

SOFOR GIS 2009 • 7th Southern Forestry & Natural Resources GIS Conference

December 7 - 9, 2009
The University of Georgia
Athens, Georgia



Sponsorship and Support from
The University of Georgia Warnell School of Forestry & Natural Resources
Land use planning Working Group of the Society of American Foresters
The University of Georgia Center for Continuing Education
GIS Working Group of the Society of American Foresters
Georgia Department of Natural Resources
Southern Regional Extension Forestry
Mississippi State University
University of Kentucky
Silvics Solutions, LLC
Clemson University
LandMark Systems
ORBIS
ESRI

TENTATIVE AGENDA (has changed... see final conference program for details)

Monday, December 7

- 5:00 - 7:00 p.m. Registration
12:00 - 4:00 LandMark Systems & Silvics Solutions, LLC
Field Technology Demonstration
6:00 - 8:00 Social Mixer

Tuesday, December 8

- 7:00 - 8:30 a.m. Registration
8:00 - 9:00 Symposium: – Dr. Robert Weih, University
of Arkansas
9:00 - 10:15 Concurrent Sessions
SESSION 1: *Remote Sensing for Forest Inventory
Applications I*
SESSION 2: *Landscape Ecology & Land Use
Analysis I*
10:15 - 10:30 Break
10:30 - 11:45 Concurrent Sessions
SESSION 1: *Remote Sensing for Forest Inventory
Applications II*
SESSION 2: *Landscape Ecology & Land Use
Analysis II*
11:45 - 1:15 p.m. Lunch (furnished)
1:15 - 2:55 Concurrent Sessions
SESSION 1: *Remote Sensing for Disturbance
Applications*
SESSION 2: *Programming, Tools, & Technology I*
2:55 - 3:20 Break
3:20 - 5:00 Concurrent Sessions
SESSION 1: *Species Composition & Distribution I*
SESSION 2: *Programming, Tools, & Technology II*
6:30 - 8:00 Poster Session, Reception

Wednesday, December 9

- 8:35 - 9:50 a.m. Concurrent Sessions
SESSION 1: *Wildlife Habitat Analysis &
Assessment*
SESSION 2: *Species Composition & Distribution II*
9:50 - 10:15 Break
10:15 - 11:55 PRIMARY SESSION: *Remote Sensing, Tools, &
GIS for Hydrological Applications*
11:55 - 12:30 Closing Remarks, Awards, Door Prizes

SOFOR GIS 2009

If you have responsibilities in forest management, urban and community forestry, wildlife habitat evaluation, or timber harvesting, most likely Geographic Information Systems (GIS) technology has touched your work. This technology, old in concept but new in technique, is fast becoming a necessity in natural resource research and management. GIS applications are used in decision-making, planning, conflict resolution, forecasting, analyzing, and many other critical areas. As our society becomes more attuned to the value and use of GIS, it will become imperative that natural resource professionals be current on new applications and technologies.

The 7th Southern Forestry & Natural Resources GIS Conference is designed to assist you with this undertaking. The general-session presentations, question-and-answer periods and technical demonstrations should give you ample opportunities to sharpen your skills.

This conference will be valuable to anyone working in the natural resources arena including: forest industry professionals, wildlife managers, consultants, extension specialists, public land managers, investors, researchers, educators, students, conservation professionals, and anyone else with an interest in the application of GIS and GIS technologies.

CONCURRENT SESSIONS

(SCHEDULE SUBJECT TO CHANGE)

Tuesday, December 8, 9:00 am – 10:15 am

Session I: Remote Sensing for Forest Inventory Applications I

- 9:00 - 9:25 AM Comparative analysis of spectral unmixing and neural networks for estimating small diameter tree above-ground biomass in the state of Mississippi.
- *Tiruveedhula, et al.*
- 9:25 - 9:50 AM Evaluation of LiDAR Derived Estimations of Forest Measurement.
- *Chapman, et al.*
- 9:50 - 10:15 AM Estimating forest structural diversity in the southern Appalachian Mountains using LiDAR and its implications in mapping hazardous fuels for wildfire.
- *Phillips, et al.*

Session II: Landscape Ecology and Land Use Analysis I

- 9:00 - 9:25 AM Land Cover Change and Socioeconomic Drivers in a southeastern US ecoregion.
- *Grisaffi and Griffith*
- 9:25 - 9:50 AM Identifying and Mapping Areas for Offshore Wind Development in Michigan.
- *Coscarelli*
- 9:50 - 10:15 AM Using Geospatial Data and Principles of Landscape Ecology to Identify Field Sites.
- *Hepinstall-Cymerman and Parrish*

Tuesday, December 8, 10:30 am – 11:45 am

Session I: Remote Sensing for Forest Inventory Applications II

- 10:30 – 10:55 AM Combining Landsat Imagery and FIA Data: Examining Wood Supply in Southern Wood Basins.
- *Collins, et al.*
- 10:55 - 11:20 AM Development of a Spatial Model to Assess Ecological Condition and Prioritize Timber and Fuel Treatments for the Osceola National Forest.
- *Drake, et al.*
- 11:20 – 11:45 AM GPS Signal Reception and inertial Bridging in the Austin Cary Memorial Forest.
- *Mohamed*

Session II: Landscape Ecology and Land Use Analysis II

- 10:30 – 10:55 AM Constructing and Evaluating a Wetland and Land Use History Database for the Dougherty Plain, Georgia.
- *Hepinstall-Cymerman and Martin*
- 10:55 - 11:20 AM Geospatial analysis of forest patterns related to environmental history of Wormsloe State Historic Site.
- *Jordan and Madden*
- 11:20 – 11:45 AM GPS Signal Reception and inertial Bridging in the Austin Cary Memorial Forest.
- *Mohamed*

CONCURRENT SESSIONS

(CONTINUED)

Tuesday, December 8, 1:15 pm – 2:55 pm

Session I: Remote Sensing for Disturbance Applications

- 1:15 – 1:40 PM Mapping of Hurricane Katrina forest damage in South Mississippi using MIFI data and GIS.
- *Garrigues, et al.*
- 1:40 – 2:05 PM An Index for Carbon Release Potential Following a Catastrophic Wind Event.
- *Crosby, et al.*
- 2:05 – 2:30 PM Assisting the Rapid Response of Storm Damage Relief using Object Based Image Analysis.
- *Shouse, et al.*
- 2:30 – 2:55 PM Modeling forest damage from hurricanes.
- *Merry*

Tuesday, December 8, 1:15 pm – 2:55 pm

Session II: Programming, Tools, and Technology I

- 1:15 – 1:40 PM Universal modular GIS - write once and use everywhere GIS tools.
- *Krakov*
- 1:40 – 2:05 PM An assessment of the impact of processor speeds and RAM availability on common geoprocessing routines.
- *Lowe III*
- 2:05 – 2:30 PM One year's experience with a recreation-grade GPS receiver.
- *Bettinger*
- 2:30 – 2:55 PM Blending Technology with Forestry – Unlimited Applications.
- *Sehnaiek*

Tuesday, December 8, 3:30 pm – 4:35 pm

Session I: Species Composition and Distribution I

- 3:20 - 3:45 PM Probability mapping for species conservation on Alabama's Gulf Coast.
- *Lemke, et al.*
- 3:45 - 4:10 PM Here today, gone tomorrow: Projected loss of a salamander diversity hotspot as a consequence of global climate change.
- *Milanovich, et al.*
- 4:10 – 4:35 PM Impact of ecological and socioeconomic determinants on the spread of tallow tree in southern forest lands.
- *Tan and Fan*
- 4:35 – 5:00 PM Threats of major nonnative invasive plants in the southern forest lands: condition, extent and potential driving factors.
- *Fan and Fan*

Tuesday, December 8, 3:30 pm – 4:35 pm

Session II: Programming, Tools, and Technology II

- 3:20 - 3:45 PM Leaf-off accuracy of mapping-grade GPS receivers.
- *Bettinger, et al.*
- 3:45 - 4:10 PM A Comparison of Four Sampling Methods to Estimate Soil Carbon Content.
- *Worsham, et al.*
- 4:10 – 4:35 PM Zonal and Large Data Set Solutions Developed While Calculating the Mean Human Footprint™ for Protected Areas at the Continent Scale.
- *Lipscomb and Baldwin*
- 4:35 – 5:00 PM A GIS Approach to Property and Land Records.
- *Triplett and Russell*

CONCURRENT SESSIONS

(CONTINUED)

Wednesday, December 9, 8:35 am – 9:50 am

Session I: Wildlife Habitat Analysis and Assessment

- 8:35 – 9:00 AM Landscape features affecting Northern Bobwhite Nest Fate by Specific Failure Causes in the Southeastern, USA.
-Felege, et al.
- 9:00 - 9:25 AM Linear referencing and dynamic segmentation as a framework for spatially-explicit animal movement modeling in linear systems.
- Albeke and Nibbelink
- 9:25 – 9:50 AM An information-theoretic approach for multi-scale analysis of habitat use by coastal river otters in Prince William Sound, AK.
- Nibbelink, et al.

Wednesday, December 9, 10:15 am – 11:55 am

Primary Session: Remote Sensing, Tools, and GIS for Hydrological Applications

- 10:15 - 10:40 AM Intensity of tropical cyclones along portions of the southeastern U.S. coasts.
- Bettinger
- 10:40 – 11:05 AM Evaluating the use of low-cost side scan sonar to map aquatic habitat on the lower Flint River, Georgia, USA.
- Tracy, et al.
- 11:05 – 11:30 AM Operational Drought Characterization using Thermal Remote Sensing: A Case Study in Georgia's Altamaha River Watershed.
- Jacobs, et al.
- 11:30 – 11:55 AM Dynamic Spatial Information Interface for USGS Monitoring Sites.
- Demir and Beck

Wednesday, December 9, 8:35 am – 9:50 am

Session II: Species Composition and Distribution II

- 8:35 – 9:00 AM Geospatial tools for resource management decisions: Geovisualization of hemlock dieback in Great Smoky Mountains National Park.
- Allen, et al.
- 9:00 - 9:25 AM Modeling physical and biological factors related to Capuchin monkey tool use in the cerrado of northeastern Brazil.
- Madden and Jordan
- 9:25 – 9:50 AM Increasing community tree assessments with trained adult volunteers.
- Berle

POSTER PRESENTATIONS

Posters:

- Animal Space Use for ArcGIS: Animal Space Use for ArcGIS: Generating animal home range and core use areas using VBA and ArcObjects.
- *Carpenter*
- Land Use and Suitability Analysis for Urban Recreational Development using AHP Method in Zone 9 of Isfahan City.
- *Mirahsani and Mahmud*
- Modelling of Soil Moisture in the Bankhead National Forest.
- *Ellis, et al.*
- Predicting the occurrence of invasive plants in the Cumberland Plateau and Mountain Region: integration of forestry inventory data, geospatial information system and statistical modeling tools.
- *Lemke, et al.*
- Mapping Habitat in Ichawaynochaway Creek Using Low-Cost Side Scan Sonar.
- *Kaeser and Litts*
- Predicting Carbon Content Within a Loblolly Pine Ecosystem: Kriged Prediction Mapping.
- *Ike, et al.*
- Quantification of a Boundary Shape: A Scale Dependent Method for Determining Patch Boundary Convexity.
- *Albeke, et al.*
- Geospatial analysis and genetic relatedness in *Elliottia racemosa* (Georgia plume) to determine conservation practices.
- *Porter*

We are still accepting **poster** submissions. Please submit your abstract to the e-mail address below. We accept only electronic submissions. Thank you.

Program Chair: Nate Nibbelink
University of Georgia
706-542-9853
nate@warnell.uga.edu

- Please put “**SOFOR Submission – Your Last Name**” in the subject of your e-mail, and include all the required information in the body of the e-mail (not as an attached document).
- Include the following information in your submission:
 - (1) the type of presentation – **Poster**;
 - (2) the title of the presentation;
 - (3) the author(s), affiliation(s);
 - (4) the corresponding author’s mailing address, telephone number, fax number, and e-mail address;
 - (5) the abstract in 250 words or fewer; and
 - (6) up to three keywords

Exhibits

One of the highlights of the “7th Southern Forestry and Natural Resources GIS Conference” is the diversity and quality of the exhibits. Don’t miss out on this year’s conference! For exhibitor information, contact **Pete Bettinger** at pbettinger@warnell.uga.edu.

Sponsors

This conference provides an outstanding opportunity to highlight your company to GIS users throughout the South. For details, contact **Pete Bettinger** at **706-542-1187** or pbettinger@warnell.uga.edu.

GENERAL INFORMATION

This conference will be held at the Georgia Center for Continuing Education Conference Center & Hotel, which is located on the beautiful, historic campus of the University of Georgia in Athens, Georgia. As a unit of UGA's Office of the Vice President for Public Service and Outreach, the Georgia Center brings the University's teaching, research, and service expertise to the people of Georgia and beyond! For more information, visit www.georgiacenter.uga.edu.

Special Needs

If you require special services, facilities, or dietary considerations, contact **Holly Blanchard** at **706-542-3395** or Holly.Blanchard@georgiacenter.uga.edu by **October 27, 2009**.

Lodging

A block of rooms is being held for your convenience until **5:00 p.m. ET, November 16, 2009**.

PLEASE RESERVE YOUR ROOM USING THE CONFERENCE REGISTRATION FORM ON THE FOLLOWING PAGE.

Room Rates: (1 bed) \$89/night + 7% sales tax
(2 bed) \$99/night + 7% sales tax

Directions to the Georgia Center are available online at www.georgiacenter.uga.edu/sections/directions.phtml

Program Cancellation Policies

(1) A cancellation received by **5:00 p.m. ET on or before November 30, 2009**, will be refunded, minus a \$35 processing fee. No refunds will be issued thereafter; substitutions will be allowed. (2) To change or cancel your registration, call 800-884-1381, Monday through Friday, 8:00 a.m. to 5:00 p.m. ET. (3) If an event is cancelled for any reason, the Georgia Center will not be responsible for any charges related to travel.

REGISTRATION FEES

The fee for this conference is \$240 for professionals and \$125 for full-time undergraduate and graduate students of any college or university. The fee includes a conference packet, a copy of the proceedings, receptions, lunches, continental breakfasts, and refreshment breaks. There is an additional \$25 fee for registrations paid or postmarked after **5:00 pm ET, November 16, 2009**.

CONTINUING EDUCATION CREDITS

This conference will provide 9.5 hours of Category I Continuing Forestry Education (CFE) credit.

For More Information, Contact

Nate Nibelink, Conference Chair
nate@warnell.uga.edu

Or, go to the SOFOR GIS 2009 website at
www.soforgis.net



Event Registration/Hotel Reservation Form

7th Southern Forestry Natural Resource Management and GIS Conference (#67403)

December 7-9, 2009

(name – please print or type) (preferred name for name badge) (date of birth *for transcript retrieval.*)

(business mailing address or check here if home address)

(city) (state) (zip) (county, if Georgia)

(home phone) (work phone)

(fax) (e-mail address) Please send me e-mail information about Georgia Center programs.

(position) (organization/employer)

By registering for this event, I agree to comply with event cancellation policies.

EVENT REGISTRATION FEE:

Your registration will not be processed until payment is received.

Participant/Speaker on or before 11/16/09.....\$240 _____
Participant/Speaker after 11/16/09.....\$265 _____
Student on or before 11/16/09.....\$125 _____
Student after 11/16/09.....\$150 _____
Total: \$ _____

Dietary Restrictions: _____

METHOD OF PAYMENT TO PROCESS EVENT REGISTRATION:

Enclosed is a check payable to The University of Georgia
 Enclosed is a purchase order payable to The University of Georgia (Federal ID No. 58-6001998) and/or an authorization letter to bill employer/organization.
 Mastercard VISA American Express Discover
Card # _____ Expires ____/____
Name on card: _____
 UGA Dept. Name _____
 UGA Building Name _____
Billing Contact _____ Phone No. _____

Four ways to register:

Web: www.georgiacenter.uga.edu/conferences — Credit Card Only
Fax: 706-542-6596 or 800-884-1419 — Credit Card Only
Mail: **7th Southern Forestry Natural Resource Management and GIS Conference — #67403**
Georgia Center for Continuing Education
Conference Center & Hotel
The University of Georgia
Athens, Georgia 30602-3603
Phone: 706-542-2134 or 800-884-1381 — Credit Card Only
(Mon.–Fri. from 8 a.m. to 5 p.m. ET)

HOTEL REGISTRATION:

Complete the following to request a room reservation at the Georgia Center Hotel. If your lodging preference is unavailable, the best alternative will be confirmed. Non-guaranteed reservations will be cancelled at 4:00 p.m. ET the day prior to your scheduled arrival. Check-in is 4:00 p.m. ET; check-out is 11:00 a.m. ET. **The Georgia Center is a smoke-free building; all lodging rooms are nonsmoking.**

Choose Occupancy: Single Double

Choose Room Type:

Classic Room (1 Bed)\$ 89.00 plus 7% sales tax
 Select Room (2 Beds).....\$ 99.00 plus 7% sales tax

Arrival Date _____ Departure Date _____

name of roommate for shared room

METHOD OF PAYMENT TO GUARANTEE HOTEL RESERVATION:

Mastercard VISA American Express Discover
Card # _____ Expires ____/____
Name on card: _____

At check-in, you must present your credit card or complete a credit card authorization form (for a copy, call the Georgia Center at 800-884-1381, Mon.-Fri., 8 a.m. to 5 p.m. ET).