

Spring 2019

TreeIQ

The Minnesota Tree Inspector Quarterly Newsletter



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Tree Inspector News & Upcoming Events

2019 Certification Workshops - Nearly Full

Dates & Locations

April 19th - Savage Environmental Learning Center - FULL

May 3rd - Oakdale Discovery Center - FULL

May 10th - St. Louis Park Rec Center

All Workshops will run from 8:30 am—3:30 pm

[Register Now at www.mntreeinspector.com](http://www.mntreeinspector.com)

Comments from our readers:

*In response to **Betulaceae Buddies: Carpinus caroliniana and Ostrya virginiana Plant Profiles by Monica Randazzo in TreeIQ Fall 2018:***

I was extremely happy to read Ms. Randazzo's article about two of my favorite trees. These two birch cousins have a lot to offer in an urban setting like Minnetonka where woodland competition for light can be fierce. My little 250 ft backyard woodlot is finally free of garlic mustard and buckthorn after 2 years and two of my first choices to restore it with native plantings have been the shade lovers of blue beech and the "other" ironwood. These two are possibly more trouble free than the chokecherry and the dogwoods that are natives also. The ironwoods are never bothered by occasional black knot fungus like the dogwoods. And their size is perfect under mature oaks and at the brighter edges of the woods. Thanks for highlighting these two and I hope your writings will encourage more tree huggers to enjoy exploring native trees in the future.

Arbor viridus semper,

Mike Haugen

TreeIQ Featured Tree Inspector, Spring 2019

Brian Volz

City of Minneapolis Park and Recreation Board

Interview by Gary Johnson, University of Minnesota, Department of Forest Resources

The TreeIQ Featured Tree Inspector for this issue is a relative newcomer to the Tree Inspector family, but someone who has long been connected to natural resources and tree care. Brian Volz has been a Minnesota Certified Tree Inspector for over three years as one of his duties as



a production arborist with the Minneapolis Park and Recreation Board (MPRB). Born in Saint Louis, Missouri, Brian lived in several cities in the United States and Canada. He claimed residence in Kansas City, Providence Rhode Island, Philadelphia and Toronto before finding his way to our backyard.

TreeIQ: Brian, how did you get interested in trees and urban forestry?

I have a degree in cartography (map-making) and worked in the private sector using photographs to make detailed maps, as a land surveyor and then as an arborist after I finished a graduate degree in forestry conservation from the University of Toronto. As an arborist, I learned how to run ropes for rigging, safely operate a chainsaw, and rope-and-saddle climb trees (which I still do both for work and recreationally).

As an arborist, I've also worked as a plant health care specialist as well as a sales arborist for commercial companies. One of the companies I worked for processed urban trees into consumer goods from kiln-dried slabs of wood all the way to finished products like dining tables.

It's pretty obvious that Brian has worked with trees in just about every capacity in the private sector, but what is unique about working for a municipality as a production arborist and Certified Tree Inspector?

TreelQ: As a municipal arborist and Tree Inspector for MPRB, how do your current duties differ from your experiences as a private arborist?

I have worked with MPRB's Regional Service Center scouting for Ash trees in naturalized areas. Tree Inspectors are responsible for identifying potential hazards presented by Ash trees within close proximity to pedestrian use areas. We mark them for removal if or when necessary and keep removal records for replanting purposes.

One of my major roles is having the responsibility for choosing appropriate replacement trees, which I consider an honor. The Forestry Department's goal is to increase diversity whenever possible while understanding the reality of potential future tree pests such as Asian Longhorn Beetle. Other tasks include maintaining our tree inventory database, identifying pruning requirements for our existing tree canopy (large as well as small trees), and customer relations.

My knowledge of tree species, insect pests and diseases helps me when I interact with customers

(residents of Minneapolis). Sometimes this interaction happens when we are pruning or removing trees, or inventorying boulevards, and a resident wonders what is going on and why that specific work needs to be done. It also includes making specific house calls when someone has a service request or a question about trees in their boulevards or even their privately-owned trees.

TreelQ: Is there a common question or two that people in your community ask you as part of your tree inspector role?

It's more of a statement than a question. People often say, "You must love your job," to which I reply, "yes I do!"

Tree IQ: Okay, since you have all of this job diversity as a Tree Inspector and you have recently gone through the studying and testing to become one, is there anything that you think should be added to the training curriculum to help Tree Inspectors become even better?

Yes, two or three things. First, are there new tree species and varieties being developed and released that should do well in the different Minnesota climates? Second, what new insect pests should we be concerned about and watchful for? Third, which tree species are most likely to survive and thrive in specific landscape sites, such as alkaline soils, poorly drained landscapes and maybe some unique planting situations such as engineered soils or areas receiving a lot of deicing salt run-off?

TreelQ: What impact or impacts do you see the Tree Inspector Certification program having on the

Minnesota urban forestry community?

- Helping to get the right tree planted in the right place.
- Making sure that dead, diseased, infested and hazardous trees are removed in a timely fashion.
- Increasing species diversity.
- Establishing large trees where there is adequate space and specifying smaller trees when that space isn't enough for large trees.
- Promoting long-term maintenance.

TreeIQ: Is there a particularly memorable experience that you've had as a tree inspector?

Being a tree inspector is a rewarding experience in general for me. One thing I find extremely difficult is explaining to a property owner that their enormous American Elm tree is infected with Dutch Elm Disease and that it must be removed. People are very

attached to their trees and it takes patience and empathy in order to be sure they understand we are listening to their point of view. Explaining the process of condemning a diseased tree is for the greater good can be a challenging task but is always worth taking the time to explain it thoroughly and making that connection with them.

TreeIQ: Okay, I'm almost done, but can you share one "fun fact" about yourself ?

I climb rocks as well as trees but I climbed trees first. People often ask, "So you must be a rock climber too". I used to say no and explain the differences. Now I say yes...and explain the differences.



“Box Cutting” Containerized Root Systems: A quick Fix for a Long-term Problem

Gary Johnson, Professor, Urban and Community Forestry
Department of Forest Resources, University of Minnesota and Extension

The Problem

Trees or shrubs that are grown in plastic containers - specifically smooth plastic containers - have a bad habit of producing roots that grow in a circular pattern within those containers. Often referred to as “pot-bound” root systems (Figure 1), they can end up shortening a plant’s life within a few years if not corrected at planting time.



Figure 1. A typical pot-bound root system of an Arborvitae.

How It Happens

When roots grow through the soil and come in contact with the inside of those containers, they turn and grow parallel to the containers’ inside walls in a circular pattern. If the roots are fine and light-colored, it’s usually not a big problem – they will quickly grow out into the landscape soil once they are correctly planted and watered (Figure 2).

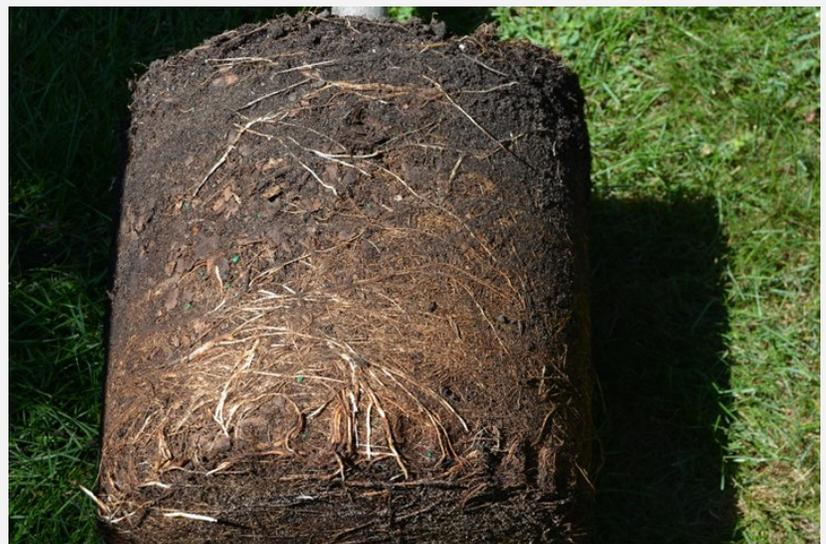


Figure 2. Thin, light-colored encircling roots of an oak...no problem.

However, if those encircling roots enlarge and become darker colored and woody, about the thickness of a pencil, they develop a “memory” for that growth habit and it sticks with them (Figure 3) Even when they are planted in a good soil, those roots keep growing and enlarging in that circular fashion.

What Happens If They Are Not Corrected?

Roots are meant to grow out and away from the tree or shrub stems, “mining” the landscape soil for water and minerals and creating a wide, stable root system. If they stay in a tight, circular pattern, they don’t have the chance to find and absorb water and minerals very well. They also tend to become unstable since their root system is so small. Too often, these trees and shrubs die slowly within a few years (Figure 4).



Figure 3 (left). Encircling woody roots near the end of the pointer. These birch roots have developed an encircling root pattern “memory.” *Figure 4 (right).* This Amur maple was planted without correcting the woody encircling roots problem and died five years later in the landscape.

The Quick Fix – “Boxing”

Research at the University of Minnesota’s Urban Forestry, Outreach, Research and Extension nursery from 2005-2010 discovered a fail-safe technique for correcting the problem simply and quickly without harming the plants. Using hand saws, the outer one inch of each side of the pot-bound root systems of 72 trees (maples, arborvitae and crabapples) were physically removed along with the encircling, woody roots - “boxing” the root system (Figures 5 and 6). At the end of the five-year study, none of the “boxed” trees were dead or had pot-bound roots. The control trees (no boxing) all had confined root systems as well as the other trees where the root systems had only been sliced.



Figures 5 and 6. “Boxing” the root system of a badly pot-bound birch. Figure 5 demonstrates the cut using a pruning saw and removing about one inch of soil ball on one side. Figure 6 shows the completed operation, illustrating why it is called “boxing” the root system.

Since Then

The procedure has been repeated literally hundreds of times with pot-bound trees at the University. Whether it was done in the spring, in the summer or in the autumn, there has yet to be a tree that has died from the procedure or redeveloped an encircling root system. This 2-4 minute procedure does not kill trees...it saves them (Figure 7).



Figure 7. The same birch with the boxed root system demonstrated in Figures 5 and 6, eight weeks later. The new roots are growing out into the landscape soil instead of staying in an encircling pattern.

About the author:

Gary Johnson
Professor
University of Minnesota
Department of Forest Resources
Urban Forestry Outreach Research and Extension
2019
www.trees.umn.edu

Mad about Kentucky Coffeetrees

Excerpts from the Urban Tree Junkies (UTJ) Podcast interview with Andy Schmitz and Jeffrey Carstens. Listen to the full episode at www.trees.umn.edu/utj.

Many urban tree species are fighting a losing battle from abiotic and biotic forces. Many of these problems are host specific. Emerald ash borer, for instance, is an insect that almost exclusively attacks and kills ash tree species; pathogens such as Dutch elm disease and oak wilt also infect trees at the genus level. Coupled with these biotic invaders, changing climates are putting a strain on many tree species as weather extremes become more polarized.

These impacts have been the drivers for diversifying the species that are planted in our urban environments. Rural forests, when allowed to follow natural succession will often be very diverse in flora. As species die, others fill the void and a healthy forest persists. This idealized system is less adaptable to urban forest management. One aspect that can be followed however, is diversification of species. But there's a problem, the list of species that can tolerate the stresses of urban environments is limited in comparison to natural lands, and many of our favorites are under attack.

The search for new resilient tree species additions to the urban forest continues. One such tree that has been making headlines in the urban forest community is Kentucky coffeetree.

This species will tolerate many urban stressors such as soil moisture and alkalinity extremes and with stout branching it is resistant to storm and ice damage. Oh! And few biotic invaders take it on. This tree

has persisted for thousands of years, but exists today in small copses and is considered rare in the natural environment. Developing a reputation for being a tough tree, it is now propagated by many nurseries for urban utilization and is becoming more common in landscapes as a suitable component for tree population diversification.

We found two experts who love Kentucky coffeetrees:

Andy Schmitz is the director and general manager of Brenton Arboretum in Dallas Center, Iowa which has over 2500 woody plant species on 143 acres.

And

Jeffrey Carstens is a horticulturalist with the USDA at the North Central Regional Plant Introduction Station in Ames, IA, and is currently the curator for the collection of woody landscape plants.

UTJ: You've mentioned Kentucky coffeetree was a priority species for collecting and storing seeds from, why was that?

Jeff: It was a species of interest mostly because it was a native species, so we could go out and collect those, and we knew it would store as seeds in our gene bank. If you took oak as an example, or maples as an example, or hickories or even magnolias, those are recalcitrant species, so they don't store well as seeds. We didn't have a lot of collections of

collections of Kentucky coffee trees. In fact, we only had just a handful of collections, I think three or four that were in our holdings. So the genetic diversity of that species was really poorly represented.

As we all know, where the plant comes from greatly influences its potential performance if it's planted elsewhere in the US. So that is sort of the whole justification for trying to make sure these are well documented collections, so that if in the future, if a particular area in Kansas wants to grow out coffeetrees, they may want genetics that are locally adapted to their conditions as opposed to getting genetics from an unknown source.

UTJ: What is the natural ecology of Kentucky coffeetrees in the landscape, where do you find these trees?

Jeff: When we first started this project we could turn to literature and scientific publications, and they would typically say that coffeetree is found around floodplain type habitats or watersheds. When you look at where we first started collecting in the local areas around Iowa - that was very true. You would only find coffeetree in those types of situations. But as we started getting out across its range, that's when we really started learning more about the species.

Andy: We've been in 17 states looking at this species and seen the habitats vary greatly. If you look into Kansas and Oklahoma, especially Oklahoma, where we saw more coffeetrees than we would have ever expected, it was growing in some pretty tough sites – we're talking dry sites. Far western Oklahoma, very dry, sites that experience 10-20 days

over 100 degrees with 20 inches of rainfall. And the coffeetrees were doing very well. A lot of times they may have been found along these little streams and so forth, but we were seeing lone coffeetrees just out in expansive areas such as in cattle ranches.

In Minnesota, for instance, along the Minnesota River we saw them growing on granite outcrops and then see it growing down in the bottomlands along the river. So very close in proximity but two very distinct habitats. It speaks a lot to how adaptive the species is.

Jeff: After figuring that out, we started taking a closer look at the soil types where we were finding Kentucky coffeetree. If you look at Iowa as an example, for every locations that we were finding it in, for example in a particular watershed, those soils needed to be very well drained. So they could tolerate some flooding, but once that flooding occurred the water needed to be removed rather quickly. We started realizing coffeetree doesn't really like to be wet or considered a wetland species by any means. But if you look at Iowa where humans have altered the landscape so severely, basically the only places left for coffeetree to exist are in the wooded areas and major watersheds. Because we've found it in watersheds and on very dry rocky habitats, is part of the reason why it is considered a good candidate for urban conditions.

UTJ: What are your thoughts on why coffeetree makes a good urban tree candidate?

Andy: Looking at where we are finding Kentucky coffeetree in its native habitat speaks a lot to its adaptability to urban conditions. Kentucky coffee-

tree is definitely a species that is associated with limestone soils, we're finding it on wet soils, we're finding it on upland sites, we're finding it on extremely dry sites, and as we look to the urban conditions, we're going to have wet soils, we're going to have dry soils, we're going to have high pH and heat islands. So seeing where it's found natively, hopefully it's adaptable to these conditions.

Also, it's a single species in North America – there's only one *Gymnocladus*. And with that, it's a species with really no disease issues, no insect issues, and being alone in its genus, it's not going to have those. So homeowners won't have to worry about things affecting their tree in that aspect.

Being in the Midwest and in the middle of winter here, this is a tree that holds up to ice loads extremely well. It's a species that in the summertime is very fine textured due to its leaves and leaflets (it has a compound leaf), but in the wintertime it is a very coarse textured tree, very stout branching. Jeff and I have witnessed this. There is a particular site in Tennessee that was hit hard by a major ice storm in 2009. We were there in 2010 and it was a destruction zone of trees down - broken trees, broken branches. And there were 15 Kentucky coffeetrees on a hillside and all of them were still standing.

Jeff: Little to no damage.

Andy: This is kind of documented in the literature that Kentucky coffeetree can withstand ice loads, but seeing it firsthand in Tennessee really spoke volumes to how it can withstand ice loads.

UTJ: I'm sold.

Andy: You well know we continue to talk about diversity in our landscape, diversity in our urban forests. Coffeetree is a small portion of our natural forest and probably even a smaller percentage of our urban forest, I think it's being planted more, but as we continue to look for species as we lose ash from emerald ash borer and oaks to oak wilt, we need some good species that can replace those.

UTJ: I was interested to see you have at least six collections from Minnesota, anything notable about Minnesota's native Kentucky coffeetrees?

Andy: Yeah, we do have six collections there. If you look at the native range map, the populations in Minnesota are really separated from the core range – kind of these disjunct populations. Basically, it's hanging out along some of the major watersheds. For example, along the Minnesota River from Mankato north in both directions up to Minneapolis and up to Granite Falls. We're also finding it along the Mississippi River from Minneapolis down to the Iowa border. We made a great collection along the Blue Earth River from Winnebago to Vernon Center.

Again, I think, like Iowa these are areas that are heavily agricultural lands, coffeetree has probably been pushed to the river corridors more so in these areas.

The site along the Minnesota River up by Granite Falls is pretty cool. There are these three billion year old granite outcrops along the river there and coffeetrees were sprouting pretty much right out of the granite outcrops, and then there were coffeetrees down along the river in the bottomland area too.

I Thought Rabbits Only Ate Clover: *Predicting and Sometimes Preventing Animal Damage to Trees*

Gary Johnson, Professor, Urban and Community Forestry

Department of Forest Resources, University of Minnesota and Extension

Do you remember when rabbits were bunnies and they hopped through fields of grass, munching on clover? Or when twin fawns were precious and vulnerable little Bambis who needed protection from the bad wolves or coyotes? Or when gerbils and hamsters were cuddly, little...oh wait, they still are, but voles are nasty, horrible little imposters. One thing is for sure: Walt Disney never tried to grow trees.

Planted Trees: The Original Fast Food.

It's that time of the year (early April) when tree huggers begin surveying the damage from the past six months of early winter, winter and late winter. And it's not the damage from deicing salts, cold temperatures or drying winds; it's the damage from incisor teeth and antlers. Isn't it ironic that horticulturists have developed trees that are resistant to diseases like Dutch elm disease and insect pests like bronze birch borer, but have not developed trees that aren't tasty to cute, woodland creatures? It would be a safe bet that more trees have died from rabbits girdling their stems than oaks have died from oak wilt.

What kind of trees do critters prefer to devour or damage?

Store-bought trees and shrubs, there's your list. Maybe a little more specific? Rabbits and voles pre-

fer young oaks, elms, burning bush (*Euonymus*), dogwoods (like red-twigged), and fruit-bearing trees and shrubs like apples, pears, cherries, serviceberry, hazel nut, and black chokeberry. There are others, but these are the favored.



Figure 1. Late winter rabbit damage after the snow has melted.

Deer will sell their souls for a row of Northern white cedar (aka, arborvitae). They love to munch on the tender, tasty foliage as far up as they can reach. They, too, like the fruit trees, especially apples, serviceberries and cherries. When they get hungry and ornery enough, they start ripping off branches of

Eastern red cedar, spruce, pines (especially jack pine), and lilacs, among others. And when those male deer need to clean their antlers from the summer velvet in the autumn or make their presence known in the late winter to all of the female deer, they will seek out those elms (again), pine, and spruce trunks, and Northern white cedars (if there's anything left), they will find and destroy them by girdling their stems (trunks).

Good grief, anything else? You betcha; how about some beaver and porcupine damage to finish things off? Beavers damage trees in a couple of ways. First, they harvest trees and take them off... somewhere. These are usually the smaller (less than 10" trunk diameter at ground line) or softer wood species (basswood, aspen, cottonwood). The other damage is extensive stem girdling, up to 24" of complete girdling on larger or harder-wooded species like hackberry and ash, which eventually causes the tree to prematurely die.

Porcupines are basically rabbits that can climb trees. Porcupines will completely girdle stems and branches of trees by stripping off the bark and cambium. All that's commonly left are trees that are stripped down to bare bones.

Managing Critter Damage and Staying Out of Jail.

**Sorry, but this discussion won't include any references to poison baits, trapping or lead poisoning for obvious reasons...I don't want to get in hot water.*

1) Exclusionary fencing. If it's done right and you've perfectly predicted the snow depth for next winter, it works 100% of the time. For voles, the best is ¼ inch hardware cloth, either formed as a cylinder and placed around the tree trunks (leave at least a couple of inches of space between the tree trunks and the wire), or



Figures 2 and 3. Note on Figure 2 (top photo) the distinctive girdling from rabbits. The bottom photo (Figure 3) shows the relative position of the damage. The snow reached depths of four feet in this orchard so the rabbits had access to the branches well above ground.



Figure 4. Deer have eaten most of the lower foliage on this row of Northern white cedar.
Photo Credit: Tim Teynor



Figure 5 (above). Beaver damage to hardwood trees.
Photo Credit: Jim Blake.



Figure 6 (left). Porcupines have almost completely stripped this tree of its bark.
Photo Credit: Stephen Cain

built as a mini-fence around shrubs. Try to sink the wire into the ground just a little bit and then put a stake or two into the ground and attach the wire to the stake. Since voles girdle tree or shrub stems below the snow line, the cylinder/fencing only needs to be a little taller than the predicted or average snow depth. Tree shelters can also provide excellent stem protection from voles and some other critter damage. Again, sink the base of the tree shelter into the mulch or soil around the tree to be protected to prevent voles from tunneling under the shelter.

Hardware cloth also works very well to prevent rabbit, deer antler rubbing and beaver damage to tree trunks. If voles aren't a problem in the landscape, ½

inch hardware cloth can be used to keep these animals from girdling the tree trunks. Chicken wire (either galvanized or plastic-coated) works well to prevent rabbit damage and often damage from unmotivated beavers. Rabbits and beavers work above the snow line, so predicting the snow depth for the winter is important. Rabbits can feed 18" or more above the snow line by standing on their rear feet, so add at least that to the predicted depth of the snow when purchasing and installing the exclusionary fencing or trunk protection.

Exclusionary fencing to prevent deer from browsing on buds and foliage is another instance where it relies on the installer perfectly predicting snow depth.

Deer can easily leap over fences that are up to 6 feet tall, sometimes taller. So the trick is placing the fencing high enough to prevent browsing damage yet close enough to the tree or shrubs to prevent the deer from jumping over and into the sheltered area. Deer can reach over shorter (5 feet or less) fencing and browse, so the fencing needs to be at least 24" away from the branches and foliage to prevent that. Also, it's no trouble for a deer to stomp down chicken wire fences, so it usually pays to use a heavy gauge wire (like hardware cloth) or put in a lot of stakes to anchor and support the fencing.

2) Animal repellent products. There are a lot of stories out there and they all claim 100% effectiveness: little bars of soap hung from branches, fox urine, human hair, and more. Since I'm bald, I'm not about to catch and collect fox urine and I don't stay in hotels often enough to build up a cache of little bars of soap, here are two products that work pretty well.

Plantskydd™ and Liquid Fence™ are two, commonly used animal repellents that are available online or in most garden centers. They can be applied as granules in the soil around the plants or as liquid sprays. They are effective at minimizing damage from most mammals, but don't impact birds. Both are safe to use and are not petroleum chemicals.

The first thing to note about using either as a spray is to determine which way the wind is blowing before you begin spraying. Trust me, you don't want to be downwind from this stuff and get a face-full of spray or soak your clothing. It won't kill you, but your social life will be zero for several days. For max-



Figure 7. Hardware cloth ($\frac{1}{4}$ inch in this photo) is almost guaranteed to prevent any vole, rabbit, beaver and antler-rubbing damage to tree stems as long as it was at least a couple feet taller than the deepest snow of the winter.

imum effectiveness, the first application should be in early autumn and continued through spring, applying fresh coats about every month.

Recovering From Damage.

Sometimes, the damage is so severe that the plants need to be removed and hopefully replaced. This is often the case when tree trunks are completely girdled (all the way around the trunk) and for a vertical length of several inches. If the girdling is only partial

or if the vertical extent is an inch or less, healthy plants have the potential to form callous tissue which can bridge the gap and then develop into functional, vascular and bark tissues again. In this case, do everything you can to keep the plant healthy and growing well which **always** means keeping the trees from becoming water-stressed and **sometimes** means fertilizing them with low rates of slow-release nitrogen (e.g. bone meal, blood meal, composted manures).

For low tree branches that have become severely girdled due to rabbit feeding during deep snow win-

ters, prune them off in the spring. For shrubs that have been heavily damaged from girdling or twig-feeding, prune them back as close to the ground as possible in the spring.

Don't waste your time and money by spraying tree wound paints or any paints on the animal damaged areas if you decide to keep the plants. The damage is done and painting the wounds only changes the color. Save the money for purchasing hardware cloth, tree shelters, or stinky products that repel animals next autumn.



Figure 8 (left). This high density, polyethylene trunk guard prevent damage from almost all critters (except voles), and comes in a variety of lengths. The guard coils around the stems and the open side is closed with zip ties. **Figure 9 (right).** Another option that does a very good job of protecting stems from voles, rabbits and deer browse/antler rubbing are tree shelters. These are designed to slip over smaller saplings, but they can also be used for larger branched trees by slitting one side of the shelter and reattaching it with zip ties.

April, 2019

University of Minnesota, Department of Forest Resources
Urban Forestry Outreach Research and Extension Lab and Nursery

Yellow Birch (*Betula alleghaniensis*) is the Best Tree in Minnesota – Fight Me

By Monica Randazzo, University of Minnesota, Department of Forest Resources



Figure 1: Fall color of yellow birch, photo credit to Cold Stream Farm.

Birch trees are neither uncommon nor unpopular in Minnesota, and in urban plantings both the native trees paper birch (*Betula papyrifera*) and river birch (*Betula nigra*) are ubiquitous among other *Betula* species and cultivars. While it is also native to Minnesota, the **very cool, hip, and luminous** yellow birch (*Betula alleghaniensis*) is often difficult to find in nurseries, and not well known throughout Minnesota. Nevertheless, it is a common tree in the forests of Northeastern Minnesota, though it generally does not grow in pure stands. It more often can be found as individual specimens or in small clusters - unlike its more gregarious relatives. While it does not regularly dominate Minnesota landscapes, yellow birch does grow on a wide range of sites, ranging from low-lying moist areas to uplands. Happening upon a yellow birch in the forest or a landscape planting is a sincere delight, light reflects off of the shiny, golden-bronze bark, giving the tree a distinct glow compared to its neighbors.



Figure 2: Exfoliating bark of yellow birch, photo credit to Native Plant Trust.



Figure 3: Leaf of yellow birch, photo credit to Native Plant Trust.

While of course all trees are special, the yellow birch has a few characteristics in addition to its gorgeous bark which helps it stand out. Unlike other birches, *B. alleghaniensis* is a long-lived species that can reach up to 300+ years old, enabling its presence in mid- to late-successional stands. At maturity it grows up to 75' and taller, with a diameter at breast height of 3' or more. The branching is alternate, and twigs are slender and pubescent when younger. The leaves are simple, elliptical, and doubly saw-toothed with even, rounded to heart-shaped bases, with a dark green and deeply veined top and light yellow-green undersides. The winter buds are reddish-brown and pointed, with a thin fringe of white hairs along the scale margins. Its flowers are wind-pollinated, male flowers are pendulous, yellow and purple catkins and female flowers are oval, upright catkins.

Beyond its aesthetic traits, *B. alleghaniensis* has a number of uses to humans and wildlife. The wood is used for numerous purposes as it is strong and heavy, such as furniture and interior woodwork. Twigs and inner bark produce wintergreen oil (methyl salicylate), the scent of which is reminiscent of icy hot, or the cork grease used on woodwinds. The twigs can be used for tea, and the sap can be harvested for a unique syrup by tapping. Beaver and porcupine both chew the bark of yellow birch, and moose, white-tailed deer, and snowshoe hare browse on twigs and seedlings. Many songbird species feed on the seeds as well.

While yellow birch can be somewhat elusive in Minnesota, it is not necessary to travel to the Appalachian or Allegheny mountains (the range which yellow birch was named after) where it is more dominant in order to bask in the glory of *B. alleghaniensis* – it can be found across much of Eastern Minnesota. Next time you are walking down the Kawishiwi Trail, visiting the Eloise Butler Wildflower Garden, or romping through the woods of eastern Minnesota, keep an eye out for this beautiful native tree.

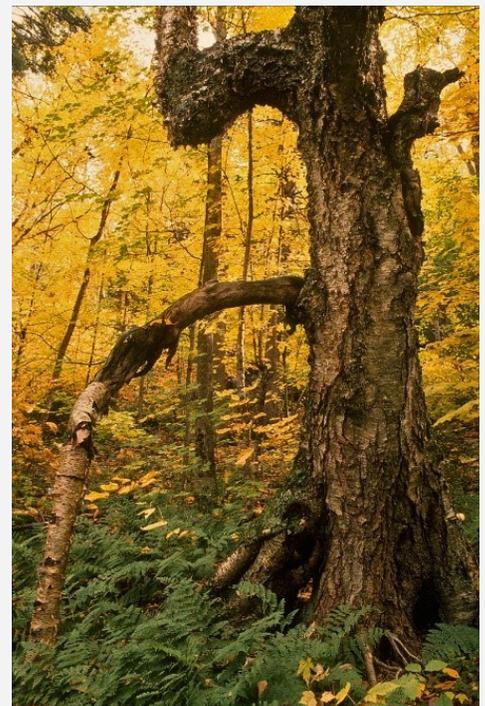


Figure 4: Mature yellow birch in forest, photo credit to Dan Perlman.

While yellow birch can be somewhat elusive in Minnesota, it is not necessary to travel to the Appalachian or Allegheny mountains (the range which yellow birch was named after) where it is more dominant in order to bask in the glory of *B. alleghaniensis* – it can be found across much of Eastern Minnesota. Next time you are walking down the Kawishiwi Trail, visiting the Eloise Butler Wildflower Garden, or romping through the woods of eastern Minnesota, keep an eye out for this beautiful native tree.

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About this publication

***TreeIQ - The MN Tree Inspector Quarterly* is a publication produced by the University of Minnesota in collaboration with agency partners. *TreeIQ* is a seasonal electronic newsletter devoted to providing timely technical information and community connections for Minnesota's Certified Tree Inspectors.**

The University of Minnesota offers certification and recertification opportunities and proctors new certification exams at the certification workshops. For more information on the Tree Inspector program, the certification, and other frequently asked questions, please visit us at www.mntreeinspector.com.

Contact treesins@umn.edu with any questions or submissions.

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