



NOW
is the **TIME** for
AGROFORESTRY!

Agroforestry is a technology that has truly “come of age”

—North American Agroforestry: An Integrated Science and Practice, 2nd edition.

It is also fair to say that the application of agroforestry in America is not yet what it could and should be. With this in mind, there are at least five signposts that demonstrate that USDA and its partners are making the case that agroforestry is a means to address key issues and demands on our Nation’s agricultural lands and forests. However, there are two primary barriers to the wide spread adoption of agroforestry in America. First is “agroforestry illiteracy” in the natural resource professions. And second,

is the lack of accounting for agroforestry land use in America. This issue of *Inside Agroforestry* highlights some of the existing efforts to overcome these barriers.

Five signposts that agroforestry has “come of age”

In USDA Secretary Tom Vilsack’s vision for America’s forests (delivered August 2009, Seattle, WA) he called for a broad

see **Signposts**, Page 7

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NAC Director's Corner

A commentary on the status of agroforestry by Andy Mason, NAC Interim Director



New Leadership at NAC

IN December, 2009, I was appointed by the USDA Forest Service (FS) to serve as NAC's Interim Director. I am both honored and pleased to have the opportunity to "take the reins" from Director Greg Ruark, who these past 11 years has provided outstanding leadership for agroforestry research & development and technology transfer. As some of you know, for the past five years, Greg had been serving a dual role as both NAC Director and as an Assistant Director (ADR) at the Southern Research Station. Greg will now concentrate full time on his ADR duties; however, I know he will remain a strong NAC cooperator and certainly an advocate for agroforestry.

Please allow me to introduce myself. I've served for over 30 years with the FS in a wide range of positions, including Director of State and Private Forestry in Alaska; Director of the Forest Health Technology Enterprise Team, a national unit located in Fort Collins, Colorado; and in a wide range of line, staff, and field positions on national forests in Colorado, Montana, and Washington State. I began my professional career as a forester with the Colorado State Forest Service in 1977.

My most recent assignment was a two-year detail to the USDA Natural Resources Conservation Service (NRCS) as their National Forester, stationed in Washington DC. My primary focus at NRCS was to lead and support a national joint forestry initiative among the NRCS, FS, State forestry agencies, and conservation districts, which was aimed at finding ways to improve our delivery of forestry-related assistance to private landowners. I also helped develop and coordinate NRCS's national forestry policy, including forestry-related provisions in the 2008 Farm Bill.

As NRCS's National Forester, I learned about agroforestry and NAC and, very importantly, saw agroforestry applied on the ground by natural resource professionals and landowners in Missouri, North Carolina, Ohio, and Virginia. I really had my eyes opened about the science, practice, and potential for agroforestry in North America. I am now more than ever a "true believer" in both agroforestry and NAC's mission—to *develop and deliver technology on a broad suite of agroforestry*

practices to help landowners improve their economics and to optimize a wide range of public benefits and ecosystem services.

As NAC's Interim Director, FS leadership has asked me to make my top priority the development of a National Strategic Framework for Agroforestry, which will identify USDA's future emphasis areas in agroforestry research, development, and technology transfer. Over the past few months, I have been leading an Interagency Agroforestry Team (IAT), sponsored by and with team members representing the FS and NRCS, four other USDA agencies (Agricultural Research Service, National Institute of Food and Agriculture, Farm Service Agency, Office of Environmental Markets) and two key partners (National Association of State Foresters, National Association of Conservation Districts).

The IAT will develop the Strategic Framework with input from a diverse group of stakeholders (representing universities/extension, Tribes, conservation and landowner organizations, industry, and other federal and state agencies). Much of the stakeholder input was gained at an Agroforestry Roundtable Workshop, May 25–26, 2010, in Washington DC.

I believe that we truly have a significant opportunity to expand the application of agroforestry in the U.S. Later in this issue of Inside Agroforestry (IA) please read "Agroforestry Signposts", where I explain why this is a unique moment in time for agroforestry. Also, in the next IA stayed tuned for some highlights from our meeting with stakeholders at the May 25–26, 2010 workshop.

I am fully committed to ensuring that NAC—and its many partners—will continue to develop the science and deliver the tools that natural resource professionals need to help landowners and communities plan and apply agroforestry practices. If we haven't met yet, I look forward to meeting you very soon, hearing your ideas about agroforestry, and learning how NAC can help you.

Sincerely,
Andy Mason

Accounting for agroforestry

Richard Straight
FS Lead Agroforester
Lincoln, NE

A NOT so uncommon question around the NAC is, “How many acres of agroforestry are in the U.S.?” Maybe not so surprising—because of their blended nature, agroforestry land uses are not picked up on national inventory systems. Neither are the urban and community forests, but that’s for another article and another time. Here are two examples of how some state forest agencies are attempting to account for the presence and value of agroforestry.

The Great Plains Tree & Forest Invasives Initiative

In the Great Plains states of North Dakota, South Dakota, Nebraska, and Kansas trees and forests are highly prized, partly because of their scarcity and partly because of their critically important roles for people in towns, agriculture, the environment, and wildlife. The question of, “How valuable are these *Working Trees*?” became much more urgent with the Emerald Ash Borer (EAB). Even though in 2008 EAB had not been detected near the Great Plains, this insect’s reputation for near complete destruction of ash trees wherever it is found and its continued westward movement is of great concern for these states. The threat of EAB created questions like “How much will it cost to remove all the ash trees?”; “What will be the impact on wildlife habitat without ash trees?”; “How many windbreaks will become nonfunctioning?”; “What will the native woodlands and forests look like after EAB?”

To begin to address these and many other questions these four states worked together to create a proposal and apply for funding under the USDA Forest Service, State & Private Forestry Redesign program. So began a two-year cooperative effort called The Great Plains Tree & Forest Invasives Initiative. Although EAB was the primary impetus, the four state forestry agencies wanted to be prepared for any invasive pest that could threaten the tree resources. The initiative had five major components:

1. Comprehensive forest and tree resource assessment
 - Urban & community forests
 - Rural forests (non-FIA)
 - Agroforests/linear forests
2. Education and outreach
3. Monitoring and detection
 - Citizen monitoring and detection network
 - Campground education
4. Marketing and utilization
5. State and regional planning

Through this multi-state cooperative and working with the USDA Forest Service Northern Research Station Forest Inventory and Analysis staff (FIA), an inventory method was developed that is compatible with the national FIA system. In the first year alone an estimated 1.3 million acres of trees in windbreaks, riparian forests and buffers providing agroforestry benefits were inventoried that were previously unaccounted under existing inventory processes. Now these four states can begin to more intentionally manage their agroforestry



Riparian forest buffer. USDA National Agroforestry Center file photo.

resources, determine the value of existing agroforests, and make a case for future support of agroforestry for the benefit of their states’ economies and natural resources.

Assessment of Kansas Riparian Forests

A line from an old poem reads something like this, “In a land where fence posts are made of stone and fires are fueled by cow pies, the value of a tree should not be

questioned.” That’s all well and good, but when the federal reservoirs are the source of municipal and industrial water for two-third of Kansas’ population and they are filling up with streambank sediment, you need more than a little prairie wisdom to say “trees are the answer”. Research in Kansas shows that riparian forests are more effective than other land cover at stabilizing streambanks during high water events and trapping sediments which otherwise would end up in reservoirs. The Kansas Forest Service along with numerous other partners decided to develop a process to inventory and classify by condition class the riparian forests in the state’s reservoir watersheds. The initial project began in 2009 in the Delaware River watershed and was funded in part with a USDA Forest Service, State and Private Forestry Competitive Grant. The grant will make it possible to use GIS and on-the-ground forest inventory to assess the size and condition of riparian forests and identify areas where their protection, management and establishment can most benefit the reduction of sediment loads. The data will be used to develop a riparian forest classification system to guide policy and program implementation which can be applied to other watersheds. In addition, 10 sites demonstrating forestry BMPs will be established.

The inventory process will utilize LANDFIRE, (<http://www.landfire.gov/>) a GIS mapping tool that describes percentage of vegetation types for wildland fuel and fire regimes. The on the ground survey process is still being developed but will likely be similar to what was used for the Great Plains Initiative for inventorying windbreaks and riparian forests. Three riparian forest condition classes have been established: 1) Riparian Area In Need of Protection/Properly Functioning, 2) Riparian Area in Need of Management/Functional at Risk, and 3) Riparian Area in Need of Establishment/Nonfunctional. Each classification has a set of criteria. This project is in its early stages and you can contact the Bob Atchison, atchison@ksu.edu, at the Kansas Forest Service for more information. 🌳

Jump on board!

The agroforestry program express is moving out!

Doug Wallace
NRCS Lead Agroforester
Lincoln, NE

EVER wonder how to bring those great conservation ideas into reality? Think agroforestry. That's right—agroforestry. What better solution to your conservation issues than agroforestry—a unique land management approach that intentionally mixes woody plants, and crop and animal production systems to create environmental, economic and social benefits? And what better time, than now, to find funding for these practices? On June 18, 2008, Congress passed the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill). In this bill are numerous opportunities for land users to get financial support for forestry and agroforestry uses through a wide range of USDA programs—some time-tested and proven, and some truly new. The federal funding programs were developed as incentives for good stewardship



Field windbreak. Natural Resources Conservation Service file photo.



The 2008 Farm Bill contains a forestry title and forestry and agroforestry provisions in other titles. The conservation title (Title II) modifies most programs to include forestry/agroforestry activities and directs the creation of infrastructure for environmental services markets (including carbon markets). Forestry practices and nonindustrial private forest lands are now accepted for the Conservation Stewardship (Subtitle D), Farm and Ranch Lands Protection (Subtitle E), Environmental Quality Incentives (Subtitle F) programs, and other conservation programs (Subtitle G). The energy title (Title IX) includes two provisions to expand the use of woody biomass in energy production.

and, to provide payment assistance for practices that when properly designed and managed, provide a means to treat pressing environmental issues. Although there are more funding programs than described in this newsletter, the programs covered represent federal sources with the greatest application to agroforestry. The chart on the next page helps summarize all the fantastic

Agroforestry practices include field, farmstead, and livestock windbreaks to protect crops, control snow, or mitigate livestock odors; riparian forest buffers along streams and rivers; silvopasture systems with trees and forage growing together for dual income; alley cropping integrating annual crops with high-value trees and shrubs; forest farming where food, medicinal, and/or decorative products are grown under the protection of a managed forest canopy; and a variety of special applications, such as riparian forest buffers that are widened to include woody plants for bioenergy production.



Alley cropping. University of Missouri, Center for Agroforestry.

options and opportunities that are currently available today. *Selected program highlights:*

Environmental Quality Incentives Program

The purpose of EQIP has been expanded to include forest management. Forest management and agroforestry practices were already funded by EQIP, but this new language places an increased emphasis on enrolling forestland.

Conservation Stewardship Program

Formerly known as the Conservation Security Program, CSP has been renamed and overhauled in order to be more user-



Short rotation woody crop. USDA National Agroforestry Center file photo.

USDA Programs for Agroforestry*

	Alley Cropping	Riparian Forest Buffer	Windbreak	Silvopasture	Multi-story Cropping	Special Applications (Tree Planting)
NRCS						
EQIP	C	C	C	C	C	C
WHIP	C	C	C	C	C	C
CSP		U	U	U	U	U
WRP		C/E		C/E	C/E	C/E
FSA						
CRP						C/I/R
CCRP	C/I/R	C/I/R	C/I/R			C/I/R
BCAP						C/I/R

C = Cost share payment; I = Incentive payment; R = Rental payment; E = Easement payment; U = Land use payment

* Not all combinations or programs will be available in all States and Territories.

friendly and offer new conservation benefits. The new CSP significantly expands the amount of forestland that will be enrolled in the program: producers may now enroll all of the eligible forestland under their control.

Wildlife Habitat Incentives Program

WHIP is designed to develop and improve wildlife habitat on private land, including protecting, restoring, developing or enhancing habitat to benefit at-risk species. Only producers with agricultural land, Indian tribal land, or non-industrial private forestland can participate in WHIP.

Wetland Reserve Program

WRP is a land retirement program designed to establish and improve wetland areas. Restoration of wetlands includes the planting of trees and shrubs. In some cases,

WRP land may even be grazed, cut for hay or harvested for wood products, providing wetland values are maintained.

Biomass Crop Assistance Program

BCAP is a broad new program designed to encourage the establishment and production of new crops, including woody biomass, for conversion to bioenergy, and to assist with the collection, harvest, storage and transportation of these crops. Eligible crops and other biomass do not include those eligible for commodity payments under Title I, invasive or noxious plants, animal waste and byproducts, food and yard waste, or algae.

Conservation Reserve Program

CRP along with its continuous signup provisions (CCRP) offers a number of opportunities to apply forestry and



Multi-story cropping. USDA National Agroforestry Center file photo.

agroforestry practices on eligible acres. CRP and CCRP is a land retirement that offers annual soil rental rate payments, cost share payments and annual maintenance payments, making it a very attractive federal program.

Where to go for more information on USDA federal programs:

(NRCS) <http://www.nrcs.usda.gov/programs/>
(FSA) <http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=landing>

Use agroforestry practices and programs (see chart above) to:

- Thin a dense stand of trees for ginseng production; (Multi-story Cropping – 379);
- Improve pollinator habitat on cropland; (Alley Cropping – 311);
- Develop, protect, or enhance stream corridor wildlife habitat; (Riparian Forest Buffer – 391);
- Plant trees into grasses to improve livestock performance; (Silvopasture Establishment – 381);
- Improve water quality; (Riparian Forest Buffer, Alley Cropping, Tree/Shrub Establishment – 612)
- Reduce soil erosion and energy usage on cropland and farmstead sites; (Windbreak/Shelterbelt Establishment – 380).
- Rehabilitate aging windbreaks; (Windbreak/Shelterbelt Renovation – 650)
- Plant trees/shrubs for bioenergy use; (Special applications: Tree/Shrub Establishment)

Help for silvopasture training

Richard Straight
FS Lead Agroforester
Lincoln, NE

SILVOPASTURE management is a new enough land use that it can be challenging to find practical information and people who can provide sound assistance. After all there isn't a silvopasture association or professional journal for networking or to advance the research and innovations. Not surprising, each year more universities are engaging in research and more state extension agencies, conservation districts, and state forestry divisions are hosting field days to promote the economic and environmental benefits of silvopastures. By no means is the USDA National Agroforestry Center the only place to find good silvopasture information. In fact two of NAC's most recent products that support silvopasture were done in conjunction with other partners.

It can be intimidating coming into a training session or public meeting with very little background on the subject, especially when you don't think you know enough to even ask a relevant question. The newly released Online Silvopasture Course, www.silvopasture.org, is intended to help the user develop a basic understanding of silvopasture management. The course was developed in partnership with Alabama A&M University with assistance from the Center for Invasive Species and Ecosystem Health—Bugwood Network at the University of Georgia. The course contains seven modules and can be completed over the course of several sessions



Silvopasture. USDA National Agroforestry Center file photo.

if desired. Each module consists of reading material, presentations, and a concluding quiz. It is expected that the course will soon be approved for continuing education credits from the Society of American Foresters.

Although the Online Course is geared toward southern pine silvopasture, many of the basic concepts and principles will apply across the country. The Course is a companion to NAC's handbook, *Silvopasture: Establishment and Management Principles for Pine Forests in the Southeastern United States*. This handbook was also

produced in partnership with Alabama A&M and can be downloaded in PDF version from the Course website or from the NAC website, <http://www.unl.edu/nac/morepublications/silvopasturehandbook.pdf>.

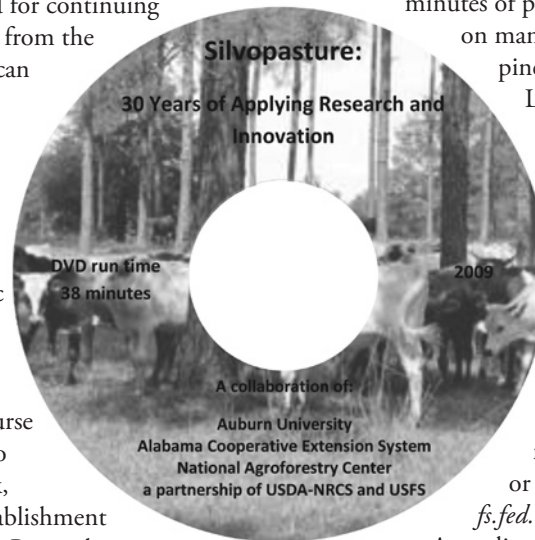
The other recently completed project is a DVD, *Silvopasture: 30 Years of Research and Innovation*, done in partnership with Dr. Becky Barlow, Auburn University Extension. The DVD features

Florida silvopasturists George and Pat Owens and early USDA Forest Service researcher Dr. Cliff Lewis. The DVD is 38

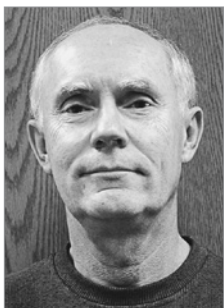
minutes of practical information on managing southern pine silvopasture. Dr.

Lewis and the Owens share research and experiences in establishing and caring for trees, managing forage, and working with livestock in a Florida silvopasture system. A copy of the DVD can be requested by e-mail or fax at nhammond@fs.fed.us or 402-437-5712.

An online version of the DVD is soon to be available at <http://www.unl.edu/nac/silvopasture.htm>. 🌲



New kid on the block



Doug Wallace was recently hired as the NRCS Lead Agroforester at the National Agroforestry Center in Lincoln, Nebraska. Doug will be part of the USDA National Agroforestry Center (NAC) team that is a partnership with the Natural Resources Conservation Service (NRCS) and the Forest Service (FS).

Doug has Bachelor of Science and Master of Science degrees in forestry from the University of Illinois. In 1975 Doug began his conservation career as a field ecologist in western Illinois for the Illinois Natural Areas

Inventory, a comprehensive systematic statewide natural area inventory. Upon completion of the inventory in 1978, Doug began work for NRCS and served in a number of locations throughout Illinois as a soil conservationist, district conservationist and area resource conservationist. From 1988 to 2010, Doug served as the NRCS State Staff Forester in Columbia, Missouri. While in Columbia, he also conducted post-graduate research on shade tolerance of warm season grasses for agroforestry applications at the University of Missouri. 🌲

Signposts

Continued from page 1

vision for forestry and close collaboration between the Forest Service and NRCS in adopting an “all-lands approach” that includes all public and private working lands. He stressed the need to operate at a “landscape-scale” to ensure clean and abundant water for communities, to address climate change, and to develop new markets for ecosystem services that increase rural wealth. Agroforestry is certainly an important means to accomplish the Secretary’s vision.

In his USDA Testimony to Congress on the House Climate Change Bill in December 2009, USDA Chief Economist Joseph Glauber addressed how farmers and ranchers could potentially gain through the greenhouse gas emissions (GHG) offset program provided for in H.R. 2454. Citing EPA and other studies, he stated that the primary source of agricultural offsets would be increased carbon sequestration through afforestation of crop and pastureland. Agroforestry provides the benefits of afforestation, while supporting agriculture

production, not replacing it.

A national Joint Forestry Initiative (JFI) with the FS, NRCS, the National Association of State Foresters (NASF) and the National Association of Conservation Districts (NACD) made a very significant commitment in early 2007 to work together to improve the delivery of forestry related conservation assistance to private landowners. The JFI action plan includes several agroforestry related actions.

The Know Your Farmer, Know Your Food (KYF2) initiative, which is being actively led by Deputy Secretary Kathleen Merrigan, provides a forum to demonstrate how agroforestry supports local and regional food systems. NAC Interim Director Andy Mason serves on USDA’s KYF2 Task Force which strives to integrate and emphasize USDA programs and policies that:

- *Stimulate* food- and agriculturally-based community economic development;
- *Foster* new opportunities for farmers and ranchers;
- *Promote* locally and regionally produced and processed food;
- *Cultivate* healthy eating habits and educated, empowered consumers;
- *Expand* access to affordable fresh and

local food; and

- *Demonstrate* the connection between food, agriculture, community and the environment.

The fifth signpost is the ongoing development of a National Strategic Framework for Agroforestry. On May 25–26 a diverse group of invited stakeholders including landowner and conservation organizations, universities/extension, Tribes, state agencies, regional councils, USDA, and other federal agencies, met to discuss the future of agroforestry in the U.S.. The workshop was sponsored by the Interagency Agroforestry Forestry Team (IAT), which includes six USDA agencies, the NASF, and the NACD. In the next few months the IAT, led by NAC Interim Director Andy Mason, will develop the Strategic Framework after fully considering stakeholder input. The new strategy will identify USDA’s—including NAC’s—most important future emphasis areas for agroforestry research, development, and technology transfer, both nationally and in priority regions/ watersheds.

These five signposts certainly indicate that agroforestry is a technology that has come of age! 🌱

Conservation Buffer Guide update

Richard Straight
FS Lead Agroforester
Lincoln, NE

Gary Bentrup
Research Landscape Planner
Lincoln, NE

LAST year NAC published the Conservation Buffer Guide, a synthesis of over 1,400 research articles on designing conservation buffers complete with graphics and assistance in designing multiple function buffers. Since that time the publication has been recognized by the Association for Communication Excellence in Agriculture, Natural Resources, and Life and Human Sciences; the U.S. Forest Service Southern Research Station; and the National Association of Government Communicators. Beginning in May 2010 resource



professionals can get copies of the Conservation Buffer Guide in Spanish as well as in English. Hard copies can be ordered from the NAC online publication orders page, <http://www.unl.edu/nac/order.htm>, or download a PDF of the Spanish version at <http://www.unl.edu/nac/bufferguidelines/>.

Later this year NAC will also release the Conservation Buffer Guide in Simplified Chinese. Keep an eye on the Buffer Guidelines web site for availability.

In the last year over 10,000 copies of the Conservation Buffer Guide have been requested and mailed out to natural resource professionals all over the U.S. and in many countries around the world. Part of the popularity of the Guide is due to its practical design and helpful images that convey the buffer design and planning guidelines. This practical nature of the Guide comes out of a research process that engaged the end user, natural resource professionals, from beginning to end. This cooperative process is at the heart of the next step for improving the Conservation Buffer Guide. NAC is working with the Leopold Center at Iowa State University to find out how resource professionals are using the Guide, what they would like to see added, what works and what doesn’t work, and what other tools or adaptation could make the Guide even more useful. 🌱

Upcoming Events

July 18–21, 2010

65th International Soil & Water Conservation Society (SWCS) Annual Conference. St. Louis, MO. http://www.swcs.org/en/conferences/2010_annual_conference/

August 3, 2010

Conservation In Action Tour 2010. Williamsburg–Richmond, VA. <http://www.conservationinformation.org/?action=article&id=68>

August 23–27, 2010

Watershed Management Conference: “Innovations in Watershed Management Under Land Use and Climate Change” Madison, WI. <http://content.asce.org/conferences/watershedmanagement2010/>

August 30–September 1, 2010

American Water Resources Association (AWRA) Summer Specialty Conference & Eighth Caribbean Island Water Resources Congress. Rio Grande, Puerto

Rico. <http://www.awra.org/meetings/PR2010/>

October 27–31, 2010

Society Of American Foresters (SAF) National Conference, “Forests & People: A Watershed Event.” Albuquerque, NM. <http://www.safnet.org/natcon10/index.cfm>

For more upcoming events, visit our website calendar: www.unl.edu/nac/calendar.htm



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www.unl.edu/nac

Mission

The USDA National Agroforestry Center (NAC) is a partnership of the Forest Service (Research & Development and State & Private Forestry) and the Natural Resources Conservation Service. It is administered by the Forest Service, Southern Research Station. NAC’s staff are located at the University of Nebraska, Lincoln, NE and in Blacksburg, VA. NAC’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, NAC 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.

Policy

USDA policy prohibits discrimination because of race, color, national origin, sex, age, religion, or handicapping condition. Any person who believes he or she has been discriminated against in any USDA-related activity should immediately contact the Secretary of Agriculture, Washington, DC 20250. Opinions expressed in “Inside Agroforestry” are those of the author and do not necessarily represent the policy of the USDA Forest Service and the USDA Natural Resources Conservation Service.

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