

College of Natural Resources

Annual Report, 2007 – 08

Changes in the Service Environment: The recent downturn in the economy has affected the timber and forest products industries. Our income from the Hofmann Forest has been reduced, and that will lead us to cut our budget from that source by \$ 300,000, or about 9% for 2008 – 09. Economic conditions have impacted our major potential donors, and this has led us to readdress fund raising for the American Home project. The same economic forces may affect student applications to our programs and the need for financial support for students in the College.

Recent state and federal legislation favoring renewable energy research and development has had a positive impact on our research and outreach programs. Our external grants and contracts have increased about 36% this past year. Opportune areas for research and outreach include biomass production, biofuels, recreation - health – obesity relationships, housing innovations, genomics, urban forestry, and ecosystem services of forests. In addition, there is a growing societal awareness of climate change and the role that natural and managed forests can play in carbon sequestration. Extension programs in tourism continue to grow, as do those for support of sustainable, affordable housing; forest and wildlife-oriented landowner education; and biofuels and bioenergy.

Our enrollment continues to grow with an 8.5% increase in total enrollment (10% increase in undergraduate and 2% increase in graduate enrollments). New initiatives in recruiting at military bases, distance education programs, and graduate programs in China offer opportunities for additional growth. The Forestry and Environmental Resources (FER) summer

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camp for high school students continues to be well subscribed, and may be particularly beneficial to Fisheries & Wildlife enrollment. New staff positions in FER and PRTM will assist with advising, recruiting, retention, placement, and outcomes assessment.

Compact Plan: We hired a new academic advisor for the Parks, Recreation and Tourism Department, and she is relieving faculty of advising burdens while simultaneously enhancing contact with and satisfaction of students and parents and allowing the faculty to increase their activities in research and graduate education. We have advertised for two Biomass/Biofuels positions, one in FER and one in Wood and Paper Science (WPS), which should allow us to continue our recent successes in these areas.

Diversity: Our undergraduate enrollment in Fall, 2007 was 1066 students, with 24% female students (down from 26% in '06) and 135 ethnic minorities (12.8%, up from 11.5% in '06). Our graduate enrollment was 210 with 48% females (up from 45%) and 11% ethnic minorities (up from 10%). Our new forest hydrologist, urban forester, tourism extension specialist and PRTM department head are all female. In fall, 2007 we hosted the third Natural Resources Diversity Summit at NCSU.

Our EnvironMentors program entered its second year, with joint funding from CNR and the Provost's office. Ms. Shafney Grays has been added to our staff to manage the program. We now have 20 students enrolled, and 9 have graduated. The program accepts students from Garner, Southeast Raleigh, Enloe, Raleigh Charter, and Burnham high schools.

Instructional Program Advances: The College continues to develop and support Service Learning (SL) pedagogies through the Engaged College Project, jointly sponsored by the Center for Teaching Excellence in Curricular Engagement. The Project is based on a single umbrella

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project, the Wake Nature Preserves Partnership, that each of the departments can use to provide comprehensive college-wide participation in both single courses and multi-course sequences. The SL activities will focus on the sustainable development and use of Wake County natural areas.

Three new distance education masters programs are being developed, with support from DELTA, in Environmental Assessment (joint with Zoology), Spatial Analysis (intercollegiate) and Parks, Recreation & Tourism Management (conversion of existing on-campus degree).

Negotiations are underway to establish 3+2 masters programs with selected universities in China, starting with an agreement with Nanjing Forestry University (NFG) in the WPS program. This collaboration would allow NFU seniors to take courses taught by NCSU faculty in China for graduate credit and subsequently enroll at NCSU to complete the master's degree with one year's NCSU residency. We are continuing our efforts to build a collaborative program for student exchange with the University of Pretoria in South Africa, the University of Concepcion in Chile, and Helsinki University of Technology in Finland. The campus-wide CNR-CALS Borlaug Lectureship and Award has entered its 4th year of service to the University.

The first articulation agreement for Environmental Technology was signed with Pamlico Community College in January 2008. An additional agreement is being developed with Wake Technical Community College, which might become part of the recently established PAC Program for an NCSU-Wake Tech Partnership.

Significant investment in instructional technology has taken place this year: up fitting of a second flexible-landscape, plasma screen/pod classroom in the Jordan addition; \$75,000 in donations for improvements to classrooms and student areas in WPS, and purchase or

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development of new technologies for distance education courses. There has been significant programmatic development by faculty around these new technologies. A new Distance Education Coordinator was hired to work with faculty on distance education and other instructional technology areas.

With a goal of eventual ubiquitous international experiences for CNR students, CNR faculty led 14 Study Abroad experiences in 2007-08: Sweden, Australia, Chili, Ghana, Turkey, China, Chile, Costa Rica and Nicaragua. A total of 93 CNR students participated in study abroad experiences in 07-08.

Research: 2007-08 was a record year for the College, with over \$ 9.9 million in new awards received - exceeding last year's new awards by 36%. CNR has taken a leadership role in research, development and deployment efforts focused on bioenergy. Bioenergy projects accounted for approximately \$ 2.8 million in new research awards in the College in 2007-08. CNR researchers captured three of the five competitive awards made by the NC Biofuels Center to NCSU this year. A new NSF I/UCRC was awarded to CNR – “The Center for Advanced Forestry Systems” - with partners at Purdue, Oregon State and Virginia Tech. CNR is playing a leadership role in the University's application for a second NSF-I/UCRC in Biofuels. New areas of research included sustainable housing and support for the wood products industry; land management planning and land manager training with the Department of Defense and the U.S. Marine Corps at Camp LeJeune; the relationships between recreational opportunities in schools and communities and human obesity and overall youth and adult health; and the complex interactions between sustainable biomass production, ecosystem services, carbon sequestration, climate change and bioenergy production.

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Extension: New awards by CNR Extension faculty totaled approximately \$ 427,000 in 2007-08.

These include a U.S. Forest Service grant on innovative wood products from North Carolina's underutilized species, a DOE/DHS gap analysis for disaster resilient homes, and tourism development plans for Montgomery and Edgecomb counties. The NC Hospitality Customer Service training curriculum has now reached over 70 NC CES field faculty. The Piedmont Birding Trail opened on May 15, 2008 with help from PRTM Extension. To date, more than 120 businesses and communities have participated in the Birder Friendly Training Programs. Our IPM programming efforts are estimated to have resulted in a 50% decrease in insecticide use in NC's Christmas tree industry. Policy work by Extension Forestry was instrumental in providing background information for NC's Renewable Portfolio Standard, and work continues on educating landowners, policy makers and professionals on woody biomass for energy.

Faculty Awards: Dr. Vincent Chiang, Jordan Endowed Professorship; Dr. Dan Robison, CNR Outstanding Teacher and ACE Leadership Fellowship; Dr. Richard Lancia, CNR Board of Governor's Award nominee and NC Wildlife Federation's Wildlife Conservationist of the Year; Kathy Hamilton Gore, CNR Alumni Distinguished Undergraduate Professor nominee; Drs. Fred Cabbage and Hugh Devine, CNR Alumni Distinguished Graduate Professor nominees, Dr. Awatif Hassan, Fellow of the American Society of Agricultural and Biological Engineers; Dr. Toddi Steelman, Fulbright Scholar; Dr. Yu-Fai Leung, Visiting Scholar, Taiwan National Science Council; and Drs. Ellis Cowling, Phillip Doerr, Rick Hamilton, Russ Lea and Henry Amerson, Professors Emeritus.

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Student Awards: Inductions into national honor societies: 32 Xi Sigma Pi, 4 Phi Kappa Phi, 17 Rho Phi Lambda, and 3 Phi Beta Kappa; 32 Undergraduate Research Symposium participants; 22 Gamma Sigma Delta Outstanding Freshmen recognitions, Irena Marie Rindos – University Honors Program graduate; Joshua M. Hardin, Trevor Davis Israel and Mason Emily Littlefield – University Scholars Program graduates; Nyeema C. Harris, ACAAGS Academic Achievement Award; Aimee Rockhill, Preparing the Professoriate Fellowship; Emrys A. Treasure – NCSU Valedictorian; 23 Hofmann Forest Graduate Fellowships; and 229 merit scholarships awarded; NCSU Academic Dean's List: 173 in Fall and 220 in spring.

Fund Raising: The major accomplishment this year was the merger and restructuring of our two foundations into the NC State Natural Resources Foundation, which will become effective July 1, 2008. Additional fund-raising foundations and advisory boards will be formed as needed, and 2 – 3 additional development officers will be hired in 08 – 09. The *Acres of Opportunity* program resulted in one gift of 115 acres, and our new *Grow With Us* campaign has been developed and will begin in July 2008. Increased income from the Hofmann to CNR for 2007-08 was \$ 400,000. Total cash to CNR was \$ 5.1 million, 4% above our goal for the year. WPS also secured the initial funding for the Woody Rice Professorship. Total fund raising, however, was only 50% of our goal. The shortfall was caused by the failure of an effort to secure a single \$ 3 million gift for the American Home project as well as an anticipated \$ 500,000 gift.

Administration: This past year we filled an open position for Assistant Dean for Finance and Administration with Don Patty. Dr. Doug Wellman, Head of PRTM is retiring on July 1, and we have hired Dr. Dorothy Anderson of the University of Minnesota to replace him. She will arrive October 1, and Dr. Candace Vick Goode will serve as Interim Head. The major structural change

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was the merger and restructuring of the Forestry Foundation and the Pulp and Paper Foundation (see Fund Raising above). CNR developed a new funding initiative to help match donations for endowed professorships and a Proposal Development Fund to support the preparation of large, inter-disciplinary research proposals.

Examples of the University's Five Focus Areas:

Producing leaders for the state, nation and world. As a college which specializes in professional degrees, our goals include the production of graduates who are not only educated broadly, but who also have the skills and experience that are directly applicable in the workforce and leadership of the natural resources industries that we serve. All of our programs require an internship/coop or summer field experience that provides real-world knowledge of their disciplines and that broadens their perspectives as future leaders. Over 25% of CNR undergraduates did either an internship or coop this past year. CNR students are also encouraged to participate with faculty on research projects as independent study or as part of the CNR Honors Program, with a goal of engaging students in scientific inquiry and potentially to prepare them for graduate school. The College provides small stipends to support this effort, and 32 CNR students presented their projects at the Undergraduate Research Symposium this year.

Creating educational innovation. CNR faculty continue to develop and incorporate new computer-assisted and distance education technologies in the classroom. The expansion of our distance education masters programs, study abroad opportunities, articulation agreements with community colleges, and developing programs in China require administrative, pedagogical, and technical innovation (see Instructional Program Advances above).

Improving health and well being. The PRTM Department's IPARC program (Investigating Places for Active Recreation in Communities) completed its first year with a summit which reviewed the current knowledge linking park and recreation facilities and programs promoting physical activities with healthy living across age and social classes. This program has attracted \$ 500,000 in funding its first year, and 12 articles have been published.

Fueling economic development. Forestry, wood products, pulp and paper, recreation, tourism, and golf all play a major role in the economic well being of the state and its residents. Extension faculty help advise the nearly 700,000 forest landowners of NC, family-owned furniture and wood processing plants, and county-by-county tourism efforts.

Driving innovation in energy and the environment. The college has taken a leadership role in research, development and deployment efforts focused on the sustainable production of biofuels and bioenergy. The college has new externally-funded research projects aimed at increasing the supply and quality of woody biomass, better understanding of their wood costs, and how to insure that small forest landowners are properly compensated for their biomass production. New technology projects include a lead role in the first NCSU/RTI bioenergy demonstration project, which is focused on biomass gasification and production of liquid fuels; three of the five new projects funded at NCSU by the new Biofuels Center of North Carolina; three Golden Leaf funded projects for bioenergy; and five new DOE and USDA technology development grants. Finally, the College has played a major role in helping the Biofuels Center, the North Carolina Biotechnology Center, Golden Leaf, and a series of state-wide and national efforts to inform the discussion on the complex interactions between sustainable biomass production, ecosystem services, carbon sequestration, and bioenergy production.