



## Dynamic Duo



**Hardy breeds of cattle can get along well on shade-tolerant grass.**

With careful management, cattle and pine trees can make a successful double-cropping combination.

Mention woods grazing to most folks and it conjures up images of scrawny, half-wild cattle trying to grub out a living in honeysuckle and scrub oaks. Not so for George Owens. On his Chipley, Florida operation, cattle and pine trees are a carefully orchestrated double-crop system.

"In the 80's, I found myself with high-priced real estate," Owens says. "I had to find a way to create some cash flow on my ranch. The answer was grazing cattle under planted pines--in fancier terms, silvopasture."

In 1985, Owens planted pine trees. Similar to twin-row crop spacing, he planted young trees four feet apart in two rows spaced eight feet apart. He left 40 feet of space between each pair of rows. In that space, Owens sowed 10 to 12 pounds per acre of Pensacola bahiagrass seed. On his 50-acre tract, that worked out to approximately 20 acres of pines and 30 acres of grass.

"If I had bought the land for \$300 to \$500 an acre, I could have just planted pines on it and come out okay," Owen says. "But I paid \$1,000 an acre, which

forced me to come up with better returns. The first year I planted bahiagrass, I was able to sell two cuttings of hay to area dairies as well as graze my cattle."

**Wide strips.** The 40-foot-wide spacing between the twin rows of trees allowed Owens ample room to operate his haying equipment. He says the wide row spacing also lets plenty of light reach the grazing areas to ensure good forage growth.

"Pensacola bahiagrass can stand more abuse than any other grass we have," Owens notes. "It's also shade and drought tolerant. But bahiagrass isn't known for top quality. I remedy that by drilling five pounds of crimson clover per

(See *Dynamic* on page 9)

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## Dr. Gene Garrett Appointed to USDA Advisory Committee on Small Farms

On December 6, 1999 Secretary Glickman announced the establishment of a new USDA Small Farms Advisory Committee. The Committee is authorized for two years and will review programs and strategies to implement small farm policy and advise the Secretary on approaches to improve USDA programs. This committee is an important step toward implementing recommendations in the 1998 USDA National Commission on Small Farms report, which made several recommendations for increasing the Department's investment in agroforestry.

In December, 1999 Secretary Glickman said, "*This committee will be a critical link in the Administration's commitment to help small farmers and ranchers across the country preserve their livelihood for future generations. I will rely on this committee to provide insight and input on actions to strengthen USDA programs that contribute to the viability and growth of small farms and ranches.*"

Dr. Gene Garrett, Director of the Center for Agroforestry, at the University of Missouri has been appointed as one of the members of this 18-person committee of non-federal advisors.

Dr. Garrett has expressed a willingness to receive input on ideas that can help small farms become more economically sustainable. You can send your suggestions to: [garretth@missouri.edu](mailto:garretth@missouri.edu)



## NAC Director's Corner

*A commentary on the status of agroforestry  
by Center Director, Dr. Greg Ruark*


### Your Success is Our Success

All across the United States we are seeing an increased use of agroforestry. Farmers, ranchers, and communities are adapting and adopting a wide variety of agroforestry technologies to meet their needs. "Working trees" are being employed for many purposes, including water quality protection, crop and livestock production, wildlife habitat, and diversifying farm economies. One indicator of the expanding demand for agroforestry is that last fiscal year the NAC filled requests from natural resource professionals for over 108,000 brochures and technical notes. Five of our 8 X 10-foot traveling displays were loaned out for 71 events in 20 states.

A better picture of the adoption and potential demand for agroforestry is needed. To this end, NAC has been working in partnership with the National Association of Resource Conservation and Development (RC&D) Councils to conduct and analyze a national agroforestry survey of RC&D Councils. The survey was designed to gauge the current usage of agroforestry by practice types (alley cropping, forest farming, riparian forest buffers, silvopasture, windbreaks, and special applications) and by region of the country. It will also indicate where future demand is likely to occur. Survey results will be highlighted in our next *Inside Agroforestry* Spring issue.

Ultimately, success must be judged against how well an agroforestry practice accomplishes its intended objectives. This issue highlights a few of the successful agroforestry efforts across the

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country. As we collected these stories, the staff at NAC was pleasantly surprised by the variety of innovative approaches. We hope you too will read these stories and find them interesting. Remember that NAC is always interested in hearing about experiences from our readers so that we can help you share them with other natural resource professionals. 


## Working Trees for Treating Waste Brochure Coming Soon

Plant science and engineering have combined forces forming a natural alternative to treating waste and growing trees at the same time. The technology of using fast growing trees, like hybrid poplars, to recycle nutrients from solid and liquid waste is here and rapidly being adopted. This waste treatment approach has emerged as an alternative to other expensive treatment technologies, such as constructed treatment plants.

Excess nutrients and other chemicals coming from agricultural, municipal, and industrial operations are a concern to surface and ground water quality. Instead, turn this waste into a product by applying it to trees. This "waste" is actually a food and water source for trees. Trees uptake excess nutrients and breakdown harmful

chemicals providing a natural cleaning process for soil and water resources. Major advantages are that the trees can produce valuable solid wood products for extra income that helps offset the cost of treatment, and can diversify the rural economy. Tree plantings also provide visual, noise, and odor buffers, while directly aiding in reducing atmospheric carbon dioxide by storing carbon in the trees and wood products.

Is this right for operators you may work with? Be sure to get a copy of our new *Working Trees for Treating Waste* brochure which will be arriving this spring to find out more. Inquire about this and other *Working Trees* brochures by e-mailing Nancy at the Center: [nhammond/rmrs\\_lincoln@fs.fed.us](mailto:nhammond/rmrs_lincoln@fs.fed.us) or fax

her at 402-437-5712. You may also order on-line from our web site. [www.unl.edu/nac/](http://www.unl.edu/nac/) 



**Working Trees for Treating Waste brochure coming soon.**

## Missouri's Agroforestry Program

Missouri has its own active agroforestry agenda and landowners are reaping the benefits. The *Missouri Agroforestry Program* is a result of the Missouri Economic Diversification and Afforestation Act of 1990 which was passed by the 85th Missouri General Assembly and directed the Missouri Department of Conservation (MDC) to develop and implement an agroforestry program in cooperation with other specified organizations.

"The major intent of the program was to provide state rental payments," Doug Wallace, USDA NRCS staff forester said. "Thus a farmer would have the potential to receive incentive payments on CRP lands for up to 20 years (25 years on 15-year CRP contracts) if they used those lands for agroforestry purposes."

The State of Missouri, through the program, works with state landowners to cost-share tree plantings and assists with planting design and layout.

"In addition to tree farmers we have agroforesters who are generally more agricultural oriented landowners trying to incorporate forestry practices into their traditional crop systems," says Wallace. "And they may or may not be tree farmers. Although the two programs sometimes overlap, you don't have to be a tree farmer to be an agroforester and vice versa."

Wallace adds that a challenge for agroforesters are "initial" costs which he mentions have to be carried forward until a landowner can start realizing any revenue from his investment.

"What state and federal programs do is give you some type of reimbursement to plant trees, and if you're eligible, to start obtaining rental payments," comments Wallace. "So that helps cover your upfront costs and a lot of times when your program has ended you can start making money on your trees depending on the program you've chosen."

The program's goals are to complement new or extended CRP, encourage soil conservation, and encourage diversification. **NAC**

Adapted from *AgVentures* Volume 3 Issue 4 "Agroforestry Opportunities for Landowners, Enhance Your Income, Property, and Life!" by Elizabeth Marcelina

## Sheep and Christmas Trees: A Good Combination



**White says, "It's pretty amazing what the sheep accomplish. When you first let them in a new pasture they'll go right down the weeds on the first row of trees like a lawn mower."**

One Missouri resident practicing agroforestry is Bill White, a biologist with the Missouri Department of Conservation and owner of White's Christmas Tree Farm in Union Star. Currently 10 of the farm's 60 "rolling" acres are planted with Scotch pine, white pine, fir, and spruce Christmas trees -- 800 trees per acre. The other acreage is under CRP programs and includes some walnut trees White is managing the walnut for lumber production.

White's wife Diane and their four sons enjoy the family Christmas tree operation, especially after they purchased their first shropshire sheep a little over two years ago. White explains that shropshire have been extensively researched for grazing Christmas trees in Europe and says, "It's the breed that did the best in their trials."

The shropshires are employed under a rotational system to provide weed control. White's first two years of owning the sheep were spent experimenting with rotation timing and grazing intensity. "It's taken some adaptation and careful observation. I've never raised sheep before so it's been a real learning experience."

The family markets lambs and older cull animals to local markets. Some lambs are employed by the White's sons in 4-H and FFA programs.

Relates White, "Most of my summers before the sheep were spent fighting the vegetation around the Christmas trees by weeding, applying herbicide, mowing, and trimming. Introducing the sheep was

a way for me to gain a little more spare time. Since we have an added lambing season in the winter, our work load isn't totally lessened, it's just less intense during summer months.

It's pretty amazing what the sheep accomplish. When you first let them in a new pasture they'll go right down the weeds on the first row of trees like a lawn mower. Then they'll start on the grass between the trees. They do a real thorough job. Prior to the sheep I was mowing maybe five to six

times a year and applying herbicide twice a year, and now I only mow twice a year (once right before marketing season to spruce things up) and I no longer apply herbicide. So it's saved me quite a bit in summertime labor and costs, and we have a little money from sheep sales."

Currently the Whites have around 20 shropshires total including lambs and intend to increase their herd to 30 for their Christmas tree operation. Once their lands come out of CRP they plan to further expand their sheep numbers.

From one to two acres of Christmas trees are planted annually at the farm on a rotation system. The family markets their trees from \$3.50 to \$4.50 a foot depending on the species. Also depending on the species, the trees are harvested anywhere from five to nine years of age. Larger trees that aren't picked during the season are utilized in wreaths and grave blankets in the White's on-site Christmas theme gift shop. They also offer ornaments, tree stands, etc. Because so many people asked about their sheep the first year the sheep are now found in a pen next to the gift shop during market season.

"It makes a great conversation piece and the kids especially enjoy the lambs," says White. **NAC**

Adapted from *AgVentures* Volume 3 Issue 4 "Agroforestry Opportunities for Landowners, Enhance Your Income, Property, and Life!" by Elizabeth Marcelina

# Northwest Ohio Field Windbreak Program

Submitted by Gregg Maxfield, Ohio Division of Forestry



***This newly established windbreak will eventually provide benefits to cropland and the row crops planted each year. It will also provide wildlife habitat.***

The Northwest Ohio Field Windbreak Program is a complete tree planting program. Participating landowners receive complete service from design of a windbreak to planting of the trees.

It's an interagency effort that began in 1977. Objectives were to get field windbreaks planted, reduce soil erosion, protect crops from wind damage, and enhance wildlife habitat. Since its beginning, more than 1,150 windbreaks have been planted, covering more than 631 row miles.

The interagency committee meets at least twice a year to discuss the program and make changes where necessary. Cooperating Agencies and organizations include: local Soil and Water Conservation Districts (SWCD) in 15 northwest Ohio counties, the USDA Natural Resource Conservation Service (NRCS) and Farm Service Agency (FSA); the Ohio Department of Natural Resources' Divisions of Forestry, Soil & Water, and Wildlife; and Pheasants Forever.

Landowners interested in planting a windbreak on their farm first contact their local SWCD Office during the summer, fall or winter prior to planting season. SWCD or NRCS personnel plan and help design the windbreak. This includes explaining the requirements of the program, preparing maps of the windbreak's location, helping with selection of proper tree and shrub species to plant, and explain any site preparation that might be necessary on the landowners part. County SWCD staff also physically stake the location of the windbreak in the field prior to spring planting.

Windbreaks planted through the Northwest Ohio Windbreak Program must be at least 1,000 row feet in total length, and be

protecting agricultural land. Landowners can have from one to six rows of trees and shrubs planted through the program.


Because of the various soil types and landowner interests, there are 10 to 13 species available each year for planting, including: arborvitae, eastern red cedar, Norway Spruce, Austrian Pine, White pine, baldcypress, black chokeberry, American cranberrybush, American plum, silky dogwood, pin oak, English oak, mixed crabapples and blackhaw. Farmers that want wind protection for their fields without having to give up much crop ground will generally plant a single row of arborvitae. Landowners wanting to improve wildlife habitat on their farms may have a multiple row windbreak planted with a variety of species.

Obtaining planting stock and planting the windbreaks is the responsibility of the Ohio Division of Forestry. Most of the seedlings used in the program are grown at one of two state nurseries in Ohio.

In February, seedlings are shipped to Maumee State Forest in northwest Ohio. When planting conditions are right, the seedlings are transported to the windbreak sites and planted. Each windbreak receives two applications of a pre-emergent herbicide: once in the spring when the seedlings are planted, and the second in late fall when a survival count is done.

A survival guarantee for each windbreak planted is a unique feature of the Northwest Ohio Windbreak Program. If the survival of the windbreak after the first growing season falls below 75 percent, the planting crew will return to the site and replant. If the survival of the windbreak is 75 percent or greater, the landowner will be offered seedlings from the Division of Forestry to replace those that have died. The guarantee ensures a landowner will have a full windbreak going into the second growing season. From then on, it is the landowners responsibility to maintain the windbreak through weed and grass control, protecting the windbreak from wildlife damage and replacing dead seedlings.

Since 1977 the Northwest Ohio Field Windbreak program has proven to be a successful conservation program in which government agencies, conservation groups and private landowners have been working together to reduce soil erosion, protect crops and enhance wildlife habitat.

For more information on the Northwest Ohio Field Windbreak Program contact Gregg Maxfield, Ohio Division of Forestry at (419) 424-5004, or e-mail to [gregg.maxfield@dnr.state.ohio.us](mailto:gregg.maxfield@dnr.state.ohio.us). 

# Windbreaks Come To Life At Air Force Base

Submitted by Loren St. John, Plant Materials Center Team Leader, Aberdeen, ID



**Two-year-old planting at the Mountain Home Air Force Base. Windbreaks, depending on density, can reduce windspeeds up to 80 percent.**


The USDA NRCS Aberdeen, Idaho Plant Materials Center (PMC), has installed approximately 53,000 linear feet of windbreaks during a four-year period at the Mountain Home Air Force Base in southwestern Idaho.

The Base is located in a desolate, eight to 10-inch annual precipitation zone and is subject to high winds, hot summers and cold winters. There are no native tree stands for miles.

The PMC and Air Force joined forces in 1990 when a test site was established at the Base to look at the adaptability of trees and shrubs for the area. Based on cooperative work and technical expertise from the PMC, the Air Force requested assistance with planting and installation of windbreaks at the Base.

A cooperative agreement was developed between the Air Force and the PMC in 1995 to install the windbreaks over a four-year period beginning in 1996. The PMC developed alternative plans and the Air Force chose to install five- and six-row windbreaks consisting of Siberian peashrub, Rocky Mountain Juniper, Robusta poplar, Austrian pine, chokecherry, and skunkbush sumac. The Air Force prepared the sites and the PMC planted the trees and installed weed barrier fabric to help conserve moisture and control weeds. A drip irrigation system was also installed.

According to Loren St. John, Project Leader at the PMC, many of the deciduous trees and shrubs grew 18 to 24 inches during their first growing season. The evergreens grow slower but will provide year-round protection from the wind once they are established. In about five years, the windbreaks will be providing protection from the wind and will make living and working conditions on the Base a more pleasant experience.

The Air Force is extremely happy with the survival and growth of the windbreaks. In fact, plans are underway to continue installing more windbreaks at the Base during the next four years. 

## SARE-NAC Agroforestry Producer Grants for Fiscal Year 1999

NAC partnered with the USDA Sustainable Agriculture Research and Education (SARE) program to provide a special opportunity for the *SARE Farmer Grant Program* in fiscal year 1999. The four SARE regional offices solicited and funded proposals for agroforestry demonstration projects. Projects could either be initiated and managed by a producer or could be coordinated by a technical professional, if carried out on a farm with significant farmer involvement. Farmers, ranchers, or tribes could propose projects that either installed established agroforestry practices or explored novel ways of integrating trees and shrubs into agricultural systems. Funds totaling \$96,000 were provided for the following grants. The NAC/SARE Partnership will again make funds available in FY 2000 for agroforestry grants to farms and ranches.

### North Central Region

- **Iowa**, Oak Savanna Restoration -- Diversity in a Rotational Grazing System
- **Iowa**, Crop-bearing Windbreak/Shelterbelt Project
- **Minnesota**, Growing Various Species of Angelica as a Forest Crop in the Midwest
- **Missouri**, Brambles and Sassafras Agroforestry Project,
- **Missouri**, "Scotco Sand" Agroforestry Demonstration,
- **South Dakota**, Improve Grazing Profits by Marketing Cedar

### Northeast Region

- **Maryland**, Ginseng Dead-Heading
- **New York**, Propagation of Superior, Straight-Growing Black Locust through Agroforestry
- **New York**, Creating a Demonstration Agroforestry Field
- **Vermont**, Riparian Buffers
- **West Virginia**, Ginseng Grown Under PawPaw Trees Making the Farm Profitable Using Agroforestry
- **West Virginia**, Medicinal Herb Cultivation, Mushroom Production, and Forest Restoration

### Southern Region

- **North Carolina**, Use of Low Value Hardwoods for Shiitake Mushroom Production
- **North Carolina**, Oriental Persimmons and PawPaw: Two Sustainable Crops for the South
- **Puerto Rico**, Demonstrating the Benefits of Agroforestry Practices on Family Farms

### Western Region

- **Guam**, Evaluation and Implementation of Nitrogen Fixing Species in Hedgerow Intercropping

Contact regional SARE offices for more information: North Central: 402-472-0265; Northeast: 802-656-0471; Southern: 770-412-4787; and Western: 801-797-2257. website:

[www.sare.org](http://www.sare.org) 



## Blizzard

by Jerry (JB) Bratton  
March, 1998

*It was 1998 and the blizzard had struck  
and fear was the call of the day.  
There's no way to keep dry, warm, or safe  
nor keep the harsh weather away.*

*Cattle are crowded against a haystack  
trying hard to simply survive.  
Death is close in the wind, snow, and cold  
and protection means staying alive.*

*Four people and a car are in a snowdrift  
near panic with no help in sight.  
The gas tank is low. All they see is snow,  
sensing doom on this cold winter night.*

*Two pheasants are crammed in tight to a post  
trying hard to make it, shield the gale.  
The only cover available to the young hen  
as she huddles up tense by the male.*

*Survival is hard in a land with no trees  
or shrubs to protect from the snow.  
If they're planted right, they'll work hard for us.  
Safe haven from the arctic powered blow.*

*Just down the road, where folks think smart  
there are barriers made to handle the storm.  
They're living snow fences of trees and shrubs  
that keep all of nature from harm.*

## Working Trees for Livestock Countertop Displays Now Available

These 21" by 28" medium-weight cardboard displays can sit in your office on a counter or table. Each colorful display illustrates how trees planted specifically for livestock operations (either for protection or in silvopasture systems) can benefit landowners. A convenient pocket holds NAC's Working Trees for Livestock (WTL) brochures. **To order your FREE displays, fill out this order form below and fax to 402-437-5712.**

Please indicate the number of each display you need.

- Working Trees for Livestock: Agroforestry for Livestock Protection (applies in most states.)  
 Working Trees for Livestock: Agroforestry for the Pacific Northwest  
 Working Trees for Livestock: Silvopasture in the Southeast  
 Yes, I need more Working Trees for Livestock brochures.

Please send \_\_\_\_\_ (indicate number needed.)

Your Name:

Organization:

Shipping address:

City, State, Postal Code:

Phone:

E-mail:

*Available on a first-come, first served basis,  
so ORDER SOON!!*

## Wildlife Habitat Planting Helps Control Flooding

Submitted by Donald Donovan, USDA-NRCS, Rockville, Indiana

The Wabash River bottom in west-central Indiana, just north of Clinton, is subject to frequent flooding. In an effort to control the flooding, as well as serve a productive purpose, the cropland site was converted to wildlife habitat. The restored riparian buffer and wetland that wildlife now call home helps to filter sediment and nutrients during flood events.


After about one year of planning, trees were planted in the fall of 1998. Twenty-one acres out of a seventy acre Wetland Reserve Program (WRP) easement were planted to a mixture of native bottomland hardwood species of trees. The trees are protected by a permanent easement,

therefore they will provide benefits for many generations to come.

Species that were chosen include bald cypress, pin oak, pecan, bur oak, swamp white oak, and swamp oak. They were planted on 20-foot by 20-foot spacing, or 100 trees-per-acre. A portion of the trees were planted on an 18-inch high ridge to see if trees planted on the ridge do better than those that were not.

Through a partnership of USDA-NRCS, White Construction (landowners), CINERGY (an energy corporation), and Berg-Warner Nurseries. The land was enrolled in WRP under a permanent easement. The cost was paid by USDA-

NRCS, with CINERGY also making a contribution in exchange for the carbon credits that were gained by planting trees.

The trees were planted to provide mast for wildlife, food and second generation seed supply. The rest of the WRP tract will be allowed to naturally regenerate to Silver maple and cottonwood. There will also be some open water wetlands developed for water fowl. The trees were planted taking advantage of small differences in elevation so the trees would have a better chance of survival during flood events. 

# Successful Locally-Led Conservation Effort Ideas Can Be Used For Agroforestry Too

Following are some of the successful projects that Conservation Districts have done to increase their conservation efforts through marketing, grant-seeking, and partnerships. Some of these stories may spark ideas which could be used to build on your agroforestry outreach efforts.

- The Winooski Natural Resource Conservation District mailed out 500 questionnaires to develop a resource assessment for its District, which covers portions of three counties and both rural and urban land uses. The results of the survey brought some surprises to the District and the local work group in terms of the top natural resource concerns and their priorities. The information which resulted was used by the local work group in its preparation and ultimate approval of an EQIP proposal.

*Winooski Natural Resources Conservation District, Vermont*

- The Oneida Tribe and the Brown and Outagamie County Land Conservation Departments have joined together to create a partnership which can serve as a national model to cooperatively address shared water resources goals on tribal and non-tribal lands. The three partners have developed an EQIP proposal, and project implementation will be conducted under the leadership for three project managers, one each from the three cooperators. The EQIP funds will be administered in a joint account by the Brown and Outagamie County Farm Service Agency (FSA) offices, with disbursement to the three partners as needed.

*Oneida Tribe of Indians, Brown and Outagamie County Land Conservation Departments, Wisconsin*

- The Kosciusko County Soil and Water Conservation District (SWCD) brought together 35 community leaders representing different conservation interests throughout the county to assist the District to redirect its conservation efforts. The workgroup identified over 80 local natural resource concerns, prioritized the concerns and identified several priority geographic areas where these concerns exist. District annual and long-range plans will be developed from this information.

*Kosciusko County Soil and Water Conservation District, Indiana*


- New London and Windham County SWCD boards discovered that the needs in their two counties were similar and combined forces across traditional political boundaries to focus on mutual resource concerns. The result of one meeting was an EQIP proposal to be submitted to NRCS to address agriculture-related concerns.

*New London and Windham County Soil and Water Conservation Districts, Connecticut*

- The Franklin County SWCD Supervisors invited over 19 agencies and organizations to participate in assessing needs, gaining public support and working together to focus people power and funding to address the natural resource needs in their District. The result was a consensus that the Bear Creek Watershed was their priority watershed. The District's leadership role has been recognized in the local newspaper and the County Commission has doubled their local appropriation. This local partnership is growing and is now recognized as the Conservation Advisory Committee to the District.

*Franklin County SWCD, Alabama*

- Through a series of meetings and field tours, the East and West Stanislaus Resource Conservation Districts obtained input from over 600 persons and 300 groups for the local conservation needs assessment process. As a result of the wide input, the local conservation work group, identified six priority areas to address DDT, nitrates, dormant sprays, PM-10 air quality issues, endangered species, and ground water recharge.

*East and West Stanislaus RCD's, California.* 

## Good Ideas From Wyoming


- District personnel made door-to-door contact with 75 percent of the producers and agencies within their boundaries in order to gain local input for natural resource conservation concerns in their community.

*Little Snake River Conservation District, Wyoming*

- Where better to reach the public than at the mall? This district took their questions concerning local natural resource conservation concerns to the local mall and adjoining Sam's Club. This effort supplemented news articles and a questionnaire published in the district's newsletter. A free tree was provided to local citizens providing input to the district's long-range plan.

*Natrona County Conservation District, Wyoming*

- The Laramie County Conservation District's efforts to reach customers included telephone contacts and a mass mailing to personally invite 4,500 individuals to two Conservation District public forums. Forum participants developed and prioritized natural resource concerns which were used by the district to develop their long-range plan. The District has received positive response from attendees, including legislators and county commissioners, for their efforts to involve local citizens in natural resource conservation.

*Laramie County Conservation District, Wyoming* 

## Riparian Forest Buffer Will Work Twice as Hard

Submitted by Pat McGrane, Public Affairs  
Specialist, USDA-NRCS, Lincoln, Nebraska



**Wendelin Dinslage, who farms near Howells, Nebraska, holds a wooden antique car and stands beside a roll top desk he crafted himself. He has planted a riparian buffer on his property to protect the streambank, provide wildlife habitat, and later serve as a source of lumber for his woodmaking hobby.**

Along the edges of the Maple Creek on his land, Nebraska landowner Wendelin Dinslage has planted a 150-foot riparian forest buffer.


The Lower Elkhorn Natural Resources District (NRD) assisted with the planting and helped pay for some of the cost of the trees.

Dinslage placed nearly nine acres into the Conservation Reserve Program (CRP). The buffer is comprised of cottonwood, green ash, and hackberry near the water, with black walnut, swamp white oak, red oak, bur oak, and silver maple away from the waters edge.

The buffer will primarily protect Dinslage's stream bank and provide wildlife habitat. But, since the plan incorporated some of Dinslage's favorite trees to harvest for woodworking, the planting will later serve as a supply for woodworking projects. Dinslage makes everything from roll-top desks, wooden antique car toy replicas, and beveled doors for cabinets.

People often regard Siberian elm as a nuisance wood. Dinslage used pieces of the "nuisance" elm to create beautiful beveled panels in his kitchen cabinets. The wood remains unstained and is very attractive.

Over the years, he acquired his own sawmill, built his own kiln and stocked an abundant supply of lumber.


Dinslage's project is a good example of really getting the most out of an agroforestry planting. 

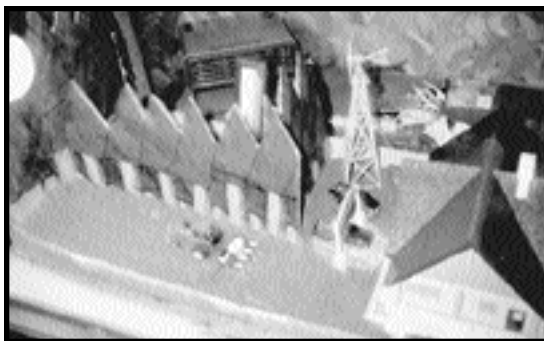
## Student's Windbreaks Project Wins with the Web

By Clover Shelton, Technology Transfer Assistant

Curtis James Hensley, an eighth grade student at Julesburg Junior High in the Great Plains town of Julesburg, Colorado, developed a successful science project using the National Agroforestry Center's web site. He used the information on the site to write a research paper about windbreaks and complete a project for the local Science Fair last spring.

To show two primary benefits of windbreaks (temperature reduction and erosion control), Hensley constructed a miniature farmstead with surrounding farmland in a cardboard flat (see photo). He used a heat lamp to simulate the sun's heat and a fan to simulate the wind. By using a cardboard cutout "windbreak" and a thermometer, he showed the difference that a windbreak can make in field temperatures. With the "windbreak" in place, an obvious difference was also shown on the effects of wind (from the fan) on erosion.

Besides receiving an "A" on his paper, his project also took first prize in his class. Congratulations, Curtis James, on your successful understanding of agroforestry! 



**Eighth grade Julesburg, Colorado student Curtis James Hensley constructed a miniature farmstead to show the effects of windbreaks.**


*This is an excellent example of a success story using the Internet. NAC's user-friendly web site, located at [www.unl.edu/nac](http://www.unl.edu/nac), is a comprehensive source of information on all agroforestry practices.*

## Minnesota Agroforestry Cooperative — Hybrid Poplar Fund

The Minnesota Agroforestry Cooperative is working to establish a fund that will finance the conversion of 25,000 acres of marginal agricultural land to hybrid poplar. The Cooperative was formed in 1996 to assist producers with the cash flow difficulties of growing trees compared with traditional annual crops and to also provide agronomic and marketing support. Its motto is "Money doesn't grow on trees, even though our trees grow you money."

The cooperative's fund will cover establishment costs, three years of maintenance payments, and advance payments to help the producer with land taxes and other annual costs. This will amortize their harvest gain to help relieve the tax burden associated with a 10-year crop.

Producers can receive \$143 per acre for establishment and \$35 per acre each year through age three for maintenance, such as weed and insect control. In years 4-10 advance payments are available for up to 70 percent of estimated annual yield. At harvest time, the cooperative will negotiate the best price for the wood and arrange for harvest and transportation. Funds that were advanced to the producer plus a five percent administrative charge will be deducted from the harvest gross. The producer can then re-enter the program for the next rotation.

For more information about the cooperative, contact Debbie Letosky, 900 Robert Street, #104, Alexandria, MN 56308; phone 320-763-3191, ext. 5. 



acre into it every October. I love clover. As long as I get nitrogen from the legume, the grazing benefits are immaterial.”

Along with providing nitrogen for the pines and boosting the quality of the bahiagrass, the clover stretches the grazing season on hay through December.

To help insure that his forages succeed, Owens applies lime every three to four years, according to soil-test recommendations. “If we don’t keep the pH up, we don’t have clover,” he says. To keep the bahiagrass thriving, he applies broiler litter at the rate of two tons per acre every other year.

Owens manages his forages by sticking to a stocking rate of one cow and calf per acre. “I try to maintain a stocking rate that will produce excess grass, not excess cattle,” he says. The veteran rancher uses intensive rotational grazing at times to favor the clover or to force his cattle to eat the grass growing under the pine straw.

To keep pine straw from completely smothering the grass, Owens conducts controlled burns every three years. There’s a tax advantage in the burns as well. Owens points out that the costs incurred can be counted as an annualized expense rather than a capital expense that can’t be deducted until trees are harvested.

**Hardy cattle.** Owens also meticulously selects and manages his cattle. Longhorns are his breed of choice. “I don’t think straight English cattle would do very well in my agroforestry program,” he says. “Half Brahman, or more, will work. But if you produce purebred Angus or Simmental cattle and are after heavy weaning weights, it won’t work out.”

David St. Louis, a Mississippi State University animal scientist, also has concerns about the potential lower performance from certain breeds in this grazing system. At the South Mississippi Experiment Station in Poplarville, St. Louis and his fellow researchers run a silvopasture program similar to the one Owens has developed. Rather than a cow-calf program, however, the scientists have only stocker steers.

“I wouldn’t raise heavy-milking cattle

because of the low quality of the grass,” St. Louis says. “But we’ve learned that rotational grazing can increase the grass quality.”

Owens runs cattle on his grass and pine trees during the summer and fall. Then he gives the land a break by moving the cattle to another farm during the cold season. They overwinter on ryegrass-clover pastures, and receive supplemental whole cottonseed and bahia hay.

“I move cattle in winter so they won’t be tempted to gnaw on the pine trees when the grass gets scarce,” Owens explains. He says his winter forages also get the cows in good enough condition to achieve a 90-percent conception rate during his 100-day spring-breeding season.

**Protects trees.** Common sense plays a key role in preventing damage to the trees. Although Owens turned lighter-weight calves into the pine-grass combo when the trees were only two years old, he was more cautious with mature cows.

“Keep them off the young timber until it is three or four years old so the cows won’t bite the tops out of the trees or trample on them,” he says. “You want to make sure the trees aren’t the only thing green that’s available when you turn the cattle in.”

At the Mississippi research site, the scientists turned cattle in after one year. “At a lower stocking rate of 500 pounds per acre, we didn’t have much damage to the trees,” St. Louis says. “But we did have damage when we increased the stocking rate to 1,000 pounds per acre.”

With his meticulous management, Owens estimates that he gets 70 percent as much timber per acre from his double-cropped trees as from solid-set pines.

“Solid-set trees will grow about 1.4 cords per acre per year,” he reports. “My twin-row pine stand will grow about one cord, which is still \$50 an acre of growth per year.”


After 11 years of comparing timber growth in grazed stands and non-grazed stands, St. Louis reports no difference in yields between the two.

Scientists at the Louisiana State University, Hill Farm Research Station near Homer, LA have achieved better results than either St. Louis or Owens by

grazing cattle under 30-year-old pines.

“In the last 14 years, cattle haven’t had any negative impact on our mature trees,” reports forester Terry Clason. “We’ve actually had a 30 percent increase in timber yields because of the fertility benefits from forages.”

Owens says his trees are now big enough that haying is no longer feasible. To generate extra income, he’s selling his pine straw to a man who bales it in 18- to 22-pound bales for nurseries and garden centers. He pays Owens about \$30 an acre per year for the pine straw.

“Everybody said raising cattle and pines together wouldn’t work because the cattle would destroy the trees,” Owens says. “But I’ve been able to double the return from my land with this combination. I also get some extra return from my cattle by marketing them for recreation instead of the dinner table. I get a premium on all of my Longhorns by selling them to rodeo companies and owners of practice-roping pens. When you combine my cattle sales with the tree business, I have a dynamic duo.” 

*Reprinted from “The Furrow.” by Becky Mills.*

## Income Opportunities From Specialty Products

Agroforestry in the Northeast  
March 23-25, 2000

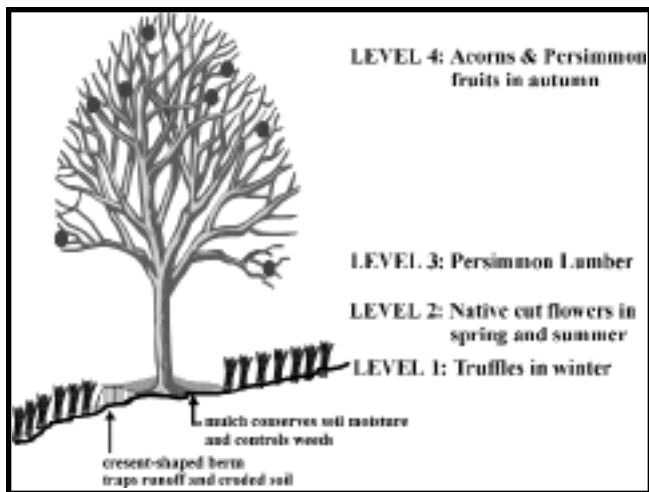
This Conference will provide professionals and laypeople information about agroforestry and the technologies and benefits it may bring to the Northeast.

**For more information contact  
Threshold to Maine RC&D:**  
[www.thresholdtomaine.org/  
agroforestry/](http://www.thresholdtomaine.org/agroforestry/)  
e-mail: [rcd@cybertours.com](mailto:rcd@cybertours.com)  
Phone: 207-657-3131

**Sponsored by:** USDA NAC, New England Association of RC&D Areas, Maine Association of RC&D Areas, and Maine Forest Service Stewardship Program.

# Four-Level Forest Farming Operation Making the Most of Agroforestry

Submitted by Rob McIntyre, Landowner, Austin, Texas



McIntyre's concept of a four-level orchard.

On his five-acre property in central Texas near Austin, Rob McIntyre is experimenting with a creative forest farming venture.

McIntyre describes his project in "levels." He estimates that "With the exception of Level 3, each have a potential gross return of about \$10,000 to \$20,000 per acre per year."

McIntyre says, "Despite weather extremes and my own mistakes, I think I've made progress in developing the prototype for a diversified, profitable tree farm on an acreage lot near Austin." Following is a description of each level.

**Level 1:** The underground portion of this experimental orchard consists of black truffles (gourmet mushrooms). Europeans currently grow most of the world's truffles and with the exception of North Carolina, McIntyre is not aware of any confirmed production of black truffles. The truffles grow in symbiosis with the roots of live oak trees that were planted as seedlings in 1988. The trees are now over six feet tall.

**Level 2:** While the trees in the orchard are maturing, McIntyre uses the alleys for quick-growing wildflowers and grasses that are suitable for bouquets. He currently grows many flowers including Mexican hat and horsemint.

**Level 3:** In 1992, thirty-six American persimmon seedlings were planted. McIntyre intends for this level to eventu-

ally yield persimmon lumber, which can be as valuable as walnut wood when produced on bottomlands. However, the surviving persimmon trees have grown little since 1992. Slow growth may be a result of freeze injuries, record drought, weed competition, and upland clay soil with 7.9 pH.


McIntyre chose American persimmons because they are very tough and adaptable trees

that yield valuable wood. Fresh or dried American Persimmon fruits have a taste that is considered superior by some to the more popular oriental persimmons sold in grocery stores.

Instead of building an expensive drip irrigation system, McIntyre harvests water, capturing runoff and storing it in the soil near each tree. McIntyre says that "Ancient tree farmers often used this method in arid and semiarid regions where the average annual rainfall was as little as four inches." He says, "Water harvesting is best-suited to small farms growing drought-tolerant, deep-rooted fruit and nut trees that can reach runoff stored deep within the soil." McIntyre uses a lawn mower or farm tractor to cut weeds between rows and doesn't apply any herbicides or pesticides.

**Level 4:** This level is designed to produce acorns and fruits in autumn. During these months, there is little or no production from the other three levels.

McIntyre direct-seeded fifty live oaks from trees bearing acorns that were abundant and relatively low in tannins which causes a bitter taste. The surviving thirty-five oaks now average two feet in height.

McIntyre says, "I think there's potential to develop low-tannin acorns and acorn oil as an organic cash crop. Some of the acorn meal, nut butter, and roasted kernels I've made had a pleasant nutty flavor." 

## MARKETING TIP

### When Editing Your Own Copy

Whenever you write something, you should know how to edit and polish your own copy. Here are some guidelines to follow when editing for:


- **Brevity.** Cut every word that adds nothing to meaning. Examples: Change "during the course of" to "during" and "few in number" to "few."

- **Clarity.** Don't use vague adjectives when specific ones are called for. Don't write "We received numerous inquiries." Instead write "We received 14 inquiries."

- **Tone and Style.** Make sure your words sound as if they come from a human being—and not an institution. Example: Instead of writing "Further notification will follow," write "I'll keep you informed."

- **Variety.** Avoid starting each sentence with the same part of speech, such as a noun or pronoun. Caution: Don't try to start each sentence with a different part of speech. Just strive for some variety.

- **Content.** Make your purpose immediately clear. Don't force your reader to wade through several paragraphs before understanding why you wrote the piece.

- **Paragraph strength.** See to it that each paragraph deals with only one topic. Including too many will make your reader work too hard. 

Source: *Communication Briefings*,  
Volume XVIII, No. IV

# NAC Fact Sheet

## The USDA National Agroforestry Center



A Forest Service — Natural Resources Conservation Service Partnership

**Purpose:** NAC is a pioneering program to accelerate the development of agroforestry, a science and practice that integrates agriculture and forestry land uses. The partnership combines resources of the two agencies to develop and apply agroforestry technologies in appropriate conservation and/or production systems for farms, ranches, and communities.

**Role:** The Center serves as a catalyst to form partnerships, promote cooperation, and leverage resources. NAC cooperates with a national network of agencies, universities, and organizations to encourage agroforestry research and technology transfer. The Center strives to develop and deliver agroforestry technologies based on the needs of resource professionals who assist landowners.

### Programs:

**Research & Development:** Forest Service scientists and co-located NRCS scientists from the Watershed Sciences Institute work with university cooperators to develop and integrate agroforestry technologies to attain more economically, environmentally, and socially sustainable ecosystems.

**Technology Transfer & Applications:** Forest Service and NRCS Agroforesters work with a national network of cooperators to develop and distribute agroforestry technical information.

**International Exchange:** Forest Service and NRCS Staff facilitate the development of agroforestry projects with international cooperators and selectively involves agency and university professionals for mutual benefit.

### For more information, call 402-437-5178 (extensions listed below):

#### Administration

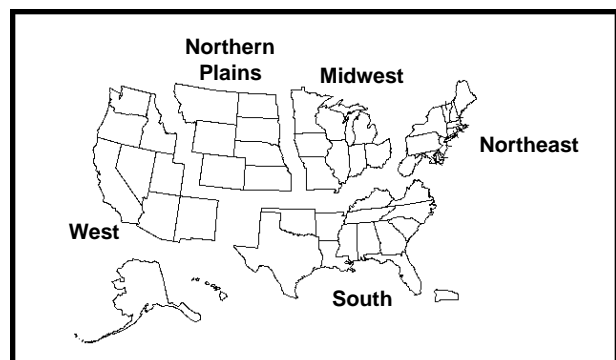
- Dr. Greg Ruark, Center Director, ext. 27

#### Technology Transfer & Applications

- Jerry Bratton, FS Lead Agroforester, ext. 24 (**Northern Plains Contact**)
- Bruce Wight, NRCS Lead Agroforester, ext. 36 (**Northeast Contact**)
- Gary Kuhn, NRCS Agroforester, located Spokane, WA. Phone: 509-358-7946 (**Western Contact**)
- Jim Robinson, NRCS Agroforester, located in Ft. Worth, TX. Phone: 817-509-3215 (**Southeast Contact**)
- Mike Majeski, FS Agroforester, located in St. Paul, MN. Phone: 651-649-5240 (**Midwest Contact**)
- Gary Wells, NRCS Landscape Architect, ext. 41

#### Research & Development

- Dr. Michele Schoeneberger, FS Research Leader and Soil Scientist, ext. 21
- Dr. Michael Dosskey, FS Research Riparian Ecologist, ext. 25
- Tim Leininger, FS GIS Specialist, ext. 37
- Gary Bentrup, FS Landscape Planner, ext. 18



Serving natural resource professionals

## Upcoming Events

### April 11-13, 2000

*Agricultural Marketing Outreach Workshop for Limited Resource Farmers.* Memphis, TN. Contact: Orlando.Phelps@usda.gov

### May 9-12, 2000

*Using Conservation Buffers in Urbanizing Landscapes National Conference.* Nebraska City, NE. Contact: [www.arborday.org](http://www.arborday.org)

### June 18-21, 2000

*National RC&D Council Conference. "Conserving the Past and Developing the Future."* Ogden, UT. Contact: 801-262-6838

### July 8-11, 2000

*Soil and Water Conservation Society Annual Conference. "Gateway to the Future - Conserving Private Land."* St. Louis, MO. Contact, Pat Mulligan, ([patm@swcs.org](mailto:patm@swcs.org)).

### September 24-30, 2000

*21st Session of the International Poplar Commission. "Poplar and Willow Culture: Meeting the Needs of Society and the Environment."* Portland, OR. Contact: Jud Isebrands, ([jisebran@newnorth.net](mailto:jisebran@newnorth.net)) or [www.ncfes.umn.edu/IPC2000/](http://www.ncfes.umn.edu/IPC2000/) Phone: 715-362-1116.

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Phone: 402-437-5178; Fax: 402-437-5712.  
Greg Ruark, Center Director, ext. 27  
Michele Schoeneberger, FS Research Leader ext. 21  
Jerry Bratton, FS Lead Agroforester ext. 24  
Bruce Wight, NRCS Lead Agroforester ext. 36  
Kim Stuhr, *IA* Editor ext. 13  
Clover Shelton, Information Assistant ext. 14  
Jim Robinson, NRCS Agroforester  
Fort Worth, TX phone: 817-509-3215  
Gary Kuhn, NRCS Agroforester  
Spokane, WA phone: 509-358-7946  
Mike Majeski, FS Agroforester  
St. Paul, MN phone: 651-649-5240  
Web Site: [www.unl.edu/nac](http://www.unl.edu/nac)

### Mission

The National Agroforestry Center (NAC) is a partnership of the USDA Forest Service, Research & Development (Rocky Mountain Research Station) and State & Private Forestry and the USDA Natural Resources Conservation Service. The Center's purpose is to accelerate the development and application of agroforestry technologies to attain more economically, environmentally, and socially sustainable land-use systems. To accomplish its mission, the Center interacts with a national network of partners and cooperators to conduct research, develop technologies and tools, establish demonstrations, and provide useful information to natural resource professionals.

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