Project Leader's Report

September 2004

USDA Forest Service - Southern Research Station - 320 Green Street Athens GA 30602 - http://www.srs.fs.fed.us/disturbance

DIVISE
DISTURBANCE AND MANAGEMENT OF SOUTHERN ECOSYSTEMS

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Outreach Activities:

Three organized groups of 27 people visited the Brender Forest during September. These groups were Boy Scout Troup 127 from Perry, Georgia, Georgia Bureau of Investigation, and a Forest Service Group.

Approximately 26 visitors came by the office at the Brender Forest for information and 30 people signed the register at the Hitchiti Interpretive Trail.

Joe O'Brien was invited to speak by the Department of Ecology and Evolutionary Biology at Tulane University to doctoral students about non-academic career options, focusing on his experiences at the Southern Research Station. He found that the majority of the students hoped to work outside of academia, but most were unaware of the many roles that researchers have in government agencies. They had many questions and some misconceptions, including the notion that they would have little intellectual freedom as a government employee. They expected that a scientist's research would be dictated to him or her by a bureaucrat. Coincidentally, he has been invited by Gayle Edwards of the University of Georgia School of Teacher Education to present a similar seminar next month to a group of 30 UGA graduate students.

Boy Scout group visiting the Hitchiti Experimental Forest

Technology Transfer:

ALABAMA FORESTRY COMMISSION

• Louis Hyman, Fire Staff Officer for the Alabama Forestry Commission, visited Athens and met with Scott Goodrick to discuss methods of automating and improving Alabama's Fire Danger Rating System. The system will integrate weather observations with forecast weather information to provide both observed fire danger and forecast values for the next three to five days.

• Gary Achtemeier developed a stand-alone slide presentation, "SmokePlumeTestCase" that shows details of one of the aircraft flights over a smoke plume on 06 March 2002. This case is being selected for validating several smoke plume algorithms for injection into CMAQ. It was developed for representatives of WRAP, VISTAS, and EPA. The presentation will be available on the Smoke Management web site http://www.srs.fs.usda.gov/smoke/.

• Achtemeier also developed a "representative" vertical smoke profile for Greg Stella, a modeling contractor for VISTAS, to test CMAQ. The profile was based on sounding data provided for Florida by Yong Liu and transformed to the coordinate system in Stella's modeling protocol.

• Mac Callaham attended the Soil Ecology Colloquium in September in Rouen, France. He gave an invited paper on "Policy and management responses to earthworm invasions" and poster "Long-term land use effects on soil invertebrate communities in southern Appalachian Piedmont soils." Callaham contributed to another paper that was presented by cooperator Paul Hendrix, "Invasion of exotic earthworms into native earthworm communities." Abstracts of these papers were reported last FY.

• Ralph DiCosty presented a poster at the EUROSOIL meeting, held in Freiburg, Germany. The poster presented early results of the work on soil carbon being conducted with Steve Kelly, Tim Rials, and John Stanturf. The poster was entitled "Soil black carbon levels and soil organic matter quality under interval prescribed burning in the southeastern United States."

• Joe O'Brien presented a seminar on tropical tree ecophysiology as part of the Ecology and Evolutionary Biology seminar series to approximately 30 students and faculty at Tulane University.

• Tom Waldrop produced a summary document to describe early results of the National Fire and Fire Surrogate Study at the southern Appalachian site. The document was prepared for a presentation to the Governing Board of the Joint Fire Science Program. Although the meeting was cancelled due to Hurricane Ivan,

the document can be viewed on the home page of the Fire Surrogate Study (http://www.fs.fed.us/ffs/).

• In August, Rick Reitz was asked to provide an escaped fire post-mortem of an escaped prescribed fire onto the Francis Marion National Forest in South Carolina, to determine if the person who set the prescribed fire on his own property had adequate suppression resources to detect and suppress an escaped fire. Although investigation reports were helpful, the scorch patterns on the trees themselves tell the story best. To minimize escape, fire should generally be set against the wind (backing fire) and allowed to back into the burn unit from the control line. If this is done the char pattern on tree boles will be low on the bole and char

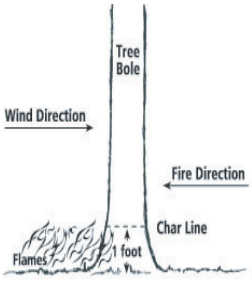


Figure 1

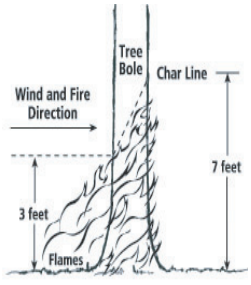


Figure 2

from surface along the bole will be in a line horizontal to the ground (Figure 1). However, if fire is set to travel with the wind (head fire) the char pattern will generally be much higher on a tree bole and angled even higher on the leeward side of the tree. Additionally, the char pattern on the leeward side of a tree will be opposite wind direction (Figure 2). These two facts, char pattern line across tree boles and a higher char pattern on one side of a tree than the other, will tell the type of firing pattern used and direction wind was blowing during the burn. Char patterns indicated that a head fire traveling across private land was intense enough to loft burning embers across the control line and onto available fuels of the Frances Marion National Forest.

• Gary Achtemeier, Scott Goodrick, and Yong Liu presented a seminar at EPA Region 4 Headquarters in Atlanta on SHRMC-4S, the regional air quality modeling platform, particularly progress in linking Daysmoke with CMAQ to provide temporal and spatial distributions of smoke from prescribed burns. In attendance were 15 folks from EPA, and several VISTAS representatives linked via telephone.

• Gary Achtemeier presented a progress report on PB-Coastal Plain and Daysmoke to the Pocosin fire/smoke field project working group. The meeting, held in Manteo, NC, was for the group working on the project funded by the Joint Fire Sciences Program led by Bob Mickler. Approximately 25 scientists, fire managers, and field operatives attended, representing the Forest Service, Fish and Wildlife Service, and EPA. The talk was about progress on these models to date, plans for the future, and data required to

Meetings/Reports:

• John Stanturf attended the European Forest Institute (EFI) Annual Meeting, held in Bangor, Wales (UK). Much of the discussion centered on a new structure for EFI due to its new status as an international organization, and facilitating a smooth transition, which involves dissolving the old association and liquidating its assets and transferring the assets and liabilities to the new EFI. A new Regional Project Centre (RPC) was approved, PHOENIX, Fire Ecology and Post-Fire Management. PHOENIX was proposed by a consortium of institutions around the Mediterranean Basin, from France, Greece, Italy, Portugal, and Spain. The RPC will be managed from ISA/CEABN at Tapada da Ajuda, a university campus in Lisbon, Portugal. Francisco Castro Rego, professor at CEABN (Centro de Ecologia Applicada Prof. Baeta Neves, Instituto Superior de Agronomia) is the coordinator (frego@isa.utl.pt).

• An extension to the EFI meeting was the IUFRO International Conference *Transformation to Continuous Cover Forestry in a Changing Environment—Consequences, Methods, Scenarios, Analyses,* also attended by Stanturf. The conference focused on new silvicultural approaches to meeting the needs of society using either a gradual (transformation) or sudden (conversion) change in forest structure and species composition using techniques that generally favor mixed uneven-aged stands, site-adapted species, and selective harvesting. Such continuous cover or close to nature approaches are an important part of current forest policy on public land in Europe, including the host country of Wales. One of the keynote talks given at the meeting was by Gary Miller, Northeastern Research Station in Morgantown, West Virginia. Gary spoke on "The implications of maintaining a two-age forest canopy in Appalachian Hardwood forests." Parallel sessions covered forest management, biometrics and information technology, ecosystems and biodiversity, and economics and politics. The conference was co-sponsored by IUFRO WP 1.17.02, Restoration of Boreal and Temperate Forests. For such approaches to have much appeal on private land there should be available species of moderate to high commercial value and of at least moderate to high shade tolerance.

• Ralph DiCosty attended the Eurosoil Conference in Freiburg, Germany. Several presentations dealt with soil changes associated with land management and the persistence of carbon in soils. V. Targulian asserted that the majority of diagnostic soil layers in the World Reference Base soil classification system are "bad attractors", as they are unfavorable environments for living creatures. Accordingly, he recommended that soil-forming processes be monitored to ensure future soil quality. C. Kabala showed that one hundred forty years under pine was sufficient to form Podzolic soils (acid soils prone to rapid leaching of nutrients; Spodosols and Entisols in the US Soil Taxonomy). R. Gerlach and E. Eckmeier presented evidence that fires set by past civilizations may be the primary force behind the formation of the deep black mineral soils of Central Europe. C. Largeau presented convincing evidence that certain straight-chain carbon compounds are remarkably persistent in soils. These compounds, even when newly formed, survive harsh acid extractions in the laboratory. Thus, acid extractions may be less suitable than previously thought for separating "young" and "old" soil carbon. For abstracts and papers, visit http://www.bodenkunde.uni-freiburg.de/eurosoil//

• Yong Liu attended the Visibility Improvement State and Tribal Association of the Southeast (VISTAS) Technical Analysis Work Group Meeting, held in Atlanta. Contractors reported progress in characterizing meteorology, air quality modeling, and sensitivity experiments. The Work Group identified a number of priority issues for next steps.

• Mac Callaham, Tom Waldrop and Ken Outcalt attended the Science and Management Integration Committee (SMIC) Meeting of the National Fire and Fire Surrogate Study in Missoula, MT. The group met to discuss the network-wide data analyses that are fast approaching. The group was addressed by ecologist Jessica Gurevitch, who provided an overview of her pioneering work in the area of meta-analytical statistical methods. A highlight of the meeting was a field trip to the Lubrecht Experimental Forest, which is managed by the University of Montana Department of Forestry. While in Missoula, Callaham met with Ralph

Boerner (Ohio State University) to discuss expanded collaboration on the soil ecology work underway at Clemson Forest. The next meeting of SMIC will be hosted by Ken Outcalt at the southern Coastal Plain site in Andalusia, Alabama.

• Tom Waldrop and Kim Crider met with Elizabeth Crone (left) of the University of Montana, Department of Forestry, to review Kim's progress and discuss options for her dissertation. Kim is enrolled as a Ph.D. student at the University of Montana as part of the agency's Scientist Recruitment Program. Dr. Crone serves as her major advisor. Kim is studying source-sink theory and how it might apply to the control of non-native invasive plants in Ponderosa pine ecosystems after wildfire.

• John Stanturf and Rick Reitz will attend the SAF Annual Meeting in Edmonton, Alberta. They will conduct two focus group sessions for the knowledge acquisition study and Reitz will present a paper on Firewise.

• Scott Goodrick and Dave Cleland will present papers at the "Advancing the Fundamental Sciences" meeting next month in San Diego. Scott's paper is on "Numerical Modeling of Vortices on Wildland Fires and Their Potential Impact on Fire behavior and Smoke Dispersion" co-authored by Phil Cunningham, Florida State University Department of Meteorology. Dave's paper, "Sections and Subsections of the United States: Mapping and Applications," is co-authored by James E. Keys, Washington Office.

• Yong Liu will attend the 2004 CMAQ Workshop, to be held at University of North Carolina at Chapel Hill in October. Yong will present a paper "Air Quality Effects of FL Prescribed Fires Simulated with CMAQ" by Liu, Achtemeier, and Goodrick. The agenda includes CMAQ evaluation, model development, climate and pollution feedbacks, air quality forecast, air quality management, and computation.

Science and Management Integration Committee (SMIC) members viewing results at the Montana Fire and Fire Surrogate project site.

Partnerships:

• John Stanturf, Cynthia Fowler, and Rick Reitz established a cooperative agreement with the Society of American Foresters to study the ways professional foresters acquire new technical information. A survey instrument will be tested with focus groups at the Edmonton meeting of the SAF. Cooperator at SAF is Rita Neznek, head of policy. (SRS-04-CA-11330136-187 Society American Foresters "Knowledge Acquisition by Foresters")

• Gary Achtemeier established a cooperative agreement with Oklahoma State University to evaluate the application of PB-Piedmont to Oklahoma forests. Cooperator is J.D. Carlson in the Department of Biosystems and Agricultural Engineering. (SRS-04-CA-11330136-188 Oklahoma State University "Evaluation of PD-Piedmont for operational application to Oklahoma forests and rangelands")

• John Stanturf attended the second planning workshop for the next phase of the ConForest Regional Project Center of the European Forestry Institute (EFI). The ConForest RPC is expanding their focus to conversions of species other than Norway spruce. The work in the unit on restoration of longleaf pine and conversions from other pine and hardwood stands, as well as new work on conversion of pine plantations to natural pine and pine/hardwood stands on public lands fit within this expanded framework. The work unit has provisionally joined the ConForest RPC as an affiliate member; Stanturf is exploring ways to formally affiliate with ConForest and other EFI institutes, such as the one on fire that was recently established. The Forest Service R&D is an affiliate member of EFI.

• Dexter Bland and John Stanturf have begun cooperating with Emile Gardiner, SRS-4155, in a study of willow (*Salix nigra*) establishment. In our first operational use of the newly acquired Air Spade, Dexter Bland excavated 12 root systems of 1-year-old willow plants from the experimental site in Sharkey County, MS.

Dexter Bland using an Air Spade to excavate willow roots.

Willow root in heavy clay soil following the planting trench.

• Joe O'Brien met with Kevin Hiers, The Nature Conservancy (TNC) Fire Program Manager for Georgia and Alabama, and Robert Mitchell of the Joseph W. Jones Center for Ecological Research, to plan new research on fire effects on tree physiology, including applying fire to individual trees to differentially damage roots, the root crown, and the bole while simultaneously measuring sap flux and water potential prior to and after the fires. TNC and the University of Florida will provide an intern for six months to help O'Brien expand preliminary studies on the stress responses of longleaf pines to different kinds of fire damage. The intern will be trained to operate and program data loggers, to use other ecophysiological gear, and will maintain the field experiments.

• Yong Liu met with Van Shrieves (Program Manager) and Darren Palmer (Environmental Scientist) with EPA Region 4 to discuss possible participation of USDA Forest Service in an EPA environmental project, applying remote sensing to questions concerning air quality effects of wildland fire.

• Tom Waldrop and Mac Callaham met with Clemson faculty member Steve Jeffers, and Clemson graduate student Aaron Stottlemyer to discuss research methods related to Waldrop's new study of using beetle-killed areas to meet management and restoration objectives. They developed an experimental design to address questions about the influence of fire intensity on mutualistic relationships between trees and mycorrhizal fungi. Stottlemyer is a former employee of the work unit and is currently pursuing a Ph.D. in fire ecology. He is interested in heat impacts to mycorrhizal abundance on pines and hardwoods. The meeting resulted in a new partnership with Dr. Jeffers.

• Tom Waldrop met with Christopher Post of Clemson University on September 28 to discuss a new collaborative research project. Dr. Post is a GIS specialist with the Department of Forestry and Natural Resources. They planned a proposal to the Joint Fire Science Program that would provide 3-dimensional measurements of fire intensity over time. The measurement system would provide information on what variables are most important to measure to predict fire severity responses such as vegetative mortality and soil disturbance. Waldrop and Post plan to work with Matt Dickenson of the Northeastern Research Station, an expert on fire physics.

• Joe O'Brien and Mac Callaham will set up a long-term study on fire frequency effects on Bahamian pineyards at Abaco National Park, Bahamas. This research is in collaboration with Jaime Collazo and Caroline Stahala of North Carolina State University and Sally Horn and Ken Orvis of the University of Tennessee. Travel to Abaco is funded by the FS International Program and The Nature Conservancy, and tentatively set for October although likely will be postponed because of the effects of Hurricanes Frances and Jeanne. This research will exploit prescribed fires set as part of a TNC/Forest Service wildland firefighter training program that O'Brien participated in and utilize pre-hurricane data collected by him. A Masters student from UT, David West, will collect charcoal as part of a paleoecological study of fires on Abaco. Mac Callaham will collect soil samples, to quantify fire effects on soil nutrients and the soil flora and fauna. In addition to collecting vegetation and fuel data and monitoring fire behavior and temperature, Joe will monitor temperature and smoke quantities in Bahamian parrot nesting cavities as the fire passes. He will re-measure the stands and quantify storm damage.

Science Highlight:

Tom Waldrop and Katie Greenberg (SRS-4101) presented preliminary results of the Appalachian site of the National Fire and Fire Surrogate Study (Green River Game Land) to managers of the North Carolina Wildlife Resources Commission, the cooperating landowner. The burn-only and mechanical-only treatments increased fine fuels, which are expected to decompose rapidly. The mechanical and burn treatment reduced fuels more than other treatments; but these treatments supported high fire intensities. Mortality of overstory hardwoods occurred when groundline temperatures exceeded 700^{o} C. Katie Greenberg, cooperator for the study at Green River, described changes to herpetofauna, small mammals, and birds that were caused by fuel reduction treatments. Amphibian and reptile abundance was similar among all treatments during all years. Amphibian richness differed among treatments during some years, but differences did not appear to be biologically meaningful (e.g., there were treatment differences in 2001 when no treatments had been implemented). No differences were seen in 2004; reptile richness did not differ among treatments during any year. Small mammal abundance differed among treatments in 2002 and 2003. Results should be considered preliminary, as these data were not adjusted for differences in the number of trap nights among treatments and years, or due to trap tampering, probably by raccoons. Species richness differed among treatments during some years, but not during 2003. Differences did not appear to be biologically meaningful (i.e., there were differences among "treatments" in 2001 when no treatments had yet been implemented). Bird abundance and species richness were similar among treatments, except during 2004 when richness increased in mechanical + burn. The abundance of shrub-nesters was (marginally) greater in mechanical + burn than burn only treatment areas during 2004. Responses were most evident at the species level. Some species responded (increased or decreased) to treatments, whereas others did not. Work at this site is funded under the National Fire Plan; the original National Fire and Fire Surrogates study continues to be funded by the Joint Fire Sciences Program. More information on this site is available on our website at http://www.srs.fs.usda.gov/ffs_gr/ .

Hooded Warbler
Wilsonia citrina

White Footed Mouse
Peromyscus leucopus

Five-lined Skink
Eumeces fasciatus

> *"A vision without resources is just hallucination."*
>
> *(Source unknown)*

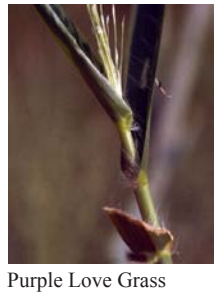
From the Cover (Masthead) - Grasses of Southern Pine Forests.

Big Bluestem
Andropogon virginicus

Arrowfeather Threeawn
Aristida purpurascens

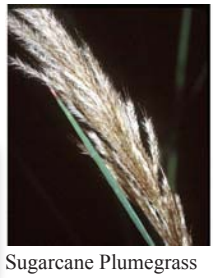
Lop-sided Indian Grass
Sorghastrum secundum

Wiregrass
Aristida beyrichiana



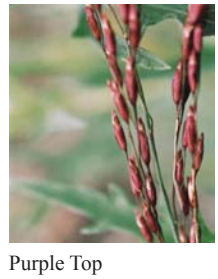
Purple Love Grass
Eragrostis spectabilis

Pineywoods Dropseed
Sporobolus junceus



Sugarcane Plumegrass
Erianthus giganteus

Little Bluestem
Schizachyrium scoparium



Purple Top
Tridens flavus

Funding:

Scott Goodrick, Gary Achtemeier and Yong Liu were awarded a grant from the USDA National Research Initiatives program to study "Wildland fire emissions and air quality - assessing uncertainty in CMAQ due to variations in the vertical distribution of smoke emissions." Their proposal has been funded for $481,307 over the next three years. This work examines a critical issue in air quality modeling: the vertical apportionment of emissions. Generally, this is accomplished using empirical plume rise models based on stack emissions; it is not known whether these plume rise models are applicable to wildland fire. The results of this work will improve the representation of wildland fires in modeling strategies for addressing regional haze.

Visitors:

• Louis Hyman, Fire Staff Officer for the Alabama Forestry Commission visited Scott Goodrick to discuss potential fire danger rating systems for Alabama.

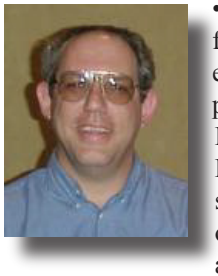
• J.D. Carlson, professor in the Department of Biosystems and Agricultural Engineering at Oklahoma State University, visited Gary Achtemeier to receive training on PB-Piedmont.

Personnel News:

• Tom Phillips left for a job with the National Forests in Texas.

• Tom Waldrop, Helen Mohr, Greg Chapman, Lucy Brudnak, and Sandra Rideout-Hanzak received training on the use of an automatic external defibrillator (AED) machine. The 4-hour course covered procedures of when to use the machine and how it operates. An AED was recently purchased for the Clemson Lab and is the only one available in Lehotsky Hall, where SRS-4104 and SRS-4201 employees are housed. All remaining employees will complete the training in October.

News from around the Region:



• Gregory Reams is the new National Program Leader for the Forest Inventory and Analysis (FIA) program, effective September 20th. Greg Reams comes to this position from the National Forest Health Monitoring Research unit of SRS, located at Research Triangle Park, North Carolina. He was project leader of that unit since 2002. From 1997 to 2002, he was section head of research on new inventory and monitoring methods and techniques of the SRS-FIA unit at Knoxville, TN. Before that, he spent six years in New Orleans as a researcher and subsequently project leader of the Institute for Quantitative Studies of the Southern Research Station. He also has worked as a research professor at Oregon State University, and earned his degrees from Ohio State (B.S.), Mississippi State (M.S.) and University of Maine (Ph.D.).

News from around the Region:

• Former Head of the Clemson University Department of Forestry, Robert Max Allen, 83, died Thursday, September 16, 2004, in Anderson, SC. Born June 5, 1921, "Bob" grew up in Hampton, IL. He entered Iowa State College in 1939 and left after Pearl Harbor in 1941 to enter the Marines. He earned his bachelor's and master's degrees in forestry from Iowa State University. In 1948, he took a job in forestry research with the US Forest Service in south Mississippi and was transferred to Duke University, where he earned a Ph.D. in tree physiology. In 1966, he became the Belle W. Baruch Professor of Forestry with Clemson University. He was named Head of the Department of Forestry in 1970 and remained in that capacity for 12 years. Bob retired in 1991, but continued to work for another two years. He was a Fellow of the Society of American Foresters and a longtime member of the South Carolina Forestry Association. He served as Chairman of the Appalachian Society of American Foresters and Chairman of the Southern Region of the Association of State College and Forestry Research Organizations. The Robert M. Allen Forest Technology Transfer Award has been established at the Clemson University Foundation. The award will be available to faculty and students who excel in the transfer of natural resource technology. Donations can be directed to the Robert M. Allen Forest Technology Transfer Award, The Clemson University Foundation, Box 345601, Clemson, SC 29634-5601.

• Weyerhaeuser Company sold all of Weyerhaeuser's owned commercial timberlands in Georgia, approximately 270,000 acres, to four companies for approximately $400 million. Weyerhaeuser will continue to manage a long-term timberland lease covering approximately 34,000 acres. The purchasers of the timberland are Virginia Forest Investment LLC from Hogansville and Macon, Georgia; Georgia Fall Line Properties LLC from Greensboro, Georgia; Oaky Woods Properties LLC from Perry, Georgia; and Copper Station Holdings #3 from Beaufort, South Carolina. Weyerhaeuser will continue operating its nine processing facilities in Georgia. (Source: PRNewswire-FirstCall)

• The Wilderness Society released "Why Wilderness?" a report detailing the role wildland plays in Southern culture and identity. Rep. John Lewis (D-Ga.) wrote the report's preface, signaling his intent to champion the cause of wilderness protection in the critical months and years to come. "Why Wilderness?" provides state-by-state documentation of the current status of many wilderness areas in the Southern Appalachians; it also notes that Southern Appalachian wilderness rivers provide drinking water to more than 10 million people. "Why Wilderness?" is available from the Wilderness Society at www.tws.org. (Source: BUSINESS WIRE and The Wilderness Society)

• The European Union appears to be moving toward mandatory standards for the protection of soil quality. Environmental protection of soil has been lagging behind water and air, according to Dr. Lieve van Camp, European Commission Coordinator for Soil Thematic Strategy. Expanding on Dr. van Camp's remarks, Dr. Stephen Nortcliff, Secretary General of the International Union of Soil Sciences, urged soil scientists to agree on a limited number of parameters that could be used as general indices of soil quality. For more information on the European Commission's soil protection strategy, visit http://www.europa.eu.int/comm/environment/soil/index.htm (Source: Addresses during the Opening Ceremony of the Eurosoil Conference, Freiburg, Germany. September 8, 2004.

Publications

Refereed Journals and Book Chapters

*Stanturf, J.A., Conner, W.H., Gardiner, E.S., Schweitzer, C.J., and Ezell, A.W. 2004. Recognizing and overcoming difficult site conditions for afforestation of bottomland hardwoods. *Ecological Restoration* 22(3): 183-193. (Counted last year)

Proceedings

*Reitz, Richard D. and Geissler, George L. 2003. Community advisor—Firewise. In Proc. Society of American Foresters National Convention, 25-29 October 2003, Buffalo, NY. P. 63-72.

Abstracts and Posters

*DiCosty, R., Kelley, S., Rials, T., Stanturf, J.A. 2004. Soil black carbon levels and soil organic matter quality under interval prescribed burning in the southeastern United States. Eurosoil 2004, 4-12 September, Freiburg, Germany [Poster]

Upcoming Events:

2004

Oct 1-7	The National Wilderness Summit and Expo, Denver, CO; http://www.wilderness.net/40th
Oct 2-6	Society American Foresters Annual Meeting, held jointly with Canadian Institute of Forestry, Edmonton, Alberta http://www.cif-saf-2004convention.org/natcon/
Oct 17-22	North American Forestry Commission, Joint Meeting of Silviculture and Genetics Working Groups, Morelia, Michoacán, México; Stanturf to attend
Oct 18-22	Advancing the Fundamental Sciences - A Conference for Forest Service Physical Scientists, Shelter Point Island, San Diego, CA; Goodrick and Cleland to present http://www.stream.fs.fed.us/EarthScience/NationalConference.html
Oct 19-21	SRS Management Team meeting, Coweeta
Oct 19-21	Science & Technology Meeting, GA Center, Athens, GA. Reitz and Fowler to attend.
Oct 25-26	Southern Alliance for Utilization of Biomass Resources (SAUBR) conference, Bryant Conference Center, Tuscaloosa, AL; http://saubr.ua.edu/events.htm
Oct 26-28	FSR&D Global Change All Scientists Meeting, Welches, OR; Stanturf to attend
Oct 31-Nov 3	Soil Science Society of America Annual Meeting, Seattle, WA.
Nov 6-8	Southeastern Society American Foresters Annual Meeting, Jacksonville, FL "Managing forests for wildlife"
Nov 8-12	Short Rotation Woody Crops Operations Working Group Biennial Meeting, Charleston, SC; selected papers to be published as a special issue of Biomass and Bioenergy; http://www.woodycrops.org/meeting_2004_second_call.pdf

Upcoming Events:

Nov 17-25	IUCN Third World Conservation Congress (WCC), Bangkok.
Nov 17-19	Assessment of the 2003 drought and heat impacts on forests, international conference sponsored by University of Freiburg, European Forestry Institute, Baden-Würtemburg Forestry, FVA; Freiburg im Breisgau, Germany http://www.forst.uni-freiburg.de/Waldwachstum/Drought2003_Nov2004.htm
Nov 17-19	Mixed severity fire regimes: Ecology and management conference, Spokane, WA; http://www.emmps.wsu.edu/fire/ .
Nov 24-26	Introduction of broadleaf species for sustainable forest management, international conference sponsored by SUSTMAN project at the University of Ulm; to be held in Reisensburg, Germany, http://www.sustman.de/Symposium.htm
Nov 28-Dec 2	International Poplar Commission Session 22, Santiago, Chile; Stanturf to attend and present http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?geoId=0&langId=1&siteId=1580
*Dec 8-10	Bioenergy and Biobased Products from Sustainable Forest Management in the Southern United States Conference; Houston, Texas http://forestbioenergy.tamu.edu/brochure_detailed/brochure02.html
Dec 13-17	Fall 2004 American Geophysical Union (AGU) Meeting In San Francisco, CA Ecosystems In Flux: Molecular And Stable Isotope Assessments Of Soil Organic Matter Storage and Dynamics hhtp://www.agu.org/meetings/fm04/search_detail.php?=274
Dec 16-17	SOFOR GIS 2004, Athens, GA; http://www.gactr.uga.edu/conferences/forestry/index.html

2005

Feb 28-Mar 4	13th Biennial Southern Silvicultural Research Conference, Memphis http://www.srs.fs.usda.gov/oaks/osc
Mar 13-16	Emerging Issues Along Urban/Rural Interfaces: Linking Science and Society; Atlanta, IUFRO 6.00; http://www.sfws.aauburn.edu/urbanruralinterfaces/
*Mar 21-24	USDA Symposium Greenhouse Gases In Agriculture and Forestry: Refining Knowledge and Building Tools, Baltimore, MD; http://soilcarboncenter.k-state.edu/conference
*Apr 25-27	Biennial Georgia Water Resources Conference, Athens; http://ga.water.usgs.gov/gwrc/callforpapers.html
May 11-13	EastFire Conference on Remote Sensing and Fire, to be held at George Mason University in Fairfax, VA.
Jun 20-24	5th International Conference on Forest Vegetation Management, IUFRO Research Group 1.13.00 Forest Vegetation Management. Corvallis, Oregon, USA. Abstracts for selection submitted on-line by November 30, 2004. http://outreach.cof.orst.edu/icfvm/index.htm
Jun 6-10	National Silviculture Workshop, "Restoring fire-adapted forested ecosystems" Granlibakken Conference Center in Tahoe City, California

Upcoming Events:

Jul 18-22	AFFORNORD, Conference on Effects of Afforestation on Ecosystems, Landscape & Rural Development, Reykholt, Iceland; Abstracts due October 1, 2004, http://www.skogur.is
Aug 8-13	IUFRO World Congress, Brisbane, Australia. Stanturf to attend. http://www.iufro2005.com
Sep 12-18	Society for Ecological Restoration 17th International Conference, Zaragoza, Spain. http://www.ser.org/events.asp?EventID=9
*Sep 10-12	European Forestry Institute annual conference and Scientific Seminar "Multifunctional Forest Ecosystem Management in Europe: Integrated approaches for considering the temporal, spatial and scientific dimensions" Centre Tecnològic Forestal de Catalunya (CTFC), Barcelona, Spain
Oct 19-23	Society American Foresters Annual Meeting, Ft. Worth, TX
Nov 6-10	Soil Science Society of American Annual Meeting, Salt Lake City, UT
2006	
Jul 9-15	18th World Congress of Soil Science, in Philadelphia, PA http://www.18wcss.org
Oct 25-29	Society American Foresters Annual Meeting, Pittsburgh, PA

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GPRA -ACCOMPLISHMENTS

Category	FY 2004 Total	FY 2005 Total
Number of Refereed Journal Publications	20	
Number of Non-Refereed Publications (include abstracts)	89	3
Number of Publications (refereed + non-refereed)	109	3
Number of Tours	41	
Number of Short Courses/Training	20	
Number of Invited Presentations to Scientific Organizations	12	1
Number of Invited Presentation to Lay Organizations	30	4
Volunteer Presentations to Scientific Organizations (non-GPRA	42	3
Number of Technology Transfer Activities (other than above)	105	17
Outside Funding	$2,610,574	$598,307

SRS-4104 Project Leader's Report

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