



# New Faculty joins NRCM with focus in Watershed Management

Brian Kloepfel is the newest faculty member of the Natural Resources Conservation and Management Program. He was the Site Director of the Long-Term Ecological Research Program at Coweeta Hydrologic Laboratory near Otto, NC for the past 14 years. He has a B.S. degree in Forest Science from the University of Wisconsin-Madison, a M.S. degree in Tree Physiology from Pennsylvania State University, and a Ph.D. degree in Forest Ecology from the University of Wisconsin-Madison.

During the 2008-2009 academic year, Brian will be teaching NRM 140-Natural Resource Conservation and Management, NRM 320-Soil Conservation, NRM 442-Natural Resource

Policy and Administration, and NRM 460-Watershed Management.

Brian's research interests include watershed ecology, carbon and water cycling, forest growth and dynamics, and the policies regulating the conservation of these resources. For more information please see his web link

(<http://paws.wcu.edu/bkloepfel/>). He is also involved with the Organization of Biological Field Stations (<http://www.obfs.org/>) whose mission is to help member stations increase their effectiveness in supporting critical research, education, and outreach programs at field stations across North America.



Brian Kloepfel, 2008

Brian's wife, Deanne, teaches Chemistry at Southwestern Community College and their children, Lexi (11) and Brock (8), are busy in grade school and playing soccer and basketball.

## Upcoming Events

**October 29th, 2008—Bird Banding—**NRM330 Wildlife Management class is going to GSMNP for a bird banding demonstration by Paul Super. Vans will leave campus at 2:30pm and return to campus at 5:00pm. All are welcome—contact Ron Davis at [rdavis@wcu.edu](mailto:rdavis@wcu.edu) for more information.

**November 14th, 2008—GIS DAY—**Students in introductory GIS and Remote Sensing classes will be presenting projects for GIS Day at AB-Tech. This regional event will be attended by students from WCU, UNCA, AB-Tech and Haywood Community College as well as over 300 participants from the region who work with GIS.

**January/February 2009—NC Wildland Fire Safety Training—**The training course has been postponed until January or February 2009. Watch for email notification from Pete Bates in the new year.

**February 19th and 20th, 2009—NCGIS—**NCGIS is a biannual event to be held in Raleigh, NC in February 2009. Bill Donaldson and Staci Mellon will be presenting at this conference and other WCU students will be attending to observe presentations and network with students, faculty and potential employers.

## Alumni Profile: Jennifer Slagle (Class of 2007)

*Jennifer Slagle is a GIS Specialist at Orbis GIS Inc. located in Charlotte, NC. She graduated in 2007 with a concentration in Landscape Analysis.*

Jennifer has a number of roles that she fulfills in her job. Jenn says she does the obvious map editing and creation, but also reviews the quality of ortho-photography that Orbis acquires for their clients. She has also just recently been moved into a support role for her clients whom Orbis provides GIS-related software programs.

When it comes to her typical day, Jenn will be working on at least one mapping project. Usually, there will be one primary project on the table at a time, but she often has a few smaller requests

pop up during the week that she works into her schedule. These projects can be anything from data updates to simple real-estate maps. Larger projects can go on for months, such as a dam relicensing project or helping to map evacuation routes. Orbis also acquires aerial photography for a number of different clients, which Jenn then reviews for errors.

A new development for Jenn is that she is now being moved into a support role for certain clients. Jenn says that she is their point of contact within the company and whenever they have a problem, Jenn is the one who communicates with them to find out what the problem is, works with her team to find a solution, and then report back to the client.



*Jennifer Slagle, GIS Specialist at Orbis GIS, Inc.*

*"Working with clients is often the most rewarding part of my job"*

Jennifer Slagle.

## Forest Stewards Inc. Launched on July 1st, 2008 Pete Bates

We are excited to announce the creation Forest Stewards, Inc, a non-profit corporation created to replace the Western Carolina Forest Sustainability Initiative, and to build on its mission of promoting and implementing sustainable forest management in the southern Appalachians. Though a separate corporation, Forest Stewards is an affiliated entity of WCU, and will continue to maintain close ties with the Geosciences and Natural Resources Department. Rob Lamb is the Executive Director, and the Board of Directors include Peter Bates, Director of

the NRCM Program; Wendy Cagle, Director of the Small Business and Technology Center; and Chris Cooper, Director of the Public Policy Institute.

Forest Stewards exemplifies WCU's Quality Enhancement Program by providing students with numerous opportunities to complement their formal education by applying it in a real world setting. FSI currently employs nearly a dozen WCU students who are working on a wide range of forestry, water quality, and GIS projects.

For more information, visit our website at [www.foreststewards.net](http://www.foreststewards.net).



*Forest Stewards intern and NRCM senior Weston VanDenabeele marking trees for harvest in a habitat restoration project in Macon County*

## NRCM Students Creating a Tree Inventory for WCU Campus Laura DeWald

Each fall semester, NRCM students taking dendrology are required to do a woody plant collection. The specimens that are collected are professionally pressed and labeled by the students, and then put into the permanent collection in the WCU Herbarium. Beginning in 2007 and continuing each fall, students have been assigned to particular areas on campus for their collections. Each specimen collected by the students is located with a

GPS and the coordinates entered into the herbarium data base. Eventually, all of the trees on campus will have location coordinates. This data base can be used to help protect species that are uncommon or rare on campus. In addition, several "tree walks" will be developed from this data based and this resource can be used as a resource for education and for alumni and visitors on campus.



*Tyson Halford, Deborah Denmark, Kale Buffington, Andy Harley and Robbie Kreza*

## Turtle Habitat *Ron Davis*

The eastern box turtle (*Terrapene Carolina*) is common in forested habitats of Western North Carolina however; populations in many areas are declining due in part to rapid suburban development. During the summer and fall of 2008 several NRCM students worked on a research project studying habitat use and movement patterns of box turtles within the Balsam Mountain Preserve (a 4400 acre housing development which includes a 3000 conservation easement). Funding from the Balsam Mountain Trust allowed us to equip turtles with radio transmitters and track them during the summer and fall to monitor habitat use in relation to develop-

ment. Work will continue next year with more turtles and hopefully even more student involvement.

Students participating this year include Bill Donaldson, Emily Willard, Matt Kerfonta, Charlie Howell, and Jenny Mozely.



*Ron Davis with  
Box Turtle  
(Fall 2008)*

## Land-Use/Land-Cover Mapping in Three Eco-regions *Joni Storie*

The U.S. Department of Agriculture: Cooperative State Research, Education, and Extension Service awarded \$99,612 to Joni Bugden-Storie to develop a project with the University of San Juan in Argentina and the National Institute for Space Research in Brazil on issues relevant to agricultural performance. The project will use radar satellite data (RADARSAT-2) to map land-use/land-cover for water quality monitoring in western North Carolina, to detect land-use change in the Tulum Valley near San Juan, Argentina, and for detecting illegal soybean fields in the Tapajos National Park in Brazil.

This project will (a) increase the international content of WCU's NRCM curricula; (b) map land-use/land-cover using RADARSAT-2 imagery for three applications, and (c) contribute to decision making regarding natural resource management issues in a temperate forest (WNC), a tropical forest (Brazil) and a semi-arid valley (Argentina).

Joni wrote the grant and chose to continue working with collaborators in Argentina to develop the project. She worked with the University of San Juan during her Ph.D. studies and helped them to detect vine land areas that were impacted by salinization (salt crusts form on surface after irrigation if there is quick evaporation of the water). Joni spent five months in San Juan from 1998 to 2000.

This project will increase the international content of WCU's NRCM curricula by taking 10 GNR students to Argentina and Brazil in Spring 2009. Some of the students are currently learning how to do field data collection for remote sensing image acquisitions this semester in NRM470 (Land Suitability Classification). Next semester, all ten students will learn how to make LULC maps using special software (PolSAR-Pro) and the RADARSAT-2 data in GEOG424 (Advance Remote Sensing).

These advanced skills in diverse settings and applied international experience will allow students to gain an understanding of the global dimension of their studies



*Bill Donaldson and Street Hamrick (Sept. 2008).*

and thus better equip them to address resource conservation and management issues in the Southern Appalachian region served by WCU.

The first RADARSAT-2 image was acquired in western North Carolina on September 4th, 2008. Students in NRM470 collected canopy characteristics for deciduous forest land in southern Jackson County coincident with the image acquisition (photo).



**NATURAL RESOURCE  
CONSERVATION &  
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## Welcome Back NRCM Majors (August 2008)



### NC-CGIA @ DENR

### Black Rock Trail Maintenance



Tom Tribble from the North Carolina Center for Geographic Information & Analysis gave a talk to 16 students taking Geography 324: Introduction to Remote Sensing in the Asheville Field Office. From the left, Tom Tribble and students Andrew Lawson and Wil Whitfield on October 20th, 2008.

NRCM faculty and students have assumed responsibility for Black Rock Trail along the Blue Ridge Parkway. This particular trail has not received maintenance attention because it falls within the jurisdiction of multiple agencies.

Pete Bates coordinated permissions from all the agencies involved and spearheaded NRCM involvement in this project.

Student involvement is voluntary and offers an opportunity to participate in local natural resource issues from their freshman to their senior years.

**NRCM students and faculty on trail maintenance in Fall 2008**

