



## Upright Trees for the Kansas Urban Landscape

If there is a segment of nursery production that is booming, it is the new releases of upright formed trees. Unfortunately, they are not outpacing the releases of new crabapples or red maples. In our tight landscapes, this group of trees lends itself to the requirement of narrow screening. Many narrow planting beds within our cities require narrower trees. When space is limited or a narrow screen is necessary, consider the following trees.

**Frans Fontaine hornbeam**, *Carpinus betulus* 'Frans Fontaine': I like European hornbeam in general, but 'Frans Fontaine' in particular, due to its narrower form as compared to the natural species. It appears to be both heat and drought tolerant, even in western Kansas, and it does not have any significant disease or insect problems. Hornbeam is adaptable to a wide range of soil types and pH, but prefers well-drained soils. It will grow 30- to 40 feet tall with a 15-foot spread and produce a yellow fall color.

**Crimson Spire oak**, *Quercus robur x Q. alba* 'Crimschmidt': This is a cross

between upright English oak and white oak. For years we have been promoting the upright forms of English oak, with the exception of their susceptibility to powdery mildew. The Crimson Spire will provide better resistance to powdery mildew and will entertain with bright red fall color. Crimson Spire will grow to 45 feet tall and only have a 15-foot spread.

**Regal Prince oak**, *Quercus robur x bicolor* 'Long': Regal Prince is a hybrid between fastigate English and Swamp white oak with glossy mildew resistant leaves. The tree will grow to be 45 feet tall with a 15- to 18-foot spread. Consider planting both the Crimson Spire and the regal Prince more than the upright English due to their powdery mildew resistance.

**Musashino zelkova**, *Zelkova serrata* 'Musashino': This tree is a narrow upright that portrays the typical vase shape and tight branch habit of zelkova in general, with a height of 45 feet and a 15-foot width. Zelkova does not have many pest issues and will have yellow-bronze fall leaf color.



Frans Fontaine hornbeam.



Crimson Spire oak.



Regal Prince oak.

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## Comments from the State Forester



Larry Biles, State Forester, Kansas Forest Service.

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As I write I am finishing my second year as Kansas State Forester. In my view, this year was a very successful year. Among other things, the agency:

- completed its first Statewide Forest Resources Assessment and Strategy;
- planned and conducted forestry, agro-forestry, and walnut council field days;
- coordinated KAA Arborist Training course, conducted Kansas Forest Service community statewide trainings, hosted the Tree City USA Recognition Day;
- provided training to volunteer fire fighters and grants to organized rural fire districts;
- grew and distributed 75,000 containerized seedlings;
- distributed 300,000 bare-root seedlings;
- overhauled and distributed 24 excess military vehicles to rural fire districts;
- refilled a district forester vacancy;
- hired two new foresters;
- screened for a third new forester position;
- replaced a mechanic;
- secured a back-up for the agency's plant science technician;
- promoted two foresters;
- secured new position classifications for support staff;
- rebuilt the conservation trees lath house;
- took ownership of the first state forest (950 acres, Butler County, Kansas);
- secured slightly more than \$500,000 in grants and contracts;
- hosted Kansas State University's new president, Kirk Schulz, and College of Agriculture administrators; and

- was designated state leader for the Forest Legacy Program by former Governor Sebelius.

With the exception of the Statewide Forest Resources Assessment and Strategy, the hiring of new persons, hosting Kansas State University administrators, and the legacy declaration many of the above are rather routine activities. Routine does not, however, mean automatic as each of the events require hours of preparation.

Moreover, many of the events are weather dependent, thus requiring alternative plans. I am grateful to the staff for their experience and diligence. I am equally grateful to our partners, as many of these activities and events involved other individuals, groups, and agencies.

A specific staff diligence and partnership case in point during this year was the completion of the Statewide Forest Resources Assessment and Strategy. This document required great commitment from the staff and from partners. Hours were spent identifying forest resources of great promise and great risk; strategizing how to best to use fiscal and human resources to produce the highest ecological, social, and economic benefits for and from the identified landscapes; and expressing this information in writing. Contracts with various groups covered much of the detail, but much was partner pro-bono time and talents.

The Kansas Forest Service is grateful to all involved with the Forest Resources Assessment and Strategy. Implementation is our next challenge. In that regard we respectfully seek continued partner assistance for the assessment and strategy clearly states that the annual report must detail activities completed through partnerships. May implementation of the assessment and strategy be the focus for next year's "Year Three in Review."

**Larry Biles**, State Forester, oversees all operations of the Kansas Forest Service.

## Upright Trees, continued from page 1

### **Armstrong maple**, *Acer rubrum* 'Armstrong':

As I have stated many times, a red maple does not belong by itself in the prairie. Sunscald can be an issue on the trunk if it is left in the open and exposed to the winter sun on a warm day followed by a cold snap that evening. I see quite a bit of drought tolerance from this tree. Chlorosis will be a problem in western Kansas, so should be limited to eastern half and avoid high pH soils in general. I have seen this as a great pit planted tree, which tells me that it is both moisture and drought tolerant. I especially like to see this in mass plantings. Armstrong will grow to 45 feet tall and only have a 15 foot width.

**Slender Silhouette sweetgum**, *Liquidambar styraciflua* 'Slender Silhouette': Probably the most striking narrow upright growing to 60 feet in height and only 8 feet in width. This tree is a fast grower and provides fall color of yellow to orange to burgundy. Slender Silhouette will produce some fruit later in maturity, as most seedless cultivars seem to do.

**Red Barron, Adirondack and Velvet Pillar crabapples**, *Malus spp.*: Releases from the *Malus* genus have given us many forms: dwarf, rounded, oval, weeping and upright. I particularly like the many upright forms of crabapple because they are shorter in stature than the shade trees mentioned in this article. Adirondack overall possess the most disease resistance with

Red Barron and Velvet Pillar only having good resistance to scab and fair resistance to fireblight. Adirondack and Red Barron have a mature height of 18 feet and a spread of 8 to 10 feet. Velvet Pillar will grow to a height of 20 feet and a width of 14 feet.

**Vanderwolf's pyramidal pine**, *Pinus flexilis* 'Vanderwolf's Pyramid': Vanderwolf's is probably one of the most popular pines used in today's landscape. It is a fast, upright grower that will reach 40 feet tall and half the width at 20 feet. This tree has drought tolerance but is not tolerant of excessive moisture provided by frequent irrigation. It does possess a bluish green color due to a white stripe in the needle. While I cannot guarantee any pine against pine wilt, I would suggest using this one, if you have to use a pine. In general I do believe that our summers are the toughest on the pine family.

**Taylor juniper**, *Juniperus virginiana* 'Taylor': Now this is as close as Kansas will ever



*Musashino zelkova.*



*Armstrong maple.*



*Vanderwolf's pyramidal pine.*



*Taylor juniper.*



*Incensecedar.*

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## Kansas Forest Service Hires Dhungel as New District Forester

**M**y name is Katy Dhungel and I am the new district forester for the southeast district of the Kansas Forest Service. I will be covering rural forestry in the southeast part of Kansas. I am joining a team of many fine people working hard to serve the residents of Kansas and conserve the forest resources here. I have already experienced a warm welcome from all the folks with the Kansas Forest Service and look forward to my time here.

I have come to the Kansas forest service from Maine where I worked with the Cooperative Forestry Research Unit based out of the University of Maine in Orono to study the effects of commercial thinning on forest regeneration in Maine forests.

I am originally from southern Illinois and grew up experiencing and developing an enthusiasm for the outdoors in the Shawnee National Forest and Giant City State Park in Illinois.

My love for the outdoors directed my focus in my academic career, which began at Southeast Missouri State University. I studied botany and earned a bachelor's degree in environmental and evolutionary ecology in 2004. During college I held a summer internship at the Trail of Tears State Forest in Jonesboro, Illinois where I conducted an amphibian survey in the forest stream and planted native wildflowers.

After college I headed west to do an internship as a noxious weeds management technician with the Student Conservation Association in the Frank Church – River of No Return Wilderness in Idaho. In the summer of 2005 I went to work for the National Park Service as a forestry technician on the vegetation management crew in the beautiful Great Smoky Mountains National Park.

My experiences working on this crew solidified and sharpened my focus as to what direction I wanted to go in my career and cultivated my desire to work in natural resource management and with forests in particular. It was in my second season with the park service that I decided to go

back to school for my master's degree in forestry. In the fall of 2006, I began as a graduate student in the forestry department of Southern Illinois University. My focus was forest resource management and ecology. I earned my degree in the summer of 2009. I live now with my husband and daughter in Garnett, Kansas in Anderson County.

As the district forester for the southeast region of Kansas, my job is to provide assistance to forest landowners. My duties with the Kansas Forest Service can range from writing forest stewardship plans to assessing storm damage to informing landowners about cost share programs for implementing resource conservation practices on their land.

The needs of forest landowners in Kansas are diverse and their management objectives can include aesthetics, wildlife viewing, hunting, improving stream/river water quality, wildlife viewing, commercial timber sales, and forest health.

As a member of the Kansas Forest Service team, I also participate in cooperation and communication with other agencies such as NRCS and Kansas Department of Agriculture. Another important part of my job is to develop working relationships with other professionals in my district such as NRCS district conservationists and K-State Research and Extension agents to provide clients with the best service possible.

My hope as a part of this team is to be able to not only perform the duties that I have been assigned but also contribute positively by taking initiative to come up with new ideas and solutions to help the Kansas Forest Service continually adapt and improve our methods and service. I am very excited to have the privilege of doing what I love as a career here in Kansas and I hope I can make a difference and live up to the high standards of the professionals who are my colleagues here at the Kansas Forest Service.

**Katy Dhungel**, District Forester, provides direct technical assistance to Kansans in 12 southeast Kansas counties for the Kansas Forest Service.



*Katy Dhungel, Southeast Area Forester.*

## Frequently Questions Asked by Tree Planting Customers

**H**ow often should I water my seedlings? Should I fertilize my seedlings? How can I protect my seedlings from deer and rabbits? These are some of the most frequently asked questions by customers purchasing Kansas Forest Service tree seedlings.

### **Q**How often should I water my seedlings?

Because a newly planted seedling has not had time to grow a dense root system, it cannot survive dry conditions very long and it must have moisture available to survive. The amount and frequency of irrigating new plantings varies with air temperature, wind velocity, soil texture, and soil structure. With so many factors involved, it is difficult to give a standard schedule. Irrigate thoroughly, saturating the entire root zone, and then let the soil partially dry out. This promotes soil aeration and root growth. A loose rule-of-thumb is to irrigate on sandy soils every 3 to 5 days and every 7 to 10 days on heavier soils. On the heavier soils, be sure the excess soil water drains with ample time for aeration before re-irrigating.

### **Q**Should I fertilize my seedlings?

Most soils have adequate nutrients to support seedlings the first year. It is usually best not to fertilize seedlings the first year. If you suspect there is a nutrient deficiency, take a soil sample and have it analyzed. Evergreen trees are not demanding and normally do not need fertilizer at any age. Too much nitrogen on pines will kill small roots and may result in lower survival on new plantings. On poorer soils, the deciduous plants may respond to nitrogen. Apply ¼ cup of a low-analysis fertilizer such as 12-12-12 to a 2-foot-diameter area around the seedlings.

### **Q**How can I protect my seedlings from deer and rabbits?

Deer can cause serious damage to newly planted seedlings and established trees. When they browse the buds, they reduce growth rates; nipping the tree at the base can create multiple stemmed trees; and bucks rubbing their antlers on the stems can kill the tree entirely. If deer are numerous where a landowner wants to establish new trees or protect existing trees, there are several options available.

By far, the most effective method involves fencing off the desired trees to eliminate the chances for deer to come in contact with them. However, fencing is expensive and, if not constructed properly, deer can jump over them and continue to destroy trees.

An effective method to protect deciduous trees from rabbits, deer and mechanical injuries are the use of tree tubes, offered through the Kansas Conservation Tree Planting Program. The tubes are 4-foot tall, translucent polyethylene cylinders, which allow enough light transmission to reach the seedlings but are thick enough to prevent injuries from rabbits, deer browsing and rubbing, and mechanical injuries from weed eaters or lawn mowers. While the tree tubes are designed for use on deciduous trees, they are not to be used on shrubs or evergreen seedlings.

Rabbit damage to newly planted trees and shrubs may be a serious problem. Cottontail rabbits and jackrabbits damage trees and shrubs by clipping stems, buds, small branches, and by girdling larger trees. Damage occurs primarily during the fall and winter, especially when snow cover is present.

Younger trees are susceptible to rabbit damage until their smooth, thin bark becomes thick and rough with age. Rabbits prefer apple, plum, cherry, pine, ash, maple, honeylocust, baldcypress, Russian olive, and several nut trees in addition to cotoneaster, sumac, Japanese barberry, euonymus, autumn olive, pyracantha, and roses. Juniper and redcedar trees are least susceptible to rabbit damage, but damage can occur to these plants as well. Evergreens do not resprout from the base. Therefore, if evergreens are nipped off below the lowest branch the plant will not recover and the plant must be replaced.

Methods of controlling rabbit damage include use of fences, rabbit protective tubes, tree tubes, habitat alteration, repellents, and rabbit removal through hunting or trapping. Tree protectors are one of the best long-term solutions for rabbit damage. Various types of plastic, wire, paper, and tinfoil protectors can be purchased or made at home. The protectors should be tall enough to protect trees to a height of 12 to 18 inches; about the expected snow depths. Rabbit protective

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## District Highlight: Northwest — Jim Strine

### Windbreak Renovation: What Is It And Do You Need It

In the last issue of the Kansas Canopy, John Klempa, Southwest District Forester, wrote about the importance of planning before you plant a tree. I am in total agreement with John, especially when it comes to establishing windbreaks. Windbreaks are a long-term investment and it is critical to get it right the first time. It's difficult to move a windbreak once it is planted.



What I am going to discuss is the importance of planning for the care of existing windbreaks.

A large number of windbreaks in western Kansas are in sad shape and are not functioning properly. A recent study in seven counties in southwest Kansas showed that 60 percent of the windbreaks are in good or fair condition. The remaining windbreaks (40 percent) are in poor condition.



Healthy windbreak.



Multi-row windbreak.

Windbreaks in poor condition are not providing the benefits that we expect from a windbreak. They can be improved through a process called windbreak renovation.

The first step in windbreak renovation is to determine the condition of the windbreak. Here are some questions to consider when evaluating your windbreak. Are more than 75 percent of the trees still alive? Is it a continuous barrier with no gaps? Is the density 50 percent or greater? Has smooth brome, fescue, and other cool season sod forming grasses been kept out of the windbreak? Are the majority of the trees in healthy condition? Has livestock been excluded

from the windbreak? Have desirable trees reproduced in the windbreak? Are the trees expected to live another 20 years?

If you can answer yes to at least seven of the questions your windbreak is probably in good condition and does not need renovation. If you answered yes to five or fewer, your windbreak probably needs some type of renovation. Keep in mind that these questions are just a guide. Before you start up the chain saw or fire up the dozer, I would urge you to seek the advice of a professional. Windbreak renovation advice is available through your local K-State Research and Extension, the Natural Resource Conservation Service (NRCS), and your local district forester.

The easiest and least expensive renovation practice is to plant additional rows of trees next to the windbreak. If at all possible plant the rows on the north and or west side of the windbreak. Planting on the south and or east side of an existing windbreak can result in snow damage to the small trees. Depending upon the situation, planting on the north and or west side of the existing windbreak may put the windbreak too far from the area you want to protect.

The windbreak shown in Figure 1 is a healthy, well established windbreak but what is this windbreak going to like 20 to 30 years from now. If a windbreak is 25 to 30 years old, I recommend that additional rows be planted. This will ensure continuous wind protection in the future.

Another method of windbreak renovation is the removal and replacement of existing tree rows. This method can be used where there is not room to plant adjacent to the existing windbreak. Multi-row cedar windbreaks in parts of western Kansas have suffered drastically due to the drought conditions that we have experienced. They have been hard hit by bark beetles and or flat headed borers. In situations like this I recommend leaving at least one of the existing rows and removing and replacing the other rows. A single row of dead or dying cedars still provides wind and snow protection. It can be removed when the new rows are established and providing protection. A row of dead or dying cedars may not be that attractive, but on a cold windy winter day, their protection will be appreciated.

## District Highlights continued from page 6

In some windbreaks, fast-growing trees such as Siberian elm have overtopped the conifer or evergreen tree row. Conifers, especially pine species, do best when they receive full sunlight. When they become shaded by adjacent rows, their foliage becomes sparse and their effectiveness in reducing wind speed decreases. Overtopped and shaded conifer species can benefit by removing and replacing the tree row that is over topping them.

Thinning trees within a row before they become overcrowded is a windbreak renovation practice that is seldom used. Trees within a row are spaced so that the windbreak will be effective as soon as possible. A windbreak does not become an effective wind barrier until the trees within a row start to grow together. For example trees in the north or west row of a cedar windbreak are usually planted eight feet apart. When these trees mature, they will be overcrowded. The trees could be spaced far enough apart so that they would not be overcrowded at maturity but it would take many years for the windbreak to become effective. This is where thinning within the row can be a viable renovation tool.

Figures 2 and 3 show a multi-row windbreak that could benefit from within row thinning. I would recommend thinning the south and middle rows by removing every other or every third tree. Once these two rows begin to grow together and form an effective barrier, I would then thin the north row. By doing this in stages we will ensure that there is continuous wind protection. I realize that establishing a windbreak is a difficult task, and landowners may be reluctant to remove trees within a windbreak. You have to consider what is best for the windbreak as a whole and not as individual trees.

Coppicing is a renovation practice that can be used to rejuvenate certain tree species and shrubs. The individual stems are cut to a height of six to eight inches. It is best done during the dormant season. Cutting the plants at this height will stimulate the sprouting of dormant buds providing low-level wind protection. Honeylocust and osage orange are two species that will respond to this practice. This is also an excellent practice to use on shrub rows that are too tall or too large for their allotted space.

Many windbreaks have young desirable trees within them. This natural reproduction can be managed just like a forest to provide wind protection in the future. Locate trees that have the potential to develop into sturdy mature trees and then remove the trees that are competing with them. Initially, these so-called crop trees should be spaced on 10- by 10-foot spacing. Over time these trees will have to be thinned again to maintain their vigor and to prevent overcrowding. Trees within a windbreak do not have to be in straight lines to provide wind protection.



Multi-row windbreak.

Natural resource agencies have been promoting windbreak renovation for as long as I have worked in western Kansas, but it seems like little renovation has been accomplished. In my opinion, there are two major obstacles to windbreak renovation. One is the cost involved. Windbreak renovation can be costly, especially if a dozer is needed to remove existing trees. It can also be time consuming if individual trees are removed using a chain saw. Many landowners do not have the extra money or time to do the work.



Efforts are being made to overcome these obstacles. Financial assistance for windbreak renovation is available under the Environmental Quality Incentives Program (EQIP). Contact your local NRCS office to see if your windbreak qualifies for this program. Hopefully, in the future, we will have trained contractors to do the renovation work and provide a turnkey job for landowners.

Windbreaks like any asset on a farm need to be managed and maintained for long term benefits.

*Jim Strine, District Forester, provides direct technical assistance to Kansans in 24 northwestern Kansas counties for the Kansas Forest Service.*

## Fall Forestry Field Day

Planning for the 16th annual Fall Forestry Field Day is underway. This year's event is scheduled for Thursday, October 14 at the Jackman Demonstration Forest located about 12 miles east of

Wichita, near the small town of Leon, in Butler County.

David Jackman and his wife Sally purchased the 943-acre ranch, in the 1960s and donated the property to the Kansas Forest Service to serve as a demonstration site for research and natural resource educational events. Upon Mr. Jackman's death in

2009 the title was transferred to the KSU Foundation.



One of several lakes at the Jackman Demonstration Forest where an educational session on managing fish pond populations will be held.

It is a magnificent property that the Little Walnut River snakes through providing numerous opportunities for demonstrating forest management, riparian forestry, and tree planting practices. A long-range management plan for the entire property is being prepared along with baseline data on the 135 acres of forest land.

The 2010 Fall Forestry Field Day will provide a variety of outdoor educational opportunities for landowners and natural resource professionals who want to learn more about protecting and caring for the natural resources on their property. A hot lunch will be provided.

Look for additional information in the mail and check out registration at the Kansas Forest Service web site [www.kansasforest.org](http://www.kansasforest.org). You may also contact Bob Atchison directly at (785) 532-3310 or by e-mail at [atchison@ksu.edu](mailto:atchison@ksu.edu).

**Bob Atchison**, Rural Forestry Coordinator, coordinates rural forestry activities for the Kansas Forest Service.

## Forest Management and Production Proficiency Award Winner

Conner Stirewalt, a member of the Humboldt FFA Chapter, was recognized June 3, 2010, as the state proficiency award winner in Forest Management and Production at the Kansas FFA Convention in Manhattan.

Stirewalt has been cutting and selling posts for about a year. He uses his neighbor's land to cut the posts (mostly Osage-orange) and sells them to local post yards. Stirewalt has earned enough money to buy chain saws, gas cans, and wood and post hauling trailers. He hopes to earn enough money to purchase more equipment. Over the course of his supervised agricultural experience (SAE),

he has learned how to fell a tree properly, run a skid loader, and clean and repair chain saws. He sells wood not usable as posts for firewood to minimize loss.



Kim Bomberger, Kansas Forest Service, presented the Forest Management and Production Proficiency Award to Conner Stirewalt, Humboldt FFA Chapter.

The Kansas Forest Service was the state sponsor of this year's Forest Management and Production Award. Award winners were presented at the convention to numerous FFA chapter members throughout the state for their career development efforts.

**Kim Bomberger**, District Community Forester, provides technical assistance, education, and training to Kansas communities in northeast and north central Kansas.

## Delaware River Riparian Forest Assessment in Full Swing

The on-the-ground assessment and inventory of riparian forests within the Delaware River watershed is officially underway. In late June, members of the Kansas Forest Service and K-State Extension Forestry ventured out to begin the extensive field assessment and inventory within the northeast Kansas watershed.

Foresters are aiming to collect information such as forest condition, species composition, stocking, invasive species and disease presence, and adjacent land use. All of these factors will provide a good picture of how well forests are affecting water quality, and where efforts of

protection, management, and establishment need to be focused within the watershed.

Research suggests that riparian forests have a positive effect on water quality. Watershed stakeholders (i.e., the Delaware River WRAPS) are curious as to the condition and location of these forests within the Delaware River watershed. The field assessment will eventually be coupled with GIS and remote sensing analysis to produce a map that stakeholders can use to target riparian forestry best management practice (BMP) efforts.

But how can riparian forestry BMPs help improve water quality within the Delaware River watershed? The primarily agricultural watershed covers approximately 1,150 square miles in northeast Kansas, and it eventually drains into Perry Lake, a reservoir used for municipal and recreational

purposes. Perry Lake, like many federal reservoirs in the state, has been losing water storage capacity at an alarming rate, primarily because of accelerated sedimentation. The reduced storage capacity may cause water shortages during years of extended drought – a big concern for thousands of Kansans.



*Billy Beck, watershed forester, and Dave Bruton, District Forester NE, discussing assessment options*

Scientists have determined that the sediment entering Perry Lake originates mostly from stream bank erosion – a process where unstable stream banks collapse and wash away during high flow events. Research, from K-State and other institutions, suggests that trees do a better job at stabilizing

stream banks than other types of vegetation. Properly placed and managed riparian forests would help to secure stream banks, prevent their failure, and reduce the massive sediment influx into Perry Lake.

This field assessment and inventory is an exciting endeavor because little information currently exists on the riparian forests of Kansas. Because riparian forests play a critical role in Kansas water quality, acquiring information on them is essential. Foresters will be filling a huge knowledge gap with their efforts. While this project is specific to one watershed, it will have statewide implications. The Delaware River assessment will serve as a pilot study – allowing foresters to refine the process before taking the service to other state watersheds with sedimentation issues.

**William Beck**, Watershed Forester, has statewide responsibility for forestry practices that improve water quality.

### Questions about seedlings, continued from page 5

tubes, offered through the Kansas Conservation Tree Planting Program are made of rigid ½ inch mesh and are 3¼ inches in diameter and 18 inches in height. Bamboo stakes are included to support the tubes. Side branches of evergreen and deciduous trees grow through the mesh, while the leader grows through the top of

the cylinder. These tubes will last about three years.

**Mark Haller**, Conservation Forester, manages the Conservation Tree Planting Program and related activities for the Kansas Forest Service.

## Fire Statistics – How we Compare

From time to time, we should look at some of the data we collect to determine if it is really sending us a message or just numbers on spreadsheet. Let's examine some data generated by the National Fire Incident Reporting System (NFIRS) and other sources.

The NFIRS data is for 2008 as reported through November 2009. Some other data goes back to 2004.

First, we all want to know where we rank when compared with neighboring states and those with other similarities. For the sake of comparison, I looked at Nebraska, Missouri, Iowa, Arkansas and Kansas.

In geographic area, the five states range from Arkansas with 53,180 square miles to Kansas with 82,380 square miles. The population goes from 1.8 million in Nebraska, to 6.0 million in Missouri, Kansas having 2.8 million in the 2007 census. However, all states average less than 109 persons per square mile. If one looks at the state census, Kansas only has 36 communities with a population of more than 10,000. But those 36 communities account for 59 percent of our population. Meaning nearly 40 percent of the population lives either small communities or in rural settings.

People living in rural communities are with perhaps a few exceptions, served by volunteer firefighters. In Kansas, that translates to all volunteer or departments with minimal staffing operating 585 of the 620 departments in the state. Which means longer response time to the station and because the department is in a rural area and probably a longer distance from the station to the incident. Most metropolitan department strive to have an apparatus on scene within five minutes, most responses in rural communities are more than five minutes from the station. This "fact" has a bearing on the next statistic, one we all would like to see reduced, and one I have not good solution too. That is the loss of life in fires, both civilian and firefighters.

Kansas ranks fourth in the nation in deaths per million people. In 2008 we had a death rate of 27 deaths per million people. Kansas

was only surpassed by West Virginia, the District of Columbia, and Tennessee.

Of our five comparison states, Iowa was the lowest at 10.8 deaths per million. New Hampshire was the lowest in the nation with 4.6 deaths per million. Why do we have more fatalities than our comparison states? Two reasons I give with conviction are *not* the problem, the lack of stations (998, including staffed departments) and the lack of volunteers. While some departments are seeing shrinking numbers of members, the apparatus is still getting to the incidents, fully staffed, as fast as possible. Currently, Kansas can boast about 13,500 volunteer firefighters and 2,000 career firefighters, which translates to one of 100 rural residents is a firefighter. New York City has 12,850 career firefighters for 8.25 million people or one in every 642 people.

Without doing more in-depth research, I would suggest that, Missouri, Iowa, and Arkansas, all having 81, 52, and 50 persons per square mile, respectively, and Nebraska with as few as 22 people per square mile influences the survivability of incident victims. Kansas has approximately 33 people per square mile. The states with higher population concentrations translate to more incidents closer to first responders. Conversely, as in the western Sand Hill country of Nebraska, fewer people mean few incidents. The closer one is to other people, the better the likelihood that the incident will be reported in a timely manner and the assistance will arrive in time to render lifesaving assistance.

In 2008, Kansas reported the most fires of the five comparison states, reporting 172,930 incidents. In this case an incident will also include first responder calls, hazmat, false alarms, or any other incident that a fire apparatus was dispatched to render aid. During that same year, Arkansas only reported 54,225 incidents using the same standard NFIRS form. There seems to be some disparity within the reporting system however. When the number of fire departments in Kansas is compared to the number of reporting departments, about 70 percent of all departments in the state reported in 2008. It is not known what percent of Arkansas departments reported in 2008.



A truck used by the Fire Department of New York City.



A fire truck at a volunteer department in Kansas.

## Ricci is New Forest Inventory and Health Specialist

**M**y name is Nicole Ricci and I am the new Forest Inventory/Forest Health Specialist with the Kansas Forest Service. I joined the Kansas Forest Service in May of this year and will be conducting the statewide Kansas Forest Inventory and collaborating with K-State Research and Extension and Kansas Department of Agriculture on forest health related topics.

Even though I grew up as a “city kid” in the metro-Detroit area, I always loved the outdoors. My family had a farm a couple hours away and I would spend my summers as a child in the woods, helping with chores, or working with my aunt’s cattle.

Throughout school I had worked in several office type settings, but knew I wanted a job that I would enjoy. I never wanted to have to wear a dress to work again!

After graduating with a bachelor’s of science degree in earth science I knew I wanted to work in the outdoors, so I decided to attend Michigan Technological University to earn a master’s degree in forest ecology and management. This is where I found my passion for the field of forestry.

During my time at Michigan Technological University, I worked on several forest pest surveys, which included a detection survey for emerald ash borer in the western Upper Peninsula and northern Wisconsin, a red turpentine beetle survey after a fire/fire surrogate study, dead ash survey of the Lower Peninsula, and finally the detection tools project housed in the APHIS lab. My time at Michigan Technological University made me realize the effect transportation of wood material has on the distribution of forest pests and diseases.

Most of my duties during my surveying days were in the field cutting trees or educating campers and landowners. I quickly became aware of the opportunity I had to help people answer their questions, either about emerald ash borer or any other concerns they had about trees surrounding them or on their property.

After living in the Upper Peninsula for over a decade and graduating from Michigan Technological University with a master’s degree, I decided to look for something different. I had the opportunity to continue graduate work at the University of Florida where I worked on a regeneration study in

pond cypress domes. The objective of the study was to find out if pond cypress stump sprouts had long-term survival and could still be used as timber and mulch source.

Currently, I am responsible for working on the forest inventory across the state. The Kansas Forest Inventory Program gathers forest information regarding the health, composition, and growth of our forests to allow forest resource professionals and the forest industry to plan long-term management strategies. Forest plots are located across the state and are measured with landowner permission.

Each year, 20 percent of the forest area in the state is measured. Then every fifth year the same trees are remeasured, completing the cycle. This allows us to keep track of how our forest resources are growing, being used, and their condition.

The areas I visit for the forest inventory project are selected at random by the USDA Forest Service and sent to us in the form of aerial photographs with geographical coordinates and an X at the plot location. Since I do not choose the areas to measure, it is important to get permission from landowners to access their property. Plat books are examined, courthouses are visited, and landowners are contacted by mail or phone and sometimes visited in person to get permission.

When visiting a plot, we collect information on tree diameter, height, species, damages, crown cover, and other qualities. Each site is different from the others. The size of each plot covers about a sixth of an acre total, on which all trees greater than 5 inches in diameter at breast height (4.5 feet from the uphill side of the base of the tree, known as DBH) are measured. On a smaller plot area within that sixth acre, all trees between 1 to 5 inches DBH are measured, and the seedlings less than 1 inch DBH are counted. When I return to remeasure plots from previous cycles, I am able to track



*Nicole Ricci, Forest Inventory and Health Specialist*

*continued on page 12*

## ***Fire Statistics, continued from page 10***

These statistics show us that Kansas may have about enough stations if they were equally distributed.

We currently have one station per 83 square miles; a perfect situation would have one per 64 square miles. More volunteers are not the answer so much as having volunteers available to respond when needed. In many communities, the numbers on the roster are indicative of a good response, when, in fact, the town is now a bedroom community where most of the volunteers leave for jobs elsewhere for the day. This, at best, leaves the retirees to respond.

## **Online Survey**

The Kansas Forest Service Fire Management program is requesting your input as we evaluate our priorities, and seek ways to better serve the fire departments in Kansas. If you would take a few moments to complete our online survey, found at <https://surveys.ksu.edu/TS?offeringId=161797> we would appreciate it. It should take less than 10 minutes, and your answers will help us to understand how we are doing, and how we may do better.

I propose that Kansas' demographics would indicate that the 27 plus fatalities reported can be attributed in part to several dynamics, including but not limited to the relative proximity of the rural population to the first responders, the age of our rural population, and the lapse time between when the fire started and when it was reported (and other associated circumstances).

**Ross Hauck** Fire Management Coordinator, directs fire management activities for the Kansas Forest Service.

## ***New Forester, continued from page 11***

the growth of specific trees, and from that, estimate the growth of entire stands.

According to the data collected during the 2001 to 2005 cycle, there are approximately 2.1 million forested acres in Kansas. Of this area, about 95 percent is owned by private landowners. Because so much of our forestlands are privately owned, it is important that landowners be aware of the forest inventory program. Without cooperation, our ability to collect information from Kansas forests would be severely limited.

I would like to thank all those landowners who have granted permission for the Kansas Forest Service to access their property for the Forest Inventory and Analysis project. Your help is greatly appreciated. Remember, data collection is an ongoing process, and nothing we do as part of the project affects the way you manage your property.

When not doing forest inventory work, I will be assisting the Kansas Department of Agriculture and K-State Research and Extension with First Detection Trainings and disease/pest surveys and meeting with district foresters and landowners about tree pest concerns across the state. I am looking

forward to educating both myself and others on current forest health issues. I hope to promote awareness of the major forest pests and diseases that are in Kansas or have the potential to affect the trees in our state, such as emerald ash borer and thousand cankers disease. Although neither has been found in Kansas, the impact on the estimated 26.2 million black walnut and 56.1 million green and white ash trees in our rural landscape could be substantial. The Great Plains Initiative inventory of both urban and rural Kansas provided a clearer picture of species composition and distribution within the state. This information can help us better understand how to prepare for invasive species.

Please feel free to contact me, and your district forester with any tree concerns.

Forest health related resources can be obtained from the internet at: [www.kansasforests.org/pubs/index.shtml](http://www.kansasforests.org/pubs/index.shtml) or by contacting Nicole Ricci, Forest Inventory/Forest Health Specialist, 2610 Claflin Rd., Manhattan, KS, 66502; (785) 532-3276; e-mail: [nmricci@k-state.edu](mailto:nmricci@k-state.edu)

**Nicole Ricci**, Forest Inventory/Forest Health Specialist, statewide responsibility for forestry inventory and forest practices that improve forest health.

## Upright Trees, continued from page 3

get to any plant resembling Italian cypress. Discovered in Taylor, Nebraska, this tree is a moderate grower with a height of 30 feet and a width of only 3 to 4 feet. Taylor was listed as one of the *Great Plants for the Great Plains* in 2003. Two other new upright junipers are 'Blue Arrow' and 'Prairie Pillar', both possessing blue color.

**Incensecedar**, *Calocedrus decurrens*: This tree has been planted in south central Kansas for many years and with few problems. I am starting to see it in the Kansas City area and I would like to try it in western Kansas. It is listed as a zone 5 to 8 in hardiness. I am not concerned with its heat and drought tolerance (once established), just the temperature fluctuations. It adapts to a range of soil types and will tolerate poor sites. Occasionally bagworms can be an issue and a periodic dead branch possibly caused by a canker. It will grow to 40 to 50 feet tall and 10 to 15 feet wide.

**Shawnee Brave baldcypress**, *Taxodium distichum* 'Mickleeson': Baldcypress is an extremely adaptable plant. It is both drought and moisture tolerant. However it is not as pH adaptable and will not tolerate the high pH issues in western Kansas. Shawnee Brave will grow to a height of 50 to 60 feet and will have a width of 20 feet, which is about 10 feet narrower than the straight species. Occasionally bagworms and spider mites are an issue with baldcypress. I would love to see more groves of bald cypress, and I would consider using it as a street tree. The fall color is a striking reddish/bronze rust.

**Princeton Sentry Ginkgo**, *Ginkgo biloba* 'Princeton Sentry': I still cannot think of a single pest problem with ginkgo and the only downside is its slow growth. Plant the male clones as to prevent the issues with the fruit. Princeton Sentry is a seedless cultivar and will grow 45 to 60 feet tall with a spread of 20 feet. Ginkgo is also called maidenhairtree as the leaf resembles a maiden's sweeping hair. Typically it will provide a golden yellow fall color and will usually shed its leaves uniformly in a day or two.

**Prairie Sentinel hackberry**, *Celtis occidentalis* 'JFS-KSU 1': I have said many negative things about hackberry over the years, but I have nothing but good things to say about this one. This tree is one of the latest releases from the John C. Pair Horticulture Research Center. The tree was discovered by our two western Kansas Foresters: Jim Strine from Hays and the late Troy Bratton from Dodge City. In the wild, this tree is 40 feet tall and is 6 feet wide. It has kept its form despite the recent snow and ice loads. The leaves are typical medium green and will provide a yellow fall color. The trademark proceeds (after attorney fees, etc.) will go toward the continuation of the Trees for Kansas Tree trial that Jason Griffin and I oversee.

**Tim McDonnell**, *Community Forestry Coordinator/District Community Forester*, coordinates community forestry activities and provides educational and technical services for communities and green industries in southeast and south central Kansas.



Shawnee Brave baldcypress.



Princeton Sentry ginkgo.



Prairie Sentinel hackberry.

# Growth Rings

## The Naming of Sawlog Creek

Although Kansas is recognized as a prairie/plains state, it has many place names associated with trees and forests. A study of the state's geography reveals that it likewise has numerous riparian areas that were named after trees or are associated with trees.

One somewhat obscure stream in southwest Kansas (Hodgeman and Ford Counties) was named Sawlog Creek during late 19th century military activity while building the Fort Hays to Fort Dodge Road (1867) connecting the two forts. Sawlog Creek's name was not derived from any one particular tree species but from the necessity of harvesting trees for construction as well as trail travelers' need for fuel en route to either destination. It is the former purpose that we will focus upon. It is also interesting to note that this same road crossed a stream in northern Rush County called Big Timbers Creek, but that is another story.

Originally called Schaff's Creek in honor of Lt. John Schaff who was stationed at Fort Atkinson in 1867, the creek's name was later changed to Sawlog because of the vast amount of timber that lined its banks and furnished forts Mann, Atkinson and Dodge with wood for both fuel and construction materials. Robert M. Wright (post trader at Fort Dodge in 1867, contractor with the U.S. Army for supplying wood, and later Commissioner of Forestry in 1901) further explained the name change:

"The creeks, when the fort (Fort Dodge) was first started, were all heavily wooded with hackberry, ash, box elder, cottonwood, and elm. We cut 1,500 cords of wood almost in one body on a little creek six miles north of the fort, all hackberry. There were a good many thousands of cords cut on the Sawlog (and) the soldiers would go out to the old Hays (Fort Hays) crossing, chop down a big tree, hitch a string of large mules to it, haul it up on the bank near the ford, and, after stripping off its top and limbs,

leave its huge trunk there. In consequence thousands of immense logs accumulated, making the place look as if a sawmill had been established; and these great trunks were sawlogs ready to be cut into lumber. The early buffalo-hunters called the creek Sawlog, which name it bears to this day."

David Clapsaddle who authored the article, "The Fort Hays-Fort Dodge Road" in *Kansas History: A Journal of the Central Plains* visited and studied the Sawlog Creek vicinity in 1990 and described the area from the old Sawlog Creek crossing to Fort Dodge as still largely uncultivated, and many old wagon ruts could still be found. Today, contemporary aerial photographs indicate the presence of trees and other woody vegetation adjacent to and in close proximity to the stream.

Sawlog Creek is but one example of numerous streams in western Kansas that once possessed large quantities of the invaluable resource of timber. Used by Native Americans for centuries for myriad purposes, this resource later became imperative for the success of expeditions by early explorers and field campaigns by the U.S. Army and ultimately, railroads and settlers who moved into this region in the late 19th century.

### Sources:

David K. Clapsaddle, "The Fort Hays-Fort Dodge Road," *Kansas History: A Journal of the Central Plains*, 1991, 14, 2, 101-112.

R.M. Wright, "Personal Reminiscences of Frontier Life in Southwest Kansas," *Kansas Historical Collections*, 1901-1902 7 (Topeka: State Printer, 1902), 64.

**Larry Rutter** is a member of the American Tree Farm System and serves on the Kansas Tree Farm Committee and the Kansas Chapter of the Walnut Council Board.

## Thousand Cankers Disease Awareness

### Visually inspect your trees for signs or symptoms

- Monitor walnut trees over time for increases in decline.

### Follow state regulations

- Know and abide by state quarantines established to protect Kansas's forests and landscapes.

### Understand requirements for commercial trade

- Moving walnut plants or products can increase the chances of thousand cankers disease occurring in Kansas. Transporting walnut from another state to Kansas *must* be done according to the state quarantine. These requirements are in place to stop the artificial spread of thousand cankers disease and other pests.

### Spread the word within your area

- Help educate others about the issues and reasons the quarantine is in place.

### Ask questions

- Talk to your local K-State Research and Extension agent, Kansas Forest Service district forester, or Kansas Department of Agriculture.

### *What does this mean for harvesting, transporting, selling, and milling of walnut?*

Persons or businesses that handle or move walnut plants, walnut trees, wood, or other material harvested from walnut trees, must register with the Kansas Department of Agriculture.

### Within Kansas

Walnut plants and products can still be harvested, sold, milled, and exported out of Kansas because neither the walnut twig beetle nor the fungus has been found in the state.

If the beetle, thousand cankers disease, or both are found, the quarantine will prohibit the movement of infected or infested plants, plant parts, products of walnut, or articles

of walnut like: logs, lumber, firewood, bark, mulch, burls, stumps, and packing materials. These plants, plant parts, and products of walnut are known as regulated articles. This prevents the beetle or the fungus from being transported to other areas in the state or country.

### Importing Walnut

Getting walnut from (Washington, Oregon, Idaho, California, Utah, Arizona, New Mexico, and Colorado or other states where the disease has been found) can occur if the wood has been inspected by that states regulatory plant protection agency (equivalent of the Kansas Department of Agriculture) and is certified as disease and pest free. Importers of regulated articles are required to have a compliance agreement with the Kansas Department of Agriculture. This inspection and certification are

required for plants, logs, lumber, firewood, bark, mulch, burls, stumps, and packing materials from states that do not conduct annual surveys for the pest and disease. The Kansas Department of Agriculture will know what states conduct surveys.

Exempt walnut wood or products from the quarantine are: processed lumber that is free of bark and has been heat treated to 133 degrees Fahrenheit; from states, territories, and foreign countries where the disease or the beetle has not been detected; nuts; nut meat; and finished wood.

This quarantine was put in place to prevent the spread of thousand cankers disease of walnut and the walnut twig beetle to the state of Kansas.

Please call Kansas Department of Agriculture with any questions regarding the quarantine at (785) 862-2180.

**Nicole Ricci**, *Forest Inventory/Forest Health Specialist, statewide responsibility for forestry inventory and forest practices that improve forest health.*

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## *Kansas Secretary of Agriculture Josh Svaty signed the Thousand Cankers Disease Quarantine in July 2010*

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### Links of Interest:

Kansas Forest Service  
[www.kansasforests.org](http://www.kansasforests.org)

K-State Research and Extension  
[www.ksre.ksu.edu](http://www.ksre.ksu.edu)

State of Kansas  
[www.accesskansas.org](http://www.accesskansas.org)

Kansas Department of Wildlife and Parks  
[www.kdwp.state.ks.us/](http://www.kdwp.state.ks.us/)

Natural Resources Conservation Service-Kansas  
[www.ks.nrcs.usda.gov/](http://www.ks.nrcs.usda.gov/)

Farm Service Agency-Kansas  
[www.fsa.usda.gov/ks/](http://www.fsa.usda.gov/ks/)

## Calendar of Events

**September 7 – October 8** – Conservation Tree Program Fall Sales. Online orders can be placed at [www.kansasforests.org/conservation/index.shtml](http://www.kansasforests.org/conservation/index.shtml) or call (888) 740-8733.

**October 9, 10, and 16** – Wildfire chain saw training class S-212, Manhattan. Contact Jason Hartman, (785) 532-3316 or [hartmanj@ksu.edu](mailto:hartmanj@ksu.edu) or Eric Ward, (785) 532-3307 or [eward@ksu.edu](mailto:eward@ksu.edu)

**October 11 – 15** – Kansas Arborist Association Training Course, Manhattan. Contact Tim McDonnell, (316) 788-0492 or [tmcdonne@ksu.edu](mailto:tmcdonne@ksu.edu)

**October 14** – Fall Forestry Field Day. Jackman Demonstration Forest, Butler County, Leon, Kansas. Contact: Bob Atchison, (785) 532-3310 or [atchison@ksu.edu](mailto:atchison@ksu.edu)

**November 12, 19 and 30** – Pest Detector Workshops. Emporia – November 12; Hays – November 19; Garden City – November 30. Contact Tim McDonnell at (316) 788-0492 or [tmcdonne@ksu.edu](mailto:tmcdonne@ksu.edu)

**December 2** – Urban Trees Workshop, El Dorado. Contact Tim McDonnell, (316) 788-0492 or [tmcdonne@ksu.edu](mailto:tmcdonne@ksu.edu)

**January 12 – 14** – Kansas Arborist Association Shade Tree Conference, Topeka. Downtown Ramada. Contact Tim McDonnell, (316) 788-0492 or [tmcdonne@ksu.edu](mailto:tmcdonne@ksu.edu)

**January 20- 21** – Kansas Natural Resource Conference. Wichita. Airport Hilton. Contact Charles Barden, (785) 532-1444 or [cbarden@ksu.edu](mailto:cbarden@ksu.edu)

### We Need Your Help

In an effort to reduce printing and mailing costs, the Kansas Forest Service would like subscribers who are willing to receive the newsletter electronically to send their e-mail address to [pmccaffr@ksu.edu](mailto:pmccaffr@ksu.edu) or call us at (785) 532-3300.

Your e-mail address will not be given to any other organizations.

If you have any questions please do not hesitate to let us know.

For a current listing of events, check our Web site: [www.kansasforests.org/calendar](http://www.kansasforests.org/calendar)