VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY FALL 2005

Saving *Caretta caretta* on Bald Head Island

THE LOGGERHEAD MAY SOMEDAY OWE ITS EXISTENCE TO FISHERIES GRADUATE STUDENT HEDGES

Melissa shows off some hatchlings to the public. When they crawl out to the water, they make their way to the Sargasso Sea, a two-million-square-mile ellipse of water in the North Atlantic hundreds of miles from the East Coast running from the West Indies to the Azores off Africa.

Among America's special places is Bald Head Island, one of three small barrier islands collectively called the Smith Island complex. The southernmost of North Carolina's captivating cape islands, Bald Head juts out into the ocean at its eastern tip known as the legendary point of Cape Fear.

It's here that the state's largest river, Cape Fear, flows into the Atlantic Ocean. Dunes along the South Beach at the river's mouth gave the island its Bald Head name. River pilots looking for work from incoming ships trampled the vegetation down to the bare dunes.

The river and its estuarine system provide a lifeline for fish and wildlife that inhabit the island, a key reason a group of concerned property owners founded the Bald Head Island Conservancy in 1983. Dedicated to conserving the natural resources around the island, the conservancy sponsors such highly popular activities as summer Conservancy Camp for youngsters, fishing schools in the fall, and – turtle walks.

Directing these turtle walks, while undertaking a major research project, has been Virginia Tech graduate research assistant Melissa Hedges, who is working on a loggerhead sea turtle field study and population model for her master's degree. Anyone following Melissa around for a few days wonders how she does it all.

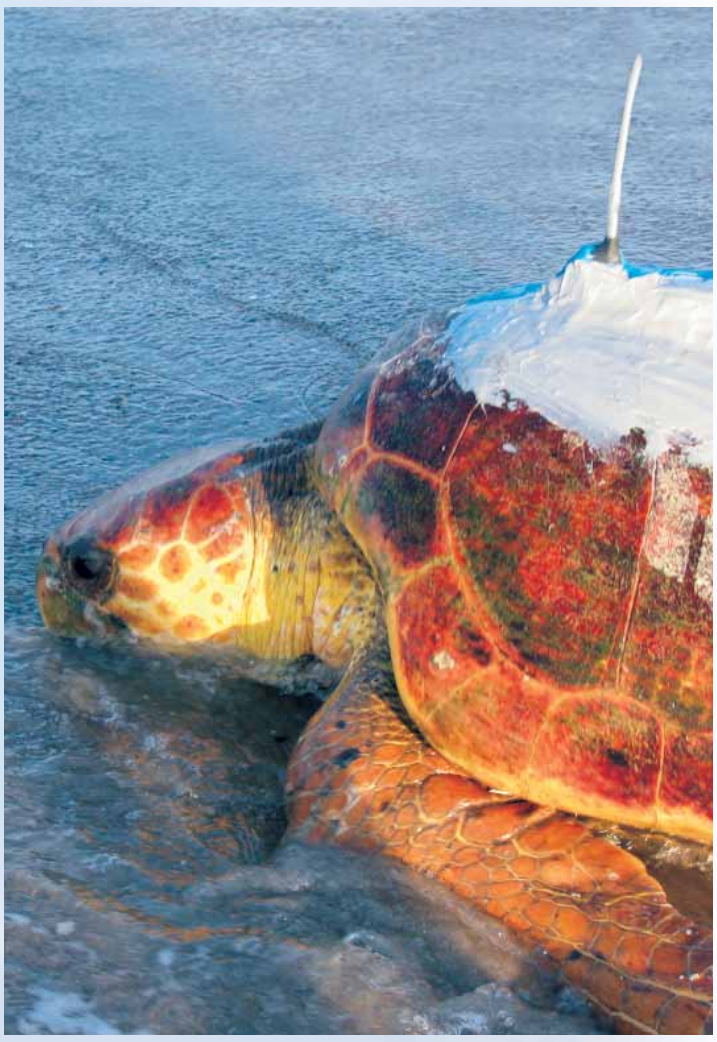
The benefactors of the Conservancy, known for its Sea Turtle Protection Program, have built simple but nice facilities near the eastern tip of the 12,000 acre island, 10,000 of which are forever protected preserves.

Melissa was responsible for hiring and training her crew of six undergraduates, who had rotating night duties in dune buggying up and down half of the island's shoreline looking for loggerheads coming ashore to nest from May to August. They assisted Melissa with Camp Pollywog, an environmental experience for four to six-year-olds; conducted daily educational programs during the summer season, special weekend programs and forums with natural resources speakers, staffed the visitor's station, and monitored and collected data on the nesting loggerhead sea turtles.

Melissa and her crew pulled grueling hours and literally worked around the clock seven days a week with the sea turtle beach survey and the educational programs. The research focused on collecting demographic data on the Caretta caretta, the loggerhead sea turtle that continually returns to Bald Head Island to nest, generation after generation. "Our goal is to estimate key life history parameters and identify statistically significant changes in the data over time," defined Melissa.

Each night after sundown, rain or storm, two crews of two would go out from the center of their patrol area in their beach buggy and comb the 14 mile nesting habitat along the shoreline in opposite directions, meet back at the center point for a break, and resume patrolling until dawn. Using flashlights covered in red transparent paper so as not to disturb any turtles they found coming ashore to nest, the student field workers would look for turtles or their tracks.

If the student field workers found a turtle nesting, they would note the coordinates on a GPS unit, tag the turtle for remote monitoring after she laid her eggs, and cage off the area with wire to protect it from any human and animal disturbance. Sometimes the turtle would make what was termed "a false crawl." She would go back out to sea without laying any eggs. Since the summer of 2002, the crews also have been using passive integrated transponders (PIT tags) on the turtles for improved monitoring; the students inject a small microchip into the female's left shoulder. Four female turtles each summer also receive satellite tags. The tags are providing researchers with information on the turtles' migratory routes and foraging grounds. Satellite tracking does not come cheap – each tag costs $5000. The researchers put epoxy on top of the shell to fasten the antennae.



One of four female turtles on which Melissa and her crew fastened a $5000 satellite tag to help researchers learn where the turtles migrate and forage.

While Turtle Central was down on Bald Head Island, Melissa's college advisor was at the Blacksburg campus – Jim Berkson, associate professor of fisheries and wildlife sciences.

Virginia Tech
1872
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

IN THIS ISSUE

"DOC" WALBRIDGE RECOGNIZED WITH NEWLY ENDOWED SCHOLARSHIP

Doc Walbridge (l) with long time friend, retired food science professor Gerald Anderson.

Tom 'Doc' Walbridge, whom college creator John Hosner calls one of the three most significant teachers the College of Natural Resources ever has had, was honored this fall for his contributions to the college with the establishment of a newly endowed scholarship in his honor and several celebrations.

Walbridge earned a reputation in the forest industry with his key role in introducing mechanized logging and forest engineering to the South. His success in the industry led him to the head of the Harvest Research Project, which was a group of Southern companies that came together to find a way to meet the need for better equipment in the industry.

In 1972 the head of the forestry school (as the college was then known), John Hosner, invited Walbridge to Blacksburg to set up an industrial forestry operations program. He taught students mechanized logging. The program gained the support of industry leaders because it continued needed research in a growing field and fed graduate students to the forestry workforce. Walbridge spent 15 years teaching, supervising graduate students, and conducting research. He retired in 1989.

"Doc was a pied piper," Hosner recalled. "Wherever he was, his students were following after him because of his teaching excellence and his personality that have not been matched yet in the college. He sent many outstanding professionals out into the field of forestry. His teaching accomplishments put him on an equal footing with the legendary Mosby, the beloved forestry and wildlife professor."

After a short interval in California, Walbridge returned to Blacksburg where he said about his continuing work with students: "I am going to continue teaching as long as I am not in the way." And so he has been coming into work on a regular volunteer basis to help teach industrial forestry students.

Doc Walbridge's scholarship has been fully endowed by friends, colleagues, and students, but further donations continue to help grow the scholarship and are being accepted at Virginia Tech, College of Natural Resources, 324 Cheatham Hall, Blacksburg VA 24061. Checks should be made payable to the VT Foundation for the Thomas Walbridge Endowment.

The Chan Chich Lodge

CMI SPONSORS BELIZE TRIP FOR ALUMNI

The Conservation Management Institute (CMI), a center located in the college, addresses interdisciplinary research questions that involve conservation management in Virginia, North America, and internationally in Bolivia, Kyrgyzstan, Belize, El Salvador, Mexico, Nepal, and Peru. CMI will be sponsoring a trip just for alumni to Belize that will take place February 4-9. Belize is a small Central American country south of Mexico, ideal for viewing wildlife.

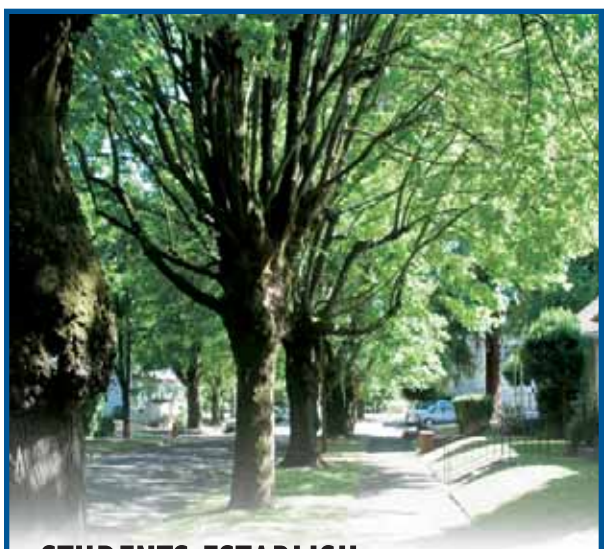
Alumni will stay at the Chan Chich Lodge, a world-renowned birding destination. Daytime activities will include bird watching, canoeing, guided hikes, and horseback riding. Evening talks will be given on conservation topics relevant to Virginia Tech's activities in Belize and Central America. Opportunities will be available to tour local Mayan ruins and for wildlife viewing.

The total cost for the trip is $2500 per person. The price includes airfare from Charlotte, N.C., to Gallon Jug, Belize, accommodations at the lodge, meals, and most daytime activities. To sign up for the trip contact Jeff Waldon, assistant director of the CMI, at ***fwiexchg@vt.edu*** or at (540)-231-4540. For more information check the web: ***http://www.cmiweb.org***

KATRINA LEGISLATION PROVIDES SPECIAL OPPORTUNITY

The Katrina Emergency Tax Relief Act of 2005 (KETRA) provides a unique giving opportunity to individuals contemplating donating larger gifts or making sizeable outstanding pledges. KETRA temporarily eliminates certain limits for charitable deductions claimed in a given year. For gifts made between August 28 and December 31, KETRA allows a 2005 deduction up to the donor's entire adjusted gross income (AGI) with any excess carried forward for up to five additional years under the usual provisions.

This means donors otherwise constrained by the usual deduction limitations (50% AGI for cash; 30% AGI for stock and real estate) may wish to make gifts or pledge payments before December 31, 2005. There are limits: only cash gifts to public charities, such as the Virginia Tech Foundation, Inc. qualify. Also, state law and other tax issues can affect your particular situation, making it important to consult your tax adviser. To learn more, contact the Office of Gift Planning at 800-533-1144 or 540-231-2813.



STUDENTS ESTABLISH URBAN FORESTRY CLUB

Thanks to the Urban Forestry and Arboriculture Student Society, the Virginia Tech campus keeps its beautification edge. This new club engages in tree beautification projects on campus, as well as educating the public about the benefits of trees in urban settings, teaching proper tree establishment and management, and planning activities for Arbor Day.

The student group works to promote and improve education about urban forestry and arboriculture within the Virginia Tech/Blacksburg community. During the Annual PLANET Student Career Days in 2005 in College Park, Maryland, the team placed fourth in their first appearance in the competition. The team plans to compete again in 2006 at the PLANET and regional International Society of Arboriculture competitions.

The Society is affiliated with the International Society of Arboriculture (ISA) and is the parent organization of the Tree Climbing Team of Virginia Tech.

Membership is open to all Virginia Tech students and faculty with an interest in urban forestry and arboriculture, regardless of their area of study. More informationis available at the Urban Forestry website at ***www.cnr.vt.edu/urbanforestry/***.

Eric Wiseman, new assistant professor in forestry, is the club's advisor, and forestry student Michael Pavlis is the president. John Homyk is the representing officer, and Sarah Knight the treasurer.

FROM THE DEAN'S PERSPECTIVE

Another academic year is underway and as always it is a time of excitement and enthusiasm on the part of students, faculty, and staff. One activity this Fall of particular importance to the CNR is the process of updating our strategic plan in concert with a similar effort at the University level. We will define selected areas for greater emphasis and investment during the period 2006-2012. Increasing our enrollment will be a high priority during this period. Overall enrollment in the college has remained relatively constant when compared to this time last year. Plans call for us to work more aggressively with various community colleges around the Commonwealth to establish formal articulation agreements to facilitate the transition of students from two year into four-year programs of study within the College.

We have also established a network of alumni volunteers that will help to recruit at the county level by making themselves available to their home school systems to provide educational programs, participate in career fairs, and serve as a point of personal contact for potential students. Longer term we will explore some unique new majors or options within majors in order to appeal to a broader student base. We have set an ambitious goal of increasing undergraduate enrollment from the current level of approximately 440 to 700 over the next six years. At the same time we will be seeking to expand our graduate student enrollment to a target level of 100 M.S. and 100 Ph.D. students.

I am also pleased to report that our Master of Natural Resources professional degree program in the National Capital Region has received supplemental funding from the Provost and Dean of the Graduate College. This important infusion of new resources will allow us to increase our enrollment of professional degree seeking students to 70 as well as expand the number of students pursuing additional graduate education through our non-degree certificate programs.

Research is an extremely important part of the overall CNR portfolio. We are undertaking new cooperative research initiatives in biomaterials, biotechnology, and water resources while at the same time strengthening our presence in aquaculture. The fiscal year that ended June 30, 2005 was a record year for the college in terms of success in the acquisition of external grants and contracts. New grants totaling just slightly less than $13 million were added to the College research portfolio. This represents an increase of 32% over the previous year! The expansion of funding for our research base is an extremely important part of our overall strategy for a more successful and productive college. These funds directly or indirectly provide the resources to grow our graduate program and are an important addition to the funds needed for a top quality teaching program. Undergraduate employment opportunities within the College along with career building undergraduate research experiences are also supported largely with external grant funds. We have a very strong faculty that have come together to advance the college on this front and their collective efforts have made this significant jump possible. One recent example of the strength of our faculty is supported by the recognition of Drs. Jim Johnson and Mike Mortimer by the Society of American Foresters with national awards. These awards are part of an ever growing list of national and international recognitions awarded to our faculty.

Our plans for the future are the result of a careful and thoughtful development process which will strengthen our College over time. Future resource allocations will be more closely tied to performance and enrollment and the College needs to position itself to be in the best possible position to take advantage of the opportunities, both financial and otherwise, that will begin to flow from the recent restructuring of the relationship between state supported universities and the state legislature.

Finally, I want to express my appreciation to those of you that have contacted me concerning the new format of our newsletter. We greatly appreciate the positive comments and very much want to keep you informed on developments and activities in the College. Our alumni and friends are a very important part of the future of the CNR and we greatly appreciate your support and interest.

Best wishes for an enjoyable Fall.

J. M. Kelly

Ken Morgan (l), a friend and supporter of the college, brought a Southside Virginia neighbor, Ward Burton, to visit Dean Kelly this past summer. Burton (r), a NASCAR Winston Cup Driver and a person who loves the outdoors, has started the Ward Burton Wildlife Foundation, an education-oriented organization dedicated to promoting wildlife conservation, habitat enhancement, and the proper stewardship of natural resources. The foundation owns and manages 1,000 acres known as the Cove along the Staunton River in Halifax County, where an environmental education center serves teachers, landowners, and students.

IN MEMORIAM

Shelton Hardaway Short III

Shelton Hardaway Short III, director of the Forestry and Natural Resources Board, passed away on July 30, at age 79.

Short was born in Richmond, Va., and spent most of his life pursuing education. He graduated with a B.A. from Hampden-Sydney College and obtained master's degrees from the International College of Elsinod, Denmark, and The University of Nevada-Reno. Short also earned a Doctorate of Philosophy from the University of Edinburg in Scotland. Not only did Short pursue his own education, he gave back by involving himself in research and teaching at colleges all over the world. He spent time at The College of William and Mary, the University of Virginia, and Virginia Tech to name a few. His involvement in forestry schools all over the southeastern United States is evidence of his dedication to improving forestland and wildlife habitats.

His love of education gave him a desire to help others have educational opportunities. Shelton and his wife Jean funded scholarships and professorships for students and faculty in the college.

Short was also involved in many boards and committees as well as serving the country by being Virginia's Representative to the United Nations. "Short was not only a friend to the college and an important member of the community, but also, an example of someone who served his nation, experienced the world, pursued his loves, and lived a full life," said Nancy Parsons, the college's development director.

Margaret "Marnie" Manning Andrews

Margaret "Marnie" Manning Andrews passed away October 29. A legend to some of us and greatly admired, she earned her M.S. in forestry from the college in 1984 and later in her career came back as a faculty member, where she served as an undergraduate advisor, recruiting new students and assisting in their job placement.

After retiring in 1994 she enjoyed many outdoor activities and volunteered at Virginia Tech's Horticulture Garden and Special Collections Library.

Ahead of her time and a "pioneer" woman in natural resources, Marnie raised five children and was a role model for many. She was the granddaughter of the late South Carolina Governor Richard Irvine Manning and earned her undergraduate degree in English from the University of South Carolina, where she was Phi Beta Kappa and a member of Delta Delta Delta sorority.

NEWS NEWS, SEND US YOUR NEWS

Please let us know what is happening in your life so we can include the news in our next college alumni newsmagazine. Send your information to David Arnold at *dfarnold@vt.edu*; or 324 Cheatham Hall, Blacksburg VA 24061. Thanks. We would love to hear from you. Send it NOW while you are thinking of it!

COLLEGE SHINES AT SAF

Associate dean for outreach **Jim Johnson**, assistant forestry professor Mike Mortimer, and the student chapter of the Society of American Foresters (SAF) picked up top honors at the Society of American Forester's national convention in Fort Worth, Texas in October.

SAF honored Jim Johnson, forestry professor and associate dean of outreach, with the Technology Transfer Award and a $1,000 honorarium in recognition of outstanding achievement in technology transfer, implementation, and extension by an SAF member as evidenced in the recipient's career or involvement with SAF Working Groups and Science Program activities.

Johnson is an expert in both forestry and nonformal, adult education. "His skill at planning and conducting technology transfer and extension programs, coupled with his energy, enthusiasm, and work ethic, make him a prolific writer, a programmatic innovator, and an exceptional educator," said Harold Burkhart, head of the college's forestry department.

Mike Mortimer received the Young Forester Leadership Award for 2005 and a $500 honorarium recognizing his outstanding leadership as a young forestry professional for contributions that benefit the practice of forestry and the SAF.

Mortimer teaches forest resource law and policy at the college, where his passion for forestry policy transfers to his students, who have consistently given him high marks for his presentation skills and for making his courses both engaging and relevant.

He has been an active member of SAF since 1998, serving on several committees and task forces at both state and national levels. He is best known for his work as chair of SAF's National Forest Policy Committee, during which he served as coauthor of several national position statements, contributed editorials to regional newspapers, and acted as an SAF spokesperson on national forest policy issues such as the Roadless Area Conservation Rule.

Before coming to Virginia Tech, he worked as a special assistant to the Attorney General in Missoula, where he provided legal counsel to the Trust Land Management and Forestry Division, which manages public and private forestland in Montana. He also served on the agency's management team responsible for the development and implementation of resource policies affecting old-growth forests, threatened and endangered species, and sustainable forestry practices. He was a forest policy analyst for the University of Montana's Bureau of Business and Economic Research, where he researched issues pertaining to forest health, forest management, and the forest products industry.

Pictured here is Heidi Metz planting pine trees at the forestry department's Fishburne Forest.

The **college's student chapter** won the Student Chapter of the Year Award. This award is based on service to student members, the forestry department, the college, the Blacksburg community, as well as the Society of American Foresters.

Last year the student chapter worked hard to bring in speakers on a variety of topics including John Carroll from the Virginia Department of Forestry; Dan Henry, an urban forester for the City of Roanoke, Virginia; John Hancock from Mead-Westvaco; Greg Nowacki from the U.S. Forest Service; and college dean Mike Kelly.

The student chapter was one of only a few student chapters in the nation to demonstrate an increase in membership! The student chapter also completed a number of service and educational projects last year including trail maintenance for the Virginia Natural Heritage Program at Buffalo Mountain in Floyd County, coordinating an educational booth on forestry as part of the Wood Magic program for area 4th graders, and hosting a forestry information booth as part of the campus-wide Earth Day celebration.

The student members also attended the Society of American Foresters Blue Ridge Chapter meetings, the Appalachian Society of American Foresters regional meetings, and the SAF National Convention. The award was presented to the 2004-2005 student chapter officers: Joe Secoges, Lauren Stull, Crisi Suarez, and Collin Calhoun.

Pictured here are SAF members Olivia Watts and Crisi Suarez as they work the chapter's Earth Day information booth on the drillfield.

WOOD SCIENCE AGAIN RECEIVES DONATED DESIGN MANUALS

The wood science and forest products department received a donation of 45 National Design Specification (NDS) wood design manuals through the cooperation of Boise and the American Wood Council. These manuals were distributed to students in Daniel Hindman's Design of Wood Structures and Timber Engineering classes. "This is the second year these design manuals have been provided to the college by supportive industry partners," said Hindman, "and we are most appreciative."

GARDEN CLUBS SELECT FORESTRY TO MANAGE URBAN FORESTRY FELLOWSHIP

Zone IV of the Garden Club of America (GCA) has made Virginia Tech home for its recently established national urban forestry fellowship for qualified U.S. students. The first awards will be presented in early 2006.

With this fellowship, the Garden Club of America seeks to forward its goal of advancing knowledge of urban forests and increase the number of scientists in the relatively new field of urban forestry. A selection committee from the college's forestry department, including practicing urban forestry scientists, will review applications with the Garden Club of America endorsing their final selection.

The fellowship is open to both advanced undergraduate and graduate students pursuing degrees in urban forestry, forestry, horticulture, environmental studies, or a closely related field at any four-year college or university degree program in the U.S. Recipients must be U.S. student who will be enrolled as a junior, senior, or graduate student during the fellowship period. The award is for $4,000, and recipients may apply for one additional year of funding.

REMOTE SENSING CONFERENCE TARGETS FORESTRY

This fall the university in conjunction with the Virginia Tech Chapter of the American Society of Photogrammetry and Remote Sensing (ASPRS) hosted the Silviscan: Lidar Applications in Forest Assessment and Inventory Conference at the recently completed Skelton Conference Center.

The conference included world-renowned speakers from Norway and Canada and focused on the use of airborne laser scanning data, otherwise known as "Lidar," in assessing operational forest and landscape inventories. ASPRS President Aaron Bernard said the conference provided a "rare opportunity to meet and work with folks of this quality in this cutting-edge area of research."

RESEARCH OFFICES GET FACELIFT

Jim Berkson, associate professor of fisheries and wildlife science and unit leader of the Virginia Tech National Marine Fisheries Service Recruiting, Training, and Research Program, and his administrative assistant **Lynn Hayes** laugh in astonishment over the revamped look of the new digs for graduate students on the first floor of Cheatham Hall. Over the summer, Berkson and his staff worked diligently with campus renovations to prepare the graduate offices for students before classes began in the fall. And wow, what a nice makeover!

ZEDAKER AND CGIT ASSIST IN KATRINA AFTERMATH

Squad Boss Shep Zedaker (front row, far right) and his crew from the Virginia Department of Forestry pose for a quick photo shoot with a familiar forest backdrop while working in Mississippi assisting cleanup efforts from hurricane Katrina's devastation.

National and natural disasters are no strangers to the college. Over the years many faculty and their students have fought forest fires and cleaned up trees felled by hurricanes. It was a given that forestry professor and veteran crew boss Shep Zedaker would end up in the Gulf region helping to clean up.

Zedaker, one of the nation's experts on forest fires, often goes out with the U.S. Forest Service or the Virginia Department of Forestry when a disaster occurs. He would have been mopping up the Gulf with his U.S. Coast Guard group after Katrina, but the Virginia Department of Forestry called him first. Zedaker aborted a trip in North Carolina to watch the Hokies play N.C. State to answer the call to work with forestry's 20-man crew.

Zedaker explained, "Cleanup officials used firefighting crews because those command-control-communications networks are already in place and work extremely well for coordinating groups of people." The squad Zedaker oversaw and trained worked with the Gulf Islands National Seashore for two weeks to help clear Ocean Shores near Biloxi, Mississippi, of fallen trees and debris.

Zedaker reported, "We worked on cleaning up communities that had been submerged with up to 25 feet of water. The homes were just saturated and most of the residents had to leave but gradually returned after the streets were cleared. While our conditions were not great, they weren't horrible. We slept in tents at the Gulf Island National Seashore Davis Bayou and were exhausted after working hard all day, but at least the seawater took out the mosquitoes and it wasn't extremely hot." Retired forestry professor David Smith covered for Zedaker while he was away. Upon returning from the Gulf region, Zedaker remarked, "Katrina cleanup was harder than any forest fire I've ever worked."

Also on the disaster scene was Virginia Tech's Center for Geospatial Information Technology. Civil engineering professor Randy Dymond, the center's director who now has a dual appointment in the college's geography department, and geography professor Bill Carstensen, associate director of the center, coordinated a team of students in using emerging technologies to assist the American Association for State and Local History (AASLH).

Carstensen explained that Virginia Tech's geospatial center is providing the AASLH with maps to prioritize assistance to those organizations that are protecting significant U.S. historical sites and collections. "The maps," he noted, "accurately locate important sites and organizations that are involved in the preservation of Gulf Coastal history. We are preparing the maps here at our Center for Geospatial Information Technology as a service to the AASLH."

Dymond, who put out a call to assist in the relief efforts, said, "We welcome more volunteer work in the Katrina aftermath. We have some good capabilities and want to be useful to help in any way we can."

The Center for Geospatial Information Technology develops cutting edge geospatial information technology tools and provides expertise in Geographic Information Systems (GIS) and Global Positioning Systems (GPS). Geospatial services the center can provide disaster-struck communities include using mapping tools to analyze evacuation routes, map locations that receive the most extensive damage, determine areas to be searched for rescue workers, estimate damage to houses and buildings, track levee information, track contaminated water as it is pumped out of affected areas, track infrastructure damage and repairing, and more.

WATER CENTER JOINS COLLEGE

The Virginia Water Resources Research Center (VWRRC), informally known as the Water Center, broadened its affiliations and became part of the College of Natural Resources. Originally formed in 1965 at Virginia Tech as one of 54 institutes at land-grant universities across the country, the Water Center seeks to provide research and educational opportunities to future water scientists; promote the research of practical solutions to water resources problems; and facilitate the timely transfer of water sciences information to policy and decision makers as well as citizens.

Today, the VWRRC receives federal, state, and university support for its competitive water research programs and works with colleges and universities throughout Virginia. The Water Center collaborates closely with state agencies to address water issues critical to Virginia.

For example, it provides leadership to a multi-institute and interdisciplinary Academic Advisory Committee to assist the Virginia Department of Environmental Quality in establishing Virginia's water quality standards. Additionally, the VWRRC lends administrative support to the Virginia Water Monitoring Council, which coordinates water-monitoring programs between state and federal agencies as well as with public and private entities. Various other research initiatives at the Water Center are supported through external grants.

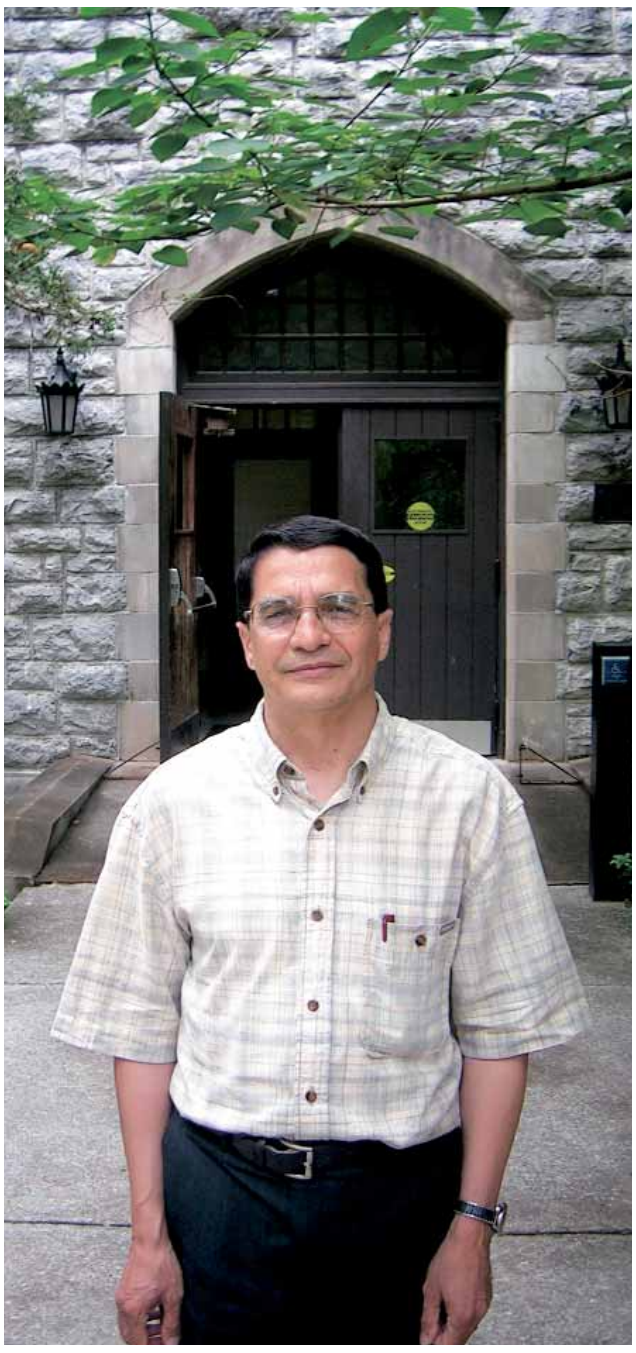
Along with maintaining and developing strong partnerships with governmental agencies and state higher education institutions, the center's interim director Tamim Younos also recognizes the importance of out-reach programs to the Water Center "people want to know the value of research," said Younos. The outreach component of the VWRRC strives to not only keep citizens and legislators informed about the center's research and current issues related to water resource management, but the center hopes to extend its out-reach efforts to elementary, middle, and high school students by collaborating with programs already in place in state schools.

Important outreach activities include the Water Center's quarterly newsletter *Water Central* and the Service Training for Environmental Progress (STEP) program, a university-community partnership.

This year the Water Center celebrated it's 40th anniversary. The National Water Research Symposium: Balancing Water Law and Science along with the Virginia Water Resources Research Center 40th anniversary events were recently held at the Skelton Conference Center on campus. The events featured nationally recognized keynote speakers, a series of science and policy forums that address critical water issues in Virginia and across the U.S., as well as workshops and research presentations.

Interim Director Younos has edited the book, *Total Maximum Daily Load: Approaches and Challenges*, which discusses the regulatory and technical processes mandated by the Federal Clean Water Act. The book mainly serves as a guide to help restore the biological, chemical, and physical integrity of the nations' lakes, rivers, and streams. Younos explained, "The book serves as a valuable reference for graduate programs, state and local governments, and other consulting firms involved with TMDL issues."

In addition, Younos has just become the president of the Universities Council of Water Resources (UNCOWR), which is made up of over 90 universities worldwide. Younos has been a member for the past six years and became the president elect from 2004-05. The institutions involved in UNCOWR focus on promoting the fundamental principles of education, research, public service, international activities, and support for policy development. More information about the Water Center is available at: ***www.vwrrc.vt.edu.***



Interim Director Tamim Younos is pictured in front of the Water Center's current home in Agnew Hall.

ONLINE COURSES

The Sloan Consortium, a national association of institutions and organizations offering quality online education, called on higher education institutions to offer their online courses to students affected by Katrina as well as to national guard members called to active duty. These courses, offered by more than 200 colleges, were organized into an accelerated eight-week "Sloan Semester" that runs through January 6, 2006.

The courses are free to all qualified displaced students. The Alfred P. Sloan Foundation provides universities with a stipend. All courses will carry degree credit and will be transferable to the student's previous university.

In response to a call to help students displaced by Katrina, the Natural Resources Program in Virginia Tech's Capital Region campus offered three online courses: Foundations of Federal Land Management which addresses the acquisition, disposal, reservation, and management of the public domain; Interdisciplinary Recreation Planning, which covers the design aspects of recreation site planning; and Public Lands and Realty Principles, which introduces the organization, legislative structure, and legal and policy components for managing public real estate.

The college's National Capital Region campus has developed a number of online courses, including some they are offering to students displaced by Katrina. The campus has seen exponential growth under the leadership of director David Trauger. Pictured here are some of the graduate students studying ecology at Dolly Sods Wilderness and Scenic Area of the Monongahela National Forest in West Virginia. This photo shows students and faculty at the Dolly Sods Area during the Field Biology and Ecology course offered at the Virginia Tech National Capital Region Campus. A series of field trips were taken by the class to key locations throughout the Mid-Atlantic Region during 2005 Spring Semester. Within the same mid-day hour, students experienced mist, rain, snow, sleet, and sunshine as they trekked through bogs, grasslands, tundra, and forests in the rugged terrain along this high mountain ridge of the Appalachian Plateau.

COLLABORATION IN FOREST PRODUCTS MARKETING BENEFITS THE VIRGINIA INDUSTRY

The extension forest products marketing program has been helping one of Virginia's largest employers be more competitive since the early 1990s. The forestry and forest products industry employs more than 250,000 people and adds over $25 billion to the state's economy every year.

The overall goal of the forest products marketing outreach program is to help attract new forest products businesses, expand existing businesses, and enhance the competitiveness of the forest products industry in Virginia. A collaborative effort among the faculty, students, and numerous other groups within the commonwealth makes such a goal possible.

Extension specialists and other faculty from the college's Department of Wood Science and Forest Products marketing faculty have been offering continuing education courses such as Marketing Forest Products, Selling Forest Products, Strategic Marketing Planning, Ecommerce for the Forest Products Industry, and Customer Service Training. The faculty has also integrated specific market research projects or market development plans into undergraduate and graduate curricula to introduce students to industry-related challenges. These courses take students into the business world where they can apply what they have learned, including developing marketing plans for individual companies.

Students have worked with Morgan Lumber Company on a company positioning study. From this work, the company has proceeded with an aggressive growth campaign over the past few years, nearly doubling its production and entering new markets. Students also have worked with Coffman Stairs, Turman Lumber Company, Mountain Forest Products, Morgan Lumber Company, Amelia Lumber Company, Dreaming Creek Timber Frames, and Blue Ridge Wood Products.

Ken Morgan, president of Morgan Lumber, stated, "In seeking marketing research, Virginia Tech's Department of Wood Science and Forest Products and its Center for Forest Products Marketing and Management is without a question our best resource. Their assistance has been an integral part of our company's progress."

FIRST EVER "WOOD WEEK"

The Department of Wood Science and Forest Products held its first ever "Wood Week at Virginia Tech" this fall at the Brooks Forest Products Laboratory.

The purpose of this event was to publicize the role of wood and forest products in society. Paul Winistorfer, professor and department head of wood science and forest products, said "Wood Week is also meant to highlight the significant contributions of our department and students to the industry and to bring awareness to students of career opportunities in the forest products industry."

Some of the main events targeting this goal were a social and awards program for the department and its industry partners at the new Skelton Conference Center at The Inn, a career fair held at the Brooks Laboratory, and the display of the award winning Wood Magic traveling classroom on the center of campus.

Wood Week gave students an opportunity to learn from industry representatives about career opportunities; exposed students to important facts about wood and its role in everyday life; and raised overall awareness about the program. "I hope Wood Week at Virginia Tech will become an annual event!" Winistorfer stated.

NEW WILDLAND FIRE COURSE

The Department of Forestry is adding a Wildland Fire: Ecology and Management course to its curriculum this year. Forestry professor Shep Zedaker said, "While I have taught this subject in special classes from time to time, we are now making it a formal part of our curriculum."

The class will provide students with basic knowledge on how fire has an impact on forest environments, how weather influences fire behavior, how wildland fires are suppressed, and how fire is used as a land and vegetation management tool.

The course will also provide students with the knowledge and training to qualify as a basic wildland firefighter. Extended laboratory sessions will provide practice in fire behavior prediction, prescribed burning techniques, and fire control methodology.

Forestry professor Shep Zedaker (second from right) conducts class in the field with the Wildland Fire: Ecology and Management course.

Fire is a completely natural and prevalent force shaping wildland ecosystems. Zedaker noted, "Wildfires burn, on average, over 4 million acres annually in the U.S. Wildfires and the damage they cause have increased in intensity because past fire suppression policies have allowed the accumulation of fuel in the form of fallen leaves, branches, and excessive plant overgrowth in forest and wildland areas."

Increased fire damage is also due to changing weather patterns across the nation that have brought increasingly dry, hot weather and the expanding residential development in the wildland/urban interface.

WILDLIFE SOCIETY PUTS COLLEGE #1 IN RECYCLING

Cheatham was ranked the Number One building on campus for recycling last year by the Environmental Coalition, the organization that manages paper recycling on campus – thanks to the Wildlife Society that so conscientiously collects and sorts paper every week from the 13 bins throughout the building.

HOKIES WIN TABLE TENNIS

Hua Dan (front left) along with fellow table tennis team members.

Hua Dan, a visiting scientist from China, led the Virginia Tech women's table tennis team to a national victory in the National Collegiate Table Tennis Association's Women's Team Championship. Last spring the team beat opponents University of Southern California, John Hopkins University, UVA, and Mississippi State to win the award. Other team members from Virginia Tech included Wan-Yin Chang, Haiyan Cheng, Quanlei Fang, Lucia Gan, and Wen Jiang.

Hua Dan works in the college's fisheries department with mussels expert Dick Neves on developing a cultured pearl process for mussels.

DIGITAL MAPPING OPTIONS FOR FORESTERS REVIEWED

In an effort to broaden the reach of Geographic Information Systems (GIS) to forestry managers at all levels, forestry graduate student **Aaron Bernard** and associate professor of forestry **Steve Prisley** evaluated several smaller-scale GIS systems and published an article based on their findings in the Society of American Forester's Journal of Forestry titled "Digital Mapping Alternatives: GIS for the Busy Forester." "Over the past decade, computer-based tools for mapping and analyzing data known as GIS have played an increasingly important role in natural resource management, particularly for forestry professionals," Prisley explained. Today, GIS offers irreplaceable assistance in managing an array of tasks such as harvest scheduling, fire mapping, and the monitoring of trends in vegetation.

However, the high costs and extensive training associated with advanced GIS systems have mostly limited the utilization of this valuable tool to large corporations and government agencies. Fortunately, as Bernard and Prisley illustrated in their article, there are more affordable and less time consuming options available that can still meet the everyday needs of smaller companies and consultant firms.

The computer mapping and analysis software reviewed by Bernard and Prisley ranged in price from free to $400 and were rated in a number of ways including ease of use and installation.

Following the article's release, the Alabama Forest Owners' Association consulted Bernard and Prisley for help in explaining to its members the practical applications of a particular no-cost, small-scale GIS software package that received high marks in the article's evaluation.

NO TREE TOO BIG

Stephen Jordan (left) along with forestry extension agents Adam Downing (center) and Peter Warren (right) stand in front of the tulip poplar that likely was planted by Thomas Jefferson.

FOR URBAN FORESTRY STUDENT

This summer, urban forestry major Stephen Jordan had a chance to see firsthand some of the nation's largest and oldest trees. Jordan worked as an intern with associate professor of forestry and 4-H specialist Jeff Kirwan on updating the Virginia Big Tree Database.

The database is managed by the college along with the Virginia Department of Forestry and the Virginia Forestry Association and keeps an ongoing record of the largest tree of each species for the state. 55 trees in the state database are also the nation's largest for their respective species.

In July, Jordan found himself measuring trees at the home of one of the nation's founding fathers, Thomas Jefferson's Monticello. Two trees at the historic site were of particular interest. The Chinese cedrella on the west lawn retained its title as the state champion for its species. The tulip poplar near the home's southern porch, however, fell short of reaching top status.

Nevertheless, the tulip poplar's significance may well exceed that of its neighbor on the west lawn. Many experts speculate Thomas Jefferson himself planted the tulip poplar. Jordan's work with the database received local media attention from Charlottesville television and newspaper reporters.

When he was asked how he liked his job in spite of the sweltering heat, Jordan said he was enjoying his role with the program. "One of the best parts of my job is the chance to come to places like Monticello," said Jordan. Prior to his internship with the Virginia Big Tree Database, the native of Staunton, Virginia, had only been to Monticello on grade school field trips.

WOOD SCIENCE STUDENT'S PAPER PLACES 2nd

Richard K. Johnson, a Ph.D. student in the wood science and forest products department, received second place in the 2004 Wood Award competition for his paper "Thermoplastic Composites with Lyocell Fibers."

Doctoral candidate Richard Johnson receives his second place award at the 2004 Wood Award competition.

Johnson's paper concerns the potential of utilizing wood waste from wooden pallets to generate value-added products. Chopped red oak pallets were blended with lyocell, a strong man-made cellulose fiber. This blend was then used as reinforcement in plastic material, which Johnson observed to be stronger and more affordable than non-blended reinforcements.

Dynea, a company leading in providing high performance adhesives, sponsored the award. It consisted of a plaque and a $500 cash honorarium. The award was presented at the Forest Products Society's International Convention this past summer in Quebec, Canada.

STUDENTS RESTORE LOCAL RIVER

Jamie Roberts, research specialist and Ph.D. candidate in the fisheries and wildlife sciences department, took a student team of graduate students to the Roanoke River Cleanup this fall in Roanoke, Virginia. Teams picked up trash in 15 different sites besides streams and parts of the river.

In the past, the event drew 150 participants, but this year there were over 350 volunteers including local high schoolers, Boy Scouts, Girl Scouts, local park staff, and Virginia Tech graduate students.

Groups began cleaning early in the morning and were treated to a free lunch at Wasena Park. The trash around the river included everything from cigarette packs to shopping carts and car tires. In addition to removing trash, volunteers removed invasive non-native plants and had the chance to see water quality monitoring displays. A celebration of the river was held after the cleanup.

Roanoke River Cleanup Day was arranged by several organizations joining together including the City of Roanoke Parks and Recreation, the Roanoke Natural Foods Coop and Clean Valley Council, Roanoke County, the Town of Vinton, the Department of Environmental Quality, the Upper Roanoke River Roundtable, and the Western Virginia Water Authority.

Roberts, who has concentrated his research on the darters of the Roanoke River, is probably one of the river's top experts. He was the photo feature of the front page Virginia section of the Roanoke Times after the cleanup event.

Over 350 volunteers helped out with this year's Roanoke River Cleanup project including a group of fisheries and wildlife graduate students.

LOVED TO TEACH NEY RETIRES

John Ney with his wife Cathy (r) and Anne Scanlon, the wife of late fisheries and wildlife professor Pat Scanlon.

"So long and thanks for all the fish," as fish book author Douglas Adams would say and retiring fisheries professor John Ney likes to parrot.

What does Ney hope he is remembered for? "For good teaching and mentoring students who have gone on to become good stewards of aquatic resources," he replied. Department head Don Orth affirmed that his student evaluations were consistently near the perfect 4.0 score.

Ney's graduate students have done very well professionally, and he is proud of that accomplishment. In his 29 years here, Ney taught fish ecology, advanced ecology of fishes, and fisheries techniques. His research interests focused on applied ecology of fishes, trophic dynamics, reservoir management, and impact assessment.

Last year Ney was inducted into the Fisheries Management Hall of Excellence for his lifetime contributions to American fisheries. In 1989 he served as president of the Education Section of the American Fisheries Society and in 1986 as president of the Environmental Sciences Section of the Virginia Academy of Sciences. He is a Fellow of the American Institute of Fishery Research Biologists and a Certified Fisheries Scientist.

The Universities of Wisconsin and Minnesota graduate of yesteryear will be retiring to familiar home territory of Minocqua in Northern Wisconsin- "God's country, population not much over 521, beef jerky capital of the world," Ney called it. He and his wife, however, plan to winter at their Naples condo near the Everglades. He will be doing some projects with the University of Florida, as well as consulting with a power company on reservoir fish.

His other proud accomplishments are his M.D. son in Seattle and M.D. daughter in St. Louis, both of whom are also married to medical doctors.

PROFESSORS RECEIVE PROMOTIONS

The college recently promoted five of its faculty members. Bob Smith and Chip Frazier of the wood science and forest products department and Jay Sullivan of the forestry department were each promoted to full professor.

Steve Prisley of the forestry department received tenure. Rien Visser, also in the forestry department, was promoted to associate professor.

Promotions to higher ranks and tenure are granted to faculty members who have achieved outstanding accomplishments and demonstrated excellence in instruction, research, outreach, extension, and other professional activities.

Bob Smith

Chip Frazier

Jay Sullivan

Steve Prisley

Rien Visser

GEOGRAPHY PROFESSOR RETURNS TO HIGH ALTITUDES

Over the summer assistant professor of geography Lynn Resler returned to a familiar research site in the high altitudes of Glacier National Park, Montana. Resler's dissertation, which won the 2005 J. Warren Nystrom Award from the Association of American Geographers for best paper based on a recent dissertation analyzed the effects of environmental change on the alpine treeline in Glacier National Park.

Lynn Resler takes measurement and Global Positioning System (GPS) information on the conifer seedlings she samples along the alpine treeline of the Northern Rocky Mountains of Montana in Glacier National Park.

Her current research continues along these same lines with Sharolyn Anderson, assistant geography professor at the University of Denver, by studying the relationship between the establishment of conifer seedlings and the changing mountain environment. Exposure to extreme temperature, high wind, and heavy precipitation are just a few of the hindrances for seedling development.

One species of particular interest to Resler is the whitebark pine (pinus albicaulis), which has been in decline throughout the western U.S. due to a plant disease called blister rust. The whitebark pine has a proven ability to regenerate at the high altitudes of the alpine treeline and serves as an essential source of food and habitat for mountain wildlife.

Through her research, Resler has discovered evidence of blister rust even at high altitudes, which poses serious risks to the ecosystem of the treeline. The fine-scale sampling and measuring of conifer seedlings, combined with spatial analysis techniques used in Resler's research, will provide greater understanding of patterns in treeline dynamics and will increase awareness of the vulnerability of mountain ecosystems, as she and Anderson develop an agent-based model.

WORLD REGIONS ON TV

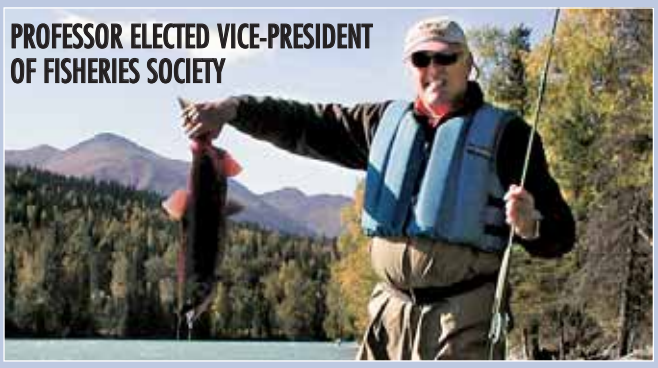
John Boyer's World Regions geography class, which plays to 600 Virginia Tech students, was featured in a back to school segment on WSET-ABC TV 13 in August.

One of a kind instructor Boyer told the standing room only class that this semester they would be learning what is happening, where it is, and WHY THERE. He uses a multi-media mixture with two screens going at once on the auditorium stage, as well as skits, acting, and entertaining discourse to get his critical points across.

"In this instantaneous information age everything is connected in the world today," pointed out the charismatic teacher who promised his audience he would single-handedly bring plaid back into fashion. His class is one of the university's most popular core courses; students line up to get into it!

Pictured with John Boyer (center) are two of his former World Regions students: Adam Breske (left), posing as the United Nations observer and Brent Biondo posing as the hardliner from the former Soviet Union. Both students are theater majors who volunteered to be part of Boyer's acting crew.

PROFESSOR ELECTED VICE-PRESIDENT OF FISHERIES SOCIETY



Fisheries and wildlife associate professor Steve McMullin has been elected vice president of the Southern Division of the American Fisheries Society. McMullin will take office in February and will serve as president-elect in 2007 and president in 2008. The Southern Division is one of four regional divisions with nearly 10,000 members nationwide.

NEW GRADUATE COURSE OFFERED

A new graduate course on constructing sustainability was developed by Bruce Hall, professor of forestry, and Paul Angermeier associate professor of fisheries and wildlife sciences. This course was offered this fall to students of all disciplines. Hall and Angermeier hoped the course would attract students with backgrounds as diverse as ecology, political science, environmental planning, and even biological systems engineering.

Sustainability is the idea that resources must be both protected and developed at a rate that meets the population's current and future needs. The course examines the past, present, and future of sustainability as a unifying concept for science, policy, and public understanding of environmental management. The new course covers topics such as ecological, economic, and collaborative sustainability, public understanding of sustainability, the history of humanity's stewardship of Earth, and the role of science in sustainability.

NEW POSTDOC JOINS IN WOOD SCIENCE RESEARCH

Christian Heinemann, who received his Ph.D. from the University of Hamburg, Germany, received a post doctorate fellowship in the wood science and forest products department under professor Chip Frazier. His research concerns laminated veneer lumber (LVL), an engineered wood product made by layering dried and graded wood veneers with waterproof adhesives and cured in a heating press. Heinemann seeks to develop new moisture-cure polyurethane adhesives for the manufacture of LVL, which will bond high moisture veneer and save energy by eliminating the need for the heating press. His project is supported by Virginia Tech, Trus Joist – A Weyerehaeuser Business, and National Starch and Chemical.

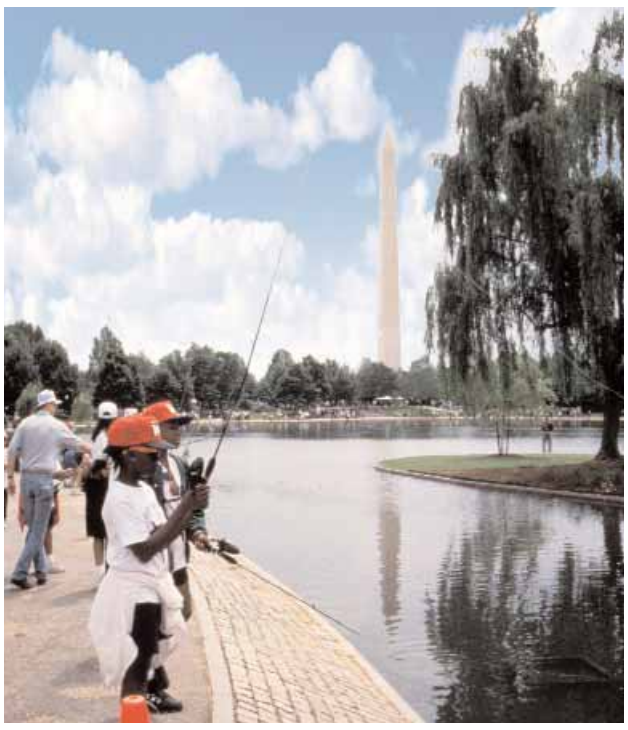
CONSERVATION MANAGEMENT INSTITUTE EVALUATES EFFECTIVENESS OF FISH CONSUMPTION ADVISORIES

Under a grant from the Environmental Protection Agency Chesapeake Bay Program Office, the college's Conservation Management Institute (CMI) recently completed a study aimed at identifying members of the population at greatest risk for consuming contaminated fish caught recreationally in and around the Chesapeake Bay.

In addition to recognizing who was most at-risk of ingesting contaminated fish, this study also looked at ways to improve the dissemination and overall effectiveness of recreational fish consumption advisories. These advisories are designed to inform the public of potential risks from eating fish that may contain such contaminants as mercury and polychlorinated biphenyls, commonly known as PCB's.

The results of this project were presented at the 61st Annual Northeast Fish and Wildlife Conference in Virginia Beach, Va. The study's results and suggested improvements to fish consumption advisories were also discussed at regional stakeholder meetings.

CMI was established in 2000 as a center within the college to better address multidisciplinary research questions that affect conservation management effectiveness on local, national, and global levels. For more information about this study, the complete report and data files are available on the CMI web page at: ***http://www.cmiweb.org/human/CBP_fishadvisory04.html***



Pictured above are young urban anglers participating in National Fishing Week in Washington D.C. (Photo courtesy of Lavonda Walton, U.S. Fish and Wildlife Service).

Bill Hopkins holds a baby alligator while in the field conducting his physiological research of reptiles.

PHYSIOLOGIST/TOXICOLOGIST JOINS COLLEGE FACULTY

William A. Hopkins has joined the college as an associate professor of wildlife sciences. Hopkins has spent the past two years as an assistant research scientist with the University of Georgia's Savannah River Ecology Laboratory (SREL) in Aiken, South Carolina. His position with SREL included directing the wildlife ecotoxicology and physiological ecology programs as well as advising Ph.D. and M.S. students. Hopkins completed his Ph.D. in ecology, evolution and organism biology at the University of South Carolina. He earned a M.S. in zoology at Auburn University and his B.S. in biology at Mercer University.

Hopkins has already published nearly 50 peer-reviewed manuscripts and book chapters, focusing on environmental stress, pollution, and the physiological ecology of amphibians, reptiles, and bats.

One of the primary objectives of his research is to better understand the effect of human-based disturbances on an ectotherms' (i.e., reptiles and fish) ability to survive. Despite his intensive research, Hopkins still finds time to serve as an active member of the National Academy of Sciences Committee on Minefilling Power Plants Wastes and the Scientific Advisory Board for the International Center for Birds of Prey.

WILDLIFE PROFESSOR UPDATES "BEST AVAILABLE SCIENCE"

When researchers and policymakers consider the best ways to protect an endangered species, the phrase "best available science" is frequently used to describe the scientific basis behind decisions that are aimed at preserving natural habitat and preventing further decline in species population.

However, since 2002, fisheries and wildlife science professor Mike Vaughan has been one of four members of a Science Review Team put in place to review the flawed research of the State of Florida and the U.S. Fish and Wildlife Service (FWS) on one of the country's most endangered species: the Florida panther. As a team member and an expert on large carnivore ecology, Vaughan reviewed more than 20 years and 3,000 pages of scientific literature based on Florida panther research.

His analysis revealed serious flaws in their research and understanding of habitat requirements for the panthers. Vaughan pointed out that although the existing research conducted and adhered to by the FWS and State of Florida was loaded with what he called "improper inferences," it still was "taken as gospel once it was published, and [therefore] this flawed research keeps being cited."

The idea of reviewing research on the Florida panther was first brought to Vaughan's attention by one of his former graduate students John Kasbohm (Doctorate of Fisheries and Wildlife Science, 1994), who was the coordinator of the Florida panther recovery program for the U.S. FWS.

As Vaughan and his colleagues reviewed the data gathered in the panther research, they quickly identified a major source of oversight in the service's analysis of panther habitat requirements. The researchers collected only daytime activity data on the Florida feline and failed to acknowledge the cat's nocturnal nature.

Not realizing that a panther's nighttime activity may cover greater area than during the day, the federal and state researchers made generalizations from the daytime data to cover an entire 24-hour period. This led to the unfounded conclusion that panthers wouldn't travel more than 90 meters outside of a forested area. Furthermore, numerous decisions related to development and land use in Florida have resulted from the FWS' erroneous assumptions that fail to acknowledge the panther's true range of coverage.

The work of the Science Review Team and Vaughan has recently led the U.S. Fish and Wildlife Service to revise its guidelines. The Florida panther population has been increasing from 40 to 50 cats in 1995 to approximately 80 today, and Vaughan suggests this positive trend can continue by "reanalyzing existing data and gathering more data on kitten survival so that population growth and reproductive rates can be modeled."

This past summer, The Public Library of Science published an article titled "How Science Has Failed the Florida Panther," based on the Science Review Team's findings. In January 2006, the Journal of Wildlife Management also plans to publish two articles based on the team's review to help out "the new science."

IS IT A PANTHER, WILDCAT, COUGAR, OR MOUNTAIN LION?

Within North America, the names "panther, wildcat, cougar, and mountain lion" are used interchangeably to describe a large, predatory feline. When asked what the difference is among these varieties, Mike Vaughan explains that they are genetically all the same. Vaughan bases this notion on the studies of a former wildlife science research associate Melanie Culver, who examined the genetic composition of each cat. Vaughan attributes the difference in terminology to regional distinctions and minor variations in physical features like skull size. In fact, Vaughan adds "relocation studies with the Texas cougar in Florida have shown the large carnivore can adapt, intermingle with the native panther, and thrive in its new environment."

SULLIVAN RECEIVES TEACHING AWARD OF MERIT

The Virginia Tech Chapter of Gamma Sigma Delta, the honor society of agriculture, has recognized **Jay Sullivan**, forestry professor, as the recipient of the Teaching Award of Merit 2005.

Sullivan, who has been associate editor of Forest Sciences, teaches forest economics field lab, forest resource management, integrated forest management practicum, and advanced forest resource management and economics.

Among his numerous research activities is a study dealing with restoring sustainable forests on Appalachian mined lands for wood products, renewable energy, carbon sequestration, and other ecosystem services. He has also worked on land parcelization and non-industrial landowner participation in timber and land market sales.

Sullivan has made many presentations including some on forest banking and management rights versus annual returns.

ZINK-SHARP HEADS UP SEMI

Audrey Zink-Sharp, associate professor of wood science and forest products, is the new director for the college's Sustainable Engineered Materials Institute (SEMI). SEMI's mission promotes the wise management of timber resources to ensure an economic and environmentally sustainable supply of renewable resources to match future demand for building construction materials and related products.

Zink-Sharp's research team from multiple departments is developing a database to assess alternative forest management practices to meet future demand for wood and designing a strategy for developing new composites based on principles of materials science.

One specific project has been to look at why intra-ring property data are lacking for many widely-used wood species. Today modern engineered wood composites are crafted with increasingly smaller and smaller wood components, so there is a critical need for this study.

Inaccuracies and inefficiencies result in the industry, especially when species with marked intra-ring variations are used. Wood anatomy features such as cell wall thickness, mocrofibril angle, cell type and distribution are influenced by silviculture. These features control stiffness, shrinkage, and wood strength.

Researchers are developing a test system to measure intra-ring properties and relate experiment results with silvicultural treatments to determine the impact of silviculture.

RESEARCH SPOTLIGHT

McLEAN AND CRAIG TEST CHEAPER FOOD SOURCES TO RAISE COBIA

Ewen McLean and Steven Craig each cradle a juvenile cobia before returning the fish to their tanks and the favorable conditions of the VTAC water reuse system.

Since the summer, college faculty with the Recirculating Aquaculture Demonstration and Research Facility, commonly known as the Aquaculture Center (VTAC), have been researching new ways of raising cobia, a saltwater fish that may someday become a mainstay in the United States' aquaculture industry.

Due to the high cost associated with feeding and housing the fish, cobia are currently not in commercial production within the U.S. However, fisheries and wildlife professor and director of the Aquaculture Center, Ewen McLean, along with associate professor of fisheries and wildlife and veterinary medicine, Steven Craig, have been working with researchers from France, Brazil, and Belgium to develop sustainable and economically feasible methods for raising this untried fish.

McLean and Craig began their work with cobia as part of the first annual marine finfish larviculture research and training workshop held at Virginia Tech's Virginia Seafood Agricultural Research and Extension Center (VSAREC) in Hampton, Virginia. The two-month residential workshop sponsored by the VTAC, VSAREC, and the International Initiative for Sustainable and Biosecure Aquafarming explored the latest technology in larval cobia feed production and enrichment.

McLean and Craig each spent a month in Hampton as part of the workshop, feeding and monitoring the larvae, and being on call for the cobia during this crucial time in their development.

After eight weeks in Hampton, approximately 2,000 cobias were transported to the VTAC in Blacksburg for further nutritional and physiological research. The six-hour trip from Hampton to Blacksburg presented several challenges, including how to provide oxygen to the fish. Once in Blacksburg at the VTAC, McLean and Craig had the opportunity to work with the fish at their juvenile stage. McLean said of this period in the cobia's development, "Since they grow so fast, there's a tight window of opportunity for controlled studies." This gives McLean and Craig only three to four months to study and observe the fish before they grow too large for the holding systems at the VTAC.

One of the primary goals of McLean and Craig's cobia research was to find alternative protein sources since feed typically constitutes one of the greatest operating costs of any aquaculture production facility. The VTAC has been experimenting with cheaper and more sustainable protein sources than the cobia's traditional diet which comprises fish meal. McLean and Craig are working with organically certified alternatives including soy and yeast-based compounds that are more affordable and sustainable than feeding fish to fish.

The VTAC offers some of the best conditions for this type of research. The center utilizes water reuse systems that have zero effluent and minimal waste water and are totally secure by providing complete control over the environment. This creates ideal circumstances in which to study the fish's immune system apart from the influence of environmental and other external factors and to determine best management practices for cobia aquaculture. Although this type of aquaculture system may be expensive to operate, Steven Craig pointed out, "This is a totally integrated program, which from a marine perspective, very few universities take such a holistic approach."

Besides nutrition and immune system research, the aquaculture center has collaborated with the Virginia Bioinformatics Institute to study gene expression to see how genes change when exposed to various conditions. This ability to monitor protein production on a day-to-day basis is not only very unique to aquaculture research, but as McLean pointed out, "By integrating gene expression work with physiological studies, immune research, and morphological changes, we get an integrated feeling of what's going on with the animal. This information will help us to increase survival."

McLean and Craig both agree their research has contributed to an understanding of more sustainable and cost-effective ways to raise cobia that may someday lead to cobia being as commonplace as salmon, catfish, or tilapia in today's American restaurants.

FORESTRY FACULTY AND STUDENTS ASSIST NATIONAL PARK SERVICE

Prince William Forest Park, located in Northern Virginia and managed by the National Park Service (NPS), is the largest protected natural area in the Washington D.C. metropolitan area with more than 15,000 acres. In recent years the area around the park has experienced increasing population growth and associated residential development, particularly to the north of the park.

The only formal entrance into the park, however, is on the park's south boundary. To assess public support for increased access to the park, the NPS is utilizing college faculty and students to help with surveys of park visitors and neighboring residents.

The survey project is headed by assistant forestry professor Steve Lawson, who explained, "Findings from the surveys will be particularly important as NPS moves into future phases of access development planning."

College research associate Aurora Moldovanyi as well as graduate students Brett Kiser, Steve Bullock, and Kerry Wood are also assisting Lawson with the project. The results of the surveys will provide NPS with information on park visitation patterns, demographics, and attitudes toward park management.

Members of the Prince William Forest Park survey project include (left) graduate student Brett Kiser, (center) research associate Aurora Moldovanyi, and (right) assistant forestry professor Steve Lawson.

STUDENTS TEST WOOD PRODUCTS

Students in assistant wood science and forest products professor Daniel Hindman's Wood Mechanics II class had the chance to examine and test new wood materials last spring. The class focused on understanding the properties of wood that concern its strength, stiffness, and efficiency.

Students tested a bamboo strandboard, donated by Joseph Howard, Inc., that was imported from China. The bamboo was used to fabricate box beams. After testing, students found its design properties were greater than typical oriented strandboard.

Students also tested a completely wooden fastener, produced and donated by the Miller Dowel Company. These fasteners were made out of several different wood species including oak, maple, locust, and purpleheart.

Though they were originally intended for use on outdoor decks, these fasteners are also used extensively in woodworking. The strength of these fasteners impressed the students who used them in constructing the timber bridge for the national competition in wooden bridges.

Students assemble one of the two bamboo box beams in the Wood Engineering Laboratory for Hindman's Wood Mechanics II class.

GRADUATE STUDENT HELPS SAVE ENDANGERED OCELOTS

Department of Fisheries and Wildlife graduate student Adam Dillon is completing his thesis this fall on ocelot density and home range in Belize, Central America.

"However, due to a lack of current information pertaining to ocelot population abundance and density in Central America, my research has been quite challenging," he noted. In fact, there is only one ocelot available for him to document home range size and spatial arrangement.

Dillon's advisor, assistant professor Marcella Kelly, whose large cat research was featured in the January issue of National Geographic, explained, "When he finishes his research, it will provide baseline information for future research and ultimately aid in conservation efforts to help save this rare, endangered species."

Yes, rare indeed.

Graduate student Adam Dillon conducts field research on an ocelot in Belize, Central America.

JONES TAKES HOME PRESTIGIOUS AWARD

Fisheries and wildlife sciences doctoral candidate **Jess Jones** has been awarded the William Preston Thesis Award for the best original research with the potential to benefit all people. This annual award is the highest academic award for master's degree students given by the university.

Jones' thesis, titled "A Holistic Approach to Taxonomic Evaluation of Two Closely Related Endangered Freshwater Mussel Species, the Oyster Mussel, and Tan Riffleshell," reevaluated the separate classification of two very closely

related mussel species. Jones utilized not only the traditional methods of analyzing the anatomical characteristics, but also used modern genetic techniques. Through his research, Jones was able to describe a new species and subspecies of freshwater mussel. His findings also illustrate how essential a multi-faceted approach is to understanding and describing the world's biodiversity.

Along with being surprised by the recognition, Jones also felt honored to be nominated by members of his thesis advisory committee. "I wasn't even aware of being nominated until I heard word from the graduate school that I had won the award. However, it's a great honor to have my research recognized by the university," Jones remarked.

In addition to his responsibilities as a Ph.D. student, Jones also works for the Virginia field office of the U.S. Fish and Wildlife Service as a restoration biologist. He received his bachelor's and master's degrees from Virginia Tech and is currently helping college scientists restore rivers and their respective populations of native mussels and fishes.

BUSY YEAR FOR MILITARY LANDS DIVISION

This past summer, the Military Lands Division (MLD) of the Conservation Management Institute had their hands full with various research projects including bat and rare bird surveys at Fort Chaffee, Arkansas; Munition Damage to Forest Resources at Fort Pickett, Virginia; and Range and Training Land Assessment Management at Fort Rucker, Alabama. This past spring, the Military Lands Division released final reports on a variety of topics ranging from assessments of the golden cheek warbler habitat at Fort Hood, Texas to an avian atlas for Fort Chaffee, Ark. To help with the heavy workload, the MLD hired two new Geographic Information Systems (GIS) technicians, Kristen Labrie and Pamela Swint, as well as Beth Porkoski, a new field botanist.

Military lands frequently are an excellent site for conducting research as human impact is generally limited and natural habitats are in great abundance.

1ST ANNUAL WOOD BOWL

Sardo Pallet and Container Laboratory research associate Peter Hamner tries to make a tackle on wood science and forest products undergraduate Josh Herzog in spite of a "block in the back" by undergraduate Joe Movic.

Photo credit: Brianna Wright, daughter of wood science and forest products research associate Bob Wright

College of Natural Resources

QUARTERLY PUBLICATION

Fall 2005

Dean *J. Michael Kelly*
Editor *Lynn M. Davis*
Associate Editor *David Arnold*
Assistant Editors *Sarah Kamppila, Krystle Norman*
Designer *Joe Swope*
Photography Contributors
Lynn Davis, David Arnold, Sarah Kamppila
Printer *Progress Printing, Lynchburg, Va.*
Alumni Office (540) 231-5809
Development Office (540) 231-8859
Public Affairs *davisl@vt.edu*
Sports Information (540) 231-6796

HOKIE LINKS
COLLEGE WEB *http://www.cnr.vt.edu*
VT NEWS *http://www.news.vt.edu*
VIRGINIA TECH *http://www.vt.edu*
VT MAGAZINE
http://www.vtmagazine.vt.edu
ALUMNI ASSOCIATION
http://www.vatechalumni.com
ALUMNNET *http://alumni.iddl.vt.edu/*
VT BOOKSTORE
http://www.bookstore.vt.edu/
ALUMNI CAREER SERVICES
http://www.career.vt.edu/alumni/alumni1.htm
SPORTS *http://www.HokieSports.com*
http://www.schoolspiritart.com
(Hokie web store)
CONTINUING EDUCATION
http://www.conted.vt.edu
COLLEGIATE TIMES
http://www.collegiatetimes.com
GIVING TO VT *http://www.givingto.vt.edu*

BALINESE DELIGHT

Ewen McLean, Aquaculture Center Director

A Bali backdrop for fish culture cages constructed of wood, net, and oil drums.

Sometimes working in the field of aquaculture, the controlled rearing of aquatic animals and plants, has its advantages. This year, the World Aquaculture Society (WAS) was generous in providing one – its annual meeting was held in Bali, Indonesia, a Hindu island steeped in mysticism and resilient against the great Western tourist invasion.

For the four of us that were lucky enough to undertake the grueling 34 hours of travel from Blacksburg, the meeting and its associated attractions were nothing less than paradise. The seven-day visit included not only conference attendance but also visits to unique commercial, provincial, and federal government aquaculture hatcheries.

The intrepid College of Natural Resources team included myself as director of Virginia Tech's Aquaculture Center (VTAC); Steven Craig, head of VTAC's fish nutrition unit; Michael Schwarz, Virginia Seafood Agriculture Research and Extension Center's (VSAREC) aquaculture specialist and newly-inducted Alltech scholar; and doctoral candidate Jackie Zimmerman.

World Aquaculture 2005 had over 3300 participants originating from 87 countries, and the event was made even more spectacular by the opening ceremony where Indonesia's President Susilo Bambang Yudhoyono welcomed everyone. During the event's four days there were 62 sessions, 750 oral presentations, over 200 posters, and a trade show with 175 stands from 25 countries.

Craig, Schwarz and I chaired scientific sessions and delivered oral presentations on subjects as diverse as aquaculture engineering, fish nutrition, and larval fish rearing.

Giant clam broodstock.

Jackie experienced an intense four days of lectures on state-of-art global aquaculture, ranging from southern bluefin tuna culture to aquaculture education and extension activities. The college's four attended over a third of the oral presentations. An important aspect of the meeting was the opportunity to discuss the research findings at the VTAC and VASREC as well as comparing notes and discussing collaborative opportunities with scientists from Europe, North and South America, Asia, and Africa.

A day before the WAS meeting we were all fortunate to be able to experience an exclusive tour of Bali's aquaculture industry, a 14-hour expedition I had pre-organized. Our host was Aspari Rachman, who has worked closely with the Indonesian aquaculture industry for over 25 years, with 10 years experience in Bali.

Our excursion provided not only a fantastic opportunity to immerse ourselves in the realities of global aquaculture, but also presented the means to sightsee Bali from its southern to northernmost shores. Caldera, stepped rice paddies, beautiful Hindu temples, traditional ceremonies, long-established forms of art and craft, and wondrous vistas of lake, ocean, and forest fed the spiritual in us. The busy city and town streets, with their urgent salesmen, presented the less romantic commercial side of this nonetheless delightful tropical isle.

As a country, Indonesia has a unique aquaculture industry, furnishing the local, regional, and international markets with a wide variety of seafood. Farmed seaweeds, sea cucumbers, mollusks, crustaceans such as tiger shrimp, over 80 species of food fish, and frogs represent some of the aquacultured freshwater, brackish, and marine products.

Indonesia, and Bali in particular, also provide the worldwide marine and freshwater ornamental industries with numerous species, and it was upon these that our venture concentrated. High on the list was a facility that produced five of the seven known species of giant clams and 25 species of hard and soft corals for habitat rejuvenation and the ornamental trade.

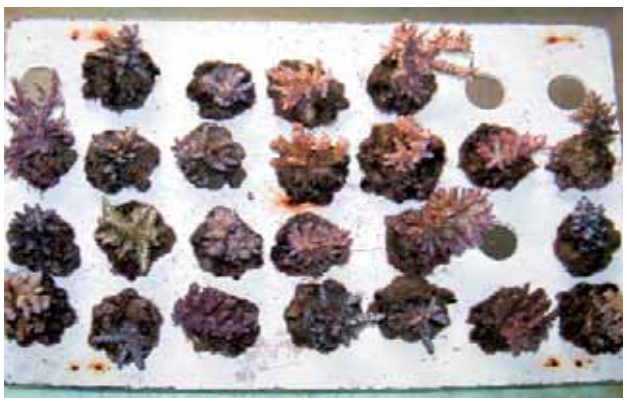
Giant clams can produce many millions of eggs every spawn time and can reproduce several times a season. Their reproduction may be controlled by hormonal and environmental manipulations. Standing among tanks of these wondrous shellfish with their colorful display of symbiotic algae was indeed delightful. Broodstock animals were small giants of the molluskan world. The company engaged in giant clam farming has developed unique mantle colorations for the international trade.

Tanks overflowing with multi-hued corals were also hard to ignore. The methods used in their culture were explained and demonstrated, providing opportunities for us to collect digital images that will be used for teaching and extension. An undergraduate research project has developed as a result of this visit. Not too far distant from the clam-coral operation was an ornamental fish exporter. Sadly, many species of the fish maintained at this facility were collected from the wild.

Nevertheless significant efforts are being made by Indonesian scientists to culture this diminishing resource. Four hours later in the minivan, we were ejected at a cage farm operation that held our favorite fish – the cobia, together with rabbitfish, groupers of different kinds, and others. Some six operations were undertaken in a relatively small embayment, representing provincial, federal and private enterprise. The structure of the fish farm cages was interesting, mainly comprising wood and some very basic flotation devices, serving to illustrate how rudimentary marine aquaculture operations can be.

Time was of course also available for pleasure, and by trip's end we were all "seafooded-out." Selecting live lobsters, shrimp, and fish that would be prepared for us ensured the freshest seafood available anywhere. To eat these selections on a beach with live music and waves breaking not 20 feet from the table was enchanting. Leaving the island was not desired but unfortunately a necessity. More than one of us was considering a research sabbatical as the plane lifted off for the 34-hour journey back home.

The Virginia Tech aquaculture group (from left) our host Aspari Rachman, Michael Schwarz, Ewen McLean, Steven Craig, and Brazilian colleague Luis Andre Sampaio.



Various species of cultivated coral.

NEW COURSE ALLOWS STUDENTS TO TRAVEL THE WORLD

Students interested in traveling the world now have a great opportunity to do just that. "World Landscapes" is a new course being offered by the Department of Geography starting in Spring 2006. This course, a combination of study abroad and in-class enrichment, was designed to offer essential field experience for undergraduate and graduate students.

Basically, the course focuses on a distinct region of the world each fall or spring semester. Then, during winter, spring, or summer break, students will get the chance to experience first-hand these regions for one to three weeks. By using a "landscape approach, " professors encourage students to see the world as far more than scenery by observing landscapes to understand how they were created.

Eastern Canada, mainly Maritimes and Newfoundland, will be the course's first destination. Weekly class meetings will be used to discuss readings about Eastern Canada, which will help prepare students for the new human and physical environments of the region. Coastal glaciations, plate tectonics, urban planning, and settlement patterns are just some of the many topics this course will cover. Professor Bill Cartensen, assistant professor Lynn Resler, instructor John Boyer, and professor emeritus Bob Morrill will lead the new course.

In the future, Jim Campbell and Larry Grossman plan to utilize this course to take their students on an expedition throughout the United Kingdom to survey the relationship between physical landscapes and human settlement. In addition, the course will explore the impacts of the European Union and globalization on contemporary economy and society and the historical geography of the relationship between the Caribbean and United Kingdom.

So you thought geography was simply memorizing the capitals of states and where the Great Lakes were!

Newfoundland not only offers remarkable scenic beauty, but its landscape variations are an excellent source of geographic study.

KELLY IN BRAZIL FOR JAGUAR WORKSHOP

The Jaguar Habitat and Population Workshop attracted participants throughout North and South America.

This summer assistant professor of fisheries and wildlife sciences Marcella Kelly traveled to Brazil to attend a Jaguar Habitat and Population Workshop. Kelly explained, "The workshop was designed to get experts involved and to determine if we had enough information on jaguars to construct a population model for the species." The experts mainly concentrated their research on the Misiones Region of Argentina, where jaguars are among the typical wildlife.

STAUFFER TEACHES WILDLIFE DATA COLLECTING IN MEXICO

Dean Stauffer, professor of wildlife sciences, taught a one–week workshop on wildlife habitat analysis and evaluation in the Facultad de Zootechnia at the La Universidad Autonoma de Chihuahua (UACH, Autonomous University of Chihuahua), in Chihuahua, Mexico, this summer. How to design studies to collect data on wildlife habitat; analyze the data to develop models that can be used to evaluate habitat quality; and use this information to develop plans for habitat management were the topics.

Through an interpreter, Stauffer taught 33 advanced undergraduate and graduate students from UACH, faculty from UACH and three other Mexican Universities, several researchers from environmental research institutes in Mexico, and two lead biologists from the Mexican Ministry of Environmental and Natural Resources in Mexico City.

He taught the Habitat Evaluation Procedures used by several federal resource agencies in the U.S. The course included a field exercise where the students collected data and brought it back to the classroom for analysis, resulting in a presentation of their results on the final day. Stauffer's interpreter was Juan Carlos Guzman, a recent Ph.D. graduate from the fisheries and wildlife sciences department, who is now a faculty member in the Colegio De Postgraduados, Campus Montecillo, Zacetecas, Mexico.

This was Stauffer's fourth trip to teach since June of 2000. "I hope to return in January 2006 for another class and may continue annually to visit alternating classes on habitat analysis and wildlife population estimation and analysis," he said.

Stauffer provides instruction to the class prior to collecting field data.

STUDENTS CONDUCT RESEARCH IN THE DOMINICAN REPUBLIC

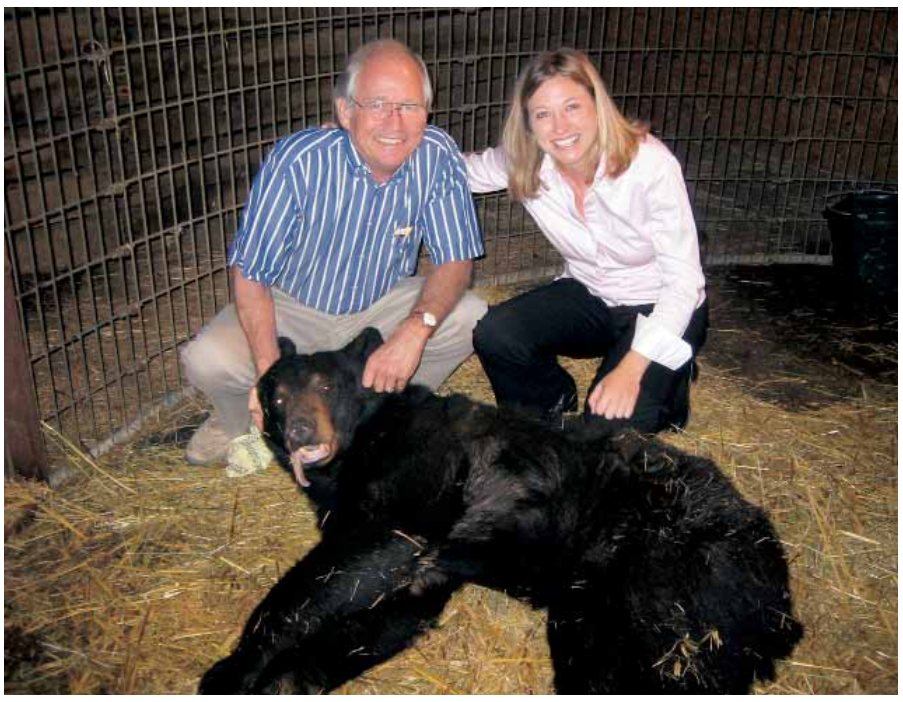
Last summer geography professor Joe Scarpaci and assistant geography professor Korine Kolivras led a group of 19 students enrolled in an environmental and social sustainability course in Punta Cana, a Caribbean resort in the Dominican Republic. The group ended up in a feature article in US Airway's Attaché publication seen by more than 1.5 million people. Students surveyed 1354 homes in a squatter settlement in Verón to gather information about building materials, location, condition, and the land use of these homes. Scarpaci and Kolivras surveyed 104 homes to determine if families were receiving any primary health and medical care.

Their field research identified a lack of water treatment facilities and health care in this community. Scarpaci estimates that locals spend 14-20 percent of their earnings on fresh water. As a result, Virginia Tech is now making efforts to partner with the Verón community, its surrounding hotels, the Punta Cana Biodiversity Center, and any other potential funders to organize a water treatment system.

Thomas Mazich (far right), third year architecture student, and Professor Scarpaci (2nd on right), speak with a member of Verón's town council.
Photo credit: Casey Parker

Attaché, a magazine published by US Airways with a circulation of approximately 1.5 million people, mentioned Scarpaci, Kolivras and their students in an Aug. 2005 article reviewing the Punta Cana Resort. Janine Latus, author of the Attaché article, wrote about passing "a group of Virginia Tech students, who are on the island studying sustainable development… A few miles away, their peers are working through details for Virginia Tech's plans to build and staff a health-care clinic in a nearby town."

OFFENBUTEL'S BEAR EXPERTISE MOVES HER NORTH



Colleen gave her thesis seminar in the morning and had to work in the bear pens before giving her defense in the afternoon!

Colleen Offenbutel, who first came to the college as a technician with the Cooperative Alleghany Bear Study (CABS), later became a graduate student under fisheries and wildlife professor Mike Vaughan and earned her master's degree. She also worked in the bear pens at the Center for Ursid Research for four of her six years at the college.

On the day of her defense, Colleen presented her thesis in the morning, worked with a captive bear in the bear pens in her presentation clothes afterward, and gave her defense a few hours later that afternoon.

For her thesis, Offenbutel worked on CABS, focusing on black bear home range dynamics. CABS was a 10-year study on bears that took place in two different study areas: Montgomery, Craig, and Giles counties; and Augusta and Rockingham counties. Colleen analyzed data from all 10 years of research for both study areas.

Offenbutel is now in Westboro, Massachusetts working for the state's Division of Fisheries and Wildlife as its furbearer biologist.

ALUMNUS HEADS WATERSHED

Anne Zimmerman, a '79 forestry and wildlife graduate, now directs the USDA Forest Service's watershed, fish, wildlife, air, and rare plants office. Zimmerman first joined the staff as deputy director in May 2004 and was appointed acting director in June 2004. Zimmerman assumes leadership over a number of offices located across America that deal with a variety of topics such as air and water quality and wildlife habitat management. The position requires coordinative and organizational abilities as well as the ability to develop partners to support the goals of the agency.

Working as a wildlife biologist, Zimmerman began her career with the USDA Forest Service on the George Washington National Forest in Virginia in 1979. She held other biologist positions on the Kisatchie National Forest in Louisiana and the national forests in Alabama.

Zimmerman served as deputy district ranger and was promoted to district ranger while working in Lolo National Forest in Montana. Returning to the South, she acted as deputy forest supervisor and later forest supervisor of the Cherokee National Forest in Tennessee.

Her broad range of experience also includes her service on the Blue Team of the southern region's Incident Command Team, one of the service's top firefighting teams.

The Virginia native received her master's in wildlife ecology from Purdue University. Zimmerman says she is "very excited about the challenges and opportunities that my wonderful staff, our partners, and I will face in the near future."

COLLEGE ALUMNI HELPS WITH TSUNAMI RELIEF

Mark Jewell, a '97 graduate in forestry and wildlife, took a month off from work to help with the reconstruction effort in Sri Lanka after the tsunami. His Virginia Tech flag went with him. Jewell works as an outdoor recreation planner for the National Park Services Blackstone River Valley National Heritage Corridor in Rhode Island.

LOUISIANA UNPLEASANTNESS

Bill Ensign '95 Ph.D, fisheries and wildlife and a Kennesaw State University professor in Georgia reported that "during the recent unpleasantness in Louisiana former Virginia Tech fisheries and wildlife classmates Mary O'Connell '91 and his wife Meg Uzee '93 safely fled their Louisiana home when Katrina struck." They lived in New Orleans not far from Lake Pontchartrain. At this writing they were in Mary's mother's home in Daytona Beach watching pictures on television of their house under water to the roofline.

University Honors students have raised $30,000 so far with $100 print sale/donation of the Sugar Bowl 2000 French Quarter scene in New Orleans. They are hoping to reach their $100,000 goal for the Hurricane Katrina Relief Project. Email orders may be sent to the Hokie artist Becky Guynn at becvkwg@adelphia.net. Prints may also be obtained from The Inn at Hans Meadow in Christiansburg, Virginia: 1-888-643-2103.

Robert Bates'('66 B.S. in forestry and wildlife) great niece Madeline Parr (front left) and great nephew Charles Parr (back right) enjoy some soccer and football in front of Cheatham at the homecoming gathering and tailgate.

HOMECOMING '05

Associate professor of wildlife and former fisheries and wildlife department head Jerry Cross with his wife Beth (both seated on right) enjoy catching up with Gary ('80, Forestry and Wildlife) and Kim Norman at the college's homecoming before the Hokies vs. Georgia Tech Yellow Jackets football game.

EXTENSION AND OUTREACH

STUDENTS CAN WALK THROUGH FOREST ONLINE WITH AWARD-WINNING 4-H VIRTUAL FOREST

Elementary and middle school students can take advantage of an award-winning hi-tech way to learn about forestry using the 4-H Virtual Forest from the college's Virginia Cooperative Extension program. The 4-H Virtual Forest is an interactive, web-based learning experience that introduces forest management concepts to youth ages 9 through 13. Led by forestry professor Jeff Kirwan, the 4-H Virtual Forest has seven learning modules: land-use management, renewable resources, photosynthesis, tree identification, succession, tree measurements, and timber harvesting. "The modules complement 4-H project work in forestry and are consistent with the Standards of Learning for Virginia public schools," said Kirwan.

The 4-H Virtual Forest can be found at *http://www.ext.vt.edu/resources/4h/virtualforest/*.

"It is important for our youngsters to learn about forestry," said Robert Ray Meadows, director of the state's 4-H program. Forests cover about 16 million acres or about 60 percent of Virginia. "The forest products industry ranks first in the state in numbers of manufacturing jobs, salaries, and wages. Virginia's forests protect water quality, provide recreational opportunities, and provide habitat for a diversity of wildlife species."

"The 4-H Virtual Forest is a way to introduce youth to science-based forest management activities," said Dan Goerlich, Virginia Cooperative Extension agriculture and natural resources agent at Halifax County who was the principal writer in creating the 4-H Virtual Forest.

The 4-H Virtual Forest received the Virginia Cooperative Extension Natural Resources Flagship award from Virginia's Natural Resources program leadership team and an Outstanding Team award from the Alpha Gamma chapter of Epsilon Sigma Phi, the extension honor organization. Virtual Forest also garnered awards from the Association of Natural Resources Extension Professionals and the National Association of Extension 4-H Agents. Carl Estes, instructor technologist in the Agriculture, Human, and Natural Resources Information Technology at Virginia Tech, was the web developer.

All the 4-H youth development agents have CDs of the website. Each extension district office has sets of 25 CDs that are available to loan to teachers for use in a computer lab setting.

NEW EXTENSION ASSOCIATE

The college has added Jennifer Gagnon to its extension and outreach program as a forestry extension associate. She will coordinate various activities including the Virginia Forest Landowner Education Program, production of the extension program's quarterly newsletter, and the fall forest farms tours. She earned her bachelor's and master's degrees from the University of Florida.

4-H HELPS YOUTH GET EARLY LOOK AT CAREERS

Forestry professor Jeff Kirwan continues a long-standing tradition with 4-H youth development agent John Blankenship in hosting an annual 4-H Career Day field trip for the youth of Tazewell County by helping students learn about the many different careers that could be part of their futures.

Jeff Kirwan takes fourth graders on a career tour at Virginia Tech.

Blankenship works with the Tazewell County schools to take most of the fourth graders and their teachers on the field trip. Students hear about several of the businesses and industries that are located along the way from Tazewell County to Virginia Tech, including Appalachian Power and Celanese. Some of the highlights of the tour when they get to Virginia Tech are the College of Natural Resources, the Department of Entomology in the College of Agriculture and Life Sciences, the Department of Geosciences in the College of Sciences, and the athletic department. The students tour the campus and have lunch at Dietrick Dining Hall. Blankenship is following in the footsteps of retired 4-H youth development agent Jack Sisk, who started the program.

HOLIDAY LAKE IMPORTANT TO THE COLLEGE

The college has a long history with the Holiday Lake 4-H Educational Center in Appomattox, Virginia. As the Commonwealth's largest 4-H Center, Holiday Lake is committed to educating youth and adults, especially in natural resources and the outdoors.

The college has used this facility and its unique location to educate students of all levels, landowners, and educators through a variety of programs like the Spring Forestry Camp, an opportunity for students in their junior year to live at the 4-H Center for a month and have daily field classes in the state forest.

Virginia's SHARP Logger Training and Educational Program also takes place there. A nationwide initiative designed to publicly demonstrate the forest industry's commitment to practicing sustainable forestry; the program includes three six-hour training sessions in Logging Safety, Sustainable Forestry, Harvest Planning, and Best Management Practices.

Wood Magic is an interactive youth education program that involves students and teachers in hands-on, natural resource-based activities focused on wood and forest products. It also emphasizes the role natural resource science plays in a sustainable future. The curricula include the Virginia Standards of Learning and hands-on engaging science experiments. This program has been housed at the 4-H Center, and for the past two summers, the large trailer has come from the college and parked there to reach youth across central Virginia.

The Forestry and Wildlife Tours promote wise resource management on private forestlands. The tour includes several demonstration stops on private, industry, and public lands. "The Holiday Lake 4-H Center provides a wide variety of natural resource related programs annually," said Bryan Branch, director of the 4-H Center.

Many forestry students have attended Spring Camp and lodged in Holiday Lake's cabins nestled in the Buckingham State Forest.

VIRGINIA GEOSPATIAL EXTENSION PROGRAM WINS COLLEGE OUTREACH AWARD

John McGee, geospatial extension specialist in the forestry department, and Paige Baldassaro's won the college's Outreach Award for 2005 for their Virginia Extension Geospatial Program. "This new and effective program is having a significant impact on the diversity of audiences using a variety of multimedia communication efforts throughout the Commonwealth and nationwide," stated the Award Selection Committee.

VIRGINIA 4-H WHEP TEAM PLACES THIRD OVERALL

The Virginia Wildlife Habitat Evaluation Program (WHEP) team placed third overall out of 19 teams in the National 4-H WHEP contest held August 3-7 at the Vines 4-H Center near Little Rock, Arkansas. The team included coach Jenny Mercer, and members Jill Bourgeois, Derek Davis, and Lily Damico of August County, and Hannah Shaw of Nelson County. Last year Mercer's team placed first in the nation when the college hosted the national event for the first time.

Participants in the WHEP competition must first compete at district and state levels to continue on to the national competition. There are five areas of competition. Participants must: identify wildlife foods, interpret aerial photographs, recommend management practices for a piece of land, develop a rural management plan, and develop an urban wildlife management plan. Jill Bourgeois placed eighth in aerial photographs, third in wildlife food identification, and fifth overall. Hannah Shaw finished 10th in wildlife management planning.

Out of the 19 teams present, Virginia's team was the only one to place in the top five in both the urban and rural management planning, placing third in rural and second in urban. The team was sponsored in part by Jim Johnson, professor of forestry and associate dean of outreach, as well as the College of Natural Resources.

The 2005 WHEP Team: (left to right) Coach Jenny Mercer, Hanna Shaw, Jill Bourgeois, Lily Damico and Derek Davis

CORRECTION TO LAST ISSUE

Jim Chamberlain, USDA research scientist in the wood science and forest products department, was pictured holding galax, a short-stemmed ground cover, harvested heavily primarily in North Carolina. Here is a picture of what ramps look like, as provided by '77 graduate in forestry and wildlife Bob Radspinner.

WORKSHOP ON LEAN MANUFACTURING

Earl Kline, Dan Cumbo, and Brian Bond of the wood science and forest products department partnered with Brian Brashaw from the University of Minnesota–Duluth to present the fourth workshop on lean manufacturing for the wood products industry. The three-day event was held at the Wood Education and Resource Center in Princeton, West Virginia, this summer. 15 wood products industry participants learned the basic principles of lean wood manufacturing and how to apply it to their own businesses.

Participants used a hands-on exercise to understand how traditional batch manufacturing is less efficient than lean manufacturing. They also learned how to redesign and reorganize their own manufacturing processes to make them more profitable.

The workshop gave them an opportunity to tour a local cabinet manufacturer who has successfully used lean manufacturing for over seven years. "The best feature of the workshop," said some of the attendees "was its interactive, hands-on training approach."

FORESTRY AND GEOGRAPHY JOIN FORCES IN INTELLIGENCE RESEARCH

Steve Prisley, associate professor of forestry, and Bill Carstensen, professor of geography received a grant from the National Geospatial-Intelligence Agency (NGA) for a three-year, $450,000 contract. Virginia Tech was one of 13 schools to receive a share in the $4 million of research grant money distributed by the NGA.

This is the first time the college has received a grant from the NGA's Academic Research Program (NARP). The NARP gives grants annually to U.S. academic institutions that are selected to provide information that will advance and develop ways to conduct and apply research in their field. The NGA's primary work is to collect and analyze spatial data (digital maps) that support U.S. intelligence agencies. Prisley and Carstensen submitted their proposal through the Center for Geospatial Information Technology (CGIT), a university interdisciplinary center, at which Carstensen is associate director. Prisley called the CGIT, "an ideal vehicle for projects that bring together investigators from different disciplines." Prisley and Carstensen's project will involve research on managing uncertainty in spatial data. Keying Ye and Eric Smith from the statistics department will join them in their research, as well as two Ph.D. students and a few M.S. students.

Prisley expressed excitement to have this new agency sponsor the college in research, "especially because it is one not typically linked with natural resources and several recent graduates of the college have begun careers with the NGA." He added, "the project is an excellent example of the collaboration of forestry and geography that has been going on long before geography joined our college."

Steve Prisley and Bill Carstensen (right) stand in front of the display used for the National Geospatial-Intelligence Agency project at the Center for Geospatial Information Technology (CGIT) located in Torgensen Hall.

USDA AWARDS COLLEGE OVER $400,000 IN GRANTS

The USDA Forest Service awarded nearly $3 million in grants to help propel the hardwood forest products industries forward; $410,735 of that grant was given to the department of wood science and forest products and the Sloan Foundation Forest Industries Center.

Wood science and forest products professor Earl Kline of the Sloan Foundation Forest Industries Center will direct some of the grant money in a campaign called "Woods to Goods." It will develop a roadmap that follows the progression of activities in the cabinet supply chain, from the landowner to the end-consumer, literally from woods to goods. This project will focus on the wood supply chain for kitchen cabinets in the Appalachian region.

Another portion of the grant money will be under the direction of research associate Zhangjing Chen and wood science professor Marshall White, professors of wood science and forest products. In a one-year project, they will focus on developing a vacuum treatment system that would eliminate insects in wood products and packaging materials. If successfully developed, this treatment could take the place of chemical treatments and fumigation that are both energy inefficient and harmful to the environment.

In a one and a half year project under the direction of research associate Peter Hamner and White, splicing technology will be used to determine the feasibility of manufacturing pallet parts from hardwood segments. Recycled hardwood that is currently unusable could have its value restored by being spliced from short segments to full size compounds. An economic analysis will be done to determine the possibility of establishing this operation.

Assistant professor Brian Bond will oversee a project concerning the effect of curve sawing on hardwood logs, particularly Red Oak logs containing sweep. Traditional methods of sawing hardwood often leave logs warped when dried. A method of sawing that took the curvature of logs into consideration would allow higher quality and higher volumes of hardwood to be produced that would have less warp when dried.

The last project, also overseen by Bond, is a national workshop developed to introduce new technologies and techniques to those in the hardwood industry. The challenge is that new information is frequently only available to government-supported programs. This workshop would focus on currently available tools, technologies, and systems that would help increase the overall competitiveness of the hardwood industry.

College of Natural Resources
Virginia Tech
324 Cheatham Hall (0324)
Blacksburg VA 24061

Non–Profit
U.S. Postage PAID
Blacksburg VA 24060
Permit No. 28