

# Project Leader's Report

Center for Forest Disturbance Science

September 2008

U.S. Forest Service - Southern Research Station - RWU 4156 - 320 Green St. Athens, GA - <http://www.forestdisturbance.net>

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## Innovation

🌲 Scott Goodrick gave an invited presentation to the Southeastern Chapter of the Society of American Foresters annual meeting in Pine Mountain, GA. The presentation provided attendees with an overview of current research in managing wind-related risk in southern forests that is being conducted within the Center for Forest Disturbance Science.

🌲 Joe O'Brien was an author with Dan Jimenez and Brett Butler of the Missoula Fire Lab on the poster "Rx-CADRE (Prescribed Fire Combustion-Atmospheric Dynamics Research Experiments)" presented at the International Association for Wildland Fire Conference in Jackson Hole, Wyoming. O'Brien also will present the results of his portion of the experiment at the 2008 Fire Caucus Meeting, scheduled for November 5-6 in Niceville, Florida.

🌲 Ken Outcalt has been invited to make a presentation to the Northwest Florida Prescribed Fire Council in Tallahassee, Florida. The presentation is titled: "Alternative fuels management treatments for Florida Ecosystems."

🌲 John Stanturf gave a Brown Bag seminar on "Restoration and Climate Change." Seminars coming up on October are Scott Goodrick on new database developments and Kim Crider on her dissertation work.

## Face Time

🌲 Five organized groups of 91 individuals visited the Brender Forest this month, including the Southeastern Wood Producers Association who held a logger and forestry workshop. The instruction included classroom sessions and a field trip. The classroom sessions covered southern pine beetle (SPB) detection and control, invasive species and best management practices for stream crossings and for streamside management zone protection and management. On the field trip, participants viewed longleaf plantation research, prescribed fire, RCW management, SPB detection, control and prevention, planting warm season grasses for erosion control and wildlife, and a bottomless culvert installation. The other groups included Forest Inventory and Analysis training and testing, two classes from the Mercer University Environmental Science Department and a Cooperative Extension program on forestry basics for the Master Naturalist program of Bibb and Jones counties.

🌲 In other Brender/Hitchiti Forest news, the bow season for deer hunting is underway and a total of 30 people came by the office for information. A total of 36 people signed the register and walked the Hitchiti Interpretive Trail.

🌲 Scott Goodrick talked to the first graders at Whit Davis Elementary School in Athens on the different things that meteorologists do in their jobs.

🌲 Longtime readers will have noticed a new look for the PLR this month. We're striving for a cleaner, more readable format and we would appreciate any feedback. Zip an email to me at [jstanturf@fs.fed.us](mailto:jstanturf@fs.fed.us). We also encourage information from you that would be of general interest, especially news of upcoming events.

## Connections

🌲 Drs. Joo-hoon Lim and Myung Bo Lee from the Forest Fire Division of the Korea Forest Research Institute visited Tom Waldrop this month. These scientists were visiting a few locations in the United States with fire research programs before attending a conference in Jackson Hole, Wyoming about the recovery of Yellowstone National Park since the 1989 wildfires. The Korea Forest Research Institute is interested in supporting a prescribed burning program in hilly terrain. They were particularly interested in learning about Waldrop's work with restoration in the southern Appalachian Mountains and his estimates of fuel loading throughout the region.



## What's Up

Stan Barras, former scientist, Project Leader, Assistant Station Director, and staff entomologist, with the Southern Research Station passed away this month. Stan served as a Research Entomologist and Project Leader for the Southern Pine Beetle Unit in Pineville, LA. Stan continued his service to the Forest Service as Assistant Director of the Southern Forest Experiment Station in New Orleans and later as Staff Entomologist in Washington, DC. Stan was a pioneer in research into bark beetle-fungal interactions and a great supporter of forest entomology in the South. Stan was diagnosed with lung cancer just one month ago. He was 72 years old.



Gretta Boley has accepted the Region 8 Forest Supervisor position on the National Forest in Jackson, Mississippi.



Kier Klepzig is the new Assistant Director for Threats to Forest Health. He comes to this position following 10 years as Research Entomologist and Project Leader of the Southern Research Station's Insects, Diseases and Invasive Plants unit in Pineville, LA. Kier received his PhD in Entomology and Plant Pathology from the University of Wisconsin-Madison, was a Professor at Southern University, and joined the Forest Service in 1995. Kier's reporting date to Asheville is October 12th.



*Caesarodispus klepzigii* (Microdipididae), a newly described mite named after Kier by John Moser, retired Forest Service entomologist in Pineville



A new study released by the International Institute for Environment and Development and FAO, *Fuelling exclusion? The biofuels boom and poor people's access to land* brings some rationality to the debate on the effects of biofuels development on food security. The study finds that "biofuels can be instrumental in bringing an agricultural renaissance that revitalizes land use and livelihoods in rural areas. Price signals to small-scale farmers could significantly increase both yields and incomes, securing real, long-term poverty reduction in countries that have a high dependence on agricultural commodities. Large-scale biofuels cultivation could also provide benefits in the form of employment, skills development and secondary industry. However, these possibilities depend on security of land tenure. Where competing resource claims exist among local resource users, governments and incoming biofuel producers, and where appropriate conditions are not in place, the rapid spread of commercial biofuel production may result - and is resulting - in poorer groups losing access to the land on which they depend." The study can be downloaded at <http://www.iied.org/pubs/pdfs/I25511ED.pdf>

The European Forest Institute has accepted proposals to establish four new Regional Offices in different locations across Europe. This development follows the establishment of the first EFI Regional Office EFIMED in Spain last year. EFIATLANTIC in Bordeaux will concentrate on issues of west-European relevance in the region of Atlantic rim. EFICEE in Vienna will cover Central-Eastern Europe. EFICIENT will rotate offices among Freiburg (Germany), Zurich (Switzerland) and an observatory in Nancy (France) in Central Europe. EFI-SEE in Croatia will cover South-Eastern Europe. Another proposal for an office focusing on Scandinavian forest research, EFINORD, will be re-submitted. EFIATLANTIC and EFICEE are expected to change their proposed names and most of the regional offices are expected to be launched during 2009. (Source: EFI News)

Move over, Research Triangle Park and Silicon Valley -- the Innovation Crescent is fast on your heels. The moniker was unveiled this summer as the brand name for the geographic area extending from metro Atlanta to Athens, GA. The region has a rich concentration of life sciences companies, universities (Emory, University of Georgia, Georgia Tech), and research organizations -- as well as the federal Centers for Disease Control and Prevention. The Innovation Crescent will be the cornerstone of Georgia's global branding campaign, with a goal of creating name recognition similar to North Carolina's Research Triangle or California's Silicon Valley. Life science firms in the state raised \$469 million from 1995 to 2004, and there is more than 85,000 square feet of life science incubator space in the Innovation Crescent. Go to: <http://atlanta.bizjournals.com/atlanta/stories/2008/09/15/focus7.html?b=I221451200%5E1697150>

🌲 In case you missed it, this summer Dalton McGuinty, premier of Ontario, put at least 55 million acres off limits to development. That's half of the province's boreal forest. McGuinty also promised no new mining or logging projects until local land-use plans have support from native communities. The decision commits Ontario to setting aside lands more than twice the size of Pennsylvania as parks or wildlife refuges.

🌲 The draft report from the conference on "Adaptation of Forests and Forest Management to Changing Climate with Emphasis on Forest Health: A Review of Science, Policies and Practices" held in Umeå, Sweden is available. One of the main messages of the conference is that adaptation of forests and forest management to changing climate is possible, but there is little time for planning and acting. It has also become obvious throughout the conference that adaptation needs and capacity differ dramatically between developed and developing countries. In developed countries, issues are of a more technical nature, and address concerns raised with respect to the forest and the forest industry. In developing countries, issues are often more immediate, at the community level, and are fueled by conflicts between environmental and economic objectives. Consequently, a strong need to support forest science and community forestry in developing countries has been identified. The report can be downloaded at the conference website, <http://www.forestadaptation2008.net/home/en/> (Source: IUFRO News)



Photo: Courtesy of Kathy Hopkins, RPF, Victoria, BC, Canada  
 Keynote panelists from left to right: Abigail Kimbell, Chief of the USDA Forest Service; Doug Konkin, Deputy Minister, British Columbia Ministry of Forests; Balgis Osman Elasha, Higher Council for Environment and Natural Resources, Khartoum, Sudan

🌲 A new professional organization has been formed for environmental professionals. The Association for Environmental Studies and Sciences (AESS; <http://aess.info>) aims to fill an important gap in our ability to facilitate understanding of environmental science, policy, management, ethics, and history, by providing a professional association that supports the identity, collective voice and continuing education of individuals involved in interdisciplinary environmental research, teaching, and problem-solving. A quarterly electronic newsletter has already been established, and a flagship journal will be launched in 2009. The first annual meeting will take place next year in Madison, Wisconsin (Oct 8 - 11, 2009).

### All About Us

🌲 Rick Reitz is headed to California for a detail. Rick will be an acting district ranger on the Plumas National Forest from October to January.

🌲 The extensive damage sustained in the Turks and Caicos from Hurricanes Faye and Ike required the postponement of Joe O'Brien's planned travel there in October. The fire and insect damage assessment Joe was scheduled to conduct for The Nature Conservancy is tentatively planned for February 2009.



Damage from Hurricane Ike photographed by Rick Reitz.



🌲 The Clemson-based group of the Fire Science team attended an 8-hour training session on first aid, blood-borne pathogens, CPR, and use of the Automated Electronic Defibrillator (AED). An AED was purchased 4 years ago by both units stationed at Clemson and is the only one available in their building on campus. Although it has not yet been needed, having an AED and trained personnel on site is a valuable asset to personnel of both the Southern Research Station and Clemson University. Attending were Gregg Chapman, Chuck Flint, Helen Mohr, Ross Phillips, Mitch Smith, and Tom Waldrop.

### Small Change

🌲 The Atmospheric Sciences Team has received a contract from the Santa Rosa County planning commission in Florida for "Development of Smoke Modeling Tool for Managing Visibility Reduction from Smoke in Military Air Spaces." The objectives of this project are to develop 3-dimensional smoke concentration models that can be used for planning safe military aircraft operations.

🌲 Tom Waldrop submitted a proposal to the Forest Health Monitoring EM program to develop photo series to estimate fuel loads in the Southern Appalachian Mountains. Photo series are available or are being prepared for most cover types in the southeast with the exception of those of the Southern Appalachians. The proposed study would build on previous work where fuels were measured on over 1,000 study plots in disturbed and undisturbed sites throughout the region. The new photo series, along with those already being developed, would make fuel measurements taken on Forest Inventory P3 plots more efficient and could possibly be used on the more abundant P2 plots. Decisions on submitted proposals will be completed in early 2009.

## Science Highlight

🌲 Meteorological events sometimes are so intense that the severity of their effects rises to the level of a “natural disaster.” A recent report from the Worldwatch Institute reports that “In 2007, there were 874 weather-related disasters worldwide, a 13 percent increase over 2006 and the highest number since the systematic recording of natural perils began in 1974. Weather-related disasters around the world have been on the rise for decades... on average, 300 events were recorded every year in the 1980s, 480 events in the 1990s, and 620 events in the last 10 years.” (Löw, Petra. 2008. Weather-related disasters dominate. Vital Signs Online, October. Worldwatch.org)

The Center for Forest Disturbance Science staff is working on understanding hurricanes and other weather-related disturbances and we have highlighted some of our research and science delivery work in previous issues of the PLR and the upcoming October issue of Compass, the Southern Research Station quarterly magazine will highlight our hurricane work. As noted in the Innovation section, Scott Goodrick continues to work on modeling wind damage to trees and we hope to begin a study on wildfire risk soon, led by Ken Forbus. This is part of our Forest Futures effort. Recently, one of us had a chance to help with post-disaster efforts. Just hours after landfall of Hurricane Ike on Texas’ Galveston Island, the Southern Area Type 2 Incident Management Team prepared to assess the island’s damaged infrastructure. The purpose of the assessment is to determine how effective infrastructure components will be when returned to operation. SRS employee Richard Reitz is a member of the team that performed the assessment.



Damage from Hurricane Ike photographed by Rick Reitz.

The assessment concept used is fairly new. It is designed to be done quickly, with minimal assistance from local government, and with an accuracy of around 70%. It gathers infrastructure data by five groups. The groups are security, water, energy, accessibility, and telecommunications. These five groups contain one-to-five indicators each. For instance, the security group’s four indicators are police, fire, hospitals, and emergency medical services. The assessment report is visual by color. Red indicates an effectiveness level of less than 39%, yellow indicates an effectiveness level of 40-to-79%, and green indicates an effectiveness level of greater than 80%. When the thirteen indicators are displayed as a table on a single page it is easy to quickly see the present effectiveness levels of the island’s total infrastructure. The table is used by FEMA and local governments to assist them in prioritizing the order of work necessary to return some semblance of livable conditions to the Island of Galveston. (Löw, Petra. 2008. Weather-related disasters dominate. Vital Signs Online, October. Worldwatch.org)



## Partnerships

🌲 Ross Phillips met with Chiao-Ying Chou, a Ph.D. student of Clemson University to discuss the Piedmont site of the National Fire and Fire Surrogate (FFS) Study. Chiao, a student of Roy Hedden and Bo Song, is using data from the FFS Study in support of a study to use modeling, GIS, and 3-D visualization to assess the damage to viewsheds from southern pine beetle infestations in South Carolina.

🌲 Joe O’Brien spent a week at the Joseph W. Jones Ecological Research Center at Ichauway. The purposes of the trip were to conclude fieldwork on the CFATES (Carbon Fine-root Allocation and Transfer at Ecosystem Scales) and to initiate a new proj-

ect with Bob Mitchell (Jones Center) and Behzad Mortazavi (University of Alabama) challenging the current paradigm that recent photosynthate drives soil CO<sub>2</sub> fluxes. We hypothesize that ecosystems subject to frequent fire or other disturbances are important exceptions to the tight linkage between photosynthesis and respiration shown in some studies. Our rationale is that the large stores of carbohydrates needed to repair photosynthetic tissue damaged by disturbances would buffer variation in day-to-day assimilated carbon levels, thereby decoupling both auto- and heterotrophic soil respiration from aboveground production. We will exploit variation in carbon stable isotope ratios in assimilates driven by stomatal response to short-term changes in soil moisture and humidity, in effect, a natural dosing experiment. Soil CO<sub>2</sub> flux is a critical component of terrestrial carbon budgets and understanding how aboveground disturbances affect fluxes is critical for accurate modeling. The logic behind the experiment and some preliminary results will be presented at the American Geophysical Union Conference to be held December 15-19th in San Francisco.

🌲 David Combs, Ken Forbus and Scott Goodrick met with Tommy Hutcherson, the burn boss at Ft. Benning in Columbus GA, to visit a number of the burn units planned for this winter. The purpose of the visit was to use photo series to characterize the fuels on the various units to provide estimates of fuel loadings for each unit.



What a difference a few miles makes! Top photo is of a two year rough for a typical sandhill site at Ft. Benning GA. Bottom photo is also a two year rough, but the soils are clay.

## 2009 Widgets

(\* denotes new publication this month)

### JOURNAL ARTICLES AND BOOK CHAPTERS

Boerner, R.E.J.; Coates, A.T.; Yaussy, D.A.; **Waldrop, T.A.** 2008. Assessing ecosystem restoration alternatives in eastern deciduous forests: the view from belowground. *Restoration Ecology* 16(3): 425-434. (Citation update, listed in FY 2008)

Lockhart, B.R.; Gardiner, E.; Leininger, T.; **Stanturf, J.** 2008. A stand-development approach to oak afforestation in the Lower Mississippi Alluvial Valley. *Southern Journal of Applied Forestry* 32: 120-129.

Peterson, C.J.; Leach, A.D. 2008. Salvage logging after windthrow alters microsite diversity, abundance and environment, but not vegetation. *Forestry* 81(3): 361-376. (Citation update, listed in FY 2008)

Zhang, D. and **Stanturf, J.A.** 2008. Forest Plantations. In Sven Erik Jørgensen and Brian D. Fath (Editors-in-Chief), *Ecosystems*. Vol. [2] of *Encyclopedia of Ecology*, 5 vols. pp. 1673-1680. Oxford: Elsevier.

### PUBLISHED ABSTRACTS

**Callaham, M.A., Jr., S.C. Rostkowski, Jr.,** E.S. Gardiner, J.A. Stanturf, and B.A. Snyder. 2008. Litter-dwelling arthropods in a bottomland hardwood restoration experiment in the Lower Mississippi Alluvial Valley, USA. Poster presentation at 15th International Colloquium on Soil Zoology and Ecology, August 2008, Curitiba, Brazil.

**Callaham, M.A., Jr., J.J. O'Brien,** P.F. Hendrix, D.L. Camp, and S.R. Bennett. 2008. Carbon and nitrogen dynamics in soils with native North American and introduced European earthworms determined with stable isotopes. Poster presentation at 15th International Colloquium on Soil Zoology and Ecology, August 2008, Curitiba, Brazil.

**Callaham, M.A., Jr.,** K.R. Butt and C.N. Lowe. 2008. Stable isotope evidence for marine-derived avian inputs of nitrogen into detrital foodwebs on the Isle of Rum, Scotland, UK. Poster presentation at 15th International Colloquium on Soil Zoology and Ecology, August 2008, Curitiba, Brazil.

**Crider, K.K.** 2008. Direct and indirect effects of a native predator on weed biological control. Poster presentation at Ecological Society of America annual meetings, August, 2008, Milwaukee, WI.

McGee, J.D., N.A. Jansen, J.K. Hiers, **M.A. Callaham, Jr.,** R.J. Mitchell, and M.P. Greene. 2008. Recalcitrant carbon pools in burned and unburned longleaf pine systems. Poster presentation at Ecological Society of America annual meetings, August, 2008, Milwaukee, WI.

Snyder, B.A., **M.A. Callaham, Jr.,** C.N. Lowe, S.C. Rostkowski, Jr., and P.F. Hendrix. 2008. Interactions between the invasive earthworm *Amyntas agrestis* (Megascolecidae) and the North American millipede *Sigmodon ainsliei* (Xystodesmidae). Oral presentation (delivered by Callaham) at 15th International Colloquium on Soil Zoology and Ecology, August 2008, Curitiba, Brazil.

**Stanturf, J.A.** 2008. Silviculture and ungulates: Implications of restoration and climate change. Expert Workshop on New Ways to Optimise the Joint Management of Ungulates, Forests, and Forest Landscapes, Løvenholm Castle, Denmark; Forest and Landscape-KVL, Copenhagen Denmark.

## Calendar

### 2008 International Year of Planet Earth

**Oct 5-9:** Soil Science Society of America Annual Meeting, joint with Geological Society of America and the Gulf Coast Association of Geological Societies; Houston, Texas <https://www.acsmeeetings.org/programs/technical/>

**Oct 6-10:** Baltic-Scandinavian Disturbance Network annual meeting, Bialowieza National Park, Poland

**Oct 5-14:** IUCN World Conservation Congress, Barcelona, España; <http://www.iucn.org/congress/2008>

**Oct 21-23:** FIA Symposium 2008 Climate Change, Fire, and Other Hot Topics, Park City, Utah; <http://www.fia.fs.fed.us/symposium/>

**Nov 5-9:** Society American Foresters Annual Meeting, Reno, NV; <http://www.safconvention.org/natcon-08/index.cfm>

**Nov 10-15:** International Forest Eco-hydrological Workshop on Water Management through Forest Management, Beijing, China.

**Nov 17-20:** 15th Biennial Southern Silvicultural Research Conference, Hot Springs, Arkansas; <http://www.srs.fs.fed.us/bssrc2008/index.htm>

### 2009

**Jan 11-15:** 24th Tall Timbers Fire Ecology Conference, Tallahassee, FL; <http://www.talltimbers.org/news/24thFEconference.html>

**Mar 10-12:** Climate Change: Global Risks, Challenges and Decisions; Copenhagen, Denmark; <http://www.climatecongress.ku.dk>

**April TBD:** 12th Biennial Conference of the Soil Ecology Society

**Apr 12-16:** Annual conference of U.S. Regional Association, International Association for Landscape Ecology (US-IALE), "Coupling Humans and Complex Ecological Landscapes" Snowbird, Utah; <http://www.usiale.org/snowbird2009>

**May TBD:** Conference on Ecology and Management of High-Elevation Forests in the Central and Southern Appalachians; Snowshoe Mountain Resort, Slatyfork, WV

**\*Jun 10-11:** Carbon in Northern Forests: Integration of Research and Management Traverse City, MI <http://forest.mtu.edu/cinf/>

**Jun 15-19:** National Silviculture Workshop, Integrated Management of Carbon Sequestration and Biomass Utilization Opportunities in a Changing Climate, Boise, Idaho

**\*Jun 29-Jul 3:** 6th International Symposium on Ecosystem Behavior, BIOGEMON 2009, Helsinki, Finland; <http://www.environment.fi/default.asp?contentid=298085&lan=EN>

**Aug 2-7:** Ecological Society of America Annual Meeting, Albuquerque, New Mexico

**Aug 4-8:** First World Congress of Environmental History, Copenhagen, Denmark; <http://www.wceh2009.org>

**Aug 23-28:** Society for Ecological Restoration International World Congress, Perth, Western Australia <http://www.seri2009.com.au>

**\*Sep 20-25:** International Conference on Multipurpose Forest Management: Strategies for Sustainability in a Climate Change Era, Niigata, Japan; <http://www.keiri.fr.a.u-tokyo.ac.jp/multiFM/>

**Sep 30-Oct 4:** Society American Foresters Annual Meeting, Orlando, Florida

**Oct 13-16:** 2nd International Conference on Wind Effects on Trees, Meteorological Institute, Albert-Ludwigs University, Freiburg, Germany, <http://www.wind2009.uni-freiburg.de/>

**Oct 18-25:** World Forestry Congress, Buenos Aires, Argentina; [http://www.wfc2009.org/index\\_1024.html](http://www.wfc2009.org/index_1024.html)

**Nov 1-5:** Soil Science Society of America Annual Meeting, Pittsburgh, PA

**Nov 30-Dec 4:** 4th International Congress of the Association for Fire Ecology, Savannah, GA <http://www.fireecology.net/congress09/home>

## 2010

**Aug 1-6:** Ecological Society of America Annual Meeting, Pittsburgh, Pennsylvania

**Aug 23-28:** XXIII IUFRO World Congress, Seoul, Republic of Korea <http://www.iufro2010.com/>

**Oct 31-Nov 4:** Soil Science Society of America Annual Meeting; Long Beach, California

**Nov 15-19:** VI International Conference on Forest Fire Research; Coimbra, Portugal [http://www.fire.uni-freiburg.de/course/meeting/2010/1st\\_announcement.pdf](http://www.fire.uni-freiburg.de/course/meeting/2010/1st_announcement.pdf)

**\*TBD:** International Poplar Society Symposium, Orvieto, Italy.

## 2011 International Year of the Forests

**Aug 7-12:** Ecological Society of America Annual Meeting, Austin, Texas

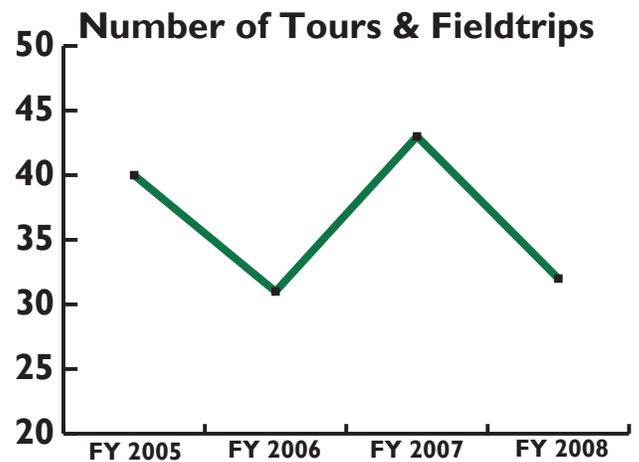
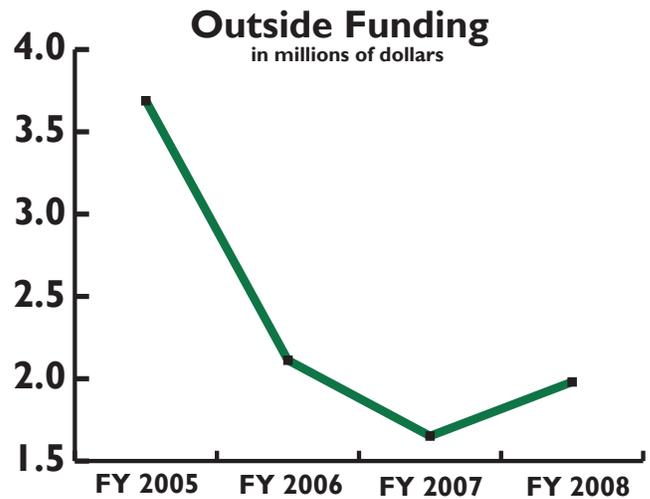
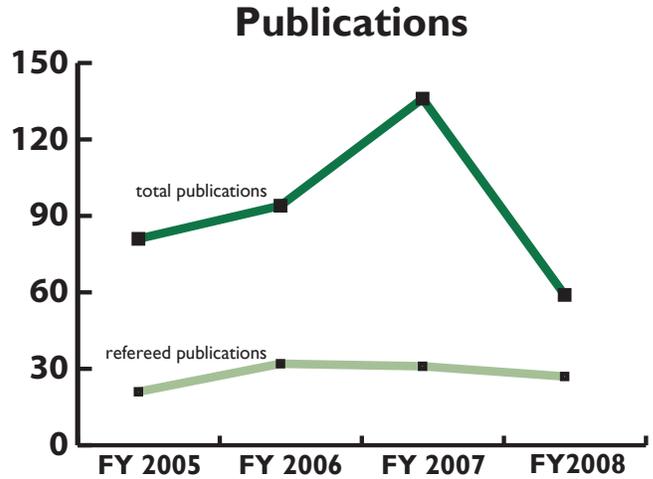
**Oct 14-20:** Soil Science Society of America Annual Meeting; San Antonio, Texas

**TBD:** International Fire Congress, South Africa; <http://www.fire.uni-freiburg.de/WoF/pressroom.htm>

**TBD:** IUFRO Wind and Trees Conference, Athens, Georgia; Chris Peterson, University of Georgia to organize

# Scoreboard

Category	FY2009
Number of Refereed Journal Publications	2
Number of Non-Refereed Publications (include abstracts)	7
Total Number of Publications	9
Number of Tours	3
Number of Short Courses/Training	5
Number of Invited Presentations to Scientific Organizations	2
Number of Invited Presentations to Lay Organizations	8
Number of Volunteer Presentations to Scientific Organizations	4
Number of Technology Transfer Activities (other than above)	12
Number of Tools Developed	0
Outside Funding	\$70,000



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