be possible. To do the cut properly, there would only be 5 oak trees per acre left to provide seeds. The logs would need to be hauled out and the tree tops (slash) would be left on the ground to deter deer from over-browsing the new growth. Oh my! It looks just like the adjoining property did in 1993. BUT, just 3 years later we can see we had a very successful harvest. The "bomb look" very quickly becomes a new forest.

Joe began the clean-up after the harvest immediately. Deer are lazy and will walk on whatever paths Joe creates. The slash was moved to allow the deer easy access to the path boarders but to hinder their access to the bulk of the 17 acres cut. The second summer after the cut we were very concerned that there were no trees. A forester came out to walk the area. He laughed at us as we looked out over the clear cut in dismay. He said, "Look at your feet. There are lots of little trees." Nature has taken over. There are black raspberry bushes everywhere and more hazel than we've ever seen in our woods. There is plenty of food for the animals and there are lots of new growth oak trees. As the oaks grow, the berries and hazel will die off for lack of sun and in about 20 years, the oaks will again be providing acorns.

Trunk diameter: 1" or less trees are seedlings; 1"-5" Saplings; 5"-10" poles. The new growth trees on the parcel harvested in 1993 are poles. And the 1998 harvested woods consist of saplings. For forestry purposes, you are looking for a minimum of 800 seedlings per acre.

Scott Sullivan, Marquette County Forester, demonstrated a very simple technique to calculate the number of new seedlings. He used a shovel with a screw in the center-top of the handle. He measured a rope 11'10" long and attached a washer to one end, and placed the washer on the screw. By stepping the spade into the ground, he had the ability to walk in a circle the size of 1/100 acre and count the trees growing within. All of the trees are counted including trees that weren't cut due to their size or species. In the example 1/100 acre plot of our woods, we had 29 trees-2900 trees per acre. To get a true number, you would take data from random plots throughout your clear cut and average them. We did the same exercise in the 1998 clear cut and found there were 23 trees growing within the 1/100 acre. The trees are smaller than an old growth forest, but there is no doubt you are standing in the woods.

Participating in a Managed Forest Plan is a choice. If you are thinking about an MFL Plan, spend time with your forester and ask questions about the plan. Take advantage of your county forester; you are already paying for that service. If you're not sure or don't like the plan, don't do it. You don't have to manage your land if you don't want to. You can let the woods just be and do what it will. We have all seen entire woods wiped out by bugs and beetles, disease and old age. We've seen non-native trees planted and invasive species creep into our woodlots. Choosing to be a **Managed Forest Land** (MFL) provides tools to ensure sustainable forests. But, you have to choose.

TWOLINED CHESTNUT BORER - PART 1

USDA by George Heaton

Contributed by
John Schwarzmann
Forest Supervisor
Board of Commissioners of Public Lands

INTRODUCTION

The twolined chestnut borer, *Agrilus bilineatus* (Weber), belongs to the beetle family Buprestidae. The word "chestnut" refers to the beetle's past status as a principal pest of American chestnut, *Castanea dentata*. The twolined chestnut borer is found from the Maritime Provinces of Canada, west to the Rocky Mountains, and south to Florida and Texas (Figure 1).

Figure 1 - Probable range of the twolined chestnut borer, based on the combined distribution of its oak host species.

HOSTS

Oaks are the primary hosts of this pest. Some of the more frequently attacked species include white oak *(Quercus alba)*, scarlet oak*(Quercus coccinea)*, northern pin oak *(Quercus ellipsoidalis)*, bur oak *(Quercus macrocarpa)*, chestnut oak *(Quercus prinus)*, northern red oak *(Quercus rubra)*; post oak, *(Quercus stellata)*, black oak, *(Quercus velutina)*, and live oak, *(Quercus virginiana)*.

Adult twolined chestnut borers primarily attack oaks that are damaged by drought or trees that are suppressed or declining. Urban oaks that suffer stress from trunk and root injury, soil compaction, and changes in soil depth are equally vulnerable to attack by this pest. Oaks that have been defoliated by insects such as gypsy moth *(Lymantria dispar)*, elm spanworm *(Ennomos subsignarius)*, fall cankerworm *(Alsophila pometaria)*, and forest tent caterpillar *(Malacosoma disstria)* are also attacked by the twolined chestnut borer.

The twolined chestnut borer adults attack and kill stressed oaks. Other oak borers, such as the red oak borer, *Enaphalodes rufulus*, and the carpenterworm, *Prionoxystus robiniae*, attack live trees without killing them.

EVIDENCE OF INFESTATION

The first symptom of borer attack is usually wilted foliage appearing on scattered branches during late summer (Figure 2). The foliage on infested branches wilts prematurely, turns brown, but remains attached to the branches for several weeks or months before dropping. Such branches will die and produce no foliage in the next year.

Trees can be killed in the first year of attack; however, death usually occurs after 2 to 3 successive years of borer infestation. Typically, the crown is attacked during the first year, with the remaining live portions of the branches and trunk being infested during the second and third years.

Infection by the oak wilt fungus, *Ceratocystis fagacearum*, causes similar symptoms in the tree crown, but the foliage wilts, turns brown, and drops from the branches quickly during early summer.

The twolined chestnut borer leaves a permanent visible record of its visit. As adult borers emerge from the host tree, they bore distinctive D-shaped exit holes 1/5 inch (5 mm) wide in the bark (Figure 3). Exit holes of other oak-infesting wood borers are circular or lens-shaped. For example, exit holes of the adult carpenterworm moth

Figure 2. Red oak tree with foliage wilting in late summer - indicative of attack by the twolined chestnut borer.

Figure 3. - D-shaped exit hole of the twolined chestnut borer as observed on the bark surface.

or adult Cerambycidae beetles such as the red oak borer and the rustic borer, *Xylotrechus colonus*, are circular, while those of adult Buprestidae in the genera *Chrysobothris* and *Dicerca* are lens-shaped. Visible D-shaped exit holes indicate that this section of an oak tree was infested some time in the past and now is probably dead.

Larvae damage host trees by feeding on the phloem (the inner bark), the cambium (the growth layer producing both phloem and xylem), and the xylem (outer sapwood). The phloem transports food from the crown downward while the xylem conducts water and minerals from the roots upward. Although full-grown larvae are not much thicker than 1/18 inch (1.4 mm), they are able to construct galleries of sufficient depth to cut the flow of food and water. This is especially true for oaks and other ring-porous hardwood species that conduct water almost entirely within the outer one or two growth rings of the sapwood.

Continued (Part 2) in the next newsletter!

Future Articles

PIF members are encouraged to submit articles, announcements, photos, and items of interest for future newsletters. Submissions may be forwarded to Margo Popovich at margo122050@mac.com or mailed to:

Partners In Forestry
6063 Baker Lake Rd
Conover, WI 54519

Please pay your dues in a timely manner, as we wish to keep working for you, networking and providing you valuable and timely information.

REMINDER

FOREST FEST

Saturday, August 6, 2011

at

Trees for Tomorrow

A Celebration of All the Forest Has to Offer

If you have not been receiving email announcements
or correspondences from PIF,
please give us your current email address.

PARTNERS IN FORESTRY
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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.