MINNESOTA
Shade Tree Advocate
Speaking Out For Community Forests
VOL. 3, NO. 3 • SUMMER 2000

Inside This Issue

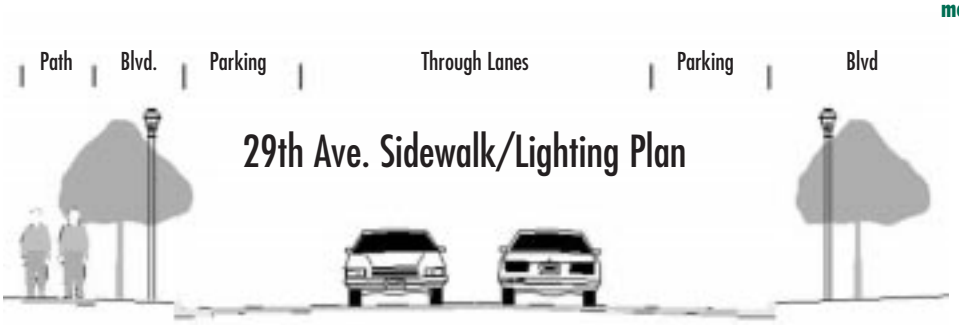
Summer 2000

The Minnesota Shade Tree Advisory Committee's mission is to advance Minnesota's commitment to the health, care and future of all community forests.

Rethinking Urban Infrastructure


JAN HOPPE

An upgraded urban forest is a key in reworking St. Anthony's 29th Avenue from a "runway" (photo) to a more neighborhood-friendly design.



COURTESY WSB

Not so long ago, many city planners, civil engineers and citizens who didn't live in the neighborhood shared a common view of busy streets: Make them as wide as possible, as straight as possible and keep visual distractions as far back from the thoroughfare as possible. "Neat and streamlined" kept the traffic moving. Residents living curbside usually wanted reduced speed limits, but their voices were often lost in the attention to straightforward traffic flow.

Today, many more people are suspicious about the wisdom of creating utilitarian roadways that encourage people to speed through cities, and especially through residential neighborhoods. When the suburban city of St. Anthony contemplated both flood mitigation and reconstruction of its 29th Avenue, "*How do we slow them down?*" became a leading question. "*The urban forest*" became part of the answer.

An east-west feeder stretching about two-thirds of a mile between Stinson Blvd. and County 88, 29th Avenue is a fast, heavily traveled commuter roadway that cuts through a residential neighborhood. Project Engineer and Consultant Todd Hudmer says it "looks like a runway. There is no vegetation on the right of way, and the whole setting looks like you should go fast."

In reconstruction and utility work soon to be undertaken, City Public Works Director Jay Hartman says 29th

Please turn to p. 12.

East Grand Forks

COMMUNITY FOREST PROFILE

DALE SKYBERG

Spring and summer flooding complicate matters for urban foresters in East Grand Forks.

Imagine the challenges. Alkaline clay-base soil. A short growing season—basically June through September. Severe winter temperatures dropping to –40°F. Acres of urban forest and four parks on a river/flood plain that floods nearly every year, often with serious ice damage. And then there's a year like 1997 when the entire city floods, much of it 15-20 feet deep.

These challenges are all in a year's work for Park and Recreation staff in East Grand Forks, MN. Yet the city has an urban forest and park system that's lush, healthy and beautiful.

East Grand Forks, population 8,500, lies directly across the Red River of the North from Grand Forks, North Dakota. City park/forestry staff consists of two full-time employees assisted by part timers brought in for special needs. This small group maintains 21 parks along with cemetery grounds, boulevard areas and riverbanks, two indoor ice facilities, four outdoor ice rinks and an outdoor pool. Community beautification is important, supported by a regular line item in the city budget, the enthusiastic backing of the city council and the interest of the townspeople. Along with other community planting, the city pays for and plants trees on berms in residential areas throughout the city each spring. Citizens sign up for the trees and then take responsibility for ongoing maintenance. Currently, volunteers are working to beautify State Highway 220 roadsides as it moves through town, along with other projects.

The "500-Year Flood" of '97 obviously created heavy stress on East Grand Forks' urban forest. Many trees were completely submerged in water. Fuel tank residue, chemicals, sediment in the water and ground debris all assaulted trees and other vegetation. With a disaster this size, cleaning up, cutting and trimming away damage were about all park personnel could do to bolster trees. Some trees died, but species native to or suited to the flood plain did quite well. Common to the city are oak, ash, cottonwood, elm, basswood and hackberry. Dutch elm disease and ash anthracnose threaten those species, and prevention efforts are part of the tree management program. Planting after the flood has been focused on keeping diversity.

A new Red River Recreation Area project is sparking lots of excitement and enthusiasm in the community these days. The DNR State Parks System and City of East Grand Forks are collaborating to create the first state recreation area in the region. Seven hundred acres along the river are being developed for public recreation with the assistance of state and federal funding. Included will be a campground, hiking and picnic areas and a visitor's center housing interpretative information about the big flood. Construction will begin in May, 2001. Private industry even has a stake; a new Cabela's is already open. Visitors will be able to get DNR licensing and services, buy outdoor gear and enjoy recreational facilities all in "one-stop" shopping.

East Grand Forks' urban forest has the benefit of two long-term tree advocates who work closely together and complement each other's expertise. Dale Skyberg, Superintendent of Parks and Recreation, has been with the city for 20 years and brings a health and physical education background to park management. Jim Neil, Park Foreman and City Forester, has a 25-year tenure loaded with on-the-job skills.

New Perspectives, Anyone?

Working in a small city, Dale and Jim appreciate the opportunity to communicate with colleagues in other communities. Dale thinks a great opportunity for sharing ideas would be for city park and forestry people from various communities to get together for a work day now and then. The group would set a date, bring their own equipment and come to one community for a day. They'd go through the community with their local colleagues, observing successes and problems, participating in on-site work, building camaraderie and learning together. Are you interested? Call Dale at 218/773-8000, or Jim at 218/779-7750.

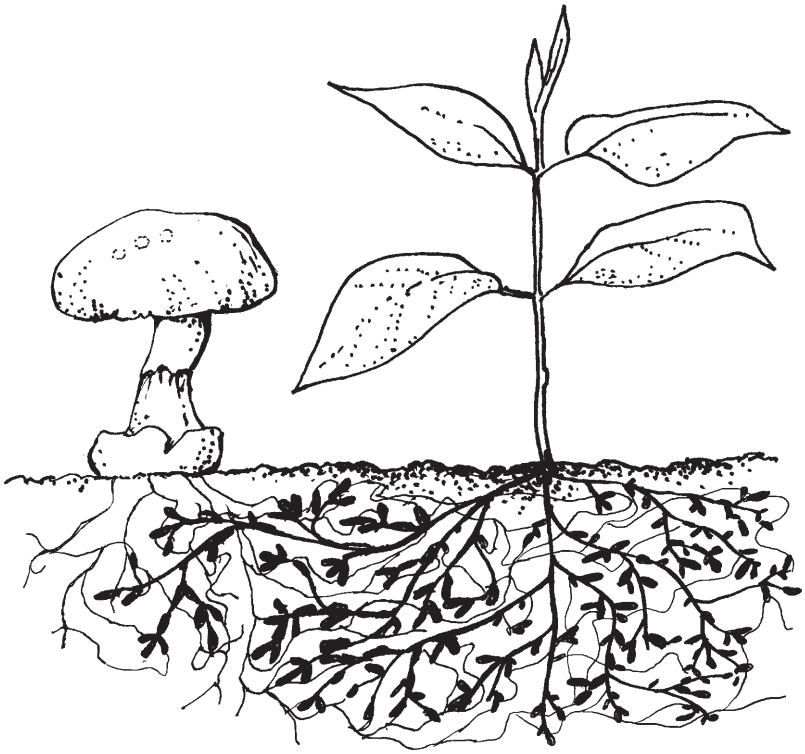
Will Mycorrhizal Inoculations Save Your Ailing Tree?

By Cindy Buschena

Most, if not all, urban soils have been disturbed and altered and are quite different from a tree's natural habitat. Will the addition of mycorrhizal fungi improve tree and shrub growth in the urban setting?

A tree colonized by mycorrhizal fungi (a fungus that forms a symbiotic relationship with tree roots) has better nutrition as well as fewer incidences of root diseases. It is better protected against damaging environmental conditions such as drought and soil accumulations of deicing salt. And depending on the type of mycorrhizal relationship, infected trees may have an advantage at soil water and nutrient access and uptake.

Ectomycorrhizal (ECM) fungi are indispensable for many tree species in nature. Arbuscular mycorrhizal fungi (AMF) are found in all climates and ecosystems, regardless of the type of soil, vegetation or growing conditions. It is found on the majority of cultivated plants. So much has been written on the benefits of ECM fungi that most people are convinced of the advantages. However, relatively few field studies on mycorrhizal inoculation have been published and commercialization of mycorrhizal products is still in its infancy. Although both AMF and ECM inoculum have been available commercially for many years, few options to purchase effective ECM inoculum are available in northern climates and especially the Lake States.



Mycorrhizal fungas structures in soil.

Is it as simple as following a recipe?

Some species of ECM are limited by geographical area. As with plant materials, the origin of the fungus is very important when considering purchase of inoculum. Even with the appropriate fungus, the beneficial effects of the fungus can be adversely affected by fertilization (phosphorus and nitrogen may be harmful), liming, pesticide use (in particular, fungicides), and topsoil removal during development activities. Temperatures can also affect mycorrhizal fungi. The majority of fungal species grow best between 18°C and 27°C, though some have a wider temperature tolerance. *Pisolithus tinctorius*, for example, can grow at soil temperatures of 34°C or higher, but is not native to Minnesota.

Please turn to page 4.

Mycorrhizae, from page 3

GARY JOHNSON

Comparison of the number of mycorrhizal root tips between a healthy (left) and a declining (right) white oak. Sample volumes were uniform.

In nature, mycorrhizae thrive in leaf compost and other organic materials, not sod. In addition, landscape trees and turfgrasses commonly have different, optimum pH ranges than do mycorrhizal fungi. Compaction, a common condition in urban soils, results in the loss of pore space which subsequently reduces the amount of air and water available to soil organisms (including mycorrhizal fungi) and plant roots. Compaction can also cause changes in carbon dioxide and oxygen concentrations and diffusion rates, causing significant, long-term plant stress in urban landscapes. Since mycorrhizal fungi require oxygen to survive, their existence and growth may be inhibited or greatly reduced in compacted, clayey soils.

Many claims of commercial inoculants overlook the complexity and incomplete understanding of the field behavior of mycorrhizal fungi.

The urban forest isn't a greenhouse.

Mycorrhizal associations, including inoculant applications, are ecology issues. Many claims of commercial inoculants overlook the complexity and incomplete understanding of field behavior of mycorrhizal fungi. Knowledge of its biology is mainly based on results of experiments with culturable fungi that may not be ecologically significant. Culturable species are the ingredients of commercial inocula. Add these commonly used, culturable fungi to a potted plant and the plant will often become phosphorus-rich and grow better. But it is unknown whether these fungi improve plant performance beyond the greenhouse.

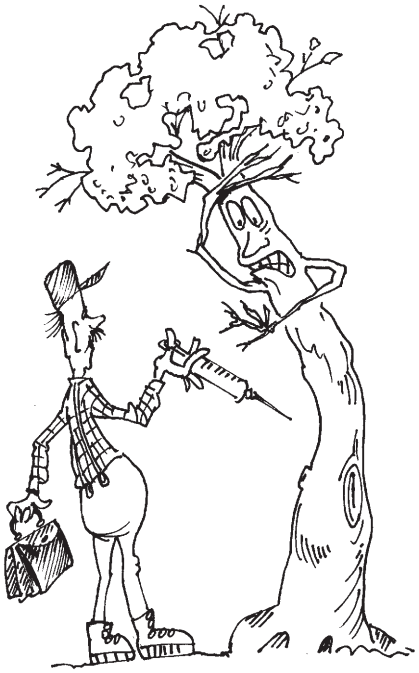
Pot experiments are necessary but do not represent ecological reality. Results from pot experiments should not be expected to be the same as results in the natural or synthetic forest. A mixture of easily cultured fungi (AMF and/or ECM) may not have any predictable benefits in the field. This is especially true if the ECM and/or AMF inoculation accompanies practices, nutrients or other additives that may by themselves cause beneficial results in plant health and growth. Confusion is certain: were the benefits due to the fungi, the nutrients, the organic material amendments?

The caveat.

It is true that mycorrhizal fungi influence plant populations and community dynamics, but they are not the answer to all problems, especially in the urban landscape. If you decide to use mycorrhizal fungi, expect to receive correctly labeled inoculum, clearly indicating the fungal species and the number of living propagules. Expect to receive correct and relevant information that is helpful in determining whether your situation would benefit from inoculation. Do not accept anything less.

Remember that interactions between mycorrhizal fungi and other components of the landscape ecosystem are very complex. The problems with your trees may not be related to the lack of mycorrhizal fungi. They quite often may be related to the presence of some other organism or condition that is harmful to the trees.

Cindy Buschena is a research scientist at the University of Minnesota, Department of Forest Resources.



JIM KIEHNE

Establishing Transplanted Trees: Water you going to do?

By Rich Hauer

Healthy trees that mature into legacies do not happen by chance. Ask city foresters and they may say you need to match trees that are biologically adapted to a site. Hopefully you will also find trees (they're in short supply these days) for the site. Ideally, delivered trees must then be inspected to monitor for compliance with tree specifications (i.e., depth to the root system, pests, stem condition) included as part of the bid proposal. Short tree planting seasons are sometimes a barrier. Further, at times poor soil characteristics (e.g., organic matter, pH, aeration, drainage) at the site need modification. After these hurdles are cleared you still have to plant the tree. But does the job end there?

For some planting programs, the project ends after planting. For others, trees are periodically watered when maintenance staff are not mowing turf. Others may be more dedicated and water trees weekly. All these scenarios will work during years when rainfall is frequent and plentiful. During normal years, however, even weekly watering of newly transplanted trees may not be enough. When establishing trees are subjected to water deficits, growth and function of the leaves, shoots and root growth slows to negligible levels. This delays establishment and may even lead to the death of these parts. In the worst case scenario, which too often needlessly happens, a net decrease in living biomass occurs and the canopy becomes smaller. The tree canopy may now resemble a 1-inch caliper tree rather than the planted 2-inch caliper tree. The purpose of this article is to shed light on recent scientific-based prescriptions for watering trees to aid establishment.

GARY JOHNSON

We can see the scorching in this maple's leaves, a symptom of stress from inadequate watering. But the impact on overall vitality and delay in establishment may not be as obvious.

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Water and Tree Physiology

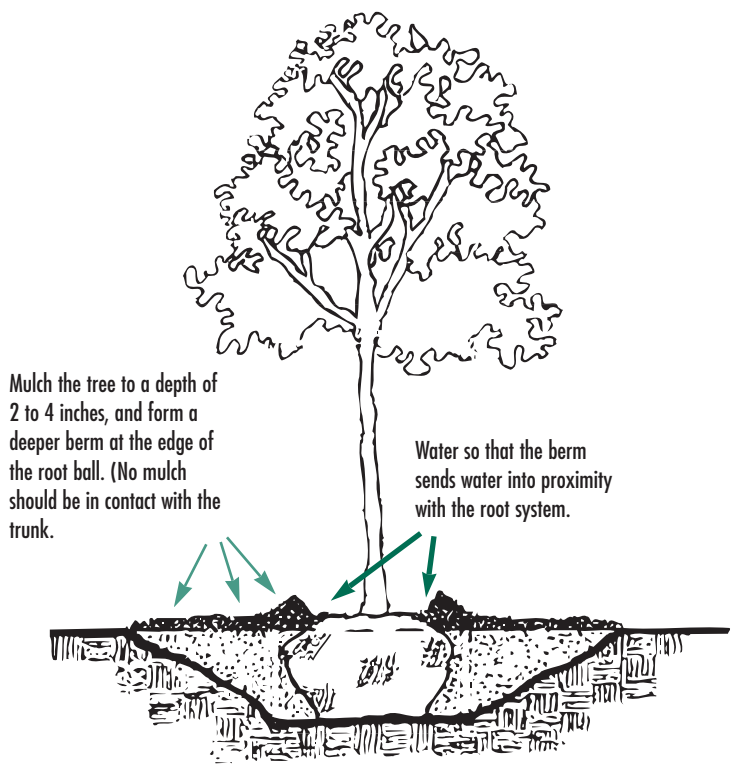
The function and growth of plants as suggested by Justus Von Liebig in 1840 (modified later by others) is limited by the factor present in the smallest amount relative to its minimum requirement. Ample light, water, oxygen, carbon dioxide, mineral nutrients and suitable temperatures are all important for plant growth and function. Quite often, however, plant nutrients (e.g., nitrogen, phosphorus, potassium) are most commonly thought of as factors that limit plant growth. While these along with other nutrients are vital for growing healthy trees, water is the factor that most

Please turn to page 6.

Establishing, from p. 5

often limits growth. In humid regions, water accounts for approximately 80% of the variation in diameter growth. In arid regions, water accounts for approximately 90%.

For the most part, trees can only take up water from soil in proximity to roots. Established trees are in contact with greater volumes of soil due to wide-spreading root systems, and are more capable of obtaining water. Newly transplanted trees have less soil volumes to extract water. Obviously, trees that have root systems severed to facilitate transplanting (i.e., bare root, balled & burlapped and tree spade) have fewer roots and a smaller soil volume in contact with roots. Container-raised trees also have a small root area to obtain water even though they are transplanted with the majority of their root system intact. In fact, newly planted container-grown trees require daily watering the first few weeks following transplanting. Just ask a nursery operator how often they water their containerized trees!



UNIVERSITY OF NEBRASKA COOPERATIVE EXTENSION

After planting, form a berm with mulch at the edge of the root system to insure water is placed in proximity to the roots.

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Is There a Way to Reduce Water Requirements of Newly Transplanted Trees?

The removal of branches at transplanting, or compensatory pruning, was a common practice in the past. The idea was simple: since roots were removed during the transplanting operation, then the canopy should be pruned accordingly to compensate for the root loss. It was thought that fewer branches and leaves meant less demand for water, leading to better establishment. Research from Oklahoma, Colorado and England have found trees establish more quickly without compensatory pruning when watered frequently. With little rainfall or supplemental irrigation, trees pruned and unpruned at planting establish similarly (See *Pruning at Planting,* MnSTAC *Advocate,* Spring 1999.

Antitranspirants (also known as antidesiccants) have also been suggested to aid transplant success. Antitranspirants reduce water loss through stomates by either causing stomate closure or covering stomates with a waxy film that is a barrier to water loss. In theory antitranspirants seem reasonable, but in practice they may lengthen the establishment period. While closed or blocked stomates reduce water loss, they also decrease carbon dioxide entry into leaves. Less carbon dioxide accordingly reduces the manufacture of energy compounds from photosynthesis.

But what practices can be used to reduce water requirements of transplanted trees? Two methods are mulching trees (See *Mulching,* MnSTAC *Advocate,* Spring 1999) and planting smaller-sized trees. Mulch helps reduce evaporation from soil surfaces and also adds organic matter to the soil. Smaller trees establish sooner than larger trees and require less water during watering. In addition, a berm can be formed at the edge of the root system to insure applied water is placed in proximity to the roots.

Prescription or Dosage-Based Watering

Historically, tree-watering guidelines have suggested watering trees every seven to ten days with 1 to 1-1/2 inches of water. While this frequency and amount of water may work in some situations, research within the last five years from the Morton

Arboretum and the University of Florida at Gainesville suggests more frequent watering is necessary for optimal tree establishment. Within two to three days, rootballs of newly planted trees will dry to levels that impede root growth. Newly transplanted trees in the Midwest will benefit from daily watering for the first one to two weeks, applying approximately 1 to 1-1/2 gallons per-stem-caliper inch per watering. Thereafter, water trees every two to three days for the next two to three months and then weekly at the same rate until established.

Remember, newly transplanted trees are absorbing water from a diminished rooting area (i.e., apply water to the root ball). Roots must generate and grow into surrounding soils before a larger soil volume can be tapped for moisture. Tree roots grow approximately 18 inches in length annually in the Midwest. Trees in Minnesota will become established within one to one-and-a-half years for each caliper inch of stem. Thus, it takes two to three years before a 2-inch caliper tree is established. The more closely you match your watering frequency to the optimum the quicker trees become established.

Labor to water trees is sometimes given as a reason or excuse for not adequately watering newly planted trees. If the water requirements of newly transplanted trees cannot be met, planting smaller trees is recommended. For example, 1- and 2-inch caliper trees have less root loss and recover faster than trees 2 to 3 inches in stem caliper. Mulching trees to a 2- to 3-inch depth is recommended as it helps reduce evaporation and conserve precious water. Incorporating the labor cost of watering trees within the tree planting budget should insure adequate watering occurs and trees establish successfully. If tree planting is part of the contract process, consider including watering as an additional component in the bid. Your community forestry program will be far better off if trees are adequately watered rather than if you are continually replanting and not realizing the benefits that mature and established trees provide.

Rich Hauer is a plant health specialist and editor of the Overstory *publication at the Minnesota Department of Agriculture.*

Irrigation Guidelines for Quickly Establishing Trees

(Well-drained sites during the growing season in the Midwest)

■ Less than 2-inch caliper planting stock

Water daily for 1 week; every other day for 1 to 2 months; weekly until established

■ 2- to 4-inch caliper planting stock

Water daily for 1 to 2 weeks; every other day for 2 months; weekly until established

■ 4-inch caliper planting stock

Water daily for 2 weeks; every other day for 3 months; weekly until established

Notes:

- Modified from Gilman, E.F. 1997. *Trees for Urban and Suburban Landscapes*. Delmar Publishers. 662 pp.
- Delete daily irrigation when planting in fall or early spring. Little irrigation is needed when planting in winter.
- Reduce frequency in cool, cloudy, wet weather if soil is poorly drained (soil drains less than 3/4 inches per hour). Eliminate daily irrigation in poorly drained soil. Following a rainfall, wait until all free moisture drains out of the soil.
- Establishment takes 12 months per-inch-trunk caliper.
- Minimum frequency for survival could be once each week.
- Irrigation can cease once trees drop deciduous foliage in the fall.
- At each irrigation, apply 1 to 1.5 gallons for each inch of trunk diameter to the root ball.

"So, What Can We Do With This Wood?"

Every municipality in the state is faced with this question at one time or another. Whether it's routine pruning of diseased or dying trees, utility trimmings, normal storm throw or dealing with the horrendous tree damage following storms throughout the state in 1998, finding a place for downed wood can be a big challenge. Finding a use for it rather than burning or dumping it a landfill is preferred, but access to cost-effective resources for reuse varies greatly from community to community.

COURTESY MPRB

While long having interest in a "use it, don't bag it" approach to dealing with wood refuse, the storms of 1998 and the huge volume that resulted became the catalyst for a program that's working well today for the Minneapolis Park and Recreation Board (MPRB). After the storm, of course, there were many types of wood refuse all jumbled together . . . branches and limbs, whole trees, good and marginal tree species for reuse. The city was approached by Minnesota Valley Hardwood to obtain logs. An agreement was reached, and the company bought and hauled off the bigger pieces. The higher quality wood would eventually become furniture in Italy and Japan, among other uses. Lower end wood became pallets, trailer beds, etc. City handling and hauling were significantly reduced.

Meanwhile, cleanup crews were chipping smaller pieces for recycling as mulch, paths, etc. in the park system. The volume of chips, however, was overwhelming and it was decided to make chips available to the public. Woodchip distribution sites were selected and advertised throughout the city. Crews dumped the chips in prearranged parking lots and easily accessible areas. Citizens could pick them up at no charge.

Minneapolis has an abundant, enduring urban forest that includes:

- 170 park properties
- 6,385 acres of park system (land and water)
- 70 full-time forestry personnel
- 4550 new tree plantings per year average for past 10 years. Plantings represent a diverse population based on a block-to-block master street tree plan.
- 90,639 remaining elms (over 121,000 have been removed since 1963)

Woodchip distribution continues today, and is very popular with the public. There are now convenient neighborhood distribution sites in many parts of the city. Seven chippers and tower (bucket) trucks routinely travel the city, pruning, removing hazardous trees, etc. Chipping is done on the spot; the chips are taken to a nearby site.

While providing a positive link between MPRB and the citizens of the city as well as a responsible environmental solution, woodchip recycling offers some cost offset benefits too. The problem of what to do with all the chips is solved without paying for space, and there is minimal hauling at city expense. Non-storm years yield about 100,000 board feet of sellable lumber, which amounts to about $10,000.

Have there been problems? Nothing major. Occasionally a resident will not like where a particular site is located. The normal "steaming" that happens as green wood is drying has caused a few to think the piles were on fire. As long as the volume in piles is generally matched to the use of the site, big piles that might attract children or nuisance behavior are avoided. The city monitors for public dumping, but that hasn't been an issue.

Successful recycling and utilization requires a plan well before any storm strikes. But even in a non-storm year, the plan yields benefits.

Municipalities considering a wood recycling program have a number of issues to sort through, including: How are you going to collect, sort, chip the wood? Who are the potential buyers or users? What should we try to sell? How can we work with these people so relationships and work plans are in place before a major storm occurs? What should we give away, and how? How can city time and expense be minimized while not compromising environmental needs, public support or safety? What will be the response of city government and community leaders, and how can we invest them in our efforts?

In Minneapolis, wood recycling is worth the effort. It's working.

Information for this article was provided by Ralph Sievert and Jim Hermann. Ralph is Director of Forestry, and has been with MPRB for 6 years. He was previously Cleveland City Forester and an Ohio DNR urban forester. He holds aMasters degree from Ohio State University. Jim is Forestry Programs Manager and has been with MPRB since 1977. Gaining his forest products and plant pathology education at the University of Minnesota, Jim mentions being influenced by Dr. David French.

Jim and Mike Zins co-chair the MnSTAC Wood Utilization Task Force and are always interested in hearing recycling ideas. In a future issue, we will feature Mike's ideas about wood utilization.

Rx for Wounded Trees

By Cindy Ash

Trees have a marvelous defense system against diseases, insects and the environment. It's called bark. Just as the contents of our homes are protected by four walls and a roof, important workings inside the tree are protected by the bark.

Occasionally, however, something damages this protective barrier and a series of events follows that requires energy. Trees with a good energy supply respond to the damage or wounding by quickly sealing off the damaged tissues and then, over several seasons, by growing new bark over the damaged area. (Energy, otherwise known as plant food, is created during photosynthesis. It is not supplied in a fertilizer.)

A damaged area can be referred to as a "canker." Simply defined, cankers are localized dead areas on woody plant parts (branches, trunks and roots). They result from hundreds of different "events" and include damage caused by insects and diseases as well as mechanical damage, environmental damage and less frequently, chemical damage.

Wounds, created when the bark is torn by lawn mowers, pelted by hail stones or pounded with nails, create holes in the protective barrier of the bark . This allows insects and diseases that could not ordinarily get into the tree to penetrate and damage it. A healthy tree has plenty of energy and "mobilizes" its defenses to the wound. It creates barriers surrounding and beyond the boundaries of the original wound. These barriers prevent the tissues adjacent to the wounded area from drying out. The disease or insect is unable to invade any further and the original wound, still considered a canker, begins to seal over. Trees don't heal like animals do. The damaged areas are always damaged, but are sealed within the tree.

LINDA HAUGEN

Canker left by hanging lantern

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"The right tree in the right place" offers good future protection against wounding. When we plant species that are well adapted to the planting site, we give more energy for defense when that "rainy day" comes along.

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If the tree is stressed, however, as in recently transplanted, fighting insect or disease problems, struggling with soil conditions, lacking water, having too much water or other stresses, it's a different story. The tree does not have the energy to establish the internal and external barriers quickly enough or strongly enough to prevent secondary insects and diseases from causing more damage and creating even larger cankers. Some fungi form perennial cankers that enlarge every year until the branch, trunk or tree is killed. Trees often sustain severe damage when they break at cankered areas on windy days or during storms.

DON BREHEMAN

Nectria canker in honeylocust

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Recognizing Cankers

Cankers are usually easy to identify. Observe first the color and texture of healthy bark. Then, look for areas that are a different color, lighter or darker, and

Please turn to page 10.

About MnSTAC

The Minnesota Shade Tree Advisory Committee (MnSTAC) was established in 1974 by a group of concerned citizens to address the health and well being of community forests. MnSTAC is recognized throughout Minnesota and the country for its expertise, advice, coordination and support for community trees. It is an organization of diverse individuals who represent a broad spectrum of tree-related interests. It fosters and supports local community tree programs across the state so healthy community forests are fully integrated into community development, infrastructure, education and management.

Regional MnSTAC Committees

Southeast STAC

Chair: Henry Sorensen
651/388-3625 or 651/385-3674
Sec./Treas.: Katie Himanga, Heartwood Forestry, Lake City
651/345-4976

Headwaters-Agassiz STAC (HASTAC)

Chair: John Johnson
City Forester, City of Thief River Falls 218/681-1835
Sec./Treas.: Jeff Edmonds
DNR Forestry, Bemidji 218/755-2891

West Central STAC

Chair: Bob Fogel
Director of Parks, City of Moorhead 218/299-5340
Sec./Treas.: Dave Johnson
DNR Forestry, Detroit Lakes 218/847-1596

Northeast STAC

Chair: Kelly Morris
City Forester, City of Grand Rapids 218/326-7600
Secretary/Treasurer/Technical Advisor: Dan Jordan
IRRR–Mineland Reclamation 218/254-3369
Coordinator: Kathleen Preece
Minnesota BetterFORESTS magazine 218/326-0403
e-mail kathleen@uslink.net.

Rx, from p. 9

are slightly sunken into the wood. The bark itself may be intact or torn open. Cankers commonly start at the attachment of a branch stub or at a wound in the bark. In some cases, the tree may have tried to close over the wound (you'll see callus tissue forming a ring around the wound), but lacked enough energy to contain the wound and the cankered area will have enlarged. Be especially alert for cankers when purchasing new trees and shrubs. Remove any tree wrapping protecting the trunk and make a thorough exam before purchasing.

GARY JOHNSON

Target canker in maple

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Responding to Cankers and Wounds

Small amounts of physical damage to trees (wounds) seal over fairly quickly in healthy trees. Even the numerous cankers created by small hail stones tend to be contained very quickly.

Larger amounts of damage resulting from severe hail, a car hitting the trunk, improper pruning and numerous other causes, can reduce the vitality of the tree and predispose it to invasion by secondary insects and diseases. Pesticides are not helpful. Your goal is to improve the vitality of the tree. Water during dry periods. Mulch. Properly prune dead, dying or broken branches. Remember that the tree itself is responsible for battling most secondary (considered weak or non-aggressive) insects and diseases. By helping to keep trees healthy, you're giving them a good chance to win this battle!

Dr. Cindy Ash is Director of Scientific Services at the American Phytopathological Society.

Tree Potpourri

URBAN AND COMMUNITY FORESTRY CALENDAR

Events/Conferences

Aug. 3–4—**Vegetation Management Association of Minnesota Annual Conference,** Holiday Inn, New Ulm. Contact Judy Christensen, 612/470-0993.

Aug. 6–9—**ISA Annual Convention,** Baltimore, MD. Contact 217/355-9411.

Sept. 9–12—**Grassroots 2000 Summit,** Lied Conference Center, Nebraska City, NE. Contact Don Mueller, 651/772-6148.

Sept. 25-27—**Firewise Communities Workshop,** Brooklyn Park, MN. Contact http://www.firewise. org/communities/index.htm.

Sept. 26-27—**Trees, People and the Law National Conference,** Lied Conference Center, Nebraska City, NE. Contact NADF, 402/474-5655.

Sept. 28–30—**Community Forest at Its Best: Tree City USA National Conference,** Nebraska City, NE. Contact NADF 402/474-5655.

Oct. 1–4—**Society of Municipal Arborists Annual Conference—"Great Lakes: Great Trees,"** Lansing, MI. Contact Bob Cool, 517/349-0999.

New Publications

For Extension publications, contact the University of Minnesota Extension Service Distribution Center, 20 Coffey Hall, 1420 Eckles Ave., St. Paul, MN 55108-6069; 800/876-8636. Refer to publication number when ordering.

ANSI A300 Tree Fertilization Standards. Contact ISA at 888/472-8733.

The Big Woods Heritage Forest pamphlet. Contact MN DNR Forestry at 651/772-7925.

Conserving Wooded Areas in Developing Communities: Best Management Practices in Minnesota. Contact MN DNR Forestry at 651/772-7925.

A Practitioner's Guide to Stem Girdling Roots of Trees. Gary R. Johnson and Richard J. Hauer, 2000. BU-7501. $6. University of Minnesota Extension Service.

Protecting Trees from Construction Damage: A Homeowner's Guide. Gary R. Johnson. Major revision of the original by Miller, Rathke and Johnson. FO-6135 1999 revision. University of Minnesota Extension Service.

Storm Damage to Landscape Trees: Prediction, Prevention, Treatment. Gary R. Johnson and Ben Johnson, 1999. FO-7415. University of Minnesota Extension Service.

Tools and Training for Tomorrow. Tree Trust Annual Report, 1999. Contact Tree Trust, 952/920-9326.

Tough Trees and Shrubs for Tough Sites. G. R. Johnson, M. Zins, and M. Shippee, 2000. FO-7502. $1. University of Minnesota Extension Service.

Tree City USA (Video, 7 min, 45 sec.). Contact National Arbor Day Foundation, 402/474-5655.

Internet

- Hazard Tree Web Page, USDA Forest Service, State and Private Forestry St. Paul Field Office: willow.ncfes.umn.edu/Hazard/hazard.htm
- International Society of Arboriculture: www.ag.uiuc.edu/~isa
- Livable Communities: www.livablecommunities.gov
- Minnesota Department of Natural Resources: www.dnr.state.mn.us
- ***NEW!*** MnSTAC: www.mnstac.org
- Minnesota Society of Arboriculture: www.isa-msa.org
- National Arbor Day Foundation: www.arborday.org
- National Tree Trust: www.nationaltreetrust.org
- National Urban and Community Forest Advisory Council: www.treelink.org/connect/orgs/nucfac/index.htm
- The Simple Act of Planting a Tree: www.treelink.org/simpleact/index.htm
- Tree Climbers Discussion Group: spectre.ag.uiuc.edu/archives/isa/treeclimbers
- Tree Climbing: www.treeclimbing.com
- Tree Link: www.treelink.org
- University of Minnesota Forest Resources Extension: http://www.cnr.umn.edu/FR/extension/pages

Dear Tree Advocate,

We want to hear from you! What are your thoughts about the *Advocate* newsletter?

What would you like to see articles on?

Please check if appropriate:

- ❑ I want more information about joining the Minnesota Shade Tree Advisory Committee (MnSTAC).
- ❑ I do not wish to receive the *Minnesota Shade Tree Advocate.* Please remove me from your mailing list.

Mail to: Jan Hoppe
Minnesota Shade Tree Advocate
115 Green Hall, 1530 Cleveland Ave. N.
St. Paul, MN 55108

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Minnesota Shade Tree Advocate

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Address inquiries to:

Jan Hoppe
Minnesota Shade Tree Advocate
115 Green Hall
1530 Cleveland Ave. N.
St. Paul, MN 55108

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Rethinking Infrastructure, from p. 1

will take on a whole new look. No longer will it be straight as an arrow, or even the same width. Gently varied curbs will define the roadway, which will not lose lanes, but will become narrower in some spots. Parking spaces and traffic lanes will be placed strategically to create a new mood. Lighting will be enhanced, and a sidewalk, curving gently with varied distances to the curbs, will be installed on the north side of the street.

An upgraded urban forest is key to the relaxed feel. Eighty to 100 new trees will be planted closer to the street, with residents choosing (from several site–appropriate species) the trees that will be planted in front of their own houses. Boulevards will be further enhanced with other vegetation to create roadside green space. The "runway" will become much more like a parkway. The peaceful effect is expected to calm the traffic, encourage slower speeds and improve safety.

Of course flood mitigation is improved at the same time. Declared a federal disaster area by President Clinton in 1997 because of its propensity for flash flooding, St. Anthony has federal and state funding for flood protection projects. Representing WSB and Associates, Minneapolis, contracted engineering and consultant service provider, Todd Hudmer lauds St. Anthony for its interest and initiative in seeking green solutions. Extensive tree and shrub plantings, green space and neighborhood pocket parks not only add beauty and environmental richness, but will function as holding areas to slow storm waters in the predominantly clay-based community.

GARY JOHNSON

GARY JOHNSON

Central boulevard plantings can also help calm a busy thoroughfare, as in south Minneapolis' 31st Street project, shown before (left) and after.

◆ ◆ ◆

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