

Measuring Canopy Cover: What Should My City's Canopy Cover Be?

by Jill Johnson, Coordinator
US Forest Service, Midwest Center for Urban and
Community Forestry

Many U.S. cities are turning to canopy assessment to help identify areas that need more tree cover. Aerial photographs or satellite images are used to determine how much of the city is currently covered by tree canopy (Fig. 1). The maps are then used as a basis for setting an urban tree canopy goal, either for the entire city or for individual sections of the city.

There are many different ways to analyze tree canopy and determine realistic goals for different parts of a city. The approach described below was developed by the US Forest Service, University of Vermont and several state forestry agencies. There are five basic steps:

- 1) **complete an urban tree canopy assessment** to determine how much canopy cover currently exists and where there are opportunities for more
- 2) **set a goal** to increase canopy cover based on the assessment
- 3) **create a plan** to achieve the goal

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Figure 1. Tree canopy covers roughly 20% of the total area seen in this photo.

- 4) **implement the plan**
- 5) **evaluate successes and challenges**, adjusting the plan as necessary to meet the goal

Most communities will need help with the first step, the assessment. But the other parts of the process can be completed internally if there is an urban forester on staff. The details of each step are outlined below.

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Things Have Changed

Since 1993, quarterly issues of our *Wisconsin Urban & Community Forests* newsletter have been sent through the mail. Last year we carefully reviewed and surveyed the mailing list in an attempt to reduce expenses and ensure the newsletter was being sent to an interested audience. At that time many readers elected to “go green,” signing up to receive the newsletter electronically. Unfortunately, even with these changes we can no longer afford to print and mail four issues each year. We will continue to produce four newsletters per year in electronic format via our website. Two of those editions will also be printed and mailed. **This is our first electronic-only issue.**

Newsletter availability will be announced through the *Wisconsin Urban Forestry Insider*, our bi-weekly electronic bulletin and posted on our website <http://dnr.wi.gov/forestry/uf/>. To receive notification when issues are available electronically, please visit <http://dnr.wi.gov/forestry/newsletters/> and subscribe to the *Insider*. Those already signed up to receive the newsletter electronically will be transferred to the *Insider* subscription list for notification. If you prefer not being added to the *Insider* subscription list, please let us know. If you do not have access to a computer at work or home, you can log on at your local public library.

We do appreciate your patience as we make these necessary changes. Your comments and concerns are always appreciated and welcome to Laura Wyatt at Laura.Wyatt@wisconsin.gov or PO Box 7921, Madison, WI 53707. And most of all, thanks for the interest and work you provide in support of Wisconsin’s urban and community forests!



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Community Profile:

Population: 3012

Tree City USA:
11 years

Miles of Streets: 17

Number of Parks/
Total Park Acres:
8 mini-parks,
8.14 acres

Old Settler's Park,
17.7 acres

Program Profile:

2009 Forestry Budget:
\$90,000

Community Profile:

Village of Paddock Lake

by Karen Harris
Village Trustee

Paddock Lake is a small village of just over 3000 people in southeastern Wisconsin. We have been a Tree City USA for 11 years and we have lots of exciting things going on here.

A new tree beautification program offered by the village will permit residents to buy trees at a discounted price to spruce up their yards and contribute to an international campaign of the United Nations Environment Program, Plant for the Planet: Billion Tree Campaign. Their goal is to plant seven billion trees worldwide each year.

The Village of Paddock Lake struck a deal with Ludwig Nursery in Brighton, which also donates a 10-foot tree each year for Arbor Day, to offer trees to residents at a significantly discounted price. All trees planted will be recorded with the Plant for the Planet program and will help meet the international goal. Both 3-foot and 10-foot trees are available. The 3-foot trees are in pots and include trees such as Autumn Blaze® maple, sycamore and Japanese tree lilac. Costs are \$10 without planting and \$15 for planting. The 10-foot, 2½"-diameter trees include Autumn Blaze®, Red Sunset®, Green Mountain® and sugar maple. Cost for these trees are \$110 and \$125 if the nursery plants.

The Village of Paddock Lake has also been very proactive about emerald ash borer. With the borer found about 15 miles away in Kenosha County, it has become a real threat for us in Paddock Lake. We have



Photo: Karen Harris

Village Trustee Karen Harris (center) instructs Cub Scouts how to properly plant the community Arbor Day tree.

initiated and finished a program of inventorying all ash trees within the village. In addition to counting and locating all ash trees we have also documented the health, condition and size of these ash trees. All ash trees were assigned a number; maps of the village with all the properties located by the county property ID number were used. The trees are located on the map along with the circumference at three feet above the ground and also the approximate height of the tree.

The Village of Paddock Lake has also applied for a grant to replace dead trees. Because the north side of the village is made up of almost 100% ash trees, we hope to plant more trees in case the village ends up with emerald ash borer. We would still have some trees planted and it would not be a bare neighborhood. At this point we are just trying to be prepared. 🌱



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Send your inquiries, address changes, or story ideas to Laura Wyatt, Laura.Wyatt@Wisconsin.gov (608-267-0568), or Dick Rideout, Richard.Rideout@Wisconsin.gov (608-267-0843).

Editors: Laura Wyatt and Dick Rideout
Contributors: Cindy Casey, Don Kissinger, Jeff Roe, Tracy Salisbury, Kim Sebastian, Candice Sovinski, and Olivia Witthun

Articles, news items, photos and ideas are welcome.

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This newsletter is available in alternative format upon request and can also be downloaded in PDF format from our website: <http://dnr.wi.gov/forestry/UF/>

For breaking UF news, anecdotes, announcements and networking opportunities, sign up for The Urban Forestry Insider, DNR's bi-weekly e-bulletin. Archives are at <http://dnr.wi.gov/forestry/UF/resources/InsiderArchive.html>

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Emerald Ash Borer in Wisconsin—Update

by Bill McNee, Gypsy Moth Suppression Coordinator
DNR Northeast Region

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Tree care professionals across the Midwest have been receiving many reports of ash trees suddenly dropping their leaves. This is due to two causes: frost/freezing damage from weather conditions earlier this spring and a fungal disease called ash anthracnose. It is not due to emerald ash borer, which causes different symptoms and acts over several years to kill a tree. A tree injured by frost/freezing damage or anthracnose will usually put out a second set of leaves and will look much better for the rest of the season. No control is necessary for yard trees, although it is a good idea to maintain overall vigor by watering during dry periods, properly mulching and minimizing tree injuries. UW-Extension has a factsheet available at <http://wihort.uwex.edu/gardenfacts/XHT1001c.pdf>.

Early May through mid-June is the time to be applying most insecticides that are used to protect trees from EAB damage. A tree service will be needed to apply most of the approved insecticides. For more information visit www.emeraldashborer.wi.gov/articleassets/InsecticideOptionsForProtectingTreesFromEAB.pdf. Treatments are not recommended if more than 15 miles from a known infestation.

Iowa has become the latest state to find EAB. In mid-May several larvae were found along the Mississippi River across from Victory, Wisconsin. Iowa has an estimated 90 million ash trees. EAB was also found in far southeast Minnesota (Houston County), not far from the EAB infestation at Victory, Wisconsin, and the new detection in Iowa.

Purple panel traps are now present around Wisconsin for use in this summer's EAB trapping project. A total of 8,700 traps will be in use between May and September. Degree-day accumulations predict that EAB adults began emerging in southwest Wisconsin over the Memorial Day weekend.

Firewood

Starting June 1, 2010, the 50-mile firewood rule for state parks and forests has been reduced to 25 miles. The new rule states that firewood being brought into a state park or forest must:

- originate from within 25 miles of the campground on that state park or forest, or from within 25 miles of the state park or forest if there is no campground
- be from within Wisconsin
- not be from a quarantine area that does not already cover the park or forest

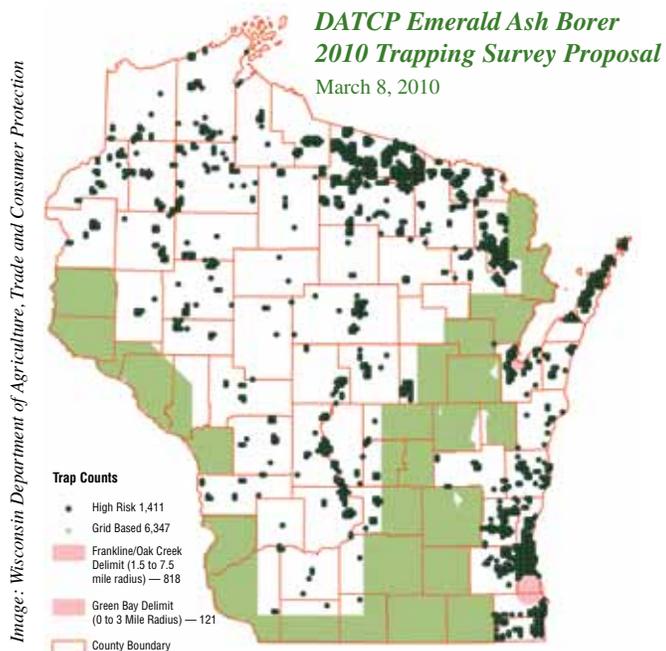
Dimensional lumber (such as 2-by-4s) and firewood certified by the Wisconsin Dept. of Agriculture, Trade and Consumer Protection are exempt from this regulation. Campers with new or existing reservations are being notified of the change.

Wisconsin Natural Resources magazine recently published an article explaining why local firewood is the safest firewood. See <http://dnr.wi.gov/wnrmag/2010/04/firewood.htm>.



Photo: WDNR

DATCP will place 8,700 purple panel traps throughout the state in 2010.



Certification Profile:

DATCP Certified Pesticide Applicator Program

compiled by Don Kissinger, Urban Forestry Coordinator
DNR Northern Region

The Certified Pesticide Applicator program allows for people to correctly and legally apply chemical pesticides in Wisconsin. A person must be certified if they intend to direct the use of:

- restricted-use pesticides
- pesticides on a for-hire basis
- pesticides in public schools or on school grounds
- pesticides that contain metam sodium
- pesticides in aquatic environments

Pesticide applicators are termed either **private** or **commercial**. Private applicators are those that make restricted-use pesticide applications to property owned, controlled and/or rented by them and/or their employer for the production of an agricultural commodity (e.g., corn, apples, Christmas trees, etc.). Wisconsin currently has 15,100 certified **private** applicators.

In the arboricultural world most folks need to obtain a **commercial**, for-hire certification. These persons make contractual pesticide applications for which they or their employer receives compensation. Examples are employees of landscape firms, pest control companies and custom agricultural pesticide applicators. Wisconsin has 12,800 commercial pesticide applicators. While there are many commercial certifications, the ones that most pertain to arborists are Fruit Crops, Forestry, Turf & Landscape, Greenhouse Nursery and Right of Way.

To become certified, a person must obtain a training manual for the category they will test on (\$45 for a commercial applicator manual) and pass the exam with a score of 70%.

The certification exam is based on information within the training manuals that are unique to each category. Prospective commercial applicators may also attend a live training session relating specifically to the category they plan to test on. All categories except Fruit Crops provide live training sessions which are typically offered from January–April and cost

\$25. Training sessions are not meant to be a substitute for reading the manual but are used to supplement and highlight some of the more difficult-to-understand areas such as laws and regulations, application methods & techniques, proper calibration, etc. For people unable to participate in live trainings, DVDs and CDs are available for some categories. Most commercial applicators need to be licensed on an annual basis as well as certified. This entails passing the certification exam and then completing a license application as well as paying a \$54 fee. Licensing runs on a calendar year basis.

Exam Process

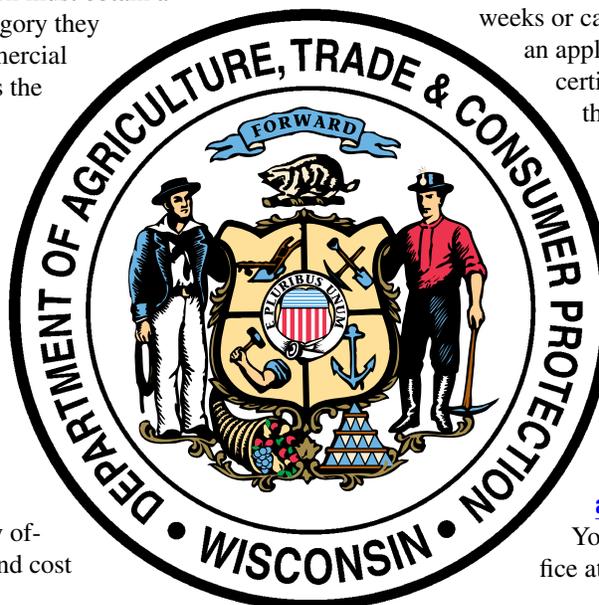
Exams consist of approximately 70 multiple-choice questions. Private applicators are given 120 minutes to complete the exam, while commercial applicators have 90 minutes. Exams are open book for private applicators and closed book for commercial applicators. If you have registered for a training session, you will be automatically scheduled to take the exam at the end of the session. If you are uncomfortable taking the exam that day, you may defer to a later date to further study the materials and contact the Department of Agriculture, Trade & Consumer Protection (DATCP) at 608-224-4548 to book an exam appointment. Exams are offered year-round in Madison and seasonally in Eau Claire, Green Bay, Waukesha, Spooner and Wausau. The Pesticide Applicator Training (PAT) program office provides detailed information on exam procedures and directions to testing sites listed in the green sheet that accompanies the training manual.

Exam scores are sent out by mail within two weeks or can be checked online. If

an applicant passes the exam, the certification card is mailed with the exam score. If a person fails the commercial applicators exam they will need to contact the DATCP for a retake. Certifications must be renewed every five years by re-testing. For complete information on the PAT program and to order training manuals, visit

<http://ipcm.wisc.edu/Default.aspx?alias=ipcm.wisc.edu/pat>

You may also call the PAT office at 608-262-7588. 🌿



Project Profile:

Irvine Park Native Tree Trail

by Cindy Casey, Urban Forestry Coordinator
DNR West Central Region

As the 20th century drew to a close, Chippewa Falls resident and conservationist Everett Nelson sought to mark the momentous occasion by honoring an earlier time in the city's history. Nelson organized the Chippewa Falls Committee for the Twenty-First Century, Inc., which began raising money for a monument to pay tribute to the area's settlers and lumbering heritage. Nelson passed away before his vision could be realized, but an offshoot of his plan soon took shape under the leadership of another local man, Don Bichner. Instead of a concrete-and-bricks monument, however, Bichner envisioned a living showcase of trees representing all of Wisconsin's indigenous species. Thus the Native Tree Project was born.

The city's 318-acre Irvine Park turned out to be an auspicious project site, not only because of the diversity of habitat types, but also because representatives of 32 indigenous tree species were already present. Early on, the project was awarded several grants from a community foundation endowment known as the Fred R. Bowe Memorial Fund. These grants were used to buy and install 10-by-20-inch, black granite identification markers for the trees.

Using the DNR booklet *Forest Trees of Wisconsin: How to Know Them* as a master plant list, the project committee continued to buy, plant and arrange for markers for the remaining 20 or so indigenous species not previously existing in the park. Upon the advice of city Parks and Recreation Director Bill Faherty, most of these trees have been planted along a walking path that loops around Duncan Creek through the center of the park. Funds to continue placing the 300-pound identification markers have come from individual tree sponsorships. Initially Bichner wanted to limit the \$185 sponsorships to one per family, with the idea of distributing the legacy as broadly as possible, but he notes that "sometimes husbands and wives couldn't agree on what kind of tree they wanted" and so ended up sponsoring two. As an alternative to tree sponsorship, a number of residents simply contributed to the project with a financial gift to the endowment fund. Several local nurseries donated trees, labor and equipment. The City of Chippewa Falls has also contributed trees. All tree sponsors and project contributors are listed in a directory.

Surprisingly, reaching the \$10,000 fundraising goal proved relatively easy. Tree sponsorships and other donations were solicited via word-of-mouth, not through formal advertising. Bichner likens the \$10,000 goal to a deck of cards. "By focusing on individual 'cards' instead of the whole deck, it wasn't

so overwhelming," he explains. The group's biggest challenge, particularly at the project outset, was lack of technical expertise. "It's one thing to plant a tree in your own yard," Bichner says. "It's a whole different ball game figuring out how much space and sunlight you need for the number and variety of trees we were working with."

Finding space for some of the new trees in the amply wooded Irvine Park was not easy. To make room, city parks staff cleared black locust from portions of the creek bank and the project volunteers removed large patches of buckthorn elsewhere along the trail.

The vast majority of labor for the tree project has come from a small, dedicated group of volunteers. These retirees meet once a week to cut buckthorn and replace, relocate, water, stake, prune and install browse protection on project trees. Bichner estimates his group has collectively donated well over 1000 hours, excluding time spent on project planning, organizing and oversight. Some of the volunteer time was used to match the city's 2006 Urban Forestry Grant for Irvine Park management activities.

Parks and Recreation Director Faherty admits that the Native Tree Trail would never have been possible without the volunteers. "We rely heavily on state and federal grants as well as the service of volunteers," Faherty says. "The grants act as a catalyst, igniting enthusiasm among residents and leveraging support from private businesses." He notes, "It's not so much about the money as it is the atmosphere that's created when volunteers have the opportunity to provide service. Grants help create that opportunity."

Pending improvements to the walking trail aren't yet complete, but the tree portion of the project is winding down, with American beech and rock elm the only species needed to round out the collection. For Bichner and the other volunteers, however, the work continues. On any given Tuesday afternoon you're apt to find them tending trees along the trail. If you stop by, bring your work gloves! 🌿



Photo: Cindy Casey, WDNR

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Photo: Cindy Casey, WDNR

Tree identification markers are produced locally by Johnson Monument Company.

Irvine Park Native Tree Trail Staff and Volunteers (l to r): Chippewa Falls Director of Parks and Recreation Bill Faherty and project volunteers Richard Erickson, Don Bichner, Paul Nicolai, Leith Sault.

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Community Tree Profile:**Three-flowered maple
(*Acer triflorum*)**

by Laura G. Jull, Associate Professor & Extension Specialist
Dept. of Horticulture, University of Wisconsin–Madison



Three-flowered maple fall color



Three-flowered maple bark

Native To: Manchuria (north-eastern China) and Korea

Mature Height: 20–25'

Spread: 15–25'

Form: Upright to rounded form, dense, with drooping lower branches

Growth Rate: Slow

Foliage: Opposite, trifoliate leaves (not common for a maple). Leaflets are ovate to lanceolate, 2–3" long, each with their own petiole. Leaflets have irregular serrated margins and uneven leaf bases. Terminal leaflet is the longest. Petiole and leaf veins on undersides are pubescent.

Buds and Stems: Younger stems are reddish brown to tan; older stems are exfoliating and tan to brown. Buds are clustered, pointed, imbricate, purplish to brownish black; bud scale tips have short white hairs.

Fall Color: Showy, yellow to orange (mainly)

Flowers: Not showy, insignificant; small, greenish yellow flowers borne in spring in clusters of three (referring to the common name).

Fruit: Double samara (schizocarp) in late summer to fall, green turning brown, 1- to 1½-inch-long wings point downward and may cross at tips of wings; seeds at top of schizocarp are pubescent as is the stalk holding the fruit (peduncle). Seeds are difficult to germinate, with low viability.

Bark: Showy, exfoliating in vertical papery scales, light tan to amber on upper branches; lower branches and trunk are ashy brown with papery, vertical fissures; tree is often multi-

stemmed or single-stemmed with a short trunk.

Site Requirements: Adaptable to most soils and pH, however, intolerant to heavy clay, poorly drained soil. Difficult to transplant and performs better if planted in spring. Grows in full sun to partial shade, moist, well-drained soil and is moderately drought tolerant, however, leaves can scorch if drought is extended. Not very heat tolerant, thus it is not very urban tolerant. Requires little pruning since it grows slowly and is a small ornamental tree. Lower branches can be limbed up to expose the showy, exfoliating bark.

Hardiness Zone: 4a–7a

Insect & Disease Problems: None serious, but can get verticillium wilt, as it is a maple; can leaf scorch in severe droughts.

Suggested Applications: Three-flowered maple is a very nice, small, ornamental tree for residential landscapes, small areas, or even in large, insulated planters with sufficient root area. Its fine texture adds interest in the landscape and combines well with hostas and groundcovers. Can be used as an understory tree on the edges of wooded areas.

Limitations: Hard to find in nurseries and expensive due to difficulty in propagation. Lower limbs hide the showy bark and therefore should be removed.

Comments: Three-flowered maple is an underused, small, ornamental tree for residential and some commercial sites. It could be used as a specimen tree near decks and patios where the bark can be viewed from all directions. The fall color is outstanding as is the bark, giving the tree year-round interest. It is a good alternative to paperbark maple (*Acer griseum*) as it is more cold hardy, though the bark is not as showy as paperbark maple. Three-flowered maple is not invasive as seed germination is low.

Common Cultivars or Selections: none

References:

Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses, 6th ed. 2009, by M. A. Dirr, Stipes Publishing, Champaign, IL.

Maples of the World, 1994, by D. M. van Gelderen, P. C. de Jong, and H. J. Oterdoom, Timber Press, Portland, OR.

North American Landscape Trees, 1996, by A. L. Jacobson, Ten Speed Press, Berkeley, CA.

Plants that Merit Attention: Vol. 1 Trees, 1984, The Garden Club of America, Janet Meakin Poor, (ed.), Timber Press, Portland, OR.

Trees for Urban and Suburban Landscapes, 1997, by E. F. Gilman, Delmar Publishers, Albany, NY. 🌿

2011 Wisconsin DNR Urban Forestry Grants — Intent to Apply Announced

by Candice Sovinski, Urban Forestry Grant Manager
DNR Division of Forestry

Each year the Wisconsin Department of Natural Resources offers financial assistance for urban forestry projects that strengthen a community's capacity to manage its trees. Eligible applicants may be a city, village, town, county, tribal government, or 501(c)(3) nonprofit organization and joint applicants are encouraged to apply. The grant program supports projects that advance a community's urban forestry management program. Emphasis continues to be on preparation for and response to emerald ash borer (EAB) which this year includes support for planting less common tree species to increase urban forest diversity. Also this year, the state has an additional \$120,000 in federal funds to support grants for EAB preparation and response.

Since 1993, the Urban Forestry Grant program has provided nearly \$10.4 million throughout the state. Projects must relate to urban forestry. Past projects have supported successful partnerships as well as countless hours from volunteers, consultants and dedicated urban forestry professionals. Grant recipients use the funds to advance their urban forestry management programs and, in turn, enhance the state's urban forests. Wisconsin's Urban Forestry Grant program is a 50–50 cost-share program. Grant awards range from \$1,000 to \$25,000.

Previous urban forestry projects funded by the grant program include:

- urban forestry plans (strategic plans, management plans, work plans, etc.)
- emerald ash borer (EAB) preparedness and response
- community tree inventories
- hazard tree inventories
- tree planting and operations
- tree boards or tree action groups
- urban forestry staff training
- urban forestry public awareness programs and/or materials
- contract specifications for urban tree planting, maintenance and/or removal
- education, public awareness and much more

The Intent to Apply form is available on-line at <http://dnr.wi.gov/forestry/UF/grants/>, or by contacting Candice Sovinski, Urban Forestry Grants Coordinator, Wisconsin Department of Natural Resources, candice.sovinski@wisconsin.gov, 608-267-3775. Returning a completed Intent to Apply by September 3, 2010, ensures that you will receive an application by mail for the 2011 grant cycle. Applications will also be available online in early August. Applicants have until October 1, 2010, to apply.

Further information is available at <http://dnr.wi.gov/forestry/UF/grants/>, or contact your regional urban forestry coordinator; see <http://dnr.wi.gov/forestry/UF/staff/>.

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What Damaged This Tree?

Turn to page 15 to find out. . .



Photo: Tom Zagar, City of Muskego

Urban Tree Health Matters:

Notes from Plant Disease Diagnostics Clinic—Peering Into the 2010 Plant Disease Crystal Ball

by Brian D. Hudelson, Director
UW—Madison Plant Disease Diagnostics Clinic

Fig. 1: Root rots can lead to a general thinning and dieback of tree canopies, leaves that are smaller than normal and leaves that turn their fall color early.

For this issue of the *Wisconsin Urban & Community Forests* newsletter, I have been asked to channel Hen Wen, the oracular pig from Lloyd Alexander's Newbery Award-winning *Chronicles of Prydain*, and attempt to predict possible plant disease problems for the 2010 growing season. While Hen Wen used rune-inscribed ash rods to aid in her predictions (Aha! There really *is* a forestry reference in my babblings

about sword and sorcery literature), I have no such aids and will have to try to make my predictions based on last summer's disease problems and last winter's weather pattern. Only time will tell how accurate my predictions will be. However, at this moment I see potential problems in two areas: root rots, and leaf spots and blights.

Root rots: My primary concern for the health of woody ornamentals in 2010 is in the area of root rots. In many areas in Wisconsin last fall, substantial snows came very early, well before soils had a chance to freeze. Because of snow's insulating qualities, many locations had no frost in the soil for the entire winter. The combination of cold

but non-frozen soils, and potentially high moisture available from snow cover may have provided conditions where root rot pathogens could have been active throughout the entire winter.

In particular, I am concerned about water-mold (i.e., Oomycete) root rot pathogens such as *Phytophthora* or *Pythium*. These fungi-like organisms are called water molds for a reason—they tend to grow and reproduce more efficiently in wetter (and oftentimes cooler) soils. Water molds survive in soil as thick-walled resting spores called oospores. When soils are relatively dry, oospores tend to germinate to form hyphae (thread-like structures) that can directly penetrate root tissue. However, when soils are wet, these resting spores often germinate to form reproductive structures called sporangia, which in turn produce numerous swimming spores called zoospores. Thus there is oftentimes a substantial increase in potential inoculum of these pathogens during wet weather. Zoospores can swim towards roots (following chemical signals exuded by plants), encyst (i.e., lose their ability to swim) at the root surface, then germinate to form hyphae that can penetrate root tissue.

If root rot pathogens *have* been active throughout the winter, with substantial numbers of root infections and resulting root decay, watch for the effects later in summer as soil moisture becomes scarce. I would expect trees and shrubs with substantial root rot problems to show symptoms of general canopy dieback from the top down. Leaves on these trees and shrubs may be smaller than normal and may turn their fall color early (Fig. 1). Upon close examination, root and crown tis-

Continued on p. 10



Photo: Brian Hudelson, UW—Madison

Coming Events:

July 14, 2010 – Rochester Arborist Workshop, “Dynamic Tree Dynamics,” Mayo Civic Center, Rochester, MN. Contact Jay Maier at 507-286-8733 or info@rochesterarboristworkshop.com.

July 23–28, 2010 – International Society of Arboriculture Conference & Trade Show, Navy Pier, Chicago, IL. Visit www.isa-arbor.com/conference/.

August 12, 2010 – Wisconsin Nursery Association's Summer Field Day & Trade Show, Northwoods Nursery, Rhinelander, WI. Contact WNA at 414-529-4705.

August 13, 2010 – WAA Summer Conference, Mitchell Park, Milwaukee, WI. Visit www.waa-isa.org/calendar_of_events.asp.

October 3–6, 2010 – Society of Municipal Arborists Conference & Trade Show, Albuquerque, NM. Visit www.urban-forestry.com.

October 7, 2010 – WAA Fall Seminar, Wilderness Resort, Wisconsin Dells, WI. Visit www.waa-isa.org/calendar_of_events.asp.



Urban Forest Insect Pests:

Twolined Chestnut Borer

by Linda Williams, Forest Health Specialist
DNR Northeast Region

Twolined chestnut borer (*Agrilus bilineatus*) is a native beetle that attacks and can kill oaks weakened by stress from drought, defoliation or other tree damage. In urban areas the most common stressors are trunk and root injuries, soil compaction and limited soil depth contributing to droughty soils. Although the primary host is oak, occasionally other species are attacked.

The adult beetles, active in spring and early summer, lay their eggs on the bark of a stressed tree. The eggs hatch and the larvae bore under the bark where they feed in the cambium layer, effectively disrupting nutrient and water flow within the tree. The leaves on infested portions of the tree will turn a uniform reddish brown color and will often remain on the tree for an extended period. Dieback and mortality associated with twolined chestnut borer can be easily confused with oak wilt, but the dieback associated with the insect often starts at the top of the tree with branch dieback, and progresses downward, whereas the rapid

mortality associated with oak wilt in the red oak family affects the entire tree all at once.

To determine if your tree is being attacked by twolined chestnut borer you will have to peel some of the bark to look for the larval galleries under the bark. You might also see small D-shaped exit holes, usually less than 1/5" in diameter. By the time you notice symptoms, the damage is done and little can be done for those portions of the tree, but if the tree recovers its vigor it could stop any further damage. There are some larval parasitoids that provide some control of twolined chestnut borer, and pesticides can be used to treat some high value trees, but prevention is the best tool for managing this insect. To prevent attack from twolined chestnut borer, try to prevent stress to your trees. In urban areas this may mean mulching, watering, soil aeration, preventing defoliation, avoiding injury, and minimizing stress and soil compaction caused during construction. 🌿



Photo: David Cappaert, Michigan State University, Bugwood.org.

Twolined chestnut borer larvae

November 2–5, 2010 – Wisconsin Park and Recreation Association Annual Conference, La Crosse Convention Center, La Crosse, WI. Visit www.wpraweb.org/education.htm.

November 9–11, 2010 – Partners in Community Forestry National Conference, Loews Hotel, Philadelphia, PA. Visit www.arboday.org/programs/index.cfm.

November 11–13, 2010 – TCI Expo, David L. Lawrence Convention Center, Pittsburgh, PA. Visit www.tcia.org/index.aspx.

November 13, 2010 – Women in Horticulture 2010 Conference, Mount Mary College, Milwaukee, WI. Contact Melinda Myers at 414-727-1818 or info@melindamyers.com.

December 5–8, 2010 – American Society of Consulting Arborists Annual Conference, Amelia Island, FL. Visit www.asca-consultants.org/conferences.html.

January 30–February 1, 2011 – WAA/DNR Annual Conference and Trade Show, Hotel Sierra/KI Convention Center, Green Bay, WI. Visit www.waa-isa.org/calendar_of_events.asp. 🌿

If there is a meeting, conference, workshop or other event you would like listed here, please contact Cindy Casey. Please see back cover for contact information.

sue of symptomatic plants will likely have the typical darkening associated with root rot problems (Fig. 2).

Management of root rots can be challenging. The best way of minimizing the impact of root rots is to properly prepare soils before planting ever occurs so that soils drain well. By moderating soil moisture, water mold and other root rot fungi are less likely to be active and less likely to produce zoospores, thus reducing the likelihood and number of infections. Fungicide treatments also are available for root rot management but are not appropriate in all situations. They work best when root rot problems are caught early, before substantial damage has occurred. Fungicide treatments do not cure existing infections but are designed to prevent additional infections from occurring. Such protective treatments can oftentimes provide plants with minor root damage the time they need to produce new root tissue that can then compensate for roots

lost through root rots. Plants severely affected by root rots may receive no benefit from fungicide treatments. Proper diagnosis of root rot pathogens is critical for selection of an appropriate fungicide; products tend to be very specific in terms of the root rot organisms they control. The Plant Disease Diagnostics Clinic, <http://pddc.wisc.edu>, can help identify root rot pathogens and provide appropriate fungicide recommendations.

Leaf spots and blights: The summer of 2009 was a relatively good year for leaf spots and blights on many woody ornamentals. In particular, I saw a fair amount of anthracnose on maple, ash and oak (Fig. 3). In addition, numerous samples of *Venturia* leaf blotch on silver maple arrived at the Plant Disease Diagnostics Clinic in 2009. This latter disease was characterized by the development of black, necrotic (i.e., dead) areas on leaves that in certain instances were misidentified as tar spot, a disease I more commonly see on sugar and Norway maple. The *Venturia* leaf blotch pathogen (*Venturia acerina*) is related to the pathogen that causes apple scab (*Venturia inaequalis*). Given the leaf diseases I observed in 2009, the high probability of the pathogens that cause these diseases surviving over the winter in leaf debris, and the high potential for cool, wet spring weather that is optimal for infections to occur, I expect leaf disease to be prevalent again in 2010.

The good thing about most woody ornamental leaf diseases such as anthracnose and *Venturia* leaf blotch is that they tend to be cosmetic. While they oftentimes look quite severe to homeowners, these diseases typically cause relatively little, if any, damage to affected trees and shrubs. If severe defoliation occurs several years running, leaf diseases can stress trees to the point where they become more susceptible to more severe diseases such as *Armillaria* root disease. However, this level of defoliation is unusual.

The best way to manage most leaf diseases, particularly in urban settings, is simply to rake up and remove leaf litter. This removes a major source of leaf pathogens. Once again, fungicide treatments are available for preventative control of leaf diseases. However, I recommend such treatments only when severe defoliation has occurred for several years. When fungicide treatments are warranted, they should be applied by a certified tree care professional with expertise in fungicide applications as well as the proper equipment to ensure good coverage of sensitive leaf tissue.

For what it is worth, these are my predictions for 2010. As noted above, only time will tell how accurate my predictions will be. For more information on many of the diseases discussed in this article, as well as many others that I am *not* clairvoyant enough to see on the horizon, check out the University of Wisconsin Garden Facts at <http://wihort.wisc.edu/GardenFacts.html>. 🌿



Fig. 2: Root rots lead to discoloration in the roots and crowns of trees and shrubs.



Fig. 3: Anthracnose (shown here on oak) is one of several primarily cosmetic diseases that may be a problem in 2010.

Photo: Brian Hudelson, UW-Madison

Urban Tree Canopy Assessments

The assessment determines how much existing canopy a community has, how much is possible and, depending on the specific interests of the community, where canopy is most desired. These assessments require high-resolution aerial photographs or satellite images and experts called remote sensing specialists to analyze them.

The first step is for the specialist to create a land cover map from the aerial photographs or satellite images. At a minimum, the final map should show where existing tree canopy is located. But it is very helpful if the pavement, grass/shrubs and water are also identified.

Once the existing canopy is mapped, the next step is to determine where it's possible to add canopy. Because trees cannot be planted on top of buildings, in the middle of roads or in water, these areas are blocked out. What is left is a map showing where it is biophysically possible to plant trees.

The final step involves integrating specific interests of the community. Social and other environmental concerns can be incorporated so increases in canopy cover address multiple issues. For example, one city wanted to plant trees in low-income neighborhoods so their desired canopy map highlighted those low-income neighborhoods with the least amount of canopy.

Set a Canopy Goal

The big question is always, “How much is enough?” Unfortunately there is no clear answer. The nonprofit organization American Forests has developed guidelines from their experience analyzing tree cover in U.S. cities. The guidelines are as follows:

- average tree cover for the entire city – 40%
- suburban residential zones – 50%
- urban residential zones – 25%
- central business districts – 15%

These are just guidelines; every community should consider its own needs and set realistic and achievable goals. Known canopy cover of U.S. cities ranges from 12% in Frederick, Maryland, to 39% in Burlington, Vermont. So deciding on an acceptable goal depends significantly on the community's current situation.

When setting goals, be specific about the geographic boundaries. Most communities have a citywide goal, but many have identified separate goals for different neighborhoods or land use types. The goal should be to increase canopy cover. Considerations for wide-scale losses due to insect or disease outbreaks should be noted. Specify the timeline for achieving the goal and be sure that it is endorsed by local officials.

Create a Plan

The plan should include activities that will both protect existing canopy as well as plant new canopy. It is difficult to increase canopy over a 10- to 30-year timeline by planting new trees and ignoring existing ones. The plan needs to incorporate activities for both. This includes designing adequate above- and below-ground growing space for trees, protecting high-quality trees already in the landscape, providing quality tree care, and using management practices that minimize the impact of storms and insect or disease outbreaks.

Because the greatest potential for increasing canopy often exists on private property, some parts of the plan may include initiatives to fund or assist with private tree planting and regulations for private tree protection.

Implement the Plan

All action items in the plan should be completed in the given timeframe.

Evaluate and Revise

Finally, it is advisable to complete a subsequent canopy cover assessment every 5–10 years. The follow-up assessment may only need to examine existing canopy to determine how successful the efforts have been and identify necessary changes to the plan or goal.

Canopy Cover Assessments versus Tree Inventories

Tree canopy assessments should not replace community tree inventories. Their purpose and value are different. A public tree inventory provides information about the species, size, condition and maintenance needs of individual trees—information critical for managing the population.

Challenges

There are a few challenges associated with canopy goals, including the cost to obtain high-quality imagery and hire an imagery analysis specialist. Another challenge is that most of the opportunities for increasing canopy cover exist on private property. And finally, it is difficult to ascertain qualitative differences in tree canopy. For example, the widespread tree cover in a park may be buckthorn. It is imperative that any community considering an urban tree canopy goal understand these challenges and limitations.

Where to Get More Information

To learn more about measuring urban tree canopy or to view reports from communities who have set goals, visit the US Forest Service website at www.nrs.fs.fed.us/urban/utc or American Forests' website at www.americanforests.org/resources/urbanforests/treedeficit.php. 🌿

Editor's notes:

To learn about Wisconsin's urban forest inventory and assessment pilot study and to view the webinar, *Mapping & Calculating the Benefits of City Trees*, visit the WDNR Urban Forestry webpage at <http://dnr.wi.gov/forestry/UF/assessment.htm>.

WDNR Urban Forestry Grants may be available for qualified canopy assessment projects. Grant information is available at <http://dnr.wi.gov/forestry/UF/grants/>.

Awards Recognize Urban & Community Forest Friends

by Virginia M. Mayo Black, Communications Specialist
DNR Division of Forestry

A Marathon County resident, four governmental entities, a local tree board and two state legislators have been recognized by the Wisconsin Urban Forestry Council for their support of the state's urban and community forest resources.



Photo: WDNR

Distinguished Service Award recipient Tom Meier was recognized for his volunteer efforts to establish an oak wilt management and control program for the Town of Mosinee. Tom is a wildlife biologist with the WDNR. Tom is shown with Mobly, a rehabilitated great horned owl.



Photo: Jeff Roe, WDNR

Project Partnership Award presented to Dane County Parks Director Darren Marsh, Dane County Tree Board member Nancy Schlimgen, Dane County Tree Board Chair and Madison City Forester Marla Eddy, Wisconsin Urban Forestry Council member Tom Dunbar and Dane County Solid Waste Manager Mike DiMaggio.

Recipients of this year's Urban Forestry awards are:

- ▶ **Tom Meier**, a town of Mosinee resident, recipient of the Distinguished Service Award for his sustained leadership working as a volunteer to establish and work with town officials and residents to raise oak wilt awareness, management and control programs, and activities.
- ▶ **The Dane County Land and Water Resources Department, the Dane County Public Works Solid Waste Division, and the Dane County Tree Board**, winner of the Project Partnership Award for their leadership in gathering together urban forestry partners and stakeholders to develop the county's Emerald Ash Borer and Wood Utilization Strategic Management Plan.
- ▶ **City of Mequon and City of Milwaukee** representatives and **We Energies**, winners of the Innovations in Urban Forestry Award for their collaboration and innovative use of hyperspectral imagery to develop a comprehensive ash tree canopy map for use in the two communities' EAB readiness planning.
- ▶ **State Rep. Fred Clark** of Baraboo (42nd Assembly District), and **State Sen. Judy Robson** of Beloit (15th Senate District), winners of the Elected Official Distinguished Service Award for their leadership in the protection of the state's urban forests, including their work to reinstate funding for Wisconsin's Urban Forestry Grant program.

The [Wisconsin Urban Forestry Council](#) advises the Department of Natural Resources Division of Forestry on the best ways to preserve, protect, expand and improve the state's urban and community forest resources. The awards are a way to recognize and thank individuals and organizations for their work and dedication and to help focus attention on a valuable community resource: the trees, plantings and habitat that are an integral part of Wisconsin's forest resource, according to Deena Murphy, assistant planner/zoning inspector for the City of Onalaska, who chairs the council's awards committee.

The award recipients were announced earlier this year at the annual Wisconsin Arborist Association–DNR urban forestry conference in Green Bay. Award plaques and local recognition were provided at award ceremonies in the honorees' home communities. Both Sen. Robson and City of Milwaukee officials received their awards as part of their communities' Arbor Day observances on April 30.

Continued on page 13

Save the Date!

Popular DNR Urban Forestry Fall Workshops

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Tree pruning basics will be the topic of the DNR urban forestry workshops offered this fall throughout the state. The workshops will feature indoor instruction on pruning fundamentals and outdoor instruction and demonstration.

Training is based on current research, ANSI A300 standards and International Society of Arboriculture's Best Management Practices. The workshops are designed for community public works and parks employees, tree board members, managers and others who have responsibility for or are involved in community tree pruning, including groundskeepers, landscape contractors, tree & lawn care firms, nursery retailers and volunteers.

Registration information will be available in July on the DNR urban forestry website or contact your regional urban forestry coordinator (see back page). 🌿

Proposed dates and locations include:

| | |
|----------------|--------------|
| Rhineland | September 13 |
| Spooner | September 14 |
| Chippewa Falls | September 15 |
| La Crosse | September 16 |
| Marshfield | September 17 |
| Milwaukee | September 20 |
| Milwaukee | September 21 |
| Whitewater | September 22 |
| Sun Prairie | September 23 |
| Sun Prairie | September 24 |
| Green Bay | September 27 |
| Appleton | September 28 |
| Oshkosh | September 29 |

Awards, continued from page 12

Murphy said now is an excellent time to look around and identify the individual, agency and/or organization whose respect for and work in support of their community's urban forestry resource should be recognized. Although the deadline for submitting a complete formal nomination is December 30, 2010, Murphy said a preliminary nomination (an e-mail or letter containing the name[s] and contact information, award category, and project name) can be sent in at any time to the Wisconsin Urban Forestry Council, PO Box 7921, Madison, WI 53707, or can be e-mailed to Laura.Wyatt@Wisconsin.gov. For additional information visit the [Urban Forestry Council Awards](#) Web page or contact a [Wisconsin Urban Forestry Council member](#) or DNR [regional urban forestry coordinator](#).

"One way to celebrate Arbor Day and Earth Day in Wisconsin is to spend some time in your community to enjoy the parks, trees and other plantings that make up your urban forest, and identify the people who are helping to nurture and preserve this often-overlooked resource," Murphy said. "Now is a perfect time to nominate someone for an Urban Forestry Award." 🌿



Photo: Jeff Roe, WDNR

Senator Judy Robson, 15th State Senate District (center), receives the Distinguished Service Award during the City of Beloit Arbor Day Celebration. Presentation participants include: City of Beloit Terrace Operations Supervisor and Urban Forestry Council member Bruce Slogoski, representative for Congresswoman Tammy Baldwin Helen Forbeck, DNR South Central Region Director Lloyd Eagan, Superintendent of Beloit Schools Milton Thompson, Senator Judy Robson, President Beloit School District Pastor Michael Ramsdail, 45th State Assembly District Representative Chuck Benedict, Beloit City Manager Larry Arft, and DNR Southern Region Forestry Leader John Nielsen.

The Idea Exchange...

compiled by Olivia Witthun, Urban Forestry Assistant
DNR Northeast Region

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Does your community or organization have an idea, project or information that may be beneficial to others? Please let your regional urban forestry coordinator know. We will print as many of these as we can.

Online, Citizen-Acquired Tree Inventory

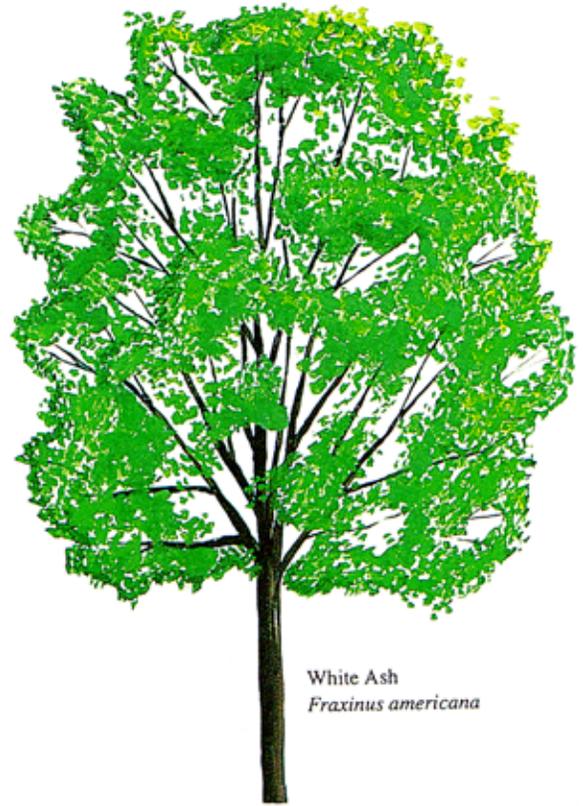
Urban Forest Map is an online tree inventory that functions like a “Wiki” site. The project is a Web-based, open-source collaboration of government agencies, nonprofits, businesses and residents who will map and provide updates for every tree in San Francisco. With hundreds of thousand of trees, the cost and effort of a traditional inventory was too high. The solution of citizen-acquired data not only provides a means of gathering the initial data, but it also enables individuals to update the information (e.g., for plantings and removals). Environmental benefits can be easily calculated, and the information gathered will help urban foresters and city planners better manage trees in specific areas, track and combat tree pests and plan future tree plantings. This creative use of technology engages the community in urban forestry while helping ease the burden of government and nonprofit entities responsible for tree management. *Info:* www.urbanforestmap.org/.

Adopt an Ash Tree

The Village of Grafton, Wisconsin, has initiated an Adopt an Ash Tree program to engage residents in financially supporting an effort to treat village ash trees. Yellow ribbons were placed on all village-owned ash trees to help residents identify them and visualize how many trees would be lost when Grafton becomes infested with emerald ash borer. The cost for a resident to adopt an ash tree is \$1 per circumference inch. A specific ash tree can be identified for adoption or a general contribution can be made to the program. Once a tree has been “adopted” the ribbon color will change to green. As of May, over \$3000 has been donated for the treatment of village-owned ash trees. Grafton is approximately 10 miles from Newburg, where Wisconsin’s first EAB infestation was found. *Info:* www.village.grafton.wi.us/index.aspx?NID=356.

Trees Make Streets Safer, Not Deadlier

Transportation engineers have often opposed the planting of trees along roadsides, contending that a wide travel corridor, free of obstacles, is needed to protect motorists. Research has actually found the opposite to be true. Tree-lined streets experience fewer accidents than do roadsides kept free of large, inflexible objects. One study showed pedestrian-friendly roadways having 40 percent fewer crashes than comparison roadways. One explanation is that motorists use the trees to help gauge their speed and then adjust their driving behavior accordingly. The inclusion of trees and other streetscape features is a successful solution that can help decrease crashes and injuries on urban roadways. These roadside trees have other benefits as well. They can extend the life of adjacent asphalt paving by 40 to 60 percent, reduce temperatures at pedestrian level and absorb vehicle exhaust. *Info:* www.newurbannews.com/ResearchTreesSep06.html. 🌿



White Ash
Fraxinus americana

Urban & Community Forestry Program Resources:

UW–Extension Plant Selection Resources

compiled by Cindy Casey
DNR West Central Region

Choosing the Right Landscape Plants: Factors to Consider, A3864, by Dr. Laura Jull. 2008. Properly placed and maintained landscape plants can increase the value of real estate. Plant selection is one of the most important decisions a gardener, landscaper or designer makes when landscaping. Download the pdf or order from the Learning Store at <http://learningstore.uwex.edu/Choosing-the-Right-Landscape-Plants-Factors-to-Consider-P1371.aspx>.

Winter Salt Injury and Salt-tolerant Landscape Plants, A3877, by Dr. Laura Jull. 2009. This publication focuses on recognizing and preventing plant damage caused by deicing salts, evaluates the pros and cons of alternatives to rock salt, and provides an extensive list of salt-tolerant plants. Download the pdf or order from the Learning Store at <http://learningstore.uwex.edu/Winter-Salt-Injury-and-Salt-tolerant-Landscape-Plants-P1328.aspx>.

For additional plant selection resources, see vol. 12, no.4, p.15 of this newsletter, at <http://dnr.wi.gov/forestry/UF/resources/UFnwsltr.htm>.

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Illustration: James McEvoy



What Damaged This Tree?

Answer: Here is a “professionally” planted tree in a city near you. Some still haven’t gotten the word that the removal of ropes, strings, wire baskets, burlap and other wrappings is an important step in the successful establishment of a newly transplanted tree. For additional information and sample specifications, check out the WI DNR “Developing Tree Purchase and Planting Specifications for Bid” at <http://dnr.wi.gov/forestry/uf/resources/PlantingGuide2007.pdf>.



Photo: Tom Zagar, City of Muskego

