



LEWIS AND CLARK HISTORIC COTTONWOODS FOR PURCHASE

The giant cottonwood trees along the Missouri River near Washburn in Smith Grove will be recognized as living witnesses to the Lewis and Clark Expedition. The trees – towering 100 feet above the forest floor and more than 250 years old – have been officially accepted to the National Register of Historic Trees!

Two centuries ago, President Thomas Jefferson sent Meriwether Lewis and William Clark and the Corps of Discovery to explore the newly acquired Louisiana Purchase. The Corps used waterways, portages and Native American trails when traveling West. Within the trail corridor are ancient trees that were standing when the explorers passed through. The remarkable cottonwoods in Smith Grove were living then and are living still, survivors of countless floods on the river.

In honor of the Bicentennial of the Lewis and Clark Expedition, American Forests is recognizing historic trees that served as “silent witnesses” to the Corps’ legendary journey through the national register and by growing offspring that will be

available for outdoor plantings and ceremonies.

Founded in 1875, American Forests is America’s oldest non-profit conservation organization. Any tree purchased supports conservation, tree planting and environmental restoration efforts worldwide. It also helps keep history alive while adding beauty and shade for future generations. People who would like a direct offspring of the Smith Grove giants should order now. American Forests is growing 150 of them from seed collected at Smith Grove last spring and will sell them for \$44.50 to anyone interested. The trees can be ordered at www.historictrees.org or by calling 1-800-320-TREE. Each tree comes with a Certificate of Authenticity.

Every state has trees that mark spots where legendary events occurred or trees that have scientific, religious, artistic or literary importance. American Forests is trying to preserve this rich heritage for future generations. The “National Register of Historic Trees” will be published in the spring of 2006 and one historic tree from each state will be immortalized in the book. This collection of trees connect 21st century Americans to the 19th century heroes, Lewis and Clark, via the living bridge of ancient trees.

Smith Grove was nominated to the historic register by a Lewis and Clark



Anyone can now own a “Lewis and Clark Historic Cottonwood” by purchasing an offspring from American Forests. The young seedlings are growing from seed taken off the giant trees at Smith Grove in North Dakota.

Cottonwoods Committee made up of representatives from North Dakota’s Game and Fish Department, Forest Service, Tourism Division, Department of Public Instruction, Lewis and Clark Bicentennial Foundation, and members from the Tribal communities and community leaders. The 23-acre Smith Grove is owned by the ND Game and Fish Department and is preserved as a Wildlife Management Area.



View from the Top of the Tree

“Fuels for Schools” describes a new and unique program to use trees removed in fire hazard reduction projects to heat local public schools. The program is straightforward. Dense, unhealthy forests are thinned to reduce fire danger near communities. The wood is chipped, hauled to local schools and used to fuel clean and efficient biomass heating systems. According to the USDA Forest Service, the primary sponsor of the program, today’s biomass heating systems are fully automated to burn fuels at very high temperatures, greatly reducing particulates, carbon monoxide and nitrous oxides associated with the open burning of wood. Water vapor is the only visible emission.

“Fuels for Schools” offers a practical and cost-effective alternative to help communities reduce wildfire risk. Typically, the low value trees and woody debris removed during hazardous fuels treatment projects are considered waste and disposed of at local landfills or through open burning. Turning this waste wood into a marketable biomass fuel product can reduce land treatment costs, create jobs and provide a less expensive fuel source for local schools. Overall, the public benefits from improved wildfire protection and energy independence through the use of local, non-fossil fuels.

The University of North Dakota Energy and Environmental Research Center (EERC) recently completed a study of North Dakota’s biomass resources and energy infrastructure with a grant from our agency. The results indicate a potential to utilize over 500,000 tons/year of biomass material from forestlands for energy or related products. The biomass resource data was combined with wildfire occurrence data over the past ten years. Significant

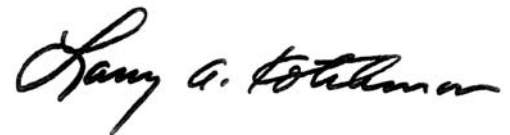
opportunities to utilize biomass and reduce fire risk exist in the Bismarck/Mandan area, the counties bordering Lake Sakakawea, the Turtle Mountains, the Pembina Valley region, and the ponderosa pine forest in the southwest. The potential for firing biomass is very good at medium and small gas and oil fired boiler facilities, such as schools and other public facilities. The study found at least 250 opportunities to replace fossil fuel with biomass.



Larry A. Kotchman
State Forester

As part of a comprehensive strategy for reducing wildland fire risk to communities, state foresters and USDA Forest Service’s regional foresters have dedicated grant funds for the “Fuels to Schools” program. Phase one of the program is underway with a pilot project in Darby, Montana. Phase two is beginning this year and includes feasibility assessments for potential sites in North Dakota, Montana, Idaho, Nevada and Utah. The EERC study clearly identifies priority sites in North Dakota where we intend to target financial and technical assistance for hazardous fuels reduction projects and equipment for biomass heating system conversions.

If you think the “Fuels for Schools” program can benefit your community, I encourage you to contact our office for assistance and funding opportunities.



2003 ND State Envirothon Winners

By: *Glenda Fauske, Information and Education Coordinator*



*Sargent Central High School 2003
Envirothon Champions*

Sargent Central High School, sponsored by the Sargent County Soil Conservation District, took top honors at the fourth annual North Dakota State Envirothon Competition held May 8-10, 2003, at Crystal Springs Camp west of Medina on I-94. The team will take part in the National Canon Envirothon Competition in Maryland from July 26-31.

Eighty-five students from around the state were challenged in this problem-solving natural resource competition for high schools students.

The Envirothon is sponsored by the Coalition for Conservation and Environmental Education. For more information, contact: Diane Olson, ND Coordinator, at (701) 845-1674.

Economic Action Study Reveals Economic Opportunities

By: Susan Stockert, Community Planning Specialist

With funds from the Economic Action Program of the USDA Forest Service's National Fire Plan, the North Dakota Forest Service engaged the Energy and Environmental Research Center (EERC) to identify and quantify forest resources, CRP, and municipal wood waste in relation to wildland fire potential. The final report "Identifying Resources and Options to Mitigate the Risk of Wildland Fires in North Dakota" reveals that communities surrounded by wildland fire fuels—dried grass, brush, fallen branches and dense tree stands, may also be surrounded by economic opportunities!

Contained in the report is a breakdown of the biomass utilization potential for all 53 North Dakota counties. The EERC report will be available July 1 on the web site at www.undeerc.org/pdf/wildfire.pdf.

The results of the study were presented in the form of workshops on June 3-5 and 10 in Bismarck, Minot, Williston and Grand Forks. The workshops were free and open to the general public. Plant managers of schools, universities, and; industry, manufacturers, and economic and community developers, electric utility representatives, agricultural commod-

ity groups, solid waste managers, and other biomass resource suppliers were invited to attend.

Communities are encouraged to download the report to learn more about the opportunities available to mitigate fire risk by investigating opportunities for energy use and value added products. Grants from the North Dakota Forest Service are available to help with fuel mitigation projects utilizing biomass.

For more information, contact Susan Stockert at (701) 328-9992

Statewide Tree Mitigation Agreement Signed

By: Tom Claeys, Sustainable Forestry Coordinator

The North Dakota Department of Transportation and North Dakota Forest Service signed a three-year agreement to replant trees removed during construction projects. The two agencies have been working closely together on conservation tree planting efforts since the Living Snow Fence Initiative was developed in 1998. The mitigation agreement was a natural extension of their existing partnership.

The North Dakota Forest Service serves to facilitate restoration of trees by utilizing its effective partnerships with conservation tree planting partners, primarily the state's 56 soil conservation districts. A concept report and funding proposal were completed and funds were secured to accomplish the preparation, tree planting, installation of weed barrier fabric and seeding of native grasses between rows.

Projects in two counties have been initiated in 2003, with the help of the

North Central and Rolette County Soil Conservation Districts. Construction projects range from concrete culvert replacement to gravel pits in the Devils Lake area. Planting plans were completed during winter months and final site preparation initiated in early spring. Suitable tree species were hand and machine planted on sites that formerly held trees, with an emphasis on maintaining a natural appearance. The Benson County site contains tree species from the original stand in an effort to restore what existed previously.

The reestablished trees will help accomplish strategic conservation needs on the site that will also result in continued protection of vital soil, water, air and wildlife resources. Conservation of these natural resources benefits all citizens of North Dakota.

ND Hosts 2004 International PLT Conference

The ND Forest Service, in cooperation with the ND Department of Public Instruction, will be hosting the "International Project Learning Tree (PLT) Conference" in Bismarck at the Radisson Inn from June 2-6, 2004. Approximately 100-150 environmental educators may be attending from Canada, Mexico, the U.S. and seven other countries.



The conference will have a Lewis and Clark theme and address many topics of interest to state coordinators and PLT teachers. To learn more about PLT, check out www.plt.org.

Vegetative Firebreaks Protect Property and Lives

By: Jason Weinerman, Sustainable Forestry Initiatives Specialist

The fires that burned through North Dakota in 2002 and the destruction of the town of Shields awakened many residents of rural North Dakota to the hazards of wildfire. Many of these residents looked outside their windows and saw their properties surrounded by acres of pasturelands or other grass acreage. They realized the potential for a catastrophic wildfire threatening their residences and working areas. The North Dakota Forest Service was able to provide these landowners with technical and financial assistance for installing practices that would protect their rural home sites.

Utilizing funding available through the National Fire Plan, 39 rural residents applied for over \$118,000 of cost-share assistance to protect homes, working areas, barns and other facilities. Landowners used this funding to install “vegetative firebreaks” around these areas. A vegetative firebreak is a specially designed windbreak that slows the spread of wildfire and gives rural firefighters an opportunity to defend isolated, scattered home sites.

A vegetative firebreak has three zones. The outside zone (farthest from the house) is a mowed grass strip that is designed to lower flame heights. The middle zone is a tilled strip of soil that creates a fuel break and greatly slows or stops the fire. The inside zone (closest to the house) is a windbreak that contains trees and shrubs that reduce wind speeds and are less combustible.

In addition to cost-sharing the installation of new vegetative firebreaks, many landowners inquired about methods for updating current windbreaks to enhance fire safety. For many of these rural landowners, simply installing a tilled soil strip around the outside of their existing farmstead windbreak would greatly enhance wildfire protection.

Grass wildfires are deceptively dangerous. They are very susceptible to subtle changes in weather and a small smoldering brush pile can blow up into a raging wall of fire with slight changes in wind and humidity. These fast moving fires can threaten lives and



National Fire Plan funding and technical assistance are available to rural landowners to install or update vegetative firebreaks that can help protect property and save lives from wildfire.

property with hardly a moment’s notice.

For more information on installing a new vegetative firebreak around your home site or updating a current windbreak to enhance wildfire protection, please contact Jason Weinerman at (701) 549-2441 or Trent Bristol at (701) 328-9916.

Helicopters Train for Wildfire Suppression

By: David Geyer, Fire Management Specialist



A Blackhawk helicopter practices hitting a target during wildfire suppression training.

On April 21-22, the North Dakota Forest Service, in conjunction with the USDA Forest Service, held a training session for the North Dakota National Guard Helicopter Program. The training session will help enhance the use of National Guard aviation assets and increase safety while they work on wildfires.

This course consisted of a classroom session on Monday, while Tuesday was a “hands on” training session with Tim Pfahler, the lead instructor pilot for the USDA Forest Service out of Missoula, Montana, at McLean Bottoms south of Bismarck.

The Blackhawk helicopter and its capabilities were very impressive during the training, as was the performance of Guard personnel. Three members of the Wyoming National Guard also participated in the training.

Six National Guard pilots were qualified in fire operations. The Blackhawk helicopters are replacing the Guard’s Huey fleet, and are capable of carrying 640 gallons of water; 500 more gallons than the older Hueys.

TREE TIPS: Dealing with Drought

By: Dr. Joseph Zeleznik, NDSU Extension Forester



Q. After last year's drought in the south and southwest parts of the state, and the predictions by some of another dry year, people want to know what can they do to keep their trees alive and healthy?

A. We obviously can't change the weather, but there are some management things we can do to minimize the impacts of drought on trees. Drought is defined as (1) a period without rainfall (2) that's long enough to cause depletion of soil moisture (3) resulting in reduced plant growth (and survival). This definition is interesting because it goes beyond simply "low rainfall." Drought is defined by its effects on living things. Trees, like all living creatures, need water to survive. When trees can't get enough water in order to grow at their maximum rate, they are experiencing drought.

The simplest and most obvious thing we can do to help trees through a drought is to give them water. Deep, infrequent watering is best for trees because it helps them develop deep, spreading root systems. Water about every ten days during dry cycles. As for the amount, a one-inch diameter tree will use about three gallons of water each day. A two-inch tree can use six gallons. Also, try to add the water at several different points around the tree, not just in one small spot. Remember, the goal is to force

the tree to develop a large, wide-spreading root system.

Management practices that conserve soil moisture will also help trees during drought. Minimizing weed competition is a good start. In a wind-break this can be done by using some type of weed-barrier fabric within tree rows or by cultivating. Weeds can also be kept out chemically.

Maintaining mulch around community trees will reduce weed competition and conserve soil moisture for trees. Mulch should be about a four-inch depth to be effective. If it's much shorter, weeds can make their way up through the mulch to the light. If it's deeper, oxygen may be cut off from the roots – yes, roots do need oxygen, too. Leave a three to four inch gap in the mulch right around the stem.

Q. Is there anything trees do to help themselves during a drought?

A. Trees are fascinating creatures and the longer-lived ones have gone through many drought cycles in their lives and have developed many mechanisms for dealing with drought. The simplest way for trees to reduce water loss is by closing their stomates. Stomates are the tiny pores in leaves that allow carbon dioxide to enter for photosynthesis (food production) and growth. But, when carbon dioxide enters leaves, water goes out. This is one of the big tradeoffs in tree biology. In order to grow, trees will lose some water. But in order to conserve water by closing their stomates, trees can't take in the carbon dioxide and they don't grow. Closing stomates is the first reaction trees will have to drought. Tree growth usually isn't completely lost during dry times, it's just reduced.

Related to this mechanism is that trees will shift a greater percentage of growth to their roots. That is, what little food is produced in photosynthesis gets sent downward in order to build a bigger root system to search for more water. Also, if things get too dry, trees will simply drop their leaves early so that they won't lose any water at all.

Q. Are some trees more tolerant of drought than others?

A. Trees have developed their own methods of surviving during hard times. Some species are more drought tolerant than others (Table 1). Plant the species recommended in the chart below in areas that are prone to drought. Although it may be a little difficult to start some of these species, they should do well once established. For information about drought resistant trees, contact Dr. Joseph Zeleznik at joseph.zeleznik@ndsu.nodak.edu or call (701) 231-8143.

Table 1. Drought tolerant shrubs and trees.

Shrubs	Hardwoods	Conifers
Silver buffaloberry	Green ash	Rocky Mountain juniper
Caragana (peashrub)	Bur oak	Ponderosa pine
Nanking cherry	Common hackberry	Creeping juniper
Common lilac	Russian olive	Eastern red-cedar
Silverberry	Honeylocust	Savin juniper
Potentilla	Siberian elm Tatarian maple	Mugo pine

If you would like an answer to one of your questions, drop us a line or give us a call at (701) 228-5422.

New State Forests Guide Available

By: Tom Karch, State Forests Coordinator

The North Dakota Forest Service has compiled a new 12-page "State Forests Guide," which is free to the public. The state forests are managed for multiple uses and provide a wide variety of public benefits, such as recreational opportunities, wildlife habitat, wood products, watershed protection, wind protection, clean air and water, and scenic beauty.

North Dakota's state forests offer a glimpse at the past. Five state forests, totaling 13,278 acres, were established to preserve a part of the state's heritage. The forests feature large tracts of woodlands, tree plantations, wetlands, small lakes and native prairie. The woodlands contain samples of aspen forest types, elm-ash-cottonwood riparian forests and oak savannas.

The state forests play an important role in the economic well being of several rural communities by attracting hunters, hikers, campers, skiers, snowmobilers, tourists and other

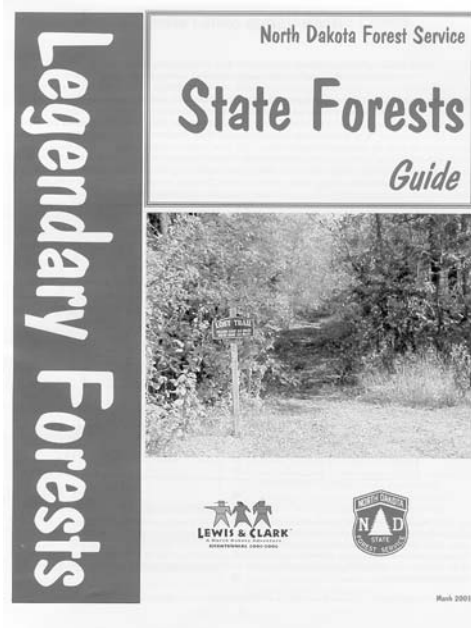
outdoor enthusiasts. The forests are located in popular tourist areas and contain three campgrounds, two picnic areas, miles of trails, and public access to four fishing lakes.

The forests also provide other products. Fire wood harvesting, haying and livestock grazing are permitted on selected tracts. Such

products are sold or leased through competitive bidding. Fees are also charged for overnight camping in recreational sites.

Recent trends indicate more people are using the state forests. For the past several years, public demand for recreational opportunities has greatly increased. The North Dakota Forest Service is committed to addressing natural resource needs and the demands of the citizens of North Dakota. Improving the condition of North Dakota's forest resources and public forestry services requires a combined effort by foresters, citizens, landowners, community leaders and elected officials.

For more information about the state forests or to get a copy of the new guide, contact Tom Karch, at (701) 228-3700.



Reader's Response

Please help us become more effective by filling out this form and returning it to:

North Dakota Forest Service
307 First Street East
Bottineau ND 58318-1100

Name: _____

Mailing address: _____

City/State and Zip: _____ Telephone: _____

My address should be changed to: _____

Please add this person to the mailing list: _____

Please send information on: _____

My idea, comment or suggestion is: _____

Firewise Communities/USA Program Launched

By: Colleen Reinke, Fire Planning and Prevention Specialist



The North Dakota Forest Service is pleased to announce the start of a new program to help communities become safer from the threat of wildfire. Firewise

Communities/USA is a national recognition program for communities that implement Firewise concepts. The program encourages communities to be proactive in designing, building and maintaining homes and property to mitigate the effects of wildfire. It includes such concepts as defensible space around homes, and choosing flame retardant plants and building materials. To date, about a dozen communities nationwide have become recognized nationally for their Firewise efforts.

Recognition includes a listing on the Firewise Communities/USA website.

Firewise Communities/USA is geared towards smaller communities, so a neighborhood, subdivision or small rural town can apply for recognition. To become a Firewise Community, communities may follow these steps: (1) schedule a site visit by a Wildland/Urban Interface (WUI) assessor; (2) the assessor visits and assesses the site, and prepares a community assessment; (3) the assessor meets with the community to discuss the findings; (4) the community forms a board or team to guide the Firewise process; (5) the community board develops a plan to address the assessment issues; (6) the community pledges to “spend” \$2 per capita on Firewise activities (this

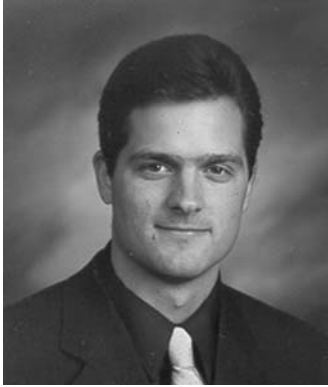
includes “in-kind” contributions and/or grant funds); (7) the community holds a Firewise event, such as Clean-up Day; (8) the community applies for recognition. Along the way, the community receives technical assistance from the WUI assessor.

Firewise Communities/USA is a natural extension of the Firewise North Dakota program that was implemented by the North Dakota Forest Service in 2001. The North Dakota Forest Service will conduct Firewise Communities/USA workshops around the state later this year. For more information on these workshops or on Firewise Communities/USA, or to schedule a site visit, please contact Colleen Reinke at (701) 328-9990 or Colleen.Reinke@ndsu.nodak.edu.

Forestry Datelines

July 11-12	ND State Horticultural Society Conference Lisbon High School Commons Contact: Randy Grueneich (701) 845-8528	Sept. 16-18	Native Plant Summit VII Best Western Doublewood Inn, Fargo Contact: USDA-NRCS Plant Materials Center (701) 250-4330
July 11-16	Lewis and Clark Workshops Washburn, ND www.ndlresource.org Contact: Glenda Fauske (701) 228-5446	Sept. 17-20	National Urban and Community Forestry Conference, San Antonio, TX Contact: Jackson Bird (701) 328-9945
July 17-26	ND State Fair, Minot ND	Sept. 19-20	Envirothon Team Coaches' Training Comfort Inn, Bismarck Contact: Glenda Fauske (701) 228-5446
July 18-19	Firewise Workshops New Town – 18th Belcourt – 19th Contact: Colleen Reinke (701) 328-9990	Sept. 27	Trees Bowl and Awards Ceremony Fargodome Contact: Tom Claeys (701) 228-5486
August 5-6	Over the Internet and Through the Woods PLT Workshop, Bottineau, ND Contact: Glenda Fauske (701) 228-5446	Oct. 4-6	ND Fire Council Fall Meeting Mandan, ND Contact: Mike Santucci (701) 328-9946
August 26-28	2003 State and Private Forestry Legislative Tour, Bismarck, ND Contact: Larry Kotchman (701) 228-5422		

People in Forestry



David Geyer
Fire Management Specialist

David Geyer is one of eleven North Dakota State University employees who received a 2003 Staff Recognition Award for outstanding job performance and achievement. Geyer was recognized during a luncheon at NDSU on April 17, where he received a \$250 cash award, an award certificate, and two tickets to an NDSU event of his choice.

As the Fire Management Specialist, Geyer is responsible for directing the improvement of wildfire mobilization capabilities by coordinating identified training and providing technical assistance. In the last year, Geyer has coordinated and hosted 45 wildland firefighting training classes that have been attended by nearly 800 students, amounting to over 9,500 seat hours of instruction. In addition to implementing tracking software for firefighter qualifications, he also chairs the North Dakota Fire Council Training Committee and is the zone representative to the Northern Rockies Coordinating Group Training Committee.

Roberta Hopkins was recently nominated for the Don and Jo Anderson Clerical Award for Excellence by the Ransom County Extension Office. All of the nominees were recognized at



Roberta Hopkins
Administrative Secretary

the Agriculture Faculty/Staff Awards Program on February 27, 2003, in the NDSU Alumni Center. Hopkins works part-time at the ND Forest Service office in Lisbon as an administrative secretary and part-time for the Extension Office.

“The Prairie Forester,” a publication of the North Dakota Forest Service
Molberg Forestry Center, 307 First Street East, Bottineau, North Dakota 58318-1100 • Phone 701-228-5422
STATE FORESTER: Larry Kotchman • EDITOR: Glenda Fauske

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