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October 2006

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DePerno, Christopher and Moorman, Christopher E., "Bringing Extension into the Classroom" (2006). *11th Triennial National Wildlife & Fisheries Extension Specialists Conference (2006)*. 7.

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Bringing Extension into the Classroom

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Abstract: The dissemination of research-based information has been a hallmark of North Carolina State University's (NCSU) land grant mission for more than 100 years. Through county Cooperative Extension Centers, NCSU maintains a strong relationship with the citizens of North Carolina. However, many students do not understand the importance of the mission of a land grant university, and most do not know that North Carolina State University has an extension program. Furthermore, students do not understand the extension mission, administrative structure, or approach to educate the public. There are many ways to bring extension into the undergraduate classroom and to encourage graduate students to build strong extension components into their research. As part of undergraduate teaching, we often share our extension experiences and questions and enlist undergraduate students to assist in answering extension-related questions. In an upper level Natural Resources Advocacy course, to introduce undergraduate students to extension and help them gain an appreciation for public education, students conduct a semester-long project focused on a real-world environmental issue. The students gather information from the scientific literature, survey stakeholders, and then reinforce correct perceptions and address incorrect perceptions through popular articles and public presentations. The NCSU Leopold Wildlife Club, primarily composed of undergraduate students, presents hands-on programs to elementary school groups, organizes educational booths at the local wildlife expo, and assists with maintenance of the native plant landscape demonstration surrounding the NCSU Fisheries and Wildlife Program main office. Additionally, graduate students are encouraged to participate in extension so that results of each research project are published and presented to a lay audience. As leaders in extension, we play a vital role in educating tomorrow's natural resource professionals. We should maximize the time we have with students and teach the importance of public education.

Key Words: curricula, land grant mission, students, extension, graduate students, undergraduate instruction

Proceedings, 11th Triennial National Wildlife & Fisheries
Extension Specialists Conference,
October 14-18, 2006, Big Sky, MT

Land Grant Mission

For more than 100 years, the dissemination of research based information has been a hallmark of North Carolina Stat University (NCSU). Through Cooperative Extension Service Centers, NCSU maintains a strong relationship with the citizens of North Carolina. Further, The College of Natural Resources at NCSU offers a wide range of Extension, Outreach, and Continuing Education programs for professionals, policymakers, and community leaders. However, many students do not understand the land grant mission at NCSU, or that NCSU has an extension program and what extension involves. Many undergraduate instructors struggle to incorporate teaching, research, and extension into their classrooms (Brown and Nielsen 2000), and more importantly do not involve students in educating stakeholder groups. However, with the recent trend to hire faculty with split teaching, research, and extension appointments, unique and important opportunities exist to actively engage students in extension and outreach.

Undergraduate Classroom

An upper-level course at NCSU (Natural Resource Advocacy – FW 485) is designed with a focus on extension. At the beginning of the course, the land grant mission at NCSU is discussed. Interestingly, most students do not know that NCSU has an extension program or understand the mission of extension and outreach. The mission at a land grant University, to know and serve the people of the state, is explained to the students. Matter and Steidl (2000) believed the first priority of undergraduate instructors is to help students become informed citizens, self-learners, and critical thinkers. Students must understand what information the citizens of North Carolina require, and university instructors must be committed to educating the citizens and students.

In FW 485, students are exposed to NCSU extension activities, including wood products extension, Christmas tree extension, and the wildlife damage program. Instructors share personal experiences with

students and students are asked how they would answer extension questions posed by the public. Many of the questions require out-of-class research and the use of science to justify their answers. Active involvement in developing solutions to extension problems shows students how they can make a difference to the lives of citizens and the conservation of natural resources.

Guest panelists from the media, non-government organizations (NGO), politicians, lobbyists, and conservation groups visit with the class during the semester. Generally, each panelist provides an overview of the portions of their job that relate to natural resource advocacy and extension. The students are required to ask questions and explore the process of environmental advocacy from many angles. Interestingly, these panel discussions have motivated numerous students to pursue careers with NGO groups or in the political arena. In fact, many students have commented they were unaware how the media, NGO's, lobbyists, or conservation groups advocate for natural resources, and many students actually become motivated to pursue careers in these fields.

Students also conduct a semester-long project focused on a real-world environmental issue. Students determine what stakeholders know about a natural resource issue, and reinforce correct perceptions and correct misperceptions. Initially, students prepare a 30-page research paper with 25 primary sources (first draft). Students then talk with and survey stakeholders and summarize the results to determine what stakeholders know or do not know. Then, Draft 1 is reduced to 3,000 words including the survey results, and students present results to their peers. Draft 3, the final paper, is reduced to 1,500 words and, to present and defend their work; students are required to prepare a poster presentation at the NCSU Undergraduate Research Symposium and NCSU Distinguished Lecture Series. One group of students won "best poster" at the 2006 NCSU Distinguished Lecture Series, which includes graduate level projects. These symposia often are attended by the public and members of the North Carolina Wildlife Resources Commission. Finally, students are required to send survey results and the final paper to stakeholders. The final paper may be submitted to the North Carolina conservation magazine, *Wildlife in North Carolina*, which reaches 62,000 subscribers. This process gives students professional presentation experience and an opportunity to publish.

Brown and Nielsen (2000) acknowledged the need to educate stakeholders about science and conservation issues. It is important to move students from memorization to critical thinking and information dissemination (Porter and Baldassarre 2000). This project teaches students to use existing research and current stakeholder knowledge to critically think about an environmental issue and then to educate stakeholders on the issue. Throughout this project, students are introduced to extension and gain an appreciation for public education. Further, students are encouraged to be active in public 'service' regardless of their future career. By actively participating, students have an opportunity to synthesize data, think critically, and compose a final product based on their own intellectual output (Matter and Steidl 2000).

Graduate Students

Graduate students should learn to bring science into the decision making process (Porter and Baldassarre 2000) and to be active in extension programming. During interviews with potential graduate students, extension and the mission of NCSU is discussed. Graduate students are encouraged to work with stakeholders and are required to publish and present research results to professional and lay audiences. By becoming active in disseminating research to the public, students will begin to take a leadership role in natural resource conservation. Further, many graduate students participate in formal extension workshops. These activities are important for building solid resumes and preparing for future careers in wildlife and fisheries management.

Leopold Wildlife Club

The Leopold Wildlife Club is a student chapter of The Wildlife Society and is composed of undergraduate and graduate students. Club members conduct hands-on natural resource programs in elementary schools, organize educational booths at the Dixie Deer Classic (the largest wildlife expo in the Southeast), conduct surveys, educate private citizens, and raise money for club activities. Also, students

have assisted with maintenance, construction, and grant writing for a native plant landscape surrounding the NCSU Fisheries and Wildlife Program main office. These activities are important for recruiting students into The Wildlife Society, building solid resumes, and exposing students to the benefits and rewards of extension.

The Future

The mission of extension is to help individuals, organizations, businesses, and communities to improve their lives and environments through an educational process that brings scientific research in an understandable and useful form to the public. The need to educate stakeholders about science and conservation issues is paramount, now and in the future (Brown and Nielsen 2000). The goal of higher education should be to help students become self-learners and problems solvers (Matter and Steidl 2000), and future wildlife professionals need to be leaders with the ability to set objectives and make decisions related to integrated planning (Krausman 2000). Students are the future of public education and as extension specialists we have a responsibility to actively engage students in extension programming. It is important that we maximize the short time we have with undergraduate and graduate students and teach the importance of extension and outreach.

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