

GREEN HORIZONS

Vol. 10 No. 3

Growing Tomorrow's Future Today

Summer 2006

Dealing with Weather-Damaged Trees

Hank Stelzer, Extension Forester

Whether growing in your yard or in high-value plantations, trees are subject to damage by environmental stresses — including wind or lightning during this time of year, and in a few months, snow or ice. It is important to know when and how to offer aid to a damaged tree to save it from future decay and possible loss.

Wind injury is usually obvious and not difficult to diagnose. Remove the damaged branch just above the limb's branch collar. The branch collar is the "donut-shaped" ring of growth around the limb as it attaches to a larger limb or the tree's trunk. If you remove this collar, then the tree cannot naturally close the wound, and you have an entry point for disease organisms and insects. If the damage is high



Evergreen trees, and even deciduous trees that do not shed their leaves, (such as this red oak) are susceptible damage from ice storms.

up in the tree, you should call a certified arborist who has the experience and proper equipment to safely remove the affected limb(s).

I usually do not recommend covering the cut with any sort of a dressing (e.g. latex paint, tar or other similar type of wound dressing). It's sort of like putting butter on a burn, in that it slows the healing process. **(cont. next pg)**

Matching Pecan Cultivars with Soil Zones for Optimum Nut Maturity



Pecan research at the University of Missouri Center for Agroforestry (UMCA), conducted primarily at the Horticulture and Agroforestry Research Center (HARC), New Franklin, MO, is another opportunity for the Center to assist Missouri landowners with profitable nut crops. Native pecans grown in Kansas, Missouri, and Illinois (Upper South) tend to have a higher oil content compared to pecans grown in the Southwest and Southeast United States. The higher oil content gives Missouri's pecans a richer, sweeter flavor than Southern pecans, potentially commanding a higher price at grocers, specialty retail vendor or wholesale outlets. **(cont. pg 3)**

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Dealing with Weather-Damaged Trees (cont from page 1)

The one exception that I do make, however, is in the case where the oak wilt disease is prevalent. Covering the cut surface, in that case, helps prevent sap-feeding insects from infecting the tree with the fungal spores that cause oak wilt.

There are several things that you can do to reduce wind and ice damage to trees:

- *Remove branches that have narrow crotch angles.*
- *Do not over-fertilize with nitrogen, as this stimulates rapid growth with weak wood.*
- *Do not top your trees, as this sets up a weak union between the old and new growth.*

A tree that has been struck by lightning can have many different symptoms. Some trees immediately burst into flames and explode when they are hit; others show no damage until a later time. Typically, strips of bark extending down the trunk or branches are loosened or burned and may hang from the tree. The extent and type of damage determines if the tree will live. It is often a “wait and see” situation. Lightning that completely kills plant tissue around the entire circumference of the tree will prevent translocation of water up the tree, and stop the movement of food produced in the leaves downward to the roots.

Plants covered with ice or snow can be damaged by an increase in weight load. High winds make the situation worse. Due to their year-round foliage, evergreen trees are particularly susceptible to this type of damage. Do not be in a hurry to start pruning a branch that is bent out of shape — in a few days, it may straighten on its own. Do not try to remove ice from a tree’s limbs, since additional damage due to breakage may occur. If you must remove damaged limbs, follow the same guidelines for wind-damaged trees. **GH**



Tree limbs with narrow crotch angles are very susceptible to ice and windstorm damage.

Emerald Ash Borer Confirmed in Illinois; Monitoring Planned for Missouri



If you find “D-shaped” holes in your ash trees, contact your local MDC forester immediately.

The Illinois Department of Agriculture has confirmed the presence of the emerald ash borer (EAB) in Kane County, west of Chicago. A homeowner discovered the beetle and alerted the Animal and Plant Health Inspection Service’s (APHIS) Illinois field office, which sent the bug to its lab in Romulus, MI for positive identification.

The emerald ash borer is a small, metallic-green beetle about the size of a penny. Its larvae burrow under the bark of ash trees, causing the trees to starve and eventually die. Since EAB was discovered in the Detroit Metro area in the summer of 2002, more than 20 million ash trees are dead or dying across southern Michigan, northern Ohio and northeastern Indiana.

Missouri residents need to be aware that EAB can enter the state on infected nursery stock and firewood brought in from out of state (*See related story, page 4*). The Missouri Departments of Agriculture and Conservation will be monitoring high-risk sites (campgrounds, new commercial/residential developments) in July and August.

The best telltale sign of an EAB attack is the characteristic “D-shaped” hole found on the bark. If you suspect that your ash trees might be infected, contact your local MDC forester or your county MU Extension office.

Matching Pecan Cultivars with Soil Zones (cont. from page 1)

Since 1995, a large collection of pecan cultivars have been planted at HARC to catalog several descriptors, including date of nut maturity, nut size, percent kernel and nut yield. Drawing from collaborative pecan research efforts conducted at Kansas State University and the Pecan Experiment Field Station in Chetopa, KS, nut tree specialists have developed initial recommendations based on growing season climatic zones of the tri-state region. The recommended climatic zone was chosen for each cultivar based primarily on length of growing season required to mature the nuts, but modified by such variables as relative winter hardiness for each cultivar. This will assist pecan growers in choosing proven cultivars that will provide consistently profitable nut yields.

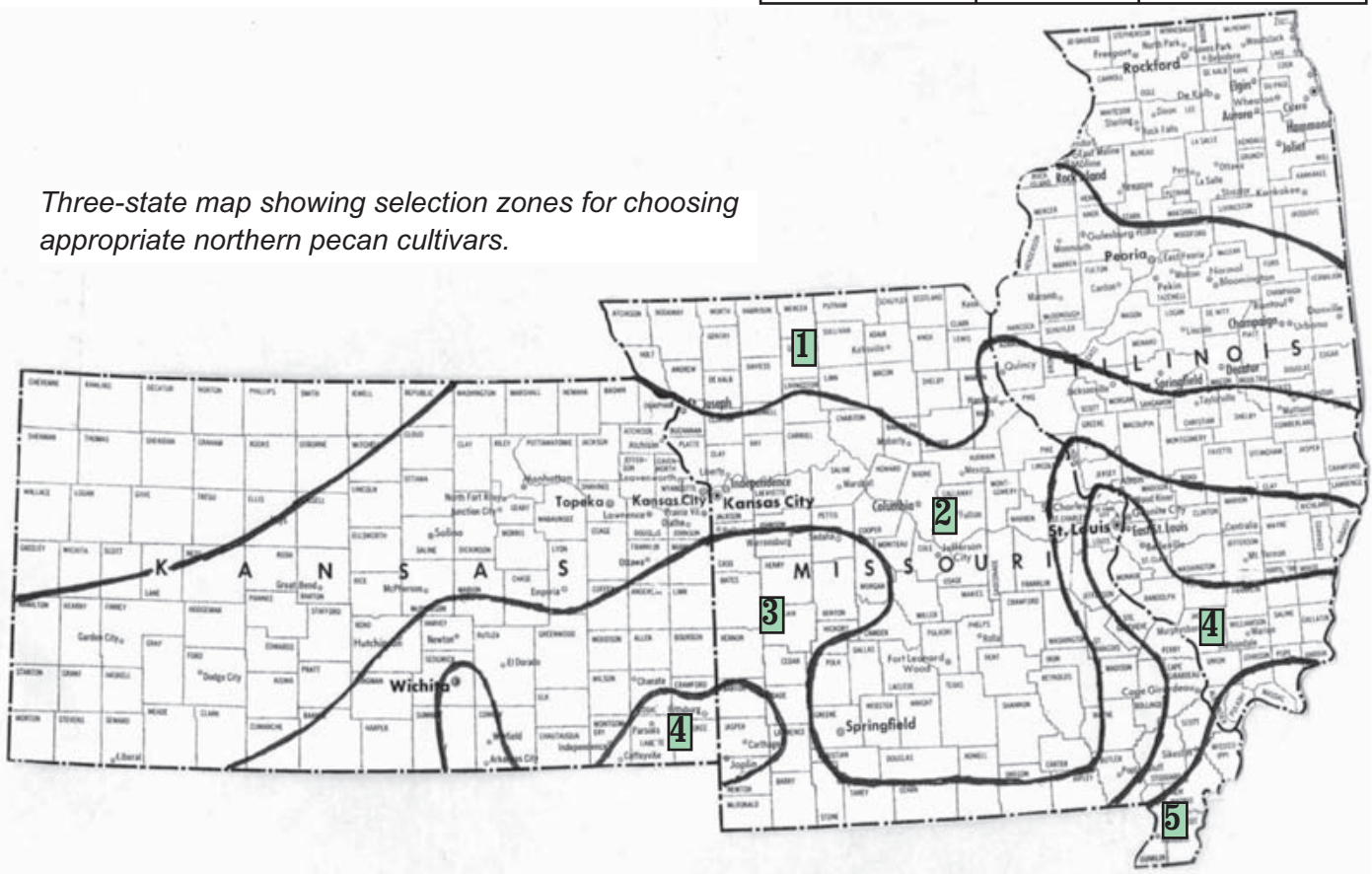
Following is a sample of data from 2005 showing a selection of cultivars and appropriate zones for Missouri, Kansas and Illinois, as indicated by the map.

Note: Recommendations may change as trees mature and come into full commercial production.

Project Team: Ken Hunt, UMCA; Bill Reid, Kansas State University **GH**

Nut yield in Pecan Cultivar Trial, Fall 2005. Location: Silt-loam soil near Sulfur Creek bottom, along edge of Missouri River floodplain, New Franklin, Mo. (Trees, age 10 from graft, are not irrigated.)		
Cultivar	Mean yield (lbs.)	Recommended Zone(s)
Colby	8.9	2,3
USDA 64-11-17	7.4	3,4
James	6.4	2,3
Kussman	6.1	2,3
Posey	6.1	2,3,4
Shepherd	3.9	2,3,4
Peruque	3.6	2,3,4
Witte	3.7	2,3
Kanza	3.5	3,4,5
Norton	2.3	2,3
Goosepond	2.2	2,3,
USDA 62-1-15	2.0	3,4
Canton	1.8	2,3
USDA 64-15-85		3,4
Ste. Genevieve	1.3	4,5
Warren #346	1.0	1

Three-state map showing selection zones for choosing appropriate northern pecan cultivars.



Sick Sycamores: Under Attack from Anthracnose Fungi

Hank Stelzer, Extension Forester

Every spring and early summer I get calls about “sick and dying” sycamore trees. This year was no exception. The culprit is anthracnose, a common name given to a group of fungal pathogens which cause dark, usually sunken lesions on the leaves.

The sycamore anthracnose fungi attack sycamore trees in early spring, causing a rapid wilt of newly emerging leaves. New twig growth may be killed back 8 to 10 inches. Larger, more mature leaves develop a brown growth along the main veins. Infected leaves often curl and eventually fall, littering the ground.

Cankers often form on the twigs and branches at the base of blighted leaf clusters. These cankers become active the following spring and produce spores that re-infect the tree and spread the disease to other sycamores in the area. Eventually, these cankers girdle and kill the twig. Repeated annual killing of twigs results in clusters of old dead twigs and live branches called “witches’ brooms.”

Weather determines the severity of anthracnose. Frequent rains and cool temperatures promote the disease. If the average daily temperature during the two-week period following emergence of the first leaves is below 55 degrees, the shoot-blight phase of the disease will be serious. Disease intensity decreases as the average temperature increases from 55 to 60 degrees. Little or no anthracnose will occur if average temperatures are above 60 degrees.

The American sycamore is much more susceptible to anthracnose than its related cousins, the London and Oriental plane tree.



Funigicidal sprays are usually not recommended because (1) the treatment must be re-applied every 7 to 14 days until conditions for disease development are no longer favorable and (2) they are not practical for large trees.

Cankers on young twigs are another sign of sycamore anthracnose.



Characteristic browning and curling of sycamore leaves infected with anthracnose.

A second crop of leaves is normally produced from mid-June into July after the loss of the first set. By that time, the average daily temperature is above the 60-degree threshold for disease development. Only in the case of repeated defoliations of both leaf flushes over a couple of years will the tree be weakened to the point of death.

Now that you know the facts, relax. Your sick sycamores will recover. **GH**

Don't Move Infested Firewood

Hank Stelzer, Extension Forester

“Don't move infested firewood” and proper wood disposal have been key messages for some time in the management of Dutch elm disease, oak wilt, pine bark beetles and a number of exotic wood boring insects. All of these pests, and many others, can be moved from one place to another in raw wood products — including firewood. Until recently, these messages have not been overwhelmingly received. However, with the continued spread of the emerald ash borer and its apparent association with the movement of firewood, many homeowners who cut/burn firewood, and land and forest owners, are taking heed.

Here are some things to remember when it comes to firewood and proper wood disposal:

- *Cut and split wood to be used later on site. Avoid moving infested wood off site whenever possible.*
- *If you do move firewood from the woods to your home, dispose of all infested wood by April 1st of (cont. pg 8)*

Landowner Spotlight – Tree Farm Field Day Hosted at 2,000-Acre Malinmor Hunt Club

by Kristen Goodrich, MDC Resource Forester

More than 50 landowners from across northeast Missouri gathered at Malinmor Hunt Club in Pike County on a nice Saturday morning this past May to learn how to manage their forests for successful timber production and wildlife habitat. This Tree Farm Field Day was co-sponsored by the Missouri Department of Conservation and Malinmor. Coordinators Kristen Goodrich, MDC Resource Forester, and Rick Merritt, Malinmor Manager



were extremely grateful for all of the natural resource professionals who gave up their Saturday to make the event a success.

Participants visited eight areas on the 2,000 acre Malinmor property to see, first-hand, on-the-ground practices and talk to a wide range of local resource professionals about their own farms. Topics ranged from Quality Deer Management™ and pond stocking to tree identification and timber stand improvement. They also got to see the soil profile found on the property and watch a logger demonstrate the art of directional felling using what is called in the trade a “hinge” cut.

Landowners learned the importance of determining their personal objectives and how to make their own forests more productive to meet those objectives; whether it be for recreation, hunting, or timber harvest. Professionals at each stop showed practices they had assisted with or had knowledge of and fielded a wide array of excellent questions from participants.

Lunch was provided by the owners of Malinmor and was held at the scenic lake. This allowed landowners and professionals the opportunity to mingle and share comments and questions. The consensus at the end of the day was to hold another field day next year and go more in depth into timber harvesting practices. Look for another great Tree Farm field day next year.

For more information about the Tree Farm Program, timber management, and wildlife management, contact your local Missouri Department of Conservation Office (www.mdc.mo.gov/forest/myforester-search.html). GH

Left: Landowners at the Malinmor Tree Farm Day received on-the-ground information on directional tree felling.

Below: Attendees also got to go “below ground” and learn about site productivity.



Eradicating Sericea Lespedeza - Without Harming Native Forbs



Hank Stelzer,
Extension Forester

After our GH article on invasive plant species (Vol. 9, No. 2), a subscriber from Platte County wrote us about finding sericea lespedeza in their 40-acre field of native warm season grasses and asked if there was a way to kill the invasive plant without harming the native forbs.

Conventional management practices of grazing and prescribed burning have not been effective in preventing the spread of sericea. It is difficult to give grasses a competitive edge over sericea with season-long and rotational grazing because cattle will select grasses and leave the sericea plants. Grazing with meat goats has been used to reduce the production of seed. Stocking rates must be maintained at levels that will keep the sericea lespedeza grazed below a 3 to 4-inch height.

Spring burning removes the dead growth of sericea, but has no negative effect on established plants. Fire increases seed germination, thus promoting the establishment of new plants. However, burning can improve the effectiveness of herbicides if applied to regrowth the same year.

Mowing will reduce the vigor of sericea plants if cut close to the ground multiple times each year. Plants should be mowed each time they reach a height of 12 to 18 inches. The most damaging time to cut sericea is late in the growing season when the plants are trying to build root reserves for next year's growth. Mowing will not kill sericea and may damage desirable grasses, depending on timing and frequency of cutting. In addition, a large sericea seed bank will remain in the soil, ready to germinate when conditions are suitable.

Very few herbicides for broadleaf weed control have provided good control of sericea lespedeza. Sericea has not been controlled with 2,4-D, and minimal kill has been achieved with a combination of picloram and 2,4-D (Tordon RTU™ or Pathway™) or dicamba and 2,4,D (Weedmaster™).

However, excellent control of sericea has been obtained with triclopyr (Garlon 3A™ or Remedy™) and triclopyr + fluroxypyr (PastureGard™) applied in June to mid-July, and metsulfuron (Escort™ or Cimarron™) applied in mid-July to late-September. While these herbicides can be used for weed control in the establishment and maintenance of native grasses, it is recommended

that you first treat a small area to confirm the tolerance of your specific mix of native forbs before you treat the entire area. As always, read and follow label instructions and cautions. **GH**

A combination of the above control measures offers the most effective control of sericea lespedeza. Here is an example of an integrated program:

- 1. Burn in late-spring** (mid-May to mid-June) to remove new and dead sericea lespedeza growth, and to encourage germination of sericea seed.
- 2. If grazing is an option**, intensively graze areas until no later than mid-July. Three to five weeks after grazing ends apply a herbicide containing triclopyr or triclopyr+ fluroxypyr to the vegetative growth. During September, apply a herbicide containing metsulfuron to developing flowers and seeds of any plants that were missed by the earlier treatment. Exclude livestock from areas where sericea stands are producing seed to prevent further spread.
- 3. If grazing is not an option**, apply a herbicide containing triclopyr or triclopyr+ fluroxypyr to vegetative growth from June to mid-July, and/or herbicides containing metsulfuron to developing flowers from mid-July to late-September.

Forest Tax Planning Conference

Aug. 29, 2006

9 a.m. – 4:30 p.m.

Library Center, Springfield, Mo

**Sponsored by Southwest Missouri RC & D,
Missouri Department of Conservation, USDA
Natural Resources Conservation Service
Co-sponsored by University Extension, Soil and
Water Conservation Districts**

Topics include setting up your farm accounts, establishing a timber basis, tax implications of a timber sale, record keeping, cost-share payments and conservation easements. Learn how real estate assessors view forestland. A panel of landowners will share their tax experiences. Speakers include representatives from H & R Block, Midwest Forest Consultants and the University of Missouri. At the end of the day, participants will have an opportunity to address questions to the speakers' panel.

Registration deadline is August 21 and the fee is \$20 per person. Mail to: Southwest Missouri RC & D, U.S. Hwy 60 West, Republic, MO., 65738. For more information, call (417) 732-6485; or email erin.assenmacher@mo.usda.gov (Make checks payable to SWMO RC&D). The Library Center is located at 4653 South Campbell, Springfield, Mo.

Recognizing Missouri's (and the Nation's) Biggest Trees

Got a big tree on your farm or forested land? Know of one on someone's else's property? Honor this mighty species by nominating it for the National Register of Big Trees, sponsored by American Forests. American Forests has documented the largest known specimens of every native and naturalized tree in the U.S. since 1940. The largest tree of its species in the country is named the National Champion.

Not only do champion trees stand as a source of inspiration, they provide wildlife habitat, shade and environmental benefits. The 2006-07 American Forests National Register of Big Trees features two American elms, a 192-foot tall Jeffrey pine and a Mississippi baldcypress with a 55-foot girth among its 870 trees in the listing. The General Sherman giant sequoia is again the reigning champion, recognized as the world's largest living thing, boasting an 85-foot circumference, a 107-foot crown spread, and a height of 274 feet.

Nominate a Missouri tree

The Missouri Department of Conservation Forestry Division works with American Forests to assign Missouri's nominated trees a point value. This value is based upon a nation-wide formula that assesses a tree's height, crown spread and trunk size. The formula adds the circumference in inches (measured at a point of 4.5 feet above the ground) to the height in feet to one-fourth the average crown spread.

Missouri's largest known living tree is an American sycamore with a score of 457, a tree that also holds the largest circumference – 333 inches. The greatest crown spread (200 feet) belongs to a different sycamore. **(cont. pg 9)**



Missouri State Champion burr oak, near McBaine, Mo.



A Message for Shiitake Mushroom Growers

Accurate, up-to-date, detailed information about markets is crucial for the success of any business. Market research and evaluation can be challenging and difficult to accomplish. The shiitake mushroom market is a specialized niche market and not much information is available for the market as a whole.

As part of its ongoing niche market research focus, the University of Missouri Center for Agroforestry (UMCA) is launching a nationwide survey including all individuals and businesses that are active participants in the shiitake mushroom market within the United States. Once completed, we will send you the results of our research. The information in the report will help you better identify market opportunities and problems, generate, refine and evaluate your marketing actions, and monitor your marketing performance.

In order to do that, we need your participation - only 25-30 minutes of your time. In turn, after the completion of the study, we'll provide you not only with a snapshot of the market, but also with a moving picture that describes the trends in the market over the next five years. In a couple of weeks, if you are a shiitake mushroom producer, you should receive a survey in the mail and a market directory form. We ask that you complete the survey and return it together with the market directory form in the enclosed envelope. If you are a shiitake mushroom producer and have not received a survey, please contact us at the addresses listed below and we'll mail one to you.

Thank you very much for your participation. We are looking forward to receiving your completed surveys and we wish you good luck in your business. Additional market studies and directories we have completed on the Chinese chestnut and eastern red cedar are available online at www.centerforagroforestry.org.

Shiitake Mushroom Market Survey contact:
Ina Cernusca, UMCA Research Associate/Marketing Specialist, ph. (573) 882-4848; or by email at cernuscam@missouri.edu



4th Annual Missouri Chestnut Roast

Saturday, October 14, 2006

Horticulture and Agroforestry
Research Center, New Franklin, Mo.

10 a.m. - 4 p.m. Free admission

Most activities held inside tents, for comfort rain or shine

- Guided tours of 660-acre Horticulture and Agroforestry Research Center featuring diverse agroforestry practices
- Educational booths and presentations from Missouri value-added agriculture vendors and University agricultural and environmental research programs
- Showcase for Missouri's outstanding agricultural products, including wines; jams and jellies; pecan, walnut and chestnut products; locally-produced honey; cheeses and meats
- Children's Tent, farm display, family activities and live music
- Cooking demonstrations by local gourmet chefs featuring Missouri chestnuts; Free fresh-roasted chestnuts and samples and displays of Missouri pecans and black walnuts
- Guided tours of 1819 Thomas Hickman House ... and more!

For additional information, including driving directions and a detailed event schedule (available in Oct.), visit:
www.centerforagroforestry.org

The Bid Box

Cooper County:

- 284 walnut trees scattered over 200 acres containing an estimated volume of 38,300 board feet (Doyle scale);
- Plus 5,800 board feet (Doyle scale) of miscellaneous, merchantable hardwood species along a half-mile line (20 feet wide) for a new fence;
- Four bids received: \$48,550, \$33,500, \$15,350 and \$12,500;
- Return per acre: \$243

Remember: Your best strategy is to know what you have and an estimate of its value before you sell.

Don't Move Infested Firewood (cont. from page 4)

the following spring. Debark, chip, burn or seal with a plastic tarp all infested wood before pests emerge from their winter sleep.

- If you bring firewood along on a camping trip, be sure to burn it ALL before returning home. Do not leave it for the next camper.
- Whenever possible, buy firewood that was produced, not just purchased, locally. Be aware that many large distributors repackage their firewood so it may not list the state of origin.
- If you run across firewood coming from an infested area, ask if it has been certified pest free. The distributor should have papers demonstrating that they are in compliance with state and federal regulations.
- Monitor trees under your care for signs of infestation.



Both the emerald ash borer discovered in Detroit and the Asian long horned beetle discovered in Chicago during the 1990s were found

Movement of infested firewood is an easy way for insects (e.g. EAB) and disease (e.g. oak wilt) to be introduced into non-infested forests.

by concerned citizens and not by professionals. Not sure what to look for? Then contact your local MDC forester or your county MU Extension office. **GH**

26th Annual Central States Forest Soils Workshop

Coordinated by the Natural Resources
Conservation Service

Oct. 10-12, 2006

Holiday Inn, Poplar Bluff, Mo.
(Big Springs area)

The Central States Forest Soils Workshop will be Oct. 10 - 12, 2006 at the Holiday Inn, Poplar Bluff, Mo. (Big Springs Area). The program will include ecological restoration, bottomland hardwood restoration, tornado damage restoration of forested lands, the Missouri Forest Ecosystem Project and forestry and soils issues at Oak Ridge Conservation Area. For more information, contact Dennis Potter, state soil scientist, NRCS, at (573) 876-0907; or email dennis.potter@mo.usda.gov.

Regular registration is \$65 by Aug. 15; registration fee is \$75 after Aug. 15. There is a student registration fee of \$55. For more information, visit www.mo.nrcs.usda.gov/forest_soils_wrkshp.html.

Foresters, soil scientists, and all natural resource practitioners are encouraged to attend.

Nominate a Missouri Champion Tree (cont. from pg. 7)

Everyone is welcome to nominate a Missouri tree for a Champion Tree. The owner and nominator of each Champion receives a certificate on a plaque. A form is available for nominating Missouri trees through the Missouri Department of Conservation web site at: <http://mdc.mo.gov/forest/landE/MOChampionTrees/>. Print the form from this site, fill it in, then send it by mail to Matt Seek, Missouri Champion Tree Coordinator. If the tree qualifies as a national champ, Seek will complete the appropriate steps with American Forests to place it on the National Register of Big Trees. For more information, contact Matt Seek, Missouri Champion Tree Coordinator, Missouri Department of Conservation, P.O. Box 180, Jefferson City, Mo., 65102; or email Matt.Seek@mdc.mo.gov. Photos of nominated trees are encouraged.

Within the American Forests National Register of Big Trees are articles about the species, information on where to look to find big trees, photos and more. A membership to

American Forests includes a free copy of the Register. For more information about American Forests membership, and the Register, visit www.americanforests.org; or call 800-368-5748, ext. 202.

How to Measure for a Champion Tree

Source: Missouri Department of Conservation (www.mdc.mo.gov)

Measuring Circumference

Circumference is measured at 4.5 feet above the ground. If a growth or branch is located at this point, (next pg)

Woodland Steward Reaches More Than 200 Landowners

Since its rollout in January, more than 200 forest landowners have attended MU Extension's Missouri Woodland Steward Short Course and the response has been overwhelmingly positive.

Our main goal of reaching "new" landowners is being achieved with over 85% of those attending having never participated in a similar course like Master Tree Farmer or Master Wildlifer. Landowners of all ages and levels of education have attended. Women as well as men have found the information useful. The "typical" landowner owns approximately 180 acres, of which 100 acres is in forest cover. About 40% have owned their land for less than 10 years while another 40% have owned their acreage for more than 20 years.

On a scale of 1 (none) to 5 (extensive), the average self-perceived level of knowledge significantly rose from "2" before the short course to more than "4" afterwards. Participants gave all indoor sessions, the field trip, instructors and manual high marks. More importantly, attendees indicated that they would be very likely to carry out land improvement practices such as vine removal, timber stand improvement, edge feathering and covey headquarters on their own without incentive payments. All participants will receive follow-up surveys six-months after completing Woodland Steward in order to track impacts on the landscape.

Short courses are continually being offered around the state. Upcoming courses will be offered in Springfield beginning August 7 (contact Gaylord Moore, 417-862-9284, mooreg@missouri.edu); KC Metro area (Blue Springs) beginning August 10 (contact Julie Abendroth, 816-776-6961, abendrothj@missouri.edu); Columbia beginning September 11 (contact Hank Stelzer, 573-882-4444, stelzerh@missouri.edu); Salem beginning September 12 (contact Ted Cunningham, 573-729-3196, cunninghamt@missouri.edu); and Sullivan beginning September 12 (contact Matt Herring, 636-583-5141, herringm@missouri.edu). A new Forestry Extension web site is in the works and will soon list all upcoming short courses. In the meantime, feel free to contact Hank Stelzer at 573-882-4444, stelzerh@missouri.edu.



MDC Forester, Mark Grueber, "quizzes" participants on tree ID at the St. Peters short course.

How to Measure for a Champion Tree (cont. from pg 9)

measure below it where the circumference is least. If the tree forks below 4.5 feet, measure the larger fork at 4.5 feet.

To measure the circumference, locate a point at 4.5 feet above the ground on the trunk and place the zero end of the tape there. The tape is wrapped around the trunk tightly without sagging so that it exactly meets the zero end of the tape. The circumference is read in feet and inches.

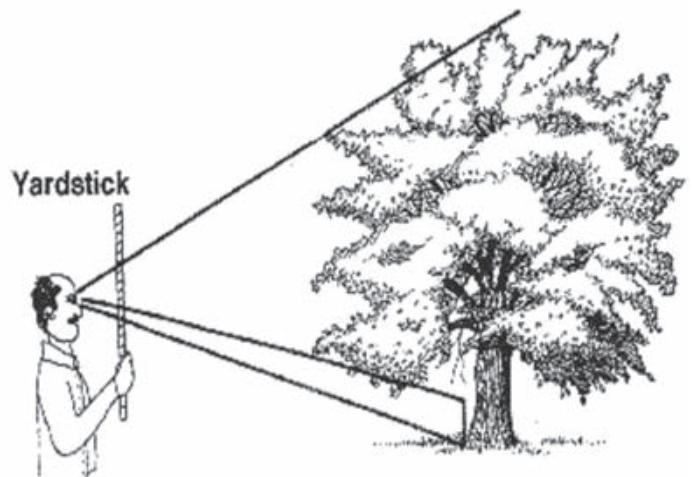
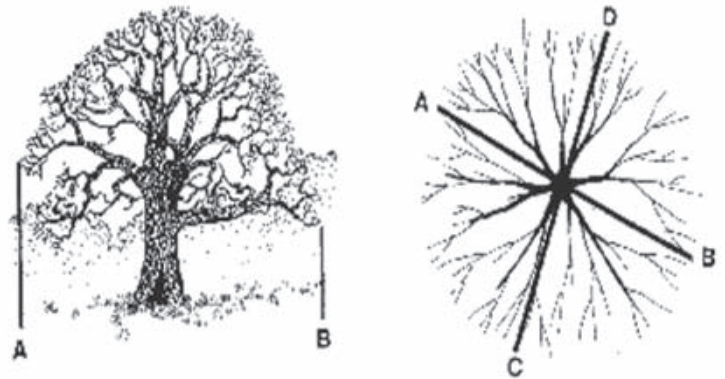
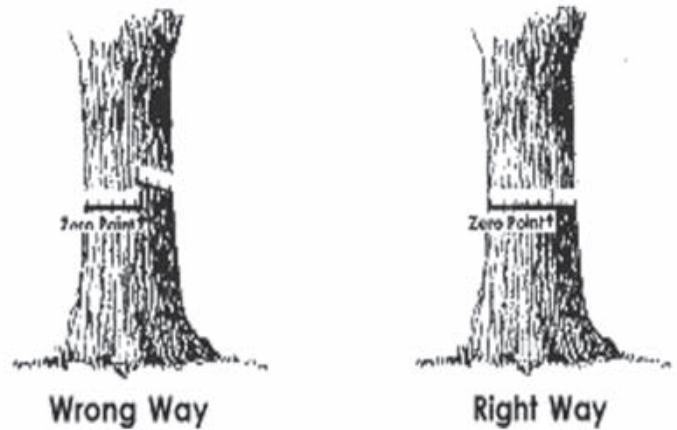
Measuring Crown Spread

Crown Spread can be measured by setting a stake directly under the outside edge of the crown farthest from the trunk (A) and another directly opposite it at the outer edge of the crown (B) on a line passing through the center of the tree. Next, set stakes marking the shortest diameter of the crown passing through the center of the tree (C and D). Measure both diameters to the nearest foot with a tape measure. Add the two measurements together and divide the sum by two to obtain the average crown spread.

Measuring Height

Height is the distance between the base and the top-most branch of the tree. A simple method of measuring tree height, which is quite accurate, is done in the following manner:

- *Make a target which is a known height (5 feet works well when measuring tall trees). A yardstick will be needed, into which you have cut a fine notch at each inch mark.*
- *Place this target against the tree, making sure that it will be visible as you walk back to measure it. Be sure the target is vertical or your reading will not be true.*
- *Holding the yardstick vertically, back up from the tree to the point where the five-foot target exactly fills one inch on the yard-stick.*
- *Now, without moving the yardstick, sight from the base of the tree to the top of the tree. The number of inches on the yardstick which is filled by the tree is noted. Each inch is equal to five feet. If the tree occupied 18 inches on the ruler, then $18 \times 5 \text{ feet} = 90 \text{ feet}$, the height of the tree.*
- *Be sure and take measurements from several points around the tree and use an average of measurements for the height. **GH***



Top: Circumference is measured at 4.5 feet above the ground. **Middle:** Crown Spread can be measured by setting a stake directly under the outside edge of the crown farthest from the trunk (A) and another directly opposite it at the outer edge of the crown (B) on a line passing through the center of the tree. **Bottom:** Height is measured using a yardstick method. (MDC diagrams)



Shortleaf Pine Symposium: Restoration and Ecology in the Ozarks

Nov. 7-9, 2006

**University Plaza Hotel & Convention Center
Springfield, Mo.**

Anyone interested in shortleaf pine management, restoration or ecology is encouraged to attend this symposium, including landowners, consultants,

conservation organizations, researchers and natural resource professionals. The event is designed to offer information about the research, successes, challenges and inquiries about shortleaf pine management.

Registration is limited to 200 attendees; early registration is encouraged. A registration form is available at http://mdc.mo.gov/science/sl_pine/. For more information, contact David Gwaze, Missouri Department of Conservation (MDC), at 573-882-9909 Ext. 3320; or email david.gwaze@mdc.mo.gov.

Event sponsors: MDC, University of Missouri Dept. of Forestry; USDA Forest Service; National Wild Turkey Federation; Current River Pole Company; Eastern National Park and Monument Association; Missouri Society of American Foresters.

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Calendar of Events

July 30 - August 2, 2006: Annual Walnut Council Meeting, Lied Center, Nebraska City, Neb. For more information, visit www.walnutcouncil.org or contact Liz Jackson at 765-583-3501.

Aug. 26, 2006: Bobwhite Workshop, MU Bradford Farm, Columbia, Mo. For more information, visit <http://aes.missouri.edu/bradford>; or email ReinbottT@missouri.edu; ph. 573-884-7945.

Aug. 29, 2006: Forest Tax Planning Conference, Library Center, Springfield, Mo. Sponsored by Southwest Missouri RC & D and Missouri Department of Conservation; Co-sponsored by University Extension. For details, see page 6.

Sept. 16, 2006: South Farm Showcase, MU South Farm, Columbia, Mo. For more information, visit <http://aes.missouri.edu/sfarms>; or contact Beverly Spencer at SpencerB@missouri.edu; ph. 573-882-7488.

Sept. 20 – 23, 2006: Black Walnut Festival, Stockton City Park, Stockton, Mo. For additional information, call 417-276-5213 or email info@stocktonlake.com.

Oct. 10-12, 2006: 26th Annual Central States Forest Soils Workshop, Holiday Inn, Poplar Bluff, Mo. Coordinated by the Natural Resources Conservation Service. See details page 8.

Nov. 7-9, 2006: Shortleaf Pine Symposium: Restoration and Ecology in the Ozarks, University Plaza Hotel & Convention Center, Springfield, Mo. For more information, see page 11.

Oct. 14, 2006: 4th Annual Missouri Chestnut Roast, Horticulture and Agroforestry Research Center, New Franklin, Mo. The Chestnut Roast is an outreach and educational opportunity featuring guided tours of the 660-acre HARC farm, agricultural exhibits and displays, free samples of fresh Missouri roasted chestnuts and chestnut dishes, agroforestry and cooking demonstrations, children's activities and several Missouri value-added food vendors, featuring Missouri black walnuts, chestnuts and pecans; meats and cheeses; specialty condiments and wines. Free admission and free parking. Hours are 10 a.m. to 4 p.m. Visit www.centerforagroforestry.org for more information; or email Rhoadsj@missouri.edu.