Exciting Changes in the Department

It's official! The Department of Natural Resources Conservation is now the Department of Environmental Conservation (ECo) and we have a newly consolidated graduate degree program. Our new name accurately represents the unifying goal for all of our programs, students, and faculty: conserving the environment—from the natural environment to the built environment. So now everyone can understand exactly what we do just by seeing our name!

The capacity of the programs, interest of our students, and expertise of the department faculty is diverse. The range of expertise covers the continuum extending from the built through the natural environment. The department is interdisciplinary and our new focus will help us to become more integrated, complementing how our undergraduate program is now structured.

Our Undergraduate Program

Last year the department reorganized its undergraduate offerings. Starting this fall, undergraduate students can choose from three programs leading to a Bachelor of Science (BS) degree:

- Building & Construction Technology (formerly Building Materials and Wood Technology)
- Environmental Science
- Natural Resources Conservation

Rather than continuing to offer separate majors in Forestry, Urban Forestry, and Arboriculture; Natural Resource Studies; and Wildlife and Fisheries Conservation, the new Natural Resources Conservation major incorporates these into a single integrated major and students will specialize in one of six academic concentrations:

- Environmental Conservation
- Fisheries Ecology & Conservation
- Forest Ecology & Conservation
- Urban Forestry & Arboriculture
- Water Resources
- Wildlife Ecology & Conservation

Our New Graduate Program

Until now, the Department has supported two separate graduate degree programs, Wildlife and Fisheries
Conservation (WFCON) and Forest Resources (FR), each of which offers a PhD degree, an MS thesis degree option, and a variety of MS professional degree (non-thesis) options. In response to the growing complexity of environmental conservation and the need to integrate the study of environmental issues, the graduate program has naturally evolved into a new broad, multi-faceted degree program with diverse opportunities for specialized training in:

- Wildlife, fish, and conservation biology
- Forest resources and arboriculture
- Water, wetlands, and watersheds
- Environmental policy and human dimensions
- Building systems

Each concentration in the graduate program (now also called Environmental Conservation) offers thesis and professional degree options.

After 23 years of using the endearing acronym BMATWT, the Building Materials and Wood Technology Program has officially adopted a new name: Building and Construction Technology (BCT). Adding Construction to our name better acknowledges the supporting undergraduate curriculum and the career paths of our graduates.

What’s in a Name?

A
fter 23 years of using the endearing acronym BMATWT, the Building Materials and Wood Technology Program has officially adopted a new name: Building and Construction Technology (BCT). Adding Construction to our name better acknowledges the supporting undergraduate curriculum and the career paths of our graduates.

New Courses

Recently, new elective courses have been added for BCT students and some other changes were made to the curriculum.

- Permaculture (BCT 397P): This class, taught by the first graduate of our Green Building master’s degree program, Ryan Harb, was offered for the first time last spring and received rave reviews from students.
- Building a Formulized Plan for Your “Green” Positioning (BCT 597S): This course is now being taught by adjunct faculty and BCT alumnus Bill Bean.
- Project Management for Design and Construction (BCT 597P): Recently developed by Ludmilla Pavlova, adjunct faculty and a senior facilities planner on campus, this course supports a growing student interest in both residential and commercial project management.
- Our newest faculty member, Dr. Simi Hoque, now teaches three courses that expand opportunities for students planning to pursue careers in green building and add value for designers, builders and others interested in this rapidly evolving field. She teaches the entry level class, Energy Efficient Housing (BCT 211), and two new courses: Building Energy and Environmental Systems (BCT 597E), which has an associated lab section, and Analytical Methods in Building Energy Performance (BCT 697E).

Search for New Faculty

We are particularly excited to announce the search for another new hire, an Extension assistant professor in building energy. The new faculty member will be charged with engaging faculty, industry, and government partners in identifying, conducting and funding building energy research, education, and outreach.
Moved in

New Faculty: In Their Own Words

Dr. Bethany Bradley  An understanding of how ecosystems respond to anthropogenic pressures like land use and climate change is a critical tool for resource management in times of change. I am interested in using biogeography to investigate how non-native, invasive plants are distributed across landscapes and regions and how those distributions are influenced by human activities. These relationships can, in turn, be used to project future risks from plant invasion and thereby inform current management. Thus far, the bulk of my research has focused on the Western United States. I’m looking forward to joining climate change research programs focused on the northeast now that I am at UMass Amherst. This year, I am teaching classes in Global Change Ecology and Geographic Information Science.

Dr. Andy Danylchuk  The overarching theme of my research is fish and aquatic conservation. My students and I use tools such as physiology and biotelemetry to understand how disturbances influence the behavior, movement, and survival of recreational fish species (e.g., striped bass, sharks, bonefish), coastal turtles, and marine invertebrates. Another focus of my research is developing models of sustainable aquaculture that can provide food security to human societies as well as reduce the harvest of wild fish stocks.

From ECo’s Department Head

Dear Alumni and Friends,
Our department is fortunate to have more good news than we can possibly squeeze between the covers of this single newsletter. The bottom line, I am proud to say, is we have great students that are being taught by the best faculty in the most progressive environmental education programs offered anywhere in the nation. The department has more undergraduate and graduate students, is conducting more research, and is working in a more unified way than ever before. Our new name, Environmental Conservation, reflects the fact that we are addressing today’s many complicated environmental challenges with an integrated approach to research and education, considering environmental systems while maintaining disciplinary depth. Graduate and undergraduate programs have a unifying focus on the stewardship of healthy and sustainable ecosystems that provide important human and community benefits. ECo’s focus extends from the ecology and management of fish and wildlife populations, trees, forests, watersheds and landscapes to the physical, social, and policy aspects of conservation involving urban forests, human habitat, and sustainable building.

As you probably noticed, it has been a while since the department has published a paper version of its newsletter. We publish our news online daily as it happens. Please join us at http://eco.umass.edu/ and subscribe to our online news service at http://eco.umass.edu/about-us/getting-eco-news/. You will automatically receive updates delivered to your email inbox. Alumni, please share your ongoing post-graduation experiences with us. We want to see what you’re up to. Let’s stay in touch.

Warmest regards,

Professor Paul Fisette

Continued on page 4
Infrared in 3D
A three-dimensional visualization of infrared thermographic imagery of a residence, created by Alexander Schreyer, was featured on the science show “Science or Fiction” aired on the French-language channel TV5 in Canada. This visualization is based on recent work in applying 2D infrared imagery to interactive 3D models.

New App Is an Aid in Gulf Crisis
Building on existing technology, researchers Curtice Griffin, Charles Schwelk, and Andy Danylchuk created an application known as “MoGo.” Short for Mobile Gulf Observatory, MoGo allows iPhone users to snap and upload photos of oil-affected wildlife, along with their GPS coordinates, to a database. From there, the data is automatically linked to the Wildlife Hotline, a call center established by Unified Command that enables response agencies to capture and clean the animals.

In the future, the research team plans to launch a MoGo app that can be used by smartphones other than the iPhone.

The app can be downloaded from the team’s website: www.savegulfwildlife.org.

Governor’s Appointment
On June 2, Governor Deval Patrick appointed David Kittredge to the state’s Commission on Financing Forest Conservation. This commission was created by legislation to study innovative methods for funding the conservation of forested wildlands and woodlands in the Commonwealth. Roughly 70% of all the state’s forestlands are privately held, and a variety of finance methods will be explored that may underwrite conservation and ensure the continuance of public ecosystem benefits from these private lands.

“Moved in” continued
can use genetics techniques to help identify populations most in need of conservation and management action, to help monitor populations over time, to predict how fragmentation and climate change are likely to influence populations, and to do forensic analyses—for example, to identify poachers. I specialize in the conservation genetics of freshwater fishes, and many of my initial projects at UMass Amherst involve native brook trout populations. I am involved with projects that use genetic techniques to examine the effects of fragmentation by roads on fish movement patterns and efforts to use genetic techniques to monitor the size of brook trout populations. However, the principles and techniques I use may be applied to any organism. I am co-advising, along with Francis Juanes, a graduate student who is examining genetic patterns in Cape Cod horseshoe crabs to help assess potential population-level effects of current harvesting practices. I’ve started collaborations with Kevin McGarigal on salamander genetics, Paul Severt on rattlesnake genetics, and Andy Danylchuk on bonefish and striped bass genetics. I am looking forward to other collaborations that arise over time in our diverse department.

Moved up
Brian Kane, commercial arboriculture, has been promoted to an associate professorship and awarded tenure at the university.

Three of our faculty members have been promoted to the rank of full professor:
Paul Barten (forestry, hydrology, and watershed management)
Matt Kelty (silviculture and forest ecology)
Kevin McGarigal (landscape ecology, ecosystem management, and wildlife ecology)

Continued on page 8
Forestry Students Win SAF Quiz Bowl Again

On March 10, UMass Forestry students were again victorious, winning the New England Quiz Bowl competition and defeating teams from UNH and Paul Smith’s College at the 90th annual meeting of the New England Society of American Foresters (NESAF) in Nashua, New Hampshire. This is the second year in a row that the UMass team has placed first in the Quiz Bowl. The competition is modeled after the Jeopardy game show, with student teams competing to correctly answer questions pertaining to forestry, wildlife, and other natural resource topics. UMass team members Justin Renaud, Robert Herrick, and Jeff Hutchins responded quickly and confidently with correct answers resulting in the victory.

4th Annual UMass Student Tree Climbing Competition

On Saturday April 24th, students in the Arboriculture & Community Forestry program held the 4th Annual UMass Student Tree Climbing Competition in Kendrick Park in Amherst. The competition consisted of four events: two speed climbs, a rope throw for accuracy, and a work climb in which competitors move around the tree to ring bells hung on branches with their handsaw, simulating a typical pruning situation. Eliot Beals and Vicki Pavao, both juniors in the program, won the men’s and women’s competitions, respectively. Thirteen students competed, and several alumni returned to help judge and time the events. Alumni also donated $1,200 worth of prizes. “This was a great competition, a beautiful day, and great fun for everyone involved,” said Brian Kane, faculty advisor for the competition.

Babaasa Receives Grant

PhD student Dennis Babaasa received a research grant from the International Foundation for Science (IFS). IFS supports scientific research (social and natural) relevant to the sustainable management, use, or conservation of biological or water resources in developing countries. These grants are awarded for amounts up to $12,000. Applicants must be citizens of a developing country with an academic degree of an MS/MA and carry out their research in a developing country. The proposed research must be relevant to the needs of the country or region and contribute to the advancement of knowledge in the grantee’s field. Dennis’s research project is on determining habitat suitability for mountain gorillas in Uganda’s Bwindi Impenetrable National Park.

Nampindo Receives Doctoral Fellowship

Simon Nampindo, a doctoral candidate in the department, was selected for the Kathryn Fuller Doctoral Fellowship by the WWF’s Conservation Science Program. Simon is one of only five winners worldwide.
Student Marshall Remarks from College Graduation

Jeffrey Hutchins, graduating forestry student, was selected to lead students from the department to the stage to receive their medallions and recognition during the College of Natural Science graduation ceremony. Student marshals from each department were invited to make brief remarks, and Jeffrey made the following:

The department...develops leaders in fisheries, wildlife, and forest ecology; environmental science; natural resource studies; and green building technology. As we move forward into a world fraught with overconsumption, the challenges we face seem overwhelming. I remind you, though, of Aldo Leopold’s words: “In these higher aspirations, the important thing is not to achieve, but to strive.” We have a responsibility as stewards of environment to ensure the wise, sustainable use of our natural resources. We have the tools; we have the dedication; we will forever strive to lead and promote this global initiative for conservation.

New Scholarships

Two new scholarships will be available for students in Environmental Conservation in 2011.

Bradford G. Blodget Scholarship Fund for Ornithological Studies

We are proud and grateful to recognize Bradford Blodget as a graduate of our department. Brad completed his thesis on the effects of off-road vehicles on least terns and other shorebirds and received his Master’s Degree in Wildlife Biology from UMass Amherst in 1978. He was employed by the Massachusetts Division of Fisheries and Wildlife from 1977 through 2002, holding the position of State Ornithologist for most of those years.

In consideration of his abiding interest in and affection for UMass Amherst and in recognition of the pivotal role his education at UMass Amherst played in the realization of his career, Brad established an endowed fund, the Bradford G. Blodget Scholarship Fund for Ornithological Studies. The fund will support the research of students interested in ornithological research, conservation, monitoring, and management. Brad hopes the scholarship will encourage and facilitate other students aspiring to careers in ornithology.

Graduate and undergraduate students with an interest in ornithological studies, with support from their faculty advisors, are invited to submit proposals for funding along with a proposed budget. Selection will be made based on the quality of the proposal and the academic preparedness of the student to engage in that work. Proposals for studies of birds within New England and New York will have priority. However, studies proposed for outside the region will be considered. The award will be available for the first time in May 2011.

Ned Taft Internship Fund in Environmental Science

Edward P. Taft III (1950-2009) was a nationally-recognized fisheries biologist. He built a world-renowned environmental sciences group at Alden Research Laboratory in Holden, Massachusetts, and fostered education in the sciences throughout his career. Although he wasn’t a UMass alumnus, he hired alumni and strongly advocated for public university graduates. His widow, Elizabeth (Libby) Taft, established the Ned Taft Internship Fund in...
Environmental Science to continue his mentoring spirit and give students real-world experience as a foundation for their future careers. The purpose of the scholarship is to give qualifying undergraduate or graduate students the opportunity to work with professionals in the field, to further critical research efforts, and to learn first-hand about U.S. and international policies and procedures by supporting student internships and independent studies in or related to environmental science in the Department of Environmental Conservation. Qualified students should have an interest in applied science, policy, or engineering aspects with a strong environmental component, particularly with respect to aquatic resources or ecosystems. First preference will be given to students interested in projects at Alden Research Laboratory related to fisheries, fish movements, and behavior relevant to development or restoration projects (e.g., hydropower, passage systems, water withdrawals, river fragmentation, river restoration, etc.). In the unlikely event that a suitable candidate is not identified, the scholarship may be awarded to an Environmental Conservation student working in an area most closely related to environmental protection and amelioration. The first scholarship will be available in spring 2012.

From Joe Larson

On my retirement from the faculty in 2000, I was appointed by the Governor to the state Fisheries and Wildlife Board that sets policies, adopts regulations, buys land for habitat preservation, and hires the staff of the state Division of Fisheries and Wildlife. It is proving to be a great experience to be closely involved in the process of incorporating science into state policies and actions. The press of public contenders (anti-hunting groups, sportsmen, endangered species advocates, developers, big time polluters, etc.) is constant in Board meetings and sometimes in the courts. I wish that there was a way to convey this to students in a classroom because it is a true-life reality show in applied ecology.

My main contact with the university now is helping to lead an effort to see that the significant historic buildings and landscapes on the campus are preserved while being put to modern uses. Any alumni who would like to know more about this battle should drop me an email at larson@tei.umass.edu.
After many years of service to the department, Bill Patterson (forest ecology) and Bob Muth (human dimensions) have retired. We wish them both the best in their future endeavors.

We also wish the best to Dave Loomis as he moves on to an exciting new position with East Carolina University in Greenville, North Carolina.

Look for more ECo news and events on our website:
http://eco.umass.edu