



Riparian forest buffer “apps” for your smart farm

THIS year has produced an extraordinary amount of flooding across the United States, Canada, as well as many other countries throughout the world leading to deaths, damages, devastation and destruction.

Even with the best currently available flood management techniques, when rivers decide to flood—they will. While not a perfect solution, because agroforestry systems will never be able to eliminate flooding, agroforestry systems can help to

mitigate and lessen the flood damage that occurs from these flooding events.

In this issue of Inside Agroforestry you will find that people and groups all across the country are applying riparian forest buffers to benefit everything from toads to towns and farms to fishes. As an added app we’ve also included some highlights of the USDA National Agroforestry Center’s activities for 2010. Happy New Year!

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FIRST AID APP:
JUST WHAT THE DOCTOR ORDERED



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HIP HOP APP:
GUARANTEED WART FREE



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FUNDING APP:
SHOW ME THE MONEY

NAC Director's Corner

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



More than clean water

RIPARIAN forest buffers mean cleaner water! But wait, there's even more! They can be designed to meet a wide range of landowner objectives, including habitat for wildlife and fish, streambank stabilization, flood protection, as well as provide a place to grow economically valuable foods, florals, medicinals, and biomass for energy. You can read about a good example of "double duty" buffers, "Edible and Woody Floral Agroforestry Riparian Buffers", co-authored by NAC Scientist Jim Chamberlain, in the Virginia Forest Landowner Update (Winter 2011) at: www.cnr.vt.edu/forestupdate/newsletters/Volume%2025/25.1.pdf.pdf.

I encourage you to think about how riparian forest buffers can do "double duty" as both a **protector** of natural resources and a **producer** of the food, fiber and energy products that provide new income sources for landowners and help keep our working lands working. Please feel free to share with me your thoughts about "double duty" riparian buffers at amason@fs.fed.us.

In the last *Inside Agroforestry* I talked about the Interagency Agroforestry Team (IAT) and the development of a USDA-wide agroforestry strategic framework. We now have a draft framework that is being reviewed by the sponsoring agencies/organizations. The draft framework has three goals: 1) increase adoption, 2) advance the science, and 3) integrate agroforestry into an all-lands approach to conservation. Read more at www.unl.edu/nac.

On a more personal note let me close with letting you know that in November 2010 the Forest Service appointed me as the permanent NAC director. I look forward more than ever to ensuring that NAC—and its many partners—will continue to develop the science and deliver the tools that natural resource professionals need to plan and apply agroforestry practices.

Sincerely,
Andy Mason

What has NAC been up to lately?

INCLUDED in this issue of Inside Agroforestry are highlights of the Summary Report of FY 2010 activities of the USDA National Agroforestry Center. The full report contains details of significant research papers, technology transfer activities and publications, and other engagements by NAC in support of agroforestry nationwide. Most notable for NAC are the personnel changes of a new director, Andy Mason, and new NRCS lead agroforester, Doug Wallace. You can read or download the complete FY 2010 annual report at www.unl.edu/nac, check out the new publication on page 9. 🌱

National Agroforestry Center Update 2010

USDA
A Partnership of the Forest Service and Natural Resources Conservation Service

The USDA National Agroforestry Center (NAC) Update highlights annual accomplishments of NAC projects, programs, and activities. For a complete summary of NAC programs, publications and activities or for more information visit www.unl.edu/nac or contact the Center at 402-427-2171 extension 611.

Technology Transfer

Mill Farm Workshop and Field Day
Agroforestry Staff Dwight and Doug Wallace assisted Terry Cassin, NAC's state forester in Louisiana on June 4 with a workshop and field day at the Mill Farm near Homer. NAC provided technical support, meals and discussion of three of the sites on the field day. Over 100 attendees and NAC staff left from three states, adopted...

Earth Wellness Festival
Researcher Michele "Tina" Resurrection in L'Annonce, Haiti and other agroforestry professionals presented at the Earth Wellness Festival on March 29-30, 2010 at Louisiana State University. Tina presented a workshop on agroforestry and the benefits of agroforestry for soil conservation and water quality.

"WOW" Pop Up Business
NAC developed three free-standing, pop-up displays for farmers to present agroforestry for sale by farmers. Following the display, farmers can contact NAC for more information and assistance.

Albany State University Field Day
Agroforestry Staff Doug Wallace was an invited speaker on August 26, 2010 at the 2010 Albany State University Agricultural Research and Extension Field Day outside of Lumberton, NC. Over 200 participants attended the field day. Faculty, research assistants, and staff presented research project information and discussed the benefits of agroforestry for soil conservation and water quality.

Agroforestry Field Day
Agroforestry Staff Dwight presented agroforestry research information to farmers and natural resource professionals in DR Kansas on May 25, 2010.

Learn-to-Plant
Director Andy Mason was the featured speaker at a "Learn-to-Plant" seminar sponsored by the University of Florida Agricultural Experiment Station, Gainesville, FL on July 19, 2010 in Washington, DC. The seminar was held at the University of Florida.

The Center for Agroforestry's Inaugural Research Symposium
Director Andy Mason presented a keynote address, agroforestry in Missouri: New opportunities for a sustainable future, at the University of Missouri Center for Agroforestry's Inaugural Research Symposium on January 8, 2010 in Columbia, MO. Agroforestry staff, faculty and agency professionals attended in person and an additional 50...

Technology Transfer

Interagency Agroforestry Team Workshop
NAC assisted with the organizational activities, presentation support, and travel logistics associated with the Agroforestry Strategic Framework Workshop held by the USDA Interagency Agroforestry Team. The workshop was held on May 23-26 in Idaho Falls, ID. Over 100 participants provided input for the strategic agroforestry plan. The field day was also held on the same dates. 600 individuals learned in person the value of agroforestry in the western United States. The workshop was held on May 23-26 in Idaho Falls, ID. Over 100 participants provided input for the strategic agroforestry plan. The field day was also held on the same dates. 600 individuals learned in person the value of agroforestry in the western United States. The workshop was held on May 23-26 in Idaho Falls, ID. Over 100 participants provided input for the strategic agroforestry plan. The field day was also held on the same dates. 600 individuals learned in person the value of agroforestry in the western United States.

Stipendiary Training Website and DVD
NAC partnered with Jim Hamilton of North Carolina Extension and Daniel DeSautel of Forestry, University of Georgia to create an online stipendiary training. This course is a companion resource to the National Agroforestry Strategic Framework & Handbook. Stipendiary Training is available at www.naccenter.org. The site is available to natural resource professionals and landowners to understand and apply the economic and ecological principles of agroforestry.

Staff Update
Andy Mason was appointed as NAC's Director in November 2010. Doug Wallace was selected as Natural Resource Specialist in March 2010. Agroforestry staff at NAC in March 2010.

Research

CarViz: Picture Better Conservation
The award-winning visual simulation software, CarViz, was updated for use on the latest Windows operating system. The image editing program allows users to create edited photos of a landscape's progress to illustrate conservation and management practices. Agroforestry Staff Resurrection also worked with the National Oceanic and Atmospheric Administration (NOAA) to create an online video library of resources for CarViz users.

Wildlife with Riparian Buffer Field
Researcher Mike Donohue's field test for designing variable-width riparian buffers is being updated. This new computer tool will assess and provide suggestions for water quality credit trading activities.

The Global Research Alliance on Agricultural Greenhouse Gases
Research Program Leader Michele Donohue was invited to join the Global Group of this new international alliance and bring research on agricultural greenhouse gas emissions. The Alliance was launched at the Copenhagen climate summit in December 2009.

Forest Farming Research
Researcher Jim Chamberlain is working with colleagues at the University of Georgia, Virginia Tech, and the Carolina Sustainability Center to establish long-term research plots and work with a rural farmer to demonstrate the viability of native plants for native plants, and explore the social factors that influence adoption of forest farming practices on private lands.

Conservation Buffer Guides
NAC translated and printed Spanish and Chinese versions of the "Conservation Buffer Guides for Stream Buffers." The Spanish version was mailed to 1,400 resource professionals throughout the United States. Researchers Jim Chamberlain, Doug Chamberlain, and Resurrection have over 100 resource guides translated and developed from a review of over 1,400 resource publications.

Update 2010

This publication is available for order as a hard-copy full guide, downloadable PDF Spanish, Spanish and Chinese, and Korean translations. All available at: www.unl.edu/nac/publications (03/2011)

Ready: Know your Power/Know Your Food
Researchers Jim Chamberlain and Todd Resurrection know that crops, sometimes called wild animals, are a popular dietary products, but not worth a second thought to grow them and manage the forests by natural resource professionals. Using research on GIS technology NAC is launching plans about the best ways and how to manage them to increase income from riparian areas.

FY2010 Requested Publications

Working Trees Series	Quantity
Demographics Series	3,102
Inventory Series	1,100
Inventory: DR / Forest	415
Inventory: DR / Grassland	912
Native Trees	2,382
Native Trees: DR	792
Wildflowers for Conservation	4,124
Wildflowers for Conservation: DR	1,494
Conservation Buffer Guide Series	552
Total Publications	17,703

Working Trees Series

DR (all requested Native Tree and Wildflowers for Conservation)

Country	Quantity
Australia	10
Canada	20
China	10
France	10
Germany	10
India	10
Japan	10
Korea	10
Spain	10
USA	10
UK	10

Holding it all together

Gary Bentrup

FS Research Landscape Planner
Lincoln, NE

Mike Dosskey

FS Research Riparian Ecologist
Lincoln, NE

Gary Wells

Retired NRCS Landscape Architect
Lincoln, NE

Michele Schoeneberger

FS Research Program Leader / Soil
Scientist
Lincoln, NE

RESTORING forest ecosystem services to agricultural landscapes is often a daunting challenge that stems from the impracticality of converting large tracts of food-producing, agricultural land to forest cover. Resolving this issue requires finding a balance between public goals for food and ecosystem services and landowner and community desires to remain an agricultural enterprise. Natural and social science principles suggest that an appropriate balance and solution may be achieved through the use of riparian forest buffers.

A riparian forest buffer is a strip of forested area along the banks of streams and other water bodies that protects those

Small forest patches and strips, and even individual trees, restored in the right places and configurations can restore significant levels of functions.

water bodies from degrading impacts of adjacent land uses and provides other ecosystem services in landscapes dominated by agricultural land uses. It is a restoration practice designed for and managed in agricultural landscapes primarily to enhance



When properly designed and placed, riparian forest buffers can restore numerous ecosystem services in agricultural landscapes. USDA National Agroforestry Center file photos.

ecosystem services such as water quality improvement, aquatic habitat enhancement, and to increase wildlife populations. Riparian forest buffers can also help to create visually pleasing landscapes, provide erosion control, and other benefits in agriculture-dominated landscapes. Even narrow buffers can have a large impact on water quality and wildlife in agricultural landscapes.

Riparian areas generally constitute less than 5 percent of the total land area in the U.S., but are disproportionally effective lands for providing forest ecosystem services. Because of these special qualities, riparian zones are uniquely capable of producing high levels of multiple ecosystem services in otherwise non-forested landscapes. Restoration of forest ecosystem services in agricultural landscapes may not require restoration of large forest tracts. Small forest

patches and strips, and even individual trees, restored in the right places and configurations can restore significant levels of forest functions that are associated with larger forest tracts.

Enhancing ecosystem services using riparian forest restoration on agricultural lands often requires a larger planning area than individual farms and ranches. Coordinated and cumulative action on several properties is often necessary to achieve desired levels of ecosystem services. To accomplish this task, an effective landscape-scale planning process is needed to pull together landowner and public concerns, needs and goals while incorporating the opportunities and constraints dictated by the existing landscape conditions. 🌳



RESTORATION APP:

McKenzie Creek floodplain recovery

Doug Wallace
NRCS Lead Agroforester
Lincoln, NE

FLOOD related problems identified within the City of Piedmont and in the McKenzie Creek floodplain in the 1990's included damages to 200 residential and commercial buildings and properties; threats to human health and safety; increases in local government service costs; streambank erosion and degradation; and detrimental effects on water quality. Other identified problems included a lack of community-oriented recreational facilities and the need for improved riparian corridors and fish and wildlife habitat. Average annual flood damages were estimated at \$584,600. To address these local concerns, the "McKenzie Creek Watershed Plan and Environmental Assessment" was prepared under authority of the Watershed Protection and Flood Prevention Act, Public Law 83-566. The plan was signed by the City of Piedmont,



Informational sign along MacKenzie Creek restoration area in Piedmont, MO. Photo courtesy NRCS Missouri.



the Wayne County Soil and Water Conservation District, and the USDA Natural Resources Conservation Service on July 7, 1998. The project consisted of voluntary acquisition and demolition of frequently flooded 126 residential and commercial properties; relocation of residents to flood-free area; and development of the acquired floodplain into 50 acres of greenway

(recreational) areas which includes two city parks with shelter buildings, picnic tables, park benches, baseball fields, soccer fields, restrooms, playground equipment, riparian tree plantings, and a gazebo for entertainment and social functions.

The greenway was developed consisting of open spaces; walking/bicycle trails; picnic areas; baseball and soccer facilities; riparian tree and shrub plantings; fish and wildlife habitat enhancement; and streambank restoration through the installation of bioengineered erosion protection measures.

Partners/Collaborators included the City of Piedmont, Missouri, Wayne County Soil & Water Conservation District, USDA Natural Resources Conservation Service (NRCS), Big Springs RC&D Council, Inc., Missouri Department of Conservation; U.S. Forest Service, Federal Emergency Management Agency, State of Missouri Emergency Management Agency, Missouri Department of Economic Development, Wayne County Heart Coalition, Missouri Department of Transportation, and the Ozark Foothills Regional Planning Commission. 🌳

And the winner is...

Doug Wallace
NRCS Lead Agroforester
Lincoln, NE

THE use of agroforestry practices should never be based on a popularity contest, but if there was one clear winner it would be riparian forest buffers. This practice is the most frequently planned and applied agroforestry practice within NRCS. Riparian forest buffers are funded through many federal conservation programs, including CRP, EQIP, CSP, and WHIP. It is also the only agroforestry practice since 2008 that has been applied and reported in every NRCS region, the Pacific Island Area, the Caribbean Area, and in 47 states. No other NRCS agroforestry practice has such wide spread acceptance and use. 🌳

Applied and reported riparian forest buffer practice (Code 391) for FY 2008, 2009, and 2010 for all land uses and all programs

Location	Acres Applied	Number Applied
National	122,846	12,730
East Region	42,768	7,008
Central Region	55,100	4,665
West Region	24,978	1,057

Source: NRCS IDEA (Integrated Data for Enterprise Analysis) Report date, 13 November 2010.



HIP HOP APP:

Houston Toad CCPI

Doug Wallace
NRCS Lead Agroforester
Lincoln, NE

THE Cooperative Conservation Partnership Initiative (CCPI) is a voluntary conservation initiative that was established as a new program in the 2008 Farm Bill. CCPI enables the use of EQIP, CSP and WHIP funds, along with the resources of eligible partners, to provide financial and technical assistance to owners and operators of agricultural and nonindustrial private forest lands to achieve specific natural resource objectives.

In June 2009 the Environmental Defense Fund (EDF) entered into a partnership agreement with NRCS to establish the Houston Toad Cooperative Conservation Partnership Initiative (Houston Toad CCPI). Conservation priorities of the Houston

Houston Toad – *Bufa houstonensis*.
Photo copyright © Gary Nafis.

Toad CCPI include facilitating the recovery of the federally endangered Houston toad, improving water quality in Alum Creek, sequestering carbon through reforestation and sustainable forest management, and developing habitat-sensitive fire breaks so as to facilitate the implementation of prescribed burning and minimize the potential for catastrophic wildfire.

Within the 105,000-acre project area EDF and its partners have the following objectives:

- Restoring/enhancing 13,500 acres of forest habitats that will benefit the

Houston toad through the implementation of various conservation practices including forest stand improvement, prescribed burning, prescribed forestry, and others.

- Creating 20 linear miles of habitat-sensitive fire breaks
- Restoring 12,000 linear feet (length) of riparian forest buffer along Alum Creek at widths ranging from 35 to 200 feet.
- Quantifying the carbon sequestration value of re-forestation and sustainable forestry projects and facilitating the aggregation and sale of associated carbon credits.
- Educating landowners about appropriate conservation practices, resources that are available to them, and carbon markets.



Restoration and enhancement of forest habitats in the Lost Pines Ecosystem will facilitate recovery of the federally endangered Houston toad and benefit a variety of other wildlife including quail and turkey. The quantification of carbon sequestration that results from these forest projects will facilitate the participation of producers in carbon markets. Fire breaks will be created in such a manner as to minimize soil disturbance and maintain tree canopy. These “habitat-sensitive” fire breaks will minimize any potential for harm to the Houston toad while still facilitating the implementation of prescribed burning and limiting the ability of wildfires to spread across the landscape. The restoration of riparian forest buffer will provide habitat for neo-tropical migrant songbirds and other wildlife. These forest buffers will also enhance water quality in Alum Creek, which is an important source of water for wetlands and ponds that support Houston toad breeding. ♣

Ephemeral ponds and slow moving shallow streams are critical habitat for the Houston Toad. Photo courtesy Karan A. Rawlins.





How wide is wide enough?

Rich Straight
USFS Lead Agroforester
Lincoln, NE

WHILE water quality is a primary purpose for installing riparian buffers and filter strips, the vast majority are installed without a planning for a specific improvement such as 20% reduction in dissolved nitrogen or 50% increase in sediment trapping. This is partly due to the fact that the conservation buffer science is still developing and that rules for conservation programs that encourage buffer installation often lag behind the science that supports them. However, as regulations and expectations of agricultural lands increase and local water quality needs become more clearly defined, specific water quality improvements for conservation buffers should follow.

To assist local conservationists and landowners in designing goal-oriented conservation buffers NAC scientists are

refining tools for planning and designing riparian buffers. The Buffer Width Planning tool and a step-by-process for designing multi-functional buffers are now available online and as a part of the Conservation Buffer Guidelines field book available from NAC. Armed with these two apps natural resource professionals will be better equipped to design conservation buffers that can achieve specific and multiple goals for the landowner and local conservation districts.

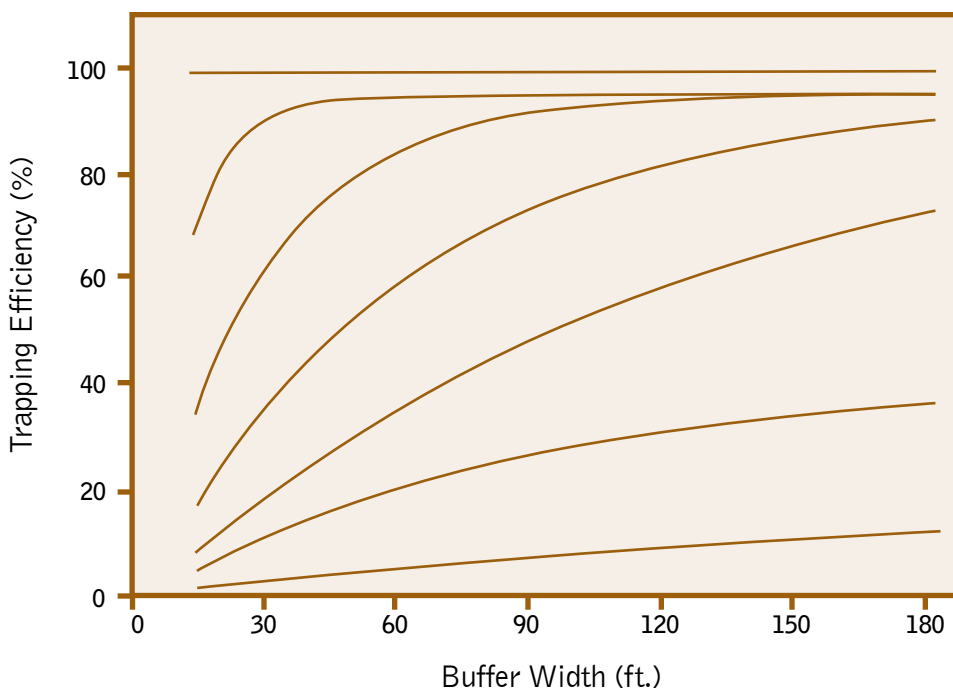
The Buffer Width Tool is based on a wide range of research and on the ground verification. The process of using the tool begins by comparing the actual field condition to the seven reference field conditions represented by the seven curves on a graph. The specific conditions for each curve can be found in the tool. Field conditions are defined according to four field factors or conditions, one of three pollutant types to be controlled and with a 2.4 inch/hour rainfall event.

- **Field Length** – Length of contributing area to buffer
- **Slope** – Average slope of the buffer and contributing area
- **Soil Texture Categories** – Coarse, Medium, and Fine
- **C-Factor (from Universal Soil Loss Equation)** – Combination of vegetation cover and tillage practice
- **Pollutant Type** – Dissolved pollutants include nitrates and pesticides, dissolved P, and sediment

It is very unlikely that the actual field conditions will match exactly with any of the seven reference field conditions. The user needs to select the field condition that is most similar to the actual field condition and following the Line Adjustment Selection Rules for each field factor, see Table B in the Buffer Guide, determine the final line to use for determining the buffer design width. Now that a buffer width curve has been selected the user can apply the desired level of pollutant trapping to determine the recommended buffer width.

The final buffer width will be determined using information derived from the Buffer Width Tool, program guidelines, local regulations, and of course the landowner's goals and limitations. Of course water quality may not be the only desired outcome from installing a riparian buffer.

Conservation buffers, including riparian forest buffers, can potentially provide many different benefits above and beyond water quality. As society's and landowner's demands and expectations from working lands and conservation practices increase so does the complexity of land management. Just like your work calendar, the more you try to multi-task and fit into each week, the more complicated it becomes. The Conservation Buffer Guide can help. At first glance the Conservation Buffer Guide may seem a little daunting with its 80+ guidelines divided into seven natural



resource issues representing thirty-five different buffer functions. Where do you begin? Well, the Buffer Guide also has some useful instructions in a little known chapter called, "How to Use this Guide."

The "How to Use this Guide" section of the Conservation Buffer Guide not only briefly describes how the Guide is organized it also walks the user through a step-by-step process of how to bring together the relevant buffer functions and guidelines to design multi-purpose conservation buffers. Working through this process it becomes easier to identify the most restrictive design elements and possibly desired buffer functions that are incompatible. The Conservation Buffer Guide combined with professional judgment, landowner experience, and program limitations can be a valuable tool in creating multi-tasking conservation buffers.

A concise version of the Buffer Width Tool, as a PowerPoint slide, can be downloaded from www.unl.edu/nac/bufferwidth.htm, and the PDF version of the Conservation Buffer Guide containing both the "Buffer Width Tool" and "How to Use this Guide" can be viewed or downloaded from, www.unl.edu/nac/bufferguidelines. 🌱

Table B: Line Selection Adjustment Rules

	Adjustment Rule
Pollutant Type	3 lines higher (+3) from dissolved pollutants to sediment 2 lines higher (+2) from dissolved pollutants to total P 1 line lower (-1) from sediment to total P 3 lines lower (-3) from sediment to dissolved pollutants
Field Length	1 line higher (+1) for each halving of the field length 1 line lower (-1) for each doubling of the field length
Slope	1 line higher (+1) for each 2.5% lesser slope 1 line lower (-1) for each 2.5% greater slope
Soil Texture	1 line higher (+1) for each soil category coarser 1 line lower (-1) for each soil category finer
C-Factor	1 line higher (+1) for each 0.35 lower C-Factor 1 line lower (-1) for each 0.35 higher C-Factor

Pollutant Type

Dissolved pollutants include nitrates, dissolved P, and soluble pesticides

Soil Texture Categories

Coarse = Sandy loam, sandy clay loam, and fine sandy loam
Medium = Very fine sandy loam, loam, and silt loam
Fine = Clay loam, silty clay loam, and silt

Field Length

Length of contributing area to the buffer

C-Factor (from Universal Soil Loss Equation)

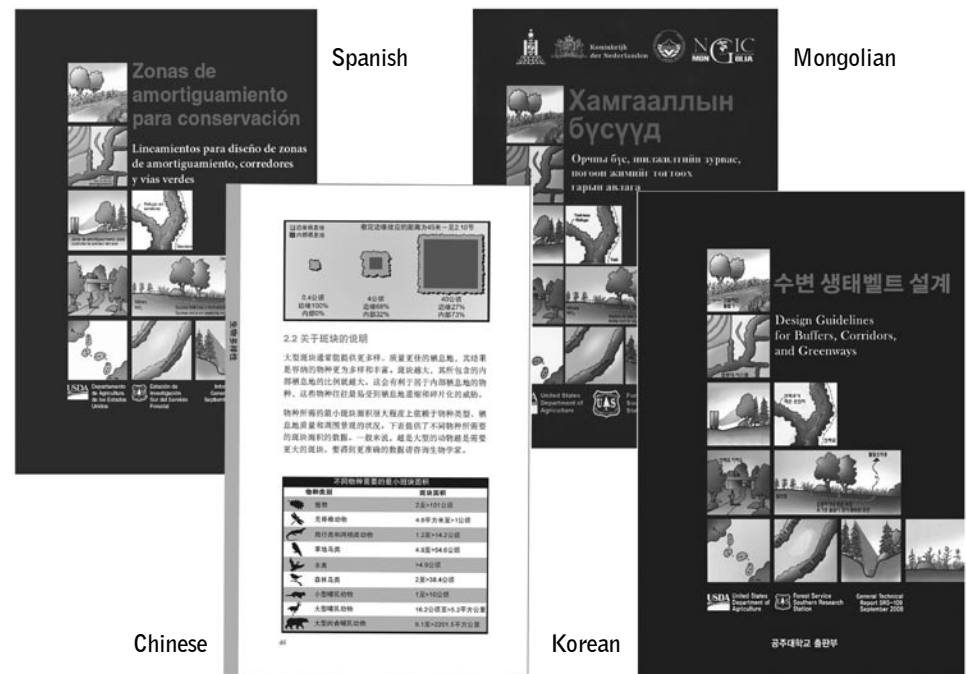
Cropland, clean tillage = 1.0 Cropland, plow tillage, low residue = 0.8
Pasture, permanent grass = 0.003 Forest, full canopy = 0.0001
Construction site, no mulch = 1.0 Construction site with secured mulch = 0.1

Slope

Average slope of the buffer and contributing area

Nothing lost in translation

SINCE NAC's 2009 release of the Conservation Buffers Guidelines over 10,000 copies have been requested and distributed. In 2010 NAC released and printed a Spanish language version of the Buffer Guide along with a Chinese language version that will be printed in early 2011. Conservation agencies in other countries have also recognized the Buffer Guide's usefulness and have done their own translations into Korean, Mongolian, significant portions into Hebrew and Agriculture Canada is working on a French version. You can download a PDF of the Conservation Buffer Guidelines at www.unl.edu/nac/bufferguidelines. 🌱





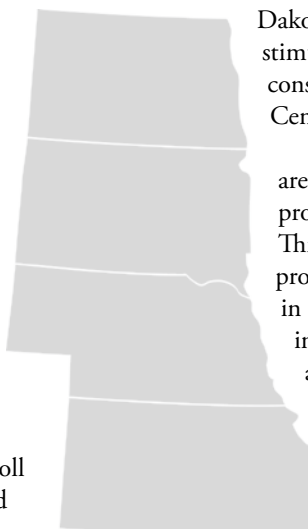
FUNDING APP:

Regional renovation & restoration

Tasha Gibby
NRCS Public Affairs Specialist
Bismarck, North Dakota

AGRICULTURE producers in North Dakota, South Dakota, Nebraska, and Kansas are eligible to renovate shelterbelts and restore forested riparian buffers as part of two Cooperative Conservation Partnership Initiative (CCPI) proposals. Signup began last July for the FY 2010 funding. Producers who wish to enroll in one of the CCPI proposals should contact their local Natural Resources Conservation Service (NRCS) field office to schedule an appointment or to complete an application.

“By partnering with the North Dakota Forest Service through the CCPI, we are helping farmers and ranchers maintain the benefits provided by shelterbelts and riparian forests into the future,” said Paul Sweeney, NRCS State Conservationist in North



Dakota. “These proposals will stimulate natural resource conservation across the Central Great Plains.”

The two CCPI proposals are part of a pool of 26 projects in 15 states. Through CCPI, the USDA provided roughly \$817,000 in financial assistance in FY 2010, which is administered by NRCS.

These projects will work through the existing Environmental Quality Incentives Program (EQIP) to leverage additional services and

resources from the state forestry agencies of North Dakota, South Dakota, Nebraska, and Kansas as well as other non-federal partners, to implement conservation on farms, ranches, and forest lands.

“Many shelterbelts and riparian forests are no longer providing the benefits to agricultural producers that they have

in the past. Renovation practices are needed to ensure shelterbelts control soil erosion, protect farmsteads, and conserve energy and riparian forests improve water quality, stabilize stream banks and reduce downstream flooding,” says North Dakota State Forester Larry Kotchman. Both CCPI proposals apply to all agricultural lands in the four states. For additional information about CCPI, please visit the Cooperative Conservation Partnership Initiative Web page at www.nrcs.usda.gov/programs/ccpi/index.html. 🌳



“By partnering with the North Dakota Forest Service through the CCPI, we are helping farmers and ranchers maintain benefits provided by shelterbelts and riparian forests into the future,”

said Paul Sweeney, NRCS State Conservationist in North Dakota

Shelterbelt (top right) and riparian forest buffer practices (bottom right). USDA National Agroforestry Center file photos.





National Agroforestry Center Update 2010

A Partnership of the Forest Service and Natural Resources Conservation Service

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Technology Transfer

Hill Farm Workshop and Field Day

Agroforesters Rich Straight and Doug Wallace assisted Terry Clason, NRCS state forester in Louisiana on June 4, with a workshop and field day at the Hill Farm near Homer. NAC provided technical comments and discussion at three of the stops on the field day. Over 50 landowners and NRCS field office staff from three states attended.

Earth Wellness Festival

Researcher Michele Schoeneberger and Agroforester Rich Straight presented "Managing Tree Resources" to Lincoln, NE public and private schools on March 29-30, 2010 at Lincoln's Southeast Community College.

"NEW" Pop Up Banners

NAC developed three, free standing, pop-up display banners for promoting agroforestry for use by partners – *Working Trees* for Agriculture; *Working Trees* for Communities; and *Working Trees* for Water Quality.

Alcorn State University Field Day

Agroforester Doug Wallace was an invited speaker on August 26, 2010 at the 2010 Alcorn State University Agriculture Research and Extension Field Day outside of Lorman, MS. Over 200 participants attended the field day. Faculty, research scientists, and staff presented research project information and discussed the benefits for enhancing profitability and sustainability of small and limited resource farms.

Kansas Agroforestry Field Day

Agroforester Rich Straight presented windbreak renovation information to farmers and natural resource professionals in SW Kansas on May 20, 2010.

Lunch~n~Learn

Director Andy Mason was the featured speaker at a "Lunch~n~Learn" seminar sponsored by the National Coalition for Food & Agriculture Research, Capitol Hill, on July 19, 2010 in Washington, DC. The audience included about 60 Congressional staff.

The Center for Agroforestry's Inaugural Research Symposium

Director Andy Mason presented a keynote address, *Agroforestry in America: New opportunities for a sustainable future*, at the University of Missouri, Center for Agroforestry's Inaugural Research Symposium on January 6, 2010 in Columbia, MO. Approximately 50 university and agency professionals attended in person and an additional 50—via live web cast.

Interagency Agroforestry Team Workshop

NAC assisted with the organizational activities, presentation support, and travel logistics associated with the Agroforestry Roundtable Workshop hosted by the USDA Interagency Agroforestry Team (IAT) that was held on May 25-26 in Washington, DC. Over 90 stakeholders provided input for the strategic agroforestry plan. The first day was also broadcast live over the internet – 648 individuals listened in across the nation. The purpose of the workshop was two-fold: 1) Increase awareness and support for expanding the application of agroforestry to address USDA priorities; and 2) Gain input from a broad diversity of invited stakeholders on a National Strategic Framework for Agroforestry that is being developed by the Interagency Agroforestry Team (IAT).

Silvopasture Training Website and DVD

NAC partnered with Jim Hamilton of North Carolina Extension and Warnell School of Forestry, University of Georgia to create an online silvopasture training. This course is a companion resource to the technical handbook, *Silvopasture: Establishment & management principles for pine forests in the Southeastern United States*. The site is a self-paced online course and a resource to enable natural resource professionals and landowners to understand and apply the economic and ecological principals of silvopasture.

<http://www.silvopasture.org/>

Staff Update

Andy Mason was appointed as NAC's Forest Service Director in November 2010.

Doug Wallace was selected as Natural Resources Conservation Service Lead Agroforester at NAC in March 2010.

Research

CanVis: Picture Better Conservation

The award-winning visual simulation software, CanVis, was updated to run on the latest Windows operating system. The image-editing program allows users to create edited photos of a landowner's property to depict proposed conservation and management practices. Researcher Gary Bentrup also worked with the National Oceanic Atmospheric Administration (NOAA) to create an online video library of resources for CanVis users.

Variable-width Riparian Buffer Tool

Researcher Mike Dosskey's field tool for designing variable-width riparian buffers is being upgraded. This new computer tool will enable quick design of effective riparian buffers over large planning areas and possible application for water quality credit trading activities.

The Global Research Alliance on Agricultural Greenhouse Gases

Research Program Leader Michele Schoeneberger was invited to join the Cropland Group of this new international alliance and bring agroforestry science to group, which is focused on bridging gaps in research on agricultural greenhouse gas emissions. The Alliance was launched at the Copenhagen climate summit in December 2009.

Forest Farming Networks

Researcher Jim Chamberlain is working with colleagues at the University of Georgia, Virginia Tech, and the Catawba Sustainability Center to establish long term research plots and work with a local forest farming network to demonstrate the viability of native plants as an alternative income source, understand how to grow and market native plants, and examine the social factors that influence adoption of forest farming practices on private lands.

Conservation Buffer Guide

NAC translated and printed Spanish and Chinese versions of the "Conservation Buffer Guide" by Gary Bentrup. The Spanish version was mailed to 1,400 resource professionals throughout the United States. *Conservation Buffers: Design Guidelines for Buffers, Corridors, and Greenways* provides over 80 illustrated design guidelines synthesized and developed from a review of over 1,400 research publications.

This publication is available for order as a spiral-bound field guide. Downloadable PDF Spanish, Simplified Chinese, and Korean translations are available at: <http://www.unl.edu/nac/bufferguidelines/index.html>

Ramps: Know your Forest/Know Your Food

Researchers Jim Chamberlain and Todd Kellerman know that ramps, sometimes called wild onions, are a popular culinary delicacy from the Southern Appalachian forests, but not much is known about how to grow them and manage the forest to enhance productivity. Using research plots and GIS technology NAC is learning more about the best sites and how to manage them to increase income from ramps on private lands.

FY2010 Requested Publications

Working Trees Series	Quantity
Agriculture / Spanish	1,372
Communities	1,680
Livestock / Spanish	1,727
Livestock - SE / Spanish	615
Silvopasture	672
Wildlife	2,282
Water Quality	2,600
Windbreak Series (set of eleven)	2,714
Windbreaks for Conservation	364
Miscellaneous	1,496
Conservation Buffer Guide	1,018
Conservation Buffer Guide/Spanish	572
CanVis	151
Total Worldwide	17,263

48 states including Puerto Rico
and 21 countries were serviced.

Countries Serviced

Australia	Germany	Poland
Canada	Greece	Portugal
Colombia	Indonesia	Rep of Korea
Czech Republic	Ireland	Romania
England	Israel	Serbia
Estonia	Italy	The Netherlands
Ethiopia	Mexico	Turkey



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 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.

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Apps

Continued from page 1

Clearly from a social and an economic standpoint, allowing the floodplain to revert to a completely natural state and allow flooding to occur whenever and where ever would be a radical and largely unpopular feat. If that alternative is not feasible or practical, then what alternatives are left for a landowner to consider? While not a perfect solution, because agroforestry systems will never be able to eliminate flooding, agroforestry systems can help to mitigate and lessen the flood damage that occurs from these flooding events. Creating an agroforestry floodplain system that accommodates, rather than eliminates flooding, but still maintains economic and biological values, can be an acceptable alternative. A key element in this option is reestablishing working trees along our river and stream systems.

Riparian forest buffers, like all agroforestry practices, can be designed and applied to provide many different benefits depending on the site conditions,

Riparian forest buffers are widely used because of the significant level of benefits that can be derived from relatively small investments of owner resources.

landowner goals, and available resources. Riparian forest buffers are also widely used because of the significant level of benefits that can be derived from relatively small investments of owner resources and land needed to create an effective and productive conservation buffer application. But like most conservation practices, riparian forest buffers are even more effective as part of a smart farm system rather than a stand alone, single purpose application. 🌳

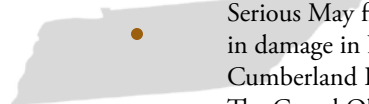


Iowa 2010 flooding. USDA NRCS file photo.



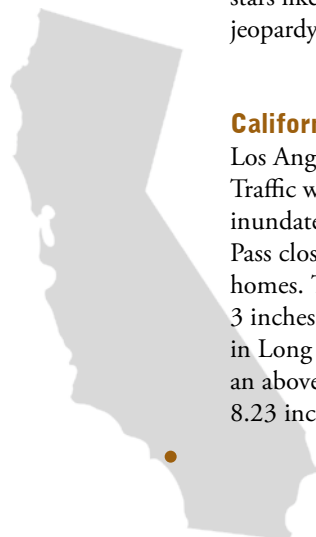
Iowa

Damage to roads, bridges and other public facilities in 57 Iowa counties from this year's flooding are close to \$150 million. An average of 23.23 inches of rain fell from June through August—making the season the second-soggiest on record. In 1993, the state recorded an average of 26.83 inches of rain during the same period.



Tennessee

Serious May flooding in Tennessee caused more than \$2 billion in damage in Nashville alone. Record two-day rains swelled the Cumberland River. Even the heart of country music was underwater. The Grand Ole Opry, along with the Country Music Hall of Fame, was flooded. Priceless music memorabilia including recordings of stars like Hank Williams, Patsy Klein and Dolly Parton were in jeopardy. The Grand Ole Opry reopened on September 28.



California

Los Angeles's latest December 2010 storm brought heavy flooding. Traffic was a nightmare, with portions of the 710 and 405 freeways inundated by several feet of water and the Grapevine and Cajon Pass closed by snow. Evacuations were ordered for more than 1,000 homes. The back-to-back-to-back wallops have dropped more than 3 inches of rain on downtown Los Angeles and more than 5 inches in Long Beach since Sunday. The precipitation has pushed L.A. into an above-average rainfall total for this time of year—with a total of 8.23 inches since July.

Upcoming Events

March 12, 2011

Tri-State Forest Stewardship Conference.
Sinsinawa, WI.
www.extension.iastate.edu/forestry/tri-state/introduction.html

April 18–20, 2011

2011 American Water Resources Association (AWRA) Spring Specialty Conference. Baltimore, MD.
www.awra.org/meetings/Baltimore2011/

April 19–20, 2011

Conservation Buffer Workshop.
Portland, OR. www.swcs.org/index.cfm?nodeID=29025&audienceID=1

June 4–9, 2011

12th North American Agroforestry Conference, "Agroforestry: A Profitable Land Use." Athens, GA. <http://hosting.caes.uga.edu/2011NAAC/>

July 6–8, 2011

North American Invasive Plant Ecology and Management Short Course. North Platte, NE. <http://ipscourse.unl.edu/>

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



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Mission

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Policy

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Inside Agroforestry

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