

# USDA National Agroforestry Center Summary Report: FY 2010

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## USDA National Agroforestry Center Summary Report: FY 2010

### Director's Note

The USDA National Agroforestry Center (NAC) is pleased to present this summary of our Research & Development and Technology Transfer & Application activities in fiscal year 2010. NAC is committed to providing technical services, tools, and research to our customers that advance the application of agroforestry for the benefit of the landowner, the community, and the nation.

### The USDA National Agroforestry Center

The USDA National Agroforestry Center (NAC) is a unique 16 year partnership among the Forest Service's (FS) Research & Development (*Southern Research Station*) and State & Private Forestry mission areas, and the Natural Resources Conservation Service (NRCS).

NAC's mission is to accelerate the application of agroforestry through a national network of partners. NAC develops and delivers science, tools and training to help landowners and natural resource professionals design, plan, and apply agroforestry practices strategically at the site, landscape, and regional scales.

- NAC products include: field demonstrations; training workshops; *Inside Agroforestry* newsletter; *Agroforestry Notes*, videos; brochures with coordinated displays; research; and tools.
- NAC's key customers are the natural resource professionals who work with farmers, ranchers, forest owners, and communities nationwide.
- NAC publications are requested by landowners, forestry and conservation partners in all 50 states and many foreign countries.

### Administration & Support Services

- Andy Mason, Director ([amason@fs.fed.us](mailto:amason@fs.fed.us))
- Kirsten Stuart, Support Service Specialist ([kstuart@fs.fed.us](mailto:kstuart@fs.fed.us))
- Nancy Hammond, Secretary ([nhammond@fs.fed.us](mailto:nhammond@fs.fed.us))
- Richard Carman, Biological Technician ([rcarman@fs.fed.us](mailto:rcarman@fs.fed.us))

### Research & Development

- Michele Schoeneberger, Research Program Leader ([mschoeneberger@fs.fed.us](mailto:mschoeneberger@fs.fed.us))
- Michael Dosskey, Research Riparian Ecologist ([mdosskey@fs.fed.us](mailto:mdosskey@fs.fed.us))
- Gary Bentrup, Research Landscape Planner ([gbentrup@fs.fed.us](mailto:gbentrup@fs.fed.us))
- Jim Chamberlain, Research Forest Products Technologist ([jchamberlain@fs.fed.us](mailto:jchamberlain@fs.fed.us))
- Todd Kellerman, GIS/Remote Sensing Specialist ([tkellerman@fs.fed.us](mailto:tkellerman@fs.fed.us))

### Technology Transfer & Application

- Rich Straight, FS Lead Agroforester ([rstraight@fs.fed.us](mailto:rstraight@fs.fed.us))
- Doug Wallace, NRCS Lead Agroforester ([doug.wallace@ftw.usda.gov](mailto:doug.wallace@ftw.usda.gov))

### NAC Locations:

#### Main Office

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1945 North 38th Street  
Lincoln, Nebraska 68583-0822

#### Director Office

USDA Forest Service  
201 14<sup>th</sup> Street, SW (4SE)  
Washington, DC 20250

#### Field Office

1650 Ramble Road  
Blacksburg, Virginia  
24060-6349



**NAC Staffing Changes: Andy Mason**, former NRCS National Forester and career FS employee, was appointed NAC Director in November 2010, replacing Greg Ruark, who since 2005 had been serving a dual role as both NAC Director and Assistant Director for Research at the FS's Southern Research Station. Andy is currently located in Washington D.C.

**Doug Wallace**, former NRCS Missouri State Forester, was selected as the NRCS Lead Agroforester at NAC in March 2010, replacing Bruce Wight (Currently NRCS National Forester). Doug and Rich Straight, FS Lead Agroforester serve as co-leaders of NAC's technology transfer program. Doug and Rich are located in Lincoln, NE.

## Technology Transfer & Application

Our NRCS and FS team works alongside a national network of agencies, university and extension specialists, non-governmental organizations, and other cooperators to transfer state-of-the-art agroforestry science and technology to the people who provide assistance to landowners, land managers, and communities. NAC utilizes a variety of approaches to promote awareness and appreciation of agroforestry, with the ultimate aim of increasing adoption and on-the-ground application of agroforestry practices and systems. During FY 2010 these activities included:

- **Hill Farm Workshop and Field Day**

- FS Lead Agroforester Straight and NRCS Lead Agroforester Wallace assisted Terry Clason, NRCS State Forester in Louisiana with a silvopasture workshop and field day at the Hill Farm near Homer. Straight and Wallace provided technical comments and discussion at 3 of the stops at the field day. Over 50 landowners and NRCS field office personnel from three states attended the June 4, 2010 event.



- **Earth Wellness Festival**

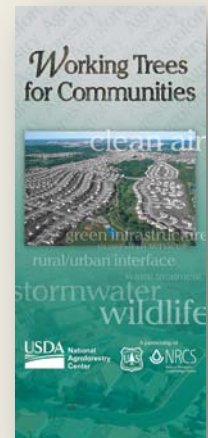
- Research Program Leader Schoeneberger and FS Lead Agroforester Straight with support from Biological Technician Carman presented “Managing Tree Resources” to over 250 students from Lincoln, NE public and private schools on March 29-30, 2010 at Southeast Community College in Lincoln, NE.

- **Family Nature Night Out**

- Research Program Leader Schoeneberger with support from Biological Technician Carman presented “Budding Foresters” to 717 Nebraska children and their families on April 8 at Prescott Elementary and on May 18 at Maxey Elementary helping families re-connect with nature while having fun and learning about nature.

- **New Agroforestry Pop-up Banners**

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



- **Alcorn State University Agriculture Research and Extension Field Day**

- NRCS Lead Agroforester Wallace, an invited speaker, presented “Agroforestry: Sustainable Farming Through Trees that Work.” at the 2010 Alcorn State University Agriculture Research and Extension Field Day outside of Lorman, MS on August 26, 2010. 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.



- **Inside Agroforestry Newsletter**
  - NAC completed and distributed one newsletter (Volume 18, Issue 1), titled “Now is the Time for Agroforestry”. This newsletter went out to 6,500 people.
- **Kansas Agroforestry Field Day**
  - FS Lead Agroforester Straight presented windbreak renovation information to farmers and natural resource professionals in SW Kansas on May 20, 2010.
- **The Center for Agroforestry’s Inaugural Research Symposium**
  - Director Mason presented the keynote address, *Agroforestry in America: New Opportunities for a Sustainable Future*, at the University of Missouri’s Center for Agroforestry’s Inaugural Research Symposium on January 6, 2010, Columbia, MO. Approximately 50 university and agency professionals attended in-person and an additional 50 via live web cast.
- **Capitol Hill “Lunch~N~Learn” Seminar**
  - Director Mason was the featured speaker at a “Lunch~N~Learn” seminar sponsored by the National Coalition for Food & Agricultural Research, Capitol Hill, on July 19, 2010, in Washington, D.C. The audience included about 60 Congressional staff.
- **NACD-NASF Joint Forestry Committee Meeting**
  - Director Mason gave an update on the Center’s activities and the USDA Agroforestry Strategic Framework at a joint meeting of the NACD Forest Resource Policy Group and NASF Forest Resource Management Committee, on August 31, 2010, in Madison WI.
- **USDA Science Performance Team Presentation**
  - Director Mason briefed the USDA Science Performance Team (members represent all USDA research agencies) about NAC and the USDA Agroforestry Strategic Framework.
- **Minority Landowner Magazine**
  - NRCS Lead Agroforester Wallace authored an article for the summer issue of *Minority Landowner Magazine* on opportunities within 2008 Farm Bill programs to fund and apply agroforestry practices.
- **USDA’s Know Your Farmer, Know Your Food (KYF2) initiative**
  - Director Mason represents the FS on USDA’s KYF2 task force and worked with NAC staff to develop a blog post regarding how agroforestry can support local and regional food systems: <http://kyf.blogs.usda.gov/2010/09/16/agroforestry-means-food-prosperity%e2%80%a6-and-more/>



**USDA Agroforestry Strategic Framework:** Director Mason is leading an Interagency Agroforestry Team (IAT) that is charged with developing a first-of-its-kind national strategic framework for agroforestry. The new five-year strategy will identify USDA’s future emphasis areas in agroforestry research and development and technology transfer, as well as guide NAC’s future direction. NAC provides significant support to the IAT, which includes representatives from five USDA agencies (FS, NRCS, Agricultural Research Service, National Institute of Food and Agriculture, and the Farm Service Agency) and two key partners (National Associations of State Foresters and Conservation Districts).

## Research & Development

Our FS Research & Development team conducts research to provide science-based knowledge and tools to assist in planning, designing and managing agroforestry systems. NAC capitalizes on in-house expertise as well as partnering with other research organizations to efficiently focus research resources and activities. For 2010 these activities included:

- **Riparian Research Synthesis**
  - Research Riparian Ecologist Mike Dosskey reviewed and synthesized the scientific literature to help inform watershed planners about the potentials for water quality improvement through the management of riparian vegetation. The synthesis will assist with gauging levels and timeframes of impacts from riparian restoration activities.
- **Picture Better Conservation**
  - Research Landscape Planner Bentrup updated NAC's award-winning visual simulation software, *CanVis*, to run on the latest Windows operating system. The image-editing program allows users to create edited photos of landscape situations depicting before and after simulations of applied conservation practices. Bentrup worked with National Oceanic Atmospheric Administration (NOAA) to create an online video library of resources for *CanVis* users.



- **Enhancing the Buffer Capability Index**
  - Research Riparian Ecologist Mike Dosskey is leading a NAC project to create an effective and easy to use tool for identifying the most effective locations within a watershed for conservation buffers and to improve their overall cost-effectiveness.
- **Variable-width Riparian Buffer Tool**
  - Research Riparian Ecologist Mike Dosskey is upgrading NAC's field tool for designing variable-width riparian buffers to include additional site conditions. The new computer-based tool will enable quick design of effective riparian buffers over large planning areas and possible application for water quality credit trading activities.

- **Forest Farming Networks**

- Research Forest Products Technologist Chamberlain is leading NAC's work 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.

- **Ramps: Know Your Forest/Know Your Food**

- Research Forest Products Technologist Chamberlain has studied ramp biology and harvesting over the last 10 years to develop best management practices for private and public forest managers. Each year literally tons of ramps, sometimes called wild onions, are harvested for eating from Southern Appalachian forests. Long term study sites are being developed to understand how best to harvest and cultivate ramp seeds to establish new harvest patches. Using GIS technology, GIS/Remote Sensing Specialist, Todd Kellerman and Chamberlain are also modeling where ramp patches can be found and where new ramp patches might be successively cultivated. Findings from these efforts will aid policy makers and managers in developing methods to manage these edible forest products.



- **Black Cohosh: New Video Advancing a Valuable Non-timber Forest Product**

- Research Forest Products Technologist Chamberlain is featured in a video that highlights the Black Cohosh Sustainability Harvest Study. Volunteer citizen scientists examine the impact of harvesting on natural populations of this important native medicinal plant species. Through experimental learning, volunteers gain experience in scientific methods and protocols to conserve understory herbaceous plants.

- **NAC Research and Development Output Summary:**

- Formally reviewed and refereed publications: 2
- Informally reviewed and refereed publications: 6
- Non-refereed publications : 17
- Presentations to lay organizations: 17
- Presentations to scientific and professional organizations and societies: 20

**Conservation Buffer Guide:** NAC translated and printed Spanish and Chinese versions of the “Conservation Buffer Guide” by Research Landscape Planner Gary Bentrup. A Spanish version was mailed to 1,400 resource professionals in the southern US. *Conservation Buffers: Design Guidelines for Buffers, Corridors, and Greenways* provides over 80 illustrated design guidelines synthesized and developed from a review of over 1400 research publications. Bentrup received a 2010 Award of Excellence from the National Association of Government Communicators (NAGC) for the guide, which was first published in 2009. Each guideline describes a specific way that a vegetative buffer can be applied to protect soil, improve air and water quality, enhance fish and wildlife habitat, produce economic products, provide recreation opportunities, or beautify the landscape. This publication is available for order as a spiral-bound field guide. Downloadable PDF Spanish, Simplified Chinese, and Korean translations are also now available on the NAC web site.

<http://www.unl.edu/nac/bufferguidelines/index.html>

### Foreign Language Versions

The image displays four covers of the 'Conservation Buffer Guide' in different languages. The Spanish cover is titled 'Zonas de amortiguamiento para conservación'. The Chinese cover features a diagram of a buffer zone with dimensions and percentages. The Mongolian cover is titled 'Хамгааллын бүсүүд'. The Korean cover is titled '수변 생태벨트 설계' (Design Guidelines for Buffers, Corridors, and Greenways).

物种类型	缓冲带宽度
植物	2至>101公尺
无脊椎动物	4.0平方米至>1公顷
爬行类和两栖类动物	1.2至>14.2公顷
鸟类及兽类	4.0至>54.6公顷
鱼类	>4.9公顷
森林及类	2至>38.4公顷
小型哺乳动物	1至>12公顷
大型哺乳动物	14.2公顷至>4.2平方公里
大型有脊椎动物	0.1至>2201.6平方公里

## Partnerships

Leveraging time, money, knowledge, and expertise through partnerships is an effective means for the USDA National Agroforestry Center to expand the network of agencies and groups involved with agroforestry. For 2010 these partnerships included:

- **Agricultural Research Service (ARS)**

- Research Program Leader Schoeneberger worked closely with ARS and FS R&D staff in Washington DC to plan and implement a successful two-day workshop in October 2009 in Nebraska City, Nebraska. The workshop was focused on exploring opportunities for ARS and FS to collaborate on agroforestry research, especially which could enable bioenergy feedstock production. Participants included 11 ARS scientists and 11 FS scientists from across the U.S. whose skills and interests included agroforestry, genetics, silviculture, agronomics, short rotation forestry, range, soils, economics, logistics and conversion. In addition, there were representatives from NRCS, the National Institute of Food and Agriculture, and FS S&PF. A list of priorities was developed and next steps were defined.

**Agroforestry Roundtable Workshop:** NAC provided significant planning along with considerable logistical support by Kirsten Stuart, Support Service Specialist to this Interagency Agroforestry Team (IAT) sponsored national event on May 25-26, 2010 in Washington DC, which was attended by over 90 stakeholders representing universities/extension, Tribes, landowner and conservation organizations, industry, state agencies, and other USDA/federal agencies. USDA Deputy Secretary Kathleen Merrigan opened the first day's "Agroforestry in America" seminar, which was broadcast live over the internet, allowing 648 individuals to join virtually from 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's priorities; and 2) gain input from a broad diversity of invited stakeholders on the USDA Agroforestry Strategic Framework. The framework is scheduled for completion and release in early 2011.



- **The Global Research Alliance on Agricultural Greenhouse Gases**

- Research Program Leader Schoeneberger was invited to join the Cropland Group of this new international alliance and bring agroforestry science to the 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

- **Nebraska Forest Service**

- NAC is partnering with the Nebraska Forest Service to establish an alley cropping system as a conservation field trial at the Horning State Farm Demonstration Forest, Plattsmouth, NE. One of the perennial crops will include hybrid hazelnut in addition to multiple alley cropping demonstrations with high quality, superior black walnut cultivars, northern pecan, Chinese chestnut, woody florals and hay.

- **University of Minnesota**
  - NAC is providing funding to establish, manage and monitor a new field research and demonstration site that is being developed by the University in cooperation with USDA NRCS and US Forest Service, as well as other university and industry partners. The proposal site will be planted in various alley cropping configurations of herbaceous and woody perennials to evaluate the performance of different cover crop species when inter-planted with trees and to access the impacts of various woody and herbaceous perennials in terms of bio-feedstock production and ecosystem services.
- **Tall Timbers Research Inc.**
  - NAC awarded a grant to monitor quail use of silvopasture systems in South Carolina. Predator and quail populations will be monitored on silvopasture fields that will include improved pasture grasses, warm season grasses, native forbs, legumes and loblolly pine trees to determine if the silvopasture components have a positive impact on the quail population.
- **Wiregrass Resource Conservation and Development (RC&D)**
  - NAC completed a grant in Alabama with the Wiregrass RC&D. The RC&D is assisting two landowners in converting their Conservation Reserve Program (CRP) pine plantations into silvopasture systems. The RC&D also hosted a landowner field day at each site to discuss how to transition from a CRP pine plantation to a functional silvopasture system.
- **Alabama A&M University**
  - NAC is providing funding for a research and demonstration project at Epes, Alabama to access and compare the growth, survival, and development of loblolly pine in a silvopasture system under different rates of grazing by goats.
- **USDA National Agricultural Statistics Service (NASS)**
  - NRCS Lead Agroforester Wallace is working with NASS to add an agroforestry question for the 2012 Census on Agriculture. NAC is also cooperating with NASS to analyze existing data relating to agroforestry activity from the 2008 Census.
- **Tribal Nursery Production in Wisconsin**
  - NAC is providing funding through the Western Forestry and Conservation Association to provide support to the Menominee and Keweenaw Bay Indian Community Tribes in Wisconsin. The Tribes will expand their nursery operations to grow culturally significant plant species for Tribal use by employing agroforestry technologies.



### Current/Ongoing Projects

NAC is assisting with several national agroforestry projects, that when completed, will provide working tools to support increased agroforestry understanding and application. For 2010, these projects include:

- **Forest \*A\* Syst Agroforestry module**
  - NAC is assisting Kris Irwin, Project Manager, Warnell School of Forestry & Natural Resources, University of Georgia to add an agroforestry module to the existing web-based Forest \*A\* Syst site. Forest \*A\* Syst is a self-assessment guide that helps new forest landowners articulate their objectives in a written management plan and foster a working relationship with a resource professional who can provide them with technical assistance.  
<http://www.forestasyst.org/>

- **COMET-VR**
  - NAC is assisting in the beta testing of a new agroforestry module in COMET-VR. The **Voluntary Reporting of Greenhouse Gases-CarbOn Management Evaluation Tool (COMET-VR)** tool is a decision support tool for agricultural producers, land managers, soil scientists and other agricultural interests. COMET-VR provides an interface to a database containing land use data from the Carbon Sequestration Rural Appraisal (CSRA) and calculates in real time the annual carbon flux using a dynamic Century Model simulation. <http://www.cometvr.colostate.edu/>
- **Agroforestry Outreach Manual**
  - FS Lead Agroforester Straight is working closely with Joshua Idassi, Natural Resources Specialist, at North Carolina Agricultural and Technical State University to produce an agroforestry manual for small, limited resource and minority landowners. This practical guide for farms and woodland owners will show farmers how they can apply agroforestry to generate income and create marketing opportunities and make their small family farms and forests profitable.



**Silvopasture Training Web Site:** NAC partnered with Jim Hamilton, North Carolina State University, and the Warnell School of Forestry, University of Georgia, to create an online silvopasture training course. The new website is a companion resource to the technical handbook, *Silvopasture: Establishment & management principles for pine forests in the Southeastern United States*. The site is designed as 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. This website and course is the product of a USDA interagency collaboration between the US Forest Service, Natural Resource Conservation Service, the National Agroforestry Center, and the University of Georgia's BUGWOOD Network.

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

**NAC Publication Request Summary:** NAC Secretary Nancy Hammond continues to respond and fill publication requests from our customers that in 2010, comprised 48 states, including the US territory of Puerto Rico and 21 foreign countries.

### NAC Publication Request Summary

*United States total requested publications – 16,958:*

West – 2,574, Northeast – 6,382, and Southeast – 8,002

*Foreign total requested publications – 305:*

Australia – 2, England – 11, Greece – 1, Italy – 1, Republic of Korea – 127, Canada – 101, Estonia – 5, Indonesia – 6, Mexico – 2, Romania – 3, Colombia – 1, Ethiopia – 3, Ireland – 2, Poland – 1, Serbia – 3, Czech Republic – 12, Germany – 2, Israel – 1, Portugal – 4, The Netherlands - 10, Turkey – 7.

*FY2010 Requested Publications (all sources):*

Publication	Quantity
<b>Working Trees Series</b>	
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 (visual simulation tool)	151
<b>Total Worldwide</b>	<b>17,263</b>

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