

FOREST ECOLOGY AND MANAGEMENT NEWS

A Newsletter for Department of Forest Ecology and Management Alumni, Staff, and Students

Volume 8, Number 1

February 2005

News from the Chair

Winter's grip is loosening (not that it was ever very tight in Madison), but the Legislature seems intent on retaining a tight grip on the University's purse strings in 2005-06. We anticipate another (smaller) budget cut for the coming year to deal with the state's continuing budget deficit. We remain optimistic that economic indicators do reflect an improving fiscal situation for state government, but it has yet to be seen here. Still, there is good news to report from several quarters, as you will see inside.

This issue features the work of Prof. Tom Gower, one of our most productive and enterprising faculty, who continues to conduct important ecological research in northern forests. I hesitate at times to feature only one member of our faculty because everyone here continues to work hard and demonstrate what a vibrant educational community UW-Madison remains. There will be more such features in the future.

We also have recruited some very talented graduate students who joined us fall semester. I continue to be impressed with the motivation and creativity of our graduate (and undergraduate) students. We expect big things from this cohort.

We recently updated our web site (<http://forest.wisc.edu>) and are fine tuning

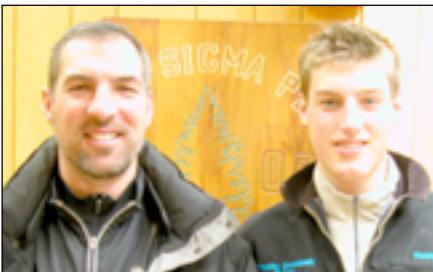
it now to add more useful links. If you have not visited the site in several months, please visit it again. We'd like your opinion as to what changes would make it even more user friendly.

Our undergraduate students continue to succeed, both here and once they reach the professional world. Comments from several recent grads are noted in the Alumni Update. And we continue to hear from older alumni, and occasionally find them visiting with their offspring. It can be a bit of a shock coming face to face with "son of ..." but we are always pleased to discover that your memories of Madison are positive and that you now want your children to experience life here. Keep them coming.

— Ray Guries

Alumni Update

Swift Corwin (B.S. 1981) and his son, Swifty, stopped by the department to say hello and Ray Guries snapped a picture of father and son (pictured below, Swift on the left, Swifty on the right). Swifty is a high school senior and was scouting colleges. No pressure, Swifty, but you can't do better than UW-Madison.



Guenther Castillon (B.S. 2002) checked in from Huron Shores ranger station in Oscoda, Michigan. He says he's enjoying his work and the people he works with. His responsibilities run the

gamut from writing stand management prescriptions and environmental assessments, conducting prescribed burns, marking timber, laying out sales, and even doing some timber theft investigative work. Before you feel too sorry for Guenther's heavy work schedule, he reports that he's also squeezed in some fishing and kayaking. His co-workers have also introduced him to grouse and duck hunting. Guenther's email address is: gcastillon@fs.fed.us.

Sarah Zenner (B.S. 2003) is fortunate to spend this winter in Florida. She accepted a seasonal position at Everglades National Park at Park Headquarters in the Pine Island District. She works at the Ernest F. Coe Visitor Center part of the time and conducts ranger-led programs the rest of the time. Her ranger programs include a couple of guided walks, a bicycle tour, a "slough slog," and an evening campfire program. Sarah says she hopes to return to the Grand Tetons National Park later this year for her third summer season there. Sarah's email is: smzenner@uwalumni.com.

Jussi Uusivuori (Ph.D. 1990) reports a change of employment. He has been appointed a Professor at the Finnish Forest Research Institute (METLA) in Helsinki. His new email address is: Jussi.Uusivuori@metla.fi.

Bruce Michie (Ph.D. 1981) visited the department and gave a presentation on the problems of conducting timber

Alumni Update continues on page 2

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Alumni Update, continued from page 1
inventories in Russia. Bruce works for the European Forest Institute (EFI) in Finland. His current work focuses on refining a system to analyze international forest products trade data. Bruce's email is: <Bruce.Michie@efi.fi>.

Cory Secher (B.S. 2001) recently accepted a full-time, permanent position with the Colorado State Forest Service. He has begun training for the role of Assistant District Forester-Boulder District, which will involve the new chore of running district budgets. He also continues training for wildland fire-fighting and just received Crew Boss and Engine Boss certification. Cory's email address is: <secher1@msn.com>.

Ricardo Scarpa (Ph.D. 1999) has accepted an appointment as Professor in Environmental Economics at the University of Waikato in New Zealand. He leaves his current position at the University of York in February. At the time this newsletter was printed, we did not yet have his new email address.

Student News

Students Learn the Basics of Wildland Firefighting

The Forestry and Recreation Club sponsored a three-day Wildland Fire Training Workshop during two weekends in January. The class was offered to students and other interested participants who wished to learn more about wildland fire behavior and control techniques. The class was supported by the Wisconsin DNR and was taught by Mr. Larry Schmidt, a retired DNR ranger. After completing the training modules, students are eligible to earn a "red card," which is required for federal wildfire employment purposes. De-

Annual Christmas Tree Sale is Another Holiday Success

For several days in early December, the UW's Stock Pavilion was transformed into a Christmas tree wonderland filled with fantastic fir scents and attractive wreaths. According to Forestry and Recreation Resources Club President, Joe Schwantes, more than 400 white pines, balsam, and Fraser fir trees were sold to become the holiday focal point in many homes. The Club raised some \$6,000 from the tree sale to support club activities as well as to provide financial support for "Summer Camp" at Kemp Natural Resources Station and the "Spring Trip" tour of forests and forestry management practices in the southern U.S. With financial help from the 2004 tree sale, a new activity has been added. Professor Don Field will lead a group of Recreation Resources Management majors on a Spring Break work-learn experience at the Land Between the Lakes National Recreation Area in Tennessee and Kentucky. The annual fund raiser also helps pay for convention attendance (several students traveled to Edmonton, Alberta, for last Fall's SAF convention) and technical training classes, such as chain-saw and wildland fire safety classes. Over two dozen students and several faculty members donated their time to help wide-eyed shoppers find the "perfect tree." We look forward to another successful tree sale in December 2005. If you live in the greater Madison area, this is the place to come for your future trees.

Club member Kaitlyn Schott helps a buyer choose just the right tree. (Photo by Gene Summers)



spite the long hours and sacrificed weekends, the class was attended by 14 students and one Forest Service employee. There will be one more Saturday event during which participants will be able to gain hands-on experience with fire suppression by learning how to lay hose, make fire lines, and extinguish fires. The Wildland Fire Training Workshop provided a great opportunity to learn outside the classroom and will be offered again in the future.

— Submitted by Joe Schwantes,
club president

Mo Zhou wins Best Student Paper award

Congratulations to Ph.D. student Mo Zhou, who received the Best Student Paper award in Oct. 2004 at the Midwest Forest Economists and Mensurationists conference in Grand Rapids, MI. Her winning paper is titled "Test for Market Integration of Softwood Saw-timber Stumpage in the Southern U.S. with Space-time Models." Mo is working with Prof. Joseph Buongiorno. Her degree interests focus on optimizing forest management in a stochastic environment for multiple use with interests in the southern pine stumpage market.



Congratulations to our December Graduates

B.S. Recreation Resources

Management: Sarah Herzberg

M.S. Forestry

Michael LaBissoniere

Thesis: *Understanding the Impacts of Foreign Competition in the Wisconsin Wood Furniture Industry*

Ph.D. Forestry

Edward Bartell

Thesis: *Characteristics that Influence the Awareness and Involvement of Small Communities in Wisconsin's Urban Forestry Grant Program*

Jenny Carney

Thesis: *Variation in Growth of Two Dominant Grasses at a Central New Mexico Ecotone for Two Years with Contrasting Climates*

Greg Clendenning

Thesis: *Seasonal Homeowners, Community Change, and Natural Resources Management in the Amenity Rich Exurbs of the Wisconsin Pine Barrens*

Howard Nelson

Thesis: *Tropical Forest Ecosystems of Trinidad: Ecological Patterns and Public Perception*

Welcome New Forest Ecology and Management Graduate Students

Richard (Rick) D. Bergman (rbergman@wisc.edu) – I am working on a Masters degree and with Prof. Scott Bowe. The Masters thesis is to develop a Life Cycle Inventory (LCI) for hardwood lumber production in the northeastern United States. I received a B.S. in Chemical Engineering from UW-Madison then spent six years in the U.S. Navy as a submariner, and received an Associate Degree in Electromechanical Technology two years later. I work at the Forest Products Lab doing research on lumber drying. I enjoy walking, sometimes with our dog depending on the weather, and traveling with my wife, Debra, and stepdaughter, Danielle.

Julia Burton (jiburton@wisc.edu) – I am a Ph.D. student working with Prof. David Mladenoff and others on the Flambeau Experiment. We are examining how canopy gaps affect patterns of species composition and diversity in understory plant communities in space and time and the importance of those patterns to larger-scale processes. Originally from the prairie-forest border region of Illinois, I migrated to Madison from St. Paul, where I obtained my M.S. comparing primary and secondary forests on the North Shore of Lake Superior. I also have a B.S. in Forestry from UW-Stevens Point. My hobbies include botanizing, canoeing, hiking, and birding.

Chris Caldwell (cmcaldwell@wisc.edu) – I am working with Prof. Scott Bowe toward a wood science degree to complement the work I am doing at the Forest Products Lab's Performance Engineered Composites unit. I enjoy working at the lab because most of the ideas that are researched here exhibit a vision that looks toward future generational needs and not just present needs. I am a member of the Menominee Nation in Wisconsin, where the forest has always been a part of our culture and decisions concerning our natural resources have been made with that same vision.

Rebecca Gass (rgass@wisc.edu) – I am a Master's degree candidate working with Prof. Mark Rickenbach. My research involves developing policy mechanisms that foster cross-boundary cooperation among private forest owners. I have a B.A. in Political Science from Colorado State University. For the past two years, I have worked for the Wis. DNR, Division of Forestry in the State Forest program. This position helped me to see how I could successfully marry my background in policy and my interest in natural resources. I grew up in northern Wisconsin and was wearing wool knickers and x-country skiing from the time I could walk. When the snow melts, you can find me running the trails in the Arboretum.

Corey Halpin (chalpin@cs.wisc.edu) – I am a new Master's degree candidate working with Prof. Craig Lorimer. My research will focus on developing computer models of forest growth and statistical validation of those models. I grew up in Reedsburg (a small town in Wisconsin near Wisconsin Dells) but now live in Madison with my wife and two step-kids. I received my B.S. in Electrical Engineering and Computer Science here at Madison and became interested in forestry through a part-time job at the Forest Products Lab during my undergraduate work.

Sarah Mittlefehldt (mittlefehldt@wisc.edu) – Currently, I am working on a Ph.D. in Forest Ecology & Management with Prof. Nancy Langston. My research will focus on the history of community-based watershed management in northern Wisconsin. I received my MEd from Harvard University in environmental science education and enjoyed designing an undergraduate degree in social ecology at Carleton College. When not busy with the books, you can find me on a porch somewhere, playing bluegrass on my bass fiddle or enjoying Wisconsin's plethora of outdoor activities.

New grads, continues on page 4



Student describes internship experience at Olympic National Park

By Greg Jaeger

I am a Recreational Resources Management major in the Department of Forest Ecology and Management. I just finished my internship experience at Olympic National Park in Port Angeles, Washington. My internship was with the Natural Resource Division of the National Park Service.

While interning at the park, my job was to assist my boss with her research in analyzing the true human impact upon the park and also to do restoration projects that would hopefully combat the effects humans have inflicted onto the land.

Before starting my job, I went through special training where I learned wilderness survival tactics, first aid training, search-and-rescue training, and aviation safety. I was part of a crew that went

out on the park trails and completed field inventory surveys. We would note the conditions of the man-made structures within the park, note areas that had been heavily impacted by humans, and also measure how long the trails were. We measured the trails as accurately as possible using GPS units. This helped the GIS staff create more accurate maps and helped the maintenance crew set its maintenance priorities. I also worked in the park's greenhouse where we propagated plants from seed collect-

'... my internship has shown me what it takes to become a successful park manager/employee.'

ed from restoration project areas. Near the end of my internship we continued our restoration project by planting these plants in the park and also delineating the trails by using course, woody debris.

I am very appreciative of my internship because it has shown me what it takes to become a successful park manager/employee.



Recreation Resources Management student Greg Jaeger takes time out during his recent internship at Olympic National Park to enjoy the scenic Washington coast. Photo by Tanguy Valois

New grads, continued from page 3

Jordan Muss (muss@wisc.edu) – My geographic history is broad. I grew up in Texas, lived in D.C., worked in the Chicagoland area, and recently emigrated from South Florida just ahead of the hurricanes. I have a B.S. in Computer Science from Northwestern and an M.S. in Environmental Science from Florida Atlantic University. For the past 5 years, I was tooling around in the Florida Everglades in an airboat, studying South Florida's patterned peatlands. Now, as a Ph.D. student working with Prof. David Mladenoff, I will be examining the broad and fine scale effects of forest cover on the hydrology of Lake Superior watersheds. My extracurricular interests include running, trap and skeet shooting, and other outdoor activities.

Shawn P. Serbin (serbin@wisc.edu) – I am an entering Master's degree candidate working with Prof. Tom Gower. I received a B.A. in Information Systems and Development with a minor in GIS from Michigan State University. My research interests involve the use of remote sensing techniques to examine the effects of global and regional climate change on the physical and biophysical processes of terrestrial ecosystems. I am currently working on a project looking at validating the use satellite data to quantify critical vegetation canopy parameters that influence carbon exchange between boreal forests and the atmosphere.

Ingrid Van Herk (vanherk@wisc.edu) – I am a Masters student working with Prof. Tom Gower. My research will focus on the effects of climate change on water movement through the boreal forest. This is based on Dr. Gower's larger Boreal Forest Warming Project in northern Manitoba, Canada. I am originally from Morinville, Alberta, Canada. I completed my BSc in Conservation Biology at the University of Alberta. I then worked for Dr. Gower on the Boreal Forest Warming Project. When not working or studying, I enjoy camping, canoeing, and traveling, taking any opportunity to see different places.



Faculty Feature - Prof. Stith T. (Tom) Gower

You might say the whole world is awaiting the results of a couple of research projects Professor Stith T. (Tom) Gower currently has underway. The projects seek to determine what impact global warming might have on boreal forests, the second most common forest type in the world. Boreal forests comprise a band of predominantly evergreen coniferous forests across high latitudes in Canada, Russia, Alaska, and smaller parts of China and Scandinavian countries. The U.S. Department of



Prof. Tom Gower and his horse "Saqr."

Energy has funded Prof. Gower and research colleagues to construct aluminum-frame chambers that look like a cross between the set for a sci-fi film and high-tech corn cribs. Many of the materials used to build the structures were delivered to the staging area near Thompson, Manitoba, by semi-trucks from Madison and were lifted to the research site by helicopter.

The project involves laying heating cables under a half-acre area of soil and building chambers from aluminum frames 25 ft. in diameter around plots of six to eight young black spruce trees. The air temperature inside the chambers and soil beneath the chambers is heated 5 degrees C. above the temperature in the adjacent control plots. All the environmental conditions are controlled electronically,

with data transmitted to UW-Madison via satellite.

Of particular interest is the effect the warmed soil has on the release of carbon dioxide produced from carbon stored in the soil in the form of dead organic matter. "We use the warmed chambers nested on soil warming plots to examine the direct effects of ecosystem warming," says Prof. Gower. The chambers allow Prof. Gower and his fellow researchers to adjust the temperature within the chambers while the chambers help minimize changes in radiation, humidity, and carbon dioxide concentration. The project builds on Gower's earlier work in northern Wisconsin and Sweden. Cooperators in the project include Manitoba Hydro, Manitoba Conservation, and the Swedish

University of Agricultural Sciences.

A second three-year project, also based in Manitoba, explores the impact of wildfires on the growth of vegetation in boreal forests. Prof. Gower hopes this NASA and NSF funded project will advance his long-term efforts to link field measurements, remote sensing, and ecosystem modeling to quantify the effects of global change on the carbon budget of boreal forests.

Prof. Gower and fellow research scientist, Doug Ahl, theorize that forest disturbance, especially wildfire, plays a role in the trend toward earlier "green-up" in the spring. Fire frequency in northern Manitoba and Saskatchewan boreal forests has increased by 200% or more in the last 20 years. Gower and Ahl hope their results will demonstrate a

Gower continues on page 6

Prof. Gower and his research colleagues constructed aluminum-frame chambers to enclosed plots of black spruce trees. Air in the chambers is heated 5 degrees C. above that in the control plots.





Gower continued from page 5
 link between the increased number of fires and the corresponding earlier green-up. They have set up light sensors in eight study stands of trees to measure the amount of light absorbed by the canopy, which can be used to quantify the phenology of the forest. These data can then be compared to MODIS satellite data. Watch future issues of this newsletter for project results.

Prof. Gower has been on the faculty in the department since 1987. He received his undergraduate degree at Furman University, his M.S. in Forest Ecology and Soil Science at North Carolina State University, and his Ph.D. in Forest Ecology at the University of Washington. He and his wife, Connie, have two daughters. When he has the

time, Prof. Gower enjoys endurance horse racing with his daughters. Races range in length from 25 to 100 miles, with mandatory horse checks every 12 – 20 miles to ensure the horse is metabolically and structurally sound. Prof. Gower says he finds the sport is especially intriguing because you must understand how to (1) train and condition horses, (2) manage equine physiology to ensure their diet and supplements (including the special concoctions each rider makes up to keep the horse’s electrolyte and glucose levels optimum) are optimal, and (3) create strategy to peak horses for certain races.

Many of the materials used to build the aluminum frame structures were lifted by helicopter to the research site near Thompson, Manitoba.



Department News

Prof. Buongiorno receives award from IUFRO

Prof. Joseph Buongiorno was recently named a recipient of the International Union of Forest Research Organizations (IUFRO) Scientific Achievement Award. The award, to be presented during the XXII IUFRO World Congress in August in Brisbane, Australia, recognizes individuals for their scientific achievements and for promoting forestry research.

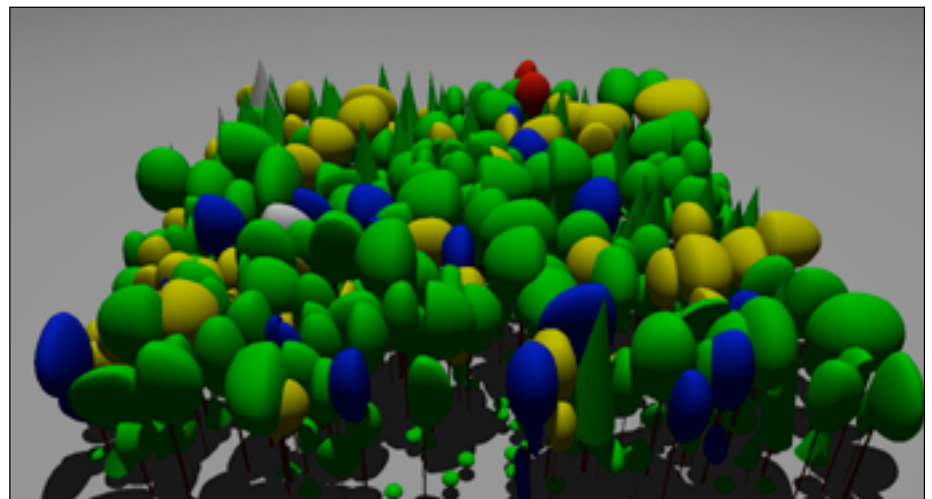
Prof. Lorimer’s CANOPY research receives grant

Prof. Craig Lorimer received a grant from the U.S. Forest Service to study the effectiveness of silvicultural treatments in restoring the development of old-growth features in northern hardwoods. The Wis. DNR, which is initiating a companion field study of these practices on four research sites across northern Wisconsin, is a cooperator on the proj-

ect. The immediate goal of the project is to use a computer model to simulate the long-term effects of these treatments on forest habitat structure, growth, and yield. These predictions will then be compared with observed tree responses from the DNR field study. Prof. Lorimer and graduate students Jake Hanson, Corey Halpin, and Jayne Vanderwerker are developing a model called CANOPY which simulates the growth of tree crowns and can mimic the small-scale processes of gap formation and

closure. It will also incorporate features of natural disturbances regimes such as periodic windstorms. There will also be a regeneration module that predicts the density and species composition of saplings in response to disturbance. The calibration data is based on records of more than 14,000 trees from permanent and temporary plots in managed, unmanaged, and old-growth stands. Model development is currently under way, and preliminary results are expected in 2006.

Below is CANOPY's depiction of a 1 ha stand in the Menominee Indian Reservation.





A heartfelt thank you to our donors

The Department of Forest Ecology and Management was fortunate in 2004 to receive a number of generous donations. We would like to publicly thank each of you for your contribution and continuing interest in our department, programs, and students. The funds are sometimes tagged for a specific use by the donor. Other donations support undergraduate scholarships and educational activities, student attendance at professional meetings, and special development projects. Below is a listing of contributors.

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Forest Ecology and Management Capital Fund

We invite you to join us in our efforts to establish a capital fund. Proceeds will be used to support a range of research and instruction activities, help cover the costs of the summer field camp and the southern trip, and to upgrade research space in Russell Labs.

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If paying by check, please make your gift payable to UW Foundation Forestry Fund, University of Wisconsin Foundation, 1848 University Avenue, P.O. Box 8860, Madison, WI 53708-8860

Alumni Update

We'd like to hear what's new with you, your family, career, etc. Please complete and return the form below or e-mail the information to <rpjuries@wisc.edu>.

Name: _____

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Inside this issue . . .

Christmas tree sale a
big success page 2
Meet our new graduate
students page 3
Student interns at Olympic
National Park page 4
Featured faculty: Prof.
Tom Gower page 5

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