Department of Forestry Periodic Review 2010-2011

Self Study

Self-Study Checklist for Educational Units

Background: The self-study document is the primary resource used by the external review committee to complete the second phase of the program review process. The better the quality of the self-study the more likely the work of the review committee will be productive and yield helpful feedback for the unit.

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This checklist may also be used to identify elements of accreditation reports that are acceptable substitutions for required elements of the self-study.

Submitted for:

Unit Name: College of Agriculture Department of Forestry

By: Red Baker, chair

Date: February 1, 2011

Year of Program Review: 2010-2011

Name of Accreditation Agency: (if applicable) Society of American Foresters (SAF)

List or describe documents available for review: Dept. of Forestry Self-Study, SAF Reaccreditation Visiting Team Report, Forestry Dept's Response to SAF Visiting Team Report, SAF Reaccreditation Document, Addenda to SAF Visiting Team Report and Dept. of Forestry Self-Study

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• Committee composition names and Affiliation	x		
• List of major recommendations	x	Included in report and in implementation plan form	

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Introduction

The Department of Forestry in the College of Agriculture has recently completed an exhaustive inspection by the professional society which accredits University forestry programs. The details of the Society of American Foresters reaccreditation process are below.

The Society of American Foresters (SAF) is the professional body that accredits forestry undergraduate programs throughout the country. Every accredited forestry department must undergo a self-study, site visit, review, and formal hearing for reaccreditation every 10 years. Interim reports every 5 years are also required. To maintain their accreditation, programs must demonstrate the capacity in terms of undergraduate curriculum and faculty performance to graduate foresters who are capable of technically and ethically operating in a field that is closely monitored by a professional society.

Last year, the Department of Forestry at the University of Kentucky was scheduled for its 10-year reaccreditation by the Society of American Foresters. Accordingly, the Department produced an extensive self-study document that was completed in February 2010 and the site visit was conducted from March 22-25, 2010 (see Agenda). The site visit was extremely thorough and involved meetings with all faculty, staff, students, and appropriate upper-level administrators. The Committee conducting the site visit was selected by the SAF Committee on Accreditation (SAF COA) and was as follows:

Dr. Kamran K. Abdollahi
Professor of Urban Forestry and Ecophysiology
Urban Forestry Program
Southern University
Baton Rouge, LA

Dr. Steven Anderson
President and C.E.O.
Forest History Society

Dr. Kim C. Steiner (chair)
Professor of Forest Biology
School of Forest Resources
The Pennsylvania State University

The site visit report is attached (see Visiting Team Report) and was transmitted to the appropriate administrators, including the Provost, following the site visit.

The Department's response to the visiting team's report was postponed because the Forestry Department was in transition between an interim Chair and permanent Chair, who had recently been identified but was not yet on campus. Shortly after the arrival of the new permanent Chair, in August 2010, the Department provided the SAF COA a formal response to the SAF team visit (see Response to SAF). The International SAF Annual Convention was held in Albuqeuerque, NM during October 2010. The new Forestry Chair, Dr. Terrell Baker, represented the Department at the formal hearing in front of the SAF COA during the Annual Convention. At this hearing, all signs pointed to the fact that the Department would be recommended for reaccreditation and in January 2010, we received a formal notice that the Department was reaccredited through 2020.

The Department has recently experienced extensive administrative burdens. Prior to the search for and hiring of a new Chairman, itself a significant effort, the Department wrote a new strategic plan, planned and began to implement a new curriculum, and prepared an exhaustive self-study for the SAF reaccreditation review. These developments contributed to the positive results from the reaccreditation review. These processes were also very useful for the Department in terms of requiring faculty to come together, address a series of common goals, and polish the professionalism and collegiality the Department needed to accomplish the tasks set before them. However, the Department is still unveiling the new curriculum, breaking in a new Chair, and trying to recover from significant investments in strategic planning and administration. These exercises necessarily come at the expense of investments in research, instruction, and Extension activities – the Department's bread and butter mission areas. As valuable as these kinds of planning and visioning exercises are, they cannot be the objective, but must remain a pathway to accomplishing the objectives we have set for ourselves in those core mission areas.

UNIVERSITY OF KENTUCKY DEPARTMENT OF FORESTRY PERIODIC REVIEW

EXECUTIVE SUMMARY

February 2011

INTRODUCTION

The Department of Forestry is one of 14 academic departments within the College of Agriculture at the University of Kentucky. It is one of only two professionally accredited degree programs in the college and the only accredited forestry program in the state. As such, the Department is responsible for servicing all demand for forestry undergraduate and graduate programs, the majority of research, and all forestry-related Cooperative Extension programming in the Commonwealth of Kentucky. Approximately 47% of Kentucky is forested and there are nearly 470,000 woodland owners in the state. According to the latest estimates, the state supports a forest products industry with cumulative impacts nearing $5 billion. With the recent economic downturn, this number is down significantly from estimates several years ago when it was estimated to be approximately $8 billion. Forestry-related industries employ around 30,000 workers, not including supporting industries. Kentucky is typically one of the top three hardwood-producing states in the country. The stated mission of the Department is to *enhance the ecological, economic, and social benefits of forests and related natural resources to elevate the quality of life for Kentuckians and beyond*.

DEPARTMENT OVERVIEW

History

Formation of the Department was preceded by creation of the Forest and Wood Technician School program, a two-year associate degree program at the Robinson Station in Quicksand, Kentucky. The program operated from 1962 until 1982. The Department of Forestry on the University of Kentucky campus was formed in 1970. A decrease in faculty numbers has occurred due to retirements, departures, and other vacancies without refilling. There are currently 13 faculty members in the Department (not including the Chair) and two vacancies. There are also 3 Adjunct Faculty (Cox, Cremeans, Paratley) who teach class, provide Departmental support, and/or conduct research.

Table1. Current and historic distribution of faculty FTEs in the Department of Forestry.

Year/Source	Teaching	Research	Extension	Total
2000-2001	3.96	12.15	6.86	22.97
2001-2002	3.12	7.08	6.46	16.66
2002-2003	8.26	5.28	4.41	17.95
2003-2004	2.8	5.3	4.4	12.5
2004-2005	9.0	5.3	4.4	18.7
2005-2006	4.2	6.3	4.9	15.4
2006-2007	7.5	5.0	3.8	16.3
2007-2008	5.0	5.0	3.8	13.8
2008-2009	4.2	6.4	7.7	18.3
2009-2010	4.9	7.51	9.75	22.16
Average	**5.3**	**6.5**	**5.7**	**17.5**

The Department also has 4 administrative staff support positions; an Administrative Assistant for the chair's office, a Business Manager, an Account Clerk, and an Extension Information Specialist. A recent hire was an Academic Coordinator, who will be responsible for providing student services for undergraduate and graduate students in the department, including responsibilities related to 1) recruitment, 2) retention, 3) placement, and 4) alumni relations. There are also 3 full-time research technicians (Hamilton, Patel, Collett), one of whom works at Robinson Forest, a 12,000-acre forest the Department manages for teaching, research, and Extension activities. Another recent hire has been a full-time Forest Manager for the Robinson Forest property, which requires continuous oversight and facilitation for research, teaching, and Extension efforts taking place on the forest. The Department also employs 4 Extension Staff Professionals, 2 of whom work on campus (McClaren, Thomas) and 2 who work in Jackson, KY (Ammerman, Fackler) at the Robinson Center for Appalachian Resource Sustainability. Professional staff support is critical to the Department for carrying out its work in the three mission areas – teaching, research, and Extension.

The Department holds monthly faculty meetings during the Fall and Spring Semesters, taking a 3-month hiatus during the summer field season when most faculty and staff are traveling for research or teaching Forestry Summer Camp. The Department has organized 8 standing committees through which much of the Department's planning and program development take place. The Undergraduate (1) and Graduate (2) Program Committees address student and curriculum issues. The Extension (3) and Research (4) Committees coordinate activities and help develop a vision for the department in these mission areas. There is also a Robinson Forest Committee (5), comprised of faculty and staff both within and outside of the Department, that helps coordinate management on Robinson Forest. The Outreach (6) Committee provides leadership on maintaining relations with alumni and communicating the Department's goals and objectives to the general public. The Facilities (7) Committee addresses building and space issues in the Department's 3 buildings. The Seminar (8) Committee organizes the Department's seminar series,

predominantly the Fall Semester portion where outside speakers from a variety of disciplines are hosted for presentations and interactions with the faculty. Each of these committees is active in planning some portion of the activities of the Department and making recommendations to the Chair regarding implementation of policy for the Department.

Table 2. Summary of the Department of Forestry's budget through the last 5 years.

Year/Source	Teaching ($)	Research ($)	Extension ($)	Total ($)	
			2010-2011		
State ($)	428,474.00	780,010.70	527,937.76	1,736,422.46	**75.89%**
Federal ($)		375,775.26	175,980.60	551,755.86	**24.11%**
Total ($)	428,474.00	1,155,785.96	703,918.36	**2,288,178.32**	
	18.73%	**50.51%**	**30.76%**		
			2009-2010		
State ($)	411,077.35	705,492.99	406,940.03	1,523,510.37	**72.55%**
Federal ($)		394,316.26	181,975.60	576,291.86	**27.45%**
Total ($)	411,077.35	1,099,809.25	588,915.63	**2,099,802.23**	
	19.58%	**52.38%**	**28.05%**		
			2008-2009		
State ($)	444,619.16	686,979.64	400,727.85	1,532,326.65	**73.51%**
Federal ($)		370,821.48	181,380.60	552,202.08	**26.49%**
Total ($)	444,619.16	1,057,801.12	582,108.45	**2,084,528.73**	
	21.33%	**50.75%**	**27.93%**		
			2007-2008		
State ($)	459,805.34	655,635.92	414,894.29	1,530,335.55	**69.77%**
Federal ($)		457,309.46	205,810.66	663,120.12	**30.23%**
Total ($)	459,805.34	1,112,945.38	620,704.95	**2,193,455.67**	
	20.96%	**50.74%**	**28.30%**		
			2006-2007		
State ($)	413,459.00	657,439.00	387,081.00	1,457,979.00	**66.19%**
Federal ($)		576,489.00	168,126.00	744,615.00	**33.81%**
Total ($)	413,459.00	1,233,928.00	555,207.00	**2,202,594.00**	
	18.77%	**56.02%**	**25.21%**		
			2005-2006		
State ($)	381,250.00	622,771.00	337,442.00	1,341,463.00	**65.25%**
Federal ($)		424,918.00	289,568.62	714,486.62	**34.75%**
Total ($)	381,250.00	1,047,689.00	627,010.62	**2,055,949.62**	
	18.54%	**50.96%**	**30.50%**		

DEPARTMENTAL MISSION AREAS; TEACHING, RESEARCH, EXTENSION

The Department accomplishes its mission through instruction, research, and Extension activities. The Department's primary instructional responsibility is its forestry program. Additionally, the Department contributes to college-wide programs in Natural Resources and Environmental Science and Agricultural Biotechnology. Graduate instruction is offered through the Master of Science in Forestry program. Individual faculty members mentor and advise Doctoral graduate students through joint appointments in graduate programs such as Crop Science, Animal Sciences, Plant and Soil Science, and Biology. Educational programs of the Department prepare students for careers as forestry and natural resource professionals in public agencies, industry, and education. The Department of Forestry's instructional goal is to prepare students for leadership in the knowledge economy and global society. Educating students is a fundamental means by which the Department of Forestry enhances the future of the Commonwealth. The Department expects graduates to become leaders in forestry and natural resource professions, as well as their communities. The Department seeks to provide a responsive learning environment of creative thinking that enables all students to achieve their highest level of proficiency. The Department is currently focusing on recruiting and retaining students with high academic and professional potential and developing a more diverse student body. The learning environment in the Department of Forestry is rigorous and highly relevant to career opportunities for our graduates. The teaching program is focused and structured to prepare graduates for success in achieving the Department's overall mission of enhancing the sustainable economic, ecological, and social benefits of forests and related natural resources.

Instructional programs involve teaching faculty who are also involved in the land grant missions of research and Extension. The faculty provides a wide breadth of experience and knowledge resulting in a diverse forestry curriculum and hands-on experience. Joint appointments and close ties among the Extension, teaching, and research faculty are encouraged to provide a constant interchange of ideas and experiences that strengthen both undergraduate and graduate instruction. The integration of faculty involved in instruction, research and Extension is a reflection of the mission statements and goals of the Department's research and Extension areas. The Department of Forestry's research goal is to enhance the intellectual and economic capital of Kentucky through growth in research. Discovery is an essential part of the Department's vision of being widely recognized for improving the lives of people and for improving the condition of human and biotic communities. Research in the Department of Forestry therefore helps provide insight and solutions to important challenges relating to sustaining long-term economic, ecological, and social benefits provided by forests and natural resources in Kentucky and beyond. Research disciplines include ecology, economics, policy, geospatial analysis, hydrology, silviculture, soils, surface mine reclamation, timber management, wildlife ecology, human dimensions, and wood utilization. Current research programs include studies of wildlife ecology and conservation, ecosystem dynamics, applications of geographic information systems, forest health, optimal management of timber stands, surface mine reforestation, stream restoration, carbon sequestration, invasive species management, and bioenergy production. The results from these research endeavors contribute to formation of ecologically, socially, and economically integrated solutions to natural resource management problems. The Department also encourages strong links among research programs and undergraduate, graduate and post-graduate education to prepare scientists and resource managers to meet the challenges facing society. The Department will continuously improve the quality, relevance, and effectiveness of the Department's research program, and obtain additional support for research.

Table 3. Current and historic enrollment in the Department of Forestry graduate and undergraduate program.

	Fall Semester Enrollment									
FORESTRY	**01-02**	**02-03**	**03-04**	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**
Bachelor's	52	48	53	43	43	40	41	52	47	59
Master's	13	14	14	21	23	20	19	17	14	16
Post-Doctorate	1	2	1	3	1	1	1	3	2	2
Major Total	66	64	68	67	67	61	61	72	63	77

The goal of the Extension program within the Department is to provide current, applicable information on the sustained use and management of the state's forest and natural resources to elevate quality of life of the people of Kentucky. Our Extension program has developed a statewide Extension network and applied research programs in natural resources management with a broad base of support. The Extension program also provides quality presentations and continuing education opportunities for county Extension faculty and other natural resource professionals. Continuing education programs are also offered for the public and resource professionals through a diverse array of personal contacts and media, including publications that further an understanding of natural resources management. A significant part of the Extension programming effort is directed toward youth education. Many K-12 students are reached through 4-H and other venues including Win with Wood, Junior and Senior Forestry Contests, Forestry Leadership, and Wood Magic.

Table 4. Summary of impacts and outcomes from Department of Forestry Extension programs during 2010.

Extension Activity	**2010 Data**
Total sustained direct and indirect contacts per extension faculty, associates and specialists FTE.	**146,470** total contacts
Programs that sustained or increased dollars saved/earned by forest industry (including logging) and woodland owners.	**6,333** individuals, **1,251** forest industries impacted, resulting in **38.3** million dollars saved/earned by primary wood industries and **109** million dollars in income for woodland owners
Programs that result in sustainable impacts to forests, open lands, and forest resources and the habitats and wildlife that they sustain.	**359,065** acres improved or enhanced, **874** perennial streams and **2,410** intermittent streams were provided environmental protection
On-going production and distribution of education, awareness, and training resources including electronic, video, and hardcopy materials.	**38** educational, awareness, and training resources were produced related to forestry and wildlife
Educational, awareness, and training programs/presentations developed and conducted for woodland owners, natural resource professionals, forest industry, youth and the general public.	**185** presentations and programs were developed and presented

The Department of Forestry is committed to helping Kentuckians appreciate, enjoy, use, profit from, and protect our state's forest lands. The instruction, research, and Extension areas are as highly integrated within the Department as they are within the college. In the last several years the mix of experiences, and expertise of the faculty, has been transferred to the classroom creating a dynamic and effective learning environment to ensure that students are well equipped to handle the breadth and complexity of issues facing forestry and natural resource professionals.

DEPARTMENTAL PROFESSIONALISM AND COLLEGIALITY

The Department has recently experienced extensive administrative loads in the form of searching and hiring a new Chairman, preparing a new strategic plan, planning and implementing a revised undergraduate forestry curriculum, and preparing an exhaustive self-study for a ten-year Society of American Foresters site visit and reaccreditation review. The Department is also hiring 1-2 new faculty members and several administrative associates to fill vacancies. These developments have contributed, and continue to contribute, to positive developments in terms of professionalism and collegiality. These processes provided a venue for the Department faculty and staff to come together, address a series of common goals, and polish the professionalism and collegiality the Department needed to accomplish the tasks set before it. A committee structure has been put in place that capitalizes on the visioning that was necessary to accomplish these tasks, and allows them to continue on a scaled-back, more frequent schedule. This will ensure that the valuable planning that took place during this heavy visioning period will not be neglected and progress will continue to be made. This will also cultivate and fertilize the collegiality and professionalism within the Department, and will lead to more unified strategic planning and movement toward commonly established goals.

Check List

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Self-Evaluation

University of Kentucky Undergraduate Forestry Program Self-Evaluation Report

February 2010

Prepared by the Department of Forestry, University of Kentucky
for
The Society of American Foresters Committee on Accreditation

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List of Figures

Standard I: Forestry Program Mission, Goals, and Objectives

I.1. Document how the forestry program's mission, goals and objectives

I.1.(1) are consistent with the SAF Standards for Accreditation

The mission, goals, and objectives of our forestry program have been clearly defined and publicly stated. The following vision, mission, and goal statements have been taken directly from our Strategic Plan[1]. The mission statement is displayed throughout our physical facilities and the vision and mission statement is located on the departmental Web site (www.ca.uky.edu/forestry/mission_vision.php).

> **Vision:** The Department of Forestry will be widely recognized for improving the lives of people and for improving the condition of human and biotic communities through learning, discovery, and outreach activities relating to forests and natural resources.
>
> **Mission:** Research, teaching, and extension programs of the Department of Forestry will effectively enhance sustainable economic, ecological, and social benefits of forests and related natural resources in Kentucky and beyond. Our programs will elevate the quality of life by:
>
> - enhancing the integrity, stability, and health of forests and related biotic communities;
> - increasing the long-term value added, sustainable income, and sustainable flow of services from forests and natural resources.
>
> **Goals:**
>
> A. Enhance the university's stature among its peers
> B. Prepare students for leadership in the knowledge economy and global society
> C. Enhance the intellectual and economic capital of Kentucky through growth in research
> D. Embrace and nurture diversity
> E. Engage Kentuckians through partnerships to elevate quality of life

Planning at the Department of Forestry is a continuous and evolving process with multiple opportunities for review, evaluation, and adjustment of the goals, objectives, and policies of our department. These include the Department of Forestry's Strategic Plan, college review processes for teaching, research, and extension missions, forestry program curriculum revision, annual

[1] The Department of Forestry's 2008 Strategic Plan is used for this report. We are currently in the process of updating the department's Strategic Plan to align with the College of Agriculture's new Strategic Plan (2009-2014). Once the forestry department's Strategic Plan is revised, it will be added to the forestry department website. At the time of this writing, the College of Agriculture Strategic Plan awaits formal review and approval.

extension review, periodic graduate program review, and periodic departmental self-evaluation. Each of these planning and review processes has been used to shape the present mission, goals, and objectives of the Department of Forestry.

The department accomplishes its mission through instruction, research, and extension activities. The department's primary instructional responsibility is its forestry program. Additionally, the department contributes to college-wide programs in Natural Resource Conservation and Management and Agricultural Biotechnology. Graduate instruction is offered through the Master of Science in Forestry program. Individual faculty members and their Doctoral graduate students also participate in related graduate programs including Crop Science, Animal Sciences, Plant and Soil Science, and Biology. Educational programs of the department prepare students for careers as forestry and natural resource professionals in public agencies, industry, and education.

The Department of Forestry's instructional goal is to prepare students for leadership in the knowledge economy and global society. Educating students is a fundamental means by which the Department of Forestry enhances the future of the Commonwealth. The department expects graduates to become leaders in forestry and natural resource professions, as well as their communities. Forestry graduates will serve the Commonwealth, region, and nation by helping enhance sustainable economic, ecological, and social benefits of forests in Kentucky and beyond. The department seeks to provide a responsive learning environment of creative thinking that enables all students to achieve their highest level of proficiency. Instructional objectives include:

- Recruit and retain students with high academic and professional potential.
- Develop and implement actions that will result in a more diverse student body.
- The learning environment in the Department of Forestry will be rigorous and will also be highly relevant to career opportunities for our graduates. The teaching program will be focused and structured to prepare graduates for success in achieving the department's overall mission of enhancing the sustainable economic, ecological, and social benefits of forests and related natural resources.
- Increase support for teaching-related activities.
- Our graduates will be well-prepared for dealing effectively with forest-related issues.

Instructional programs involve teaching faculty who are also involved in the land grant missions of research and extension. The faculty provide a wide breadth of experience and knowledge resulting in a diverse forestry curriculum. Joint appointments and close ties among the extension, teaching, and research faculty are encouraged to provide a constant interchange of ideas and experiences that strengthen both undergraduate and graduate instruction. The integration and interaction of faculty involved in instruction, research and extension is a reflection of the mission statements and goals of the department's research and extension areas.

The Department of Forestry's research goal is to enhance the intellectual and economic capital of Kentucky through growth in research. The land grant mission of the university, college, and department encourages research activities that result in the discovery of new knowledge. Discovery is an essential part of the department's vision of being widely recognized for improving the lives of people and for improving the condition of human and biotic communities. Research in the Department of Forestry therefore helps provide insight and solutions to important challenges relating to sustaining long-term economic, ecological, and social benefits

provided by forests and natural resources in Kentucky and beyond. Research disciplines include ecology, economics, policy, geospatial analysis, hydrology, silviculture, soils, surface mine reclamation, timber management, wildlife ecology, human dimensions, and wood utilization. The department will continuously improve the quality, relevance, and effectiveness of the department's research program, and obtain additional support for research.

Current research programs include studies of wildlife ecology and conservation, ecosystem dynamics, applications of geographic information systems, forest health, optimal management of timber stands, surface mine reforestation, stream restoration, carbon sequestration, invasive species management, and bioenergy production. The results from these research endeavors contribute to formation of ecologically, socially, and economically integrated solutions to natural resource management problems. The department also encourages strong links among research programs and undergraduate, graduate and post-graduate education to prepare scientists and resource managers to meet the challenges facing society.

The goal of the extension program within the department is to provide current, applicable information on the sustained use and management of the state's forest and natural resources to elevate quality of life of the people of Kentucky. Our extension program has:

- developed a statewide extension network and applied research programs in natural resources management with a broad base of support;
- provided quality presentations and continuing education opportunities for county extension faculty and other natural resource professionals;
- provided continuing education programs for the public through media, audio-visual contacts, and publications to further an understanding of natural resources management;
- educated youth through developmental programs; and
- assisted the department's instructional mission by teaching courses.

The Department of Forestry is committed to helping Kentuckians appreciate, enjoy, use, profit from, and protect our state's forest lands.

The instruction, research, and extension areas are as highly integrated within the department as they are within the college. In the last several years the mix of experiences, and expertise of the faculty, has been transferred to the classroom creating a dynamic and effective learning environment to ensure that students are well equipped to handle the breadth and complexity of issues facing forestry and natural resource professionals.

I.1.(2) reflect the distinction of forestry as an interdisciplinary profession

Forestry is an interdisciplinary profession comprised of many fields, including biological, quantitative, managerial, and social sciences. Our department recognizes the interdisciplinary nature of forestry and reflects this distinction via student education, faculty recruitment and maintenance, and extension.

As one of the department's goals, we prepare students for leadership in the knowledge economy and global society with an interdisciplinary mindset. Multidisciplinary courses have been offered, such as ecology, economics, policy, geospatial analysis, hydrology, silviculture, soils,

surface mine reclamation, timber management, wildlife biology, and wood utilization, among others. The department expects graduates to become leaders in forestry and natural resource professions, and expects that graduates will become leaders in their communities. The forestry undergraduate curriculum has been revised with an emphasis on producing graduates who are society-ready, i.e., capable of dealing effectively with the complex economic, ecological, and social issues involving forest resources today. Department of Forestry graduates will be well prepared for further scientific study, and/or for successful careers as practitioners, scientists, educators, and/or extension professionals. We have increased teaching-related cooperation and interaction with federal and state agencies, landowners, non-governmental organizations, and private industry in these efforts. We will continue to use the University of Kentucky Herbarium, Wood Utilization Center, Robinson Forest, greenhouses, and resources to enhance student learning and to create diverse opportunities for learning. Nationally prominent individuals have been brought to the department as seminar speakers and guest lecturers to heighten the awareness of significant issues, and to increase the interaction of faculty, staff, and students with national leaders, agencies, and organizations.

Another goal of our department is to recruit and maintain a distinguished faculty committed to the department's core purpose and values, and dedicated to achieving the department's mission through high quality research, teaching, and outreach activities. In the past several years, three faculty positions have been filled with highly qualified individuals identified through nationwide search processes. We ensure effective mentoring and professional development of all faculty within our diverse body of faculty and staff. Professional development of the faculty has been encouraged and supported through sabbatical and other leave programs, through appropriate consulting activities, by encouraging faculty coursework on and off campus, and by encouraging faculty attendance at professional development conferences, workshops, and seminars.

Our extension program has also operated in an interdisciplinary manner to engage Kentuckians. In recent years, many forest-related changes have occurred that have great potential to affect Kentuckians. These include increased globalization of forest products markets, increasing urban sprawl, forest ownership fragmentation, and very significant forest threats from exotic invasive plants, insects and pathogens. These and other changes represent significant challenges to environmental and economic quality of life for Kentuckians. For the future of Kentucky's citizens, the research, teaching, extension and other outreach programs of the department must actively develop and deliver significant insight and solutions in an interdisciplinary manner to these important challenges. Our outreach programs are highly relevant to important environmental and economic issues involving the forests and related natural resources of Kentucky. Departmental extension publications and related information are made easily available electronically, through our Web site and other online outlets. We have provided extension education and training programs and materials for diverse audiences in Kentucky, including: teachers and youth, the general public, woodland owners, county agents, professionals in timber harvesting and wood-based industries, and foresters and natural resource professionals.

I.1.(3) respond to the needs of the constituencies that the program seeks to serve

As our knowledge and understanding of forests has increased, these complex systems are increasingly understood to have valuable utilitarian and intrinsic importance. The ecological services and economic wealth that forests provide affect all citizens of our Commonwealth and beyond. As such, the definition of a traditional forestry constituent has evolved to encompass a multitude of consumptive and non-consumptive stakeholders. As the state's sole forestry program, the Department of Forestry has an inherent responsibility to actively engage this diverse constituency through research, outreach, and teaching activities in ways designed to effectively address forestry and related natural resource issues, challenges, and the needs of Kentuckians.

The department is considering a standing Advisory Committee that would include representatives from key partnering natural resource agencies and organizations within the Commonwealth. These meetings would help us ensure that our research, teaching, and outreach programs are highly relevant to important environmental and economic issues involving the forests and related natural resources of Kentucky.

In our research, teaching, and outreach programs and activities, we will sustain and enhance productive collaborations focusing on forest-related issues in the Commonwealth. Research efforts have largely focused on improving our knowledge and understanding of complex forest ecosystems, and often, the effects that human activities have on them. As a land grant institution, we place particular emphasis on research that has practical management implications for our constituency. In the past decade, research has included topics that address the consequences of increasing globalization (e.g. invasive species, competition in global timber markets), changing human attitudes (e.g. forest wildlife-human conflicts, timber harvest on public lands), changing land use and ownership patterns (e.g. forest fragmentation and ownership), new technologies and approaches (e.g. GPS systems), and restoration ecology (e.g. post-mine tree planting, restoration of watersheds).

Through education and training activities, our extension and teaching efforts are designed to effectively deliver knowledge and solutions that address forest-related challenges affecting the quality of life of Kentuckians. Our participation in the Kentucky Agriculture Advisory Council, Kentucky Woodland Owners Association, The Wildlife Society, county agent networks, and interaction with teachers and youth, the general public, woodland owners, county agents, professionals in timber harvesting and wood-based industries, Kentucky Division of Forestry, Kentucky Department of Fish and Wildlife Resources, Kentucky State Nature Preserves Commission, U.S. Forest Service, U.S. Fish and Wildlife Service, National Park Service, and Natural Resource Conservation Service collectively provide critical mechanisms of communication between us and a galaxy of stakeholders. National, state, and county-level involvement in many of these organizations allows us to more effectively disseminate up-to-date knowledge and information affecting Kentuckians and their forest resources, and in turn, better understand the needs of these groups and their constituents. Exchanges with stakeholders are supported and enhanced by departmental extension publications (e.g. Kentucky Woodlands Magazine) and related information made easily available electronically through our Web site and

other online outlets, as well as by research presentations given by our faculty. Increasingly we are embracing new social communication mechanisms (e.g. YouTube demonstration videos, Webinars) to enhance our outreach efforts.

Through establishment and maintenance of communication with forestry alumni we continue to solicit feedback about the evolving forestry profession and how we may better prepare our graduates for success in dealing with forest-related resource challenges in the Commonwealth. Knowledge gained from research and extension is translated to our forestry students to make them society-ready, i.e., capable of dealing effectively with the complex economic, ecological, and social issues involving forest resources today.

I.1.(4) reflect sensitivity to the role of professional foresters in meeting diverse and changing social, cultural, economic, and environmental needs and values

The Department of Forestry recognizes that professional foresters have become increasingly vulnerable to the effects of a dynamic world of technology innovation, fluctuating global markets, urbanization, increasing energy demands, and changes in human attitudes towards resource extraction. These factors have dramatically altered forest ownership and use patterns in ways unforeseen a few decades ago. We also recognize that one of the most important challenges in a resource-hungry world is to maintain forest health through sustainable management while also providing economic benefits derived from forest products. Effective prognostication and subsequent adaption to these changes and demands requires our department to be vigilant to and effective communicators of research, economic, policy, and cultural developments that could potentially affect forestry professionals. Through education and training activities, our extension and teaching efforts are designed to disseminate ours and others research findings and other information that allows forestry professionals to effectively cope and adapt to current and future challenges. At the same time, various communication forums that we engage in, as well as contact with our alumni, agency partners, and other collaborators allow us to actively solicit the concerns, ideas, and needs of professional foresters across the Commonwealth. Through these disseminative and solicitive mechanisms, our goal is to be timely, in-touch, and in-tune with forestry professionals.

I.1.(5) maintain the professionalism and ethical behavior necessary to manage and use forest resources and trees for the benefit of society

The forestry department has established very clear professional standards for itself to adhere to in educating students and the general public about forest resources management, and we intend to lead by example rather than wait for external agencies to correct our efforts.

The University of Kentucky Department of Forestry is entering a progressive and innovative era in response to changing scientific and human dimensions that are broadening and redefining the discipline of forestry and impacting many other natural resource sciences. The College of Agriculture’s new administrative team is actively supporting the expansion of natural resource

programs and strengthening of the Department of Forestry. In response to these opportunities, the department has developed a new vision of our land grant mission to enhance a strong core program in forestry as well as to address a broader range of environmental and natural resource issues.

Since 1972, the department has developed strong outreach and undergraduate education programs and now aspires to new excellence in research and graduate education. Areas of emphasis and developing strength include conservation biology, ecosystem ecology, forest utilization and management, restoration ecology, surface mine reclamation, watershed studies, and wildlife ecology.

The department and college strive to promote the integration of research, instruction and extension to discover new knowledge as well as to address issues of importance to the Commonwealth, the nation and the world; such as commercialization of wood products, sustainable forest management, logger education, harvesting BMPs, non-timber forest products, native habitat restoration, and environmental education. The department's mission to contribute to the economy of Kentucky is bolstered by unique assets such as a nationally recognized Wood Utilization Center and the university's Robinson Forest, both located in eastern Kentucky. The Wood Utilization Center is a 14,000 square foot multipurpose facility that is extensively used for wood industry training. Its staff and equipment assist with industry problem-solving as well as with wood technology research and instruction for both university and community college students. The university's 14,800 acre Robinson Forest, located within the heart of eastern Kentucky's Cumberland Plateau, is one of the largest educational and research forests in the eastern United States. The Forest provides a unique situation for research, instruction and outreach for the department's diverse faculty and constituent interests.

Nearly half of the Commonwealth of Kentucky supports commercially and ecologically valuable forestland, providing many opportunities to diversify the department's current role. The broader scope of the department will include education of natural resource managers and scientists, social and ecological research relevant to environmental systems, and extension and outreach programs supporting Kentucky's natural resource user groups. Current opportunities for growth make this an opportune time to assess and renew the department's academic outlook and commitment to natural resource management and stewardship.

The University of Kentucky empowered a Futures Task Force to recommend areas of academic strength for future enhancement, with environmental science recognized as an area of special opportunity. In this context, we are committed to strengthening the Department of Forestry's important role in disciplines that relate to environmental sciences. We will educate foresters to master the technical and biological intricacies of sustainable forestland management including the growth of consumptive resources and improvement of the forests' non-consumptive benefits. The department must educate natural resource managers who can balance disciplinary knowledge with a profound understanding of the increasingly complex social, economic, and environmental considerations that affect natural resource management decisions and actions in rural and urban environments. Growing concerns for protection of endangered species, conservation of native biodiversity, promotion of urban forest health, and restoration of degraded ecosystems broaden the challenges natural resource managers must address. These emerging

issues present unique opportunities to expand collaborative work with federal and state agencies, non-governmental organizations and private groups.

The Department of Forestry will build upon the successes of its Society of American Foresters accredited forestry undergraduate program by expansion of the Master of Science program, an expanded program in doctoral education, and leadership of an interdisciplinary undergraduate program in Natural Resources and Conservation Management.

The Department of Forestry uses research forests and training facilities located throughout the state and region. The aforementioned Robinson Forest and the Wood Utilization Center are unique assets, but the department has expanded this resource base by building strong collaborations and by participating in such interdisciplinary programs as provided by the university's Tracy Farmer Institute of Sustainability and the Environment, other University of Kentucky colleges, and other universities. These resources, coupled with the university's goal to strengthen and broaden environmental sciences and related disciplines, provide an exciting platform for enhancement of the Department of Forestry.

I.2. Document the process for periodic self-evaluation and revision of the program's mission, goals, and objectives.

The university updates its Strategic Plan on a periodic basis, focusing heavily on the mandate of the institution. The Strategic Plan adopted in 2003 is the most recent evaluation of the vision, mission, values, and objectives of the university. This process also includes an update of the Strategic Plan of the College of Agriculture. The College of Agriculture adopted a new Strategic Plan in March, 2004. Additionally, the Administrative Regulations of the University of Kentucky require that each academic unit be reviewed every six years by an internal process involving faculty representatives from within the department, representatives from other departments, and knowledgeable constituents from the private sector.

Each of these review and evaluation processes allows for the adjustment of directions of academic units. The institutional review of the Department of Forestry has provided opportunity for input and comment in the formulation of the objectives of the department. Representatives from resource management agencies, wood products industries, and other constituent groups are invited to on-campus interviews. Preliminary drafts of the objectives are sent to constituent groups for their review and comment prior to finalization. The outcomes from these reviews have been used during several internal departmental assessments. Results of annual reviews of research and extension programs as required by the Government Performance and Reporting Act are also used during internal reviews.

The forestry department recently (2008) drafted a Strategic Plan to direct future efforts. The overall purpose of the Department of Forestry's planning process is to help ensure a high level of quality, effectiveness, and relevance in our research, teaching, and outreach programs. To accomplish this, the planning process is designed to guide the department in:

- establishing and communicating a clear, department-level core ideology, as well as overall vision and specific mission statements for our research, teaching, and outreach activities; and
- developing, communicating, and measuring progress toward broad goals and specific objectives and action steps for the department's research, teaching, and outreach programs.

The 2008 departmental Strategic Plan incorporated comments from our graduates and interest groups during its development over the previous three years (2005-2008); the last internal review of the Department of Forestry was completed in November of 2001; and the last SAF self-evaluation was completed in July of 2004. At present we are discussing procedures and timing for the continual updating of this document as well as procedures for periodic sessions to critique and evaluate our direction, strengths and weaknesses.

Standard II: Curriculum

In 2006, the Department of Forestry Curriculum Revision Committee, comprised of nine individuals, began the process of revising the undergraduate forestry curriculum. Detailed information on the curriculum revisions process, course descriptions, learning outcomes, and curriculum summaries can be found in Appendix A.

The primary goal of the University of Kentucky's undergraduate forestry curriculum revision is to:

> *"produce graduates who are 'society-ready,' i.e., capable of dealing effectively with the complex economic, ecological, and social issues involving forest resources today. In Kentucky and beyond, our graduates must be prepared to effectively enhance the integrity, stability, and health of forests and related biotic communities, and to increase the long-term value added, sustainable income, and sustainable flow of services from forests and related resources."* (Curriculum Revision Handbook 2006/2007)

The committee met with internal and external stakeholders to discuss economic, ecological, and social issues involving forest resources today and skills graduates need for successful forestry careers. Discussions also included general and technical competencies, suggested prerequisites, textbooks, and timing for each course. In addition to discussing the learning outcomes for each course, the committee also identified nine themes or common threads to be reinforced throughout the curriculum. These common threads include collaborative problem solving, communication, ecosystem approach, ethics, forest health and protection, geospatial, human dimensions of natural resources, information literacy, and managerial leadership (Figure II.a.).

Several new courses have been added to the forestry curriculum. To provide students with instruction on the latest forestry technologies, a computer applications course and spatial analysis course have been added. Forestry ethics, policy, economics, human dimensions, and natural resource issues courses have been added to give students skills to address complex socio-economic issues involved with forestry today. A new course on forest health and protection will prepare graduates for effectively enhancing the integrity and health of forests. Traditional forestry courses, such as dendrology, silviculture, forest ecology, and forest management, remain in the curriculum to provide students with fundamental forestry concepts. Another change is forestry summer camp will now be held during the spring semester of the junior year. Students will receive hands-on training in forest fire, landscape assessment, inventory, measurements, silvicultural practices, forest operations, and utilization.

The revised undergraduate forestry curriculum was approved by the University of Kentucky in fall 2009. A sample curriculum is shown in Figure II.b. In fall 2009, the first year forestry students began coursework under the revised forestry curriculum. The revised forestry curriculum will be implemented in a rolling fashion with freshman level courses being offered beginning in fall 2009, sophomore level courses in fall 2010, junior level course in fall 2011, and senior level course in fall 2012.

Figure II.a. Common threads summary for the revised undergraduate forestry curriculum.

Common Threads Summary

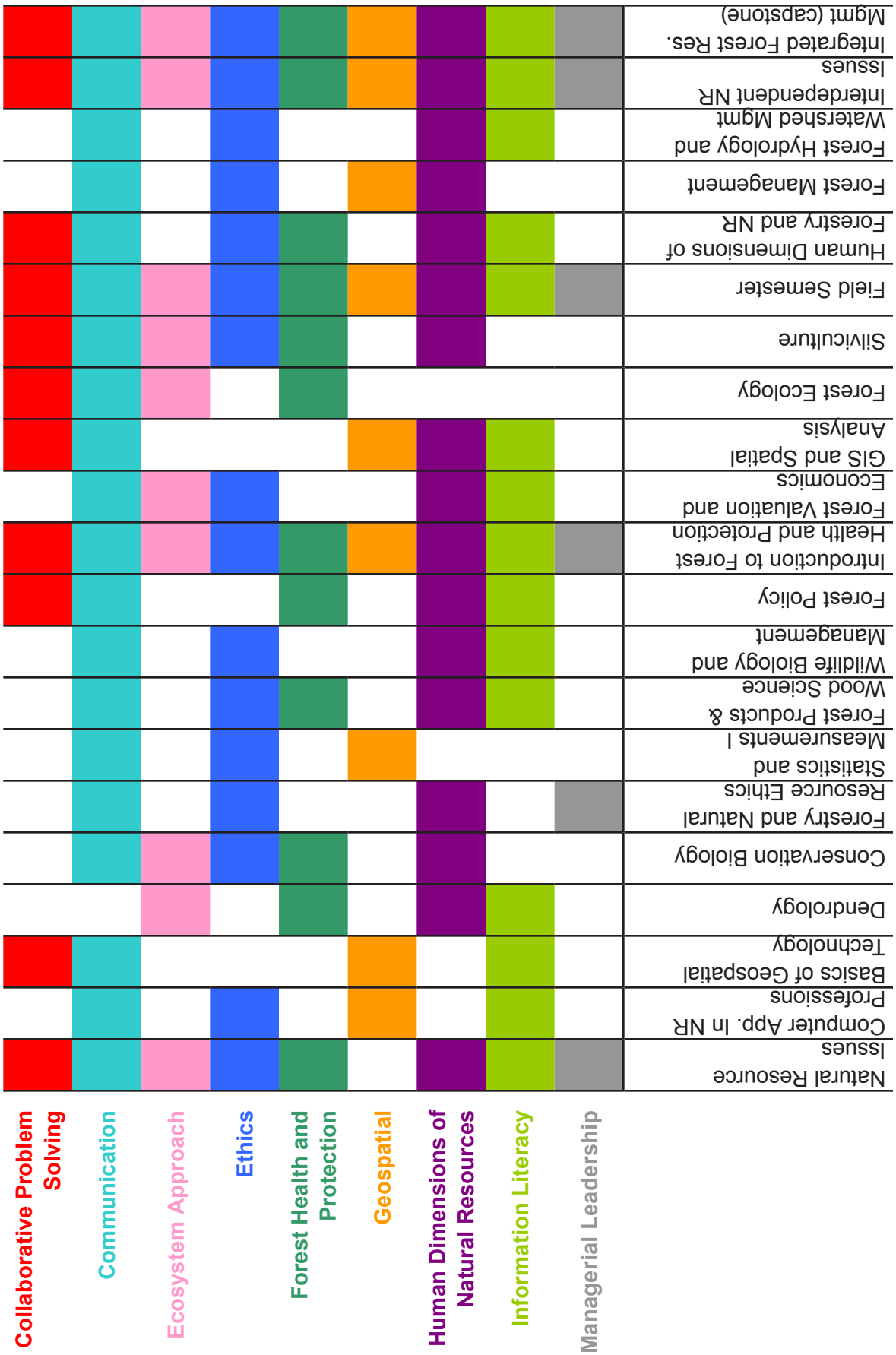

Figure II.b. Revised undergraduate forestry curriculum approved in fall 2009.

University of Kentucky Undergraduate Forestry Curriculum

Freshman Year

Fall		Spring	
Math - MA 109 or calculus	3	Inference-Logic - calculus or (stats. and logic)	3
Written - ENG 104	4	Natural Sciences 2 - BIO 103 or BIO 150	3
Natural Sciences 1 - CHE 104 or CHE 105	3	Social Science 1	3
GEN 100 Issues in Agriculture	3	Humanities 1	3
FOR 110 Natural Resource Issues	1	FOR 150 Computer Applications in Natural Resource Professions	2
	14		14

Transfer Point

Sophomore Year

Fall		Spring	
FOR 200 Basics of Geospatial Technology	2	PLS 366 Fundamentals of Soil Science	4
FOR 250 Statistics and Measurements I	3	Humanities 2	3
FOR 219 Dendrology	4	FOR 370 Wildlife Biology and Management	4
FOR 230 Conservation Biology	3	FOR 280 Forest Policy **	2
FOR 260 Forest Products and Wood Science	4	FOR 240 Forestry & Natural Res. Ethics **	2
	16	**Half semester policy and half ethics	15

Junior Year

Fall		Spring Field Semester	
FOR 310 Intro. to Forest Health & Protection	3	FOR 355 Forest Fire Control and Use	1
FOR 320 Forest Valuation and Economics	3	FOR 356 Landscape Assessment	5
FOR 330 GIS and Spatial Analysis	3	FOR 357 Inventory and Measurements II	2
FOR 340 Forest Ecology	4	FOR 358 Silvicultural Practices	3
FOR 350 Silviculture	4	FOR 359 Forest Operations and Utilization	3
	17		14

Senior Year

Fall		Spring	
Elective 1	3		
Social Science 2	3	Cross-Cultural	3
FOR 400 Human Dim. of Forestry and N.R.	3	Elective 2	3
FOR 425 Forest Management	4	FOR 470 Interdependent Natural Resource Issues – Analysis and Solutions	3
FOR 460 Forest Hyd. and Watershed Mgmt.	4	FOR 480 Integrated Forest Resource Mgmt.	5
	17		14

University Studies Program Course Code and Name
BIO 103 Basic Ideas of Biology
BIO 150 Principles of Biology I
CHE 104 Introductory General Chemistry
CHE 105 General College Chemistry I
ENG 104 Writing: An Accelerated Foundational Course
MA 109 College Algebra

Total Credit Hours	121
Forestry Hours	84
USP Hours	37

Note: Six hours of foreign language is needed if not taken in high school.

II.1. Complete Documents A-1, B-1, and B-2; complete A-2 if needed. Follow the format as presented.

See below for the following SAF forms:

Document A-1: General Education Summary - Required Courses
Document A-2: General Education Summary - Restricted Electives (not applicable)
Document B-1: Forestry Education Summary - Required Courses
Document B-2: Forestry Education Summary - Restricted Electives (not applicable)

Document A-1: General Education Summary-Required Courses

Institution Name: University of Kentucky Academic Year: Revised Forestry Curriculum Begins Fall 2009

Official Degree Program Title: Bachelor of Science in Forestry

Official Option Title: Not Applicable

Required Courses: # & Title	Total Credit Hours		
	Communications	Science and Mathematics	Social Science & Humanities
The courses listed below are part of the University of Kentucky's general education program, called the University Studies Program (USP). Also listed in at the end of this section are the pre-major requirements for the forestry program. Some of the pre-major requirements also satisfy the USP requirements.			
I. Math			
MA 109 College Algebra *or* Calculus	--	3	--
II. Foreign Language			
Two years in high school *or* 6 hours at college level	0-6	--	--
III. Inference-Logic			
Calculus *or* Statistics and Logic	--	3-6	--
IV. Written Communication			
ENG 104	4	--	--
V. Oral Communication			
Requirement suspended	--	--	--
VI. Natural Sciences			
Satisfied by pre-major requirements	--	--	--
VII. Social Sciences			
Social Science 1 course from USP list	--	--	3
Social Science 2 course from USP list	--	--	3
VIII. Humanities			
Humanities 1 course from USP list	--	--	3
Humanities 2 course from USP list	--	--	3
IX. Cross-Cultural			
Cross-Cultural course from USP list	--	--	3
X. USP Electives			
Six hours of free electives (3 hours must be outside major)	0-6	0-6	0-6
Pre-Major Requirements			
BIO 103 Basic Ideas of Biology *or* BIO 150 Principles of Biology I	--	3	--
CHE 104 Introductory General Chemistry or CHE 105 General College Chemistry I	--	3	--
GEN 100 Issues in Agriculture	3	--	--
Total Credit Hours	**7-19**	**12-21**	**15-21**

Document A-2: General Education Summary-Restricted Electives

Institution Name: University of Kentucky Academic Year: Revised Forestry Curriculum Begins Fall 2009

Official Degree Program Title: Bachelor of Science in Forestry

Official Option Title: Not Applicable

Restricted[1] Electives Courses: # & Title	Total Credit Hours		
	Communications	Science and Mathematics	Social Science & Humanities
Not applicable. There are no restricted electives courses in the undergraduate forestry curriculum.			
Total Available Restricted Elective Credit Hours			
Minimum Credit Hours Required			

[1] List general education restricted electives, if any, and include required elective credit hour totals for curriculum.

Document B-1: Forestry Education Summary-Required Courses

Institution Name: University of Kentucky Academic Year: Revised Forestry Curriculum Begins Fall 2009

Official Degree Program Title: Bachelor of Science in Forestry

Official Option Title: Not Applicable

Required[1] Courses # & Title	Credit Hours in SAF-Required Areas of Study[2]				Course Contains Significant Content in *(check all that apply)*:				Total Credit Hours
	Ecology and Biology	Measurement of Forest Resources/ Urban Forests	Management of Forest Resources/ Urban Forests	Policy, Economics, and Administration and Law	Field Work	Ethics	Oral and Written Communications	Integrated Resource Management	
FOR 110 Natural Resource Issues (1 hr)				1		X	X		1
FOR 150 Computer Applications in Natural Resource Professions (2 hrs)				0.5		X	X		0.5
FOR 200 Basics of Geospatial Technology (2 hrs)		2			X		X		2
PLS 366 Fundamentals of Soil Science (4 hrs)	4				X		X		4
FOR 219 Dendrology (4 hrs)	4				X				4
FOR 230 Conservation Biology (3 hrs)	1.5			1.5		X	X	X	3
FOR 240 Forestry and Natural Resource Ethics (2 hrs)				2		X	X		2
FOR 250 Statistics and Measurements I (3 hrs)		3			X		X	X	3
FOR 260 Forest Products and Wood Science (4 hrs)			3	1		X	X		4
FOR 370 Wildlife Biology and Management (4 hrs)	3.5		0.5			X	X		4
FOR 280 Forest Policy (2 hrs)				2			X		2
FOR 310 - Introduction to Forest Health and Protection (3 hrs)	2		1		X	X	X		3
FOR 320 Forest Valuation and Economics (3 hrs)			2	1		X	X		3
FOR 330 GIS and Spatial Analysis (3 hrs)		3							3
FOR 340 Forest Ecology (4 hrs)	4				X		X		4
FOR 350 Silviculture (4 hrs)	1		3		X	X	X		4
FOR 355 Forest Fire Control and Use (1 hr)	1				X				1
FOR 356 Landscape Assessment (5 hrs)	5				X		X	X	5
FOR 357 Inventory and Measurements II (2 hrs)		1.5	0.5		X	X	X		2
FOR 358 Silvicultural Practices (3 hrs)	0.5		2.5		X	X	X	X	3
FOR 359 Forest Operations and			3		X	X		X	3

Utilization (3 hrs)									
FOR 400 Human Dimensions of Forestry and Natural Resources (3 hrs)			2	1		X	X		3
FOR 425 Forest Management (4 hrs)		1	3		X	X	X	X	4
FOR 460 Forest Hydrology and Watershed Management (4 hrs)	3.5		0.5		X	X	X		4
FOR 470 Interdependent Natural Resource Issues (3 hrs)			2	1		X	X	X	3
FOR 480 Integrated Forest Resource Management (5 hrs)	1	1.5	1.5	1	X	X	X	X	5
Total Required Credit Hours	**31**	**12**	**24.5**	**12**					**79.5**

1 Include only required courses in forestry, natural resource, or other professional areas. Do not include electives, restricted electives, or basic, general education courses such as math, basic sciences, or English.

2 See SAF Standard II: Curriculum, for specific areas of study definitions. Credit hours may be distributed among two or more areas of study for a listed course.

Document B-2: Forestry Education Summary-Restricted Electives

Institution Name: University of Kentucky Academic Year: Revised Forestry Curriculum Begins Fall 2009

Official Degree Program Title: Bachelor of Science in Forestry

Official Option Title: Not Applicable

Restricted Elective[1] Courses # & Title	**Credit Hours in SAF-Required Areas of Study[2]**				**Course Contains Significant Content in** *(check all that apply)***:**				**Total Credit Hours**
	Ecology and Biology	Measurement of Forest Resources/ Urban Forests	Management of Forest Resources/ Urban Forests	Policy, Economics, and Administration and Law	Field Work	Ethics	Oral and Written Communications	Integrated Resource Management	
Not applicable. There are no restricted electives courses in the undergraduate forestry curriculum.									
Total Available Restricted Elective Credit Hours									
Minimum Credit Hours Required									

1 Include only restricted electives in forestry, natural resource, or other professional areas. Do not include free electives or basic, general education courses such as math, basic sciences, or English.

2 Credit hours may be distributed among two or more areas of study for a listed course

II.2. Document how oral and written communication skills are reinforced throughout the curriculum.

Oral and written communication skills are reinforced throughout the curriculum. Many of the courses have specific course learning outcomes associated with oral and written communication. The course and specific learning outcome are highlighted in Figure II.2.a.

Figure II.2.a. Forestry courses with specific learning outcomes related to oral or written communication.

Oral or Written Communication Learning Outcomes
FOR 110 Natural Resource Issues
When given a natural resource issue, you will be able to report various aspects of the natural resource issue through written work and oral presentations. You will develop (or refine) and use communication skills essential for your professional career. The communication components of this course will develop or improve your functional skills to: a. Prepare and deliver individual and team, informative and persuasive, oral presentations. b. Work in small teams, which includes identifying team objectives, assigning tasks, monitoring progress, developing collective conclusions, and presenting results. c. Search electronic databases to acquire information that can be used to define and illuminate issues and questions underlying natural resource debates. d. Utilize electronic media to prepare, present, and transmit reports and documents. e. Appreciate the bases for various perspectives of debated resource issues, and critically analyze strengths and weaknesses of arguments presented.
FOR 150 Computer Applications in Natural Resource Professions
When given a forestry and natural resource project, you will be able to effectively and professionally communicate the methods and results of the project to different types of audiences through emails, memos, letters, handouts, posters, and presentations.
FOR 200 Basics of Geospatial Technology
Construct aesthetic, accurate maps using your knowledge of proper map design skills.
FOR 340 Forest Ecology
When in the field, you will be able to use proper field note taking and data collection techniques. After returning from the field, you will be able to analyze and interpret data using statistics. You will use computers to conduct data analysis and present the data in graph format.
FOR 400 Human Dimensions of Forestry and Natural Resources
This course is a writing intensive course and by the end of the course you will be able to successfully complete the Writing Learning Outcomes. The Writing Learning Outcomes include: a. Write a paper that is essentially free of mechanical errors (grammar, punctuation, spelling, and syntax) and awkwardness, using a style that is appropriate to the purpose and audience. b. Demonstrate an ability to discover, evaluate, and clearly present evidence in support of an argument in the subject area and utilize documentation that conforms to the formats and the citation conventions of the subject area. c. Be aware that composing a successful text frequently takes multiple drafts, with varying degrees of focus on generating, revising, editing, and proofreading. d. Write a capable, interesting essay about a complex issue in forestry and natural resources for a general university audience.

FOR 470 Interdependent Natural Resource Issues
Demonstrate effective listening and communication skills and be able to address diverse audiences such as landowners, government agencies, media, and scientists.
Communicate forestry concepts to youth using programs such as Project Learning Tree.
This course is a writing intensive course and by the end of the course you will be able to successfully complete the Writing Learning Outcomes. The Writing Learning Outcomes include: a. Write a paper that is essentially free of mechanical errors (grammar, punctuation, spelling, and syntax) and awkwardness, using a style that is appropriate to the purpose and audience. b. Demonstrate an ability to discover, evaluate, and clearly present evidence in support of an argument in the subject area and utilize documentation that conforms to the formats and the citation conventions of the subject area. c. Be aware that composing a successful text frequently takes multiple drafts, with varying degrees of focus on generating, revising, editing, and proofreading. d. Write a capable, interesting essay about a complex issue in forestry and natural resources for a general university audience.
FOR 480 Integrated Forest Resource Management (Capstone)
Relate your knowledge of forestry concepts with information collected on a forested property to develop a detailed management prescription incorporating the landowner's objectives and administering the objectives in light of ethical forestry and stewardship guidelines.
Demonstrate effective interaction skills and professional conduct with various types of landowners and the public.

In addition to specific learning outcomes associated with oral and written communication, the undergraduate forestry curriculum also has nine themes or common threads to be reinforced throughout the curriculum. One of these themes or common threads is communication. Several faculty will be in charge of the nine themes or curriculum threads to ensure the common threads are appropriately integrated into the courses. Figure II.2.b. shows specifically how the communication thread is carried through the curriculum

Figure II.2.b. Forestry courses with the communication common thread or theme.

Communication Common Thread
FOR 110 Natural Resource Issues
Explain natural resource issues through written work and oral presentations using effective writing styles and presentation techniques to clearly and succinctly discuss the material in a manner appropriate for the audience at hand.
FOR 150 Computer Applications in Natural Resource Professions
When given a forestry and natural resource project, you will be able to effectively and professionally communicate the methods and results of the project to different types of audiences through emails, memos, letters, handouts, posters, and presentations.
FOR 200 Basics of Geospatial Technology
Effectively communicate, both written and oral, map components to a general audience.
FOR 230 Conservation Biology
Communicate the concepts of conservation biology effectively to classmates through discussions of reading assignments. Interpret media coverage of conservation biology topics through written communication.
FOR 240 Forestry and Natural Resource Ethics
Communicate with classmates through facilitating a round-table discussion and participating in discussions of controversial issues. Conduct oral presentations. Synthesize

information into a formal outline.
FOR 250 Statistics and Measurements I
Communicate in written form the results and interpretation of data collected.
FOR 260 Forest Products and Wood Science
Address public concerns through written and oral communication on different aspects of the forest products industry.
FOR 280 Forest Policy
Address public concerns related to policy through non-technical written documents and oral presentations. Explain communication avenues important in the policy arena.
FOR 310 Introduction to Forest Health and Protection
Address questions landowners and the public may have about forest health issues through written and oral communication.
FOR 320 Forest Valuation and Economics
Synthesize and analyze forest valuation and economic concepts by writing and presenting the material to diverse audiences.
FOR 330 GIS and Spatial Analysis
Communicate spatially related natural resource problems using a map.
FOR 340 Forest Ecology
Communicate through written reports methods and results of fieldwork. Give oral presentations using PowerPoint.
FOR 350 Silviculture
Write and present on basic silvicultural prescriptions.
FOR 370 Wildlife Biology and Management
Express, in writing, wildlife management concepts to scientific audiences and to the public.
FOR 400 Human Dimensions of Forestry and Natural Resources
Effectively communicate (written and oral) with various stakeholders.
FOR 425 Forest Management
Describe how to prepare a professional forest management plan and prepare sample components of a forest management plan.
FOR 460 Forest Hydrology and Watershed Management
Express through written and oral communication forest hydrology and watershed management issues.
FOR 470 Interdependent Natural Resource Issues - Analysis and Solutions
Develop effective listening skills and be able to address diverse audiences. Use written and oral communication to explain forest related threats and solutions and address public concerns.
FOR 480 Integrated Forest Resource Management (Capstone)
Prepare a professional written report and communicate technical information to non-technical audiences.

II.3. For the four areas of study, document how adequate instruction is provided in basic principles, typical applications, and current practices.

The four areas of study – ecology and biology, measurement of forest resources, management of forest resources, and forest resource policy, economics, and administration – are integrated in courses throughout the curriculum. (See Figure II.3.a. – SAF Professional Accreditation Requirements). Figures II.3.b.-II.3.e. highlights learning objectives to show how adequate instruction is provided in the four areas of study.

Figure II.3.a. SAF professional accreditation requirements for the revised undergraduate forestry curriculum.

SAF Professional Accreditation Requirements

Society of American Foresters
2007 Accreditation Handbook
Professional Education

	Natural Res. Issues	Computer App. In NR Professions	Basics of Geospatial Technology	Fundamentals of Soil Science (PLS 366)	Dendrology	Conservation Biology	Forestry and Natural Resource Ethics	Statistics and Measurements I	Forest Products & Wood Science	Wildlife Biology and Management	Forest Policy	Intro. To Forest Health and Prot.	Forest Valuation and Economics	GIS & Spatial Anal.	Forest Ecology	Silviculture	Field Semester	Human Dimensions of Forestry and NR	Forest Management	Forest Hydrology & Watershed Mgmt	Interdep. NR Issues	Integrated Forest Res. Mgmt.
Ecology & Biology																						
A1. Understand taxonomy & identify forest & other tree species, their distribution, & associated vegetation & wildlife					■					■					■		■					■
A2. Understand soil properties & processes, hydrology, water quality, & watershed function				■	■										■	■	■			■		■
A3. Understand ecological concepts & principles including structure & function of ecosystems, plant & animal communities, competition, diversity, population dynamics, succession, disturbance, & nutrient cycling					■	■				■		■			■	■	■					
A4. Make ecosystem, forest, & stand assessments										■		■			■	■	■		■			■
A5. Understand tree physiology & effects of climate, fire, pollutants, moisture, nutrients, genetics, insects & diseases on tree & forest health & productivity					■	■			■			■			■	■	■					■
Measurement of Forest Res.																						
B1. Identify & measure land areas & conduct spatial analysis			■					■						■			■					■
B2. Design & implement comprehensive inventories that meet specific objectives using appropriate sampling methods & units of measurement								■									■		■			■
B3. Analyze inventory data & project future forest, stand, & tree conditions								■								■	■		■			■
Management of Forest Resources																						
C1. Develop & apply silvicultural prescriptions appropriate to management objectives, including methods of establishing & influencing composition, growth, & quality of forests, & understand impacts of those prescriptions										■						■	■		■			■
C2. Analyze economic, environmental, & social consequences of forest resource management strategies & decisions						■	■				■	■	■	■		■	■	■	■	■	■	■
C3. Develop management plans with specific multiple objectives & constraints																			■			■
C4. Understand valuation procedures, market forces, processing systems, transportation & harvesting activities that translate human demands for timber-based & other consumable forest products into availability of those products									■				■						■			■
C5. Understand valuation procedures, market, & non-market forces that avail humans opportunities to enjoy non-consumptive products & services of forests									■				■									■
C6. Understand administration, ownership, & organization of forest management enterprises.											■						■		■			■
Forest Res. Policy, Ec., & Admin.																						
D1. Understand forest policy & processes by which it is developed	■					■					■											
D2. Understand how federal, state, & local laws & regulations govern the practice of forestry	■					■					■											
D3. Understand professional ethics, including SAF Code, & recognition of responsibility to adhere to ethical standards in forestry decision making on behalf of clients & public	■	■				■	■		■	■		■	■			■	■	■	■	■	■	■
D4. Understand integration of technical, financial, human resources, & legal aspects of public & private enterprises											■											

Figure II.3.b. Forestry courses with specific learning outcomes related to ecology and biology.

Ecology and Biology Learning Outcomes
FOR 219 Dendrology
Explain basic concepts of botany including photosynthesis and light, reproduction, and parts and processes of trees.
When given a particular location, you will be able to identify basic soil and site characteristics (topography, aspect, relief, and drainage) and analyze how these characteristics impact tree location.
Explain concepts such as natural and human-caused disturbance; reproduction and regeneration; and succession, competition, and tolerance.
When in rural and urban settings, you will be able to identify trees and shrubs based on the bark, twig, leaf, flower, and fruit. You will be able to use taxonomy to identify the trees and shrubs using their family, genus, and species name.
Differentiate the general distribution of tree types in the United States including eastern deciduous forests, southern forests, boreal forests, northern hardwood forests, western montane forests, pacific coast forests, and other forest types.
FOR 230 Conservation Biology
Explain diversity, in terms of both plants and animals, and how diversity is measured, maintained, and eliminated.
Analyze extinction and evolution and its impact on humans and vice versa. Be able to explain extinction and evolution in terms of its impact on genetics and speciation and names. Be able to describe extinction case studies.
Describe fragmentation and explain the causes and biological consequences of fragmentation.
FOR 260 Forest Products and Wood Science
When given a tree or stand, you will be able to determine which mill process and end product would be appropriate taking into consideration the impact of silvicultural practices, tree health (fire, insects, weather) and cultural practices (stock, treatment, fertilization, water) on wood and product quality.
FOR 370 Wildlife Biology and Management
Explain basic biological concepts such as physiology, energetics, nutrition, digestive systems, and anatomy.
Describe the history of wildlife management.
Explain the principles of wildlife management such as 1) biogeography, distribution of species, habitat requirements, forest structure, and vegetation type; 2) biodiversity, interactions, and structure; 3) taxonomy, wildlife identification, and natural history; and 4) harvesting theory and population dynamics.
Describe and apply wildlife field techniques such as trapping and radio telemetry.
FOR 310 Introduction to Forest Health and Protection
When presented with a forest health problem, you will be able to describe the problem, how it got there, and what can be done about it.
Describe the basic concepts and terminology associated with forest health and protection.
When given historical forest health issues, you will be able to describe different aspects and consequences of historical forest health issues.
When presented with invasive or exotic plants in a rural or urban area, you will be able to identify the plants, describe how they affect the rural and/or urban area, and identify methods of addressing the problem.
When presented with a pest or disease, you will be able to identify the pest or disease, describe how it affects forest health and forest products, and identify methods of addressing the problem.

Describe forest health issues in urban areas and at the rural-urban interface.
Identify the impacts various elements such as fire, wind, water, freeze, and drought have on forest health. Identify the impacts animals, such as deer and elk, have on forest health. Describe different methods of addressing these elements.
Describe forest health issues in Kentucky and the region. These issues may include southern pine beetle, gypsy moth, hemlock woolly adelgid, oak decline, emerald ash borer, dogwood anthracnose, and sudden oak death.
FOR 340 Forest Ecology
Explain human and forest history and have a basic understanding of forestry, forest ecology, forest geography, and forest communities.
When discussing the forest as an ecosystem, you will be able to describe ecosystem concepts and processes such as energy flow, forest soils, forest hydrology, forest nutrition, nutrient cycling, and decomposition.
When discussing forest community dynamics and population ecology, you will be able to describe concepts and processes such as community ecology, disturbance, forest site and disturbance, succession, fire ecology, population ecology, tree life history, population dynamics, dendrochronology, and invasive species.
When discussing the forest and tree environment, you will be able to explain concepts and processes such as structure and function of forest trees; radiation, water and carbon balance; water and trees; temperature and tree growth; biological and ecosystem diversity; and ecosystem management and ecosystem services.
When in the field, you will be able to use proper field note taking and data collection techniques. After returning from the field, you will be able to analyze and interpret data using statistics. You will use computers to conduct data analysis and present the data in graph format.
FOR 350 Silviculture
When given a silvicultural prescription, you will be able to describe how the silvicultural prescription influences timber production, forest health, biodiversity, soil and water resources, and non-timber products/benefits. You will also be able to describe how the silvicultural prescription influences social, economic, and ecological issues.
When given a silvicultural practice, you will be able to analyze the interconnections between biological principles and the silvicultural practice.
Describe the ecology and management of forest ecosystems common to Kentucky and the surrounding region.
FOR 355 Forest Fire Control and Use
Become Red Card Certified through the U.S. Forest Service. During this course, students will become Red Card Certified through the U.S. Forest Service. Fire related concepts will be incorporated throughout the semester to show students how fire affects trees, soils, landscapes, water quality, hydrology, wildlife, timber products, forest ecology, and how fire is used for silviculture. Students will also learn policy, economic, ethical, and social impacts of fire throughout the semester.
FOR 356 Landscape Assessment
Identify trees in the winter landscape using buds, twigs, and bark.
Use your knowledge of site quality characteristics to understand why certain tree species are located on different sites.
Apply knowledge of sampling theory in wildlife to practical applications such as taking vegetation measurement samples.
Evaluate cover at the ground, mid-story, and canopy level to determine how vegetation impacts wildlife habitat.
Apply knowledge of home range and patch size to select appropriate wildlife management principles for a given area.
Relate how soil properties influence a given landscape.
Analyze the difference between soil types and evaluate soil site quality.
Demonstrate proper sampling procedures for measuring flow, water quality, and other

hydrologic variables.
Use collected data to analyze the variation between different landscapes and watersheds.
Identify exotic and invasive plants. Explain exotic and invasive plant characteristics and relate how these characteristics impact rural and urban areas.
Identify forest health threats (pests, disease, wind, ice, water, drought, fire, wildlife, invasive plants) and use your knowledge of forest practices to describe ways to protect the forest from these threats.
Analyze ecosystems and critical habitat areas and the related silvicultural practices that should or should not be conducted in these areas.
FOR 358 Silvicultural Practices
Assess stand stocking and demonstrate the correct procedures for marking the stand for a thinning or other intermediate treatment.
Demonstrate the correct procedures for conducting a natural regeneration assessment.
Demonstrate the correct procedures for conducting artificial regeneration.
Compare various silvicultural practices throughout the region.
Analyze critical habitat areas and explain how to incorporate critical habitat areas into management prescriptions.
FOR 359 Forest Operations and Utilization
Examine prescribed burns and recognize how fire affects wildlife habitat structure and environmental conditions impacting understory plant response.
Describe genetic concepts after visiting a breeding program seed orchard.
FOR 425 Forest Management
When given a field site, you will use global positioning systems and geographic information systems to create a stand map consisting of various map layers including tree and wildlife layers.
FOR 460 Forest Hydrology and Watershed Management
Use your knowledge of the hydrologic cycle to explain how climate, soils, vegetation, and land-use affect the amount, timing, and quality of water.
Explain the plant-soil water relationship from the hydrologic perspective.
Explain hydrologic interactions from a land-use and landscape perspective.
Comprehend the need for forestry best management practices in relation to hydrology and watershed management.
Quantitatively measure and calculate hydrologic variables and describe analytical procedures for evaluating precipitation, evapotranspiration, infiltration, and stream flow.
Analyze current issues in watershed management in relation to social and economic impacts.
Interpret hydrology data and graphs as related to hydrology and watershed management.
FOR 480 Integrated Forest Resource Management (Capstone)
Relate your knowledge of forestry concepts with information collected on a forested property to design and implement a comprehensive inventory proposal, including describing a property's biophysical properties, historical and present land use by using land records and legal descriptions.

Figure II.3.c. Forestry courses with specific learning outcomes related to measurement of forest resources.

Measurement of Forest Resources Learning Outcomes
FOR 200 Basics of Geospatial Technology
Interpret individual maps (topographic map, aerial photo, field map, soils map, geology map, digital image) and synthesize data from multiple maps to describe a particular site.
Demonstrate the correct usage of a compass to find direction and navigate in the field by taking and following azimuths, triangulating, pacing, and setting a declination.

Construct digital and hand-written field and land classification maps using compass and pacing, global positioning systems (GPS), topographic maps, aerial photos, field maps, soils maps, geology maps, and digital images.
Demonstrate the correct usage of a GPS unit in the field to collect data and construct maps with the data using computer software to make corrections to the GPS data and incorporate GPS data into existing geographic information system databases.
Knowledge of basic geographic information concepts including remote sensing imagery, map projections, and modeling earth.
FOR 250 Statistics and Measurements I
While in the field, you will be able to take land and standing tree measurements using a compass, prism, d-tape, global positioning system, Biltmore stick, and increment borer. Using these tools, you will be able to take land measurements to measure distances and determine area, and take standing tree measurements to determine height, form expressions, crowns, age, volume, and weights.
For a given field site, you will be able to design and conduct a timber inventory that meets specific landowner objectives. You will be able to apply sampling theory and design concepts to ensure appropriate sampling methods and units of measurement are used when designing and conducting the timber inventory.
FOR 330 GIS and Spatial Analysis
Describe the principles of geographic information systems (GIS) including data layers, data models, and map projections.
When given a natural resource problem, you will be able to create digital spatial data sets, perform basic spatial analysis, and integrate social and economic data to solve spatially related natural resource problems.
When given a field site, you will be able to use a global positioning unit to collect data and integrate the field data into a GIS map.
FOR 350 Silviculture
When given inventory data, you will be able to perform statistical calculations for projecting future forest, stand, and tree conditions and use computer simulations to understand temporal aspects of silviculture.
FOR 357 Inventory and Measurements II
Demonstrate the correct procedures for conducting and writing a timber inventory. This includes using proper techniques to measure height, diameter, crown width, and stand basal area and using global positioning systems to collect stand borders, navigate, and conduct sampling.
Analyze different sites by comparing measurements and recognize other ways to classify a site besides site index.
FOR 425 Forest Management
Apply concepts such as growth and yield, mean annual increment, periodic annual increment, and site quality to forest management decisions.
When given a field site, you will use global positioning systems and geographic information systems to create a stand map consisting of various map layers including tree and wildlife layers.
When given a field site, you will be able determine what timber needs to be cut, how much should be cut, and when the cutting should occur. You will be able to describe forest regulation terms such as growing stock, annual harvest, volume control, area control, and equivalence acres and perform calculations using these concepts.
When given data, you will be able to use linear programming to determine harvest scheduling and rotation.
FOR 480 Integrated Forest Resource Management (Capstone)
Relate your knowledge of forestry concepts with information collected on a forested property to design and implement a comprehensive inventory proposal, including describing a property's biophysical properties, historical and present land use by using land records and legal descriptions.

Figure II.3.d. Forestry courses with specific learning outcomes related to management of forest resources.

Management of Forest Resources Learning Outcomes
FOR 230 Conservation Biology
Describe fragmentation and explain the causes and biological consequences of fragmentation.
Explain the role forest management, wetland management, and land use decisions have in addressing conservation (both plant and animal) issues.
FOR 240 Forestry and Natural Resource Ethics
Describe forest history in the United States.
FOR 260 Forest Products and Wood Science
When given a tree or stand, you will be able to determine which mill process and end product would be appropriate taking into consideration the impact of silvicultural practices, tree health (fire, insects, weather) and cultural practices (stock, treatment, fertilization, water) on wood and product quality.
Explain issues surrounding the wood product industry including market and economic conditions, wood technologies, recycling, forest product certification, environmental concerns, and public perception of certain forest products.
Describe terms associated with the wood product industry and why different woods are used in wood product processes.
Discuss state and regional forest product industry and analyze how global markets may affect the region's forest products industry.
Describe various forest products, including agroforestry products, and analyze how different management practices affect the types of forest products in a given area.
FOR 280 Forest Policy
Explain how various programs, laws, and regulations impact forestry. These programs, laws, and regulations may include public ownership and management of land, federal environmental regulations, wildlife policy, forestry regulations, public assistance for private owners, and global forest policy issues.
FOR 370 Wildlife Biology and Management
Analyze public perceptions of a given wildlife current event and describe ways to address public concerns surrounding the current event.
FOR 310 Introduction to Forest Health and Protection
Describe the basic concepts and terminology associated with forest health and protection.
When given historical forest health issues, you will be able to describe different aspects and consequences of historical forest health issues.
When presented with invasive or exotic plants in a rural or urban area, you will be able to identify the plants, describe how they affect the rural and/or urban area, and identify methods of addressing the problem.
When presented with a pest or disease, you will be able to identify the pest or disease, describe how it affects forest health and forest products, and identify methods of addressing the problem.
Describe forest health issues in urban areas and at the rural-urban interface.
Identify the impacts various elements such as fire, wind, water, freeze, and drought have on forest health. Identify the impacts animals, such as deer and elk, have on forest health. Describe different methods of addressing these elements.
Describe forest health issues in Kentucky and the region. These issues may include southern pine beetle, gypsy moth, hemlock woolly adelgid, oak decline, emerald ash borer, dogwood anthracnose, and sudden oak death.
FOR 320 Forest Valuation and Economics
Apply economic concepts to silvicultural practices, land values, timber values, wildlife, and

hunting.
When given a forestry scenario, you will be able to apply appropriate economic formulas to address the given scenario and use computer programs to calculate forest economic formulas.
When given timber and timberland data, you will be able to estimate the market value of the timber and timberland.
When given a silvicultural practice or management plan, you will be able to identify the economic consequences of the particular silvicultural practice or management plan.
Describe and apply antitrust regulations to forestry practices.
When given a forestry scenario, you will be able to apply supply and demand concepts and identify the impact on timber and other forestry based markets. These forestry scenarios may include forest reserve practices, globalization, consumer preferences, landowner demographics, determinants of timber price, non-timber products and services, market failures and peculiarities of timber products, new market trends, certification, change in forestland ownership, and incentive base policies.
Identify how federal, state, and local tax regulations, including property tax, income tax, estate tax, and severance/yield tax, govern the practice of forestry.
Identify societal trends toward monetizing ecosystem services and recognize the multiple benefits of forests are often public goods. Be able to explain the difference between value and price.
FOR 330 GIS and Spatial Analysis
When given a natural resource problem, you will be able to create digital spatial data sets, perform basic spatial analysis, and integrate social and economic data to solve spatially related natural resource problems.
FOR 350 Silviculture
Describe common silvicultural terms and techniques used in establishing and influencing composition, growth, and quality of forests.
When given a silvicultural prescription, you will be able to describe how the silvicultural prescription influences timber production, forest health, biodiversity, soil and water resources, and non-timber products/benefits. You will also be able to describe how the silvicultural prescription influences social, economic, and ecological issues.
When given land management objectives, you will be able to develop silvicultural prescriptions using various silvicultural concepts.
When given a silvicultural practice, you will be able to analyze the interconnections between biological principles and the silvicultural practice.
Describe the ecology and management of forest ecosystems common to Kentucky and the surrounding region.
When given inventory data, you will be able to perform statistical calculations for projecting future forest, stand, and tree conditions and use computer simulations to understand temporal aspects of silviculture.
FOR 357 Inventory and Measurements II
Evaluate how silvicultural prescriptions impact wood product value.
FOR 358 Silvicultural Practices
Analyze how to alter the forest canopy to meet a given objective.
Assess stand stocking and demonstrate the correct procedures for marking the stand for a thinning or other intermediate treatment.
Demonstrate the correct procedures for conducting a natural regeneration assessment.
Demonstrate the correct procedures for conducting artificial regeneration.
Compare various silvicultural practices throughout the region.
Describe the components of a silvicultural prescription for multiple objectives such as recreation, wildlife, health and protection, and forest products.
Analyze critical habitat areas and explain how to incorporate critical habitat areas into management prescriptions.
FOR 359 Forest Operations and Utilization

Apply best management practices (BMPs) to forestry practices
Explain various harvesting practices and the related costs associated with these practices.
Apply harvesting layout and design principles and describe the correct procedures for creating roads, landings, skids, stream crossings, fires lanes, logging roads, and marking a stand to survive a harvest. Apply BMPs to harvesting layout and design.
Use your knowledge of harvesting, forests, soils, watersheds, and wildlife to examine the impact of harvesting on the landscape.
Use your knowledge of proper herbicide and pesticide application techniques to become certified in herbicide and pesticide application.
Demonstrate the correct techniques for tree planting.
Demonstrate the correct procedures for conducting a thinning operation.
Examine prescribed burns and recognize how fire affects wildlife habitat structure and environmental conditions impacting understory plant response.
Compare various mill processes and mill facilities such as facility size, process, wood input, tree type, and supply.
Calculate value added at secondary processing facilities.
FOR 400 Human Dimensions of Forestry and Natural Resources
Explain the history of humans and natural resources and how changes in values and trends have altered the use of natural resources.
When given a forestry or natural resource scenario, you will be able to identify stakeholders involved, explain different stakeholder perspectives (values and beliefs), and critically evaluate opposing viewpoints. Based on the stakeholders involved, you will be able to describe decision making and public participation options and recognize potential power issues involved in the scenario.
When given a situation such as recreation, forest certification, globalization, rural-urban interface, ecosystem services, wildlife, and forest health, you will be able to explain the interconnection between society and natural resources across a range of societies. These situations may involve the role of communities, employment, extractive industries, resource dependency, poverty, land ownership patterns, and property rights.
Describe the Tragedy of the Commons and apply this concept to natural resource issues such as forestry, fisheries, and water.
Explain the environmental movement in the United States including the role of mainstream, grassroots, and radical groups.
FOR 425 Forest Management
Apply concepts such as growth and yield, mean annual increment, periodic annual increment, and site quality to forest management decisions.
When given a field site, you will be able determine what timber needs to be cut, how much should be cut, and when the cutting should occur. You will be able to describe forest regulation terms such as growing stock, annual harvest, volume control, area control, and equivalence acres and perform calculations using these concepts.
When preparing a forest management plan, you will be able to identify management objectives for various properties and ownership types and integrate scientific knowledge with landowner objectives.
Apply non-timber considerations such as wildlife, water quality, and recreation to forest management decisions.
Identify the key components of a forest management plan and explain how to prepare a professional forest management plan.
Integrate financial analysis into forest management decisions.
FOR 460 Forest Hydrology and Watershed Management
Comprehend the need for forestry best management practices in relation to hydrology and watershed management.
Analyze current issues in watershed management in relation to social and economic impacts.
FOR 470 Interdependent Natural Resource Issues

Describe professional and leadership skills needed to be a 'Society Ready' forester and demonstrate effective habits and leadership skills of professionals.
Explain effective methods for alternative dispute resolution and be able to identify and address stakeholders involved in a dispute.
Analyze different social, economic, and ecological approaches to address forest health issues or threats. Forest health issues and threats may include requirements of a healthy forest ecosystem, invasive plants and animals, fragmentation and parcelization, changes in land ownership patterns, global change, climate change, and pollution.
Analyze (based on readings, class discussions, and previous courses) issues that cause a disconnect between society and natural resources.
Broadly describe how to manage forest ecosystems to meet ecological, economic, and social needs. This includes incorporating conservation biology concepts and the influence of urban areas and communities on forest ecosystems.
FOR 480 Integrated Forest Resource Management (Capstone)
Relate your knowledge of forestry concepts with information collected on a forested property to design and implement a comprehensive inventory proposal, including describing a property's biophysical properties, historical and present land use by using land records and legal descriptions.
Relate your knowledge of forestry concepts with information collected on a forested property to develop a detailed management prescription incorporating the landowner's objectives and administering the objectives in light of ethical forestry and stewardship guidelines.

Figure II.3.e. Forestry courses with specific learning outcomes related to forest resource policy, economics, and administration.

Forest Resource Policy, Economics, and Administration Learning Outcomes
FOR 230 Conservation Biology
Describe the history of conservation biology.
Describe conservation values and ethical perspectives such as environmental ethics, deep ecology, and land ethic and apply these values and perspectives to conservation biology issues.
Explain the role forest management, wetland management, and land use decisions have in addressing conservation (both plant and animal) issues.
Analyze conservation policy, such as the Endangered Species Act, and its impact on conservation biology (both plant and animal).
When given a case study, you will be able to explain conservation biology issues at the local, regional, national, and global level.
FOR 240 Forestry and Natural Resource Ethics
Describe forest history in the United States.
Describe and apply key ethical concepts of conservation, preservation, deep ecology, land ethic, spiritual/religion, and multiple value systems to forestry and natural resource issues.
When given an ethical dilemma, you will be able to apply professional associations' codes of ethics as a guide for addressing the ethical dilemma. Professional associations include Society of American Foresters, The Wildlife Society, Association of Consulting Foresters, and Forest Stewards Guild.
Describe ethical issues professionals face, including public natural resource agencies, and identify ways of handling the ethical dilemmas. Ethical issues professionals may face include honesty, conflict of interest, confidentiality, professionalism, and responsibility to an employer.
FOR 260 Forest Products and Wood Science
Explain issues surrounding the wood product industry including market and economic

conditions, wood technologies, recycling, forest product certification, environmental concerns, and public perception of certain forest products.
Discuss state and regional forest product industry and analyze how global markets may affect the region's forest products industry.
FOR 370 Wildlife Biology and Management
Analyze public perceptions of a given wildlife current event and describe ways to address public concerns surrounding the current event.
FOR 280 Forest Policy
When given a forest policy, you will be able to explain the political process including how policy is formed, analyzed, evaluated, and implemented. Differentiate between proactive and reactive policy.
Identify participants in the political process and explain the role these participants play in the political process. Participants may include government branches (legislative, executive, judicial), government agencies (Dept. of Energy, Dept. of Agriculture, Environmental Protection Agency, Bureau of Land Management, and U.S. Forest Service), interest groups, and media.
Explain how various programs, laws, and regulations impact forestry. These programs, laws, and regulations may include public ownership and management of land, federal environmental regulations, wildlife policy, forestry regulations, public assistance for private owners, and global forest policy issues.
When given a forest threat or issue at the local, regional, national, or global level, you will be able to explain how current and future policy approaches at the local, state, and federal level can address the threat. You will also be able to explain opposing viewpoints on the threat. These threats may include urbanization, fragmentation, demographic shifts, invasive species, global competition, forest certification, climate change, and bioenergy.
FOR 320 Forest Valuation and Economics
Identify how federal, state, and local tax regulations, including property tax, income tax, estate tax, and severance/yield tax, govern the practice of forestry.
Identify societal trends toward monetizing ecosystem services and recognize the multiple benefits of forests are often public goods. Be able to explain the difference between value and price.
FOR 359 Forest Operations and Utilization
Apply best management practices (BMPs) to forestry practices
FOR 400 Human Dimensions of Forestry and Natural Resources
Explain the history of humans and natural resources and how changes in values and trends have altered the use of natural resources.
When given a forestry or natural resource scenario, you will be able to identify stakeholders involved, explain different stakeholder perspectives (values and beliefs), and critically evaluate opposing viewpoints. Based on the stakeholders involved, you will be able to describe decision making and public participation options and recognize potential power issues involved in the scenario.
When given a situation such as recreation, forest certification, globalization, rural-urban interface, ecosystem services, wildlife, and forest health, you will be able to explain the interconnection between society and natural resources across a range of societies. These situations may involve the role of communities, employment, extractive industries, resource dependency, poverty, land ownership patterns, and property rights.
Describe the Tragedy of the Commons and apply this concept to natural resource issues such as forestry, fisheries, and water.
Explain the environmental movement in the United States including the role of mainstream, grassroots, and radical groups.
FOR 460 Forest Hydrology and Watershed Management
Comprehend the need for forestry best management practices in relation to hydrology and watershed management.
FOR 470 Interdependent Natural Resource Issues
Describe professional and leadership skills needed to be a 'Society Ready' forester and

demonstrate effective habits and leadership skills of professionals.
Explain effective methods for alternative dispute resolution and be able to identify and address stakeholders involved in a dispute.
Broadly describe how to manage forest ecosystems to meet ecological, economic, and social needs. This includes incorporating conservation biology concepts and the influence of urban areas and communities on forest ecosystems.
FOR 480 Integrated Forest Resource Management (Capstone)
Relate your knowledge of forestry concepts with information collected on a forested property to design and implement a comprehensive inventory proposal, including describing a property's biophysical properties, historical and present land use by using land records and legal descriptions.
Relate your knowledge of forestry concepts with information collected on a forested property to develop a detailed management prescription incorporating the landowner's objectives and administering the objectives in light of ethical forestry and stewardship guidelines.
Demonstrate effective interaction skills and professional conduct with various types of landowners and the public.

II.4. Document how adequate field instruction and practice are provided to ensure that graduates have the opportunity to be competent to practice forestry as professionals.

Over half of the forestry courses in the revised curriculum contain significant content in field instruction and practice (Figure II.4.a). For example, in FOR 219 Dendrology students regularly visit sites in the surrounding area to receive hands on training for tree identification in natural and urban landscapes. Students receive field instruction on identifying site characteristics, uses, and ecology of more than one hundred trees and shrubs. FOR 340 Forest Ecology students have several labs that involve data collection, analysis, interpretation, and written reports on multiple sites in the surrounding area. FOR 480 Integrated Forest Resource Management (Capstone) students work in teams to develop a forest management plan for a forested property. Students collect and analyze data, identify goals and management objectives, and develop a plan for managing the forest based on the objectives of the forest landowner.

In addition to field instruction during regular courses throughout the curriculum, students also have an entire semester of field work. In spring of the junior year, students will spend the semester in the field taking FOR 355 Forest Fire Control and Use, FOR 356 Landscape Assessment, FOR 357 Inventory and Measurements II, FOR 358 Silvicultural Practices, FOR 359 Forest Operations and Utilization. A detailed description of the learning objectives for the Spring Field Semester can be found in Appendix A - Revision of the Undergraduate Forestry Curriculum.

Figure II.4.a. SAF general accreditation requirements for the revised undergraduate forestry curriculum.

SAF General Accreditation Requirements

Society of American Foresters 2007 Accreditation Handbook **General Education**	Natural Res. Issues	Computer App. In NR Professions	Basics of Geospatial Technology	Fundamentals of Soil Science (PLS 366)	Dendrology	Conservation Biology	Forestry and Natural Resource Ethics	Statistics and Measurements I	Forest Products & Wood Science	Wildlife Biology and Management	Forest Policy	Intro. to Forest Health and Prot.	Forest Valuation and Economics	GIS and Spatial Analysis	Forest Ecology	Silviculture	Field Semester	Human Dimensions of Forestry and NR	Forest Management	Forest Hydrology & Watershed Mgmt	Interdependent NR Issues	Integrated Forest Res. Mgmt
Communications																						
A1. Prepare & deliver effective oral presentations	■	■	■			■	■		■		■	■	■		■	■		■		■	■	■
A2a. Proficiency in English composition, technical/business writing, & writing for nonprofessional audiences	■	■	■	■		■		■	■	■	■	■	■		■	■	■	■	■	■	■	■
A2b. Read with comprehension of various documents & critically evaluate opposing viewpoints	■					■	■		■	■	■	■	■		■	■		■		■	■	
Science & Mathematics																						
B1a. Understand components, patterns, & processes of biological & ecological systems across spatial & temporal scales					■	■				■		■			■	■	■		■			
B1b. Understand molecular biology, cells, organisms, populations, species, communities, & ecosystems					■	■				■		■			■		■					
B2. Understand physical & chemical properties, measurements, structure, & states of matter				■													■					
B3. Understand & use basic approaches & applications of mathematics & statistics for analysis & problem solving		■		■				■					■		■	■			■	■		■
Social Sciences & Humanities																						
C1. Understand and address moral & ethical questions & use critical reasoning skills	■	■				■	■		■	■		■	■			■	■	■	■	■	■	■
C2. Understand human behavior & social & economic structures, processes, & important institutions across a range of societies	■					■					■		■				■	■			■	
C3. Understand diverse dimensions of human experience & culture	■																■	■				
Computer Literacy																						
D. Use computers & other contemporary electronic technologies in professional life		■	■					■	■				■	■	■	■	■		■	■		■
Course Contains Significant Content in:																						
Field Work			■	■	■			■				■			■	■	■		■	■		■
Ethics	■	■				■	■		■	■		■	■			■	■	■	■	■	■	■
Oral and Written Communications	■	■	■	■		■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■
Integrated Resource Management						■		■									■		■		■	■

II.5. Document how the forestry curriculum fosters analytical and critical reasoning skills, including systematic problem solving and decision-making for individuals and in a team environment.

The forestry curriculum has courses with analytical and critical reasoning skills. Not only will students learn basic forestry concepts, but they will be able to apply these concepts to solve problems. Figure II.5.a. provides some examples of the learning outcomes that foster analytical and critical reasoning skills.

Figure II.5.a. Examples of forestry courses with learning outcomes related to analytical and critical reasoning skills.

Analytical and Critical Reasoning Skills Learning Outcomes
FOR 150 Computer Applications in Natural Resource Professions
When given a task, you will be able to explain the decision process and construct an algorithm for accomplishing the task.
FOR 219 Dendrology
When given a particular location, you will be able to identify basic soil and site characteristics (topography, aspect, relief, and drainage) and analyze how these characteristics impact tree location.
FOR 230 Conservation Biology
Analyze conservation policy, such as the Endangered Species Act, and its impact on conservation biology (both plant and animal).
FOR 240 Forestry and Natural Resource Ethics
When given an issue such as wild animals or invasive species, you will be able to discuss the ethical dilemmas related to the issue and how different ethical perspectives frame these issues.
FOR 250 Statistics and Measurements I
For a given field site, you will be able to design and conduct a timber inventory that meets specific landowner objectives. You will be able to apply sampling theory and design concepts to ensure appropriate sampling methods and units of measurement are used when designing and conducting the timber inventory.
FOR 260 Forest Products and Wood Science
Describe various forest products, including agroforestry products, and analyze how different management practices affect the types of forest products in a given area.
FOR 280 Forest Policy
When given a forest threat or issue at the local, regional, national, or global level, you will be able to explain how current and future policy approaches at the local, state, and federal level can address the threat. You will also be able to explain opposing viewpoints on the threat. These threats may include urbanization, fragmentation, demographic shifts, invasive species, global competition, forest certification, climate change, and bioenergy.
FOR 310 Introduction to Forest Health and Protection
When presented with a forest health problem, you will be able to describe the problem, how it got there, and what can be done about it.
FOR 320 Forest Valuation and Economics
When given a forestry scenario, you will be able to apply appropriate economic formulas to address the given scenario and use computer programs to calculate forest economic formulas.
FOR 340 Forest Ecology
When in the field, you will be able to use proper field note taking and data collection techniques. After returning from the field, you will be able to analyze and interpret data

using statistics. You will use computers to conduct data analysis and present the data in graph format.
FOR 350 Silviculture
When given land management objectives, you will be able to develop silvicultural prescriptions using various silvicultural concepts.
FOR 356 Landscape Assessment
Apply knowledge of home range and patch size to select appropriate wildlife management principles for a given area.
FOR 357 Inventory and Measurements II
Evaluate how silvicultural prescriptions impact wood product value.
FOR 358 Silvicultural Practices
Analyze how to alter the forest canopy to meet a given objective.
FOR 370 Wildlife Biology and Management
Analyze public perceptions of a given wildlife current event and describe ways to address public concerns surrounding the current event.
FOR 400 Human Dimensions of Forestry and Natural Resources
When given a forestry or natural resource scenario, you will be able to identify stakeholders involved, explain different stakeholder perspectives (values and beliefs), and critically evaluate opposing viewpoints. Based on the stakeholders involved, you will be able to describe decision making and public participation options and recognize potential power issues involved in the scenario.
FOR 425 Forest Management
When preparing a forest management plan, you will be able to identify management objectives for various properties and ownership types and integrate scientific knowledge with landowner objectives.
FOR 460 Forest Hydrology and Watershed Management
Use your knowledge of the hydrologic cycle to explain how climate, soils, vegetation, and land-use affect the amount, timing, and quality of water.
FOR 470 Interdependent Natural Resource Issues
Analyze different social, economic, and ecological approaches to address forest health issues or threats. Forest health issues and threats may include requirements of a healthy forest ecosystem, invasive plants and animals, fragmentation and parcelization, changes in land ownership patterns, global change, climate change, and pollution.
FOR 480 Integrated Forest Resource Management (Capstone)
Relate your knowledge of forestry concepts with information collected on a forested property to develop a detailed management prescription incorporating the landowner's objectives and administering the objectives in light of ethical forestry and stewardship guidelines.

Throughout the curriculum students will individually be able to solve problems and make decisions. Students will also work in a team environment to make decisions and solve problems. Collaborative problem solving is one of the nine common threads in the curriculum. Figure II.5.b. shows how the collaborative problem common thread is applied in the curriculum.

Figure II.5.b. Forestry courses with collaborative problem solving common thread or theme.

Collaborative Problem Solving Common Thread
FOR 110 Natural Resource Issues
Discuss effective people skills, negotiation techniques, and managerial skills needed by natural resource professionals to effectively address natural resource issues.
FOR 200 Basics of Geospatial Technology
Work in teams to collect data and solve problems using various spatial technologies.

FOR 280 Forest Policy
Listen and understand opposing viewpoints and rationally and fairly address a particular issue.
FOR 310 Introduction to Forest Health and Protection
Work together to determine management actions necessary to avoid/resolve existing problems locally.
FOR 330 GIS and Spatial Analysis
Work in teams to develop GIS projects that address a real-world public concern.
FOR 340 Forest Ecology
Work in teams in the field to collect, analyze, and interpret data.
FOR 350 Silviculture
Work in teams to write and present basic silvicultural prescriptions.
FOR 400 Human Dimensions of Forestry and Natural Resources
Recognize collaborative problem solving opportunities and involve various stakeholders in the decision making process.
FOR 470 Interdependent Natural Resource Issues - Analysis and Solutions
Explain effective methods for alternative dispute resolution and identify and address stakeholders involved in a dispute. Work in teams to collaborate with specialists to address issues.
FOR 480 Integrated Forest Resource Management (Capstone)
Work in teams to develop management plans.

II.6. Document how student awareness of historical and current issues and policies affecting resource management and conservation is established.

Students begin their forestry curriculum with FOR 110 Natural Resource Issues. During this course, they are presented with various natural resource issues and must analyze the issues from different perspectives. In this course, students are taught to use various information sources such as the library, professional publications, popular press articles and Internet to interpret and critically evaluate viewpoints on an issue. The forestry and natural resource issues that are addressed in FOR 110 are built upon throughout the curriculum.

During fall of the sophomore year, students take FOR 230 Conservation Biology where they learn the history of conservation biology as well as current issues such as the role of forest management, wetland management, and land use decisions have in addressing conservation issues. Students also learn to analyze conservation policy, such as the Endangered Species Act, and its impact on conservation biology. Another learning outcome of this course is students will be able to explain conservation biology issues at the local, regional, national, and global level.

In spring of the sophomore year students take FOR 280 Forest Policy. During this course, students learn to explain the political process including how policy is formed, analyzed, evaluated, and implemented. Students learn to identify participants in the political process and explain the role these participants play in the political process. Historical and current issues are discussed and students will be able to explain how various programs, laws, and regulates impact forests. When given an issue at the local, regional, national, or global level, students will be able to explain how current and future policy approaches at these different levels can address the issue.

In their junior year, students in FOR 320 Forest Valuation and Economics will be able to apply economic policies to forestry practices. Students will also be able to identify how federal, state, and local tax policies govern the practice of forestry.

In their senior year, students take FOR 400 Human Dimensions of Forestry and Natural Resources where they will learn about a variety of resource management and conservation issues and be able to explain the interconnection between society and natural resource issues across a range of societies. When given a natural resource issue, students will be able to identify the stakeholders involved and explain the different decision-making and public participation options for these issues.

In the spring of the senior years, students will take FOR 470 Interdependent Natural Resource Issues – Analysis and Solutions course. This course is a culmination of the student's study of public concerns and problems related to natural resources. Working in teams, students will learn to find and verify information on diverse topics, listen to and address public concerns, communication natural resource information to a variety of audiences, and be effective professionals working toward solutions.

II.7. Document that the forestry curriculum provides a variety of educational experiences including lectures, discussion, simulations, computer applications, and individual and group projects in laboratories and field experiences, enabling students to apply the scientific methodologies necessary to attain an array of beneficial forest products, services, and conditions.

The forestry curriculum provides a variety of education experiences including lectures, discussion, simulations, computer applications, and individual and group projects in laboratories and field experiences. Many courses incorporate lecture format with discussion, computer applications and field work while other courses are more discussion based. The discussion based courses include FOR 240 Forestry and Natural Resource Ethics, FOR 280 Forest Policy, FOR 400 Human Dimensions of Forestry and Natural Resources, and FOR 470 Interdependent Natural Resource Issues – Analysis and Solutions.

Students regularly use computer applications in courses such as FOR 150 Computer Applications in Natural Resource Professions, FOR 250 Statistics and Measurements I, FOR 330 GIS and Spatial Analysis, FOR 350 Silviculture, and FOR 480 Integrated Forest Resource Management. The types of computer software used ranges from spreadsheets, database and presentation software to simulation and mapping software. For example, students use simulation software in courses such as FOR 350 Silviculture and FOR 480 Integrated Forest Resource Management.

Students gain useful hands on experience by working in groups and individually with field and laboratory experiences. As shown in Figure II.a., working in groups or collaborative problem

solving is one of the nine common threads woven throughout the curriculum. Figure II.5.b. describes how the collaborative problem solving thread is incorporated into the curriculum.

Over half of the courses in the undergraduate forestry curriculum have a field and laboratory component where students gain hands-on practical experience which allows them to better understand forest conditions, products, and services.

II.8. Document that any distance-learning component of a program is consistent with the program's stated objectives. Distance learning includes off-campus classroom programs, external degree programs, branch campuses, correspondence courses, and off-campus, electronically-based instruction.

The undergraduate forestry program does not have a distance learning component.

II.9. Describe the extent to which faculty research enriches the curriculum and opportunities available to students to participate in research activities.

Faculty research enriches the curriculum and provides opportunities for undergraduate students to participate in research activities. Research enhances courses such as conservation biology, GIS, forest ecology, silviculture, and watershed management. For example, Dr. John Cox incorporates his research into Conservation Biology by providing students with firsthand knowledge and case studies about conservation and wildlife management. Dr. Cox's research informs his teaching via selection and modification of course topics and by providing field opportunities for students. Dr. Songlin Fei uses data and research findings from various research projects in his GIS class to show the students practical applications of GIS in natural resource research and management. Dr. Mary Arthur incorporates her research and the understanding she has developed from her research, into Forest Ecology. She gives specific examples from her research and from the ecosystems in which she has worked. Dr. Arthur's research keeps her current on forest ecology and she modifies course content to reflect changes in understanding that developed in the scientific literature. Dr. John Lhotka uses narrative examples of research and presents research data to his Silviculture class. This helps provide students with current, regionally specific silvicultural practices. For Silviculture labs, students visit research sites to demonstrate the examples mentioned in class. Dr. Chris Barton uses his watershed and mine reclamation research experience to give real-world applications to his lectures on forest watershed management.

In addition to the courses in the curriculum, faculty provide opportunities to undergraduate students to participate in research opportunities. Faculty hire undergraduate students on a regular basis to collect data and participate in a variety of research projects. For example, Dr. Arthur has undergraduates participate in research in the ecology lab. Dr. Arthur hires undergraduate students to provide basic lab support on federal work-study funds or from grant funds. These students

generally spend time processing samples, running analytical equipment, and supporting graduate students directly in their research. Undergraduate students are also hired during the summer, to conduct field research as part of a field crew. In this case, students are collecting data in the field, and sometimes entering data. Dr. Cox has undergraduates help with wildlife research projects. These students are often recruited from his Conservation Biology class. Undergraduates are typically involved in collecting data and occasionally composing reports and conducting analyses. Each summer, Dr. Fei has a few undergraduate students working on research projects to collect field data and perform basic analysis. Dr. Barton also uses several undergraduate students in his research activities on watersheds and mine reclamation work.

II.10. Discuss where and how professional ethics are incorporated into the professional curriculum and reinforced by faculty.

In spring of their sophomore year, students will take FOR 240 Forestry and Natural Resource Ethics. During this course, students will be able to apply professional associations' codes of ethics as a guide to address an ethical dilemma. Professional associations include Society of American Foresters, The Wildlife Society, Association of Consulting Foresters, and Forest Stewards Guild. During this course, students will also be able to describe the ethical issues professionals face, including public natural resource agencies, and identify ways of handling the ethical dilemma. Ethical issues professionals may face include honesty, conflict of interest, confidentiality, professionalism, and responsibility to an employer.

In additional to the FOR 240 Forestry and Natural Resource Ethics course, the ethics theme is woven throughout the curriculum. As mentioned earlier, several faculty will be in charge of the nine themes or common threads to ensure the topics are appropriately integrated into the courses. Figure II.10.a. shows specifically how the ethics thread is reinforced through the curriculum.

Figure II.10.a. Forestry courses with professional ethics incorporated into the professional curriculum and reinforced by faculty.

Professional Ethics
FOR 110 Natural Resource Issues
Identify ethical issues as they relate to natural resources.
FOR 150 Computer Applications in Natural Resource Professions
Recognize the ethical considerations of accurately portraying visual material such as graphs, diagrams, and maps.
FOR 230 Conservation Biology
Describe conservation values and ethical perspectives such as environmental ethics, deep ecology, and land ethic and apply these values and perspectives to conservation biology issues.
FOR 240 Forestry and Natural Resource Ethics
Apply key ethical concepts to forestry and natural resource issues. Describe professional codes of ethics and ethical issues professionals face.
FOR 250 Statistics and Measurements I
Recognize issues associated with appropriate use and interpretation of statistics.
FOR 260 Forest Products and Wood Science
Describe ethical issues associated with harvesting and/or processing various forest

products and different approaches used to address these issues.
FOR 310 Introduction to Forest Health and Protection
Explain ethical issues associated with forest health and protection.
FOR 320 Forest Valuation and Economics
Apply professional associations' Code of Ethics to scenarios involving forest economics and valuation.
FOR 350 Silviculture
Describe ethical issues related to silvicultural practices and be able to address these ethical issues.
FOR 370 Wildlife Biology and Management
Describe ethical issues related to wildlife management.
Field Semester
Ethical considerations will be applied throughout the semester. Students will explore ethical considerations when conducting a site assessment, preparing silvicultural prescriptions, and conducting harvesting applications.
FOR 400 Human Dimensions of Forestry and Natural Resources
Identify moral and ethical issues associated with human dimensions of forestry and natural resources.
FOR 425 Forest Management
Describe ethical issues associated with preparing management plans.
FOR 460 Forest Hydrology and Watershed Management
Discuss watershed issues within the context of the water-land ethic.
FOR 470 Interdependent Natural Resource Issues - Analysis and Solutions
Describe the various ethical issues foresters face in terms of forestry and natural resource issues.
FOR 480 Integrated Forest Resource Management (Capstone)
Identify ethical issues associated with preparing management plans.

Standard III: Forestry Program Organization and Administration

III.1. Document that the program is administered by a person carrying the equivalent title and authority of administrators of comparable units in the institution. Present an organizational chart of the forestry program, showing its relationship to the institution's central administration.

The organizational structures of the University of Kentucky, the Lexington campus, and the College of Agriculture are presented on the following pages. The University of Kentucky is administered by the President (Dr. Lee Todd Jr.) who is responsible to a 20-member Board of Trustees. The College of Agriculture is one of the 15 academic colleges on the Lexington campus (Dr. Kumble Subbaswamy, Provost). The Department of Forestry is one of 11 academic departments in the College of Agriculture, administered by Dean M. Scott Smith. Other academic departments of the college are agricultural economics, agronomy, animal sciences, biosystems and agricultural engineering, community and leadership development, entomology, horticulture, landscape architecture, plant pathology, and veterinary science. Each department is responsible for programs of undergraduate and graduate instruction, research and extension, with full integration of faculty assigned to these functions within the department. Departments are administered by chairs who are appointed for six-year terms, subject to renewal following six-year Institutional Review. The Graduate School of the university (Dr. Jeannine Blackwell, Dean) is administered through the vice president for research and graduate studies, who reports directly to the president.

The organization charts for the college and department are included in Appendix B. It is helpful to summarize the administrative structure by a reverse flow method. Department chairs report directly to the dean the College of Agriculture or, when appropriate, indirectly through functional associate deans for research, extension and academic programs. The dean of the College of Agriculture reports directly to the provost, who is directly responsible to the president of the University of Kentucky. In terms of its actual operation, the administrative structure is quite open and informal. Department chairs work closely with, and have ready access to, the dean and associate deans. Academic units are tied to the graduate school through a director of graduate studies for each graduate program. In the Department of Forestry this responsibility is currently fulfilled by Dr. David Wagner.

The responsibilities of the department chair are described in the Governing Regulations of the university (GR VII.B.5.). Excerpts of these regulations are quoted below:

> *The department chair leads the department faculty in its development of policies on such matters as academic requirements, courses of study, class schedules, graduate and research programs, and service functions.*
>
> *The chair has administrative responsibility for implementing the department's policies and programs within the limits established by these Governing Regulations, the*

Administrative Regulations, University Senate Rules, Rules of the Graduate Faculty, the rules of the college, and the rules of any school of which it is a part.

The department chair is responsible for recommendations on the appointment of new faculty employees of the department, promotions, reappointments, terminal appointments, post-retirement appointments, the granting of tenure, and decisions not to reappoint.

The department chair is responsible for the periodic evaluation of department members by procedures and criteria established by the University, the college, and the department faculty.

The department chair submits the budget request for the department and administers the budget after its approval. The chair also is responsible for making recommendations on salaries, salary changes, and distribution of effort.

The chair shall speak for the department.
(Source: www.uky.edu/Regs/files/gr/gr7.pdf)

In budgetary matters, the chair has authority to allocate state and federally supported resources for support funds, support personnel, and physical facilities within the department. Allocations of funds to support the teaching and research programs of individual faculty members are made annually through a simple and somewhat informal procedure. Each faculty member annually develops a teaching, research, and/or extension budget request. These are usually quite realistic and reasonable. The chair must then distribute available funds to teaching programs, approved research projects of the Kentucky Agricultural Experiment Station, and extension programs. This system also provides the chair with some degree of flexibility to address special needs (e.g., a faculty member with rather urgent requests for start-up funds for new teaching responsibilities and/or research materials not currently available in the program). Overall budget reductions in the past two years have shrunk the operating pool, and faculty vacancies have reduced the total requests accordingly. Research funds obtained through outside grants to faculty members are administered entirely by the grantee(s) within agency and university guidelines.

There is less program-based authority regarding purchases of non-expendable (major) equipment items and facilities modifications/improvements. Within the department available funds may be used for equipment and facilities needs as appropriate; however, these funds are limited. The College of Agriculture has maintained a support fund for equipment which is distributed based upon availability, need and justification. Additionally, this past year the university has received funding to support major equipment purchases for which all faculty were eligible. The forestry department faculty maintains a list of equipment needs which can be presented upon request and/or at other appropriate times. Major facilities modifications are treated on an as needed basis and support is solicited from all levels of the university. Space is at a premium, and, while space issues are also treated on an as needed basis, the likelihood of obtaining additional space is remote.

In terms of faculty salaries, there is a broadly-distributed and shared decision process among administrative levels. For example, the chair has responsibility for making recommendations of

initial (starting) salaries of new faculty to the dean, tempered by parity, college policy and available funds. In general, such recommendations are approved. Salary increases (raises) are based upon an average salary pool (generally a percentage) based upon legislative allocation and established for the university by the president's office. Based upon this target mean, individual salary increases are allocated according to a merit rating scale based upon an annual (non-tenured faculty) or biennial (tenured faculty) faculty performance evaluation. The college's faculty performance evaluation process allows for a five-rank scale with a college assigned quota for the top rank. Raises are assigned to each merit rating to allow for an overall institutional raise at the target mean.

The chair's most significant input to the process is in assigning a merit rating to each faculty member, based upon review of the individual faculty-generated performance evaluation document. The chair's evaluation utilizes the input of an ad hoc faculty advisory committee; however, the evaluation forwarded to the dean is the chair's alone. The documents are then reviewed by the dean and appropriate associate deans, and any discrepancies between their ratings and the chair's ratings are resolved in conference. Assignment of the final merit rating lies with the dean. Regarding salary levels, the college can receive permission to exceed the university pool (within reason) by re-allocation of its resources to personnel services, on a continuing basis. (However, such a reallocation must come from non-personnel current expenses.) Also, in any year, each faculty member has the right to appeal their merit rating (thus, their raise) and the chair must decide to support, or not to support, this appeal.

In general, the chair has a rather broad range of responsibility with regard to directions and operations of programs, personnel management (including recruitment) and allocation of budgeted resources, but is much more limited in terms of program expansion (especially in regard to adding faculty positions), facilities development, and acquisition of major equipment items (using state or federal funds). These latter functions involve justification, documentation and, to some degree, the ability to compete with other campus units for increasingly limited college and/or university resources.

III.2. Document that high priority is given to quality instruction through faculty appointments, evaluation, and recognition of performance.

The forestry program has a relatively high degree of autonomy in regard to the forestry faculty's responsibilities and authority for establishing requirements for the degrees of Bachelor of Science in Forestry and Master of Science in Forestry. The professional aspects of the forestry degree programs are, in fact, the sole responsibility of the faculty of the Department of Forestry, with the college and university exercising oversight functions to ensure that university requirements are satisfied in the curricula. According to the department's Strategic Plan (2008), the department shall "maintain a distinguished faculty committed to the Department's core purpose and values, and dedicated to achieving the Department's mission through high quality research, teaching, and outreach activities."

Program structure and requirements, course sequences and prerequisites, and any modifications to these are determined by the instructional faculty of the department. Departmental recommendations are forwarded to the college Curriculum Committee for review and approval and then to the university-level Undergraduate Council (Graduate Council for graduate-level issues) and Faculty Senate for final recommendations and approval. It is unusual for college and university committees to question course content or curriculum changes and, if they do, it is usually in regard to non-forestry prerequisites and the impact of these on other teaching units. The most recent (fall 2009) revision of the forestry undergraduate curriculum is in the process of being implemented by the department. The process benefited from college and university review of the final product, which pointed out coordination concerns with other programs.

Selection of faculty (initial appointments) is mainly within the purview of the forestry program faculty. The chair initiates the procedure by securing permission to recruit from the dean of the College of Agriculture. Position responsibilities and requirements are determined by a three or four person faculty search committee, with full faculty approval, and an appropriate position announcement is developed and distributed. Usually, three candidates are selected for interview through search committee screening. Each candidate is interviewed by the chair, all members of the forestry program faculty, and by the college dean and associate deans. In some cases, such as those where a candidate is expected to conduct joint teaching or research with another program, members of that program's faculty will also participate in the interview process. The search committee and chair solicit comments and opinions from the faculty regarding each candidate. The administrator then forwards a recommendation to the dean who, barring any significant reservations on the part of the college administration, approves and grants authority to hire. Terms of appointment (tenure status), starting date and salary are determined mutually by the dean and the chair. Again, according to the department's Strategic Plan, we will fill faculty positions with the most highly qualified individuals identified through nationwide search processes.

Furthermore, the department ensures effective mentoring and professional development of all faculty. Professional development of the faculty is encouraged and supported through sabbatical and other leave programs, through appropriate consulting activities, by encouraging faculty coursework on and off campus, and by encouraging faculty attendance at professional development conferences, workshops, and seminars. The department will seek additional funding to support faculty development, including activities that expose faculty to international issues and opportunities.

The requirements for and conditions of promotion and tenure are outlined in the Administrative Regulations of the University of Kentucky (AR 2:1-1) (www.uky.edu/Regs/files/ar/ar2-1-1.pdf). The actual procedure for promotion and tenure is initiated by the chair after consultation with all tenured program faculty members. Upon the approval of the faculty, the chair prepares a promotion proposal dossier which contains:

1. A letter of application for promotion from the candidate detailing his/her scholarly activities and accomplishments;
2. A complete, detailed resume of the candidate including teaching record and performance evaluations, research productivity (publications, grants obtained, awards and recognition), service to the university, profession and community,

record of annual performance evaluations, and other information bearing upon the candidate's record and potential for continued academic excellence;
3. A Teaching Portfolio (described below) which highlights and emphasizes the candidate's instructional accomplishments;
4. Examples of representative research publications and other scholarly productivity;
5. Letters of evaluation from appropriate referees from outside the University of Kentucky, who have reviewed the candidate's academic record, containing their individual opinions and recommendations regarding the candidate's qualifications (a minimum of 6 outside referees, at least four of whom are selected independently by the unit administrator);
6. Letters of evaluation from all tenured program faculty members (and others within the university as may be appropriate) with their individual recommendations and specific information in support or non-support of the candidate's proposal;
7. A letter of transmittal from the chair to the dean containing specific information regarding the administrator's recommendation to promote/tenure or not to do so.

Upon receipt of the proposal dossier, the dean forwards it to a standing College Advisory Committee comprised of tenured professors and associate professors representing the various disciplinary areas of the College of Agriculture. This committee reviews the document and makes a recommendation to the dean, who may then approve or disapprove the committee's recommendation to promote and/or grant tenure or not to do so. If the dean decides to recommend promotion and/or tenure, or in the case of all sixth-year assistant professors, the proposal is forwarded to the provost who in turn obtains review and recommendation from the appropriate Campus Academic Area Advisory Committee. The campus area committees are permanent committees of the Faculty Senate comprised of tenured full professors in the various disciplines of the university. The Academic Area Advisory Committees that usually review forestry program faculty are those in Biological Sciences, Social Sciences, and extension. Following receipt of the area committees' recommendations, the provost forwards his recommendations to the president for his recommendation to the Board of Trustees for final action.

Thus, there is opportunity for a positive or negative recommendation for promotion and/or tenure at the departmental, college and university levels. This system places prime responsibility on the candidate, and also on tenured faculty colleagues, the chair and the college dean to make a strong case, with adequate documentation, for promotion and tenure of a faculty member. The process emphasizes evaluation by faculty colleagues at all levels.

The impact of the faculty promotion and tenure policies of the university on the forestry program and its objectives is significant and, generally, of a positive nature. The procedure emphasizes objectivity in evaluation of a candidate's teaching and research strengths, weaknesses and potentials by his or her peers, and minimizes subjective perceptions. The system is intended to develop balance of scholarly attainment, including both teaching and research competence, in individuals and in collective program strengths. In practice, it is much easier to present a positive case for an individual who is both an effective teacher and a productive scholar than for one who is clearly excellent in one aspect but severely deficient in the other.

The role of teaching in tenure and promotion decisions has been emphasized since 1992 with establishment of the criteria for a Teaching Portfolio to be included in the promotion dossier. The Teaching Portfolio is designed to provide additional information and highlight instructional accomplishments. Establishment of the Teaching Portfolio requirement has been an important step in emphasizing the importance which the university places upon undergraduate instruction. The Portfolio is described in the Administrative Regulations of the university (AR II-1.0-5) and consists of:

1. A brief reflective statement by the instructor which describes teaching and advising assignments, sets forth philosophies or objectives, and provides whatever information may be necessary to provide colleagues with a context for interpreting and understanding other information;
2. For each semester under review, a list of all courses taught, with the title, course number, number of students enrolled, and - for each different course - a short description;
3. Representative course syllabi;
4. A quantitative and qualitative summary of student evaluations; and
5. Any additional information which may assist reviewers in evaluating the faculty member's teaching accomplishments.

The overall policy regarding tenure and promotion dictates that the forestry program (and all other programs of the university) must devote careful attention and major effort to recruiting and hiring individuals who clearly have the basic skills, enthusiasm and potential to develop effective programs of instruction, research and other scholarly activities. The major challenge to achieving the professional educational objectives of the program is to attract talented faculty, facilitate and encourage the full development of their instructional and research programs, and vigorously support their promotion to a tenured position and their continuing productivity and contributions to program goals. While it is not easy to attain tenure or be promoted at the University of Kentucky, it is the assumption of the faculty recruitment process that faculty joining the university will have the skills and ambition to ensure promotion.

III.3. Document that the forestry program has adequate staff resources with competencies needed to support the students, faculty, and administration.

The non-instructional staff assistance available to the program has improved considerably since 2004. The current administrative/clerical staff consists of four permanent, full-time equivalents (FTE) in Lexington and 0.2 FTE at the Robinson Center in Quicksand, Kentucky. The two secretarial positions in Lexington are entirely devoted to faculty support. There is now a very efficient extension staff associate who serves the needs of the 5.0 FTE extension faculty, and there is an administrative assistant who primarily serves the chair and also assists with the 11.0 FTE (9 filled positions, 2 vacancies) teaching-research faculty. While numbers of faculty utilizing these two positions differ significantly, variation in work load offsets that difference. In 2005 we hired a departmental business manager, and in 2006 we added a senior account clerk

who to assists with management of departmental budgets. The one clerical position (0.2 FTE) in Quicksand serves the needs of Robinson Forest and the Wood Utilization Center.

There are presently 1.0 FTE senior laboratory technician and 2.0 FTE research analyst (technician) positions in the Department of Forestry. Technicians have in the past been assigned to faculty with major components of field, laboratory, and greenhouse research in their programs. However, faculty members increasingly utilize extramural funds to support student workers in their research programs.

In addition, the department has a full-time data systems manager to provide computer assistance to assist faculty and graduate student research, teaching and extension. Responsibilities of the position include setting up and maintaining computer systems and the departmental network, understanding and translating new technologies for faculty and staff, and physical space analysis and inventory management.

A research specialist serves as curator of the University of Kentucky Herbarium which is housed in the Department of Forestry. The curator manages the University of Kentucky Herbarium and provides botanical consulting and plant identification for the College of Agriculture, the wider university community, and the public, as well as teaching courses in dendrology, plant taxonomy and economic botany.

Robinson Forest and the Wood Utilization Center at Quicksand, Kentucky are now part of the Robinson Center for Appalachian Resource Sustainability. This change has occurred since the 2004 SAF Self-Evaluation Report. While the Center provides administrative oversight for Robinson Forest and the Wood Utilization Center, the department still maintains staff and management of the forestry research, teaching, and extension programming at the facilities. The management of Robinson Forest proper is overseen by the Robinson Forest Technical Committee, chaired by the Department of Forestry. The department also maintains equipment, office space at both facilities and lab space at the Forest. The department houses two extension associates and a management forester at the Center, the latter having direct responsibility for assisting in the use and management of Robinson Forest. In addition to the positions referenced above, the department also maintains a research technician at the Forest.

The program faculty member for forest entomology is physically housed and administered in the Department of Entomology. She receives technical and clerical support from that department, and currently employs a full-time technician (research analyst).

According to the department’s Strategic Plan, we will improve recruitment, retention, and remuneration of technical, clerical and professional staff to help ensure the highest quality of support for all programs. Staff positions will be filled with highly qualified individuals identified through competitive search processes. Staff development will be encouraged by providing mentoring where appropriate, and by encouraging participation in appropriate conferences, courses, workshops, seminars and other professional development opportunities. Staff will be appropriately involved in implementing the Strategic Plan and in updating it over time. Superior staff achievement and performance will be recognized and rewarded, and performance

evaluation of staff at the departmental level will be an objective, meaningful, and productive process.

Existing staff members are of high quality and contribute significantly and positively to program objectives in teaching, research and extension. The business manager and account clerk significantly assist with management of departmental budgets. Technical staff members are an essential part of the research program, and the department would probably benefit from additional personnel in this area.

III.4. Present the published procedure for evaluating and accepting students and for transferring credit to fulfill the general and professional education requirements in the forestry curriculum at the bachelor's or accredited master's level. Document that transfer courses, advance placement courses, and courses accepted for students in an accredited master's degree program are equal to or exceed the content and standards of the accepting institution's courses. In accordance with the Family Educational Right to Privacy Act (Buckley Amendment), visiting team members may ask to review files for students to assess compliance in this area.

The forestry program adheres to the general admission requirements for the University of Kentucky. The 2009-2010 University of Kentucky Undergraduate Bulletin is accessed at www.uky.edu/Registrar/Bulletin.htm. Admissions policies are on pp. 13-19. www.uky.edu/Registrar/bulletinCurrent/uga.pdf

The admissions philosophy of the university as listed in the Bulletin:

> *"Consistent with the University's mission of research, service and teaching, the university seeks to enroll and retain an academically talented student body that enriches the learning community and is representative of the diverse society it serves."* (p.13)

Applicants apply to one of twelve colleges within the university. Potential forestry undergraduates apply to the College of Agriculture. Under the current selective admissions policy, admission for freshman applicants is based on high school grades; national college admission test results; and successful completion of the required pre-college curriculum. Applicants submit scores from the ACT or the SAT.

The pre-college curriculum consists of: four English/language courses; three courses each in math (two algebra and geometry), science, and social studies; two in a foreign language; as well as several other individual courses (electives). Minimum requirements include a 2.0 high school GPA, including the pre-college curriculum; no minimum standard test scores are given.

Selective admission criteria for high school GPA and ACT/SAT scores are established by a faculty committee and applicants who meet them are offered admission. Applicants who have completed the pre-college curriculum but do not meet one or both of the other criteria have their

admission deferred. If, after the application deadline, spaces remain in the freshman class, admission is offered to deferred-decision applicants on a competitive basis.

Students from other colleges and universities, including community colleges, may transfer to the university if they would have qualified for selective admission at the time they entered their first institution of higher learning, and provided they have maintained a 2.0 or better grade point average for all college work attempted. Students who would not have qualified for selective admission to the university may transfer after completing 24 or more semester hours with at least a 2.0 grade point average at other institutions. Transfer of credits from fully accredited colleges and universities (a member in good standing of the regional accrediting association) is determined by the Office of Admissions and the Registrar. The university's Transfer Equivalency Database is available on-line (www.iris.uky.edu/TransferEquivalency/) and is a comprehensive database of transfer equivalencies of courses at hundreds of other institutions to courses at the University of Kentucky.

The university Selective Admissions policy was implemented in the 1984-1985 academic year and has resulted in improved academic credentials of admitted freshmen. For the academic year 2008-2009, 80 percent had a high school GPA of 3.0 or higher. The middle 50 percent taking the ACT had composite scores between 22 and 27. SAT scores for the same range were between 490 and 610 Reading, 500 and 630 Math, and 480 and 600 Writing. These ranges have changed little in the years since the 2004 SAF Interim Status Report of the Department of Forestry.

In terms of initial contact, active recruitment of students to the forestry program is handled primarily through the Office of the Associate Dean for Academic Programs. The director of student relations from this office, in conjunction with their Agriculture Ambassador program, meets with prospective students and their parents, both on campus and off. As their interests in forestry emerge, appointments are made with forestry faculty for further interviews and information sessions. The department utilizes opportunities to advertise its undergraduate programs through field days and other settings where potentially interested students and/or parents may gather. The department's director of undergraduate studies plays an important role in recruiting and is the initial contact person for almost all incoming students, usually through an initial meeting before the student applies for admission.

Retention standards for the forestry program are those of the university. Specific information on academic probation and suspension, reinstatement, and readmission for undergraduates is to be found on pages 71-72 of the 2009-2010 University of Kentucky Bulletin. Academic probation results from the cumulative GPA falling below 2.0, or a GPA below 2.0 for two semesters in a row. Suspension results from an additional semester with a GPA below 2.0 when on academic probation.

An undergraduate student must remain on suspension for at least one semester before applying to the dean of their college for reinstatement with evidence they are capable of performing at the level required, while a graduate student may apply for readmission after two semesters. Any student who is academically suspended a second time will not be readmitted to the university, except under unusual circumstances.

The faculty members of the forestry program attempt to maintain student retention at a reasonably high level through a policy of open-door counseling and advisement. Advising responsibilities are important, and often help to avoid problems of probation and suspension. This is especially true in the case of first-year and transfer students from other institutions. The department's philosophy reflects the overall College of Agriculture philosophy, which has been successful.

The university calculates retention rate as the percentage of freshmen (a cohort) entering in the fall who return to college for their second year the following fall. For the ten years ending in 2006 (latest information available), the retention rate has been between 76.4 percent and 80.4 percent, with no discernable trend. Retention rate in the College of Agriculture for the cohort starting in fall 2006 was somewhat higher than the overall university retention rate for that year at 83.6 percent (compared to 76.4 percent).

The university has made graduation rate an important priority, and indeed the rate has risen from six year graduation rates just above 50 percent to a rate slightly above 60 percent of the initial entering first-year class. Information on the fall 2001 cohort in the College of Agriculture shows that graduation rate is somewhat higher than the university as a whole (66.2 percent compared to 61.4 percent).

It is difficult to evaluate student retention in the forestry program, because most of our students are transfers from other institutions or majors. However, it is clear that at all levels of the university significant, continuing efforts are needed to bring graduate rates to a higher level.

III.5. Document that policies and processes for both short- and long-term planning of academic programs detail how periodic reviews and updates are conducted.

Major forces of change are transforming forests and natural resources in Kentucky, the nation, and the world. To thrive in today's environment of change, university-based programs of forestry research, teaching, and outreach must be of high quality in terms of scientific and academic rigor, productive in terms of measured outputs, and innovative in the use of new scientific, teaching, and communications technologies. It is to this end that the Department of Forestry directs its ongoing planning and assessment activities.

A three-tiered hierarchy of planning documents encompasses the programs of the Department of Forestry. The University of Kentucky Strategic Plan is updated and revised every two years as a part of the biennial budget request submitted to the Council of Postsecondary Education, which has oversight for all institutions of higher education in the Commonwealth of Kentucky. The Strategic Plan provides an overall institutional direction for the University of Kentucky, and the programs of the College of Agriculture and the Department of Forestry are developed within that context. The College of Agriculture Strategic Plan develops the college's missions within the context of the university plan and was most recently revised in March 2004. The Department of Forestry's mission and vision provide specific direction for its research, instruction, and extension programs (www.ca.uky.edu/forestry/mission_vision.php).

The development of all of these plans involves a complex process which provides for significant input from administrators, faculty, staff, and students. In all of these efforts, the principle driving force is the desire to identify needs of the Commonwealth of Kentucky and opportunities for the university and its programs to satisfy those needs.

Program planning within the Department of Forestry is a product of the faculty. The department is required by the Administrative Regulations of the university to undergo a Periodic Review every six years during which priorities are established. These are reviewed by an external committee of the College of Agriculture which makes suggestions directed towards overall departmental improvement. The department has also used faculty retreats to set overall plans and policies. The University of Kentucky's Department of Forestry has in this process of planning created an assessment procedure that will hopefully be a stimulus for continued planning.

Curriculum planning is a function of the teaching faculty of the Department of Forestry. The teaching committee is considered to be a committee of the whole consisting of all teaching faculty. As part of the recent curriculum revision, which is currently being implemented, the department conducted an intensive review of the prior curriculum with significant input from employers, producers, students, alumni, and other interested parties. The University of Kentucky's Department of Forestry is in the process of renewing its assessment procedures (see below), which will provide mechanisms that ensure continual curriculum planning.

The Curriculum Revision Committee members (members of the Department of Forestry) met with departmental faculty and external stakeholders to receive input on the revised curriculum. Meetings with these internal and external stakeholders included discussions on general and technical competencies, suggested prerequisites, textbooks, and timing for each course. Information from the internal and external stakeholders was used to create the course descriptions, prerequisites, course learning outcomes, and common threads outlined in the section of this document that addresses Standard II.

The curriculum revision process began by considering the requirements of the university, SAF, published reports, and issues concerning transfer students. This draft was discussed with the entire faculty of the department followed by discussions with our partners external to the university, such as alumni, landowners and agency contacts. A revised draft was again presented to all faculty members who would be affected by the revision of curriculum and to our partners. A final draft was approved by the Department of Forestry faculty and then submitted for formal approval from the university.

Research planning is a departmental function only in the definition of vacant faculty positions and the selection of new faculty. It has been the philosophy of the College of Agriculture and the department that if we can select the best faculty, they will define the appropriate directions for productive research.

Extension planning is a function of the extension faculty who use a variety of retreats and monthly meetings to plan and direct overall extension efforts. Recent accomplishment reports have resulted from these overall planning efforts.

III.6. Document in detail the process and methods for assessing educational outcomes of the specific curricular elements articulated in Standard II. Indicate whether academic and professional goals are being met, the elements most contributing to program success or lack thereof, and the means by which assessment findings are used to enhance program outcomes. Document that the interests of students and external constituents are represented in the assessments.

The University of Kentucky has begun to standardize learning outcomes assessment and learning improvement across degree programs (www.uky.edu/IRPE/assessment.html). Thus, all degree programs will implement at least two complete cycles of assessment and learning improvement by May 2011, according to the following timetable:

Completion Dates	**Assessment / Learning Improvement Activity**
September 2009	Program level student learning outcomes revised and/or updated
December 2009	Assessment strategy in place
January – March 2009	Assessment strategy implemented
April 2010	Assessment results available for faculty reflection and action
May 2010	First cycle completed and improvement plans submitted
May 2011	Second cycle completed and improvement plans submitted
August 2011	Southern Association of Colleges and Schools compliance audit begins

Since the spring 2009 semester, Dr. David Wagner (Department of Forestry Assessment Coordinator) and Dr. Laura Lhotka have been attending workshops of the university's Office of Assessment (www.uky.edu/IRPE/assessment/docs.html) and have been discussing with Dr. Marsha Watson, Director of Assessment, specific issues and strategies appropriate for assessment of small-enrollment programs (such as the forestry program). This coordination with the university's Office of Assessment is intended not only to ensure that the forestry program's outcomes assessment and learning improvement process complies with the university's mandates, but more importantly that our process is useful for continuous improvement of student learning. We note that the recent revision process for the undergraduate forestry curriculum, and the resulting curriculum maps, have been cited by the university's Office of Assessment (in campus-wide assessment workshops for other units) as best-practice examples of planning for assessment and learning improvement activities.

Assessment methods that we have used in the past included, for example, senior interviews, capstone course projects, student presentations, and external stakeholder input. Those methods were sufficient for previous rounds of Society of American Foresters (SAF) reaccreditation review. However, because of the ongoing university-wide implementation of a new assessment system, we will highlight in this self-evaluation report the important features and status of our

implementation of the new system, rather than addressing details of previous assessment activities.

The forestry program submitted its bachelor's and master's forestry program-level assessment plans in December 2009 to the university's Office of Assessment (via the office of the associate dean for academic programs of the College of Agriculture). The undergraduate forestry assessment plan is available to everyone, including our students, at www.ca.uky.edu/forestry/learning2.php. The graduate forestry assessment plan is available at www.ca.uky.edu/forestry/learning.php. The undergraduate forestry assessment plan is also located in Appendix C.

Implementation of the undergraduate forestry assessment plan was initiated by a January 2010 meeting of the Department of Forestry assessment coordinator and the instructors of FOR 150, FOR 350, and FOR 480. These are the three courses in which we will begin the new assessment program. The meeting produced rubrics for the specific learning outcomes to be assessed during the ongoing spring 2010 semester. Those rubrics are available upon request from the department's Assessment Coordinator, Dr. David Wagner.

Three specific features of our assessment plan are worth mentioning here. First, the forestry program's assessment methods will include direct evidence. Examples of direct evidence include program early and late assessments (to measure value added by the undergraduate forestry curriculum), including independent review by several faculty members of capstone course management plans. The university Office of Assessment has advised us that the best direct evidence comes from curriculum embedded assessment. Thus, when possible, we will use as direct evidence work that students are already doing during the normal order of business in their courses (e.g., writing assignments, field exercises, and oral presentations).

Second, in any one academic year, two or three learning outcomes will be assessed. This will permit all eight learning outcomes to be assessed over a three-year period. Such a three-year cycle will allow students who enter the forestry program as freshmen to experience improvements relevant to at least two or three of their learning goals, during their four-year academic career.

Finally, assessment data that are available in time for the final faculty meeting of the 2009-2010 academic year will be distributed to faculty in advance of that meeting. Learning improvement decisions will be generated by that meeting's discussion of the assessment data. Such decisions will be implemented in the 2010-2011 academic year. This same pattern of assessment and faculty review will be followed in subsequent years. However, at least one thing will change when we complete the first three-year assessment cycle and begin the second cycle in year four of the implementation process: direct year-to-year comparisons of early competence, as well as direct year-to-year comparisons of late competence, will begin to become possible for each learning outcome.

Standard IV: Faculty

IV.1. Complete Document C-1, C-2, and Document D; follow the format as presented.

See below for the following SAF forms:

Document C-1: Background Summary for Faculty Reporting to the Forestry Program Head

Document C-2: Background Summary for Faculty Teaching Courses Listed in Forms B-1 and B-2 but NOT reporting to the Forestry Program Head

Document D: Academic Summary for Faculty Reporting to the Forestry Program Head

Document C-1: Background Summary for Faculty Reporting to the Forestry Program Head

Institution Name: University of Kentucky Academic Year: 2009-2010

Official Degree Program Title: Bachelor of Science in Forestry

Official Option Title: Not Applicable

Faculty Member	Academic Rank or Title	Major Field	Highest Degree Held Degree/Year/Institution	Experience (years)		
				Current Institution	Other Institution	Non-academic
Mary Arthur	Full Professor	Forest Ecology	PhD/1990/Cornell University	17.0	2.5	0
Thomas Barnes	Full Professor	Wildlife Extension	PhD/1988/Texas A&M University	22	1	4
Christopher Barton	Associate Professor	Hydrology	PhD/1999/University of Kentucky	7	0	4
Terrence Conners	Associate Professor	Wood Products Extension	PhD/1985/Virginia Polytechnic University	9.5	15	1.2
John Cox	Assistant Adjunct Professor	Wildlife Conservation Biology	PhD/2003/University of Kentucky	10	1	1
Songlin Fei	Assistant Professor	Forest Biometrics and Spatial Analysis	PhD/2004/The Pennsylvania State University	4.5	1	0
Deborah Hill	Full Professor	Forestry Extension	PhD/1977/Yale University	28	4	0
Paul Kalisz	Associate Professor	Forest Soils/Silviculture	PhD/1982/University of Florida	27	0	1
Michael Lacki	Full Professor	Wildlife Ecology	PhD/1984/North Carolina State University	21	5	0
John Lhotka	Assistant Professor	Silviculture	PhD/2006/Auburn University	2	1	0
James Ringe	Full Professor	Forest Economics and Marketing	PhD/1983/Purdue University	26.5	0	0
Andrew Stainback	Assistant Professor	Forest and Natural Resource Economics and Policy	PhD/2002/University of Florida J.D./2006/Florida State University	0.5	4	0
Jeffrey Stringer	Full Professor	Hardwood Silviculture Extension	PhD/1993/University of Kentucky	28.5	0	0
David Wagner	Associate Professor	Forest Genetics	PhD/1986/University of California-Davis	23.5	0	0

Document C-2: Background Summary for Faculty Teaching Courses Listed in Forms B-1 and B-2 but NOT reporting to the Forestry Program Head

Institution Name: University of Kentucky Academic Year: 2009-2010

Official Degree Program Title: Bachelor of Science in Forestry

Official Option Title: Not Applicable

Faculty Member	Course(s) Taught	Academic Rank or Title	Major Field	Highest Degree Held Degree/Yr./Inst.
Larry Grabau	Fundamentals of Soil Science PLS 366*	Professor	Plant and Soil Sciences	PhD/1984/University of Missouri
David McNear	Fundamentals of Soil Science PLS 366*	Assistant Professor	Plant and Soil Sciences	PhD/2005/The University of Delaware
Lynne Rieske-Kinney	Forest Entomology FOR 402	Professor	Forest Entomology	PhD/1995/University of Wisconsin

* PLS 366 is a required course in the revised forestry curriculum.

Document D: Academic Summary for Faculty Reporting to the Forestry Program Head

Institution Name: University of Kentucky Academic Year: 2009-2010
Official Degree Program Title: Bachelor of Science in Forestry
Official Option Title: Not Applicable

Faculty Member [1]	Budgeted Time Allocation (%)				All Courses Taught						
	Teaching	Research	Extension	Other	Title and Course #	Required[2]	Credit Hours	Contact Hours*	Total Enrollment		# of Advisees
									Undergrad	Graduate	
Mary Arthur	28	62	0	10	Forest Ecology FOR 340	Forestry	3	72	36	0	1
					Special Course: Climate Change and Ag. GEN 300^	---	1	13.3	15	0	
					Forestry Seminar: Fire Ecology North America and Appalachian Ecosystems FOR 770^	---	1	14	0	8	
Thomas Barnes	0	0	100	0	---	---	---	---	---	---	---
Christopher Barton	23	75	0	2	Forest Watershed Management FOR 460G	Forestry	3	40	16	0	---
					Data Collection Techniques NRC 320	---	3	120	10	0	
Terrence Conners	0	15	80	5	Computer Applications in Natural Resource Professions FOR 150/GEN 109	Forestry	2	29.3	16	0	---
John Cox	n/a	n/a	n/a	n/a	Conservation Biology FOR 315	Forestry	3	40	35	0	---
Songlin Fei	30	70	0	0	GIS in Natural Resources FOR 599	Forestry	3	96	2	3	---
					Forest Surveying FOR 377	Forestry	1	40	16	0	
					Forest Mensuration FOR 378	Forestry	2	80	16	0	

Form continued on next page

Faculty Member [1]	Budgeted Time Allocation (%)				All Courses Taught						
	Teaching	Research	Extension	Other	Title and Course #	Required[2]	Credit Hours	Contact Hours*	Total Enrollment		# of Advisees
									Undergrad	Graduate	
Deborah Hill	2	0	98	0	Forestry Seminar: Agroforestry Systems FOR 770	---	1	4	0	1	---
Paul Kalisz	94	0	0	6	Forest & Wildland Soils & Landscapes FOR 205	Forestry	4	85.3	29	1	---
					Issues in Agriculture GEN 100	Forestry	3	40	23	0	
					Issues in Ag: Contemporary Problems in Ag. and Natural Res. GEN 200	---	3	40	29	0	
					Forest Measurements FOR 300	Forestry	4	85.3	11	0	
					Forest Ethics FOR 599	Forestry	3	40	17	1	
Michael Lacki	33	47	0	20	Forest Wildlife Management FOR 430	Forestry	3	72	19	1	---
John Lhotka	30	70	0	0	Silviculture FOR 350	Forestry	4	85.3	18	0	---
					Integrated Forest Resource Management FOR 480^	Forestry	5	160	14	0	
					Forestry Seminar: Continuous Cover Forestry FOR 770	---	1	12	0	7	

Form continued on next page

Faculty Member [1]	Budgeted Time Allocation (%)				All Courses Taught						
	Teaching	Research	Extension	Other	Title and Course #	Required[2]	Credit Hours	Contact Hours*	Total Enrollment		# of Advisees
									Undergrad	Graduate	
Rob Paratley	n/a	n/a	n/a	n/a	Silvics and Tree Identification FOR 219	Forestry	3	74.6	12	0	---
					EcoBotany Plants and Human Affairs FOR 325	---	3	40	24	0	
					Taxonomy of Forest Vegetation FOR 375	Forestry	1	40	16	0	
					Taxonomy of Vascular Plants NRC 420G	---	4	114	11	0	
					Forestry Seminar: Fire Ecology North America and Appalachian Ecosystems FOR 770^	---	1	14	0	8	
James Ringe	70	0	0	30	Map Reading & Photogrammetry FOR 200	Forestry	2	61.3	17	1	42
					Wood Technology & Utilization FOR 360	Forestry	4	69.3	18	0	
					Harvest and Utilization of Wood FOR 379	Forestry	2	80	14	0	
					Timber Management FOR 425	Forestry	4	85.3	17	0	
					Integrated Forest Resource Management FOR 480^	Forestry	5	160	14	0	
Andrew Stainback	30	70	0	0	---	---	---	---	---	---	---
Jeffrey Stringer	7	0	81	12	Silvicultural Practices FOR 376	Forestry	2	80	14	0	---

Form continued on next page

Faculty Member [1]	Budgeted Time Allocation (%)				All Courses Taught						
	Teaching	Research	Extension	Other	Title and Course #	Required[2]	Credit Hours	Contact Hours*	Total Enrollment		# of Advisees
									Undergrad	Graduate	
David Wagner	70	0	0	30	Introduction to Forestry FOR 100	Forestry	3	40	18	0	5
					Forestry and Natural Resource Issues FOR 110/GEN 109	Forestry	1	13.3	12	1	
					Issues in Ag: Contemporary Problems in Ag. and Natural Res GEN 200	---	3	40	22	0	
					Introduction to Population Genetics FOR 461	---	3	40	22	0	
					Research Methods in Forestry FOR 601	---	3	48	0	3	
					Renewable Natural Resources in Global Perspectives FOR 602	---	3	40	0	9	
					Forestry Seminar: University Forestry Teaching FOR 770	---	1	16	0	3	

[1] At institutions without budgeted time allocations by category, the administrator should estimate percentages.

[2] Indicate which accredited curriculum (if any) requires this course.

* Contact hours includes lecture and lab time, if applicable, for the entire semester the course is offered.

^ Course taught with other faculty.

IV.2. Complete Document E: Individual Faculty Information for each forestry faculty member who teaches forestry or forestry-related, professional-level courses required in the curricula.

See Appendix D for faculty CVs.

IV.3. Document that the faculty provide high quality instruction, are empowered to keep the curriculum current and in concert with the program's educational goals and objectives, and provide effective guidance for students.

Individual faculty members are responsible for developing their own courses. There are several processes that engage our faculty in curricular oversight. During the recent curriculum revision process, completed in 2009, faculty shared course syllabi and engaged in discussions regarding improvements in the overall curriculum, but also improvements to how certain content is taught, largely revolving around field versus classroom teaching (experiential learning). As a result, several faculty members will be altering the methods by which certain content is taught to accomplish a successful spring field semester in the junior year. Course syllabi were also used to develop a curriculum map which identifies which courses cover content and skills expected for an SAF-accredited forestry curriculum (see Standard II-Figures II.3.a. and II.4.a.). Finally, a university process for establishing curricular outcomes and assessments specific to each major is currently underway, and has required us to review our curriculum in light of specific learning outcomes. All of these processes have led to significant changes in the forestry curriculum which are expected to improve student learning.

Access to instructional equipment is shifting as the university upgrades traditional classrooms to ‘smart’ classrooms. Most of the classrooms in which forestry classes are now taught have state-of-the-art teaching equipment, in-ceiling LCD projectors, tabletop computers, document cameras, automatic projection screens, white boards and wireless Internet access. For those faculty who have not fully embraced projection of digital materials, overhead projectors and slide projectors are maintained by individual faculty, with departmental resources available to replace light bulbs, etc., as needed. In addition, the department maintains two continually-upgraded microcomputer laboratories, one in the Thomas Poe Cooper Building (forestry building) on campus and another at Robinson Forest. The computer laboratory on the main campus is used extensively by Forestry and Natural Resources Conservation and Management undergraduate students, as well as graduate students. This facility has 17 computers, 2 printers, a plotter and several scanners. The computer laboratory at Robinson Forest contains 15 computers and associated hardware (printers, plotter). The computer laboratories support many classes, including but not limited to Statistics and Measurements I (FOR 250), Forest Ecology (FOR 340), Forest Management (FOR 425), Wildlife Biology and Management (FOR 430), Forest Hydrology and Watershed Management (FOR 460), Integrated Forest Resource Management (FOR 480) and various sections of our graduate student seminar course (FOR 770). The

Robinson Forest laboratory is used extensively in both Forestry and Natural Resource Conservation and Management summer camps. The availability of in-house computer laboratories allows students to have hands-on experience with state-of-the-art analytical tools (simulation models, statistical software, etc.), Internet access, and a GIS database server. The GIS server contains all data layers available from all state agencies in a standard format for use in spatial data analysis. The university has a site license with ESRI for their ARC product line of GIS software used in our classes.

In addition to the two computer laboratories, the University of Kentucky was one of 39 higher education institutions in North America to receive the 2008 HP Technology for Teaching grant. The award included: 21 tablet PCs with expansion bases and travel batteries, a wireless access point, 20 unit laptop cart, 24" printer, digital camera, and multimedia projector. In fall 2008, the awarded equipment was integrated into the curriculum. Room 220 in the forestry building serves as the dedicated lab for the hardware. This project is important to both students and instructors. The technology facilitates the use of immediate feedback assessment software, computer simulations, and field data collection/analysis to enhance student learning. The mobile technology also enhances the spatial and temporal material an instructor can present during lecture or in the field. For example, instructors can improve student learning of abstract concepts by using mobile technology in the field to show simulations of how the forest will change with different management applications. Since the impact of management decisions has a large time-lag component, students can view the forest as it is today and see an immediate simulation of how the forest may look in fifty years based on the management technique applied.

Teaching funds available within the department budget are allocated to individual faculty on the basis of documented need, and are used for travel, field teaching equipment, and other needs. Very recently, the College of Agriculture instituted a mechanism allowing charges to students to cover the cost of field trips. This will generate funds that must be used specifically for teaching travel, and will largely replace departmentally-available funds for support of these activities.

The university-owned Robinson Forest is used extensively for instructional, research, and extension activities. The Forest is two-plus hour drive from campus; therefore, access is somewhat limited by distance and it is used predominantly for summer camp (in the current curriculum) and will be used for the spring field semester (once the new curriculum is in place). Other field sites closer to campus are available for educational field activities such as the University of Kentucky Arboretum, Berea College Forest, and Griffith Woods.

There are also teaching support services outside the Department of Forestry. For example, the College of Agriculture provides teaching workshops for faculty several times per year. At the university level, the Teaching and Learning Center maintains teaching materials, provides teaching-improvement seminars for faculty, and provides tutors for students. In addition, the university Writing Center provides writing support to students for free.

The university library system provides excellent service to students and faculty. The close proximity of the William T. Young Library to the forestry building facilitates use by faculty and students. Continuous upgrades in online bibliographic services have kept pace in improving access to the literature.

Faculty members have attained recognition within the larger university community, such as receipt of the College of Agriculture Master Teacher Award by a faculty member. The forestry faculty consistently has representation on the College of Agriculture Faculty Senate, as well as the university Senate, both important faculty bodies for decision-making that affects curricula. Several forestry faculty members have also participated in peer review of teaching, either by visiting another professor's class to provide constructive critique, or by having their own class critiqued.

IV.4. Document faculty expertise in their assigned areas of instruction; ability and effectiveness in instructing; aptitude for working closely with students; and ability to stimulate independent thinking and provide intellectual leadership.

At the present time, the Department of Forestry has ten faculty, plus one in another department, who have some instructional responsibility for coursework leading to the forestry degree. Overall, this equates to ~2.2 FTEs of instructional effort in the Department of Forestry undergraduate curriculum. We have recently revised the curriculum, which went into effect in fall 2009 with an increase in forestry hours, requiring 2.5 FTEs. Faculty expertise represents a wide array of disciplines, providing for meaningful learning experiences and opportunities in the undergraduate curriculum. Areas of faculty strength and expertise exist in forest management, timber and non-timber products production, forest measurement, forest ecology and biology, wildlife ecology, spatial analysis and forest economics and policy. One faculty member in the entomology department provides instructional assistance (0.10 FTE) to the forestry undergraduate curriculum and serves as a member of the graduate faculty of the Department of Forestry.

Since our last accreditation we have three new faculty, yet the average years of professional experience among our faculty is static (19.4 years versus 19.0 at the last accreditation), with average years in the program of 16.8 years. Among the teaching faculty, the average number of years of teaching experience in the program has stayed approximately the same since the last accreditation (14.4 now compared to 14.6 at the last accreditation), and overall experience in academia among teaching faculty has also remained the same (slight increase from 16.7 at the last accreditation to 16.9 now). At the last accreditation, our teaching faculty included only one member who was a full professor, but now includes 3 faculty (in forest ecology, forest economics and wood utilization, and wildlife). The current faculty has sufficient balance, diversity and strength to maintain the current and newly approved curricula, but will require additional faculty expertise to meet the long-term undergraduate instructional goals and objectives of the department.

In a relatively small department such as ours, the breadth of faculty expertise required to meet the undergraduate accreditation standards for SAF tends to constrain the depth that might be developed in certain research areas. This means that development of comprehensive and viable research and graduate programs must be accomplished through concentration of resources in limited areas of expertise. Program strengths in research and graduate education exist in wildlife

ecology, forest ecology, silviculture and timber management, forest hydrology and watershed management, restoration and reclamation, and forest biometrics and spatial analysis. In addition, our forest entomologist, in the Department of Entomology, enhances the core group of research scientists. Strong support for forestry research and graduate education is provided through expertise in genetics, soil science, plant sciences, landscape architecture, and animal sciences in other departments in the College of Agriculture. Additional faculty strengths in evolutionary ecology and molecular biology are provided by the School of Biological Sciences and the Center for Ecology, Evolution and Behavior and in geological sciences from the Department of Earth and Environmental Sciences.

In the College of Agriculture, all courses are taught by regular faculty, or in some instances, by professional staff with particular expertise. As a result, there is very little formal use of graduate students for teaching in the college. At present, the Department of Forestry has one paid teaching assistant position included in the department's teaching budget. This position, which involves serving as a teaching assistant (TA) for both semesters in a given year, is primarily used for Dendrology (FOR 219) in the fall semester and for another course during the spring semester, typically Integrated Forest Resources Management (FOR 480). These classes have high enrollment and/or a major field component wherein an additional person is needed to conduct the course. Additionally, all graduate research assistants must serve as a TA for one semester to obtain some teaching experience. These teaching experiences are carefully overseen by the faculty member responsible for the course, and the graduate student receives feedback regarding their performance. Further, this practice facilitates interactions between graduate and undergraduate students in the department, which we believe enhances the educational experience of our undergraduates, many of whom become involved in research with graduate students. In addition, some Ph.D. candidates participate in undergraduate education through informal assistance in laboratory sections, and by filling in for lectures when faculty are ill or are away from campus for professional meetings. On occasion, Ph.D. students have volunteered to participate in undergraduate instruction to gain teaching experience and bolster their resumes.

The University of Kentucky, through individual departments, contracts annually to determine faculty allocation of their academic responsibilities under a distribution of effort (DOE) agreement. A university-determined formula is used to compute percentage of effort expended in formal instruction (based on course credits and contact hours) and student advising. In this formula, a 100 percent instructional effort is considered to be 12 credit hours per semester. Faculty responsibilities to research, service, and/or extension determine the remainder of the DOE. Thus, an individual's DOE may vary from year to year in response to shifting teaching load, but at least in the pre-tenure period the DOE fairly closely tracks the expected DOE established for the position at the time of hiring. These DOE percentages are used to calculate the overall ratings in periodic faculty performance evaluations. Through this process each faculty member has a contractual understanding of the time and effort expected in each activity and how it relates to expected performance.

Teaching and research assignments are directly related to the expertise of the faculty member, and reflect the expectations of the department faculty for the fulfillment of each faculty member's academic responsibilities. Shifts in DOE among the three areas (instruction, research and extension) can change significantly over the course of a faculty member's career. For

example, in the Department of Forestry, three faculty members have teaching assignments that comprise 75-94 percent of their DOE. Changes in DOE are made in collaboration with the individual faculty member as teaching assignments are determined. All major changes in DOE assignments (5 percent or greater) during the fiscal year are reflected as a formal revision of a faculty member's DOE.

While formal time allocations are made for instruction and student advising, research, and extension, only in special cases is contractual time formally allocated to other institutional activities (e.g., administrative support). Regardless, professional activities or self-improvement are clearly justified under the broader categories (e.g., attending a scientific meeting is considered to be research).

IV.5. Document faculty involvement in professional development and scholarly activities appropriate to their disciplines.

The University of Kentucky policy on sabbatical leave provides for a six-month (one semester) leave with full pay and benefits, or a twelve-month (full academic year) leave with half pay, following six years of continual service. Faculty may also elect three- or six-month leaves at full or half pay, respectively, following three years of service. During the past five years, the following faculty members have participated in the leave program:

David Maehr (now deceased)	Florida	January 2008-June 2008
Mary Arthur	Kentucky	January 2009-June 2009

The procedure for requesting a sabbatical leave is straightforward. The faculty member submits a proposal to the chair in the form of a letter, stating the purpose of the leave and the expected benefits to the individual's professional development, to the program, and to the university. The chair forwards a copy of that letter to the dean, along with a letter addressing the validity of the request, proposed mechanisms for covering the academic responsibilities of the individual while on leave, and a recommendation for approval or non-approval. The dean may approve the request and transmit the recommendation to the provost, who then submits it to the president for final approval by the Board of Trustees. Upon granting of a sabbatical leave, the faulty member contracts to remain in the employment of the University of Kentucky for at least one year following return from leave. The individual is required to submit a report to the dean of the College of Agriculture, summarizing the leave experience and addressing the benefits derived.

Teaching responsibilities temporarily vacated by faculty on leave are generally assumed by colleagues within the department. In other cases, sabbatical leaves may occur in a semester when the faculty member does not have any teaching responsibility, or the teaching responsibility can be shifted to another semester. Teaching duties have also been assumed by qualified, non-faculty personnel, such as a research specialist. Rarely, a person may be hired temporarily to provide program continuity and be paid by funds released by a faculty member on a one-year leave.

IV.6. Document that the program follows its institution's policies and guidelines in the recruitment and retention of faculty that reflect cultural, ethnic, and gender diversity.

The University of Kentucky, College of Agriculture, and Department of Forestry are committed to a policy of providing employment opportunities to all qualified applicants regardless of economic or social status, and do not discriminate on the basis of race, color, religion, gender, marital status, beliefs, age, national origin, sexual orientation, or physical or mental disability. The university, college, and department are in compliance with Title IX of the Educational Amendments of 1972 which prohibits gender discrimination, and Title VI of the Civil Rights Act of 1964. Efforts to comply with the applicable laws and regulations are coordinated by the university's Office of Institutional Equity and Equal Opportunity. The department is committed to maintaining as diverse a workforce as possible and has an operational philosophy of attracting and hiring the most qualified candidates without reference to gender, race or cultural bias. As per university requirement, the department completes an affirmative action form for every faculty and professional staff search. These activities follow the University of Kentucky's policies and guidelines for recruiting and retaining a diverse faculty and staff workforce.

When faculty vacancies arise, a search committee is appointed that is representative of the diversity of the current faculty. The position is advertised in the major journals for each area of specialty, at all the land grant universities, and on relevant Internet list serves. Positions have also been announced in outlets such as the Association for Women in Science and Journal of Blacks in Higher Education to enhance efforts for the recruitment of women and minorities. The search committee screens the applicants and provides interview recommendations to the chair and faculty, and the top candidates invited for an on-site interview. Upon completion of the interview process, the search committee obtains faculty input and subsequently forwards a recommendation to the chair. The chair provides this input and his recommendation to the dean of the College of Agriculture and if in agreement, an offer is extended to the candidate. If the candidate does not accept the offer, the chair solicits input from the faculty regarding the suitability of the other candidates interviewed, and an offer may be extended to a second suitable candidate. If no suitable candidate is found, the search committee may re-advertise the position and the selection process would be re-initiated.

The general policies and procedures for promotion and tenure of the University of Kentucky are summarized and discussed under the portion of this document addressing Standard III. These procedures are designed to evaluate, recognize, and reward quality teaching, research, extension, and service missions of individual faculty regardless of an individual's race, color, religion, gender, marital status, beliefs, age, national origin, sexual orientation, or physical or mental disability. The distribution of effort agreement for the individual faculty member forms the basis for the expected balance of scholarly achievement among the three activity areas, research, teaching and extension. The promotion and tenure procedure, and the decisions that follow, are heavily based on peer review by department, college, and university colleagues, and upon outside letters of recommendation solicited by the chair. Candidates have the responsibility to provide clear evidence for attainment of excellence in all components of their assigned responsibilities to the university (research, teaching and extension) and demonstrate the potential for continuing productivity and achievement.

An integral component of the promotion and tenure process is the annual performance evaluation. Each year, non-tenured faculty submit a standardized self-evaluation document detailing their responsibilities, activities and accomplishments for the previous year. Included within this document is information detailing, for example, courses taught, student evaluation of performance, research productivity (as measured by project involvement, grant support, scientific papers presented and published, graduate student training), and service to the university, profession, stakeholders and community. These materials are reviewed and rated by the chair based on the relationship between the distribution of effort agreement and productivity in the assigned areas. In this process, the chair seeks input from a committee of tenured faculty peers. All evaluations are further reviewed by the college administration (dean and associate deans) and a final rating is negotiated with the unit administrator. Tenured faculty undergo identical procedures biennially (although they may also opt for review in alternating years as well). Teaching faculty are required to develop and maintain a teaching portfolio that is incorporated into the documentation for periodic performance evaluation, as well as the promotion and tenure dossier.

The periodic performance evaluations are used as an instrument for judging faculty progress toward promotion and tenure, particularly for untenured faculty, and for determination of annual salary increases for all faculty. The chair is mandated to counsel individual faculty following completion of the performance evaluation process and to provide meaningful suggestions for improvement. For untenured faculty, the annual performance evaluation provides a faculty member with a clear understanding of his or her progress toward promotion and tenure. In a situation where marginal performance is noted, it is the chair's responsibility to indicate, and to advise appropriately and as early as possible that unsatisfactory progress is being made. For cases when the faculty member disagrees with the final rating ascribed in the evaluation, there is an established appeals process. Appropriate procedures for the appeal process are communicated to the faculty with specific information as to the timeline for making an appeal. Similarly, there is also an appeals process in place for faculty denied promotion and/or tenure.

In addition to the annual performance evaluation, the chair conducts an assessment of faculty progress toward promotion and tenure two and four years after the initial appointment. A detailed CV and examples of the individual's accomplishments during each of these intermediate reviews help identify strengths as well as areas of potential weakness that can be remedied prior to review for promotion and tenure. Tenured faculty within the unit review the progress of the individual toward promotion and tenure and advise the chair regarding advancement, as well as providing suggestions for improvement. The chair counsels the individual on these reviews and provides a statement of opinion that is incorporated into the faculty member's personnel file.

Standard V: Students

V.1. Complete Document F: Forestry Graduate Employment Summary. Summarize the forestry employment record for the graduates.

See below for the following SAF form:

Document F: Forestry Graduate Employment Summary

Document F: Forestry Graduate Employment Summary

Institution Name: University of Kentucky Academic Year: 2009-2010

Official Degree Program Title: Bachelor of Science in Forestry

Official Option Title: Not Applicable

Post Graduation Status	NUMBER OF GRADUATES FOR PAST FIVE YEARS										
	Yr: 2005		Yr: 2006		Yr: 2007		Yr: 2008		Yr :2009		Total Graduates
	#	%	#	%	#	%	#	%	#	%	
Employed permanent: Forestry	11	79	6	100	4	33	2	29	5	42	28
Forestry-related	1	7			2	17	1	14			3
Other employed					2	17	1	14	1	8	4
Employed temporary: Forestry	1	7					1	14	3	25	6
Forestry-related											
Other employed											
Graduate Study:					3	25	1	14	1	8	5
Unemployed:					1	8					1
Unknown:	1	7					1	14	2	17	4
Total Number and Percentage of Graduates	14	100	6	100	12	100	7	100	12	100	51

V.2. Document that the program follows institutional policies and guidelines in recruiting and retaining motivated and academically qualified students who reflect cultural, ethnic, and gender diversity. Include data for accredited graduate degree students and identifiable pre-forestry students. Use Document G: Student Data Summary to show the total current undergraduate enrollment by class, gender, and race/ethnic diversity; provide those figures for the previous three years and the expected number during the next three years. Show the number of forestry graduates for the last three years and the expected number during the next three years.

The Department of Forestry is quite active (both formally and informally) in recruiting activities. Some of these are in conjunction with the College of Agriculture Office of Academic Programs (with which the department has a very good working relationship) and some occur within the department itself. Additionally, the department is making efforts to significantly expand its recruiting efforts.

The College of Agriculture administers an Agriculture Ambassadors program. Outstanding undergraduate students are nominated for this program each year. If selected, the student receives academic credit for their participation. Among their duties, ambassadors help conduct campus tours for prospective students and must visit Kentucky high schools to recruit students for the College of Agriculture. The Department of Forestry's director of undergraduate studies, at the request of the college, meets with the ambassadors every fall prior to their retreat to explain what forestry is, how it is both similar and different to other Agriculture majors, and outline what types of employment opportunities are available for forestry graduates. Currently, no forestry students are serving as ambassadors, but two have in the past.

The college also hosts events to attract prospective students to its program. Two notable events are the Institute of Future Agriculture Leaders (IFAL) and Ag Roundup. Both of these invite interested high school students to visit the campus and learn more about the college. If some of these students have expressed an interest in forestry, the director of undergraduate studies is contacted and a representative meets with these students. It is the practice of the department to not only meet with these students, but to engage them in some interesting exercise at the same time. Usually, members of the extension staff help out with this and, in the past few years, we have used a hands-on GPS mapping exercise as part of our program.

In addition to formal events, the college also host individual students and their parents for campus visits. Such visit are often coordinated with the Visitor's Center on the central campus. The department's director of undergraduate studies is contacted if a student with an interest in forestry is visiting, and a face-to-face meeting is arranged. These normally last from 30 minutes to an hour and include an overview of the profession, the curriculum, employment opportunities and a question and answer session.

Currently, the department's major avenue for recruitment is extension activities throughout the state. Two major activities that involve school aged children are the Kentucky Forest Leadership Program (a week long summer camp for students entering their junior or senior year of high school) which has resulted in some students majoring in forestry over the years (at least two are currently enrolled). The second is the Wood Magic program which targets grade school and middle school aged children. Both of these programs help make students aware of the profession of forestry and provide interested students with contact information. Additionally, the director of undergraduate studies participated in a job fair at a local high school in December 2008.

When an interested person contacts the department, the director of undergraduate studies sends them an information package with a letter outlining the profession of forestry and its opportunities, a copy of the curriculum, general information (an in-house Discover Forestry brochure and the SAF's Choose Forestry brochure), as well as a copy of the director of undergraduate studies professional card with contact information. The department's Office of Student Services (maintained by the director of undergraduate studies) also conducts 10-20 personal visits with students each year. This may be interested high school students or current University of Kentucky students interested in a major change. This office has a very liberal open door policy that welcomes walk-in visits and inquiries. A more passive avenue of recruiting is the department's Web site which has a section for prospective students (www.ca.uky.edu/students/welcome/forestry.asp). This contains a copy of our brochure, information on university admissions, a link to the College of Agriculture Prospective Students Web page (which includes scholarship information) and information about the university's financial aid programs.

The department recognizes that most of these recruiting activities are reactive and it seeks to be more proactive in its recruiting efforts. On March 27, 2008 the department co-lead a Southern Forestry Programs Recruiting Meeting in Knoxville, TN. This was a gathering of representatives from 11 southeastern forestry programs to discuss past recruiting efforts and to outline a strategy for improving these efforts regionally. One of the early results of this meeting was the creation of the Forestry Recruiting Information Clearinghouse Web site (which is linked to the department's Web site) (www.ca.uky.edu/forestry/recruiting/). This site outlines the findings of the meeting – what recruiting efforts have been found to be effective, and contains information for school teachers, prospective students, and parents about forestry careers and programs. The contact person for this site is Dr. Laura Lhotka, a postdoctoral scholar in our Department of Forestry.

A longer term outcome of this meeting has been the development of a recruiting survey for students already enrolled in forestry programs in the southeast. The University of Kentucky and The University of Tennessee have worked together to develop and administer the forestry recruiting survey. In spring 2009, Dr. Lhotka conducted a focus group with representatives of each of the four classes (freshman, sophomore, junior and senior) in our forestry program, as well as six other forestry programs in the South, to obtain information for a survey of existing forestry students. The goal is to ascertain what drew them into forestry as a profession so that relevant and effective recruiting tools can be developed. In fall 2009, Dr. Lhotka presented a draft of this survey to a second set of University of Kentucky forestry students (again representing all four classes) for them to critique. The final recruiting survey was administered to

the southern forestry programs in fall 2009. Results of the forestry recruiting survey will be analyzed in spring 2010. This is a long term project, but one that the department is committed to.

Document G: Student Data Summary

Institution Name: University of Kentucky Academic Year: 2009-2010

Official Degree Program Title: Bachelor of Science in Forestry

Official Option Title: Not Applicable

STUDENTS ENROLLED	Freshman		Sophomore		Junior		Senior		Total Students	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Current Enrollment	2	12	3	5	2	8	2	16	9	41
Last Year	3	6	2	10	3	16	1	11	9	43
Two Years Ago	2	9	2	9	1	11	1	6	6	35
Three Years Ago	2	6	2	10	2	6	0	12	6	34

STUDENTS ENROLLED	TOTAL NUMBER OF STUDENTS					
	African Amer	Asian	Caucasian	Hispanic	Native Amer.	Other
Current Enrollment	1		49			
Last Year	1		50			1
Two Years Ago			41			
Three Years Ago			40			

Projected Total Enrollment for Next Three Years	*Year: 2011*	*Year 2012*	*Year: 2013*
	50	**50**	**50**

GRADUATING CLASS	TOTAL NUMBER OF GRADUATING STUDENTS							
	Female	Male	Afric. Amer	Asian	Caucasian	Hispanic	Native Amer	Other
Current Graduating Class	2	16						
Last Year	1	11						
Two Years Ago	1	6						
Three Years Ago	0	12						

Projected Total Graduates for Next Three Years	*Year: 2011*	*Year: 2012*	*Year: 2013*
	10	***12***	***11***

V.3. Document the program's commitment to quality student advising. Document that advisors are readily available to students enrolled in the program for counsel regarding the student's academic, professional, and career opportunities.

The Department of Forestry enjoys a strong reputation for readily available, quality advising. The advising process begins when a student enters the University of Kentucky. University-wide advising dates are schedule at the beginning of each semester for transfer and re-admitted students, and throughout the summer for entering freshman. These dates are known in advance and are circulated among the faculty by the director of undergraduate studies. Willing and available faculty members volunteer to cover these dates. Initial advising for students with a major in the College of Agriculture occurs at a central location. At this time, the student meets with the forestry advisor and develops a schedule for the next semester. It is the policy of the department to allow the student to retain this faculty member as their academic advisor or, if the student wishes, to change to another faculty member.

Advising for students already attending the University of Kentucky occurs during a four week period each fall and each spring semester. Advisors electronically fill an Outlook calendar with the times they are willing to advise and the students go online to sign up for an advising time. This process is coordinated through the College of Agriculture Office of Academic Programs. Once the student has a completed schedule signed by their advisor, the college electronically admits them to the on-line registration site. Students have time frames based on completed credit hours within which they can register. For the majority of forestry students, this is sufficient access to advisors. Students who need further advice during the semester or who encounter problems have found their advisors to be readily accessible. Additionally, the department's Office of Student Services, maintained by the director of undergraduate studies, has a very liberal open door walk-in policy. Students can usually get their questions answered almost immediately. Should the situation required deferment to the college level, the Office of Academic Programs is also accessible and maintains a similar open door walk-in policy.

Forestry advisors work closely with students to keep them on track for graduation. It is a common practice to outline a student's plan of study in advance, so students know when their courses (especially forestry courses) need to be taken. Both advisors and students have electronic access to unofficial transcripts and to the APEX system. APEX stands for Academic Program Evaluation and Xploration. Keeping track of the university, college, and departmental courses that have been completed, allows both students and advisors to keep track of the progress toward graduation and is an effective advising tool. Prior to their last registration before graduation, the college's director of advising services calls each student in to review their academic progress and to make sure students understand what courses they must take during their last semester in order to graduate.

Students who encounter difficulties, both academic and non-academic, have a variety of resources available to them. The college has a director of First Year Success to provide any needed support and assistants to new freshman who encounter difficulties adjusting to college

life. The university maintains a Counseling and Testing Center that is open to students through offered programs and courses as well as one-on-one assistance. The staff is equipped to assist with learning skills, test anxiety, stress management, depression as well as gender and diversity issues.

As with advising, students have multi-level assistance for help with professional and career opportunities. The university's Stuckert Career Center has assigned one of their career counselors to the College of Agriculture on a part-time basis. Students can meet with this individual (or any other career counselor) for help with resume preparation, interview skills, and job searching strategies. Students retain access to the Career Center's on-line resources for a year following graduation.

The college conducts an annual career fair, and the department works with the assigned career counselor to ensure that forestry employers are included in this fair. The career counselor assigned to the college is also invited every fall to talk to the seniors about their employment searches and to acquaint them with the services of the Career Center. On the advice of the counselor, the director of undergraduate studies is planning to move this activity to spring of the junior year. The Student Conservation Association (SCA) also visits the university, college, and department on an annual basis. The department provides a table and space in our foyer for information, and provides the SCA representative access to several of our classes to talk to students about career opportunities through the SCA. Any brochures and information remaining from the visit is left with the department and is available to students in the Student Services office.

The department maintains an employment opportunities bulletin board outside of the Office of Student Services. Permanent and temporary job announcements as well as scholarship and assistantship information are posted in this location. Position announcements are also posted to the departmental Web site, which lists available assistantships, internships and permanent employment announcement.

Standard VI: Parent Institution Support

VI.1. Document the degree to which the parent institution provides resources needed to support the program being considered for accreditation. Document that the parent institution provides adequate funding and other institutional support to:

VI.1.(1) allow the program to attract and retain highly qualified faculty, staff, and administrators.

With respect to faculty resources in the 2006-2009 university Strategic Plan, the university reported that is has met its goal of 2,023 full-time faculty. It has not met the goals for minority faculty or average faculty salary relative to our benchmark medians. The reductions to the present budget (see section 2 below) have resulted in the loss of 188 positions (71 vacant faculty and 117 staff positions) at the university. The Department of Forestry has been affected by these budget reductions and the loss of Robinson Forest Initiative Funding that was mentioned in previous SAF reviews. Since the 2004 SAF review, where it was noted that the department had lost faculty in forest policy, management and economics, forest harvesting, and terrestrial restoration ecology; only the forest policy position has been filled at the present time. The economics and management position was filled but has since been vacated. At the time of the last interim review, a new chair had yet to be hired and potential faculties were to be hired. The department did fill the chair position but it has been vacated and we are in the process of searching for a new chair. In addition, since the last review the department has lost additional faculty in conservation biology, extension mine reclamation and extension recreation. Faculty lines in tree physiology and wood science have been lost. This means the department has lost the five positions that were created by the Robinson Forest Initiative and an additional three other permanent faculty lines. Because of the loss of permanent faculty lines and the new revised curriculum, two faculty positions were converted from research/instruction to nine month contract mostly full-time instructional positions. In addition, a professional staff member teaches four courses a year.

VI.1.(2) provide for elements critical to the learning environment for professional foresters such as computers, spatial information technologies, specialized laboratories, and field instruction.

Classrooms: The university provides lecture and lab facilities for teaching forestry related classes. The forestry department has priority access in three classrooms in the forestry building. Room 109 is classified as a ‘smart’ classroom and laid out for spreading out large maps/samples especially in a laboratory setting. Room 113 is a large regular classroom that has received a makeover this year. New desks, whiteboards, and projection equipment have been installed. Room 212 is a regular lecture room with whiteboards, blackboards, and a projection cart. Projection carts and other instructional assistance are provided by TASC (Teaching and Academic Support Center) (www.uky.edu/TASC/).

Computers: The university offers 16 computer labs on campus, including both Windows PCs and Macs. Computer labs are open to all enrolled students with a 'link blue' account (www.uky.edu/UKIT/clabs.htm). The university provides site licenses for Microsoft Windows and Office software, McAfee antivirus, and other useful software.

Spatial information technologies: The university licenses ESRI software and it is available at many campus labs. Departmental GPS units are used in many classes.

Specialized laboratories: The forestry department operates two computer labs in our building. Room 121 offers 17 seats with computers for students to use for email, homework, etc. It can also be used for instruction. It offers ESRI software, Two Dog inventory software, silviculture prescription software and other forest mapping tools. The lab includes a 42" plotter for printing maps. Room 220 offers a 21 seat classroom equipped with tablet computers obtained through a HP Technology for Teaching Grant in 2008 (www.ca.uky.edu/forestry/HPGrant/). These tablets are used in class field work also. Our department manages the university Herbarium; this facility houses a library of preserved native plants as well as some live plants for instruction in its attached greenhouse.

Field instruction: Robinson Forest (The university's 14,800 acre forest – located 2.5 hours from campus) is used for class field trips and our summer camp courses. Our new curriculum moves the summer camp to the spring semester. These required courses are supported by a computer lab with Internet access. A recent reorganization within the College of Agriculture places Robinson Forest under the direction of the Robinson Center for Appalachian Resource Sustainability (RCARS) instead of the Department of Forestry. This as well as economic shortfalls may somewhat reduce the departmental use of this facility for instruction in the future. The state arboretum is located on campus and is also used for instruction. The arboretum has live examples of all native trees. Walnut Woods is a 16-acre savannah woodland next to campus and is also used for teaching.

VI.2. Compare support for the forestry program, including faculty salaries by academic rank, to other academic units in the parent institution and indicate changes that have occurred or are anticipated in the educational budget. Provide the forestry program budget for the current fiscal year, and indicate by percent how the budget has changed in the last three years in terms of salaries, equipment, supplies, and travel and its relationship to the overall institutional budget. To the extent data for other forestry programs are available, regional comparisons are also encouraged.

Faculty salary comparison data are presented in Table VI.2.a. Overall, average University of Kentucky faculty salary is $106,293, College of Agriculture is $90,965, and Department of Forestry is $76,411. Average salary at the university ranges from $62,219 for College of Social Work to $122,123 for College of Business and Economics, excluding the professional schools such as medicine, dentistry, pharmacy, law, etc. Data show that overall faculty salaries in the

Department of Forestry are below the College of Agriculture and University of Kentucky average salaries. However, salaries at the assistant and associate level are competitive with other forestry schools and regional universities in Kentucky. In the last SAF report faculty salaries in forestry were above the college and university averages and this situation has eroded with average salaries at these levels now slightly below those averages. However, the discrepancy at full professor rank is significant and these salaries are more than 35 percent below the averages at the university level and 25 percent below the College of Agriculture. Furthermore, average full professor salaries at the University of Kentucky in 2008-09 are 22 percent below western forestry schools salaries from 2005-06 and 19 percent below southern forestry schools for the same reporting period. What is quite distressing is that two regional university full professor average salaries are 21 percent and 4 percent higher than full professor salaries in the forestry program. This full professor faculty salary issue is not new and was raised almost two decades ago in the 1991 SAF report. The situation has deteriorated since that time. In the last SAF report, full professor salaries ranked 14th of the 15 southern schools and are now ranked last, by a significant margin, to where full professor salaries were in 1997-98. This is a situation that will require attention and adjustment.

Table VI.2.a. Comparative salary information by faculty rank for the University of Kentucky and other similar programs for 2008-2009.

Salary Comparisons	**Assistant Professor**	**Associate Professor**	**Professor**
University of Kentucky			
Department of Forestry	**$68,548**	**$78,228**	**$82,459**
College of Agriculture	72,113	79,964	109,171
University of Kentucky*	82,219	91,347	127,125
Western Association Forestry Schools	68,178*	79,031	104,961
Southern Association Forestry Schools	67,667	79,035	101,589
Univ. of Louisville Biology Dept.	69,754	83,333	127,120
Eastern Kentucky Univ. Biology Dept.	57,498	69,895	103,641
Western Kentucky Univ. Biology Dept.	62,180	72,380	86,253

All salaries have been adjusted to a 12 month appointment without benefits.
Figures do not include department head/chair salaries.
2008-2009 information and does not include the professional colleges of Law, Pharmacy, Dentistry, or Medicine.
* Represents 2005-2006 data which is the most current information available.

Table VI.2.b. Data on the financial record of the University of Kentucky (expenditures by program and category) for fiscal years 2003-04, 2007-08, and 2008-09.

	2003-04 (in millions)	**2007-08 (in millions)**	**2008-09 (in millions)**
Instruction	$276	$335	$318
Research	231	263	280
Public Service	172	255	285
Libraries	22	24	25
Academic Support	54	86	88
Student Services	23	28	28
Instructional Support	60	114	110
Operations and Maintenance	46	59	61
Student Financial Aid	73	88	94
Health Affairs	322	681	758
Auxiliary Expense	90	119	114
Mandatory Transfer	22	37	45

Table VI.2.c. The College of Agriculture 2008-2009 fiscal year budget by program area. (state and federal funds only and excludes gifts and endowments).

Program Area	**2008-09**
Instruction	$51,485,500
Research	131,933,200
Extension and Public Service	70,755,200

Table VI.2.d. The Department of Forestry 2008-2009 budget by program area.

Program Area	**State Funds**	**Federal Funds**	**Grants / Contracts**	**Other Funds**	**% Change from 2003-04**
Instruction	$453,459	$0	*	$11,000	-5.0
Research	738,518	370,821			-8.3
Extension	400,433	181,381			-23.4

* External grants and contracts vary yearly and the Office of Sponsored Projects reports the department generated $2.1 million in FY 2005, $1.2 million in FY 06, $900,000 in FY 07, $780,00 in FY 08, and $810,00 in FY 09.

Table VI.2.e. State and federal funding for the previous three fiscal years (2006-2009).

	FY 2006-07	FY 2007-08	FY 2008-09
State Funding			
Instruction	$427,608	$467,497	$453,459
Research	716,138	878,754	738,518
Extension	389,772	402,155	400,433
Federal Funding			
Research	576,489	457,309	370,821
Extension	168,126	205,811	181,381

Table VI.2.f. Department of Forestry teaching budget for 2008-2009.

Budget Item	Budget Amount	% of Total Teaching Budget	% Change form 2003-2004
Faculty Salaries	$409,779	87.4	8.6
Teaching Assistants	10,347	2.2	0
Student Wages	16,557	3.5	432
Travel and Current Expense	21,388	4.6	0
Summer Field Camp	11,000	2.3	-83

While the university's overall operating budget has more than doubled in the past decade, gross state revenues, as a percentage of the overall budget, have decreased from 27.4 percent to 14.6 percent. The increase in budget is largely due to student tuition increases which generated $121 million in 2001 and $253 million in 2009; whereas; state appropriations were $224 million in 2001 and $237 million in 2009.

More than a decade ago, the Department of Forestry was suffering from multiple years of state budget shortfalls. In the late 1990's this budget problem was temporarily alleviated with an infusion of funding from the E.O. Robinson Trust Fund. This source of funding allowed for program expansion in all areas: instruction, research, and extension. This funding has now been phased out and the department is back in the familiar position of dealing with on-going budget shortfalls. State instructional funding is down 5 percent from the last SAF report although it was up 16 percent from 1998-99. The extension/public service budget is down almost 25 percent since the last report on top of a decline of nearly 5 percent from 1998-99. The research budget has also declined during the past three years which is a result of fewer state dollars and federal research funding. The teaching budget has remained static with faculty salaries increasing and student wages increasing; however, teaching assistants and current operating expenses have remained static since the 1998-99 SAF report. The large negative budget comparison for summer camp is a result of few students participating in 2008-09.

The majority of instructional funds in the FY 08-09 budget, just as in years past, are dedicated to faculty and student salaries. The remaining funds are marginally adequate to operate the

instructional program at the present level of enrollment and have not increased in more than a decade. While funds for student work have increased, the amount of funding for operational expenses and travel has remained static. To help offset increasing cost of laboratory courses, the university began collecting a $50 lab fee per student enrolled in lab courses in fall 2009. Of the total funds collected, 80 percent will return to the department. Special supplements to operating budgets may be obtained from other budgets in the program through the College of Agriculture Office of Associate Dean for Instruction and the university Dean of Undergraduate Studies.

One significant change that will affect the department budget is the creation of the Robinson Center for Appalachian Resource Sustainability (RCARS). In the past, there were separate budget items for the Department of Forestry, Robinson Forest, and the Wood Center. While each unit was a separate budget item, the Department of Forestry was responsible for budgetary over-expenditures which was as high as $20,000 in some years. With the creation of RCARS, all budgets with respect to Robinson Forest and the Wood Center have been moved to the College of Agriculture RCARS. In the future, all personnel or students will be required to pay to use the facilities, including vehicles, which could impact the cost of summer camp for forestry students. Furthermore, one staff member position was reclassified as extension and that salary will be included in the Department of Forestry extension budget resulting in further pressures in this budget category.

VI.3. Document that faculty is provided opportunities for development and continuing education.

The forestry program does not have a separate fund to support travel and professional development for faculty in the conduct of instruction, research, and extension and for attendance at professional or scientific meetings. Many faculty members use their internal budgets provided from McIntire-Stennis or state research projects, or start up funds to attend such meetings. Attendance at professional meetings is generally not an issue for faculty with research budgets as their budgets have increased since the last SAF report. However, for those with instruction or extension appointments, where budgets have decreased, it has the potential to become an issue. Individual faculty members with outside grants and contracts may use these funds for project-related travel within the guidelines of the grant agreement and this may serve to supplement their travel budgets.

In addition, faculty and graduate/undergraduate students may obtain travel funding from the Office of Associate Dean for Research to support travel to conferences to give presentations. The Office of Associate Dean for Instruction can also provide travel support for the Student Forestry Organization to attend the National or Kentucky/Tennessee SAF meetings. Finally, the university Teaching and Learning Center offers grant programs aimed at helping faculty members attend conferences focused on teaching and student learning.

VI.4. Document that the parent institution provides strong, well-staffed student support programs, and that non-forestry courses and support programs are readily accessible to forestry students.

The University of Kentucky offers a diversity of services available to students of the Department of Forestry. These services are provided at the university and college level. The university's Division of Student Affairs provides student support relating to academics, health and well-being, residence life, and social and recreational activities. The university's dean of Students Office provides both administrative and educational services that support the personal and academic success of students. The office provides extra–curricular, non–academic educational programs and collaborates with academic units to offer support for students in reaching their educational goals. Services made available by the dean of Students Office include those related to emergencies, housing/meal contracts, notaries, sales/solicitation on campus, and student conduct.

The Financial Aid Office offers support to students in the Department of Forestry in many ways. Most of the assistance is in the form of advising and educating students on how to obtain financial assistance. Information is provided to students on applications procedures and deadlines, types of aid available, and eligibility requirements. The university Counseling and Testing Center aids students by providing individual, group, career planning, marital/relationship, learning skills and substance abuse counseling as well as tutoring services. The center provides information, practice opportunities, and administration for national tests such as the ACT, GRE, and GMAT.

The Office of Multicultural Student Affairs (OMSA) helps maintain the University of Kentucky's commitment to embracing difference and promoting increased knowledge of diversity and its significance as a constitutive value of the university community. OMSA provides services needed to ensure the academic success and personal development of all ethnic minority students. Further, OMSA provides cultural programming to promote mutual respect and attributes of global citizenship on the part of students from all backgrounds. The OMSA support program, TriO, is a federally funded program created to support students who are first generation, low income, and/or have a documented disability in transitioning to college life and academics. In addition to supporting the individual as a student, the program works to provide a family environment where the individual can make a connection to other individuals enrolled at the university. Services offered by TriO include personal counseling, academic counseling, career counseling and preparation, graduate school preparation, and academic skills preparedness.

The advising infrastructure at the University of Kentucky is well-developed and the Central Advising Office of the University and College of Agriculture Advising Resource Center provide advising assistance to students in the Department of Forestry. These offices provide in-person support and print materials to aid students with advising questions. The College of Agriculture Advising Resource Center also maintains an extensive Web site that can guide students through the entire advising process. The College of Agriculture has new student orientation and advising workshops for both freshmen and transfer students to attend each summer. Staff take every precaution to be sure faculty are prepared to meet the students and help them make well-

informed decisions during their first semester at the University of Kentucky. The university maintains an intuitive Web interface where students can make appointments with their advisors in the Department of Forestry or access class information, personal records, and registration information.

The university Career Center offers a variety of services to students including individual career advising, computer-based programs for career planning and decision making, a career library with a large assortment of materials on career planning, résumé workshops and critiques, career fairs in collaboration with academic units, referral databases, and career/job search workshops. Interview workshops and job listings, as well as other services are provided for the benefit of the students. The Career Center also offers programs for the faculty that are designed to facilitate faculty development and involvement in the area of career services for students.

The university's Mentoring and Shadowing Network provides an opportunity for students to obtain career guidance from professionals in a variety of industries. The Career Center, Alumni Association, and colleges collaborated to create a database of University of Kentucky alumni, employers, and friends who have volunteered to mentor or provide shadowing experiences for students. The Mentoring and Shadowing Network can help students who are looking for information about a specific career field or for an opportunity to experience a career.

The Academic Enhancement Office houses a number of resources that are available to the entire campus community. Academic Enhancement programs offers several opportunities such as the Study Smarter Seminar, weekly Study Skills Sessions, individual academic consultations, the Absent Professor Program, and the Peer Tutoring Program. Specifically, the tutoring program offers free peer tutoring in various subjects throughout several colleges. The Peer Tutoring Program operates under a model of proactive, preventive, front-end assistance, rather than reactive remediation. The goal is to enhance students' academic experience as early and as often as possible.

The university also has programs in place to help students with their writing and math skills. The Writing Center assists University of Kentucky students, faculty, and staff with the process of writing in any discipline and for any purpose. The Writing center offers free individual and group consultations on any writing project at any stage in the writing process. At the Math Resource Center (Mathskeller), faculty, graduate students, and undergraduate math majors are available to help all students who are currently enrolled in a university mathematics course. The center includes a conference room, a private study room, two large study areas, and a kitchen. The center also has desktop computers, wireless Internet access, and free printing for documents related to math classes.

The university's Information Technology unit provides support to a variety of student technology services, communications systems, and network services. The Information Technology unit offers 16 computer labs on campus that are open to all enrolled students. The Information Technology unit also manages student email and Web servers. The Residence Hall Network lets students connect their personal computer to the university network so they can use email, check student records, search the library database, take online courses, access most academic computing systems, and search the Internet. The Information Technology unit offers computer

training to students and the Customer Service Center and IT Wiki/Knowledge Base Web site are available to aid students with Information Technology issues.

VI.5. Document major strengths and weakness of the parent institution and supporting departments, including breadth and accessibility, and how they affect the forestry program.

The University of Kentucky's seventeen colleges, including five professional schools and the Graduate School support more than 26,000 students. These units offer 138 baccalaureate degree programs, 98 master's degree programs and more than 67 doctoral degree programs. In 2007-2008, the University of Kentucky awarded over 5,800 degrees with 65 percent bachelor's, 23 percent master's, 5 percent doctoral, and 7 percent professional. The University of Kentucky is one of only a handful of universities with both a full-service academic medical center as well as a College of Agriculture on a single campus. The University of Kentucky has a mission to become a Top 20 public research institution. The University of Kentucky has more than 70 programs that are nationally ranked. Fifteen programs are already ranked in the Top 20, ranging from Hispanic Studies to Pharmacy. U.S. News and World Report's 2009 Edition of America's Best Graduate Schools ranked the following University of Kentucky graduate programs in the top half including Rehabilitation Counseling, Social Work, Physical Therapy, and Communications Disorders. The Chronicle of Higher Education ranked the College of Agriculture in the top 10 nationally based on faculty scholarly activity and the Departments of Plant Pathology, Plant Science, Plant Physiology and Entomology were ranked in the top ten. Forestry students often take courses in several of these disciplines.

The Tracy Farmer Institute for Sustainability and the Environment is a cross college initiative that is committed to adopting recommendations of the National Academy of Sciences report on facilitating interdisciplinary research, to leverage and augment existing strengths in environmental science and policy and develop a flexible world class organization poised to address the grand environmental challenges. Campus collaborative institutes and programs that work with the center include the College of Agriculture, The Allman Center for Green Marketing, The Consortium for Fossil Fuel Science, The Center for Applied Energy Research, Kentucky Water Resources Research Institute, Kentucky Geological Survey and the Center for Manufacturing.

In 2008, the dean for the College of Agriculture appointed a Natural Resource Initiative Planning Committee to analyze current limitations and opportunities, and recommend future directions in natural resource sciences. The scope of the Committee's planning encompassed graduate and undergraduate instruction, and interdisciplinary research and extension programs. The report made the following recommendations: 1) natural resources and environmental sciences should be recognized and valued as a strength, 2) enhance the structure of the College of Agriculture such that it encourages and rewards interdisciplinary work in the areas of natural resources and environmental sciences, 3) create a fund of seed money to support the development of interdisciplinary grant activities and interdisciplinary outreach efforts, and 4) create an Institute for Natural Resources and Environmental Sciences with the specific goal of improving the

college's ability to effectively engage in research, teaching, and extension programs focused on natural resources and environmental science and comprised of:

1. a director and staff;
2. an advisory council consisting of faculty, staff, and external constituents;
3. committees that will focus on capacity, organization, degree programs, and communication.

The dean's response to the report was generally positive with respect to the creation of a school of natural resources and his entire response may be viewed at: www2.ca.uky.edu/deanadmin-files/NRESResponse.pdf

The educational, research and extension programs of the Department of Forestry benefit greatly from institutional support from both the university and the College of Agriculture. All levels of administration provide this support, either directly or indirectly, to the faculty, staff and students. Additionally, specialized centers provided and supported by the university and college offer numerous resources that provide excellent support for departmental programs. Several of the support programs provided by these various administrative departments and specialized centers that are particularly important to Department of Forestry faculty and students are described below.

Support for teaching programs within the department is provided by the university's Teaching and Academic Support Center (TASC). This high profile and well-supported center offers personal consultations, self-assessment instruments, library resources, packets of published material that address specific teaching and learning topics, software and hardware for classroom material preparation, a practitioner's database, orientation programs for new faculty, grants, seminars, and workshops. TASC has been used by faculty in the Department of Forestry. Their comprehensive program, Writing Across the Curriculum, has been attended by forestry faculty and introduced into multiple classes as a system for integrative learning and development of writing skills. TASC has been very successful in providing information, tools, and techniques to University of Kentucky faculty, enabling faculty to become more effective teachers. Because of this success the university is giving the Center strong financial support and exposure.

The university's Writing Center provides support to faculty, staff and students. Services and support provided by the Writing Center are offered on site as well as online. Support from the Writing Center concentrates on improving writing, speaking and presentation abilities as well as use of these abilities to foster active learning. These ends are achieved through private consultations, seminars and workshops, specialized projects, extended classrooms, and computer-assisted composition. Students are exposed to the services provided by the Writing Center through information provided to them by their advisors, through the University of Kentucky Web site, and through a pair of excellent introductory classes available to freshman and transfer students, UK 101 and UK 201.

The university Informational Technology unit provides enterprise level support for various campus systems, including the computing and communications infrastructure, directory services, Web services, and high performance computing. It assists faculty to adapt or create courseware

for use in the classroom, on the Web, in electronic presentations, or via multimedia applications. The unit offers online tutorials, resources, short courses and workshops.

The Center for Statistical Computing Support provides valuable assistance for both faculty and staff. The center's staff include statistical consultants that assist with research design, software selection, data analysis and interpretation. The center offers network and on site access to a large assortment of statistical and database software and hardware, as well as numerous databases. Short courses are offered that provide training in the use of resources provided by the center. All center services and resources are available to support and improve student and faculty teaching and research efforts.

The Offices of Sponsored Program Development and Sponsored Projects Administration support the Department of Forestry through assistance to researchers who are seeking funding opportunities, writing proposals, formulating budgets, and administering sponsored projects. The Office of Sponsored Program Development focuses on assisting faculty in attempting to secure extramural funding. The staff provides newsletters and bulletins that detail grant sources, deadlines, mailing lists as well as numerous grant and fellowship databases. They perform funding searches for faculty that cover both external and internal sources. Seminars, workshops, and special events designed to enhance grant writing abilities also are offered. The Office of Sponsored Projects Administration assists faculty in preparing budgets for grant proposals and contracts and provides faculty guidance and assistance to help ensure efficient and legal utilization of funds that have been secured.

VI.6. Document that adequate library facilities, holdings, electronic access to information, and related services are provided.

The University of Kentucky library system consists of 12 major facilities. The libraries have a print collection in excess of 3.7 million volumes, holds over 73,000 current journals and serials subscriptions and a microform collection exceeding 6.4 million pieces. The library is a regional depository for U.S. government information. These materials, as well as British parliamentary papers, Kentucky state government publications, U.N. and European Union depository publications, and over one million technical reports, are available in the libraries' collections. The library has an extensive collection of the U.S. Department of Agriculture publications and U.S. Forest Service research papers, technical notes, and general technical reports.

In addition to the university's library system's print holdings, it also has an extensive collection of electronic documents including 406,014 e-books and 45,450 e-journals. This electronic collection includes 75 full-text forestry and wildlife sciences e-journals. Students can access titles available in electronic format from any university computer including the two computer labs in the forestry building. Students can also access the content from their personal computers through the university campus-wide wireless Internet system or by logging into the university library system from their homes.

The University of Kentucky libraries is a member of the Association of Southeastern Research Libraries and participates in various initiatives, including inter-institutional resource sharing, and

the expedited delivery of interlibrary loan requested materials via courier services through the Kudzu project. The Information Alliance between the Libraries of the University of Kentucky, University of Tennessee, and Vanderbilt University is a cooperative agreement among the organizations to strengthen library user access to regional information resources, and link information experts formally and informally. The university interlibrary loan system can be accessed by students from any computer connected to the Internet.

All holdings of the university library system are reflected in an electronic catalog (InfoKat) and can be searched online. The library system currently subscribes to over 400 electronic databases for reviewing the literature including general scientific search databases such as BIOSIS Previews and Biological Abstracts/RRM, CSA Illumina Databases, Web of Science, and Scopus or more specific databases like Agricola (database of the U.S. National Agricultural Library), CAB Abstracts (includes Forestry Abstracts, Forest Products Abstracts, Review of Plant Pathology and many more), and Wildlife and Ecology Studies Worldwide.

University library staff are available to help students make effective use of the library. They assist students by locating answers to specific questions or by explaining the use of InfoKat, the libraries' online catalog, other electronic resources, journal indexes, and other reference material. The library staff will also assist users in verifying and locating the libraries' periodicals holdings. Staff also lead library tours and instructional sessions for classes and other groups. Individual consultations are available for students. The staff provides self-directed training aids developed for specific majors. Students can find library assistance through the Ask-A-Librarian program that has staff available to answer questions at each library facility's reference desk as well as via phone, email, or through an online chat interface.

The primary library facility serving the Department of Forestry is the William T. Young Library (a five minute walk from the forestry building). William T. Young Library houses the general undergraduate collection and social science, humanities, business, biology and agricultural materials. The William T. Young Library is home to the print copies of all forestry and natural resources related books and journals held by the university library system. The William T. Young Library also provides a diversity of student services. Over 600 computers are available throughout the building and laptops are available for check out. The library facility provides computer ports at each table and a wireless network within the building. In addition, there are 20 group study/seminar rooms available for use. Located in the basement of William T. Young Library, the Hub @ WT's provides library research assistance and IT help in one convenient location. The Hub features over 200 Windows computers as well as a Mac lab for student use. The Hub offers flexible, comfortable furniture for students to arrange to meet their group study needs, including rolling cubicle walls and whiteboards. The William T. Young Library also houses audio and visual services, the Center for Statistical Computing Support, and the university Writing Center.

VI.7. Document that the parent institution, in collaboration with the unit housing the program, provides a physical environment that is safe, healthful, and conducive to learning.

The university has a dedicated Department of Environmental Health and Safety within the Emergency Management division. The division oversees all aspects of safety for faculty, staff and students. They have specific response plans for fire, severe weather, bomb threats, natural gas leaks, hazardous materials emergencies, utility outages, civil disturbances, violence, medical emergencies and suspicious packages. In our building, we work with the environmental health and safety department to make sure the research and teaching labs pass safety inspections and the fume hoods function properly. We develop and implement our emergency action plan to keep employees and students safe. Recently hand-sanitizer dispensers were mounted in our building to arrest the spread of disease. This is just one demonstration of the university's concern for the safety and health of the students.

Most of our courses are taught in the forestry building. The university operates four classrooms there. With our building's age, we have some issues with the teaching environment. The department works through the College of Agriculture's associate dean for academic programs to lobby the university for classroom improvements. We have had a couple of successes in the last few years. Most recently room 113 was upgraded in 2009 with new seats, climate controls, and white boards.

Appendix A.

Revision of the Undergraduate Forestry Curriculum

Revision of the Undergraduate Forestry Curriculum

Department of Forestry
College of Agriculture
University of Kentucky

September 29, 2008

If you have any questions or comments on the proposed curriculum please contact:

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Table of Contents

Introduction

It has been fifteen years since the last revision of the undergraduate forestry curriculum at the University of Kentucky (UK). The needs and expectations of forestry employers and society have changed during this time. Technologies available to foresters have changed as well as need for foresters to effectively address economic, social, and ecological issues surrounding forest resources. (Curriculum Revision Handbook 2006/2007)

Given these changes, the primary goal of the University of Kentucky undergraduate forestry education is to:

> "produce graduates who are 'society-ready,' i.e., capable of dealing effectively with the complex economic, ecological, and social issues involving forest resources today. In Kentucky and beyond, our graduates must be prepared to effectively enhance the integrity, stability, and health of forests and related biotic communities, and to increase the long-term value added, sustainable income, and sustainable flow of services from forests and related resources." (Curriculum Revision Handbook 2006/2007)

The basic objectives for the curriculum revisions are to:

1. "More effectively prepare our graduates for success in meeting current and prospective needs of society and of forestry employers.
2. Meet SAF [Society of American Foresters] accreditation guidelines." (Curriculum Revision Handbook 2006/2007)

Members of the Curriculum Revision Committee have met with departmental faculty and external stakeholders to receive input on the proposed draft curriculum using a process outlined in Figure 1. Discussions with departmental faculty and external stakeholders included general and technical competencies, suggested prerequisites, textbooks, and timing for each course. In addition to discussing the learning outcomes for each course, the committee also identified nine themes or common threads to be reinforced throughout the curriculum. These common threads include collaborative problem solving, communication, ecosystem approach, ethics, forest health and protection, geospatial, human dimensions of natural resources, information literacy, and managerial leadership.

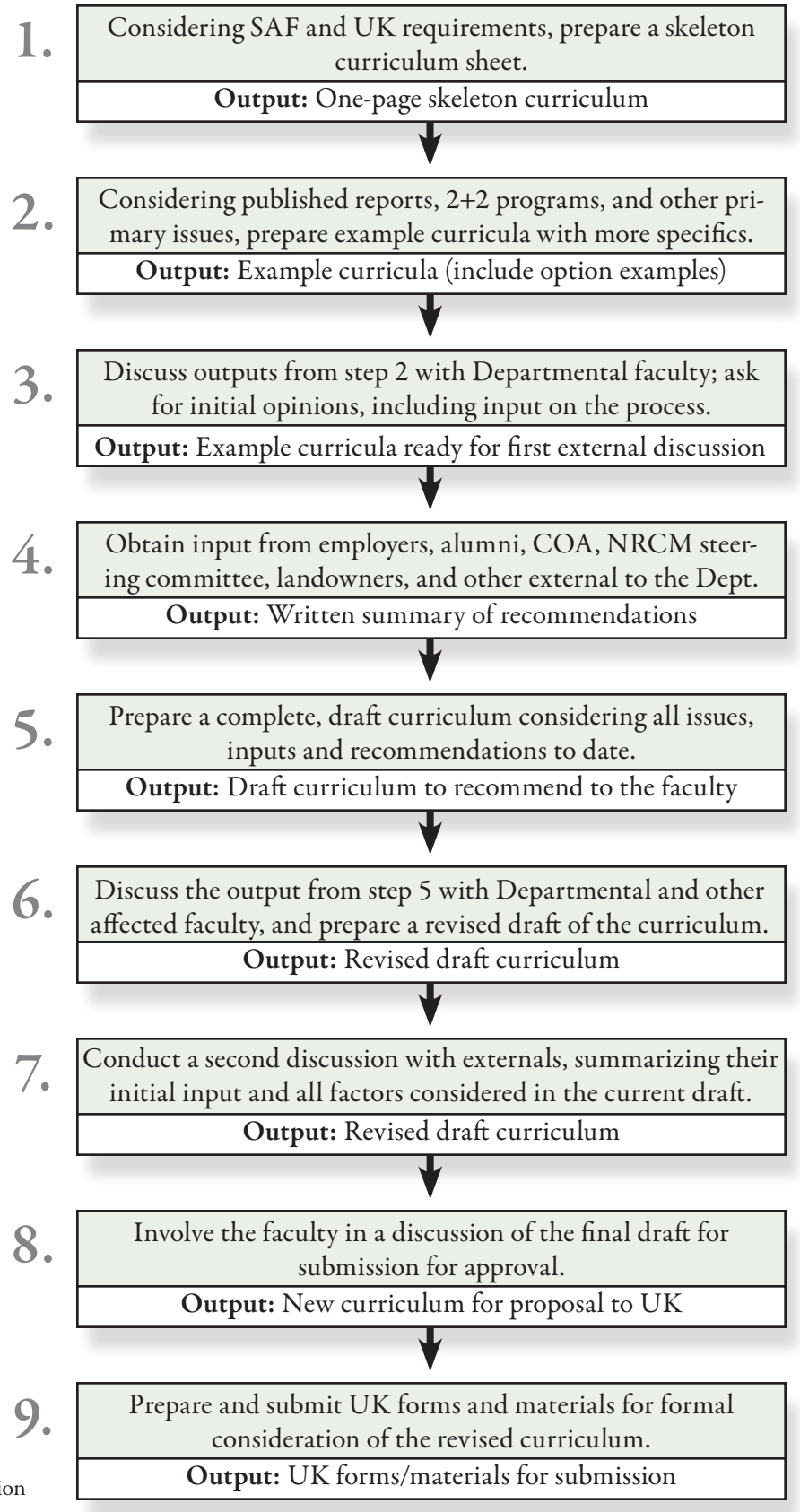
This document provides an overview of the proposed undergraduate forestry curriculum including:

- An outline of the curriculum revision process (Figure 1)
- The proposed draft curriculum (Figure 2)
- Course descriptions, prerequisites, learning outcomes, and common threads (Section 1)
- Spring field semester framework, schedule, course learning outcomes, and suggested activities (Section 2)
- Summary of how the proposed curriculum addresses the Society of American Foresters Accreditation Standards and Pinchot Report competencies (Section 3)

Curriculum Revision Committee Members

Mary Arthur	Laura Lhotka
Steve Bullard	Jim Ringe
Tammy Cushing	Andrea Schuhmann
Paul Kalisz	Dave Wagner
Mike Lacki	

Figure 1. Draft Curriculum Process



Source: Curriculum Revision Handbook 2006/2007

Figure 2. Proposed Curriculum (Version 9/16/08)

Freshman Year

Fall		Spring	
Math - MA 109 or calculus	3	Inference-Logic - calculus or (stats. and logic)	3
Written - ENG 104	4	Natural Sciences 2 - BIO 103 or BIO 150	3
Natural Sciences 1 - CHE 104 or CHE 105	3	Social Science 1	3
GEN 100 Issues in Agriculture	3	Humanities 1	3
FOR 110 Natural Resource Issues	1	FOR 150 Computer Applications in Natural Resource Professions	2
	14		14

Transfer Point

Sophomore Year

Fall		Spring	
FOR 200 Basics of Geospatial Technology	2	PLS 366 Fundamentals of Soil Science	4
FOR 250 Statistics and Measurements I	3	Humanities 2	3
FOR 219 Dendrology	4	FOR 370 Wildlife Biology and Management	4
FOR 230 Conservation Biology	3	FOR 280 Forest Policy **	2
FOR 260 Forest Products and Wood Science	4	FOR 240 Forestry & Natural Res. Ethics **	2
	16	**Half semester policy and half ethics	15

Junior Year

Fall		Spring Field Semester	
FOR 310 Intro. to Forest Health & Protection	3	FOR 355 Forest Fire Control and Use	1
FOR 320 Forest Valuation and Economics	3	FOR 356 Landscape Assessment	5
FOR 330 GIS and Spatial Analysis	3	FOR 357 Inventory and Measurements II	2
FOR 340 Forest Ecology	4	FOR 358 Silvicultural Practices	3
FOR 350 Silviculture	4	FOR 359 Forest Operations and Utilization	3
	17		14

Senior Year

Fall		Spring	
Elective 1	3		
Social Science 2	3	Cross-Cultural	3
FOR 400 Human Dim. of Forestry and N.R.	3	Elective 2	3
FOR 425 Forest Management	4	FOR 470 Interdependent Natural Resource Issues – Analysis and Solutions	3
FOR 460 Forest Hyd. and Watershed Mgmt.	4	FOR 480 Integrated Forest Resource Mgmt.	5
	17		14

University Studies Program Course Code and Name
BIO 103 Basic Ideas of Biology
BIO 150 Principles of Biology I
CHE 104 Introductory General Chemistry
CHE 105 General College Chemistry I
ENG 104 Writing: An Accelerated Foundational Course
MA 109 College Algebra

Total Credit Hours	121
Forestry Hours	84
USP Hours	37

Note: Six hours of foreign language is needed if not taken in high school.

Course Description, Learning Outcomes, and Common Threads

Section 1 outlines by course number the course descriptions, prerequisites (if any), learning outcomes, and common threads of all courses except the spring field semester courses. The spring field semester is described in Section 2.

Curriculum Revision Committee members met with departmental faculty and external stakeholders to receive input on the revised curriculum. Meetings with these internal and external stakeholders included discussions on general and technical competencies, suggested prerequisites, textbooks, and timing for each course. Information from the internal and external stakeholders was used to create the course descriptions, prerequisites, course learning outcomes, and common threads outlined in this section.

The Curriculum Revision Committee identified nine themes or common threads to be reinforced throughout the curriculum. These themes or common threads are based on initial discussions with external stakeholders and the Pinchot Institute for Conservation Report (Sample et al 2000)[1] which examined skills needed to be a successful practicing forester. These common threads include collaborative problem solving, communication, ecosystem approach, ethics, forest health and protection, geospatial, human dimensions of natural resources, information literacy, and managerial leadership. It is anticipated that several faculty will be in charge of the curriculum threads to ensure the common threads are appropriately integrated into the courses.

The **course descriptions** will be the basis for the course descriptions provided in the University of Kentucky Bulletin.

The **course learning outcomes** will be included as part of each course syllabus.

The **common threads** are a guide to show how certain topic areas are covered throughout the curriculum.

1 Sample, V.A., N.E. Block, P.C. Ringgold, and J.W. Giltmier. 2000. The evolution of forestry education in the United States: Adapting to changing demands of professional forestry. Pinchot Institute for Conservation, Washington, D.C. 62 p.

FOR 110 - Natural Resource Issues 1 credits

Course Description

A communication intensive course in which students will learn to research current forestry and natural resource issues, interpret popular press and professional publications, evaluate opposing viewpoints, and discuss issues in a clear, effective and professional manner through oral and written communication.

Learning Outcomes

1. When presented with a natural resource issue, you will be able to analyze the issue from a variety of perspectives. These issues may include human population, invasive plants and animals, fragmentation and parcelization, global and climate change, rural-urban interface, ecosystem services, food production, erosion, water quality, energy use, land use, and biotechnology.

2. When presented with a natural resource issue, you will be able to use the University of Kentucky Library as well as other resources, such as the internet, to find professional publications and popular press items related to the issue. You will be able to read and interpret both popular press material and professional publications and critically evaluate opposing viewpoints on an issue.

3. When given a natural resource issue, you will be able to report various aspects of the natural resource issue through written work and oral presentations. You will develop (or refine) and use communication skills essential for your professional career. The communication components of this course will develop or improve your functional skills to:

a. Prepare and deliver individual and team, informative and persuasive, oral presentations.
b. Work in small teams, which includes identifying team objectives, assigning tasks, monitoring progress, developing collective conclusions, and presenting results.
c. Search electronic databases to acquire information that can be used to define and illuminate issues and questions underlying natural resource debates.
d. Utilize electronic media to prepare, present, and transmit reports and documents.
e. Appreciate the bases for various perspectives of debated resource issues, and critically analyze strengths and weaknesses of arguments presented.

Common Threads

Collaborative Problem Solving - Discuss effective people skills, negotiation techniques, and managerial skills needed by natural resource professionals to effectively address natural resource issues.

Communication - Explain natural resource issues through written work and oral presentations using effective writing styles and presentation techniques to clearly and succinctly discuss the material in a manner appropriate for the audience at hand.

Ecosystem Approach - Describe ecosystem services and ecosystem issues and identify ways to address these issues.

Ethics - Identify ethical issues as they relate to natural resources.

Forest Health and Protection - Discuss forest health issues such as human population, invasive plants and animals, fragmentation and parcelization, rural-urban interface, and water quality and identify ways to address these issues.

Human Dimensions of Natural Resources - Describe the role society plays in framing, causing, and addressing natural resource issues.

Information Literacy - Use the University of Kentucky Library as well as other resources, such as the internet, to find professional publications and popular press items and critically evaluate opposing viewpoints and reliability of the material.

Managerial Leadership - Discuss effective people skills, negotiation techniques, and managerial skills needed by natural resource professionals.

FOR 150 - Computer Applications in Natural Resource Professions 2 credits

Course Description

Use and application of standard computer software to solve problems. Emphasis will be placed on decision processes and algorithm construction. Additionally, students will learn to construct aesthetic graphs, diagrams, maps and other visual material and will gain experience communicating results in a variety of written formats.

Learning Outcomes

1. When given a task, you will be able to explain the decision process and construct an algorithm for accomplishing the task.

2. When given a forestry and natural resource scenario, you will be able to use the computer to build formulas and create spreadsheets to address the scenario.

3. When given a forestry and natural resource scenario, you will be able to use the computer to construct appropriate and aesthetic graphs, diagrams, maps, presentations, and other visual material.

4. When given a forestry and natural resource project, you will be able to effectively and professionally explain the methods and results of the project to different types of audiences through emails, memos, letters, handouts, posters, and presentations.

Common Threads

Communication - When given a forestry and natural resource project, you will be able to effectively and professionally communicate the methods and results of the project to different types of audiences through emails, memos, letters, handouts, posters, and presentations.

Ethics - Recognize the ethical considerations of accurately portraying visual material such as graphs, diagrams, and maps.

Geospatial - Use the computer to construct appropriate and aesthetic maps.

Information Literacy - Identify sources of reliable information from the internet, journals, newspapers, and television.

FOR 200 - Basics of Geospatial Technology 2 credits

Course Description

A basic introduction to the various types of maps and their uses, field navigation skills, and map making. The course is heavily field and laboratory based, with an emphasis on hands-on learning and practice. Both traditional technologies, such as compasses, U.S. Geological Survey maps, and aerial photographs as well as newer technologies, such as global positioning systems and geographic information system databases will be employed in carrying out course exercises.

Learning Outcomes

1. Interpret individual maps (topographic map, aerial photo, field map, soils map, geology map, digital image) and synthesize data from multiple maps to describe a particular site.

2. Demonstrate the correct usage of a compass to find direction and navigate in the field by taking and following azimuths, triangulating, pacing, and setting a declination.

3. Construct digital and hand-written field and land classification maps using compass and pacing, global positioning systems (GPS), topographic maps, aerial photos, field maps, soils maps, geology maps, and digital images.

4. Demonstrate the correct usage of a GPS unit in the field to collect data and construct maps with the data using computer software to make corrections to the GPS data and incorporate GPS data into existing geographic information system databases.

5. Construct aesthetic, accurate maps using your knowledge of proper map design skills.

6. Knowledge of basic geographic information concepts including remote sensing imagery, map projections, and modeling earth.

Common Threads

Collaborative Problem Solving - Work in teams to collect data and solve problems using various spatial technologies.

Communication - Effectively communicate, both written and oral, map components to a general audience.

Geospatial - Use GPS units, describe basic geographic information concepts, and integrate data from various types of digital and paper maps.

Information Literacy - Identify where to find reliable maps for different applications.

FOR 219 - Dendrology 4 credits

Course Description

A study of the basic concepts of botany related to woody species and their use, along with basic soil and site characteristics in the identification of trees and forest vegetation. Laboratory, four hours per week.

Learning Outcomes

1. Explain basic concepts of botany including photosynthesis and light, reproduction, and parts and processes of trees.

2. When given a particular location, you will be able to identify basic soil and site characteristics (topography, aspect, relief, and drainage) and analyze how these characteristics impact tree location.

3. Explain concepts such as natural and human-caused disturbance; reproduction and regeneration; and succession, competition, and tolerance.

4. When in rural and urban settings, you will be able to identify trees and shrubs based on the bark, twig, leaf, flower, and fruit. You will be able to use taxonomy to identify the trees and shrubs using their family, genus, and species name.

5. Differentiate the general distribution of tree types in the United States including eastern deciduous forests, southern forests, boreal forests, northern hardwood forests, western montane forests, pacific coast forests, and other forest types.

6. Describe the role forest history, urban forestry, fire, and forest health have in the United States.

Common Threads

Ecosystem Approach - Identify basic soil and site characteristics (topography, aspect, relief, and drainage) and analyze how these characteristics impact tree location.

Forest Health and Protection - Identify exotic or invasive plant species and describe the role of forest health in the United States.

Human Dimensions of Natural Resources - Explain the role of forest history, urban forestry, fire, and forest health in the United States.

Information Literacy - Identify reliable sources for tree identification and tree reference information.

FOR 230 - Conservation Biology 3 credits

Course Description

The basic history and principles of conservation biology, including diversity, extinction, evolution, and fragmentation. Students will learn the applications of conservation biology to such topics as forest management and wetland management and study the ethical perspectives related to conservation biology, including environmental ethics, deep ecology, and the land ethic.

Learning Outcomes

1. Explain diversity, in terms of both plants and animals, and how diversity is measured, maintained, and eliminated.

2. Describe the history of conservation biology.

3. Describe conservation values and ethical perspectives such as environmental ethics, deep ecology, and land ethic and apply these values and perspectives to conservation biology issues.

4. Analyze extinction and evolution in terms of both plants and animals and its impact on humans and vice versa. Be able to explain extinction and evolution in terms of its impact on genetics and speciation and names. Be able to describe extinction case studies.

5. Describe fragmentation and explain the causes and biological consequences of fragmentation.

6. Explain the role forest management, wetland management, and land use decisions have in addressing conservation issues.

7. Analyze conservation policy, such as the Endangered Species Act, and its impact on conservation biology.

8. When given a case study, you will be able to explain conservation biology issues at the local, regional, national, and global level.

Common Threads

Communication - Communicate the concepts of conservation biology effectively to classmates through discussions of reading assignments. Interpret media coverage of conservation biology topics through written communication.

Ecosystem Approach - Describe the role forest management, wetland management, and land use decisions have in addressing conservation issues.

Ethics - Describe conservation values and ethical perspectives such as environmental ethics, deep ecology, and land ethic and apply these values and perspectives to conservation biology issues.

Forest Health and Protection - Describe fragmentation and explain the causes and biological consequences of fragmentation.

Human Dimensions of Natural Resources - Discuss the role human values and policy play in shaping conservation biology topics.

FOR 240 - Forestry and Natural Resource Ethics 2 credits

Course Description

A study of the key ethical concepts of conservation, preservation, deep ecology, land ethic, spiritualism/religion, and multiple value systems as applied to forestry and natural resource issues. Students will gain an understanding of the ethical dilemmas faced by natural resource professionals, and will be able to identify ways of handling these dilemmas, including application of professional associations' codes of ethics.

Learning Outcomes

1. Describe forest history in the United States.

2. Describe and apply key ethical concepts of conservation, preservation, deep ecology, land ethic, spiritual/religion, and multiple value systems to forestry and natural resource issues.

3. Discuss the origins and history of modern environmental ethics.

4. When given an issue such as wild animals or invasive species, you will be able to discuss the ethical dilemmas related to the issue and how different ethical perspectives frame these issues.

5. When given an ethical dilemma, you will be able to apply professional associations' codes of ethics as a guide for addressing the ethical dilemma. Professional associations include Society of American Foresters, The Wildlife Society, Association of Consulting Foresters, and Forest Stewards Guild.

6. Describe ethical issues professionals face, including public natural resource agencies, and identify ways of handling the ethical dilemmas. Ethical issues professionals may face include honesty, conflict of interest, confidentiality, professionalism, and responsibility to an employer.

Common Threads

Communication - Communicate with classmates through facilitating a round-table discussion and participating in discussions of controversial issues. Conduct oral presentations. Synthesize information into a formal outline.

Ethics - Apply key ethical concepts to forestry and natural resource issues. Describe professional codes of ethics and ethical issues professionals face.

Human Dimensions of Natural Resources - Discuss how human values and beliefs affect how natural resource issues are addressed.

Managerial Leadership - Discuss ethical issues professionals face and identify ways of handling the ethical dilemmas. Ethical issues professionals may face include honesty, conflict of interest, confidentiality, professionalism, and responsibility to an employer.

FOR 250 - Statistics and Measurements I 3 credits

Course Description

The application of statistical concepts, computations, and software to forestry sampling and inventory problems. Land, individual tree and timber stand measurement techniques will be covered as will the design and implementation of sampling systems to derive information necessary to meet landowner objectives. *Prerequisites: MA 109 or Calculus, FOR 110, and FOR 200.*

Learning Outcomes

1. Apply basic statistical concepts to analyze and solve a given problem.

2. When given a particular scenario, you will be able to use basic statistical software programs to input the data and solve the problem.

3. While in the field, you will be able to take land and standing tree measurements using a compass, prism, d-tape, global positioning system, Biltmore stick, and increment borer. Using these tools, you will be able to take land measurements to measure distances and determine area, and take standing tree measurements to determine height, form expressions, crowns, age, volume, and weights.

4. For a given field site, you will be able to design and conduct a timber inventory that meets specific landowner objectives. You will be able to apply sampling theory and design concepts to ensure appropriate sampling methods and units of measurement are used when designing and conducting the timber inventory.

5. When given wood product data, including specialty wood products, you will be able to calculate the weight, volume, and cost of the wood product and, as needed, apply log rules to determine volume.

6. Explain the basic concepts of site, stocking, and density.

7. Explain the basic concepts of growth and yield models.

Common Threads

Communication - Communicate in written form the results and interpretation of data collected.

Ethics - Recognize issues associated with appropriate use and interpretation of statistics.

Geospatial - Use global positioning systems to take land measurements.

FOR 260 - Forest Products and Wood Science

4 credits

Course Description

An examination of basic material properties of wood, methods by which it is used, and issues and economic conditions in which domestic and global wood markets operate. Concepts covered include species identification, chemical and mechanical properties and their effect on utilization, utilization technologies and their linkage to silvicultural practices, and affiliated issues such as recycling, product certification, environmental concerns, and alternative products. Laboratory, two hours per week.

Learning Outcomes

1. Describe basic concepts of wood science including chemical and mechanical properties of wood and wood identification. Use computers to perform calculations related to basic wood science.

2. When given a tree or stand, you will be able to determine which mill process and end product would be appropriate taking into consideration the impact of silvicultural practices, tree health (fire, insects, weather) and cultural practices (stock, treatment, fertilization, water) on wood and product quality.

3. Explain issues surrounding the wood product industry including market and economic conditions, wood technologies, recycling, forest product certification, environmental concerns, and public perception of certain forest products.

4. Describe terms associated with the wood product industry and why different woods are used in wood product processes.

5. Discuss state and regional forest product industry and analyze how global markets may affect the region's forest products industry.

6. Describe various forest products, including agroforestry products, and analyze how different management practices affect the types of forest products in a given area.

Common Threads

Communication - Address public concerns through written and oral communication on different aspects of the forest products industry.

Ethics - Describe ethical issues associated with harvesting and/or processing various forest products and different approaches used to address these issues.

Forest Health and Protection - Determine which mill process and end product would be appropriate taking into consideration the impact of silvicultural practices, tree health (fire, insects, weather) and cultural practices (stock, treatment, fertilization, water) on wood and product quality.

Human Dimensions of Natural Resources - Explain issues surrounding the wood product industry including market and economic conditions, wood technologies, recycling, forest product certification, environmental concerns, and public perception of certain forest products.

Information Literacy - Locate information on new technologies and applications of forest products from sources such as the USDA Forest Service Forest Product Labs or the forest products industry.

FOR 370 - Wildlife Biology and Management

4 credits

Course Description

Applications of basic biological concepts such as physiology, energetics, nutrition, digestive systems, and anatomy to the study of wildlife and wildlife management. In addition to basic wildlife biology, students will also learn taxonomy and identification of wildlife and the principles of wildlife management as well as applied field techniques such as trapping and radio telemetry. Laboratory, three hours per week.

Learning Outcomes

1. Explain basic biological concepts such as physiology, energetics, nutrition, digestive systems, and anatomy.

2. Describe the history of wildlife management in North America.

3. Explain principles of wildlife management, including 1) biogeography, distribution of species, habitat requirements, forest structure, and vegetation type; 2) biodiversity, interactions, and structure; 3) taxonomy, wildlife identification, and natural history; and 4) harvesting theory and population dynamics.

4. Describe and apply correct wildlife field techniques such as trapping and radio telemetry.

5. Analyze public perceptions of a given wildlife current event and describe ways to address public concerns surrounding the current event.

Common Threads

Communication - Express in writing wildlife management concepts to scientific audiences and the public.

Ethics - Describe ethical issues related to wildlife management.

Human Dimensions of Natural Resources - Analyze public perceptions of current events and describe ways to address public concerns surrounding the current event.

Information Literacy - Identify where to obtain current, reliable data pertaining to wildlife.

FOR 280 - Forest Policy 2 credits

Course Description

Examine the political process as it relates to the formulation, analysis, evaluation, and implementation of forest policies. Assess the impacts of various policy decisions and employ the policy process to address such forestry issues as urbanization, fragmentation, demographic shifts, invasive species, global competition, forest certification, climate change, and bioenergy.

Learning Outcomes

1. When given a forest policy, you will be able to explain the political process including how policy is formed, analyzed, evaluated, and implemented. Differentiate between proactive and reactive policy.

2. Identify participants in the political process and explain the role these participants play in the political process. Participants may include government branches (legislative, executive, judicial), government agencies (Dept. of Energy, Dept. of Agriculture, Environmental Protection Agency, Bureau of Land Management, and U.S. Forest Service), interest groups, and media.

3. Explain how various programs, laws, and regulations impact forestry. These programs, laws, and regulations may include public ownership and management of land, federal environmental regulations, wildlife policy, forestry regulations, public assistance for private owners, and global forest policy issues.

4. When given a forest threat or issue at the local, regional, national, or global level, you will be able to explain how current and future policy approaches at the local, state, and federal level can address the threat. You will also be able to explain opposing viewpoints on the threat. These threats may include urbanization, fragmentation, demographic shifts, invasive species, global competition, forest certification, climate change, and bioenergy.

Common Threads

Collaborative Problem Solving - Listen and understand opposing viewpoints and rationally and fairly address a particular issue.

Communication - Address public concerns related to policy through non-technical written documents and oral presentations. Explain communication avenues important in the policy arena.

Forest Health and Protection - Explain how current and future policy approaches at the local, state, and federal level can address forest health issues such as urbanization, fragmentation, demographic shifts, and invasive species.

Human Dimensions of Natural Resources - Explain how policy is used to address forest issues and identify participants in the political process.

Information Literacy - Locate reliable sources of information when faced with policy issues in forestry.

FOR 310 - Introduction to Forest Health and Protection 3 credits

Course Description

Modular course with one-third devoted to forest entomology, one-third to forest pathology, and one-third to other topics such as abiotic agents and invasive species. Identify various agents that affect forest health, assess the impacts of these agents on forest health, and learn different methods for addressing these impacts. *Prerequisites: BIO 103 or BIO 150.*

Learning Outcomes

1. When presented with a forest health problem, you will be able to describe the problem, how it got there, and what can be done about it.

2. Describe the basic concepts and terminology associated with forest health and protection.

3. When given historical forest health issues, you will be able to describe different aspects and consequences of historical forest health issues.

4. When presented with invasive or exotic plants in a rural or urban area, you will be able to identify the plants, describe how they affect the rural and/or urban area, and identify methods of addressing the problem.

5. When presented with a pest or disease, you will be able to identify the pest or disease, describe how it affects forest health and forest products, and identify methods of addressing the problem.

6. Describe forest health issues in urban areas and at the rural-urban interface.

7. Identify the impacts various elements such as fire, wind, water, freeze, and drought have on forest health. Identify the impacts animals, such as deer and elk, have on forest health. Describe different methods of addressing these elements.

8. Describe forest health issues in Kentucky and the region. These issues may include southern pine beetle, gypsy moth, hemlock woolly adelgid, oak decline, emerald ash borer, dogwood anthracnose, and sudden oak death.

Common Threads

Collaborative Problem Solving - Work together to determine management actions necessary to avoid/resolve existing problems locally.

Communication - Address questions landowners and the public may have about forest health issues through written and oral communication.

Ecosystem Approach - Discuss how insect and disease problems alter the landscape.

Ethics - Explain ethical issues associated with forest health and protection.

Forest Health and Protection - When presented with a forest health problem, you will be able to describe the problem, how it got there, and what can be done about it.

Geospatial - Examine digital map projections of the progress of insects and disease.

Human Dimensions of Natural Resources - Discuss how forest health issues impact rural and urban areas and social considerations of dealing with forest health issues.

Information Literacy - Locate reliable information on forest health and protection issues.

Managerial Leadership - Develop skills and knowledge to be a proactive person dealing with forest health issues.

FOR 320 - Forest Valuation and Economics

3 credits

Course Description

Apply economic concepts to silvicultural practices, land values, and values affiliated with various forest uses. Apply supply and demand concepts and financial computations to identify and quantify economic consequences of a silvicultural actions or management practices. Effects of taxation as well as the societal trend toward monetizing ecosystem services will be discussed. *Prerequisites: MA 109 or Calculus.*

Learning Outcomes

1. Apply economic concepts to silvicultural practices, land values, timber values, wildlife, and hunting.

2. When given a forestry scenario, you will be able to apply appropriate economic formulas to address the given scenario and use computer programs to calculate forest economic formulas.

3. When given timber and timberland data, you will be able to estimate the market value of the timber and timberland.

4. When given a silvicultural practice or management plan, you will be able to identify the economic consequences of the particular silvicultural practice or management plan.

5. Describe and apply antitrust regulations to forestry practices.

6. When given a forestry scenario, you will be able to apply supply and demand concepts and identify the impact on timber and other forestry based markets. These forestry scenarios may include forest reserve practices, globalization, consumer preferences, landowner demographics, determinants of timber price, non-timber products and services, market failures and peculiarities of timber products, new market trends, certification, change in forestland ownership, and incentive base policies.

7. Identify how federal, state, and local tax regulations, including property tax, income tax, estate tax, and severance/yield tax, govern the practice of forestry.

8. Identify societal trends toward monetizing ecosystem services and recognize the multiple benefits of forests are often public goods. Be able to explain the difference between value and price.

Common Threads

Communication - Synthesize and analyze forest valuation and economic concepts by writing and presenting the material to diverse audiences.

Ecosystem Approach - Identify societal trends toward monetizing ecosystem services and recognize the multiple benefits of forests are often public goods.

Ethics - Apply professional associations' Code of Ethics to scenarios involving forest economics and valuation.

Human Dimensions of Natural Resources - Apply supply and demand concepts to identify the impact on timber and other forestry-based markets taking into consideration factors such as consumer preferences, landowner demographics, certification, and change in forestland ownership.

Information Literacy - Identify sources for obtaining accurate information on current rates, prices, and taxes.

FOR 330 - GIS and Spatial Analysis 3 credits

Course Description

Principles and operations of Geographic Information Systems (GIS) applied to forestry and natural resources Students will learn to collect necessary field data to create GIS maps and digital spatial data sets, perform basic spatial analysis, and integrate social and economic data to solve spatially related natural resource problems. *Pre-requisites: MA 109 or Calculus, FOR 150, and FOR 200.*

Learning Outcomes

1. Describe the principles of geographic information systems (GIS) including data layers, data models, and map projections.

2. When given a natural resource problem, you will be able to create digital spatial data sets, perform basic spatial analysis, and integrate social and economic data to solve spatially related natural resource problems.

3. Locate and retrieve spatial data sets from public domain sources.

4. When given a field site, you will be able to use a global positioning unit to collect data and integrate the field data into a GIS map.

5. Explain trends in GIS technology and recognize challenges and opportunities related to GIS.

Common Threads

Collaborative Problem Solving - Work in teams to develop GIS projects that address a real-world public concern.

Communication - Communicate spatially related natural resource problems using a map.

Geospatial - Explain the principles of GIS and create digital spatial data sets, perform basic spatial analysis, and integrate social and economic data to solve spatially related natural resource problems.

Human Dimensions of Natural Resources - Integrate social and economic data into GIS maps to aid in addressing spatially related natural resource problems.

Information Literacy - Identify sources of spatial data sets and recognize how they can be applied to the forestry sector.

FOR 340 - Forest Ecology 4 credits

Course Description

The study of the forest as a biological community, covering ecosystem concepts such as energy flow, forest nutrition, nutrient cycling, and decomposition. Interrelationships between trees and other organisms comprising the community is also examined through concepts of disturbance, succession, population dynamics, biological and ecosystem diversity, ecosystem management, and ecosystem services. Laboratory, four hours per week. *Prerequisites: BIO 103 or BIO 150.*

Learning Outcomes

1. Explain human and forest history and have a basic understanding of forestry, forest ecology, forest geography, and forest communities.

2. When discussing the forest as an ecosystem, you will be able to describe ecosystem concepts and processes such as energy flow, forest soils, forest hydrology, forest nutrition, nutrient cycling, and decomposition.

3. When discussing forest community dynamics and population ecology, you will be able to describe concepts and processes such as community ecology, disturbance, forest site and disturbance, succession, fire ecology, population ecology, tree life history, population dynamics, dendrochronology, and invasive species.

4. When discussing the forest and tree environment, you will be able to explain concepts and processes such as structure and function of forest trees; radiation, water and carbon balance; water and trees; temperature and tree growth; biological and ecosystem diversity; and ecosystem management and ecosystem services.

5. When in the field, you will be able to use proper field note taking and data collection techniques. After returning from the field, you will be able to analyze and interpret data using statistics. You will use computers to conduct data analysis and present the data in graph format.

Common Threads

Collaborative Problem Solving - Work in teams in the field to collect, analyze, and interpret data.

Communication - Communicate through written reports methods and results of fieldwork. Give oral presentations using PowerPoint.

Ecosystem Approach - Describe concepts and processes related to ecosystem diversity, ecosystem management, and ecosystem services.

Forest Health and Protection - Describe concepts and processes related to invasive species, disturbance, and forest community dynamics.

FOR 350 - Silviculture 4 credits

Course Description

A study of ecologically based manipulations of forests to achieve desired management objectives. Develop and apply silvicultural prescriptions and learn the effects of these prescriptions on timber and non-timber forest benefits, forest health and biodiversity, soil, and water resources as well as their effect on broader social, economic, and ecological issues. Laboratory, three hours per week. *Prerequisites: FOR 219 and FOR 250.*

Learning Outcomes

1. Describe common silvicultural terms and techniques used in establishing and influencing composition, growth, and quality of forests.

2. When given a silvicultural prescription, you will be able to describe how the silvicultural prescription influences timber production, forest health, biodiversity, soil and water resources, and non-timber products/benefits. You will also be able to describe how the silvicultural prescription influences social, economic, and ecological issues.

3. When given land management objectives, you will be able to develop silvicultural prescriptions using various silvicultural concepts.

4. When given a silvicultural practice, you will be able to analyze the interconnections between biological principles and the silvicultural practice.

5. Describe the ecology and management of forest ecosystems common to Kentucky and the surrounding region.

6. When given inventory data, you will be able to perform statistical calculations for projecting future forest, stand, and tree conditions and use computer simulations to understand temporal aspects of silviculture.

Common Threads

Collaborative Problem Solving - Work in teams to write and present basic silvicultural prescriptions.

Communication - Write and present basic silvicultural prescriptions.

Ecosystem Approach - Explain how silvicultural practices influence timber production, forest health, biodiversity, soil and water resources, non-timber products, and society.

Ethics - Describe ethical issues related to silvicultural practices and be able to address these ethical issues.

Forest Health and Protection - Describe how silvicultural practices affect forest health.

Human Dimensions of Natural Resources - Identify issues and different perspectives forest landowners, government, and the public may have with various silvicultural practices.

FOR 400 - Human Dimensions of Forestry and Natural Resources 3 credits

Course Description

In an issues based format, students will study societal trends and their impact on natural systems, the disconnect between society and nature, wildlife-human interactions, as well as problems related to globalization and urbanization. *Prerequisites: Senior Standing or consent of the instructor. This is a writing-intensive (W) course approved to fulfill the upper tier of the graduation writing requirement (GWR). To receive W credit for this course, you must have successfully completed the first-year writing requirement (ENG 104 or its equivalent) and have completed at least 30 hours of coursework. Forestry majors must complete this course and FOR 470 to fulfill the upper tier graduation writing requirement.*

Learning Outcomes

1. Explain the history of humans and natural resources and how changes in values and trends have altered the use of natural resources.

2. When given a forestry or natural resource scenario, you will be able to identify stakeholders involved, explain different stakeholder perspectives (values and beliefs), and critically evaluate opposing viewpoints. Based on the stakeholders involved, you will be able to describe decision making and public participation options and recognize potential power issues involved in the scenario.

3. When given a situation such as recreation, forest certification, globalization, rural-urban interface, ecosystem services, wildlife, and forest health, you will be able to explain the interconnection between society and natural resources across a range of societies. These situations may involve the role of communities, employment, extractive industries, resource dependency, poverty, land ownership patterns, and property rights.

4. Describe the Tragedy of the Commons and apply this concept to natural resource issues such as forestry, fisheries, and water.

5. Explain the environmental movement in the United States including the role of mainstream, grassroots, and radical groups. This course is a writing intensive course and by the end of the course you will be able to successfully complete the Writing Learning Outcomes. The **Writing Learning Outcomes** include:

   a. Write a paper that is essentially free of mechanical errors (grammar, punctuation, spelling, and syntax) and awkwardness, using a style that is appropriate to the purpose and audience.
   b. Demonstrate an ability to discover, evaluate, and clearly present evidence in support of an argument in the subject area and utilize documentation that conforms to the formats and the citation conventions of the subject area.
   c. Be aware that composing a successful text frequently takes multiple drafts, with varying degrees of focus on generating, revising, editing, and proofreading.
   d. Write a capable, interesting essay about a complex issue in forestry and natural resources for a general university audience.

Common Threads

Collaborative Problem Solving - Recognize collaborative problem solving opportunities and involve various stakeholders in the decision making process.

Communication - Effectively communicate (written and oral) with various stakeholders.

Ethics - Identify moral and ethical issues associated with human dimensions of forestry and natural resources.

Forest Health and Protection - Discuss the social aspects of forest health and protection.

Human Dimensions of Natural Resources - Explain different social aspects of natural resource issues.

Information Literacy - Locate reliable information pertaining to human dimension issues.

FOR 425 - Forest Management 4 credits

Course Description

The principles of sustained yield forest management, management objectives, forest regulation, allowable cut, and timing of timber harvests. Students will identify management objectives for various properties and ownership types and integrate scientific knowledge and both timber and non-timber considerations with landowner objectives to derive management decisions. Laboratory, three hours per week. *Prerequisites: Completion of the Field Semester or consent of instructor.*

Learning Outcomes

1. Apply concepts such as growth and yield, mean annual increment, periodic annual increment, and site quality to forest management decisions.

2. When given a field site, you will use global positioning systems and geographic information systems to create a stand map consisting of various map layers including tree and wildlife layers.

3. When given a field site, you will be able determine what timber needs to be cut, how much should be cut, and when the cutting should occur. You will be able to describe forest regulation terms such as growing stock, annual harvest, volume control, area control, and equivalence acres and perform calculations using these concepts.

4. When preparing a forest management plan, you will be able to identify management objectives for various properties and ownership types and integrate scientific knowledge with landowner objectives.

5. When given data, you will be able to use linear programming to determine harvest scheduling and rotation.

6. Apply non-timber considerations such as wildlife, water quality, and recreation to forest management decisions.

7. Identify the key components of a forest management plan and explain how to prepare a professional forest management plan.

8. Integrate financial analysis into forest management decisions.

Common Threads

Communication - Describe how to prepare a professional forest management plan and prepare sample components of a forest management plan.

Ethics - Describe ethical issues associated with preparing management plans.

Geospatial - When given a field site, you will use global positioning systems and geographic information systems to create a stand map consisting of various map layers including tree and wildlife layers.

Human Dimensions of Natural Resources - Apply non-timber considerations such as wildlife, water quality, and recreation to forest management decisions.

FOR 460 - Forest Hydrology and Watershed Management

4 credits

Course Description

Principles and techniques involved in watershed management as it relates to the practice of forestry. Emphasis is placed on understanding the hydrologic cycle, plant-soil interactions from a land-use and landscape perspective, and the need for implementation of forestry best management practices. Laboratory, three hours per week. *Pre-requisites: CHE 104 or CHE 105, MA 109 or Calculus, FOR 200, and PLS 366.*

Learning Outcomes

1. Use your knowledge of the hydrologic cycle to explain how climate, soils, vegetation, and land-use affect the amount, timing, and quality of water.
2. Explain the plant-soil water relationship from the hydrologic perspective.
3. Explain hydrologic interactions from a land-use and landscape perspective.
4. Comprehend the need for forestry best management practices in relation to hydrology and watershed management.
5. Quantitatively measure and calculate hydrologic variables and describe analytical procedures for evaluating precipitation, evapotranspiration, infiltration, and stream flow.
6. Analyze current issues in watershed management in relation to social and economic impacts.
7. Interpret hydrology data and graphs as related to hydrology and watershed management.

Common Threads

Communication - Express through written and oral communication forest hydrology and watershed management issues.

Ethics - Discuss watershed issues within the context of the water-land ethic.

Human Dimensions of Natural Resources - Identify social impacts of watershed management.

Information Literacy - Locate accurate information related to water resources.

FOR 470 - Interdependent Natural Resource Issues

3 credits

Course Description

Culmination of the student's study of public concerns and problems related to natural resources. Working in teams, students will learn to find and verify information on diverse topics, listen to and address public concerns, communicate natural resource information to a wide range of audiences, and be effective professionals in working toward solutions. *Prerequisites: Senior Standing. This is a writing-intensive (W) course approved to fulfill the upper tier of the graduation writing requirement (GWR). To receive W credit for this course, you must have successfully completed the first-year writing requirement (ENG 104 or its equivalent) and have completed at least 30 hours of coursework. Forestry majors must complete this course and FOR 400 to fulfill the upper tier graduation writing requirement.*

Learning Outcomes

1. Describe professional and leadership skills needed to be a 'Society Ready' forester and demonstrate effective habits and leadership skills of professionals.

2. Explain effective methods for alternative dispute resolution and be able to identify and address stakeholders involved in a dispute.

3. Demonstrate effective listening and communication skills and be able to address diverse audiences such as landowners, government agencies, media, and scientists.

4. Analyze different social, economic, and ecological approaches to address forest health issues or threats. Forest health issues and threats may include requirements of a healthy forest ecosystem, invasive plants and animals, fragmentation and parcelization, changes in land ownership patterns, global change, climate change, and pollution.

5. Analyze (based on readings, class discussions, and previous courses) issues that cause a disconnect between society and natural resources.

6. Broadly describe how to manage forest ecosystems to meet ecological, economic, and social needs. This includes incorporating conservation biology concepts and the influence of urban areas and communities on forest ecosystems.

7. Communicate forestry concepts to youth using programs such as Project Learning Tree.

8. This course is a writing intensive course and by the end of the course you will be able to successfully complete the Writing Learning Outcomes, which include - (a) Write a paper that is essentially free of mechanical errors (grammar, punctuation, spelling, and syntax) and awkwardness, using a style that is appropriate to the purpose and audience; (b) Demonstrate an ability to discover, evaluate, and clearly present evidence in support of an argument in the subject area and utilize documentation that conforms to the formats and the citation conventions of the subject area; (c) Be aware that composing a successful text frequently takes multiple drafts, with varying degrees of focus on generating, revising, editing, and proofreading; and (d) Write a capable, interesting essay about a complex issue in forestry and natural resources for a general university audience.

Common Threads

Collaborative Problem Solving - Explain effective methods for alternative dispute resolution and identify and address stakeholders involved in a dispute. Work in teams to collaborate with specialists to address issues.

Communication - Develop effective listening skills and be able to address diverse audiences. Use written and oral communication to explain forest related threats and solutions and address public concerns.

Ecosystem Approach - When given a forest ecosystem from the local to global scale, you will be able to broadly describe how to manage the system to meet ecological, economic, and social needs.

Ethics - Describe various ethical issues foresters face in terms of forestry and natural resource issues.

Forest Health and Protection - When given a forest health issue or forest threat, identify different social, economic, and ecological approaches to addressing these issues.

Geospatial - Discuss forest ecosystems from the local to global scale. Use and/or construct maps to aid in discussion of forest issues.

Human Dimensions of Natural Resources - Broadly describe how to manage forest ecosystems to meet ecological, economic, and social needs. Identify issues that cause a disconnect between society and natural resource.

Information Literacy - Locate accurate information on diverse natural resource topics from various sources.

Managerial Leadership - Develop professional and leadership skills needed to be a 'Society Ready' forester. Identify and develop effective habits and leadership skills of professionals. Explain Roberts Rules of Order.

FOR 480 - Integrated Forest Resource Management

5 credits

Course Description

This is the other capstone course in the forestry curriculum. Students will be presented with a real life management scenario in a forested location in Kentucky. Working in teams, students will collect data, determine management objectives, and develop action plans for managing the forest according to the desires of the owner, subject to realistic legal, economic, ethical, and social constraints. Students will be required to produce a professional management plan and present the plan in a public forum at the end of the semester. *Prerequisites: Completion of Field Semester, FOR 425, FOR 460, and Senior Standing.*

Learning Outcomes

1. Relate your knowledge of forestry concepts with information collected on a forested property to design and implement a comprehensive inventory proposal, including describing a property's biophysical properties, historical and present land use by using land records and legal descriptions.

2. Relate your knowledge of forestry concepts with information collected on a forested property to develop a detailed management prescription incorporating the landowner's objectives and administering the objectives in light of ethical forestry and stewardship guidelines.

3. Demonstrate effective interaction skills and professional conduct with various types of landowners and the public.

Common Threads

Collaborative Problem Solving - Work in teams to develop management plans.

Communication - Prepare a professional written report and communicate technical information to non-technical audiences.

Ecosystem Approach - Understand the ecosystems and recognize relationships and trade-offs among forest resources.

Ethics - Identify ethical issues associated with preparing management plans.

Forest Health and Protection - Recognize forest health and protection issues on the forested property. Incorporate health and protection issues into the management plan.

Geospatial - Reinforce and further develop spatial literacy skills by incorporating maps into the management plans.

Human Dimensions of Natural Resources - Develop a detailed management prescription while incorporating the landowner's objectives and administering the objectives in light of ethical forestry and stewardship guidelines.

Information Literacy - Understand where to obtain information to complete a management plan including the courthouse, internet, and library.

Managerial Leadership - Apply professional and leadership skills to preparing the management plans.

Field Semester

This section describes the overall concept of the field semester, course descriptions, course learning outcomes, and suggested activities for each week. Activities for the field semester may change depending on instructors, weather, and new opportunities.

Field semester information was collected through individual meetings, primarily with members of the Department of Forestry teaching faculty. Several faculty mentioned specific learning outcomes to be covered in the field semester and suggested activities to accomplish these learning outcomes.

The basic framework for the field semester is shown in Figure 3. Figure 4 shows how the field semester framework fits with the University of Kentucky Spring Semester schedule.

During the first few days of the field semester, prior to the first full week of class, students will participate in team-building exercises to build trust among the students and develop leadership skills.

Throughout the spring field semester, students will visit numerous sites to see different ecosystems in the region. Students will periodically return to one site, or sample property, that will be used for in depth analysis to show integration and application of field semester concepts.

Not all sites students visit will be "model" sites. Some sites may have best management practices that were violated. This will allow students to think critically about a property, observe both good and bad practices, and discuss what could have been done differently.

Visits to field sites will be carefully coordinated to maximize information learned at a particular site. Learning outcomes will be integrated throughout the semester at different field sites. For example, if students visit Mammoth Cave to learn about soils and hydrology, they would also learn about how the land is managed for recreation, forest health issues, fire history, etc.

The prerequisites for the field semester include:

> *FOR 150, FOR 219, FOR 250, FOR 370, FOR 330, FOR 340, FOR 350, PLS 366 or consent of the field semester coordinator. Completion of the Field Semester will lead to the following certifications: U.S. Forest Service Red Card, Kentucky Master Logger, Herbicide and Pesticide Applicator.*

Figure 3. Field Semester Framework

Red Card Fire Certification

One week Red Card Fire Certification taught by the U.S. Forest Service

Dendrology, Inventory and Measurements, Wildlife, Soils, Hydrology, Health and Protection, Wood Utilization, Fire, Geospatial

Landscape Assessment

- Dendrology (Winter)
- Wildlife
- Soils
- Hydrology
- Health and Protection
- Inventory and Measurements

Integration: Use geospatial techniques to map layers and create a site assessment report on sample property.

Silvicultural Practices for Multiple Use Objectives

- Alteration of Forest Canopy
- Regeneration
- Prescription

Integration: Develop silvicultural prescriptions for forest products, wildlife, health and protection, and recreation objectives on the sample property.

Operation and Utilization

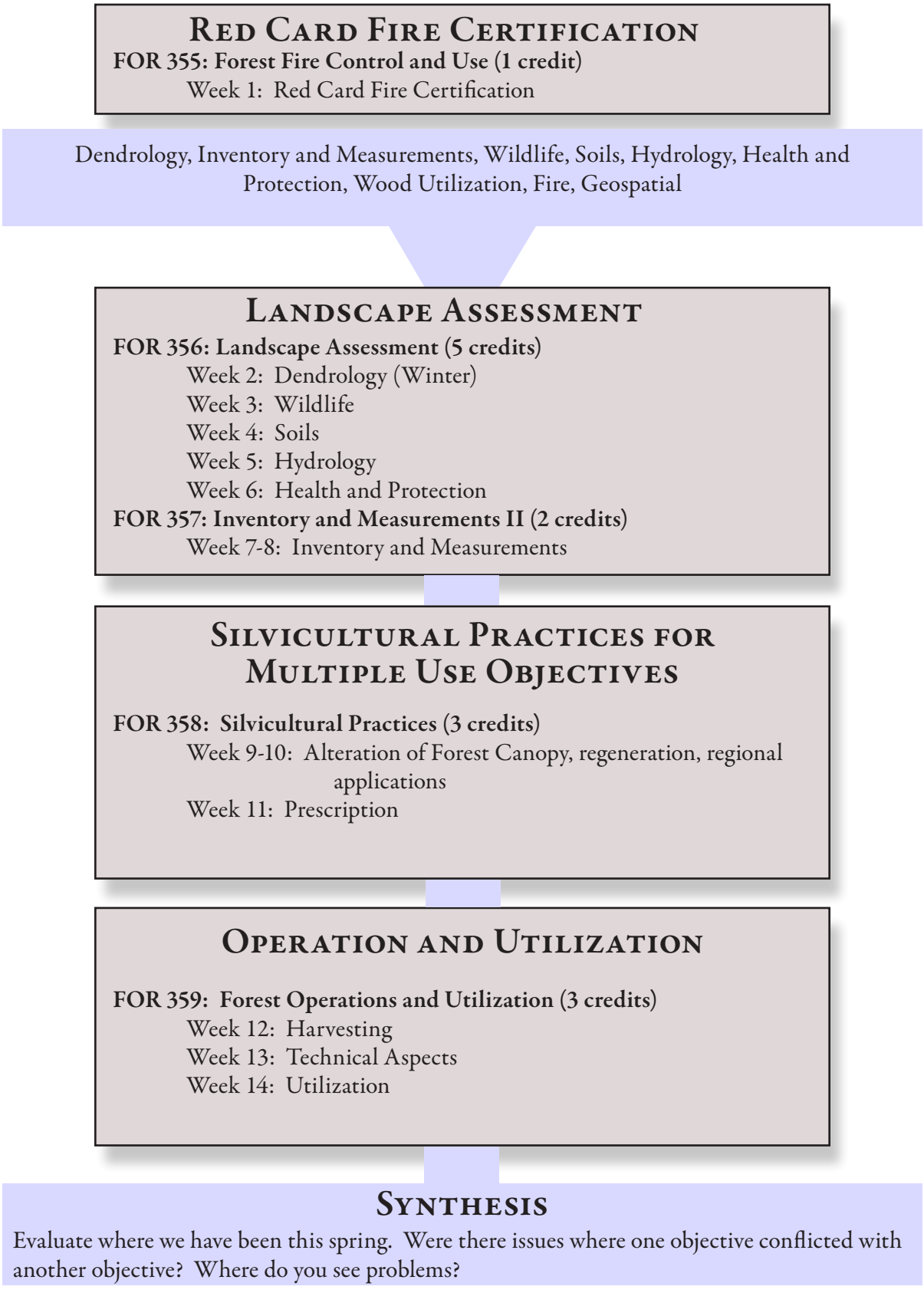
- Harvesting - Road building, BMPs, chainsaw
- Technical Aspects - Prescribed burn, site preparation, herbicides, tree planting
- Utilization - Primary and secondary

Integration: Design harvesting operations on sample property using geospatial techniques, good business sense, and ethical considerations.

Synthesis

Evaluate where we have been this spring. Were there issues where one objective conflicted with another objective? Where do you see problems?

Figure 4. Field Semester Framework and Schedule



FOR 355 - Forest Fire Control and Use 1 credit

Course Description

A study of fire related concepts as they relate to trees, soils, landscapes, water quality, hydrology, wildlife, timber products, ecology and silviculture. In completing this course, students will become Red Card Certified through the U.S. Forest Service.

Learning Outcomes and Suggested Activities

Week 1: Red Card Fire Certification

1. Explain fire concepts and Become Red Card Certified through the U.S. Forest Service.

Suggested Activities

- One week classroom setting taught by Forest Service.
- Discuss prehistoric fire - what we know, how we know it, and why fire is tied to these sites.

Additional Comments

During this module, students will become Red Card Certified through the U.S. Forest Service. Fire related concepts will be incorporated throughout the semester to show students how fire affects trees, soils, landscapes, water quality, hydrology, wildlife, timber products, forest ecology, and how fire is used for silviculture. Students will also learn policy, economic, ethical, and social impacts of fire throughout the semester.

FOR 356 - Landscape Assessment 5 credits

Course Description

Students will learn to assess various landscape types through week-long, in-depth studies of five topic areas, while studying how the topics are interrelated. The topic areas are winter dendrology, wildlife, soils, hydrology, and health and protection. During the module, students will visit sites throughout Kentucky and the region.

Learning Outcomes and Suggested Activities

Week 2: Dendrology (Winter)

1. Identify trees in the winter landscape by using tree components such as buds, twigs, and bark.
2. Use your knowledge of site quality characteristics to understand why certain tree species are located on different sites.

Suggested Activities

- Technical course in the classroom to cover buds, twigs, and bark.
- Field trips to learn buds, twigs, and bark.
- Integration of landscapes and tree identification will be reinforced throughout the field semester at all sites.
- Conduct an exercise to look at the moisture regime for a mountain. Students would start at the top of a mountain, dig a soil pit, and continue this process at periodic points down the mountain until ending up at the stream. This exercise highlights interconnections between landscape, trees, soils, and water chemistry.

Week 3: Wildlife

1. Apply knowledge of sampling theory in wildlife to practical applications such as taking vegetation measurement samples.
2. Evaluate cover at the ground, mid-story, and canopy level to determine how vegetation impacts wildlife habitat.
3. Apply knowledge of home range and patch size to select appropriate wildlife management principles for a given area.

Suggested Activities

- Collect field data such as conducting bird and herpetology surveys, input data into spreadsheets, interpret data, and present.
- Sample habitat for food, cover, and snags.
- Visit Griffith Woods to examine different habitats of savannah, woodland, old farm and fields.

Week 4: Soils

1. Relate how soil properties influence a given landscape
2. Analyze the difference between soil types and evaluate soil site quality.

Suggested Activities

- See dendrology activity mentioned above regarding identifying a moisture regime for a mountain.

FOR 356 - Landscape Assessment — 5 credits

Learning Outcomes and Suggested Activities

Week 5: Hydrology

1. Demonstrate proper sampling procedures for measuring flow, water quality, and other hydrologic variables.
2. Use collected data to analyze the variation between different landscapes and watersheds.

Suggested Activities

- Analyze a watershed to see how flow and water quality vary within a watershed. Students will start in the headwater and measure flow and water quality. Then as they move downstream into larger areas of the watershed students observe how flow and water quality changes with an increase in roads, agriculture, or urban areas. Students can use GIS to map the watershed highlighting percentages of land use in the watershed.
- Students will begin in Kentucky visiting sites, working their way through the Appalachian Mountains, and stopping at the Asheville Forest Service Lab. Students will continue through the pine plantations of South Carolina and ultimately end up at the coast to see the wetlands. This could be done in one week.

Week 6: Health and Protection

1. Identify exotic and invasive plants. Explain exotic and invasive plant characteristics and relate how these characteristics impact rural and urban areas.
2. Identify forest health threats (pests, disease, wind, ice, water, drought, fire, wildlife, invasive plants) and use your knowledge of forest practices to describe ways to protect the forest from these threats.
3. Analyze ecosystems and critical habitat areas and the related silvicultural practices that should or should not be conducted in these areas.

Suggested Activities

- Visit Robinson Forest where harvesting has occurred and show students ways to eradicate invasive species.
- After receiving pesticide certification, students could revisit sites later in the semester to eradicate some invasive species. Students could track the invasive species on a given site.
- Students can visit different sites such as dry forest communities, mesic forests, cumberland highlands forest, flatwoods, glades, prairies, woodlands, cliffs, wetlands, marshes, wet meadow, seeps, and gravel/cobble bars.

Additional Comments

During this module, students will learn to assess landscapes. Students will receive week long in-depth knowledge on a main topic area, while incorporating material from other topics. These topics include dendrology, wildlife, soils, hydrology, health and protection, and inventory and measurements. Students will visit different ecosystems in the region to understand both plant and animal communities that exist and how soils and hydrology help shape the landscape.

Integration: Throughout this module, students will return to the sample property to understand dendrology, wildlife, soils, hydrology, health and protection, inventory and measurements at the sample property. During visits to the sample property, students will gather data on particular topic areas to create GIS map layers for the sites. At the end of the module, students will have assessed the sample property and created a digital map of the site containing GIS layers for trees, wildlife, soils, hydrology, stand inventory data, and forest health.

FOR 357 - Inventory and Measurements II 2 credits

Course Description

This course teaches students how to conduct forest inventories using a variety of criteria and measurements. Students will use GPS to establish area boundaries and GIS to construct area maps. They will learn how to use inventory data to determine economic value.

Learning Outcomes and Suggested Activities

Week 7-8: Inventory and Measurements II

1. Demonstrate the correct procedures for conducting and writing a timber inventory. This includes using proper techniques to measure height, diameter, crown width, and stand basal area and using global positioning systems to collect stand borders, navigate, and conduct sampling.
2. Analyze different sites by comparing measurements and recognize other ways to classify a site besides site index.
3. Evaluate how silvicultural prescriptions impact wood product value.

Suggested Activities

- Have a consulting forester describe what goes into a timber inventory report and how the timber inventory report should look.
- Compare sites by taking measurements such as plot based sampling, nested plots looking at seedling and saplings. This could also include taking samples of soil water, soil texture, and insulation differences.
- Conduct hands-on lumber, log, tree, and crosstie grading.
- Calculate an economic evaluation of a log with hands-on log breakdown.
- Conduct an economic evaluation of standing timber.

Additional Comments

See Additional Comments section on previous page (Landscape Assessment).

FOR 358 - Silvicultural Practices 3 credits

Course Description

A study of the silvicultural practices for altering the forest canopy and regenerating the forest. Students will learn to apply these practices to meet multiple use objectives such as forest products, wildlife, health and protection, watershed, and recreation and develop silvicultural prescriptions.

Learning Outcomes and Suggested Activities

Week 9 – 10: Alteration of forest canopy, regeneration, and regional applications

1. Analyze how to alter the forest canopy to meet a given objective.
2. Assess stand stocking and demonstrate the correct procedures for marking the stand for a thinning or other intermediate treatment.
3. Demonstrate the correct procedures for conducting a natural regeneration assessment.
4. Demonstrate the correct procedures for conducting artificial regeneration.
5. Compare various silvicultural practices throughout the region.

Suggested Activities

- Students will receive hands-on site preparation techniques in the following module on operation and utilization.
- Visit sites within Kentucky and throughout the South to see different applications of silvicultural practices.

Week 11: Prescriptions

1. Describe the components of a silvicultural prescription for multiple objectives such as recreation, wildlife, health and protection, and forest products.
2. Analyze critical habitat areas and explain how to incorporate critical habitat areas into management prescriptions.

Suggested Activities

- As mentioned in Week 6, students can visit different sites such as dry forest communities, mesic forests, cumberland highlands forest, flatwoods, glades, prairies, woodlands, cliffs, wetlands, marshes, wet meadow, seeps, and gravel/cobble bars.

Additional Comments

During this module, students will learn silvicultural practices for altering the forest canopy and regenerating the forest. Students will apply these practices to meet multiple use objectives such as forest products, wildlife, health and protection, and recreation. Students will visit sites within Kentucky and throughout the South to see various silvicultural applications.

Integration: By the end of the module students will develop silvicultural prescriptions for forest products, wildlife, health and protection, and recreation objectives on the sample property.

FOR 359 - Forest Operations and Utilization

3 credits

Course Description

Plan and design timber harvests, mark a stand for harvest, and describe the effects of harvesting. Use herbicides and pesticides to eradicate invasive species, perform tree planting, conduct thinnings, and participate in prescribed burns. Become familiar with major timber utilization technologies and learn to determine value added in converting standing trees into lumber and lumber into finished products.

Learning Outcomes and Suggested Activities

Week 12: Harvesting

1. Apply best management practices (BMPs) to forestry practices.
2. Explain various harvesting practices and the related costs associated with these practices.
3. Apply harvesting layout and design principles and describe the correct procedures for creating roads, landings, skids, stream crossings, fires lanes, logging roads, and marking a stand to survive a harvest. Apply BMPs to harvesting layout and design.
4. Use your knowledge of harvesting, forests, soils, watersheds, and wildlife to examine the impact of harvesting on the landscape.
5. Use your knowledge of forestry and logging to become certified as a Master Logger, which includes chainsaw training.

Suggested Activities

- Examine harvesting impacts by examining soil compaction, soil moisture, infiltration, water quality, etc., on a harvested site. Then go to an adjacent site that was not harvested and take the same measurements. Repeat the measurements in a wetland area and a burned area. Return to the lab to analyze the data and prepare a lab report.

Week 13: Technical Aspects

1. Explain the costs (economic, social, and environmental) associated with harvesting, site preparations, and prescribed burns.
2. Use your knowledge of proper herbicide and pesticide application techniques to become certified in herbicide and pesticide application.
3. Demonstrate the correct techniques for tree planting.
4. Demonstrate the correct procedures for conducting a thinning operation.
5. Examine prescribed burns and recognize how fire affects wildlife habitat structure and environmental conditions impacting understory plant response.
6. Describe genetic concepts after visiting a breeding program seed orchard.

Suggested Activities

- Work in an urban area to eradicate invasive species in a particular area.
- Visit forest owners such as the Forest Service, Learning Fire Network, or The Nature Conservancy to see how and why land owners use or do not use fire.
- Visit a breeding program seed orchard located in Tennessee.

FOR 359 - Forest Operations and Utilization

(continued from previous page)

3 credits

Learning Outcomes and Suggested Activities

Week 14: Utilization – Primary and Secondary

1. Compare various mill processes and mill facilities such as facility size, process, wood input, tree type, and supply.
2. Calculate value added at secondary processing facilities.

Suggested Activities

- Visit various mills such as a sawmill, dimension mill, flooring mill, veneer mill, composite mill, and paper mill. This activity can be accomplished throughout the semester when traveling between field sites.
- Visit furniture manufactures. Observe various technologies such as computer number control routing and laser engraving.

Additional Comments

During this module, students will examine harvesting practices, including layout and design. Students will use silvicultural prescriptions learned in the previous module and apply those prescriptions to this module. Students will receive hands-on training in prescribed burns, site preparation, herbicide and pesticide application, and tree planting and learn the costs associated with these activities.

Integration: Students will design harvesting operations on the sample property using geospatial techniques, good business sense, and ethical considerations.

Field Semester Threads

Collaborative Problem Solving - Students will work in teams to conduct measurements, analyze data, and prepare final reports. When meeting with different landowners or land managers, students will learn about any social or policy concerns at the property and how these concerns were addressed.

Communication - Communicate with individuals that have different knowledge of forestry. For example, meet with natural resource professionals, landowners that have attended Extension workshops, and landowners with little forestry background. Effectively communicate site assessments, silvicultural prescriptions, and harvest layout and design using graphics and written text.

Ecosystem Approach - Students will be able to conduct landscape assessments taking into consideration the entire ecosystem. Trees, wildlife, soils, hydrology, health and protection, social and economic concepts will be considered when preparing a silvicultural prescription and designing a harvesting operation.

Ethics - Ethical considerations will be applied throughout the semester. Students will explore ethical considerations when conducting a site assessment, preparing silvicultural prescriptions, and conducting harvesting applications.

Forest Health and Protection - Identify exotic and invasive plants and recognize the impacts these plants have in both rural and urban areas. Identify forest health threats such as pests, disease, wind, ice, water, drought, fire, wildlife, invasive plants, and describe ways to protect the forest from these threats. Awareness of ecosystems and critical habitat and the silvicultural practices that should or should not be conducted in a particular area.

Geospatial - Use GIS to create map layers for trees, wildlife, soils, hydrology, stand inventory, and forest health for sample property. Use GIS to design harvesting operations of the sample property by identifying locations for logging roads, landings, skids, stream crossings, and fire lanes.

Human Dimensions of Natural Resources - When meeting with landowners or land managers, students will learn about legal, political, social, and economic concerns related to the property as well as the different perspectives or ideologies of the land owner.

Information Literacy - Students will learn to find data related to prescribed burns, wildfires, winter tree identification, wildlife sampling, soils, hydrology, forest health and protection, measurements, and inventory. Students will locate current information on wood product values and best management practices.

Managerial Leadership - Students will participate in team building exercises at the beginning of the semester. When meeting with land managers, students will discuss job descriptions and managerial aspects of the land managers job.

Section III

Curriculum Summary

This section provides an overview of the common threads in the curriculum, Society of American Foresters (SAF) requirements, and Pinchot Report competencies.

Table 1 shows a summary of how the common threads are integrated throughout the proposed curriculum.

Tables 2 and 3 show how the proposed forestry curriculum meets SAF Accreditation Requirements. The fields with a yellow box represent courses whose main learning outcomes cover a particular SAF requirement. Although many courses cover multiple topics mentioned in the SAF guidelines, a box was highlighted yellow only if one of the course's main learning outcomes met the requirement.

Table 4 shows how the proposed forestry curriculum meets general skills and technical competencies identified in a Pinchot Institute for Conservation Report (Sample et al 2000)[1]. This report examined the skills needed to be a successful practicing forester.

1 Sample, V.A., N.E. Block, P.C. Ringgold, and J.W. Giltmier. 2000. The evolution of forestry education in the United States: Adapting to changing demands of professional forestry. Pinchot Institute for Conservation, Washington, D.C. 62 p.

Table 1. Common Threads Summary

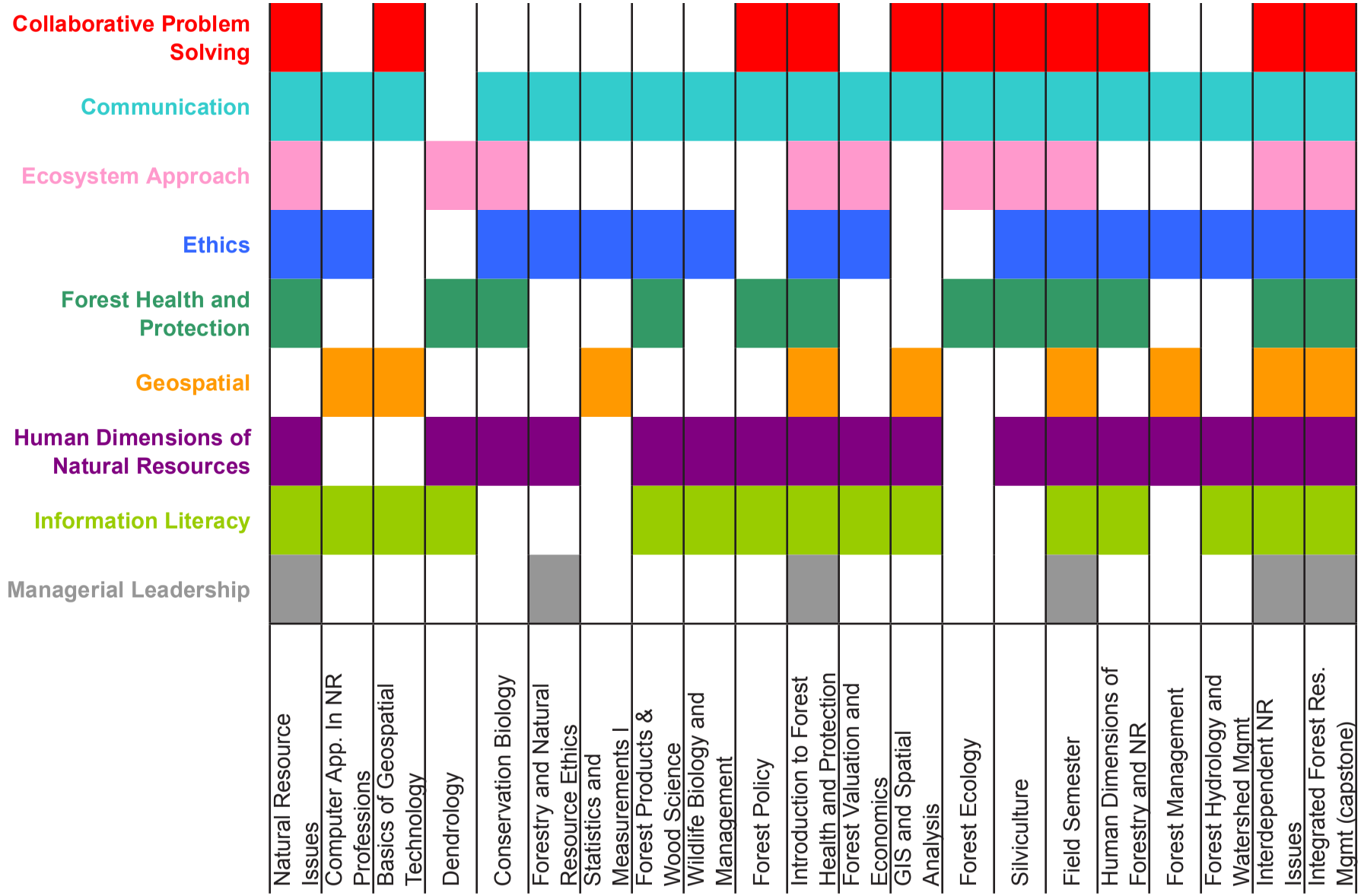


Table 2. SAF General Accreditation Requirements

Society of American Foresters 2007 Accreditation Handbook **General Education**	Natural Res. Issues	Computer App. In NR Professions	Basics of Geospatial Technology	Fundamentals of Soil Science (PLS 366)	Dendrology	Conservation Biology	Forestry and Natural Resource Ethics	Statistics and Measurements I	Forest Products & Wood Science	Wildlife Biology and Management	Forest Policy	Intro. to Forest Health and Prot.	Forest Valuation and Economics	GIS and Spatial Analysis	Forest Ecology	Silviculture	Field Semester	Human Dimensions of Forestry and NR	Forest Management	Forest Hydrology & Watershed Mgmt	Interdependent NR Issues	Integrated Forest Res. Mgmt
Communications																						
A1. Prepare & deliver effective oral presentations																						
A2a. Proficiency in English composition, technical/business writing, & writing for nonprofessional audiences																						
A2b. Read with comprehension of various documents & critically evaluate opposing viewpoints																						
Science & Mathematics																						
B1a. Understand components, patterns, & processes of biological & ecological systems across spatial & temporal scales																						
B1b. Understand molecular biology, cells, organisms, populations, species, communities, & ecosystems																						
B2. Understand physical & chemical properties, measurements, structure, & states of matter																						
B3. Understand & use basic approaches & applications of mathematics & statistics for analysis & problem solving																						
Social Sciences & Humanities																						
C1. Understand and address moral & ethical questions & use critical reasoning skills																						
C2. Understand human behavior & social & economic structures, processes, & important institutions across a range of societies																						
C3. Understand diverse dimensions of human experience & culture																						
Computer Literacy																						
D. Use computers & other contemporary electronic technologies in professional life																						
Course Contains Significant Content in:																						
Field Work																						
Ethics																						
Oral and Written Communications																						
Integrated Resource Management																						

Table 3. SAF Professional Accreditation Requirements

Society of American Foresters 2007 Accreditation Handbook **Professional Education**	Natural Res. Issues	Computer App. In NR Professions	Basics of Geospatial Technology	Fundamentals of Soil Science (PLS 366)	Dendrology	Conservation Biology	Forestry and Natural Resource Ethics	Statistics and Measurements I	Forest Products & Wood Science	Wildlife Biology and Management	Forest Policy	Intro. To Forest Health and Prot.	Forest Valuation and Economics	GIS & Spatial Anal.	Forest Ecology	Silviculture	Field Semester	Human Dimensions of Forestry and NR	Forest Management	Forest Hydrology & Watershed Mgmt	Interdep. NR Issues	Integrated Forest Res. Mgmt.
Ecology & Biology																						
A1. Understand taxonomy & identify forest & other tree species, their distribution, & associated vegetation & wildlife					■					■					■		■					■
A2. Understand soil properties & processes, hydrology, water quality, & watershed function				■	■										■	■	■			■		■
A3. Understand ecological concepts & principles including structure & function of ecosystems, plant & animal communities, competition, diversity, population dynamics, succession, disturbance, & nutrient cycling					■	■				■		■			■	■	■					
A4. Make ecosystem, forest, & stand assessments										■		■			■	■	■		■			■
A5. Understand tree physiology & effects of climate, fire, pollutants, moisture, nutrients, genetics, insects & diseases on tree & forest health & productivity					■	■			■			■			■	■	■					■
Measurement of Forest Res.																						
B1. Identify & measure land areas & conduct spatial analysis			■					■						■			■					■
B2. Design & implement comprehensive inventories that meet specific objectives using appropriate sampling methods & units of measurement								■									■		■			■
B3. Analyze inventory data & project future forest, stand, & tree conditions								■								■	■		■			■
Management of Forest Resources																						
C1. Develop & apply silvicultural prescriptions appropriate to management objectives, including methods of establishing & influencing composition, growth, & quality of forests, & understand impacts of those prescriptions										■						■	■		■			■
C2. Analyze economic, environmental, & social consequences of forest resource management strategies & decisions						■	■				■	■	■	■		■	■	■	■	■	■	■
C3. Develop management plans with specific multiple objectives & constraints																			■			■
C4. Understand valuation procedures, market forces, processing systems, transportation & harvesting activities that translate human demands for timber-based & other consumable forest products into availability of those products									■				■						■			■
C5. Understand valuation procedures, market, & non-market forces that avail humans opportunities to enjoy non-consumptive products & services of forests									■				■									■
C6. Understand administration, ownership, & organization of forest management enterprises.											■						■		■			■
Forest Res. Policy, Ec., & Admin.																						
D1. Understand forest policy & processes by which it is developed	■					■					■											
D2. Understand how federal, state, & local laws & regulations govern the practice of forestry	■					■					■											
D3. Understand professional ethics, including SAF Code, & recognition of responsibility to adhere to ethical standards in forestry decision making on behalf of clients & public	■	■				■	■		■	■		■	■			■	■	■	■	■	■	■
D4. Understand integration of technical, financial, human resources, & legal aspects of public & private enterprises											■											

Table 4. Pinchot Report Competencies

Pinchot Institute for Conservation
The Evolution of Forestry Education in the United States: Adapting to Changing Demands of Professional Forestry
Sample et. al (2000)

			Natural Res. Issues	Computer App. In NR Professions	Basics of Geospatial Technology	Fundamentals of Soil Science (PLS	Dendrology	Conservation Biology	Forestry and Natural Resource Ethics	Statistics and Measurements I	Forest Products & Wood Science	Wildlife Biology and Management	Forest Policy	Intro. to Forest Health and Prot.	Forest Valuation and Economics	GIS and Spatial Analysis	Forest Ecology	Silviculture	Field Semester	Human Dimensions of Forestry and NR	Forest Management	Forest Hydrology and Watershed	Integrated Forest Res. Mgmt	Interdependent NR Issues
General Skills	1	Work in teams	■		■														■					
	2	Address public concerns	■	■				■	■		■	■	■	■		■	■	■	■	■		■	■	■
	3	Understand sustainable ecosystem management	■									■					■		■		■		■	■
	4	Innovative approaches to forest management										■	■			■			■		■		■	
	5	Innovative approaches to working with public	■								■			■		■			■	■			■	■
	6	Evaluate and synthesize information	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■	■
	7	Landscape level-understanding			■	■	■	■				■		■		■	■	■	■		■	■	■	
Specific Technical Competencies	1	Ethics	■	■				■	■	■	■	■		■	■			■	■	■	■	■	■	■
	2	Written communication	■	■	■	■		■		■	■	■	■	■	■		■	■	■	■	■	■	■	■
	3	Oral communication	■	■	■			■	■		■		■	■	■		■	■	■		■	■	■	■
	4	Silvicultural systems										■		■				■	■		■	■	■	
	5	Managerial leadership	■						■					■					■					■
	6	Collaborative problem solving	■		■								■			■	■	■	■	■			■	■
	7	Resource management																	■		■		■	
	8	Forest ecology					■					■		■			■		■				■	
	9	Forest inventory/biometry								■									■				■	
	10	Landscape analysis/GIS			■											■			■		■		■	
	11	Tree/plant species identification					■							■			■		■				■	
	12	Human resource management	■						■					■										■
	13	Watershed management																	■			■	■	
	14	Resource economics													■				■		■			
	15	Financial management													■									
	16	Alternative dispute resolution	■																	■				■
	17	Fire dynamics					■							■			■		■					
	18	Organizational development																						
	19	Forest soils				■	■										■		■			■	■	
	20	Resource policy/law											■											
	21	Wildlife biology						■				■		■					■				■	
	22	Government relations											■							■				
	23	Forest pathology												■					■					
	24	Conservation biology						■				■							■					
	25	Forest operations and harvesting																	■					

Existing Curriculum

Freshman Year

Fall		Spring	
ENG 104 Writing	4	BIO 150 Prin. of Biology	3
CHE 105 Gen. Chemistry I	3	BIO 151 Prin. of Biology Lab	2
FOR 100 Intro. to Forestry	3	CHE 107 Gen. Chemistry II	3
MA 123 Elem. Calculus	3	CHE 115 Gen. Chemistry Lab	3
USP Requirement	3	USP Requirements	6
	16		17

Sophomore Year

Fall		Spring	
BIO 152 Prin. of Biology II	3	FOR 200 Map Reading and Photogrammetry	2
BIO 153 Prin. of Biology Lab II	2	SOC 260 Population, Resources, & Change OR GEO 210 Pollution, Hazards, & Env. Mgmt.	3
FOR 205 For. & Wildland Soils & Landscapes	4	STA 291 Statistical Method	3
FOR 219 Silvics and Tree Identification	3	PHY 151 Intro. to Physics	3
Second Writing Course	3	AEC 101 Economics of Food & Ag. OR ECO 201Principles of Economics	3
	15	USP Requirement	3
			17

Junior Year

Fall		Spring		Forestry Field Camp (early May - early June)	
FOR 300 Forest Measurements	4	FOR 350 Silviculture	4	FOR 375 Taxonomy of Forest Vegetation	1
FOR 340 Forest Ecology	3	FOR 360 Wood Technology and Utilization	4	FOR 376 Silv. Practices	2
FOR 402 Forest Entomology	3	FOR 599-002 Forest Ethics	3	FOR 377 Forest Surveying	1
MA 162 Finite Math and Its Application	3	Electives	6	FOR 378 Forest Mensuration	2
Elective	3		17	FOR 379 Harvest and Wood Utilization	2
	16				8

Senior Year

Fall		Spring	
FOR 425 Timber Management	4	FOR 480 Integrated Forest Resource Mgmt.	5
FOR 430 Forest Wildlife Management	3	Electives	7
FOR 460G Forest Watershed Management	3		12
Electives	6		
	16		

Total Credit Hours 134

Source: Curriculum Revision Handbook 2006/2007)

Appendix B

Questions and Answers

How is the proposed curriculum different from the existing curriculum?

- New courses in the proposed curriculum include:
  - FOR 150 Computer Applications in Natural Resource Professions
  - FOR 280 Forest Policy
  - FOR 310 Introduction to Forest Health and Protection
  - FOR 320 Forest Valuation and Economics
  - FOR 330 GIS and Spatial Analysis
  - FOR 400 Human Dimensions of Forestry and Natural Resources
  - FOR 470 Interdependent Natural Resource Issues

- The proposed curriculum contains several courses offered under the existing curriculum but have been modified in terms of course learning outcomes, level change (i.e., senior to sophomore level course), and/or a course name change. These modifications include:
  - FOR 110 Introduction to Forestry is now Natural Resource Issues.
  - FOR 200 Map Reading and Photogrammetry is now Basics of Geospatial Technology.
  - FOR 219 Silvics and Tree Identification is now Dendrology.
  - FOR 300 Forest Measurements is now FOR 250 Statistics and Measurements I
  - FOR 315 Conservation Biology (not required) is now FOR 230 Conservation Biology
  - FOR 360 Wood Technology and Utilization is now Forest Products and Wood Science.
  - FOR 425 Timber Management is now Forest Management.
  - FOR 430 Forest Wildlife Management is now FOR 370 Wildlife Biology and Management.
  - FOR 460 Forest Watershed Management is now Forest Hydrology and Watershed Management.
  - FOR 599-002 Forest Ethics is now FOR 240 Forestry and Natural Resource Ethics.

- The proposed curriculum has a spring field semester instead of a summer field semester. The spring field semester courses include:
  - FOR 355 Forest Fire Control and Use
  - FOR 356 Landscape Assessment
  - FOR 357 Inventory and Measurements II
  - FOR 358 Silvicultural Practices
  - FOR 359 Forest Operations and Utilization

Does the proposed forestry curriculum use the existing University Studies Program (USP) requirements?
The proposed curriculum follows the existing USP core requirements. It is not clear when and if a modified USP curriculum will be approved by the University. The modified USP curriculum will be brought to the University Senate around March 2008. Once the modified USP curriculum has been approved by the University, a revised forestry curriculum will be submitted.

The proposed curriculum contains different math and science requirements from the existing curriculum. The proposed curriculum would require the following USP courses:

Natural Science 1 – CHE 104 Intro. General Chemistry or CHE 105 General College Chemistry I
Natural Science 2 – BIO 103 Basic Ideas of Biology or BIO 150 Principles of Biology I
Math – MA 109 College Algebra or Calculus

Additional sciences are incorporated into the curriculum. Dendrology is now a four hour course, with the extra credit hour for additional instruction on plant biology. Wildlife Biology and Management is now a four hour course with the extra credit hour for additional instruction on animal biology.

Will the proposed forestry curriculum give students the background needed for graduate school?
Yes. Students that would like to continue on to a graduate program can adjust their program to ensure they have the math and sciences needed for graduate school. For example, a student could take more advanced chemistry, biology, and calculus courses. The student would also have six elective hours.

How does the proposed forestry curriculum impact transfer students?
The curriculum was designed to make it easy for students to transfer to forestry. The Curriculum Revision Committee identified the optimal transfer point as after the freshman year. The freshman year consists mainly of USP required courses. This should make it easier for a transfer student to have most of the general USP requirements met and take forestry courses during the sophomore year.

If you have any questions or comments on the proposed curriculum please contact:

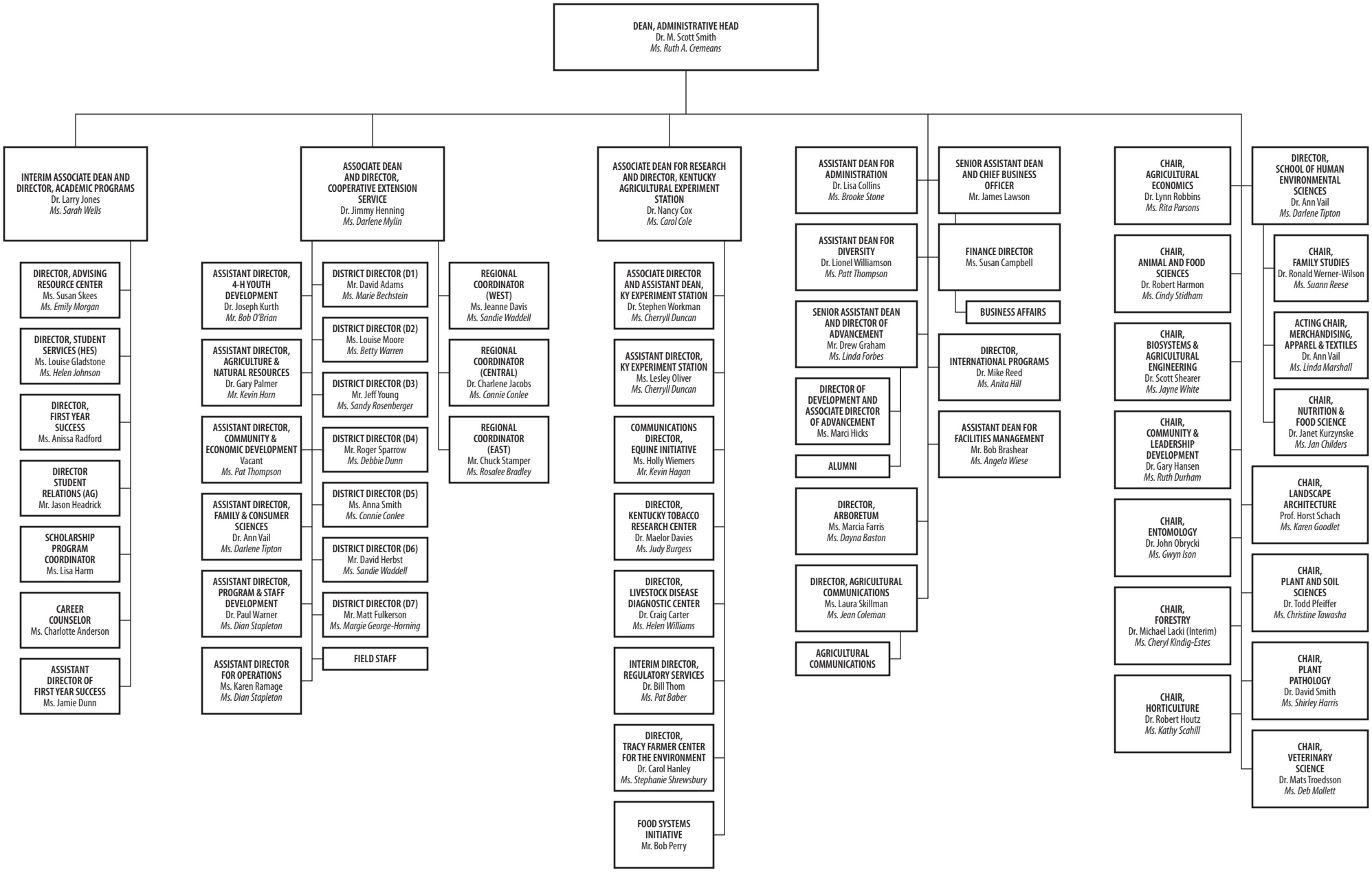
Jim Ringe
UK Department of Forestry
859-257-7594
jringe@uky.edu

Appendix B.

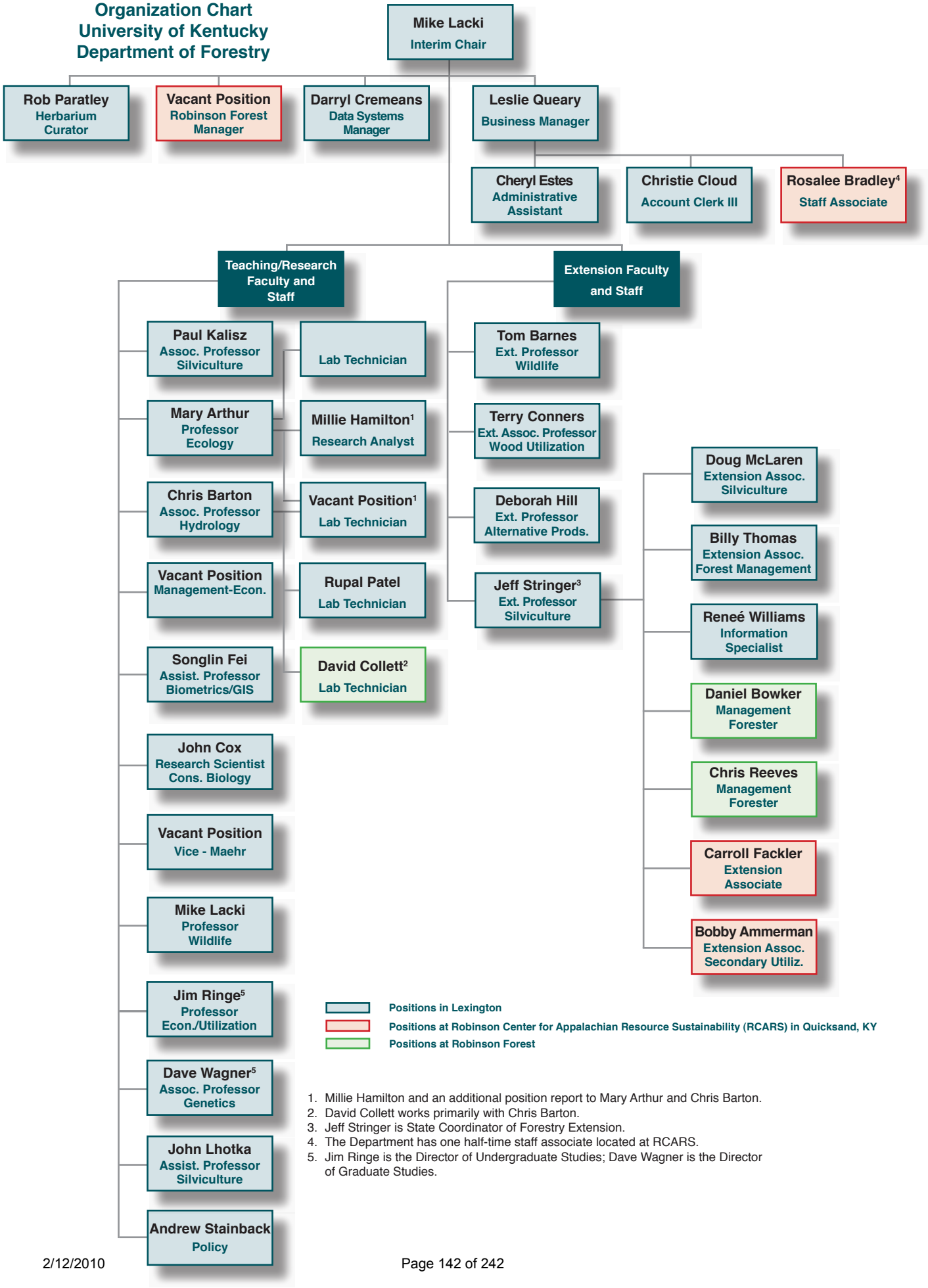
Organizational Chart for the College of Agriculture and Department of Forestry

ORGANIZATIONAL CHART

University of Kentucky • College of Agriculture



Organization Chart
University of Kentucky
Department of Forestry



1. Millie Hamilton and an additional position report to Mary Arthur and Chris Barton.
2. David Collett works primarily with Chris Barton.
3. Jeff Stringer is State Coordinator of Forestry Extension.
4. The Department has one half-time staff associate located at RCARS.
5. Jim Ringe is the Director of Undergraduate Studies; Dave Wagner is the Director of Graduate Studies.

Appendix C.

Undergraduate Forestry Assessment Plan

University of Kentucky

Assessment Inventory for General Education and Degree Programs

College: Agriculture

Department: Forestry

General Education/Degree Program: B.S. in Forestry

Undergraduate/Graduate/Professional: Undergraduate

Part I: Inventory of Statements and Plans

1. Is there a written mission statement or statement of purpose for this program and/or the department or unit within which the program is located? X Yes _____ No

http://www.ca.uky.edu/forestry/mission_vision.php *If Yes, please copy and paste, attach a copy or send a link*

2. Have you articulated student learning outcomes which describe what a student should know or be able to do when they have completed this program? X Yes _____ No

See assessment plan, attached (which updates 9/24/09 version of the outcomes) *If Yes, please copy and paste, attach a copy or send a link*

3. Have you chosen a method(s) of assessment for measuring student learning outcomes? X Yes _____ No

See assessment plan, attached *If Yes, please copy and paste, attach a copy or send a link*

4. Do you have a document (such as a curriculum map) that links student learning outcomes to the program curriculum? X Yes _____ No

See Tables 2 & 3 (pp. 39 & 40) at: http://www.uky.edu/Ag/Forestry/GEN109/AppendixA.pdf *If Yes, please copy and paste, attach a copy or send a link*

5. Have you determined an assessment cycle and fully articulated an assessment plan? X Yes _____ No

See assessment plan, attached *If Yes, please copy and paste, attach a copy or send a link*

6. Does this program have an accreditation process(es) separate from SACS? X Yes _____ No

Accredited by the Society of American Foresters

Part II: Assessment of Outcomes

During the past year, has your program used any of the following for assessment of outcomes?
Please indicate:
"**A**" if currently being used
"**B**" if not currently being used but interested in using
"**C**" if not appropriate/applicable

**Note: the following is not an exhaustive list; please feel free to add any other direct or indirect methods of assessment you may use, as necessary.*

Direct methods of assessment:	**(Enter A, B, C)**
1. Comprehensive exams	**A**
2. Writing proficiency exams	**C**
3. National examinations assessing subject matter knowledge (e.g. Major Field Achievement Test)	**C**
4. Graduate Record Exam General Test (GRE)	**C**
5. GRE Subject Test	**C**
6. Certificate examinations	**C**
7. Licensure examinations	**C**
8. Locally developed pre-test or post-test for subject matter knowledge	**A**
9. Major paper/project	**A**
10. Portfolio containing representative examples of student work	**C**
11. Capstone course work (e.g. senior level seminars)	**A**
12. Audio/video recording of presentations/performances	**A**
13. Employer/supervisor internship/practicum report	**C**
14. Summative performance assessment (i.e. recitals, art exhibits, etc.)	**C**
15. Theses/Dissertations	**C**
16. Student publications and presentations of research work	**C**
17. Documented lab demonstrations/exercises	**A**
18. Other: Southeast Forestry Conclave Competition,	**A**
KY-TN Section (Society of American Foresters) Quiz Bowl	**A**

Part II: Assessment of Outcomes - Continued

Indirect methods of assessment:	**(Enter A, B, C)**
1. Job placement of graduating students	**B**
2. Employer surveys and questionnaires	**A**
3. Graduate School acceptance rates	**C**
4. Student graduation/retention rates	**B**
5. Exit Interviews	**A**
6. Student satisfaction surveys	**B**
7. Student Course evaluations	**A**
8. Focus group discussions	**A**
9. Alumni surveys	**A**
10. Tracking of alumni honors, awards, and achievements at local, state, and national levels	**B**
11. Identification and assessment of at-risk students	**B**
12. Analysis of student grade distributions	**C**
13. Examination of information contained in department's own database	**C**
14. Other evaluations of course instruction (e.g., chair or peer review)	**A**
15. Curriculum/syllabus analysis (e.g., analysis of transfer student preparation)	**B**
16. Community perception of program effectiveness	**A**
17. Community service/volunteerism participation	**A**
18. Other: _____	**C**
_____	
_____	

Part III: Other Information

1. Has this program used any of the direct or indirect methods listed above to improve student learning, operational effectiveness, student services, and/or general operations? **X** Yes _____ No

If Yes, please briefly note 1 - 3 examples

Example 1: Use of student course evaluations to improve courses.

Example 2: Use of employer surveys to revise entire curriculum (2008-2009).

Example 3: Use of focus group discussions and interviews to revise entire curriculum (2008-2009).

2. What resources (i.e., training, personnel, technology, etc.) does this program need to develop and/or implement better methods for assessing and improving student outcomes and program effectiveness?

3. Please list any additional comments or concerns.

Completed by: Dr. David B. Wagner **Date: 21 December 2009**

BS FORE: Summary of Plan for Assessment of Student Learning Outcomes
Current on: 21 December 2009

Learning Outcomes (revised slightly from 24 September 2009 Learning Outcomes)	*Course(s) Used for Initial Assessment	*Course(s) Used for Final Assessment	*Year of Assessment in Three-Year Cycle
Learning Outcome 1: Communications Graduates will meet the "Communications" General Education Accreditation Requirements of the Society of American Foresters, *i.e.* they will demonstrate ability to: a. find, read and interpret professional documents, and critically evaluate opposing viewpoints. b. communicate information effectively in oral/visual presentations and in writing, on technical/business levels and non-professional levels.	**a, b:** FOR 110 (Natural Resource Issues)	**a, b:** FOR 470 (Interdependent Natural Resource Issues)	**2**
Learning Outcome 2: Science & Mathematics Graduates will meet the "Science & Mathematics" General Education Accreditation Requirements of the Society of American Foresters, *i.e.* they will demonstrate knowledge of: a. hierarchical components, patterns, and processes of biological, and ecological systems across spatial, and temporal scales. b. physical and chemical properties, measurements, structure & states of matter. c. and ability to use basic approaches and applications of mathematics & statistics for analysis & problem solving.	**a:** FOR 219 (Dendrology) **b:** Junior Spring Field Semester – early in the semester **c:** FOR 250 (Statistics and Measurements I)	**a, b:** Junior Spring Field Semester – late in the semester **c:** FOR 480 (Integrated Forest Resource Management)	**2**
Learning Outcome 3: Social Sciences & Humanities Graduates will meet the "Social Sciences & Humanities" General Education Accreditation Requirements of the Society of American Foresters, *i.e.* they will demonstrate knowledge of: a. and ability to use critical reasoning skills to address moral and ethical questions. b. human behavior and social & economic structures, processes, and important institutions across a range of societies. c. diverse dimensions of human experience and culture.	**a:** FOR 110 (Natural Resource Issues) **b, c:** FOR 400 (Human Dimensions of Forestry and Natural Resources) – early in the semester	**a, b:** FOR 470 (Interdependent Natural Resource Issues) **c:** FOR 400 (Human Dimensions of Forestry and Natural Resources) – late in the semester	**2**

Learning Outcome 4: Computer Literacy Graduates will meet the "Computer Literacy" General Education Accreditation Requirements of the Society of American Foresters, *i.e.* they will demonstrate ability to use computers and other contemporary electronic technologies in professional life.	FOR 150 (Computer Applications in Natural Resource Professions)	FOR 480 (Integrated Forest Resource Management)	**1**
Learning Outcome 5: Ecology & Biology Graduates will meet the "Ecology & Biology" Professional Education Accreditation Requirements of the Society of American Foresters, *i.e.* they will demonstrate knowledge of: a. taxonomy, identification, and distribution of tree species and associated vegetation & wildlife. b. soil properties and processes, hydrology, water quality, and watershed function. c. ecological concepts and principles, and ability to make ecosystem, forest, and stand assessments. d. tree physiology and effects of biotic and abiotic agents on tree and forest health & productivity.	**a:** FOR 219 (Dendrology) **b, c:** FOR 340 (Forest Ecology) **d:** FOR 310 (Introduction to Forest Health and Protection)	**a, b, d:** FOR 480 (Integrated Forest Resource Management) **c:** Junior Spring Field Semester – late in the semester	**3**
Learning Outcome 6: Measurement of Forest Resources Graduates will meet the "Measurement of Forest Resources" Professional Education Accreditation Requirements of the Society of American Foresters, *i.e.* they will demonstrate ability to: a. identify and measure land areas, conduct spatial analyses, and design & implement comprehensive inventories to meet specific objectives, using appropriate sampling methods and units of measurement. b. analyze inventory data and project future forest, stand, and tree conditions.	**a, b:** FOR 250 (Statistics and Measurements I)	**a, b:** FOR 480 (Integrated Forest Resource Management)	**3**

Learning Outcome 7: Management of Forest Resources Graduates will meet the "Management of Forest Resources" Professional Education Accreditation Requirements of the Society of American Foresters, *i.e.* they will demonstrate: a. ability to develop and apply appropriate silvicultural prescriptions, and understand impacts of those prescriptions. b. ability to analyze economic, environmental, and social consequences of forest resource management strategies and decisions. c. ability to develop management plans with specific multiple objectives and constraints. d. knowledge of valuation procedures, market forces, operational systems & activities, and non-market forces that affect production of consumable and non-consumptive forest products and services. e. knowledge of administration, ownership, and organization of forest management enterprises.	**a:** FOR 350 (Silviculture) **b, d:** FOR 320 (Forest Valuation and Economics) **c:** FOR 425 (Forest Management) **e:** FOR 280 (Forest Policy)	**a, b, c, d, e:** FOR 480 (Integrated Forest Resource Management)	**1**
Learning Outcome 8: Forest Resources Policy, Economics, & Administration Graduates will meet the "Forest Resources Policy, Economics, & Administration" Professional Education Accreditation Requirements of the Society of American Foresters, *i.e.* they will demonstrate knowledge of: a. forest policy, forest policy processes, and how federal, state, and local laws & regulations govern the practice of forestry. b. professional ethics, including the SAF Code of Ethics, and recognition of responsibility to adhere to ethical standards in forestry decision making on behalf of clients and public. c. integration of technical, financial, human resources and legal aspects of public and private enterprises.	**a, c:** FOR 280 (Forest Policy) – early in the semester **b:** FOR 110 (Natural Resource Issues)	**a, c:** FOR 280 (Forest Policy) – late in the semester **b:** FOR 480 (Integrated Forest Resource Management)	**3**

*** A rubric will be developed for each assessment. Assessment Cycle Year 1 = 2010, 2013, 2016, ... Assessment Cycle Year 2 = 2011, 2014, 2017, ... Assessment Cycle Year 3 = 2012, 2015, 2018, ... Because a major curriculum revision is currently being implemented (beginning with the fall 2009 semester), this cycle will be phased in as the revised curriculum's new courses begin to be offered. For example, because the sophomore course FOR 280 (Forest Policy) will be taught for the first time in spring 2011, it will enter the assessment cycle for Learning Outcome 7 not in 2010 but in 2013.**

Appendix D.

Document E. Individual Faculty Information

CURRICULUM VITAE
2005-2009

1. Name: Mary A. Arthur

2. Address and Contact Information

103 T.P. Cooper Building
University of Kentucky
Department of Forestry
Lexington, KY 40546-0073
Phone: 859.257.2852; Fax: 859.323.1031
marthur@uky.edu

3. Current Position: Professor of Forest Ecology (12-month appointment)

4. Degrees

B.A., Environmental Studies, Colby College, 1979
M.F.S., Forest Science, Yale School of Forestry & Environmental Studies, 1983
Ph.D., Forest Ecology, minor in Soil Science, Cornell University, 1990

5. Experience

July 2006 to Present: Professor of Forest Ecology, Department of Forestry, University of Kentucky, Lexington, KY
July 2000 to June 2006: Associate Professor of Forest Ecology, Department of Forestry, Lexington, KY
January 1993 to June 2000: Assistant Professor of Forest Ecology, Department of Forestry, Lexington, KY
January 2000 to present: Visiting Scientist, Institute of Ecosystem Studies, Millbrook, NY
January 2000 to July 2000: Sabbatical Leave, Institute of Ecosystem Studies, Millbrook, NY
2000 to present: Member, UK Biology Program Graduate Faculty
1994 to present: Member, UK Soil Science Graduate Faculty

6. Research and Teaching Projects

Extramural

"Using remotely-sensed imagery to monitor post-fire forest dynamics," USDA CSREES, Precision Resource Management, 2009-2011, $49,093. Co-principal investigator with Dr. C. McMichael.
"Fire ecology research in the Daniel Boone National Forest." USDA Forest Service, Southern Research Station, 2009-2014, $10,000. Principal Investigator.
"Fire and new oak seedlings," USDA Forest Service, Southern Research Station, $16,000, 2007-2009. Principal Investigator.
"Colonization by invasive plant species into urban and successional forest remnants in the Bluegrass Region of central Kentucky;" Kentucky Environmental and Public Protection Cabinet, October 2006-2008, $7996; Principal Investigator with Robert Paratley and Ryan McEwan.

"Spatial patterning of the effects of savanna trees and exotic species on soil nutrient and C cycling and soil biota;" USDA-CSREES, Precision Resource Management – Phase III – Scope 6; October 2006 to September 2009, $72,500; Principal Investigator with Megan Poulette.

"Collaborative research: Influences of geology and tree species composition on the response of forest nutrient dynamics to an exotic pest;" National Science Foundation, DEB-Ecosystems; March 2005 to March 2009, $115,000; Principal Investigator on collaborative grant with Gary Lovett (Institute of Ecosystem Studies) and Ross Fitzhugh (University of Illinois).

"Effects of an exotic pest on carbon and nitrogen cycling;" Northeastern States Research Cooperative, 2005-2007, $30,000; Co-principal investigator with Gary Lovett (Institute of Ecosystem Studies) and Ross Fitzhugh (University of Illinois).

"Fire in the southern Appalachians: Fuels, stand structure and oaks;" USDA-USDI Joint Fire Science Program, September 2004 to August 2007, $342,000; Co-principal investigator with David Loftis (US Forest Service, Southern Research Station).

Other

"Prescribed fire in the southern Appalachians: stand structure, oak seedlings and fuel;" McIntire-Stennis Agricultural Experiment Station Project, 2005-2010.

"Alteration of belowground processes during ecosystem invasion: *Lonicera maackii* in the forests of central Kentucky;" University of Kentucky Research Support Fund, $14,000, November 2006-October 2007; Co-principal investigator with Lynne Rieske-Kinney.

7. Teaching and Undergraduate Advising

Courses taught

FOR 340, Forest Ecology	Fall 2005, '06, '07, '08, '09
FOR 612, Forest Ecosystem Dynamics	Spring 2005 & 2007
FOR 770, Special Topics: Ecological Stoichiometry, team-taught (50%) with David Westneat, Biology	Spring 2006
FOR 770/620; Special Topics: Ecology of Complex Systems, team-taught (50%) with David Wise, Entomology	Spring 2008

Advising

Spring 2009	5 NRC, 1 Forestry
Fall 2008	6 NRC, 2 Forestry
Spring 2008	6 NRC, 3 Forestry
Fall 2007	4 NRC, 1 Forestry
Spring 2007	8 NRC, 2 Forestry
Fall 2006	11 NRC, 0 Forestry
Spring 2006	11 NRC, 0 Forestry
Fall 2005	3 NRC, 1 Forestry
Spring 2005	5 NRC, 2 Forestry
Fall 2004	3 NRC, 1 Forestry

Other mentoring

Mentorship of 1-2 high school students/year interested in forest ecology as a career (2000-present)
Natalia Truszczynski, Paul Dunbar High School research student
Christina Kuchle, undergraduate research student
Alice Ekori, French intern, 2008
Coline Siegel, French intern, 2009

8. Publications

McEwan, R.W., L.G. Arthur-Paratley, L.K. Rieske and M.A. Arthur. *In press.* A multi-assay comparison of seed germination inhibition by *Lonicera maackii* and co-occurring native shrubs. Flora.

Weand, M.P., M.A. Arthur, G.M. Lovett, F. Sikora and K.C. Weathers. *In press.* The phosphorus status of northern hardwoods differs by species but is unaffected by nitrogen fertilization. Biogeochemistry.

Alexander, H.D. and M.A. Arthur. 2009. Foliar morphology and chemistry of upland oaks, red maple, and sassafras seedlings in response to single and repeated prescribed fires. Canadian Journal of Forest Research 39: 740-754.

Christensen, L.M., G.M. Lovett, K.C. Weathers and M.A. Arthur. 2009. The Influence of tree species, nitrogen fertilization and soil C:N ratio on gross soil nitrogen transformations. Soil Science Society of America Journal 73: 638-646.

Fabio, E.S., M.A. Arthur, and C.C. Rhoades. 2009. Influence of moisture regime and tree species composition on nitrogen cycling dynamics in hardwood forests of Mammoth Cave National Park, Kentucky, USA. Canadian Journal of Forest Research 39: 330-341.

McEwan, R.W., L.K. Rieske, and M.A. Arthur. 2009. Potential interaction between invasive woody shrubs and the gypsy moth (*Lymantria dispar*), an invasive insect herbivore. Biological Invasions 11: 1053-1058.

McEwan, R.W., K. Birchfield, A. Schoergendorfer and M.A. Arthur. 2009. Leaf phenology and freeze tolerance of the invasive shrub Amur honeysuckle and potential native competitors. Journal of the Torrey Botanical Society 136: 212-220.

Alexander, H.D., M.A. Arthur, D.L. Loftis, S.R. Green. 2008. Survival and growth of upland oak and co-occurring competitor seedlings following single and repeated prescribed fires. Forest Ecology and Management 256:1021-1030.

Blum, J.D., A.A. Dasch, S.P. Hamburg, R.D. Yanai and M.A. Arthur. 2008. Use of foliar Ca/Sr discrimination and 87Sr/86Sr ratios to determine soil Ca sources to sugar maple foliage in a northern hardwood forest. Biogeochemistry 87: 287-296.

Hancock, J.E., M.A. Arthur, K.C. Weathers and G.M. Lovett. 2008. Aboveground net primary production and total belowground carbon allocation along a gradient of beech bark disease impact in the Catskill Mountains, New York. Canadian Journal of Forest Research 38: 1267-1274.

Loucks, E., M.A. Arthur, J.E. Lyons and D.L. Loftis. 2008. Characterization of fuel before and after a single prescribed fire in an Appalachian hardwood forest. Southern Journal of Applied Forestry 32: 80-88.

Templer, P.H., M.A. Arthur, G.M. Lovett, and K.C. Weathers. 2007. Plant and soil natural abundance $\delta^{15}N$: Indicators of relative rates of nitrogen cycling in temperate forest ecosystems. Oecologia 153: 399-406.

Binkley, D., D.M. Kashian, S.Boyden, M.W. Kaye, J.B. Bradford, M.A. Arthur, P.J. Fornwalt, M.G. Ryan. 2006. Patterns of growth dominance in forests of the Rocky Mountains, USA. Forest Ecology and Management 263:193-201.

Blankenship, B.A. and M.A. Arthur. 2006. Stand structure over nine years in burned and fire-excluded oak stands on the Cumberland Plateau, Kentucky. Forest Ecology and Management 225:134-145.

Lovett, G.M., C.D. Canham, M.A. Arthur, and K.C. Weathers. 2006. Forest ecosystem responses to exotic pests and pathogens in eastern North America. BioScience 56:395-405.

Newman, G., M.A. Arthur, and R.N. Muller. 2006. Above- and belowground net primary production in a temperate mixed deciduous forest. Ecosystems 9:317-329.

Chiang, J., M.A. Arthur and B.A. Blankenship. 2005. The effect of prescribed fire on gap fraction in an oak forest on the Cumberland Plateau. Journal of the Torrey Botanical Society 132: 432-441.

Yanai, R.D., J.D. Blum, S.P. Hamburg, M.A. Arthur, C.A. Nezat, and T.G. Siccama. 2005. New Insights into Calcium Depletion in Northeastern Forests. Journal of Forestry 103:14-20.

Yanai, R.D., R.P. Phillips, M.A. Arthur, T.G. Siccama, and E.N. Hane. 2005. Spatial and temporal variation in calcium and aluminum in northern hardwood forest floors. Water, Air and Soil Pollution 160:109-118.

9. Presentations and Consultations

Invited seminars and presentations

Keynote address, 1st Annual Kentucky Prescribed Fire Council Meeting, September 2009.

Presentation to the Daniel Boone National Forest Review Team Meeting, July 2008.

Kentucky Prescribed Fire Council, Keynote address, Frankfort, KY. June 2008.

Women and Minority Artists and Scholars Lecture Series, Virginia Tech University, Department of Forestry. November 2007.

Alabama A&M, Department of Forestry, Huntsville, AL. January 2006.

Centre College, Department of Biology, Danville, KY. March 2006

Eastern Kentucky University, Department of Biology. September 2006.

Other meeting presentations – *oral and poster presentations at regional and national meetings (**denotes undergraduate student; *denotes graduate student)*

Arthur, M.A., K.C. Weathers and G.M. Lovett. 2009. A beech bark disease-induced change in tree species composition influences forest floor acid-base chemistry. Ecological Society of America, August 2009, Albuquerque, NM.

Kuchle**, C., M.A. Arthur, R.W. McEwan, Bray, S. 2009. Accelerated leaf decomposition in an invasive shrub (*Lonicera maackii*) in a function of leaf chemistry, not the decomposition environment. Ecological Society of America, August 2009, Albuquerque, NM.

Poulette*, M.M. and M.A. Arthur. 2009. Single-tree effects of savanna trees and the influence of the invasive shrub *Lonicera maackii* on litter decomposition dynamics. Ecological Society of America, August 2009, Albuquerque, NM.

Weand*, M.P., M.A. Arthur, G.M. Lovett and K.C. Weathers. 2009. Nitrogen and phosphorus stoichiometry in a northern hardwood forest. Ecological Society of America, August 2009, Albuquerque, NM.

Wilson*, H.N., M.A. Arthur, McEwan, R., B. Lee and R.D. Paratley. 2009. Do mature forests present barriers to non-native plant invasion?: A case study of *Lonicera maackii* establishment in deciduous forests of central Kentucky. Ecological Society of America, August 2009, Albuquerque, NM.

Yanai, R.D., S. P. Hamburg, M.A. Arthur, M.A. Vadaboncoeur, C.B. Fuss, and T.G. Siccama. 2009. From missing source to missing sink: Long-term nitrogen dynamics in the northern hardwood forest. Ecological Society of America, August 2009, Albuquerque, NM.

Acker*, M., M.A. Arthur, S.P. Hamburg and M. Vadebonceour. 2008. Fine and coarse woody debris nutrient pools in developing northern hardwood forests. Ecological Society of America, August 2008, Milwaukee, WI.

Alexander*, H.D., M.A. Arthur, D.L. Loftis, and S.R. Green. 2008. Response of upland oak and co-occurring competitor seedlings following single and repeated prescribed fires. Fire and Eastern Oaks Conference in Carbondale, IL, May 20-22, 2008.

Alexander*, H.D. and M.A. Arthur. 2008. Interspecific differences in stemflow chemistry and N mineralization among red maple and upland oaks. Ecological Society of America, August 2008, Milwaukee, WI.

Royse*, J., M.A. Arthur, D.L. Loftis. 2008. Prescribed fire and oak seedling development in an Appalachian forest. Fire and Eastern Oaks Conference in Carbondale, IL, May 20-22, 2008.

Poulette*, M and M.A. Arthur. 2008. Single-tree effects of savanna trees and the influence of an invasive species on soil nitrogen cycling and decomposition processes. Ecological Society of America, August 2008, Milwaukee, WI.

Weand*, M.P. , M.A. Arthur, G.M. Lovett, and K.C. Weathers. 2008. Potential for phosphorus limitation in northern hardwood forest species. Ecological Society of America, August 2008, Milwaukee, WI.

Alexander*, H. D. and Arthur, M. A. 2007. Interspecific differences in N mineralization rates and stemflow chemistry among red maple and upland oaks. Ecological Society of America, San Jose, CA.

Alexander*, H. D., Arthur, M., Loftis, D., and S. Green. 2007. Landscape-level assessment of prescribed fire effects on oak regeneration. 2nd Fire Behavior and Fuels Conference - The Fire Environment - Innovation, Management, and Policy, Destin, FL.

Royse*, J.P.; Arthur, M.A.; Loftis, D.L. 2007. Prescribed fires affect seedling establishment and survival in a central Appalachian forest. Poster presentation. 2nd fire behavior and fuels conference: the fire environment-innovations, management, and policy. Destin, Florida. March 26-30.

Alexander*, H.D. and M.A. Arthur. 2007. Interspecific differences in stemflow chemistry and N mineralization among red maple and upland oaks. Abstracts of the 91st Annual Meeting of the Ecological Society of America, San Jose, CA, August 2007.

Poulette*, M.M. and M.A. Arthur. 2007. Single-tree effects of savanna trees and influence of invasive species on soil nitrogen cycling. Abstracts of the 91st Annual Meeting of the Ecological Society of America, San Jose, CA, August 2007.

Weand*, M.P., M.A. Arthur, G.M. Lovett, and K.C. Weathers. 2007. Effects of tree species and nitrogen fertilization on soil phosphorus concentrations. Abstracts of the 91st Annual Meeting of the Ecological Society of America, San Jose, CA, August 2007.

Yanai, R.D., M.A. Arthur, M. Acker*, and B.B. Park. 2007. Variation in mass and nutrient concentration of leaf litter across years and stands in New Hampshire northern hardwoods.

Abstracts of the 91st Annual Meeting of the Ecological Society of America, San Jose, CA, August 2007.

Arthur, M.A., G.M. Lovett, K.C. Weathers, and R.D. Fitzhugh. 2006. Interacting effects of geological substrate and an invasive scale (beech base disease) in tree species composition and nitrogen cycling. Proceedings, North American Forest Insect Work Conference, Asheville, NC, May 22-26, 2006. Technical Eds: F.P. Hain, R.N. Coulson, K.D. Klepzig, and J. Rhea.

Acker*, M.D. and M.A. Arthur. 2005. Mass and nutrient dynamics of coarse and fine woody debris in a chronosequence of northern hardwood forest stands. Abstracts of the 90th Annual Meeting of the Ecological Society of America, Montreal, Canada, August 2005.

Arthur, M.A. 2005. Stand dynamics in a subalpine Englemann spruce – subalpine fir forest in north central Colorado: changes over 17 years. Abstracts of the 90th Annual Meeting of the Ecological Society of America, Montreal, Canada, August 2005.

Fabio*, E. and M.A. Arthur. 2005. Stand-level control of nitrogen cycling and decomposition by oak and sugar maple at Mammoth Cave National Park. Abstracts of the 90th Annual Meeting of the Ecological Society of America, Montreal, Canada, August 2005.

Griffin, J.M., G.M. Lovett, G.R. Robinson, K.C. Weathers, M.A. Arthur, C.D. Canham and M. Kudish. 2005. The landscape pathology of beech bark disease in the Catskill Mountains: Forest history effects on disease progression. Abstracts of the 90th Annual Meeting of the Ecological Society of America, Montreal, Canada, August 2005.

Littlefield*, T., C.D. Barton and M.A. Arthur. 2005. Carbon and nutrient dynamics in regenerating forests within the eastern Kentucky coal fields. Abstracts of the 90th Annual Meeting of the Ecological Society of America, Montreal, Canada, August 2005.

Lovett, G.M., M.A. Arthur, K.C. Weathers, R.Fitzhugh and P.Templer. 2005. Species change and nitrogen retention in forests of the northeastern US. Abstracts of the 90th Annual Meeting of the Ecological Society of America, Montreal, Canada, August 2005.

Lovett, G. M., M. A. Arthur, K. C. Weathers, and R. D. Fitzhugh. 2005. Species change and nitrogen retention in forests of the northeastern US. Abstract for Acid Rain 2005 Conference, Prague, Czech Republic, June 2005.

Lovett, G. M., C. D. Canham, M. A. Arthur, K. C. Weathers, and R. D. Fitzhugh. 2005. Forest Ecosystem Responses to Exotic Pests and Pathogens in Eastern North America. Abstract for Cary Conference 11, Institute of Ecosystem Studies, Millbrook, NY, May 2005.

10. Membership in Scientific, Professional, and Honor Societies

Member: American Institute of Biological Sciences, Ecological Society of America, Society of American Foresters, Soil Science Society of America; member for 12+ years in all organizations.

11. Service and Recognition

Editorship, Review Panels, Reviewer Service

Review panels

National Science Foundation, Ecosystems Grant Panel, April 2005, 2006, 2007.

Associate Editorships

Ecology/Ecological Monographs, 2006-2009 (~13 manuscripts/year)

Soil Science Society of America Journal, 2004-2010 (~8 manuscripts/year)
Grant review NSF Ecosystems (9 proposals 2007-2009)
Journal Reviewer (8 in 2007-2008): Biogeochemistry, Bioscience, Canadian Journal of Botany, Canadian Journal of Forest Research, Ecology, Ecological Monographs, Forest Ecology and Management, Forest Science, Soil Science Society of America Journal

Committees, Elected Positions, Offices Held

Department of Forestry
Chair Search Committee, 2009-2010
Graduate Committee, 2008-2010

College of Agriculture
Agriculture Faculty Council, 2005-2007
Tracy Farmer Center for the Environment, Scientific Advisory Board, 2006-2007

University
Biology Area Committee, November 2006-2008

12. Attendance at Professional and Scientific Meetings

Workshops

Co-organized with Daniel Boone National Forest a workshop for land managers in Kentucky: *The Science of Prescribed Fire on the Cumberland Plateau*, August 11-13, 2008, Natural Bridge State Park, Slade, Kentucky.

Core member, Cumberland River Fire Learning Network (FLN). Participation as a core member in the FLN entails four 3-day workshops and numerous 1-day meetings.

Trainings

Fire ecology in upland oak ecosystems. Presentation for USFS NASP training, June 2008, Asheville, NC.

Fire and oak ecosystems on the Cumberland Plateau. Training presentation for Rx-310, *Introduction to Fire Effects* class, December 5, 2007, London, KY.

Fire ecology and management in the Cumberlands. Presentation to the *Scientific Foundations of Conservation Planning in the Cumberland Plateau and Mountains* conference, Knoxville, TN, November 13-14, 2007.

Prescribed fire and oak regeneration, Presentation to Oak Regeneration and Management, Professional Forestry Workshop, October 3-4, 2007, Lexington, KY.

CURRICULUM VITAE
2005-2009

1. Name: Thomas G. Barnes

2. Address and Contact Information

Department of Forestry
University of Kentucky
Lexington, KY 40546-0073
phone 859 257-8633
fax 859 323-1031
tbarnes@uky.edu
www.tombarnes.org

3. Current Position: Extension Professor (12-month appointment)

4. Degrees

B.S., Biology, Huron College, 1979
M.S., Wildlife & Fisheries Sciences, South Dakota State University, 1982
Ph.D., Wildlife & Fisheries Sciences, Texas A&M University, 1988

5. Experience

December 1988 – present: Extension Professor (Wildlife Specialist), University of Kentucky, Lexington, KY
1985 – 1988: Research Assistant, Department of Wildlife and Fisheries Sciences, Texas A&M University. 1983 – 1984: Biology Instructor, Huron College, Huron, SD.
1982 – 1983: Endangered Species Wildlife Biologist, U.S. Fish and Wildlife Service, Pierre, SD.
1979 – 1982: Research Assistant, South Dakota Cooperative Research Unit, SDSU, Brookings, SD.
1975 – 1979: Professional Aide I, South Dakota Game, Fish, and Parks Department, Huron, SD.

6. Research and Teaching Projects

Extramural

Kentucky Heritage Land Conservation Book Project, $10,000 awarded to T. Barnes from Kentucky HLCF board April 2007.
Wildlife Habitat Institute, $20,000 awarded to T. Barnes from Progressive Farmer Magazine February 2007.
Assessing Invasive Exotic Plants in Urban Forests. $121,005 awarded to S. Fei, T. Barnes, B. Lee, J. Stringer from USDA, National Urban Community Forestry Advisory Council June 2006.
Controlling the exotic invasive shrub, *Spiraea japonica*, on Big South Fork alluvial floodplains, $29,985 awarded May 2006, National Park Service.
Develop a State Management Plan for Aquatic Nuisance Species in Kentucky. $40,000 awarded to D. Maehr and T. Barnes from KY Dept. Fish & Wildlife Resources March 2006.

Using Sulfosufuron to Remove Smooth Brome from South Dakota Grasslands. $2,000 awarded June 2005, Monsanto Corporation.

7. Publications

Book and Book Chapters

Barnes, T. G. (In Press). Photographing Kentucky Wildflowers like A Pro. University Press of Kentucky (accepted for publication 2009).

Barnes, T. G. and N. Wirzba. 2009. The Gift of Creation. Acclaim Press (In Press).

Barnes, T. G., D. White, and M. Evans. 2008. The Rare Wildflowers of Kentucky, University Press of Kentucky.

Research

Ruffner, M. and T. G. Barnes. 2010. Natural Grassland Response to Herbicides and Application Timing for Selective Control of Tall Fescue, an Invasive Cool-Season Grass. (In Press) Invasive Plant Science and Management

Bahm, M. and T. G. Barnes 2008. Response of Native Forbs to Pre-emergent Treatment of Imazapic Herbicide. Eastern Native Grass Symposium 6: In Press

T. G. Barnes 2007. Using Herbicides to Rehabilitate Native Grasslands. Natural Areas J. 27:56-65.

Extension Publications

Thomas, W.R., J.W. Stringer, T.E. Conners, D.B. Hill, T.G. Barnes. 2007. Kentucky Forest Fact Sheet. Agric. Exten. Serv. Publ. FOR 53, 2 pp.

Magazine Articles

Stringer, J. and T. Barnes. 2007. Improving Woodland Wildlife Habitat. KY Woodlands Magazine 2(3): 6-9.

Barnes, T.G. and M. Evans. 2007. Glades. KY Woodlands Magazine. 2(3): 12-13.

Barnes, T. G. 2007. Kentucky's Uncommon Natural Heritage. KY Woodlands Magazine 2(1): 6--7.

Barnes, T.G. 2007. Winter Pizzazz: Dressing Up Your Winter Landscape. KY Gardener 5(6): 12-14.

Stringer, J. and T. Barnes. 2007. Hardwood Management Options for Wildlife. Forest Landowner 66 (2):30-31.

T.G. Barnes, 2007. Landscape Adaptation: Climate Change Leads to Lifestyle Changes. KY Gardener 5(1):12-14.

T.G. Barnes, 2006. Virginia Bunchflower. KY Gardener 4(9): 50.

T.G. Barnes, 2006. Kentucky's Rare Wildflowers. KY Gardener 4(7): 12-15.

T.G. Barnes, 2006. Of Weeds and Wildlife. Forest Landowner 65(3): 3-5.

T.G. Barnes, 2006. Taming Wildlife: Protecting Your Garden from the Hungry Hordes. KY Gardener 4(4):48-49.

T.G. Barnes, 2006. If you build it they will Come. KY Gardener 4(3):14-17.

T.G. Barnes, 2006. Elliott County Cultural Heritage Center. KY Gardener 4(2):46-47.

T.G. Barnes, 2006. Showing Off With Garden Expositions. KY Gardener 4(1):12-16.

T.G. Barnes, 2005. Functional Foundation: Using Native Trees & Shrubs in the Landscape. KY Gardener 3(9): 48-50.
T.G. Barnes, 2005. Shade Show: Native Flowering Plants for Shady Situations. KY Gardener 3(8): 13-16.
T.G. Barnes, 2005. Designing "Living Rooms" With Native Plants. KY Gardener 3(7): 44-45.
T.G. Barnes, 2005. Designing With Nature: Know Your Plants. KY Gardener 3(6): 48-50.
T.G. Barnes, 2005. The July Shade Garden in Kentucky: It Doesn't Have to be All Ferns and Hostas, Try a Little Color. KY Gardener 3(6): 14-16.
T.G. Barnes, 2005. American Goldfinches: How to Keep Them Coming Back Year After Year. KY Gardener 3(4): 14-16.
T.G. Barnes, 2005. Wet Feet: Six Species for the Boggy Landscape. KY Gardener 3(3): 13-16.
T.G. Barnes, 2005. More Backyard Birds: Woody Plants That Attract Birds. KY Gardener 3(2): 13-15.
T.G. Barnes, 2005. Backyard Birds: Keep Feathered Friends Flocking to Your Garden. KY Gardener 3(1): 48-50.

8. Presentations

I have been invited by county agents and state specialists to present programs on a variety of wildlife related subjects. I have been invited and presented more than 500 educational programs. Examples include presentations for county staff on wildlife management, animal damage management, and urban wildlife management. I have worked with specialists and provided programs for sheep producers day, annual turf shortcourse, horticulture meetings, pest control meetings, etc. I have also given invited presentations to garden clubs, environmental organizations, elderhostel groups, photography workshops, and various school groups.

9. Memberships in Scientific, Professional, and Honor Societies

Graduate Student Committee Chair

Jeb Weese, Master of Science, Thesis Topic: Evaluation of herbicides to control Japanese honeysuckle. Expected Completion date, 2007
Josh Adkins, Master of Science, Thesis Topic: Using Herbicides to Restore Bluegrass Savanna Grasslands in Central Kentucky. Degree completed 2007.
Will Wellman, Master of Science, Thesis Topic: Using Herbicides to Control Japanese Spirea (*Spirea japonica*) in the Big South Fork National River Recreation Area. Degree Completed 2008.
Matt Bahm, Doctor of Philosophy, Dissertation Topic: Converting smooth brome, reed canary grass, and quackgrass to native warm season grasses. Expected Completion date, 2008.
Marvin Ruffner, Doctor of Philosophy, Dissertation Topic: Texas Coastal Prairie Restoration. Expected Completion date, 2008.

CURRICULUM VITAE

1. Name: Christopher Douglas Barton

2. Address and Contact Information

Department of Forestry
University of Kentucky
203 Thomas Poe Cooper Bldg.
Lexington, KY 40546-0073
Phone: 859.257.2099
email: barton@uky.edu

3. Current Position: Associate Professor (12-month appointment)

4. Degrees

B.S. 1989. Centre College, Danville, Kentucky
M.S. 1997. Plant and Soil Sciences, University of Kentucky
Ph.D. 1999. Soil Science, University of Kentucky

5. Experience

Associate Professor of Forest Hydrology and Watershed Management, University of Kentucky, Department of Forestry, July 2008 to present. DOE: 75% research; 25% teaching.
Assistant Professor of Forest Hydrology and Watershed Management, University of Kentucky, Department of Forestry, January 2003 to June 2008. DOE: 75% research; 25% teaching.
Adjunct Professor, University of Louisville, Biology Department, January 2004 to present.
Adjunct Professor, South Carolina State University, Biology Department, January 2000 to 2006.
Research Hydrologist, USDA Forest Service, Southern Research Station, Center for Forested Wetland Research, Charleston, SC. Stationed at US DOE Savannah River Site, SC. January 2002 to January 2003.
Postdoctoral Research Soil Scientist, Southern Research Station, Center for Forested Wetland Research, Charleston, SC. Stationed at US DOE Savannah River Site, SC. January 1999 to January 2002.
Research and Teaching Assistant, University of Kentucky, September 1994 to January 1999.
Chemist and Field Technician, Fouser Environmental, Versailles, KY, January 1990 to June 1994.

6. Research and Teaching Projects

Extramural

C.D. Barton. 2009-2010. Long-Term Effects of Forestry Best Management Practices on Hydrology, Water Chemistry and Woody Debris in Three Appalachian Headwater Catchments. USDA Forest Service, Cooperative Research Grant, $14,000. Barton-PI.
C.D. Barton, C.T. Agouridis and Z. Weese. Characterization of Headwater Seep Wetlands in Southeastern Kentucky USDA CSREES, Precision Agriculture: Precision Resource Management, $49,946. Barton PI.

C.D. Barton. 2009-2011. Enhancement of Disturbed Upper Coastal Plain Stream Systems: Establishing Restoration Criteria and Strategies for a Stream Mitigation Bank - Amendment. USDA Forest Service, Cooperative Research Grant, $87,494. Barton-PI.

F. Hebbard, R. Paris, C.D. Barton, J. Skousen, B. McCarthy, J. Franklin, M. Jacobson and E. Shelman. 2008-2010. American Chestnut Restoration on Surface Mined Land in the Appalachian Region. Prime Sponsor: Department of The Interior, Office of Surface Mining Reclamation and Enforcement - Applied Science Program Cooperative Agreements: Coal Mining and Reclamation. (Subaward to Barton from the American Chestnut Foundation for $25,000)

C.D. Barton, J.M. Lhotka, R.C. Warner, C.T. Agouridis, D.H. Graves and S. Fei. 2008-2010. Demonstrating Techniques for Establishing Woody Biomass Plantations on Surface Mined Lands as Feedstocks for Energy Production. Kentucky Research & Development Seed Grants Program. $174,166. Barton co-PI.

J.J. Cox, C.D. Barton, and M.J. Lacki. 2007. Ecological Monitoring Initiative at Griffith Woods. USDA CSREES, Precision Agriculture: Precision Resource Management, $66,262. Barton co-PI.

P.D.S. Guimaraes, J. Hartman and C.D. Barton. 2007-2008. Survey for P. *ramorum* in Kentucky Watersheds. USDA Forest Service, Cooperative Research Grant, $21,000. Barton co-PI.

C.D. Barton. 2006-2009. Influence of Streamside Management Zone Protection on Hydrology and Water Quality in Forested Headwater Catchments of Eastern Kentucky. Commonwealth of Kentucky, SB 271 Funds, $94,277. Barton-PI

C.D. Barton and C. Agouridis. 2006-2009. Evaluating Post-Mined Land Reforestation Through the Spatial Assessment of Soil Genesis. CSREES, Precision Agriculture: Precision Resource Management, $65,242. Barton-coPI.

P.D.S. Guimaraes, J. Hartman and C.D. Barton. 2006-2007. Survey for P. *ramorum* in Kentucky Watersheds. USDA Forest Service, Cooperative Research Grant, $10,000. Barton co-PI.

C.D. Barton. 2005-2008. Enhancement of Disturbed Upper Coastal Plain Stream Systems: Establishing Restoration Criteria and Strategies for a Stream Mitigation Bank. USDA Forest Service, Cooperative Research Grant, $257,718. Barton-PI.

Proposals Submitted

C.D. Barton, H.S. Jin and C.T. Agouridis. 2009-2011. Water Quality and Biological Response to Headwater Stream Restoration on an Eastern Kentucky Surface Mine. USDI-OSMRE: Applied Science Program Cooperative Agreements Related to Coal Mining & Reclamation. $169,858. Barton co-PI.

J.M. Lhotka, C.D. Barton and J. Stringer. 2009-2011. Effect of grading technique and forest thinning on productivity of high-value tree species in reforested surface mine lands. USDI-OSMRE: Applied Science Program Cooperative Agreements Related to Coal Mining & Reclamation. $223,380. Barton co-PI.

C.T. Agouridis, C.D. Barton, M.S. Coyne, A.C. Gumbert and L.R. Lhotka. 2008-2011. Techniques for Improving Stream Corridor Function in Urban and Urban-Fringe Environments. To: CSREES - National Integrated Water Quality Program. (USDA-CSREES-ICGP-001264). $658,467. Barton co-PI

J.M. Lhotka, C.D. Barton, R.C. Warner, C.T. Agouridis and S. Fei. 2008-2010. Demonstrating Techniques for Establishing Woody Bioenergy Plantations on Reclaimed Surface Mined

Lands. To: Joint USDA/DOE (RD-RBP-BIOMASS-2007): Biomass Research and Development Initiative. $524,968. Barton co-PI.

7. Teaching and Advising

Graduate student advising

Completed

Lee Moser, M.S. Forestry, 2009. Thesis: The effects of hardwood re-sprout control in hydrologically restored Carolina bay depression wetlands; Major Advisor. Currently. Hydrology Technician, USDA Forest Service, Daniel Boone National Forest.

Kathryn M. Ward, M.S. Earth and Environmental Sciences, 2009. Thesis: Influence of matrix geochemistry on Phytophthora detection on reforested mine lands in Appalachia; co-Major Advisor with Dr. Alan Fryar. Currently. Geologist, KY Division of Water.

Patrick Angle, Ph.D. Soil Science, 2008. Dissertation: Forest Establishment and Water Quality Characteristics as Influenced by Spoil Type on a Loose-Graded Surface Mine in Eastern Kentucky; Major Advisor. Currently. Soil Scientist/Forester, USDI Office of Surface Mining and Reclamation.

Jared Edwards, M.S. Plant and Soil Sciences, 2008. Thesis: Removal of manganese from Alkaline Mine Drainage Using a Bioreactor with Different Organic Carbon Sources; co-Major Advisor with Dr. Tasos Karathanasis. Currently. Stream Restoration Specialist, Stantec.

Sarah Hall, M.S. Forestry, 2007. Thesis: Topsoil Seed Bank of an Oak-Hickory Forest in Eastern Kentucky as a Restoration Tool on Surface Mines; Major Advisor. Currently: Co-Investigator of Plant Biodiversity, Kentucky State University.

Tara Littlefield, M.S. Forestry, 2007. Thesis: Factors Controlling the Cycling and Distribution of Carbon on Reclaimed Minelands and Regenerating Clearcuts in Eastern Kentucky, co-Major Advisor with Dr. Mary Arthur. Currently: Botanist, Kentucky State Nature Preserves Commission.

Danielle Andrews, M.S. Plant and Soil Sciences, 2006. Thesis: Hyporheic Zone Development and Water Quality Improvement in a Restored Riparian Area; Major Advisor. Currently: Doctoral Student, Penn State University.

Alex Cherry, M.S. Forestry, 2006. Thesis: Hydrochemical Characterization of Ten Headwater Catchments in Eastern Kentucky, Major Advisor. Currently: Hydrologist, USGS.

Claudia Cotton, M.S. Forestry, 2006. Thesis: Developing a Method of Site Quality Evaluation for *Quercus Alba* and *Liriodendron Tulipifera* in the Eastern Kentucky Coal Field, Major Advisor. Currently: Doctoral Student, Virginia Tech.

Sally Maharaj, M.S. Geology, 2006. Thesis: Distinguishing and Quantifying "New Carbon" From "Old Carbon" on Reclaimed Mine Sites Using Thermogravimetry: Method Development and Field Validation, co- Major Advisor with Dr. Harry Rowe. Currently: Chemist and Laboratory Supervisor, Kaizen Environmental Services Trinidad Limited.

In Progress

Michael French, M.S. Forestry, Major Advisor.

Emma Witt, Ph.D. Soil Science, Major Advisor.

Courtney Mastin, M.S. Forestry, Major Advisor.

Advisory Committee Member

David Lyons, M.S. Forestry, 2004
Jason Robinson, M.S. Plant and Soil Science, 2004
Julie Ter Beest, M.S. Forestry, 2005
Marty Acker, M.S. Forestry, 2006
Eric Fabio, M.S. Forestry, 2006
Brian Cook, M.S. Forestry, 2007
Adam Michels, M.S. Forestry, 2007
Jennifer Gentry, M.S. Biology (U of L), 2007
Timothy Taylor, M.S., Biosystems and Agricultural Engineering, 2007
Jarrod Miller, Ph.D. Soil Science, 2008
Luke Cecil, M.S. Forestry, in-progress
Estifanos Haile, Ph.D., Geology, in progress
Christopher Reeves, M.S. Forestry, in-progress
Erin Barding, Ph.D. Animal Science, in-progress
Matt Weand, Ph.D. Soil Science, in-progress
Meghan Langley, M.S. Biology (U of L), in-progress
Josh Brinks, M.S. Forestry, in-progress

Post-doctoral scholars

Jarrod Miller. June 1, 2008 – March 15, 2009. Received Ph.D. degree in Soil Science from the University of Kentucky in 2008. Scientific area of emphasis: Environmental and Soil Chemistry. Currently, Research Soil Scientists, USDA-ARS, Florence, SC.

Bon Jun Koo. July 1, 2004 – June 30, 2005. Received Ph.D. degree in Soil and Water Science from the University of California, Riverside in 2002. Scientific area of emphasis: Environmental Biogeochemistry. Currently, Assistant Professor, Natural and Physical Sciences Department, California Baptist University.

Courses Taught

FOR 460G – Watershed Management, 3 credit hours.

FOR 480 – Integrated Forest Resource Management, 5-credit hours. Co-taught (50% responsibility) with Dr. Mike Lacki (03-06) and Dr. Tamara Cushing (07).

FOR 770 – Environmental Monitoring and Data Acquisition, 1-credit hour.

NRC 320 – Data Collection Techniques (NRC Summer Camp), 3 credit hours; Summer 2009, 10 students.

ENV 491 – Soils and Hydrology, 4 credit hours; Summers 1999-2005. Responsible for half of the instruction. Operated by Savannah River Environmental Sciences Field Station and South Carolina State University.

Undergraduate Advising

Adam King, UK, NRCM Major. Examined alternative techniques for restoring sediment ponds on surface mine lands. NRCM Internship: Spring 2007.

Nick Baker, UK, NRCM Major. Examined hydrologic differences between created and natural ephemeral streams in Eastern Kentucky. NRCM Internship: Spring 2006. Presentation: N. Baker and D. Dale. 2006. Surface Coal Mining Impacts on Headwater Stream Functions. UK Showcase of Scholars; Lexington, KY. April 25.

David Dale, UK, NRCM Major. Examined water quality differences between created and natural ephemeral streams in Eastern Kentucky. NRCM Internship: Spring 2006. Presentation: N. Baker and D. Dale. 2006. Surface Coal Mining Impacts on Headwater Stream Functions. UK Showcase of Scholars; Lexington, KY. April 25.

Francis Lynch, University of the South, Math Major. Examined stream geomorphology in Robinson Forest. Presentation: Lee, B.P., C.D. Barton, R.A. Katho, and F. Lynch. 2006. Robinson Forest Stream Assessment. KY GIS Conference: Ft. Mitchell, KY. July 17.

Forrest Miller, Centre College, Biology Major. Examined stream chemistry in Robinson Forest. Summer 2005.

8. Publications

Refereed Journal Publications

Taylor, T.J., C.T. Agouridis, R.C. Warner C.D. Barton and P. Angel. 2009. Hydrologic Characteristics of Loose-Dumped Spoil in the Cumberland Plateau of Eastern Kentucky. Hydrological Processes *(Accepted for publication 7/09)*

S.L. Hall, C.D. Barton, and C.C. Baskin. 2009. Seed Viability in Stockpiled Topsoil on a Surface Mine in Appalachia. Ecological Restoration*. (Accepted for publication 4/09).*

Koo, Bon Jun., Daniel E. Fletcher, Thomas G. Hinton, Christopher D. Barton, Mark R. Matsumoto, Amanda M. Teune, and Daniel I. Kaplan. 2009. Assessment of Stream Fish Mortality from Short-Term Exposure to Illite Clays used as an In-Situ Method for Remediating 137Cs Contaminated Wetlands. International Journal of Soil, Sediment and Water *(Accepted for publication 4/09).*

Conrad, P., R. Sweigard, V. Badaker, K. Hunt, D. Graves and C.D. Barton. 2009. Long-term changes in selected spoil characteristics on reforested surface-mined land. Transactions of Society for Mining, Metallurgy and Exploration. *(Accepted for publication 2/09).*

Andrews, D.A., C.D. Barton, S.J. Czapka, R.K. Kolka, and B.W. Sweeney. 2009. Influence of tree shelters on seedling success in an afforested riparian zone. New Forests. DOI 10.1007/s11056-009-9161-8 (jif -0.845)

Edwards, J. D., C. D. Barton, and A.D. Karathanasis. 2009. Evaluating the Use of a Bioreactor Mesocosm for Manganese Removal in Alkaline Mine Drainage. Water, Air and Soil Pollution. DOI: 10.1007/s11270-009-0010-3 (jif -1.205)

S.L. Hall, C.D. Barton, and C.C. Baskin. 2009. Topsoil seed bank of an oak-hickory forest in eastern Kentucky as a restoration tool on surface mines. Restoration Ecology. Published Online: Feb 11, 2009; DOI: 10.1111/j.1526-100X.2008.00509.x (jif -1.612)

Taylor, T.J., C.T. Agouridis, R.C. Warner and C.D. Barton. 2009. Runoff curve numbers for loose-dumped spoil in the Cumberland Plateau of Eastern Kentucky. International Journal of Mining, Reclamation and Environment. 24: 1-12. DOI: 10.1080/17480930802176389.

Barton, C.D., D.A. Andrews and R.K. Kolka. 2008. Evaluating hydrologic response in restored Carolina bay wetlands using soil physicochemical properties. Restoration Ecology. 16 (4): 668-677. (jif -1.612)

Conrad, P.W., R. J. Sweigard, V. Badaker, D. H. Graves, and C. D. Barton. 2008. The impact of surface applied mulches on selected physical properties of reclaimed mountaintop removal sites. International Journal of Mining, Reclamation and Environment. 22 (3): 222-236.

Larkin, J.L., D.S. Maehr, J.J. Krupa, J.J. Cox, K. Alexy, D.E. Unger and C.D. Barton. 2008. Small mammal response to vegetation and spoil conditions on a reclaimed surface mine in eastern Kentucky. Southeastern Naturalist. 7(3): 401-412.

Handayani, I. P., M.S Coyne, C.D. Barton, and S. Workman. 2008. Soil carbon pools and aggregation following stream restoration in a riparian corridor: Bernheim Forest, Kentucky. Journal of Environmental Monitoring and Restoration. 4: 11-28.

Fissore, C., C.P. Giardina, R.K. Kolka, C.C. Trettin, G.M. King, M.F. Jurgensen, C.D. Barton and D.S. McDowell. 2008. Temperature and vegetation effects on soil organic carbon quality along a forested mean annual temperature gradient in North America. Global Change Biology. 14: 193-205. (jif -4.339)

Maharaj, S, C.D. Barton, A.D. Karathanasis, H.D. Rowe and S.M. Rimmer. 2007. Distinguishing "new" from "old" organic carbon in reclaimed coal mine sites using thermogravimetry: I. Method development. Soil Science. 172(4): 292-301. (jif -0.956)

Maharaj, S, C.D. Barton, A.D. Karathanasis, H.D. Rowe and S.M. Rimmer. 2007. Distinguishing "new" from "old" organic carbon in reclaimed coal mine sites using thermogravimetry: II. Field validation. Soil Science. 172(4): 302-312. (jif -0.956)

Sharitz, R.R., C.D. Barton and D. De Steven. 2006. Tree plantings in depression wetland restorations show mixed success. Ecological Restoration. 24(2): 114-115.

De Steven, D., R.R. Sharitz, J.H. Singer and C.D. Barton. 2006. Testing a passive revegetation approach for restoring coastal plain depression wetlands. Restoration Ecology. 14(3): 452-460. (jif -1.612)

Barton, C.D., D. Marx, D. Adriano, B.J. Koo, L. Newman, S. Czapka and J. Blake. 2005. Phytostabilization of a landfill containing coal combustion waste. Environmental Geosciences. 12(4): 251-266.

Rebel, K.T., S.J. Riha, J.C. Seaman, C.D. Barton. 2005. The use of dynamic modeling in assessing tritium phytoremediation. Environmental Geosciences. 12(4): 243-250.

Barton, C.D., and K.E. Kinkead. 2005. Do erosion control and snakes mesh? Journal of Soil and Water Conservation. 60(2): 34-36. (jif -0.949)

Barton, C.D., L. Paddock, C. Romanek, S. Maharaj and J. Seaman. 2005. Metal attenuation processes in a landfill containing coal combustion waste: Implications for remediation. Environmental Geosciences. 12(1): 45-56.

Hitchcock, D.R., C. D. Barton, K.T. Rebel, J. H. Singer, J. C. Seaman, J. D. Strawbridge, S. J. Riha, and J. I. Blake. 2005. A containment and disposition strategy for the management of tritium-contaminated groundwater at the Savannah River Site, SC USA. Environmental Geosciences. 12(1): 17-28.

Books and Book Chapters

Jacinthe, P.A., C. D. Barton, S. Maharaj and R. Lal. 2009. An evaluation of methodologies for assessing geogenic carbon in mine soils of the eastern United States. In: R. Lal and R.F. Follett (eds.) Soil Carbon Sequestration and the Greenhouse Effect, 2nd Edition. SSSA Special Publication 57, 2nd Edition. 347-363.

Koo, B.J., C.D. Barton and D. Adriano. 2006. Evaluation of Bahiagrass (*Paspalum notatum*) as a vegetative cover for a landfill containing coal combustion waste. Pp 225-231. In: K. Sajwan, T. Punshon, A.K. Alva, and R.F. Keefer (Eds.) Coal Combustion Byproducts and Environmental Issues. Springer Publishers: New York.

Maharaj, S., C.D. Barton, B.J. Koo and L. Newman. 2006. Phytoavailability of trace elements from a landfill containing coal combustion waste. Pp. 195-201. In: K. Sajwan, T. Punshon, A.K. Alva, and R.F. Keefer (Eds.) Coal Combustion Byproducts and Environmental Issues. Springer Publishers: New York.

Koo, B.J., D.C. Adriano, N.S. Bolan and C.D. Barton. 2005. Plant Root Exudates and Microoganisms. In: Encyclopedia of Soils in the Environment. Academic Press. 421-428.

Barton, C. D., J. I. Blake, and D. W. Imm. 2005. Ecological Restoration. Pp. 70-83. In. J. C. Kilgo and J. I. Blake (eds.). Ecology and Management of a Forested Landscape: Fifty Years of Natural Resource Stewardship on the Savannah River Site. Allen Press, Washington, D. C., USA.

Edited Symposium Papers

Angel, P.N., C.D. Barton, R.C. Warner, C. Agouridis, T. Taylor, and S.L. Hall. 2008. Tree Growth, Natural Regeneration and Hydrologic Characteristics of Three Loose-Graded Surface Mine Spoils in Kentucky. In: Proceedings of 2008 National Meeting of the American Society of Mining and Reclamation, Richmond, VA, New Opportunities to Apply Our Science. June 14-19, 2008. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502. pp

Barton, C.D., D. Marx, R. Sweigard and W. Barton. 2008. Evaluating Spoil Amendment Use and Mycorrhizal Inoculation on Reforestation Success in the Eastern and Western Kentucky Coalfields. In: Proceedings of 2008 National Meeting of the American Society of Mining and Reclamation, Richmond, VA, New Opportunities to Apply Our Science. June 14-19, 2008. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502. pp

Adank, K.M., C.D. Barton, M.E. French and P. DeSa. 2008. Occurrence of Phytophthora on Reforested Loose-Graded spoils in Eastern Kentucky. In: Proceedings of 2008 National Meeting of the American Society of Mining and Reclamation, Richmond, VA, New Opportunities to Apply Our Science. June 14-19, 2008. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502. pp 1-13.

Michels, A., C.B. Barton, T. Cushing, P. Angel, R. Sweigard, and D. Graves. 2007. Evaluation of Low Spoil Compaction Techniques for Hardwood Forest Establishment on an Eastern Kentucky Surface Mine. In: Proceedings of 2007 National Meeting of the American Society of Mining and Reclamation, Gillette WY, June 2-7, 2007. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502. pp 492-503.

French, M.E., C.D. Barton, D. Graves, P.N. Angel, and F.V. Hebard. 2007. Evaluation of Mine Spoil Suitability for the Introduction of American Chestnut Backcrosses in the Cumberland Plateau. In: Proceedings of 2007 National Meeting of the American Society of Mining and Reclamation, Gillette WY, June 2-7, 2007. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502. pp 249-258.

Angel, P.N., C.D. Barton, R.C. Warner, C. Agouridis, R.J. Sweigard, and D.H. Graves. 2007. Tree Growth and Natural Regeneration on Loose-Graded Brown and Gray Sandstone and Mixed Sandstone/Shale Surface Mine Spoils in Kentucky: Preliminary Findings. In: Proceedings of 2007 National Meeting of the American Society of Mining and Reclamation, Gillette WY, June 2-7, 2007. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502. pp 29-42.

Angel, P.N., D.H. Graves, C.D. Barton, R.C. Warner, P.W. Conrad, R.J. Sweigard and C. Agouridis. 2006. Surface Mine Reforestation Research: Evaluation of Tree Response to Low

Compaction Reclamation Techniques. In: R.I. Barnhisel (ed.). Proceedings of the American Society of Mining and Reclamation and the 7th ICARD 2006 National Conference. American Society of Mining and Reclamation, Lexington, KY. pp45-58.

Barton, C.D., D.M. Andrews and R.K. Kolka. 2006. Influence of soil physicochemical properties on hydrology and restoration response in Carolina bay wetlands. Pp. 447-454. In: Hydrology and Management of Forested Wetlands. American Society of Agricultural and Biological Engineers, St. Joseph, MI.

Technical Reports and Extension Publications

Burger, J., V. Davis, J. Franklin, C. Zipper, J. Skousen, C. Barton and P. Angel. 2009. Tree-Compatible Ground Covers for Reforestation and Erosion Control. U.S. Office of Surface Mining. Forest Reclamation Advisory Number 6. 6 p. http://arri.osmre.gov/fra.htm.

Angel, P.N., J. A. Burger, J. Skousen and C.D. Barton. 2009. The forestry reclamation approach. Canadian Reclamation. 1:40-44.

Angel, P.N., C.D. Barton, and C. Agouridis. 2008. Interagency study examines impacts of mine spoil types on reforestation efforts. USEPA Technology News and Trends: 37:4-5. http://www.clu-in.org/products/newsltrs/tnandt/

Barton, C.D. D.De Steven, R. Sharitz, J. Kilgo, K. Kinkead, D. Otis, H. Hanlin, J. Ledvina, B. Taylor and J. Blake 2007. The Carolina Bay Restoration Project: Final Report 2000-2006. US Department of Energy DE-A109-00SR22188US. Department of Energy's Information Bridge: http://www.osti.gov/bridge/product.biblio.jsp?query_id=2&page=0&osti_id=921084. 71 pp.

De Sa, P.B., A. Bateman, J. Hartman, C. Barton, R. Patel and K. Adank. 2007. Early detection survey for Phytophthora ramorum in Kentucky. Research Report of the Nursery and Landscape Program. Agricultural Experiment Station. University of Kentucky. PR-554. pp. 24-26.

French, M.E., C.D. Barton, D. Graves, F.V. Hebard, S. Fei and K. Adank. 2007. Can surface mine reclamation help to restore American Chestnut? Reclamation Matters: 4(2): 24-28.

Sweigard, R., J. Burger, C. Zipper, J. Skousen, C. Barton and P. Angel. 2007. Low Compaction Grading to Enhance Reforestation Success on Coal Surface Mines. U.S. Office of Surface Mining. Forest Reclamation Advisory Number 3. 6 p. http://arri.osmre.gov/fra.htm.

Sweigard, R., J. Burger, D. Graves, C. Zipper, C. Barton, J. Skousen, and P. Angel. 2007. Loosening Compacted Soils on Mined Sites. U.S. Office of Surface Mining. Forest Reclamation Advisory Number 4. 4 p. http://arri.osmre.gov/fra.htm.

Groninger, J., J. Skousen, P. Angel, C. Barton, R., J. Burger, and C. Zipper. 2007. Mine Reclamation Practices to Enhance Forest Development Through Natural Succession. U.S. Office of Surface Mining. Forest Reclamation Advisory Number 5. 5 p. http://arri.osmre.gov/fra.htm.

Graves, D, C.D. Barton, P. Angel and L. Keene. 2006. Reclaiming the Future: Reforestation in Appalachia. UK Extension Pub. DFR-0074. DVD, 29.30 min.

Graves, D, C.D. Barton, R. Sweigard, R. Warner and C. Agouridis. 2006. Carbon Sequestration on Surface Mine Lands: Final Report 2003-2006. Department of Energy, Award #: DE-FC26-02NT41624 ESH-ERP. 108 pp.

9. Professional Presentations/Abstracts

Moser, L., and C. Barton. 2009. Carolina Bay restoration: Control of undesired hardwood competitors. Society of Wetland Scientists Annual Conference. Madison, WI. June 21 -26, 2009.

DeSteven, D., B. Sharitz and C. Barton. 2009. Evaluating success in passively restored depressional wetlands. Society of Wetland Scientists Annual Conference. Madison, WI. June 21 -26, 2009.

Witt, E., C. Barton, R. Kolka, D. Bowker and J. Stringer. Evaluating Best Management Practices for Ephemeral Channel Protection during Forest Harvest in the Cumberland Plateau-Preliminary Findings. 2009 ASABE Annual International Meeting. Reno, Nevada. June 21 – June 24, 2009

Agouridis, C., C.D. Barton and R. Warner. 2009. Recreating a Headwater Stream on a Head of Hollow Fill. Geomorphic Reclamation and Natural Stream Design at Coal Mines- Technical Forum. Bristol, VA. April 28-30, 2009.

Warner, R., C. Agouridis and C.D. Barton. 2009. Modeling sediment loss on geomorphic regarded forest lands in Kentucky. Geomorphic Reclamation and Natural Stream Design at Coal Mines- Technical Forum. Bristol, VA. April 28-30, 2009.

Barton, C.D., B.J. Koo, S. Maharaj and D. Graves. 2008. Carbon Sequestration on Reforested Mine Lands in the Appalachian Region of the United States. 5th International Phytotechnologies Conference. Nanjing, China. October 22-25, 2008. (Invited Keynote Presentation)

Koo, B.J., D. Fletcher, T. Hinton and C.D. Barton. Assessment of Stream Fish Mortality from Short-Term Exposure to Illite Clays used as an In-Situ Method for Remediating 137Cs Contaminated Wetlands. 24th Annual International Conference on Soils, Sediments and Water. University of Massachusetts at Amherst. October 20-23, 2008.

Kathryn M. Adank, Christopher D. Barton, and Alan E. Fryar. 2008 Selected Water Quality Attribute Analyses of Infiltrated Waters from Reforested Loose-Graded Mine Spoils in Eastern Kentucky. USEPA and National Groundwater Association Remediation of Abandoned Mine Lands Conference. Denver, CO. October 2-3, 2008.

Angel, P.N., C.D. Barton, R.C. Warner, C.T. Agouridis and T.J. Taylor. 2008. Forest Establishment and Water Quality Characteristics on a Loose-Graded Surface Mine in Eastern Kentucky. USEPA and National Groundwater Association Remediation of Abandoned Mine Lands Conference. Denver, CO. October 2-3, 2008. (Invited)

Jarrod O. Miller, A.D. Karathanasis, O.O. Wendroth, C.J. Matocha and C.D. Barton. 2008. In Situ Colloid Mobilization and Metal Transport Within Biosolid Amended Soils Following Coal Mine Reclamation. USEPA and National Groundwater Association Remediation of Abandoned Mine Lands Conference. Denver, CO. October 2-3, 2008.

Roger Burke, Ken Fritz, Brent Johnson, Stephanie Fulton, and Christopher Barton. 2008. Impact of Mountaintop Mining/ Valley Fill on the Stable Carbon Isotopic Composition and Concentration of Dissolved Organic Carbon and Dissolved Inorganic Carbon in Headwater Streams. The 6th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Honolulu, Hawaii. August 25-29, 2008.

Reeves, C., J. Stringer, C. Barton and C. Agouridis. 2008. Sedimentation rates of temporary skid trail headwater stream crossings. Addressing Forest Engineering Challenges of the Future. Proceedings of the 31st Annual Meeting of the Council on Forest Engineering. Charleston, SC June 25-28.

Angel, P.N., C.D. Barton, R.C. Warner, C. Agouridis, T. Taylor, and S.L. Hall. Tree Growth, Natural Regeneration and Hydrologic Characteristics of Three Loose-Graded Surface Mine Spoils in Kentucky. 2008 National Meeting of the American Society of Mining and Reclamation, Richmond, VA, New Opportunities to Apply Our Science. June 14-19, 2008.

Barton, C.D., D. Marx, R. Sweigard and W. Barton. Evaluating Spoil Amendment Use and Mycorrhizal Inoculation on Reforestation Success in the Eastern and Western Kentucky Coalfields. 2008 National Meeting of the American Society of Mining and Reclamation, Richmond, VA, New Opportunities to Apply Our Science. June 14-19, 2008.

Adank, K.M., C.D. Barton, M.E. French and P. DeSa. Occurrence of Phytopthora on Reforested Loose-Graded spoils in Eastern Kentucky. 2008 National Meeting of the American Society of Mining and Reclamation, Richmond, VA, New Opportunities to Apply Our Science. June 14-19, 2008.

Reeves, C., J. Stringer, C. Barton and C. Agouridis. 2008. Sediment delivery from temporary stream crossing technologies. Society of American Foresters 2007 National Convention; Portland , Oregon October 23-27.

Angel, P., C.D. Barton, R. Warner, C. Agouridis, S. Hall, R. Sweigard and D. Graves. 2007. Tree growth on loose-graded surface mine spoil in Kentucky. Society of American Foresters 2007 National Convention; Portland , Oregon October 23-27.

C. Cotton, C.D. Barton and D. Graves. 2007. Growth response of two tree species on reclaimed minelands in eastern Kentucky. Society of American Foresters 2007 National Convention; Portland , Oregon October 23-27.

Taylor, T., C. Agouridis, R. Warner, C. Barton, D. Graves and P. Angel. 2007 Hydrologic and water quality characteristics of loose-graded mine spoil. Society of American Foresters 2007 National Convention; Portland , Oregon October 23-27.

Taylor, T., C. Agouridis, R. Warner, C. Barton, D. Graves and P. Angel. 2007 Curve numbers for forested watersheds and loose-graded mine spoil. Society of American Foresters 2007 National Convention; Portland , Oregon October 23-27.

Hall, S.L., C.D. Barton and C. Baskin. 2007. Seed Banks as restoration tools on surface-mined lands in central Appalachia. Society of American Foresters 2007 National Convention; Portland , Oregon October 23-27.

R. Sweigard, K. Hunt, V. Badaker, D. Graves and C. Barton. 2007. Physical characteristics of root growth media on reclaimed mine land and its effect on reforestation. Society of American Foresters 2007 National Convention; Portland , Oregon October 23-27.

Barton, C.D., C. Agouridis and R. Warner. 2007. Recreating a headwater stream system on a head-of-hollow fill. Mid-Atlantic Stream Restoration Conference; Cumberland, Maryland November 6-8.

Edwards, J., C.D. Barton and A.D. Karathanasis. 2007. Removal of Mn from an Alkaline Mine Drainage Using a Bioreactor with Different Organic Carbon Sources. ASA-CSSA-SSSA Annual Meeting; New Orleans, LA. Nov. 4-8.

Hall, S.L., C.D. Barton and C. Baskin. 2007. Soil Seed Banks as Catalysts for Succession on Surface-mined Lands in Central Appalachia. 92nd Annual Meeting of the Ecological Society of America. San Jose, CA. August 5-10.

Barton, C.D. 2007. Carbon Sequestration by Forests on Reclaimed Mines. 2007 Mined Land Reforestation Conference. Abingdon, VA, August 7-8. (Invited)

Warner, R., C. Barton and C. Agouridis. 2007. Mining and Mine Reforestation: Influences on Watershed Hydrology. 2007 Mined Land Reforestation Conference. Abingdon, VA, August 7-8. (Invited)

Adank, K.M., C.D. Barton, M. E. French, and P. B. de Sá. 2007. Survey of *Phytophthora* on Reclaimed Mine Land Spoils. 2007 Mined Land Reforestation Conference. Abingdon, VA, August 7-8.

French, M. E., C. D. Barton, D. Graves, P. N. Angel, and F. V. Hebard. 2007. Direct-seeding versus containerized transplantation of American chestnuts on loose mine spoil in the Cumberland Plateau. 2007 Mined Land Reforestation Conference. Abingdon, VA, August 7-8.

Agouridis, C. T., C. D. Barton, R.C. Warner, D.A. Bidelspach, G.D. Jennings, R. Osborne, and J.W. Marchant. 2007. Design of a Headwater Stream System for a Head-of-Hollow Fill. 2007 Mined Land Reforestation Conference. Abingdon, VA, August 7-8. (Invited)

Fritz, K., S. Fulton, B. Johnson, C. Barton, J. Jack, D. Word, and R. Burke. 2007. Do Post-Mining Constructed Channels Replace Functional Attributes of Headwater Streams? Proceedings: North American Benthological Societies 55th Annual Meeting, Columbia SC, June 3-7.

Michels, A., C. D. Barton, T. Cushing, P. Angel, R. Sweigard, and D. Graves. 2007. Evaluation of Low Spoil Compaction Techniques for Hardwood Forest Establishment on an Eastern Kentucky Surface Mine. 2007 National Meeting of the American Society of Mining and Reclamation, Gillette WY, June 2-7.

French, M.E., C.D. Barton, D. Graves, P.N. Angel, and F.V. Hebard. 2007. Evaluation of Mine Spoil Suitability for the Introduction of American Chestnut Backcrosses in the Cumberland Plateau. 2007 National Meeting of the American Society of Mining and Reclamation, Gillette WY, June 2-7.

Angel, P.N., C.D. Barton, R.C. Warner, C. Agouridis, R.J. Sweigard, and D.H. Graves. 2007. Tree Growth and Natural Regeneration on Loose-Graded Brown and Gray Sandstone and Mixed Sandstone/Shale Surface Mine Spoils in Kentucky: Preliminary Findings. 2007 National Meeting of the American Society of Mining and Reclamation, Gillette WY, June 2-7.

Andrews, D.M., C.D. Barton, R.K. Kolka, and C.C. Rhoades. 2006. Hyporheic zone development and water quality improvement in a restored riparian area. Annual Conference of the Geological Society of America, Philadelphia, PA. October 22-25.

Angel, P.N., D.H. Graves, C.D. Barton, R.C. Warner, P.W. Conrad, R.J. Sweigard and C. Agouridis. 2006 Surface Mine Reforestation Research: Evaluation of Tree Response to Low Compaction Reclamation Techniques. National Meeting of the Society of American Foresters. Pittsburgh, PA. October 25-29.

Agouridis, C.T., R.C. Warner, C.D. Barton, D.A. Bidelspach, G.D. Jennings, J.W. Marchant, and R. Osborne. 2006. Promoting a Paradigm Shift in Head-of-Hollow Fill Design through Public Education. Abstract for Stream Restoration in the Southeast: Accomplishments and Opportunities, Charlotte, NC, October 2-5.

Agouridis, C.T., R.C. Warner, C.D. Barton, D.A. Bidelspach, G.D. Jennings, J.W. Marchant, and R. Osborne. 2006. Design of a Headwater Stream System for a Head-of-Hollow Fill. Abstract for Stream Restoration in the Southeast: Accomplishments and Opportunities, Charlotte, NC, October 2-5.

Kolka, R.K., D.M. Andrews, C.D. Barton and C.C. Rhoades. 2006. Vegetation establishment, hyporheic zone and soil development, in a restored stream/riparian area. International Conference on Forests and Waters in a Changing Environment. Beijing, China. August 8-10.

Hall, S.L., and C.D. Barton. 2006. From icon to upstart: Seed banks as restoration tools on surface-mined lands. 91st Annual Meeting of the Ecological Society of America. Memphis, TN. August 5-8.

Cherry, A., C.D. Barton, J. Stringer, and R.K. Kolka. 2006. Effects of federal environmental protection acts on "pristine" streams in eastern Kentucky. Soil and Water Conservation Society Annual Conference; Keystone, Colorado. July 22-26.

Lee, B.P., C.D. Barton, R.A. Katho, and F. Lynch. 2006. Robinson Forest Stream Assessment. KY GIS Conference: Ft. Mitchell, KY. July 17.

Maharaj, S., C.D. Barton, S.M. Rimmer, H. Rowe and A.D. Karathanasis. 2006. Distinguishing and quantifying "new carbon" from "old carbon" on reclaimed mine sites using thermogravimetry: Method development. Conference on Carbon Capture and Sequestration. Alexandria, VA. May 8-11.

Barton, C.D., B.J. Koo, S. Maharaj and D.H. Graves. 2006. Soil carbon accumulation rates on minelands in Appalachia. Conference on Carbon Capture and Sequestration. Alexandria, VA. May 8-11.

Barton, C.D., D.M. Andrews and R.K. Kolka. 2006. Influence of soil physicochemical properties on hydrology and restoration response in Carolina bay wetlands. International Conference on Hydrology and Management of Forested Wetlands. American Society of Agricultural and Biological Engineers, New Bern, NC. April 8-12.

Littlefield, T., C.D. Barton, and M.A. Arthur. 2006. Carbon and Nutrient Dynamics in Reforested Mine Sites within the Eastern Kentucky Coal Fields. National Meeting of the American Society of Mining and Reclamation, and the 7th ICARD. St. Louis MO. March 26-29.

Angel, P.N., D.H. Graves, C.D. Barton, R.C. Warner, P.W. Conrad, R.J. Sweigard and C. Agouridis. 2006 Surface Mine Reforestation Research: Evaluation of Tree Response to Low Compaction Reclamation Techniques. National Meeting of the American Society of Mining and Reclamation, and the 7th ICARD. St. Louis MO. March 26-29.

Cotton, C., C.D. Barton and D.H. Graves. 2006. A comparison of *Quercus Alba* and *Liriodendron Tulipifera* growth on reforested minelands and naturally regenerating forest. National Meeting of the American Society of Mining and Reclamation, and the 7th ICARD. St. Louis MO. March 26-29.

Maharaj, S., C.D. Barton, S.M. Rimmer, H. Rowe and A.D. Karathanasis. 2006. Distinguishing and quantifying "new carbon" from "old carbon" on reclaimed mine sites using thermogravimetry: Field validation. National Meeting of the American Society of Mining and Reclamation, and the 7th ICARD. St. Louis MO. March 26-29.

Taylor, T., C. Agouridis, C. Barton, and R. Warner. 2006. Hydrologic and Water Quality Characteristics of Loose-Dumped Mine Spoil. National Meeting of the American Society of Mining and Reclamation, and the 7th ICARD. St. Louis MO. March 26-29.

Barton, C.D., B.J. Koo, S. Maharaj and D.H. Graves. 2006. Carbon sequestration on minelands in Appalachia. National Meeting of the American Society of Mining and Reclamation, and the 7th ICARD. St. Louis MO. March 26-29.

Cotton, C., and C.D. Barton. 2006. Developing a method of site quality evaluation for *Quercus alba* and *Liriofdendron tulipifera* in the eastern Kentucky coalfields. 15th Central Hardwood Forest Conference; Knoxville, TN. February 27 – March 1.

Maharaj, S., C.D. Barton, S.M. Rimmer, H. Rowe and A.D. Karathanasis. 2005. Development of a rapid assessment method for quantifying carbon sequestration on reclaimed coal mine sites. American Geophysical Union Fall Meeting; San Francisco, CA. Dec. 5-9.

Barton, C.D., B.J. Koo and D.H. Graves. 2005. Carbon sequestration on surface mine lands. ASA-CSSA-SSSA Annual Meeting; Salt Lake City, UT. Nov. 6-10.

Andrews, D.M., C.D. Barton, R.K. Kolka and C.C. Rhoades. 2005. Hyporheic zone development in a restored riparian area. ASA-CSSA-SSSA Annual Meeting; Salt Lake City, UT. Nov. 6-10.

Koo, B.J., T.G. Hinton and C.D. Barton. 2005. Assessment of fish mortality from short-term exposure to illite clays used as an in-situ method for remediating Cs137 contaminated wetlands. ASA-CSSA-SSSA Annual Meeting; Salt Lake City, UT. Nov. 6-10.

Barton, C.D., P.N. Angel and P. Rothman. 2005. The Appalachian region reforestation initiative. The American Chestnut Foundations 22nd Annual Meting; Lexington, KY. Oct. 28-30.

Ter Beest, J., C.D. Barton, D. Maehr and J. Larkin. 2005. What are elk doing to our forests? The Wildlife Society Conference; Madison, WI. September 29.

Littlefield, T., C.D. Barton, and M. Arthur. 2005. Carbon and nutrient dynamics in regenerating forests within the eastern Kentucky coal field. 90th Annual Meeting of the Ecological Society of America; Montreal, Canada. August 7-12.

Cherry, A., C.D. Barton, J. Stringer, and R.K. Kolka. 2005. Evaluating the effectiveness of streamside management zones in forested head water streams of Appalachia: Calibration phase. Soil and Water Conservation Society Annual Conference; Rochester, New York. July 30- Aug 4.

Ter Beest, J., C.D. Barton, D. Maehr and J. Larkin. 2005. Effects of a restored elk population on soils, vegetation and water quality in eastern Kentucky. Soil and Water Conservation Society Annual Conference; Rochester, New York. July 30- Aug 4.

Cotton, C., C.D. Barton, D. Graves, and P. Angel. 2005. Reforestation of Surface Mined Lands in the Appalachian Coal Fields, USA. The Thin Green Line-Symposium on Reforestation; Thunder Bay, Canada. July 26-28.

Andrews, M.D., and C.D. Barton. 2005. Using soil physicochemical data to predict hydrologic response in restored depression wetlands. Society of Wetland Scientists 26th Annual Meeting; Charleston, SC. June 5-10.

Angel, P.N., C.D. Barton, D. Graves, R. Sweigard and R. Warner. 2005. Improved Methods for the Establishment of Forests on Surface Mined Lands. American Society of Mine Reclamation Annual Conference; Breckinridge, CO. June 13-16.

10. Service and Recognition

Editorship, reviewer service

Associate Editor, International Journal of Phytoremediation, 2005-present.
Associate Editor, International Journal of Mining, Reclamation and Environment, 2007-present.
Associate Editor, Journal of Environmental Monitoring and Restoration, 2002-present.

Manuscript Reviewer

Water, Air and Soil Pollution
International Journal of Phytoremediation
International Journal of Mining, Reclamation and Environment
Journal of Environmental Monitoring and Restoration
Environmental Geochemistry and Health
USDA Forest Service, General Technical Report
Journal of Environmental Quality
Soil Science Society of America Journal
Forest Science
Ecological Engineering
Journal of Hydrology
Environmental Engineering and Geoscience
Restoration Ecology
Journal of Applied Ecology
Geoderma
Canadian Journal of Forest Research
Hydrologic Processes

Moderator

Session VI: Genes and New Frontiers. 5th International Phytotechnologies Conference. Nanjing, China. October 22-25, 2008.
Session E: Mountain Top Removal and Valley Fill. Mid-Atlantic Stream Restoration Conference. Cumberland, Maryland November 6-8, 2007.

National Proposal Review Panels

USGS National Institutes for Water Resources Grants Program. 2009.
EPA STARS Scholarship Review Panel, Aquatic Systems and Ecology. 2005. Washington D.C.
USDA CSREES National Research Initiative Competitive Grants Program. 2005
NOAA Sea Grant Proposal Review. 2003, 2007.

Committees

University of Kentucky Agriculture Faculty Council Member, 2009-2011.
Barnhart Fund for Excellence Committee, 2009-2011.
Committee on Research and Policy, Kentucky Water Resources Institute, 2004-2007, 2008-present.
Steering Committee Member, Precision Agriculture and Natural Resources, 2004-2006.
Appalachian Region Reforestation Initiative's Science Team, 2004-present. Co-team Leader 2007-present.
University of Kentucky Representative, Consortium of Universities for the Advancement of Hydrological Sciences, 2003-present.
UK Department of Forestry, Graduate Program Committee, 2003-2005, 2006-2008.
UK College of Agriculture, Robinson Forest Committee, 2003-present.
US DOE Savannah River Site, Wetland and Aquatic Issues Task Group, 1999-2003.
US DOE Savannah River Site, D-Area CERCLA/RCRA Integration Team, 1999-2003.

US DOE Savannah River Site, Monitored Natural Attenuation and Phytoremediation Task Group, 2000-2002.

Community Service

Youth Soccer Coach, 2007-2008.
Board of Directors, UK Spindletop Hall, Inc, 2006-present.
Committee Member, Reforest the Bluegrass, 2003-2005.
Youth Basketball Coach, 2006-2007.

Professional Organizations

American Water Resources Association
Soil Science Society of America
American Society for Surface Mining and Reclamation
American Chestnut Foundation

CURRICULUM VITAE

1. Name: Terrance Conners

2. Address and Contact Information

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University of Kentucky
Department of Forestry
Lexington, KY 40546-0073
Phone: 859-257-2463
Fax: 859-323-1031
tconners@uky.edu

3. Current Position: Associate Professor (12-month appointment)

4. Degrees

B.S., The Pennsylvania State University, Forest Products, 1976
M.S., University of Massachusetts-Amherst, Wood Science and Technology, 1979
Ph.D., Virginia Polytechnic Institute and State University, Forestry and Forest Products (Wood Engineering), 1985

5. Experience

8/2001 to date: Extension Specialist in Forest Products
Assistant Extension Professor 2001–2002;
Promoted to Associate Extension Professor, 2002
Tenured, 2003
Department of Forestry, University of Kentucky

12/97–7/01: Mississippi Forest Products Laboratory and
Department of Forest Products, Miss. State Univ.
Associate Professor of Forest Products

1996–11/97: Kimberly-Clark Corporation
Corporate Research and Engineering Center, Neenah, WI
Research Manager, Fiber Technology R & D (830 Hay Points)

1991–9/96: Mississippi Forest Products Laboratory and
Department of Forest Products, Mississippi State University
Associate Professor of Forest Products

1989: Integrated Paper Services, Appleton, Wisconsin
Co-founder (Technical Services and Consulting for the pulp and paper industry)

1987–1991: The Institute of Paper Science & Technology
Assistant Professor of Material Science & Research Scientist
Group Leader, Microscopy and Fiber Analysis

1985–1987: The Institute of Paper Science & Technology (Inst. of Paper Chemistry), Assistant Professor of Biology & Research Scientist
Group Leader, Wood and Fiber Science

1981: Department of Forest Products, Virginia Tech, Instructor

1979–1980: Department of Forest Products, Virginia Tech, Teaching/Research Assistant

1979: Department of Rhetoric, University of Massachusetts, Instructor (Undergraduate Composition)

1977–1978: Department of Forestry and Wildlife, Univ. of Massachusetts, Teaching Assistant

6. Recent Research Projects

Volatile organic compounds and HAPs from lumber drying: mechanisms and controls (Completed 2008)
Wood particle absorbency for animal bedding (2008)

7. Refereed Publications

Stiglbauer, P., T. Conners, and S. Banerjee. 2006. Influence of knife angle and ambient temperature on fines generation from flakers. Forest Products Journal 56(10): 86–89.

Banerjee, S., U. Hooda and T.E. Conners. 2007. Temperature effects on fines generation during wood flaking. Appita Journal 60(6): 482–484.

Steele, P.H., M. Patton, I. Hartley, J. Cooper, T. Conners, and R. King. 2008. The differential thermal response of knots and clear wood following rapid heating. Submitted to Research in Nondestructive Evaluation, September 2008.

Banerjee, S., R. Yang, C. Courchene, and T.E. Conners. 2009. Scanning electron microscopy measurements of the surface roughness of paper. Industrial and Engineering Chemistry Research. Accepted for publication, February 2009.

Peer-Reviewed Publications and Presentations

Tangirala, P., J. Robert Heath, Arthur Radun and T.E. Conners. 2006. Development and Validation of a Programmable Logic Device (PLD) Based Sensor and Processor Microarchitecture System for Equilibrium Moisture Content Calculation in Wood Industries. Presented at the 2006 IEE Sensors Applications Symposium held in Houston, Texas, February 7–9, 2006. “Papers will be reviewed by the technical program committee for originality, clarity, and technical merit.” Published in Proceedings, pages 135–140.

Conners, T.E. 2007. An Introduction to Cutting and Grading Railroad Ties. Department of Forestry, University of Kentucky, FORFS 07-12. 31 pages. Reviewed by technical staff of major U.S. railroads as well as the Executive Director of the Railway Tie Association.

Conners, T.E. 2008. Producing and Inspecting Railroad Crossties. University of Kentucky Cooperative Extension Service, FOR-108. 16 pages. Reviewed by technical staff of major U.S. railroads as well as the Executive Director of the Railway Tie Association.

Conners, T.E. 2008. Senior 4-H Forestry Insect Identification Training. University of Kentucky Cooperative Extension Service, 4H-xx (number not yet assigned). 61 pages. Reviewed by 4-H entomologists for placement on the National 4-H Forestry website.

Non-Refereed Articles and Technical Presentations

Conners, T.E. 2005. U.S. and Kentucky Forests: A history of North American forest management and forest policy, including an update on current U.S. and Kentucky forest inventories, forest products industries' contribution to the economy and international trade. Invited presentation to Agricultural Economics 445G at the University of Kentucky, February 24, 2005. 45 students.

Conners, T.E., Banerjee, S. and P. Stiglbauer. 2005. Reducing Fines Generation at Oriented Strandboard Flakers: Knife Angle and Wood Temperature Adjustments. Presented to Louisiana-Pacific principal scientists and other technical staff. (Nashville, TN) March 25, 2005.

Stiglbauer, P.F., T.E. Conners, and S. Banerjee. 2005. Reduction of fines generation at oriented-strand board flakers by adjusting knife angles as temperature varies. Presented to 2005 Spring National Meeting of American Institute of Chemical Engineers. Atlanta, Georgia, April 11–13. In: Proceedings.

Conners, T.E., Banerjee, S. and P. Stiglbauer. 2005. Reducing Fines Generation at Oriented Strandboard Flakers: Knife Angle and Wood Temperature Adjustments. Presented to Huber technical staff and two mill managers (Spring City, TN and Silver City, VA) April 19, 2005.

Conners, T.E., Banerjee, S. and P. Stiglbauer. 2005. Reducing Fines Generation at Oriented Strandboard Flakers: Knife Angle and Wood Temperature Adjustments. Presented to Georgia-Pacific mill supervisors and technical personnel (Atlanta, GA) November 3, 2005.

Conners, T.E., Banerjee, S. and P. Stiglbauer. 2005. Reducing Fines Generation at Oriented Strandboard Flakers: Knife Angle and Wood Temperature Adjustments. Presented to Norbord technical personnel (Atlanta, GA) (also) November 3, 2005.

Stiglbauer, P., T.E. Conners, S. Banerjee, and J. Ringe. 2005. Reducing fines at OSB flakers by adjusting knife angle with wood temperature. Presented at the Annual Meeting of the Forest Products Society, Quebec, Canada. June, 2005.

Conners, T.E. 2005. Agricultural Commodity Trade with Cuba. Invited presentation to the Jackson County Homemakers, McKee, Kentucky. August 4, 2005. 50 participants.

Conners, T.E., P. Stiglbauer, S. Banerjee and J.M. Ringe. 2005. Decreasing flaker fines by changing knife angles at different ambient temperatures. Presented at Ninth European Panel Products Symposium, Llandudno, Wales, U.K. October 5–7. Paper published in Proceedings(CD ROM and softcover publication), pp. 23–30.

Conners, T.E., P. Stiglbauer, and S. Banerjee. 2005. Influence of Knife Angle and Ambient Temperature on Fines Generation From Flakers. Invited presentation to the Norbord Technical Managers Meeting held in Atlanta, Georgia. November 3, 2005. 15 participants.

Conners, T.E. Outlook for Forestry and Forest Products. 2005. Presentation to Kentucky County Extension agents, two areas, about 30 attending.

Conners, T.E. 2005. Wood Structure and Wood Moisture. Invited presentation to the joint meeting of the Ohio Valley Lumber Drying Association, the Appalachian Kiln Club and the Southeastern Dry Kiln Club held at Pipestem State Resort Park, Pipestem, West Virginia. November 2, 2005. 60 participants.

Conners, T.E. 2006. U.S. and Kentucky Forests: A history of North American forest management and forest policy, including an update on current U.S. and Kentucky forest inventories, forest products industries' contribution to the economy and international trade. Invited presentation to Agricultural Economics 445G at the University of Kentucky, February 14, 2006. 25 students.

Conners, T.E. 2006. Report to Felix Taylor, Knotwood Craftsmen, Annville, Kentucky concerning the proportions and amounts of timber available for harvest in Jackson and Clay Counties, Kentucky. Determined proportions of resulting lumber that would have a probable grade of 1 Common and better (by species and by county) to assist with the operating plans for this business. March 2, 2006.

Banerjee, S. and T.E. Conners. 2006. Implementing strategies for drying and pressing wood without emissions controls. U.S. Department of Energy Industrial Technologies Program, Forest Products Peer Review Conference. Atlanta, Georgia, April 5–6, 2006.

Banerjee, S. and T.E. Conners. 2006. Wood savings and energy/VOC reduction in OSB manufacture. Written for distribution by the DOE to oriented strandboard mill personnel.

Thomas, W., T.E. Conners, J. Stringer, and D.B. Hill. 2006. Kentucky Forest Fact Sheet. Department of Forestry, University of Kentucky Fact Sheet, FORFS-53.

Conners, T.E. 2006. The importance of wood in everyday life. Base script for fifteen-minute Wood Magic presentation, written for Kentucky County Agents participating in Forestry In-Service Training, April, 2006. 13 pages.

Conners, T.E. 2006. Log and Lumber Evaluation. Written materials supporting Forestry In-Service Training for Kentucky County Agents, April, 2006. 8 pages.

Conners, T.E. 2006. Logs and Lumber: Evaluation and Training. Written materials and presentation to Knotwood Craftsmen, Annville, Kentucky, May 2006.

Conners. T.E. and J.M. Ringe. 2006. Grading hardwood logs according to USFS standard log grades. Department of Forestry, University of Kentucky Fact Sheet, FORFS 06-02. 20 pages.

Conners, T.E. and J.M. Ringe. 2006. Grading hardwood lumber according to NHLA rules. FORFS 06-03. 10 pages.

Conners, T.E. and J.L. Watt. 2006. Crossties Species Identification Guide, Revised. Published by the Railway Tie Association, Fayetteville, GA.

Conners, T.E. 2006. In-Service Training for County Extension Agents in Forestry and Forest Products. 7 participants, August 2006.

Banerjee, S. and T. E. Conners. 2006. Dependence of Fines Generation from Flaking Wood on Temperature and Knife Angle. Paper presented to Tenth European Panel Products Symposium, Llandudno, Wales, U.K. October 11–13. In: Proceedings (Flash drive and softcover publication), pp. 147–154.

Conners, T.E. 2007. In-Service Training for County Extension Agents for Win With Wood. 20 participants. January 2007.

Conners, T.E. 2007. 4-H Senior Forestry Training Manual. Department of Forestry, University of Kentucky Fact Sheet (mostly compilation with some original authorship), FORFS 07-05. 714 pages.

Conners, T.E. 2007. Equilibrium Moisture Content (EMC) of Woody Cellulosic Materials at Cold Temperatures (30°–50°F). Department of Forestry, University of Kentucky Fact Sheet, FORFS 07-06.

Conners, T.E. 2007. U.S. and Kentucky Forests: A history of North American forest management and forest policy, including an update on current U.S. and Kentucky forest

inventories, forest products industries' contribution to the economy and international trade. Invited presentation to Agricultural Economics 445G at the University of Kentucky, February 12, 2007. 23 students.
Conners, T.E. 2007. In-Service Training for County Extension Agents for Win With Wood. 20 participants. March 2007.
Conners, T.E. 2007. Wood Magic: The Base Presentation Script, Part I. "The Importance of Wood in Everyday Life". Department of Forestry, University of Kentucky, FORFS 07-07. 17 pages.
Conners, T.E. 2007. Wood Magic: The Base Presentation Script, Part II. "The World of Wood." Department of Forestry, University of Kentucky, FORFS 07-08. 20 pages.
Conners, T.E. 2007. Wood Magic: The Base Presentation Script, Part III. "Various Species of Trees Look Different, and Different Trees Make Different Types of Wood." University of Kentucky Cooperative Extension Service, FORFS 07-09. 6 pages.
Conners, T.E. 2007. Wood Magic: The Base Presentation Script, Part IV. "Wood Structure". Department of Forestry, University of Kentucky, FORFS 07-10. 7 pages.
Conners, T.E. 2007. Wood Magic: The Base Presentation Script, Part V. "The Thing and Bubble Blowers: A Demonstration of Wood Porosity". Department of Forestry, University of Kentucky, FORFS 07-11. 7 pages.
Conners, T.E. 2007. Wood Magic: Preparing for The Base Presentation. "The Importance of Wood in Everyday Life". Department of Forestry, University of Kentucky, FORFS 07-12. 10 pages.
Conners, T.E. 2007. How to Cut Railroad Ties. Department of Forestry, University of Kentucky, FORFS 07-17. 10 pages.
Conners, T.E. 2007. Identifying Diffuse Porous Hardwoods (for the Railway Tie Association).
Conners, T.E. 2007. Identifying Ring-Porous Hardwoods (for the Railway Tie Association).
Conners, T.E. 2007. Identifying Coniferous Woods (for the Railway Tie Association).
Conners, T.E. and P. Waggoner. 2007. Woody Biomass: An Alternative Energy Source. Presentation to the Kentucky Association of Conservation Districts. July 17, 2007.
Conners, T.E. and J.M. Ringe. 2007. The UK Optical Fork: An Easy-to-Use Upper Stem Diameter Gauge for Cruising Timber Can Improve Your Profitability. FORFS 07-17. 7 pages.
Conners, T.E. 2008. Wood Energy Possibilities. Kentucky Woodlands Magazine 3(1): 10–11.
Conners, T.E. 2008. Presentation to Jr. and Sr. 4-H Forestry in Nelson County about Insect Identification. February, 2008.
Conners, T.E. 2008. U.S. and Kentucky Forests: A history of North American forest management and forest policy, including an update on current U.S. and Kentucky forest inventories, forest products industries' contribution to the economy and international trade. Invited presentation to Agricultural Economics 445G at the University of Kentucky, February 15, 2008. 28 students.
Conners, T.E. 2008. Selling Kentucky Lumber to Cuba. For Kentucky Forest Industries Association Newsletter.
Conners, T.E. 2008. Senior 4-H Forestry Insect Identification Training Jeopardy Game.
Conners, T.E. 2008. Senior 4-H Forestry Insect Identification Training PowerPoint.
Conners, T.E. 2008. Report to Jack Reid, Kentucky Central Laboratory Facility (State Criminalistics Laboratory) regarding identification of samples submitted as evidence in murder trial, Madisonville, KY. March 25, 2008.

Conners, T.E. 2008. Our Forest Heritage. Presentation for University of Kentucky Department of Forestry, April, 2008.

Conners, T.E. 2008. Equipment and Description of Wood Bubble Blower Demonstration. Department of Forestry, University of Kentucky, FORFS 08-04.

Conners, T.E. 2008. Demonstrating Papermaking: How An "Expert" Does It! Department of Forestry, University of Kentucky, FORFS 08-05.

Conners, T.E. 2008. Common Concerns About Wood-Based Energy. Kentucky Woodlands Magazine 3(2):6–7.

Conners, T.E. 2008. Comparing Wood and Fossil Fuels for Energy Production. Kentucky Woodlands Magazine. In press. Society of Wood Science and Technology. 2008. Policy and Critical Issues Committee. Use of woody biomass for bioenergy; a position paper submitted by the Policy and Critical Issues Committee. (Authored by the committee as a whole, to which I made contributions as a committee member).

Conners, T.E. 2008. Comparing Wood and Fossil Fuels For Energy Production. Kentucky Woodlands Magazine 3(3): 16–17.

Conners, T.E. 2009. Report to Cincinnati Art Museum, Amy Dehan (assistant curator), regarding identification of woods used in one of the Museum's signature pieces, the Pitman bed and dresser. This bed had been variously identified as either mahogany or black walnut, and my report provided a primer on wood structure, described my methods of approaching this identification nondestructively, my observations and my conclusions.

8. Continuing Education Program Workshops Attended

Non-conference

Visited Seamans's Timber Company, Calera, Alabama, May 2008 for on-site refresher in current railroad tie grading standards and practices.

Participant, National Extension Programs Development and Planning for Forest- and Rangeland-Based Bioenergy Extension Programs meeting, Zion, Illinois. June 2008.

9. Professional Societies, Activities, Offices Held

Member, Forest Products Society (FPS) (1977 to date.)

Member, Society of Wood Science and Technology (SWST) (1974 to date.)

Member, Policy and Critical issues Committee, 2008 to date

Railway Tie Association (RTA) (2002 to date)

Member, Education Committee (2003 to date)

Member, Strategic Planning Committee (2005 to 2006)

Member, Technical Association of the Pulp and Paper Industry (TAPPI) (1985–2001)

Member, Microscopy Society of America (MSA) (1985–1995)

Member, TAPPI Coating Fundamentals Committee (1985–2001)

Member, TAPPI Pulp Properties Committee (1985–1997)

Chair-Elect, Forest Products Society Mid-South Section, 1995–1996

Section Chair, Forest Products Society Mid-South Section, 1996

Chairman, SWST Education Committee 1994–1995

Chairman, Pulp and Paper TIG, Forest Products Society, 1994–1996

Vice-Chairman, Wood Physics TIG, Forest Products Society 1994–1995

Ex-officio member, SWST Accreditation Committee, 1994–1995

Member, ASTM Committee D06, D06.40 and D06.50; Terminology, Paper and Paperboard Task Groups on Recycled Fibers, Effects of Aging (Task completed)
Associate Forester (equivalent to Vice President/Treasurer) of the National Office of Xi Sigma Pi, the National Forestry Honorary Society 6/92–6/94
Kimberly-Clark representative to ESPRA (Empire State Paper Research Association), 9/96–12/97
Co-Advisor, Mississippi State University Student Chapter of the Society of Xi Sigma Pi 9/94–9/96
Member, Faculty Awards Selection Committee, to select winners of the 1998 Mississippi State University Alumni Association Service Award.
Advisor, Forestry and Wildlife Club, University of Kentucky, 2003–2006.
Member, County Review Team for Knott, Harlan and Bell Counties (Fall, 2006 and early 2007)
Member, College of Agriculture Faculty Council, 2007–2009.
Chairman, College of Agriculture Faculty Council, 2008–2009.

10. Recent Grants and Contracts

Department of Energy award, 2003–2006. Implementing Strategies for Drying and Pressing Wood Without Emissions. Co-PI with Dr. Sujit Banerjee, Institute of Paper Science and Technology (a part of Georgia Tech as of July 1, 2003), Atlanta, Georgia. Total project budget of $840,000 (initial award was for $1.1 million dollars but due to budget constraints this amount was reduced).
Southern Forest Research Partnership, 2008. $17,000 awarded for Biomass Education. Proposal was co-authored by Dr. Jeffrey Stringer. 1/1/08–8/1/08.
Railway Tie Association Travel grant to attend the 2008 Annual Meeting in Savannah, GA (10/26–31/08)
2009 Wood Biomass Pre-Proposal. Submitted to University of Kentucky for review prior to be forwarded to USDA for funding consideration. Co-authored by S. Bullard, T. Conners, D. Cremeans, T. Cushing, and J. Stringer.

11. Pedagogy

Academic Courses and Responsibilities

At the University of Kentucky:
Undergraduate Courses
Two weeks of Forestry Summer Camp (Harvest and Utilization of Wood) taught each year since 2002.

Occasional lectures in other courses:
Twice annually, teach segment about Forest Products for FOR 100 (Introduction to Forestry); usually, three hours of lectures to two classes (2002 to date)
One lecture annually about international trade to FOR 602 (Renewable Natural Resources in a Global Perspective)
One lecture annually to FOR 300 (Forest Measurements) about log and lumber grading
One lecture annually for Agricultural Economics AEC 445G (Introduction to Resource and Environmental Economics)

Graduate Courses

One seminar for students in the College of Law (Law 890 Evidence) about Wood and Paper Analysis and Forensic Examination (2007)

12. Professional Activities

Conners, T.E. 2005. The Rich Look of Wood. Presentation for Trends and Traditions: Spring Design Seminar, Princeton, KY, April 2005. 135 participants.

Instructor, Railway Tie Association Tie Grading Seminar, Dubois, PA July 17–19, 2005.

Conners, T. E. 2006. Log and Lumber Evaluation for County Agents, also Wood Magic 4-H program training. Forestry In-Service Training for Kentucky County Agents, April, 2006. 17 participants.

Conners, T.E. and J.M. Ringe. 2006. Wood Identification. Workshop held at Derby City Antique Mall, Buechel, Kentucky, May 13, 2006. Last-minute cancellation by sponsors due to low enrollment, but all materials were prepared.

Conners, T. E. 2006. Log and Lumber Grading for Loggers (to gain credits to retain Master Logger Certification). Pine Knot, McCreary County, Kentucky, May 25, 2006. 30 participants.

Instructor, Railway Tie Association Tie Grading Seminar, Russellville, Arkansas, July 15–18, 2006.

Instructor, Industry tours for County Agents, Forestry In-Service Training, August 7–9, 2006. 10 participants.

Instructor, Woodland Owner's Short Course, Pennyrile State Forest, Christian County, KY, June 28, 2007. Presentation about Kentucky Wood Products.

Instructor, Woodland Owner's Short Course, Pittman Creek Wood Products, Pulaski County, KY, July 2007. Presentation about Kentucky Wood Products.

Instructor, Railway Tie Association Tie Grading Seminar, Terre Haute, IN, July 22–24, 2007.

Instructor, Woodland Owner's Short Course, Lee County Extension Office, KY, August 7, 2007. 11 participants. Presentation about Kentucky Wood Products.

Instructor, Railway Tie Association Tie Grading Seminar, Montevallo, AL, July 20–22, 2008.

Instructor, Woodland Owner's Short Course, Rowan County, KY, September 4, 2008. Presentation about Woody Biomass and Wood Product Markets.

Instructor, Woodland Owner's Short Course, Hopkins County, KY, September 11, 2008. Presentation about Woody Biomass and Wood Product Markets.

Instructor, Woodland Owner's Short Course, Marion County, KY, September 23, 2008. (Due to a schedule conflict, presentation was prepared by T. Conners but delivered by a Kentucky Division of Forestry employee). Presentation about Woody Biomass and Wood Product Markets.

Instructor, Wood identification training and assistance with wood and woody debris submitted as evidence in murder trial, provided to Jack Reid, Kentucky Central Laboratory Facility (State Criminalistics Laboratory), March, 2008.

CURRICULUM VITAE

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2. Address and Contact Information

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Lexington, KY 40546-0073
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jjcox@uky.edu

3. Current Position

Adjunct Assistant Professor of Conservation Biology (4/2006-present)
Research Scientist III (1/2009-present)
(12-month appointment)

4. Degrees

Ph.D., Animal Science, University of Kentucky, 2003
M.S., Biology, Morehead State University, 1997
B.S., Biology, Morehead State University, 1995

5. Experience

April 2006 – present, Adjunct Assistant Professor of Wildlife/Conservation Biology, University of Kentucky Department of Forestry, Lexington, KY
March 2005 – March 2009, Griffith Woods Research Coordinator and Site Manager, University of Kentucky Department of Forestry, Lexington, KY
January 2009 – present, Research Scientist III, University of Kentucky Department of Forestry, Lexington, KY
January 2004 – December 2008, Research Scientist II, University of Kentucky Department of Forestry, Lexington, KY
April 1999-December 2003 – Research Assistant, University of Kentucky Department of Forestry, Lexington, KY
August 1998 – April 1999 – Wildlife Technician, Kentucky Department of Fish and Wildlife Resources, Frankfort, KY
July 1997- July 1998 – Research Assistant, University of Cincinnati, Department of Molecular and Cellular Physiology, Cincinnati, OH
August 1995-May 1997 – Graduate Assistant, Morehead State University, Department of Biological and Environmental Sciences, Morehead, KY

6. Research, Extension, and Teaching Projects

Extramural

"Gray fox ecology and monitoring in Kentucky." $74,987. USDA CSREES. October 2008-September 2011. Co-Principal Investigator with M. Dzialak.

"Calf survival, meningeal worm impacts, dispersal, and population expansion in an eastern Kentucky elk herd." July 2008-June 2009. $70,000. KDFWR. Co-Principal Investigator with D. Maehr.
"Harnessing cell phone technology to track the black bear in eastern Kentucky. $59,732. USDA CSREES. October 2008-September 2011. Co-Principal Investigator with S. Fei and D. Maehr.
"Dispersal and population expansion of the black bear in eastern Kentucky." July 2008-June 2009. $98,000. KDFWR. Co-Principal Investigator with D. Maehr.
"Ecological monitoring initiative at Griffith Woods." $66,262. USDA Hatch. October 2007-June 2008. Co-Principal Investigator with C. Barton and M. Lacki.
"The common raven in cliff habitat: detectability and occupancy." $60,000. USFWS, KDFWR STWG. July 2007-June 2008. Co-Principal Investigator with M. Dzialak.
"Bluegrass Invasive Species Partnership Initiative." $30,000. NFWF. January 2006-December 2007. Co-Principal Investigator with B. Thomas and J. Campbell.
"Bluegrass Savanna-Woodland Restoration." $41,500. Kentucky Land Heritage Conservation Fund Board. July 2007-June 2008. Co-Principal Investigator with P. Crowley.
"Evaluation of infrared technologies for estimating black bear and elk populations in Kentucky." $39,913. USDA CSREES; $45,000, Turner Foundation; $10,000, Rocky Mountain Elk Foundation. October 2006-September 2009. Co-Principal Investigator with K .Alexy, D. Unger, D. Maehr, and J. Larkin.
"Estimating the black bear population in eastern Kentucky using hair snares." $150,000. KDFWR PR. July 2006-June 2008. Co-Principal Investigator with J. Larkin and D. Maehr.
"Effects of elk on soil nutrients and vegetation in southeastern Kentucky." $10,500 Rocky Mountain Elk Foundation. July 2003-June 2005. Co-Principal Investigator with D. Maehr and J. Larkin.

7. Graduate Students Co/Supervised

M.S. students: Lauren Dahl, Willie Bowling, Josh Felch, Joe Guthrie, John Hast, Ben Augustine, Rebekah Jensen, Andrew Whittle
Ph.D. Student: John Treanor

8. Post-Doctoral Scholars/ Research Associates/Technicians Supervised

Post-doctoral scholars: Matthew Dzialak, Ph.D.
Technicians: Darcy Cunningham, Michael Wichrowski, Joe Guthrie, David Parrot, Chris Carew, Paul Zierer, Cliff Hull, Steven Bishop, Justin Blackburn, Sarah Fraley, Eric Hiltz, Keith Rutz, Mason Brock, Mohamad Saiyed, Andrew Smith, Anna Foster, Katherine Shaw, Sean Murphy

9. Teaching

Forestry 101: (3 hrs) Introduction to Wildlife Conservation (Fall 2005-present)
Forestry 315: (3 hrs) Conservation Biology (Spring 2008, 2009)
Forestry 599: (3 hrs) Environmentalism: Survey of a Sociopolitical Movement (Spring 2003, Fall 2004)
Forestry 770: (1 hr) Canid Ecology, Management, and Conservation (Fall 2006, 2008)
2009 Class, Academy of Teaching and Learning Scholars, University of Kentucky Department of Agriculture

Summer Environmental Writing Program, (20% Field Guide Summer 2003-04, 06)

10. Publications

Refereed Journals Articles

Larkin, J.L., D.S. Maehr, J. J. Krupa, J.J. Cox, K.A. Alexy, D. Unger, and C. Barton. 2008. Response of small mammals to 3 post-coal mining reclamation treatments. Southeastern Naturalist 7(4):401-412.

Cox, J.J., and P.S. Crowley. 2007. The Bluegrass restoration program at Griffith Woods. (Invited) Restoration Ecology 25:72-73.

Cox, J.J., J.L. Larkin, and D.S. Maehr. 2006. Florida panther habitat use: new approach to an old problem. Journal of Wildlife Management 70:1778-1785.

Maehr, D.S., P.S. Crowley, J.J. Cox, M.J. Lacki, J.L. Larkin, T.S. Hoctor, L.D. Harris, and P.M. Hall. 2006. Of Florida panthers and haruspices: genetic intervention in the Florida panther. Animal Conservation 9:127-132.

Dzialak, M.R., M.J. Lacki, K.M. Carter, K. Huie, and J.J. Cox. 2006. A critical assessment of hacking as a raptor reintroduction technique. Wildlife Society Bulletin 34:542-547.

Schneider, J., D.S. Maehr, K.A. Alexy, J.J. Cox, J.L. Larkin, and B.C. Reeder. 2006. Food habits of reintroduced elk in southeastern Kentucky. Southeastern Naturalist 5:535-546.

Seward, N.W., D.S. Maehr, J. Gassett, J.J. Cox, and J.L. Larkin. 2005. Field searches versus vaginal-implant transmitters for locating elk calves. Wildlife Society Bulletin 33:751-756.

Wichrowski, M.W., D.S. Maehr, J.L. Larkin, J.J. Cox, and M. Olsson. 2005. Activity and movements of reintroduced elk in southeastern Kentucky. Southeastern Naturalist 4:365-374.

Non-refereed Journal Articles

Cox, J.J. 2007. Black vulture fledges young in historic Griffith Tavern. Kentucky Warbler 83:36-37.

Seward, N.W., J.J. Cox, J.H. Brown, and J.L. Larkin. 2005. Use of elk hair as nesting material by the eastern phoebe. Kentucky Warbler 81:33.

Cox, J.J., and D.S. Maehr. 2005. Surface mining and wildlife resources: addition and subtraction on the Cumberland Plateau. Transactions of the North American Wildlife and Natural Resources Conference 69:234-250.

Book Chapters

Maehr, D.S., M.A. Orlando, and J.J. Cox. 2005. Large carnivores, herbivores, and omnivores in South Florida: An evolutionary approach to conserving landscapes and biodiversity. Pages 293-314. In, J. Ray, J. Berger, and K. Redford (eds.), Large carnivores and biodiversity: does saving one conserve the other? Island Press, Washington, D.C.

Maehr, D.S., J.J. Cox, and J.L. Larkin. 2006. North American Elk, or Wapiti *Cervus Elaphus*. Pages 293-314. In, M. Trani, W.M. Ford, and B.R. Chapman (eds.). The land manager's guide to mammals of the South. USDA Forest Service, Atlanta, GA and The Nature Conservancy, Durham, NC. 546 pp.

11. Presentations

Cox, J.J. 2009. Elk reintroduction in Kentucky: challenges and opportunities in the 21st century. (Invited) Alice Lloyd College, Hindman, KY Apr. , 2009.

Cox, J.J. 2009. Elk reintroduction in Kentucky: mission accomplished. Now what? (Invited) Indiana University Southeast. New Albany, IN. Apr. 15, 2009.
Cox, J.J. 2007. Wildlife reintroductions: a perturbed state of affairs. (Invited) The Wildlife Society 14th Annual Conference. Sept. 22-26. Tucson, AZ.
Cox, J.J. 2007. Inconvenient truths? (Invited) Environmental challenges for the 21st century: Appalachian and Minority, Science, Technology, Engineering, & Math Majors, June 11. Lexington, KY.
Cox, J.J., D.S. Maehr, Z. Danks, N.W. Seward, and K. Alexy. 2007. Coyote-elk relations in southeastern Kentucky (Invited). Southeastern Furbearers Workshop, May 9-12. Cadiz, KY.
Cox, J.J., D.S. Maehr, Z. Danks, N.W. Seward, and K. Alexy. 2006. Coyote-elk relations in southeastern Kentucky. The Wildlife Society 13th Annual Conference. Sept. 23-27, 2007. Anchorage, Alaska.
Cox, J.J. 2005. Where do we go from here? The Griffith Woods restoration project. (Invited) Annual Conference of the Kentucky Academy of Science. Nov. 10, 2005. Eastern Kentucky University, Richmond.
Cox, J.J., D.S. Maehr, and J.L. Larkin. 2005. A Euclidean distance-based habitat use analysis of the endangered Florida panther. Society for Conservation Biology 19th Annual Conference. July 15-19. University of Brasilia, Brazil.

12. Membership in Scientific, Professional, and Honor Societies

Society for Conservation Biology (1999-present)
The Wildlife Society, National and Kentucky Chapters (1999-present)
Kentucky Ornithological Society (2004-present)
Kentucky Society of Natural History (2004-present)
Kentucky Native Plant Society (2007-present)
The Audubon Society (1999-present)

13. Service and Recognition

Awards, Scholarships, Honors, Certification:
Certified Wildlife Biologist, The Wildlife Society (3/2007)
University of Kentucky 2002-2003 Gamma Sigma Delta College of Agriculture Outstanding Doctoral Student (3/2003)
University of Kentucky (2002-2003) Dissertation Fellowship $16,000/year + tuition
University of Kentucky (2000-2002) Target of Opportunity Scholarship $4,000/year
University of Kentucky (1999-2002) Research Assistantship $15,000/year
Morehead State University (1995-1997) Graduate Assistantship $5000/year
Morehead State University (1990-1994) Regents Scholarship $1500/year
Morehead State University (1990-1994) Alumni Scholarship $500/year

Reviewer Services

Manuscripts reviewed from the following journals and books: Wildlife Society Bulletin, American Midland Naturalist, Southeastern Naturalist, Bats in Forests: Conservation and Management.

Committees

The Wildlife Society Publication Awards Committee (2008-present)

UK Department of Forestry Strategic Planning Committee (2006-present)
Efroymson Planning Committee, Griffith Woods (2005)
Griffith Woods Management and Advisory Committee (2005-present)
UK College of Agriculture Precision Resource Management Committee (2006-present)
Graduate Student Committee: (Present, UK) Joe Guthrie, Rebekah Jensen, Erin Barding, Andrew Whittle, John Hast, Hannah Harris, Ben Augustine, Josh Felch, Shane Tedder, John Treanor, Joe Guthrie, Sara Martin, Patricia Hartman, (Present, Indiana Univ of PA) Jason Cougenhour, Dylan Schneider; (Past) Wade Ulrey, Sara Cilles, Willie Bowling, Lauren Dahl

14. Attendance at Professional and Scientific Meetings

The Wildlife Society 15th Annual Conference. 11/08. Miami, FL.
The Wildlife Society 14th Annual Conference. 9/07. Tucson, AZ.
The Wildlife Society 13th Annual Conference. 9/06. Anchorage, AK.
The Wildlife Society 12th Annual Conference. 9/05. Madison, WI.

CURRICULUM VITAE

1. Name: Songlin Fei

2. Address and Contact Information

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Department of Forestry
University of Kentucky
Lexington, Kentucky 40546-0073
Tel: 859-257-9760
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Website: http://www.uky.edu/~sfei2/

3. Current Position: Assistant Professor (12-month appointment)

4. Degrees

B.S. in Environmental Science, Nankai University, 1996.
M.S. in Plant Ecology, Peking University, 1999.
M.A. in Statistics, Pennsylvania State University, 2004.
Ph.D. in Ecology, Pennsylvania State University, 2004.

5. Experience

2005-present: Assistant Professor of Forest Biometrics and Spatial Analysis, Department of Forestry, University of Kentucky, KY
2005: Post-doctoral Scholar, School of Forest Resources, The Pennsylvania State University, PA
2003-2004: Statistical Consultant, Department of Statistics, The Pennsylvania State University, PA
1999-2004: Research/Teaching Assistant, School of Forest Resources, The Pennsylvania State University, PA
1996-1999: Research Assistant, Department of Urban and Environmental Sciences, Peking University, Beijing, China

6. Research and Teaching Projects

Extramural

2009-2012. Enhancing American Chestnut Breeding Program by Better Understanding Chinese Chestnut Species and Chestnut Blight in Their Native Range. The American Chestnut Foundation. PI, with F. Hebard, F. Paillet, S. Fitzsimmons, Co-PIs. $30,200. Nationally competitive.
2009. The Appalachian Trail MEGA-Transect Chestnut Project: A Citizen Science Approach to Studying Distribution of American Chestnut. The American Chestnut Foundation. PI, with J. Scrivani and K. Marmet, Co-PIs. $7,870. Nationally competitive.
2008. HP Technology for Teaching Grant (HiEd). Reviving Traditional Forestry with HP Technology. Co-PI, with S. Bullard PI. $77,000. Nationally competitive.

2008-2009. Cross-walk and Develop GIS Mapping Applications and Accomplishment Monitoring Geospatial Database. Kentucky Forest Health Protection Program. PI. $15,000. Regionally competitive.

2008. Examining the Ecology of Chestnut Blight and Reforestation Potential of both Chinese and American Native Chestnut Species as a Model for Restoration Practices. USDA Foreign Agricultural Service, Scientific Cooperation Exchange Program with the People's Republic of China. Travel support. Sept. 10-25. Co-PI, with K. Steiner, PI, and F. Hebard, F. Paillet, and S. Fitzsimmons, Co-PIs. Nationally competitive.

2007–2009. Demonstrating Techniques for Establishing Woody Biomass Plantations on Surface Mined Lands. Kentucky Research & Development Seed Grants Program. Co-PI, with C. Barton, PI. $174,166. Regionally competitive.

2006–2010. Assessing Invasive Exotic Plants in Urban Forest. USDA Forest Service, National Urban and Community Forestry Advisory Council. PI, with T. Barnes, J. Stringer, B. Lee, and W. Thomas, Co-PIs. $242,992. Nationally competitive.

Other

2009-2012. Spatial Prioritization for Invasive Species Management. USDA CSREES, Precision Agriculture: Precision Resource Management. PI. $49,564. Regionally competitive.

2008-2011. Identify Spatio-Temporal Dispersal Corridors and Hotspots of Invasive Species. USDA CSREES, Precision Agriculture: Precision Resource Management. PI, with J.D. Green and R.D. Paratley, Co-PIs. $74,794. Regionally competitive.

2008-2011. Harnessing Cell Phone Technology to Track the Black Bear in Eastern Kentucky. USDA CSREES, Precision Agriculture: Precision Resource Management. PI, with J. Cox Co-PI. $59,732. Regionally competitive.

2007–2008. Disturbance and Landform Mediated Exotic Plant Invasion. USDA CSREES, Precision Agriculture: Precision Resource Management. PI, with J. Stringer, and N. Kong, Co-PIs. $51,061. Regionally competitive.

2006–2009. Monitoring the Invasion of Hemlock Wooly Adelgid in Kentucky. USDA CSREES, Precision Agriculture: Precision Resource Management. PI, with L. Rieske-Kinney, and J. Obrycki, Co-PIs. $74,712. Regionally competitive.

2006–2009. Spatial Animation Software for Analyzing Wildlife Telemetry Data: A New Tool for Research and Teaching. USDA CSREES, Precision Agriculture: Precision Resource Management. PI, with D. Maher, Co-PI. $11,254. Regionally competitive.

Pending

2010-2013. Spatial and temporal dynamics of invasive plants and their impact on ecosystem services in Robinson Forest Following Forest Management. USDA CSREES, Agriculture and Food Research Initiative. PI, with C. Barton, M. Arthur, J. Stringer, and J. Lhotka, Co-PIs. $499,909. Nationally competitive.

7. Teaching and Advising

Course taught

FOR 599-003, GIS in Natural Resources. Fall 2006-2008. (Student evaluation - 2006: N/A; 2007: 3.8/4.0; 2008: N/A)

FOR 602: Renewable Natural Resources in a Global Perspective. Fall 2007. Team-taught.

FOR 377, Forest Surveying. Summer 2008 -2009. (Student evaluation - 2008: 3.2/4.0; 2009: N/A)
FOR 378, Forest Measurement. Summer 2008-2009. (Student evaluation - 2008: 3.1/4.0; 2009: N/A)

Course assisted
Natural Resource Management (FOR 480) and Forest Measurements (FOR 300).

Thesis committee member
Laura Patton, Luke Cicel, Wade Ulrey, Rebekah Jensen, Daniel Bowker, Josh Brinks, Rebecca Jensen, and Lauren Dahl.

Other student advising
Mentored 30 plus students on their research or projects from Aug. 2005 to date.
Served as Science Fair Judge for the 2008 Central Kentucky Regional Science & Engineering Fair.

Graduate Students Supervised
Andrew Whittle (Forestry, 2007- 2009), M.S.
Peilin Yang (Forestry, 2007- 2009), M.S.
Josh Clark (Entomology, 2007-), M.S.
Michael Shouse (Forestry, 2008-), M.S.
Yu Liang (Forestry, 2008-), M.S.
Joe Guthrie (Forestry, 2006-), M.S.
John Hast (Forestry, 2009-), M.S.
Kevin Devine (Forestry, 2009-), M.S.

Post-Doctoral Scholars Supervised
Nicole (Ningning) Kong (2007-2009)
Liang Liang (2009-)

8. Publications

Refereed journal articles
Fei, S. and K.C. Steiner. 2009. Rapid Capture of Growing Space by Red Maple. Canadian Journal of Forest Research 39: 1444–1452. (jif 1.5).
Fei, S., W. Thomas, and J. Stringer. 2009. Empowering Forestry with Geospatial Technology. Journal of Forestry 107: 84-89.(jif 1.2).
Fei, S. and K.C. Steiner. 2008. Relationships between Advance Oak Regeneration and Biotic and Abiotic Factors. Tree Physiology 28: 1111-1119. (jif 2.3).
Steiner, K.C., J.C. Finley, P.J. Gould, S. Fei, and M.E. McDill. 2008. Oak Regeneration Guidelines for the Central Appalachians. Northern Journal of Applied Forestry 25: 5-16. (jif 0.8).
Fei, S., J. Schibig, and M. Vance. 2007. Spatial Habitat Modeling of American Chestnut at Mammoth Cave National Park. Forest Ecology and Management 252: 201-207. (jif 1.8).

Fei, S. and K.C. Steiner. 2007. Evidence for Increasing Red Maple Abundance in the Eastern United States. Forest Science 53: 473-477. (jif 1.5).

Brooks, R.P., G.P. Patil, S. Fei, A. I. Gitelman, W.L. Myers, and E.D. Reavie. 2007. The next generation of ecological indicators of wetland condition. EcoHealth 4: 176-178.

Fei, S. 2007. The geography of American place names and trees. Journal of Forestry 105: 84-90. (jif 1.2).

Gould, P.J., S. Fei, and K.C. Steiner. 2007. Modeling sprout-origin oak regeneration in the central Appalachians. Canadian Journal of Forest Research 37: 170-177. (jif 1.5).

Rathbun, S. and S. Fei. 2006. A spatial zero-inflated Poisson model for oak regeneration. Environmental and Ecological Statistics 13: 406-426. (jif 1.0).

Fei, S., P.J. Gould, K.C. Steiner, and J.C. Finley. 2006. Aggregate height -- a composite variable to predict early-stage mixed-oak stand development. Forest Ecology and Management. 223: 336–341. (jif 1.8).

Fei, S., P.J. Gould, K.C. Steiner, and J.C. Finley. 2005. Forest regeneration composition and development in upland, mixed-oak forests. Tree Physiology. 25: 1495–1500. (jif 2.3).

Fang, J., S. Fei, K. Zhao, Y. Fan, D. Zhuang, and M. Wu. 2000. Anatomical characteristics of beech (*Fagus*) species in Zhejiang and their taxonomic significance. Acta Scientiarum Naturalium Universitatis Pekinensis 36: 509-516.

Book chapters

Fei, S., N. Kong, J. Stringer, and D. Bowker. 2008. Invasive pattern of exotic plants in forest ecosystems. pp 59-70. In Kohli et al. eds. Invasive plants and forest ecosystems. CRC Press.

Refereed technical report

Fei, S., P.J. Gould, M.J. Kaeser, and K.C. Steiner. 2008. Distribution and dynamic of hayscented fern following stand harvest. USDA, Forest Service, General Technical Report NRS-P-24: 187-193.

Fei, S., K.C. Steiner, and J.C. Finley. 2007. Stocking equations for regeneration in mixed-oak stands. USDA, Forest Service, General Technical Report SRS-101: 55-59.

Fei, S. 2005. Hotspot detection for chestnut oak regeneration. In proceedings of The 6th Annual National Conference on Digital Government Research (Digital Government 2005). Atlanta, Georgia 243-244.

Conference proceedings

Kong, N., S. Fei, L. Rieske-Kinney, and J. Obrycki. 2008. Mapping Hemlock Forests using Remotely Sensed Imagery and Environmental Factors in Harlan County, Eastern Kentucky. In proceedings of The 6th SOFOR GIS Conference. Orlando, Florida. 107-117.

Maehr, D. and S. Fei. 2008. Influence of GPS Monitoring Frequency on Understanding Large Mammal Behavior. In proceedings of The 6th SOFOR GIS Conference. Orlando, Florida. 212-222.

Unger, D., S. Fei, and D. Maehr. 2008. Landscape Conservation of a Recolonizing Black Bear Population in Southeastern Kentucky. In proceedings of The 6th SOFOR GIS Conference. Orlando, Florida. 237-250.

Lee, B. and S. Fei. 2007. Influence of Management History on Invasive Exotic Plants in Urban Forest Parks. Proceedings of Emerging issues along urban /rural interfaces. 182-186.

Other journal publications

French, M.E., C.D. Barton, F.V. Hebard, D. Graves, S. Fei, and K. Adank. 2007. Can surface mine reclamation help to restore American chestnut? Reclamation matters 4(2): 24-28.

Fei, S. 2007. Are we really throwing money into the water? Journal of Forestry 105: 110.

Fei, S. 2007. Hemlock Woolly Adelgid Update. Kentucky Woodlands Magazine 2: 25.

Fei, S. 2006. The statistical ecology and environmental statistics interdisciplinary classroom. Environmental and Ecological Statistics 13: 356-357.

9. Presentations

International

Fei, S. and N. Kong. Invasive Species Distribution in the Southeastern U.S. The 23rd annual Meeting of the Society for Conservation Biology. July 11-17, 2009. Beijing, china.

Fei, S. Mapping and Modeling Species Distribution. Environmental and Ecology Research Center, Chinese Academy of Science. Sept. 24, 2008. Beijing, China.

Steiner, K. S. Fei, F. Hebard, F. Paillet, S. Fizsimmons. Restoring the King of the Forest. Department of Ecology, Peking University. Sept. 23, 2008. Beijing, China.

Fei, S. Mapping and Modeling Species Distribution. Department of Ecology, Peking University. Sept. 23, 2008. Beijing, China.

Pike, A., T. Mueller, F. Sikora, B. Mijatovic, and S. Fei. Mobile Soil pH Sensor: Initial Assessment in Central Kentucky. ASA-CSSA-SSSA 2007 International Annual Meeting. Nov. 4-8, 2007. New Orleans, LA.

Fei, S. Hotspot Geoinformatics in Natural Resource Conservation. International Hotspot GeoInformatics and Digital Governance Working Group Workshop. May 14-18, 2007. University Park. PA.

Fei, S., K.C. Steiner, and J.C. Finley. Influences of overstory conditions on advance oak regeneration. IUFRO: Oak 2006 Conference. Sept. 24-27, 2006. Stevens Point, WI.

Fei, S., J. Stringer, and K.C. Steiner. Influential factors of potential oak regeneration in the Appalachians. IUFRO: Oak 2006 Conference. Sept. 24-27, 2006. Stevens Point, WI.

K.C. Steiner, P.J. Gould, S. Fei, and J.C. Finley. Regeneration of oak in the central Appalachians. IUFRO: Oak 2006 Conference. Sept. 24-27, 2006. Stevens Point, WI.

National

Combs, A. and S. Fei. What Do Forest Scientists Publish? 23rd National Conference on Undergraduate Research. April 16-18. 2009, La Crosse, WI.

Clark, J.T., S. Fei, N. Kong, L.K. Rieske-Kinney, and J. Obrycki. Mapping eastern hemlock and modeling hemlock woolly adelgid invasion in eastern Kentucky. 54th Association of American Geographers 2009 Annual Meeting. 22-27 March 2009, Las Vegas, NV.

Shouse, M. and S. Fei. Mapping Invasive Plants Using Feature Extraction. 54th Association of American Geographers 2009 Annual Meeting. 22-27 March 2009, Las Vegas, NV.

Whittle, A., S. Fei, and J. Cox. Global Climate Change and Its Effects on Large Carnivore Habitat in Florida. The Wildlife Society Annual Conference. Nov. 8–13, 2008. Miami, FL.

Whittle, A., S. Fei, and J. Cox. Black Bear and Florida Panther Habitat and the Effects of Climate Change. OFWIM 2008 Annual Meeting and Conference: Using Innovative Technology to Move from Planning to Implementation. Oct. 27–30, 2008. Albuquerque, NM.

Fei, S., K. Steiner, F. Hebard, F. Paillet, S. Fizsimmons, Z. Shen, and W. He. In Search of Wild Castanea in China. The American Chestnut Foundation 25th Annual meeting. Oct. 24-26, 2008. Chattanooga, TN.

Fei, S. and N. Kong. Distribution of Invasive Plants in the Southeastern U.S. Ecological Society of American 92nd annual meeting. Aug. 3-8, 2008. Milwaukee, WI.

Kong, N., S. Fei, L. Rieske-Kinney, and J. Obrycki. Mapping Hemlock Forests using Remotely Sensed Imagery and Environmental Factors in Harlan County, Eastern Kentucky. 6th SOFOR GIS Conference. Mar. 24-26, 2008. Orlando, FL.

Clark, J., N. Kong, S. Fei, L. Rieske-Kinney, and J. Obrycki. Mapping Eastern Hemlock (Tsuga Canadensis) in Southeastern Kentucky using Remote Sensing and a Classification Model. 6th SOFOR GIS Conference. Mar. 24-26, 2008. Orlando, FL.

Clark, J., M. French, R. McNertney, M. Pulliam, M. Shouse, and S. Fei. An Invasive Species Trail on the University of Kentucky Campus. 6th SOFOR GIS Conference. Mar 24-26. 2008. Orlando, FL.

Moser, L.J., M. I. Strong, and S. Fei. University of Kentucky's Native Tree Trail. 6th SOFOR GIS Conference. Mar 24-26. 2008. Orlando, FL.

Maehr, D. and S. Fei. Influence of GPS Monitoring Frequency on Understanding Large Mammal Behavior. 6th SOFOR GIS Conference. Mar. 24-26, 2008. Orlando, FL.

Unger, D., S. Fei, and D. Maehr. Landscape Conservation of a Recolonizing Black Bear Population in Southeastern Kentucky. 6th SOFOR GIS Conference. Mar. 24-26, 2008. Orlando, FL.

Whittle, A., D. Maehr, and S. Fei. Global Climate Change and Its Effects on Large Carnivore Habitat in Florida. 8th National Conference on Science, Policy and the Environment. Jan. 2008. Washington, D.C.

Fei, S. and J. Schibig. Site Affinities of American Chestnut – A Spatial Modeling Approach. The American Chestnut Foundation annual meeting. Oct. 2007. Burlington, VT.

Fei, S., W. Thomas, and J. Stringer. Empowering Forestry Extension with Geospatial Technology. Society of American Foresters National Convention. Oct. 2007. Portland, OR.

Fei, S. Evidence that oak is declining in abundance. Ecological Society of American 91th annual meeting. August 5-10, 2007. San Jose, CA.

Fei, S., K.C. Steiner, and J.C. Finley. Development of Oak Regeneration in the Central Appalachians. North American Forest Biology Workshop. May 20-23, 2007. Bloomington, IN.

Fei, S. and R. Habig. Influence of Management History on Invasive Exotic Plants in Urban Forests. Emerging Issues along Urban/Rural Interfaces II. Apr. 9-12, 2007. Atlanta, GA.

Fei, S. Aggregate height – a composite measure of seedling population. Society of American Foresters National Convention. Oct. 2006. Pittsburg, PA.

Fei, S. and K.C. Steiner. Irreversible red maple expansion? Presented in the Ecological Society of American 90th annual meeting. August 7-11, 2006. Memphis, TN.

Fei, S. Hotspot detection for chestnut oak regeneration. In proceedings of The 6th Annual National Conference on Digital Government Research (Digital Government 2005). May 19-20, 2005. Atlanta, GA.

Regional

Rieske-Kinney, L. J. Harwood, J. Obrycki, S. Fei, and F. Yang. Evaluating the threat of the invasive hemlock woolly adelgid: From satellites to cells. Invasive Species Conference. Dec. 12-13, 2008. Lexington, KY.

Shouse M. and S. Fei. Object-Oriented Image Analysis: A Tool For Invasive Plant Mapping. Invasive Species Conference. Dec. 12-13, 2008. Lexington, KY.

Fei, S. J., Schibig, and M. Vance. Habitat Mapping of Castanea Dentata at Mammoth Cave National Park. Tennessee Academy of Science meeting (botany section). Nov. 21. 2008. Nashville, TN.

Yang, P. and S. Fei. Change of Forest Composition in the Eastern United States in the Last Two Decades. Southern Mensurationist Meeting. Oct. 26- 29. St. Augustine, FL.

Whittle, A., S. Fei, and J. Cox. Global Climate Change and Its Effects on Large Carnivore Habitat in Florida. Florida's Wildlife: On the Frontline of Climate Change. Oct. 1 – 3, 2008. Orlando, FL.

Fei, S. Applying Geospatial Technology to Raise Public Awareness of Natural Resource Related Issues. KY GIS Conference. Jul. 7-9, 2008. Lexington, KY.

Shouse, M. and S. Fei. Mapping Invasive Plants Using Remote Sensing Imageries in Kentucky. KY GIS Conference. Jul. 7-9, 2008. Lexington, KY.

Clark, J. and S. Fei. Mapping eastern hemlock and hemlock woolly adelgid in southeastern Kentucky. KY GIS Conference. Jul. 7-9, 2008. Lexington, KY.

Whittle, A.J., and S. Fei. Global Climate Change & Effects on Florida Panther & Black Bear Habitat. KY GIS Conference. Jul. 7-9, 2008. Lexington, KY.

Kong, N. and S. Fei Spatial distribution pattern analysis of invasive plants in Southeastern of U.S. KY GIS Conference. Jul. 7-9, 2008. Lexington, KY.

Clark, J.T. and S. Fei. The invasive species trail: A map of invasive plants on the campus of the University of Kentucky. Invited Presentation for the 2007-2008 Service-Learning Showcase of the University of Kentucky's J. W. Stuckert Career Center. Apr. 18 2008, Lexington, KY.

Fei, S., P. Gould, M. Kaeser, and K. Steiner. Distribution and Dynamics of Hayscented Fern in Mixed-Oak Stands in Pennsylvania. 16th Central Hardwood Forest Conference. Apr. 8-9, 2008. Lafayette, IN

Whittle, A., S. Fei, and D. Maehr. 2008. Global Climate Change and Its Effects on Large Carnivore Habitat in Florida. University of Kentucky Graduate Student Interdisciplinary Conference. March 28, 2008. Lexington, KY.

Kong, N. and S. Fei. Mapping Hemlock Forests Using Remote Sensed Imagery and Environmental Factors in Eastern Kentucky. KY GIS Conference. Jul. 31-Aug. 1, 2007. Louisville, KY.

Thomas, W. and S. Fei. Geo-spatial Visualization of Forest Management Activities in Kentucky. KY GIS Conference. Jul. 31-Aug. 1, 2007. Louisville, KY.

Fei, S. and J. Schibig. Spatial Modeling of American chestnut at Mammoth Cave National Park. Kentucky TACF spring meeting. Apr. 28, 2007. Elisabeth town, KY.

Fei, S. Geographic Information System (GIS) in Natural Resources. Digital Scholarship Colloquium. Mar. 28, 2007. Lexington, KY.

Fei, S., D. Bowker, J. Stringer, and C. Barton. Distribution pattern of invasive plants in Robinson Forest. 9th Annual Southeast EPPC Conference. Mar. 22-22, 2007. Athens, GA.

Schibig, J., S. Fei, and M.Vance, J. Tinsley. Site affinities of American chestnut at Mammoth Cave Nation Park. TACF's Southern Regional meeting. Feb. 24, 2007. Chattanooga, TN.

Schibig, J., M. Vance, J. Tinsley, S. Fei, L. Fly, A. Osborn, and M. Skaggs. Ecology of *Castanea dentata* at Mammoth Cave National Park. The Tennessee Academy of Science meeting. Nov. 18, 2006. Clarksville, TN.

Fei, S. and D. Maehr. Tracing the secret creatures using GIS and GPS. GIS day at the University of Kentucky. Nov. 15, 2006. Lexington, KY.

Fei, S., K.C. Steiner, and J.C. Finley. Regeneration stocking guides in mixed-oak forest. 15th Central Hardwood Forest Conference. Feb. 28-Mar. 1, 2006. Knoxville, TN.

Fei, S. Cumulative height -- a composite variable to measure seedling population. 2005 Northeast Ecology and Evolution Conference. Mar. 18 -20, 2005, University Park, PA.

10. Membership

The Ecological Society of America (ESA)
Society of American Foresters (SAF)
Sino-Ecologists Association (SEA)
The American Chestnut Foundation (TACF)
North American Colleges and Teachers of Agriculture (NACTA)

11. Professional Service and Recognition

Professional service

Associate Editor: Northern Journal of Applied Forestry (2007-2010)
Guest Editor: Northeastern Naturalist (2009)
Conference Chair: 17th Central Hardwood Forest Conference (2010)
Conference Organizer: Invasive Species Conference (2008)
Program Chair: 6th Southern Forestry and Natural Resources GIS Conference (2008)
Editor: Proceedings of the 6th Southern Forestry and Natural Resources GIS Conference (2008)
Editor: Proceedings of the 2008 Invasive Species Conference (2008)
Journal Reviewer: Forest Ecology and Management, Northern Journal of Applied Forestry, Journal of Applied Remote Sensing, and Forest Science.
Proposal Reviewer: National Science Foundation (2009)

Awards and honors

Research Activity Award, $2400, Spring 2009, awarded by College of Agriculture, University of Kentucky.

Conference and Workshop Award, $3,000, Fall 2008, awarded by Office of the Vice President for Research, University of Kentucky,

Research Activity Award, $3000, Spring 2008, awarded by College of Agriculture, University of Kentucky.

Research Activity Award, $9000, Summer 2007, awarded by College of Agriculture, University of Kentucky.

Research Activity Award, $1600, Spring 2007, awarded by College of Agriculture, University of Kentucky.

Research Activity Award, $3000, Fall 2006, awarded by College of Agriculture, University of Kentucky.

Early Career Faculty Workshop Award, 20 recipients across the nation, awarded by Scientific Environment for Ecological Knowledge (SEEK NSF) Program. Jan. 9-13, 2006. LTER Network Office, Albuquerque, NM.

Pinchot Scholar, 1999-2001, awarded by School of Forestry Resources, The Pennsylvania State University.

Invited presentation

Distribution of Invasive Species. The 5th International Symposium on Modern Ecology. June 2009. Lanzhou, China

Restoring the King of the Forest. Department of Ecology, Peking University. Sept. 2008. Beijing, China.

Mapping and Modeling Species Distribution. Department of Ecology, Peking University. Sept. 2008. Beijing, China.

Mapping and Modeling Species Distribution. Environmental and Ecology Research Center, Chinese Academy of Science. Sept. 2008. Beijing, China.

Applying GIS and Remote Sensing in Monitoring Forest Health. Mapping and Monitoring Land Resource Change Conference. May 2008. Lexington, KY.

Site Affinities of American Chestnut – A Spatial Modeling Approach. The American Chestnut Foundation annual meeting. Oct. 2007. Burlington, VT.

Hotspot Geoinformatics in Natural Resource Conservation. International Hotspot GeoInformatics and Digital Governance Working Group Workshop. May 14-18, 2007. University Park. PA.

Spatial Modeling of American chestnut at Mammoth Cave National Park. Kentucky TACF spring meeting. Apr. 2007. Elisabeth town, KY.

Place names and American chestnut restoration. The American Chestnut Foundation annual meeting. Oct. 2006. Arbingdon, VA.

CURRICULUM VITAE

1. Name: Deborah B. Hill

2. Address and Contact Information

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University of Kentucky
Lexington, KY 40546-0073
859 257-7610 (office)
859 323-1031 (fax)
dbhill@uky.edu

3. Current Position

Extension Professor, Non-Timber Forest Products, Agroforestry, International Forestry Small Woodlot Management, Permaculture, 12-month appointment, Department of Forestry

4. Degrees, with Field, Institution, and Date

B.S., Jackson College, Tufts University, Biology, 1960-1964, degree earned 1964.
M.Ed., School of Education, Boston University, Elementary Education/Science, 1966-1968, degree earned 1968.
M.F.S., School of Forestry & Environmental Studies, Yale University, Environmental Studies, 1971-1973, degree earned 1973.
Ph.D. Yale University, Silviculture, 1973-1977, degree earned 1977.
Certificate, Oxford Forestry Institute, Oxford University, Agroforestry, certificate earned summer 1989.
Certificate, Ecovillage Training Center, Summertown, TN, Permaculture, spring 1995/fall 1996, certificate earned 1996.

5. Experience

Teaching experience

(Institutions, Rank, Specialization, Dates, Total Academic Yrs.)
University of Kentucky, Professor, Sustainable agriculture/ Agroforestry, 2008
University of Kentucky, Professor, Sustainable agriculture/ Permaculture, 2008
UGA/St. Croix, Professor, Agroforestry in the Caribbean/ Permaculture, 2008
University of Kentucky, Professor, Silviculture/ Agroforestry, 2008, 2007, 2006, 2005, 2004, 2003
University of Kentucky, Professor, Silviculture/ Lab 2008, 2007, 2006, 2005
University of Kentucky, Professor, Silviculture/ beneficial fungi, 2008, 2007, 2006
University of Kentucky, Professor, Graduate Seminar/ Agroforestry, 2005, 0.5, 2004, 0.5
University of Kentucky, Professor, Summer environmental writing program, 2006, 2004, 2003
University of Kentucky, Professor, FOR 602 on Agroforestry/ Permaculture, 2006, 2003
University of Kentucky, Professor, Graduate Seminar/Agroforestry 2005, 0.5, 2004, 0.5
University of Kentucky, Professor, Forest Pathology, 2004

University of South/Sewanee, Professor, Silviculture/ Non-timber forest products/ Shiitake mushrooms, 2003
University of Kentucky, Professor, Field Day/ Permaculture, 2003
University of Kentucky, Assistant Professor, Forest Ecology/ Silviculture, 1987, 0.5, 1983, 0.5
Cornell University, Lecturer, Forest Ecology, 1980, 0.5
SUNY College of Environmental Sciences and Forestry, Visiting Assistant Professor, Silviculture, 1979-1980, 1.0

6. Graduate Students Supervised

Jennifer Flowers (Plant Pathology) Master's (2000 – 2002) Ph.D. (2002 – 2005)
Amy Bateman (Plant Pathology) Master's (2005 – 2007)
Joe Dinwiddie (Ag. Education) Master's (2001)

7. Teaching and Undergraduate Advising

Graduate seminar in agroforestry (FOR 770) (Fall 2004, 2005)
Classes on agroforestry, fungi for silviculture class (Spring 2004 – 2008)
Summer Environmental Writing Program

8. Publications

Hill, Deborah B. 2008. Agroforestry Part Four: Windbreaks. IN Kentucky Woodlands Magazine. Volume 3, Issue 1. pp. 18-19.
Hill, Deborah B. 2008. Agroforestry Part Five: Alley Cropping. IN Kentucky Woodlands Magazine. Volume 3, Issue 2. pp. 22-23.
Hill, Deborah B. and Jeffrey W. Stringer. 2007, 2008. Selling Black Walnuts in Kentucky. FORFS 07-04, FORFS 08-03. 1 p.
Hill, Deborah B. 2007. Agroforestry: Forest Farming. IN Kentucky Woodlands Magazine. Volume 2, Issue 1. pp. 16-17.
Hill, Deborah B. 2007. Agroforestry Part Two: Silvopasture. IN Kentucky Woodlands Magazine. Volume 2, Issue 2. pp. 18-19.
Hill, Deborah B. 2007. Agroforestry Part Three: Riparian Buffer Strips. IN Kentucky Woodlands Magazine. Volume 2, Issue 3. pp. 20-21.
Hill, Deborah B. 2007. Caring for Christmas Trees. FOR 105. Extension publication. 4 pp.
Hill, Deborah B. 2007. Non-Timber Forest Products: Forest Farming. Kentucky Woodlands Magazine, 1.5 pp.
Hill, Deborah B. 2006. Youth Opportunities in Forestry Education. FORFS 06-01. Extension publication. 4 pp.
Hill, Deborah B. 2006. Non-Timber Forest Products and Agroforestry. IN: Kentucky Woodlands Magazine Volume 1, Issue 2. November 2006. 2 pp.
Hill, Deborah B. and Jeffrey W. Stringer. 2005, 2006. Selling Black Walnuts in Kentucky. FORFS 05-04, FORFS 06-02. 1 p.
Hill, Deborah B. 2005. Farming Forest Mushrooms. IN: Appalachian Opportunities Medicinal and Aromatic Plants: Producing, Using and Marketing Herbs and Non-Timber Forest Products. Proceedings Fourth Annual Symposium, Beckley, WV, 15-17 September 2005. pp. 66-75.

9. Presentations and Consultations

Funds from the Forest landowners' meeting (Somerset) (spring 2008) Agroforestry Applications for Kentucky. (250)

Agroforestry for underserved populations. Shiitake production/Forest Farming Birmingham, AL (spring 2008) (50)

GalaxyIII (2008) Poster presentation on "The Ripple Effect: Training Natural Resource Personnel in Agroforestry" (Indianapolis, IN) (2500).

Quicksand Field Day (2008) Shiitake production (17)

Woodland Landowners Workshop (June 2007, July 2008). Non-timber Forest Products. (50)

Tennessee State University Alternative Crops. 2007. Shiitake Production. Jackson, TN (30)

Southern Sustainable Agriculture Working Group (SSAWG) 2007. Using Your Woodlot to Increase Farm Income: Forest Farming. Louisville. (1250)

Kentucky Women in Agriculture annual meeting – Shiitake production (2007) (10).

Woodland Landowners Workshop (August 2006/June 2007). Non-timber Forest Products. (30) (35)

Kentucky Women in Agriculture annual meeting – roundtable on Intensive microproduction (2005) (25), Shiitake production (2006) (10).

Association of Natural Resource Extension Professionals (ANREP) Biennial Conference (Park City, UT) – "Training the Trainers in Agroforestry" presentation (25); "Follow the Money – Finding Resources to Support Extension Programming", workshop (15)(Spring 2006).

Tennessee State University Alternative Crops. (2006). Shiitake Production (2 sessions), Clarksville, TN (60)

Quicksand Field Day (2006) Shiitake production (20)

Woodland Landowners Meeting (February, March 2006). Non-timber Forest Products (230)

Mountain State University Symposium on Medicinal and Aromatic Plants. 2005. Farming Forest Mushrooms, Beckley, WV (30)

10. Membership in Scientific, Professional, and Honor Societies

2006-present Member, Senate Appeals Committee on Privilege and Tenure

2006-2007 Chair, Board of Directors, Earth Center at Dominican St. Catherine's College in Springfield, KY.

2006-present Treasurer, Bluegrass Chapter of AAUW

2006-present Commissioner, LFUCG Greenspace Commission

2005-present Member, Board of Directors for Association for Temperate Agroforestry (AFTA)

2005-2006 Member, Curriculum Committee on Sustainable Agriculture Major in the College of Agriculture

2004-2007 President-elect, Kentucky-Ecuador Partners

2008-present President, Kentucky-Ecuador Partners,

2003-2007 Kentucky Representative, Appalachian Forestry Resource Center Bioregional Advisory Council

2003 Sponsorship ($2500) from Partners of the Americas to attend a Farmer-to-Farmer meeting in El Salvador (20) (6 countries represented) and to work in Ecuador on microproduction workshops in the Quito and Santo Domingo de Los Colorados areas (>200 contacts)

2002-2006 Member, Advisory Board, Earth Center at Dominican St Catherine's College in Springfield

2002, 2000 Reviewed articles for publication in Agroforestry Systems and for Journal of Agricultural and Food Chemistry
2002, 2001 Visited Ecuador through Farmer-to-Farmer and Kentucky-Ecuador Partners to instruct in the development of square meter gardens.
2000-2005 Member, UK College of Agriculture Extension P&T Review Committee (4th 2-year term
2000-2001 Served on the Informational Technology (computers) committee for the SACS report
2000, 2001 Review promotion and tenure packages for colleagues in other universities.
1999-2000 Arranged trip for and traveled with 6 students from UK to Ecuador to study sustainable agriculture and sustainable development. December 27,1999 to January 10, 2000.
1999-2000 Member of Planning Committee and Keynote Speaker for conference on Income Opportunities and Financial Strategies for Forest Landowners, held in New Albany, IN October 2000
1988-present Treasurer, Kentucky Forestry Council (organization that sponsors the annual Forestry Leadership Program)
1998-2005 Treasurer, ANREP
1998-1999 Planned, made all arrangements, and implemented conference on Income Opportunities for Woodlot Owners in Forth Mitchell, KY March 1999.
1997-1998 Member of Steering Committee and presenter for the first North American Conference on Enterprise Development Through Agroforestry: Farming the Agroforest for Specialty Products. Conference held in October 1998 in Minneapolis, MN.
1994-present Member, UK Religious Advisors Staff
1985-present Member, Kentucky-Ecuador Partners, part of Partners of the Americas, a grass-roots exchange program, sponsored in part by UK's Office of International Affairs. Also member of Kentucky-Ecuador Partners Agriculture Committee.

11. Service and Recognition

Administrative Assignments

Initial Appointment: 1981 (Assistant Extension Professor)
Promotion: 1987 (Associate Extension Professor with tenure)
Promotion: 1995 (Extension Professor)

Awards and Honors

2006 Award: ANREP, President's Award for Distinguished Service
2005 Award: Barnhart Fund for Excellence ($1000) to support costs for agroforestry workshop project (2006)
2005 Award: for excellence from the Southern Region/Cooperative Extension Service for exceptional programming in the area of video for "Growing and Marketing Shiitake Mushrooms on Natural Logs"
2005 Award: ANREP, Gold award for short publication – collaboration on ginseng publications from Ohio State University (6 pp).

Editorships, Review Panels, Review Service

2008, 2007 Article reviewer for Agroforestry Systems, Journal of Forestry

2007 Grant reviewer, Urban Forestry Grants (USDA/FS, KDF) (54)
2007 Outside reviewer, P&T package from Oregon State University,
2007 Outside reviewer, grant proposal from the Ontario Research Fund-Research Excellence program Ontario Ministry of Research and Innovation, Canada.
2007, 2005, 2003, 2002 Grant reviewer, Urban Forestry Grants (USDA/FS, KDF) (54)
2006, 2005 Article reviewer for Agroforestry Systems, Journal of Forestry
2006, 2005 Outside reviewer, P&T packages from Ohio State University, West Virginia University
2005 Abstract reviewer and program planner, ANREP Biennial Conference (114)
2005 Grant reviewer, Urban Forestry Grants (USDA/FS, KDF)(54)
2005 Reviewer, 3 Extension Ginseng publications from Ohio State University

Invited Lectures, Speeches

Southern Sustainable Agriculture Working Group (SSAWG) Forest Farming, 2007. Invited
Tennessee State University Forest Farming. 2007. Jackson, TN (10), Clarksville, TN (10). Invited
Tennessee State University Alternative Crops. 2006. Shiitake Production (2 sessions), Clarksville, TN (60) Invited
Kentucky Women in Agriculture annual meeting – roundtable on Intensive microproduction (2005) (25), Shiitake production (2006) (10). Invited
Mountain State University Symposium on Medicinal and Aromatic Plants. 2005. Farming Forest Mushrooms, Beckley, WV (30) Invited

CURRICULUM VITAE

1. Name: Paul J. Kalisz

2. Address and Contact Information

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University of Kentucky
TP Cooper Building
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859-257-7606 (Office)
859-323-1031 (FAX)
pkalisz@uky.edu

3. Current Position: Associate Professor, Soils & Silviculture (nine-month teaching-only appointment)

4. Degrees, with Fields, Institutions, Dates

B.S., Forestry, The Pennsylvania State University, 1977
M.S., Agronomy, Cornell University, 1979
Ph.D., Soil Science, University of Florida, 1982

5. Experience

July 2004 – Present: Associate Professor, nine-month teaching-only appointment, Department of Forestry, University of Kentucky, Lexington, KY
July 1989 – July 2004: Associate Professor, Department of Forestry, University of Kentucky, Lexington, KY
April 1983 – July 1989: Assistant Professor, Department of Forestry, University of Kentucky, Lexington, KY
May 1982 – April 1983: Research Associate, Soil Science Department, University of Florida, Gainesville, FL
June 1979 – May 1982: National Science Foundation Fellow, Soil Science Department, University of Florida, Gainesville, FL
June 1977 – May 1979: National Science Foundation Fellow, Department of Agronomy, Cornell University, Ithaca, NY

6. Graduate Students Supervised

Current Committee Involvement

Patrick Angel, Ph.D. - Co-Major Advisor
Will Wellman, M.S. - Committee Member

Committee Member For

16 M.S. students in Forestry
1 M.S. student in Entomology
1 M.S. student in Agronomy
1 Ph.D. student in Agronomy

3 Ph.D. students in Biological Sciences

External Committee Member For
2 Ph.D. students in Geology
1 Ph.D. student in Anthropology
1 Ph.D. student in Entomology
2 M.S. students in Wildlife Management (Eastern Kentucky University)

7. Teaching and Undergraduate Advising

Present Teaching Assignment

FALL SEMESTER - Course (credits),Title

FOR 599 (3) Ethics in Forestry
FOR 205 (4) Soils & Geology
FOR 300 (4) Forest Measurements
GEN 100 (3) Issues in Agriculture

SPRING SEMESTER - Course (credits),Title

FOR 350 (4) Silviculture
FOR 599 (3) Ethics in Forestry
GEN 100 (3) Issues in Agriculture
FOR 770 (1) Forestry seminar (occasional)

Teaching Chronology
FOR 350 (Silviculture) - taught every Spring since 1984; altered in 2006 to include fundamentals of Forest Pathology (FOR 410)
FOR 205 (Soils & Geology) - taught every Fall since 1993
FOR 300 (Forest Measurements) - taught every Fall since 2003
FOR 376 (2) Silviculture Summer Camp - taught every summer from 1983 until 2003
FOR 564 (Forest Soils) - taught every Fall from 1983 until 1998
FOR 599 (Ethics in Forestry) - taught every Spring and Fall since 2004
FOR 770 (Forestry Seminar) - taught every second or third Spring
GEN 100 (Issues in Agriculture) - taught every Spring and Fall since 2005

8. Present Research Projects
Survey of Earthworm Fauna of Joyce Kilmer - Slickrock
Wilderness and Citico Wilderness. In cooperation with Nantahala and Cherokee National Forests

CURRICULUM VITAE

1. Name: Michael J. Lacki

2. Address and Contact Information

105 T.P. Cooper Building
University of Kentucky
Department of Forestry
Lexington, KY 40546-0073
(859) 257-3217 (Office)
(859) 323-1031 (Fax)
mlacki@uky.edu

3. Current Position: Professor & Interim Chair (12-month appointment)

4. Degrees, with Field, Institution, and Date

B.S., Biology, University of Dayton, 1978 (Magna Cum Laude)
M.S., Zoology, The Ohio State University, 1980
Ph.D., Zoology, North Carolina State University, 1984

5. Experience

July 2009 – Present: Professor & Interim Chair, Department of Forestry, University of Kentucky, Lexington, KY
July 2006 – June 2009: Professor of Wildlife Ecology and Management, Department of Forestry, University of Kentucky, Lexington, KY
July 1996 – June 2006: Associate Professor of Wildlife Ecology and Management, Department of Forestry, University of Kentucky, Lexington, KY
December 1989 – June 1996: Assistant Professor of Wildlife Ecology and Management, Department of Forestry, University of Kentucky, Lexington, KY
July 1986 – November 1989: Program Leader & Assistant Professor of Wildlife Technology, Wildlife Technology Program, The Pennsylvania State University, DuBois, PA
August 1984 – June 1986: Visiting Assistant Professor of Wildlife Ecology, Center for Earth & Environmental Science, State University of New York at Plattsburgh, Plattsburgh, NY
January 1984 – July 1984: Instructor, Department of Zoology, North Carolina State University, Raleigh, NC
January 1981 – December 1983: Graduate Teaching Assistant, Department of Forestry, North Carolina State University, Raleigh, NC
August 1978 – December 1980: Graduate Teaching Assistant, Department of Zoology, The Ohio State University, Columbus, OH
January 1976 – July 1978: Research Assistant, Department of Biology, University of Dayton, Dayton, OH

6. Research Projects

Extramural

"Roosting and foraging behavior of Rafinesque' big-eared bat near the northern limits of the species range;" KDFWR; 2009-2012, $153,915.00; Principal Investigator

"Ecological monitoring initiative at Griffith Woods;" USDA; 2007 to 2008, $66,262; Co-Principal Investigator with John J. Cox and Christopher Barton

"Effects of forest practices on insect prey and activity levels of forest-dwelling bats in Tennessee;" Tennessee Nature Conservancy; 2006 to 2007, $9,900.00; Principal Investigator

"Effects of silvicultural treatments on insect prey and activity levels of forest-dwelling bats in the central Appalachians;" National Council for Air and Stream Improvement, Inc.; 2006 to 2009, $120,000.00; Principal Investigator with Lynne Rieske and Luke Dodd

"Injury and mortality risks from wildland fire smoke and heat exposure for endangered Indiana bats in maternity roosts;" USDA Joint Fire Science Program; 2005 to 2008, $380,000.00; Co-Principal Investigator with Matt Dickinson, James Norris, Valerie Young, and Anthony Bova

"Survey of forest bats in managed coniferous forest of north-central Idaho;" Idaho Wildlife Conservation and Restoration Program; 2004 to 2006, $20,000.00; CoPrincipal Investigator with Michael Baker

"Diet and prey abundance of the Ozark big-eared bat in northwest Arkansas;" Arkansas Game and Fish Commission; 2004 to 2006, $50,000.00; Principal Investigator

"Status, distribution, and reproductive characteristics of river otters in Kentucky;" Kentucky Department of Fish and Wildlife Resources; 2003 to 2009, $245,393.00; Principal Investigator

"Roost-site selection and roost microclimates of tree-roosting bats in coniferous forests of the Pacific Northwest;" Northwest Bat Cooperative; 2001 to 2007, $296,175.00; Principal Investigator

Other

"Restoration of the American peregrine falcon (*Falco peregrinus anatum*) to cliff habitats in Kentucky;" College of Agriculture Experiment Station Project; 2001 to 2007.

7. Graduate Students Supervised

Patricia Hartman, M.S., 2005
Joshua Adkins, M.S., 2006
*Joseph Johnson, M.S., 2006
*Luke Titsworth (Dodd), M.S., 2006
Anthony Miller, M.S., not completed
Amy Courtney, M.S., 2006
Dave Unger, Ph.D., 2007
Wade Ulrey, M.S., 2007
*Lauren Dahl, M.S., 2008
*William Boling, M.S., 2009
*Dan Cox, Ph.D., not completed
*Tiffany Potter, M.S., not completed
*Erin Barding, Ph.D., (active)
*Luke Dodd, Ph.D., (active)

*Hannah Harris, Ph.D., (active)
Marvin Ruffner, Ph.D., (active)
Zeb Weese, M.S., (active)
*Rebekkah Jensen, M.S., (active)
Rachael Mallis, Ph.D., (active)
*Joseph Johnson, Ph.D., (active)

*Major advisor or co-advisor

8. Post-Doctoral Scholars Supervised
Michael Baker, Ph.D., Louisiana State University

9. Teaching and Undergraduate Advising

University of Kentucky
Introduction to Wildlife Conservation (FOR 101); 1990
Data Collection Techniques (NRC 320) – contributing instructor; 1994-2001, 2005-2007
Forest Wildlife Management (FOR 430); 1990-2007
Integrated Forest Resources Management (FOR 480) – team taught course; 1994-2006
Renewable Natural Resources in a Global Perspective (Graduate Level - FOR 602) – contributing instructor; 2003, 2005, 2007
Special Topics in Conservation Biology (Graduate Level - FOR 620); 1995
Wildlife Habitat Analysis (Graduate Level - FOR 630); 1992, 1994, 1996, 2000, 2006
Forestry Seminar (Graduate Level - FOR 770); 2002

10. Publications

Books & Book Chapters
Dickinson, M.B, M.J. Lacki, D.R. Cox. 2009. Fire and the endangered Indiana bat. Pp. 51-75 in Proceedings of the 3rd fire in eastern oak forests conference (Hutchinson, T.F., ed.), Northern Research Station, USDA Gen. Tech. Report, GTR-NRS-P-46.
Lacki, M.J., J.P. Hayes, and A. Kurta. 2007. Bats in forests: conservation and management. The Johns Hopkins University Press, Baltimore, MD. 329pp.
Lacki, M.J., S.K. Amelon, and M.D. Baker. 2007. Foraging ecology of bats in forests. Pp. 83-127 in Bats in forests: conservation and management (M.J. Lacki, J.P. Hayes, and A. Kurta, eds.), The Johns Hopkins University Press, Baltimore, MD.

Refereed Publications
Lacki, M.J., D.R. Cox, and M.B. Dickinson. 2009. Response of northern bats to prescribed fires in eastern Kentucky forests. Journal of Mammalogy (in press).
Dzialak, M.R., K.M. Carter, M.J. Lacki, D.F. Westneat, and K. Anderson. 2009. Activity of post-fledging peregrine falcons in different rearing and habitat conditions. Southeastern Naturalist 8: 93-106.
Lacki, M.J., D.R. Cox, and M.B. Dickinson. 2009. Meta-analysis of summer roosting characteristics of two species of Myotis bats. American Midland Naturalist 161: 321-329.

Baker, M.D., M.J. Lacki, G.A. Falxa, P.L. Droppelman, R.A. Slack, and S.A. Slankard. 2008. Habitat use of pallid bats in coniferous forests of northern California. Northwest Science 82: 269-275.

Dodd, L.E., M.J. Lacki, and L.K. Rieske. 2008. Variation in moth occurrence and implications for foraging habitat of Ozark big-eared bats. Forest Ecology and Management 255:3866-3872.

Cox, D.R., M.J. Lacki, M.D. Baker, and J.S. Johnson. 2008. Sample size and the characterization of roosting habitat of forest-living bats. Bat Research News 49:1-9.

Dodd, L.E., and M. J. Lacki. 2007. Prey consumed by *Corynorhinus townsendii ingens* in the Ozark mountain region. Acta Chiropterologica 9: 451-461.

Lacki, M.J., and M.D. Baker. 2007. Day roosts of female fringed myotis, *Myotis thysanodes*, in xeric forests of the Pacific Northwest. Journal of Mammalogy 88: 967-973.

Johnson, J.S., M.J. Lacki, and M.D. Baker. 2007. Foraging ecology of long-legged myotis, *Myotis volans*, in north-central Idaho. Journal of Mammalogy 88: 1261-1270.

Lacki, M.J., J.S. Johnson, L.E. Dodd, and M.D. Baker. 2007. Prey consumption of insectivorous bats in coniferous forests of north-central Idaho. Northwest Science 81: 199-205.

Dzialak, M.R., M.J. Lacki, and S. Vorisek. 2007. Survival, mortality, and morbidity among peregrine falcons reintroduced in Kentucky. Journal of Raptor Research 41: 61-65.

Dzialak, M.R., K.M. Carter, and M.J. Lacki. 2007. Perch site selection by reintroduced peregrine falcons Falco peregrinus. Wildlife Biology 13:225-230.

Baker, M.D., and M.J. Lacki. 2006. Day roosting habitat of female long-legged myotis in ponderosa pine forests. Journal of Wildlife Management 70: 207-215.

Dzialak, M.R., M.J. Lacki, K.M. Carter, K. Huie, and J.J. Cox. 2006. An assessment of raptor hacking during a reintroduction. Wildlife Society Bulletin 34:542-547.

Maehr, D.S., P. Crowley, J.J. Cox, M.J. Lacki, J.L. Larkin, T.S. Hoctor, L.D. Harris, and P.M. Hall. 2006. Of cats and Haruspices: genetic intervention in the Florida panther. Responses to Pimm et al. (2006). Animal Conservation 9:127-132.

Dzialak, M.R., M.J. Lacki, J.L. Larkin, K.M. Carter, and S. Vorisek. 2005. Corridors affect dispersal initiation in reintroduced peregrine falcons. Animal Conservation 8:421-430.

Dzialak, M.R., M.J. Lacki, and K.M. Carter. 2005. Characterization of potential release sites for peregrine falcon reintroduction. Natural Areas Journal 25:188-196.

Lacki, M.J., J.W. Hummer, and J.L. Fitzgerald. 2005. Population patterns of copperbelly water snakes (Nerodia erythrogaster neglecta) in a riparian corridor impacted by mining and reclamation. American Midland Naturalist 153:357-369.

Dzialak, M.R., L.S. Burford, S. Vorisek, M.J. Lacki, and B.L. Palmer-Ball, Jr. 2005. The peregrine falcon and its recovery in Kentucky. The Kentucky Warbler 81:39-46.

Non-Refereed Publications & Published Abstracts

Lacki, M.J., D.R. Cox, L.E. Dodd, and M.B. Dickinson. 2008. Response of northern bats, *Myotis septentrionalis*, to prescribed fires in eastern Kentucky forests. Bat Research News 49: 139.

Dodd, L.E., L.K. Rieske-Kinney, and M.J. Lacki. 2008. Silvicultural disturbance influences bat activity and the occurrence of nocturnal insects in the central Appalachians of eastern North America. Bat Research News 49: 115.

Baker, M.D., and M.J. Lacki. 2006. Survey of forest bat communities and day-roosting ecology of *Myotis volans* in North-central Idaho, 2004-2005 comprehensive report. Final report to the Idaho Fish and Game, State Wildlife Project No. T-1-5 0410. 48 pp.

Cox, D.R., M.J. Lacki, M.D. Baker, and J.S. Johnson. 2006. Effects of sample size on habitat modeling for forest-roosting bats. Bat Research News 47:97.

Baker, M.D., and M.J. Lacki. 2006. day-roosting habits of female fringed myotis, *Myotis thysanodes*, in xeric forests of the Pacific Northwest. Bat Research News 47:85.

Dodd, L.E., and M.J. Lacki. 2006. Occurrence of prey and diet of the Ozark big-eared bat (*Corynorhinus townsendii ingens*). Bat Research News 47:98.

Johnson, J.S., M.J. Lacki, and M.D. Baker. 2006. Foraging ecology of long-legged myotis (*Myotis volans*) in north-central Idaho. Bat Research News 47:114.

Baker, M.D., M.J. Lacki, and J.S. Johnson. 2005. Day-roosting behavior of female *Myotis volans* in xeric and mesic forests of the intermountain northwestern United States. Bat Research News 46:154.

Publications in Review

Lacki, M.J., M.D. Baker, and J.S. Johnson. Geographic variation in roost-site selection of long-legged myotis in the Pacific Northwest. Journal of Wildlife Management (in review).

Kroll, A.J., E.B. Arnett, and M.J. Lacki. Managing snags to sustain bird and bat populations in the Pacific Northwest, USA: on a wing and a prayer? Journal of Wildlife Management (in review).

Ciuzio, E.A., D.S. Maehr, M.J. Lacki, J.L. Larkin, and J.W. Gassett. Bird community composition, abundance and habitat structure associated with a restored elk population on reclaimed strip mines in eastern Kentucky. Journal of Wildlife Management (in review).

11. Presentations, Posters, and Seminars

Lacki, M.J., D.R. Cox, L.E. Dodd, and M.B. Dickinson. 2008. Response of northern bats, *Myotis septentrionalis*, to prescribed fires in eastern Kentucky forests. 38th Annual North American Symposium on Bat Research, Scranton, PA.

Lacki, M.J., D.R. Cox, and M.B. Dickinson. 2008. Response to prescribed fire of tree-roosting bats in eastern oak-hickory forest. International Workshop on Impact of Prescribed Fire in Forest Ecosystems. Athens, OH. Invited.

Papers and Posters Presented by Students & Post-Doctoral Scholars

Barding, E.E., and M.J. Lacki. 2009. Status of river otters in Kentucky. Midwest Furbearer Resources Workshop. Franfort, KY.

Dodd, L.E., L.K. Rieske-Kinney, and M.J. Lacki. 2008. Genetic approaches enhance our understanding of the consumption of insects by forest-dwelling bats. Annual Meeting of the Entomological Society of America, Reno, NV.

Dodd, L.E., L.K. Rieske-Kinney, and M.J. Lacki. 2008. Silvicultural disturbance influences bat activity and the occurrence of nocturnal insects in the central Appalachians of eastern North America. 38th Annual North American Symposium on Bat Research, Scranton, PA.

Dodd, L.E., L.K. Rieske-Kinney, and M.J. Lacki. 2008. Silvicultural disturbances influence the insect prey base of forest-dwelling bats. 51st Annual Southern Forest Insect Work Conference, Chattanooga, TN.

Dodd, L.E., L.K. Rieske-Kinney, and M.J. Lacki. 2008. Application of genetic techniques for detection of prey of forest-dwelling bats. 18th Colloquium on Conservation of Mammals in the Southeastern United States, Blacksburg, VA.

Barding, E.E., M.J. Lacki, and E. Carlisle. 2008. Status of the river otter (*Lontra canadensis*) in Kentucky. Midwest Furbearer Resources Workshop, Olathe, KS.

Barding, E.E., and M.J. Lacki. 2007. Status, distribution and reproductive characteristics of river otters in Kentucky. Southeast Furbearer Managers Workshop, Cadiz, KY.

Dodd, L.E., L.K. Rieske-Kinney, and M.J. Lacki. 2007. Novel and traditional approaches for identifying prey of forest-dwelling bats: a comparison of methods. 50th Annual Southern Forest Insect Work Conference, Jekyll Island, GA.

Dodd, L.E., L.K. Rieske-Kinney, and M.J. Lacki. 2007. Effects of timber harvest on insect prey and the activity of forest-dwelling bats in the central Appalachians. University of Kentucky graduate Student Interdisciplinary Conference, Lexington, KY.

Dodd, L.E., M.J. Lacki, and L.K. Rieske-Kinney. 2006. Variation of Lepidoptera across forest landscapes – Implications for the Ozark big-eared bat (*Corynorhinus townsendii ingens*) in Arkansas. Annual meeting of the Entomological Society of America, Indianapolis, IN.

Baker, M.D., and M.J. Lacki. 2006. day-roosting habits of female fringed myotis, *Myotis thysanodes*, in xeric forests of the Pacific Northwest. 36th North American Symposium on Bat Research, Wilmington, NC.

Dodd, L.E., and M.J. Lacki. 2006. Occurrence of prey and diet of the Ozark big-eared bat (*Corynorhinus townsendii ingens*). 36th North American Symposium on Bat Research, Wilmington, NC.

Johnson, J.S., M.J. Lacki, and M.D. Baker. 2006. Foraging ecology of long-legged myotis (*Myotis volans*) in north-central Idaho. 36th North American Symposium on Bat Research, Wilmington, NC.

Dodd, L.E., M.J. Lacki, and L. Rieske-Kinney. 2006. Variation in lepidopteran communities across landscapes – implications for forest-dwelling bats in eastern North America. North American Forest Insect Work Conference, Asheville, NC.

Dodd, L.E., and M.J. Lacki. 2006. Landscape variation of moth abundance surrounding roost sites of the Ozark big-eared bat (*Corynorhinus townsendii ingens*) in Arkansas. 16th Colloquium on Conservation of Mammals in the Southeastern United States, Chattanooga, TN.

Dzialak, M.R., M.J. Lacki, J.L. Larkin, K.M. Carter, and S. Vorisek. 2005. Corridors affect dispersal initiation in reintroduced peregrine falcons. 12th Annual Conference of The Wildlife Society, Madison, WI.

Potter, T.M., J.A. Hanna, L. Freer, and M. Lacki. 2005. Agonistic behavior of the North American river otter (*Lontra canadensis*) toward humans: a medical case report & review of literature. 2005 Wilderness Medicine Conference and Annual Meeting, Snowmass, CO.

12. Membership in Scientific and Professional Societies

American Society of Mammalogists, 1978 to 2009
North American Society for Bat Research, 1980 to 2009
Southeastern Bat Diversity Network, 1992 to 2009
The Wildlife Society, 1978 to 2009 (including Kentucky State Chapter & Southeast Section)

13. Service and Recognition

Administrative Assignments

Interim Chair; Department of Forestry, University of Kentucky; 2009

Responsibilities include directing a department of 35 faculty and staff with an annual operating budget of $2.2 million dollars. The position involves oversight of teaching, research, and extension programs, along with management activities at the 12,000-acre school forest in eastern Kentucky.

Chair of Robinson Forest Committee; University of Kentucky; 1999 to 2005

Responsibilities included directing the committee that is charged with oversight of instructional, research, and extension activities that occur on the University of Kentucky school forest. Committee chair has oversight of the development and implementation of management actions on the school forest as approved by the Department of Forestry faculty.

Committees, Elected Positions, and Offices Held

President-Elect, Southeastern Bat Diversity Network, 2009-2011.

Proceedings Associate Editor and Member of Planning Committee for the Symposium on Big-eared Bats in Southeastern United States, Athens, GA; 2010.

CURRICULUM VITAE

1. Name: John M. Lhotka

2. Address and Contact Information

210 T.P. Cooper Building
University of Kentucky
Department of Forestry
Lexington, KY 40546-0073
859-257-9701
john.lhotka@uky.edu

3. Current Position: Assistant Professor of Silviculture (12-month appointment)

4. Degrees, with Field, Institution, and Date

B.S., Forestry, Southern Illinois University, 1999
M.S., Forest Resource Management, Southern Illinois University, 2001
Ph.D., Silviculture, Auburn University, 2006

5. Experience

June 2007 – Present: Assistant Professor of Silviculture, Department of Forestry, University of Kentucky, Lexington, KY
June 2006 – April 2007: Research Associate, School of Forestry and Wildlife Sciences, Auburn University, Auburn, AL
May 2003 – May 2006: Graduate Research Assistant, Auburn University, Auburn, AL
July 2001 – March 2003: Forester (GS-9), USDA Forest Service, Rocky Mountain Research Station, Moscow, ID
August 1999 – May 2001: Graduate Research Assistant, Southern Illinois University, Carbondale, IL

6. Research, Extension, and Teaching Projects

Extramural

Barton, C.D., J.M. Lhotka, R.C. Warner, C.T. Agouridis, D.H. Graves and S. Fei. 2008-2010. Techniques for establishing woody biomass plantations on surface mines as feedstocks for energy production. Kentucky Governors Office of Energy Policy: Energy R&D Program (08-GOEP-01). $170,773. Lhotka co-PI.

Lhotka, J.M. and J.W. Stringer. Evaluating seedling development, stand structure, and understory microenvironment six growing seasons following midstory removal. 2008. USDA Forest Service, Southern Research Station, Forestry Research (Federal Domestic Assistance Number: 10.652). $5,683. Lhotka co-PI.

Bullard, S.H., D.W. Cremeans, T.L. Cushing, S. Fei, J.M. Lhotka, L.R. Lhotka. 2008-2010. Reviving Traditional Forestry with HP Technology. 2008 HP Technology for Teaching Higher Education Award. $77,000. Dr. Lhotka has assumed the project director role on 05/07/2009.

Lhotka, J.M. and J.W. Stringer. Evaluating seedling development, stand structure, and understory microenvironment six growing seasons following midstory removal. 2009. USDA Forest Service, Southern Research Station, Forestry Research (Federal Domestic Assistance Number: 10.652). $14,435. Lhotka co-PI.

Other

Lhotka, J.M. Use of underplanting to enhance the health and sustainability of oak dominated ecosystems in Kentucky and the Central Hardwood Region. McIntire-Stennis project (KY009022).

Lhotka, J.M. Effect of clearcut opening size on forest composition and structure fifty years following treatment.

Lhotka, J.M. and E.F. Loewenstein. Modeling growth and recruitment in managed uneven-aged upland oak-pine stands.

Lhotka, J.M., M.R. Saunders, J.M. Kabrick, D.C. Dey. An expanding gap system for regenerating oak dominated stands in the Central Hardwood Region.

J.J. Cox and J.M. Lhotka. Impact of fire frequency on the survival and growth of twelve tree species common to the Inner Bluegrass Region of Kentucky.

7. Graduate Students Supervised

Graduate Students Advised

Joshua S. Brinks, M.S. Forestry, Advisor, July 2008 to present
David L. Parrott, M.S. Forestry, Advisor, May 2009 to present

Graduate Committee Service

2008-2009: 2 M.S. students (Forestry)

8. Teaching and Undergraduate Advising

Courses Taught

FOR 770 – Continuous Cover Forestry (1 credit)
Fall 2008

FOR 480 – Integrate Resource Management (5 credits)
Spring 2008, Team Taught: T.L. Cushing (50%) and J.M. Lhotka (50%)
Spring 2009, Team Taught: J.M. Lhotka (50%) and J.M. Ringe (50%)

FOR 350 – Silviculture (4 credits)
Spring 2009

Guest Lectures

UK Department of Forestry, Forest Management (FOR 425)

Sept. 26, 2007 - Estimating current yield using whole-stand growth and yield models

Sept. 28, 2007 - Using whole-stand and diameter class models to predict stand growth and future yield

Oct. 1, 2007 - Structure and application of individual tree growth and yield models
Sept. 24, 2008 - Introduction to growth and yield modeling (lecture and lab)

UK Department of Forestry, Forest Mensuration (FOR 378, Summer Camp)
May 19-20, 2008 - Introduction to the TwoDog Forest Inventory Software
May 29, 2008 - The use of forest inventory data in the development of silvicultural prescriptions
May 26-27, 2009 - Introduction to the TwoDog Forest Inventory Software

9. Publications

Refereed Journal Articles

J.M. Lhotka and E.F. Loewenstein. In Press. Effect of midstory removal on understory light availability and the two-year response of underplanted cherrybark oak seedlings. Southern Journal of Applied Forestry.

Lhotka, J.M. and E.F. Loewenstein. 2008. An examination of species-specific growing space utilization. Canadian Journal of Forest Research. 38(3): 470-479.

Lhotka, J.M. and E.F. Loewenstein. 2008. Influence of canopy structure on the survival and growth of underplanted seedlings. New Forests. 35: 89-104

Lhotka, J.M. and E.F. Loewenstein. 2007. A weighted relative density model applied to loblolly pine (*Pinus taeda L.*) stands. African Journal of Agricultural Research. 2(7): 300-304.

Lhotka, John M. and Edward F. Loewenstein. 2006. Indirect measures of predicting light transmittance along a gradient of riparian forest canopy structures. Forest Ecology and Management. 226: 310-318.

Other Publications and Documented Accomplishments

Lhotka, John M. and Edward F. Loewenstein. In Press. A comparison of canopy structure measures for predicting height growth of underplanted seedlings. Proceedings of the 15th Biennial Southern Silviculture Research Conference. USDA For. Serv. Gen. Tech. Rep.

Lhotka, John M. and J.W. Stringer. 2008. Improving Oak Regeneration through Soil Scarification and Underplanting. Forest Landowner. 67(6): 38-39.

Lhotka, John M. and Edward F. Loewenstein. 2006. Initial response of underplanted yellow poplar and cherrybark oak seedlings to four levels of mechanical midstory removal. P. 275-278. in Conner, K.F., ed. Proceedings of the 13th Biennial Southern Silviculture Research Conference. USDA For. Serv. Gen. Tech. Rep. SRS-92.

10. Presentations and Consultations (* Indicates Presenter):

Oral and Poster Presentations

Lhotka, J.M.*, M.R. Saunders, J.M. Kabrick, D.C. Dey. Regenerating oak dominated forests using irregular, gap-based silvicultural systems. 15th Biennial Southern Silviculture Research Conference. November 17-20, 2008. Hot Springs, AR.

Lhotka, J.M.* and E.F. Loewenstein. A comparison of canopy structure measures for predicting height growth of underplanted seedlings. 15th Biennial Southern Silviculture Research Conference. November 17-20, 2008. Hot Springs, AR.

Lhotka, J.M. and E.F. Loewenstein*. Diameter increment models for individual trees within upland oak stands managed using single-tree selection. 6th IUFRO Workshop of Uneven-

aged Silviculture, Feasibility of Silviculture for Complex Stand Structures: Designing Stand Structures for Sustainability and Multiple Objectives. Oct 24-27, 2008, Shizuoka, Japan.

Lhotka, J.M.* and J.J. Zaczek. Soil scarification to improve oak establishment. Oak Regeneration and Management Professional Forestry Workshop hosted by University of Kentucky – University of Tennessee Cooperative Extension Partnership. Oct 3-4, 2007. Lexington, KY.

Lhotka, J.M. and J.J. Zaczek*. Scarification seeding of oak: reproduction in three case studies. IUFRO Advances in Principles and Practices of Oak Silviculture and Genetics. September 24-27, 2006. Stevens Point, WI.

Lhotka, J.M.* and E.F. Loewenstein. Individual tree based growing space model for quantitative management of uneven-aged stands. IFURO Natural Disturbance-Based Silviculture – Managing for Complexity conference. May 14-18th, 2006. Rouyn-Noranda, Québec.

Lhotka, J.M.* Silvicultural implications of forest canopy structure based light transmittance and seedling growth models. Southern Illinois University, Department of Forestry. April 12, 2006. Carbondale, IL.

Loewenstein, N.J.*, E.F. Loewenstein, J.M. Lhotka and B.J. Ostrom. Response of *Microstegium vimineum* and *Lonicera japonica* to continuous forest cover forestry practices. 7th annual Southeast Exotic Plant Pest Council symposium, May 3-5 2005, Birmingham, AL.

Rawls, R.P.*, J.M. Lhotka*, E.F. Loewenstein, J.M. McDaniel, and M.F. Smidt. Stakeholder preferences among various forest management regimes at the wildland-urban interface. Emerging Issues along Urban/Rural Interfaces: Linking Science and Society conference. March 13-16, 2005. Atlanta, GA.

Lhotka, J.M.* and E.F. Loewenstein. Initial response of underplanted yellow poplar and cherrybark oak seedlings to four levels of mechanical midstory removal. 13th Biennial Southern Silviculture Research Conference, February 28 - March 4, 2005, Memphis, TN.

Consultations

October. 23, 2008 – Discussed methods for regenerating oak on productive sites in eastern Missouri with Missouri Department of Conservation, Resource Forester from Perry County, MO.

April 6, 2009 – Discussed techniques for reforestation of reclaimed surface mines with Chevron Mining Inc., Environmental Engineer, from Berry, AL.

11. Membership in Scientific, Professional, and Honor Societies

Society of American Foresters
Southern Hardwood Forestry Group

12. Service and Recognition

Awards and Honors

Outstanding Young Alumnus Award, 2007, Southern Illinois University, Department of Forestry
USDA Certificate of Merit, Outstanding Contributions to National Fire Plan Studies – 2001

Editorships, Review Panels, Reviewer Service

Professional Journal Reviews - Forest Ecology and Management, Journal of the Torrey Botanical Society, New Forests, Northern Journal of Applied Forestry, Southern Journal of Applied Forestry

Reviewer of manuscripts for Proceedings of 16th Central Hardwood Forest Conference, 2007

Reviewed pre-proposals (18) and full-proposals (4) for the 2007 Southern Forest Research Partnership (SFRP) grant program, 2007

Reviewer of proposals (11) for University of Kentucky, Precision Resource Management grant program, 2007

Invited Presentations

Lhotka, John M. Predicting Understory Light Transmittance and Hardwood Seedling Growth across a Canopy Structure Gradient. University of Missouri, Forestry Graduate Student Association seminar, October 3, 2008. Columbia, MO.

Lhotka, John M. Soil Scarification to Improve Oak Establishment. Indiana Society of American Foresters, 2008 Summer Meeting, August 26, 2008. Columbus, IN

Committees, Elected Positions, Offices Held

Kentucky Forest Health Task Force – September 2007 to Present

Graduate Curriculum Committee – August 2007 to Present

13. Attendance at Professional and Scientific Meetings

Invasive Species Conference, December 12-14, 2008. Lexington, KY

15th Biennial Southern Silviculture Research Conference. November 17-20, 2008. Hot Springs, AR

Society of American Foresters National Convention, Reno, NV, November 6, 2008

Silviculture Instructors Field Tour, Reno, NV, November 3-5, 2008

16th Central Hardwood Forest Conference, Lafayette, IN, April 8-9, 2008

Society of American Foresters National Convention, Portland, OR, October 24-26, 2007

Scientific Foundations of Conservation Planning in the Cumberland Plateau and Mountains, Knoxville, TN, November 13-14, 2007

Silviculture Instructors Field Tour, Portland, OR, October 21-23, 2007

USDA/CSREES Grantsmanship Workshop, Washington, DC, October 9-10, 2007

Southern Hardwood Forestry Group field tour and meeting, Selma, AL, April 2007

Forest Inventory and Analysis data training workshop, Athens, GA, March 1, 2007

14th Biennial Southern Silviculture Research Conference, Athens, GA, February 26-March 1, 2007

IFURO Natural Disturbance-Based Silviculture – Managing for Complexity conference. Rouyn-Noranda, Québec May 14-18th, 2006

Emerging Issues along Urban/Rural Interfaces: Linking Science and Society conference. Atlanta, GA, March 13-16, 2005

13th Biennial Southern Silviculture Research Conference, Memphis, TN, Feb 28 - March 4, 2005

CURRICULUM VITAE

1. Name: Robert Paratley

2. Address and Contact Information

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Department of Forestry
University of Kentucky
Lexington, KY 40546-0073
Office phone: (859) 257-3094

3. Current Position: Curator, U.K. Herbarium (12-month appointment)

4. Degrees

MS Ecology, Cornell University - 1985
BA Geography, State University of New York, Binghamton - 1974

5. Experience

January 1995 - present: Curator, University Herbarium
August 1993 - December 1994: Instructor, Department of Forestry, University of Kentucky
July 1985 - May 1994: Financial Manager, University Art Museum, Cornell University

6. Grants & other projects

Identifying Spatiotemporal Corridors an Hotspots for Invasive Plants $74,747 Co-investigator with Song-lin Fei and JD Green
Flora of Floracliff State Nature Preserve - completed fall 2008
Vegetation of upper Cumberland River in Kentucky - ongoing

7. Teaching and Advising

Teaching

Silvics and Tree Identification FOR 219 (2002-present)
Economic Botany - Plants and Human Affairs FOR 325 (1999-present)
Taxonomy of Vascular Plants - (1996-present)
Forestry Field Camp - Dendrology, Forest Vegetation (1996-present)
World Resources FOR 602 - unit on Non-tropical products of tropical rainforests (Fall 2007)
Graduate Seminar FOR 770 “Forests as Cultural Landscapes” Spring 2007
Guest lectures in PSS 602 Issues in Feeding World Population and BIO 575 Plant Anatomy and Morphology

Graduate Student Committees

Heather Clark, MS Forestry
Yu Liang, MS Forestry

8. Publications in Refereed Journals

McEwan, R., RD Paratley, RN Muller, and CL Riccardi, 2005. "The Vascular Flora of an Old-growth Mixed Mesophytic Forest in southeastern Kentucky." Journal of the Torrey Botanical Society 132:618-627.

Book review of Ron Jones' Plant life of Kentucky for University Press of Kentucky and also for Bulletin of the Torrey Botanical Club.

9. Recent presentations and public programs

Workshop

Native Ferns, Floracliff Nature Preserve, June 2007

Presentations

"Old Growth forest Dynamics" to Meeting of Kentucky Woodlot Owners Association May, 2008

"Andre Michaux and the quest for plants of the New World" part of UK Arboretum "Great Botanists" series, October 2008.

"History of Botanical Medicine in the U.S." to Master Gardeners of Lexington (at U.K. Arboretum) May 2006

10. Service & Affiliations

Woody Plant and Wildflower Identification Program - ongoing with County Extension Offices

Advisory Boards

Floracliff Nature Sanctuary Board of Directors (2001-present)

Professional Memberships

Torrey Botanical Society (1985-present)
Society of Economic Botany (2002-present)

CURRICULUM VITAE

1. Name: James M. Ringe

2. Address and Contact Information

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Department of Forestry
Lexington, KY 40546-0073
(859) 257-7594 (Office)
(859) 323-1031 (Fax)
jringe@uky.edu

3. Current Position: Professor of Forest Products Economics/Marketing (12-month appointment)

4. Degrees, with Field, Institution, and Date

B.S. Forestry (with High Distinction), University of Kentucky, 1977.
M.S. Agriculture, University of Kentucky, 1979.
Ph.D., Forestry, Purdue University, 1983.

5. Experience:

July 1999 - Present: Professor of Forest Products Economics/Marketing, Department of Forestry, University of Kentucky, Lexington, KY.
December 1990 - June 1999. Associate Professor of Forest Products Economics/Marketing, Department of Forestry, University of Kentucky, Lexington, KY.
December 1984 - November 1990: Assistant Professor of Forest Products Economics/Marketing, Department of Forestry, University of Kentucky, Lexington, KY.
August 1983 - December 1984: Temporary Instructor, Department of Forestry, University of Kentucky, Lexington, KY.
June 1979 - July 1983: Research Instructor, Department of Forestry and Natural Resources, Purdue University, West Lafayette, IN.
May 1977 - May 1979: Graduate Research Assistant, Department of Forestry, University of Kentucky, Lexington, KY.

6. Research, Extension, and Teaching Projects

Post mining reforestation demonstration project II. D.H. Graves, Principal Investigator; C.D. Barton, J.M. Ringe, J.W. Stringer, R. Sweigard, and R. Warner, Co-Investigators. USDA Forest Service. $985,000; 2002-2005.
Post mining reforestation demonstration project III. D.H. Graves, Principal Investigator; C.D. Barton, J.M. Ringe, J.W. Stringer, R. Sweigard, and R. Warner, Co-Investigators. USDA Forest Service. $985,000; 2003-2006.
Carbon Sequestration on surface mine lands. D.H. Graves, Principal Investigator; C.D. Barton, J.M. Ringe, J.W. Stringer, R. Sweigard, and R. Warner, Co-Investigators. U.S. Department of Energy. $1,000,000; 2002-2005.

7. Graduate Students Supervised

As a Committee Member

Broadbeck, Scott, 2007 (expected).Property taxation, forest fragmentation and development in Kentucky's Green River and Lower Cumberland River Watersheds. M.S. in Forestry. Committee Member.

Michels, Adam. 2007 (expected). Economics of low-compaction reforestation techniques on surface mines. M.S. in Forestry. Committee Member.

Jia, Haili. 2008. The strategic exercise of options under noisy market conditions: agri-business firms' investments in providing precision agriculture services. Ph.D. in Agricultural Economics. Served as Outside Member of Examination Committee.

8. Teaching and Undergraduate Advising

Teaching Assignments

FOR 100 - Introduction to Forestry; Fall semester 1985-2000.
FOR 200 - Map Reading and Photogrammetry; Spring semester 1994-present.
FOR 300 - Forest Mensuration; Fall semester 1983.
FOR 305 - Harvesting Timber Crops; Spring semester 1990-1993.
FOR 310 - Forest Photogrammetry; Spring semester 1991.
FOR 360 - Wood Technology and Utilization; Spring semester 1994-1995, 2000-present.
FOR 377 - Forest Surveying, Summer Camp (assisted with course preparation and grading); 1984.
FOR 378 - Forest Mensuration, Summer Camp; 1984.
FOR 379 - Harvesting and Utilization of Wood, Summer Camp jointly taught); 1988-1996, 2000-present.
FOR 400 - Wood Identification and Properties; Fall Semester 1992.
FOR 420 - Wood Products (jointly taught) Spring semester 1988-1991.
FOR 425 - Timber Management; Fall semester 2001-2005, 2009-present.
FOR 455 - Forest Policy and Administration; Spring semester 1985-1989.
FOR 480 - Integrated Forest Resource Management (Senior Capstone); 2009-present (Team taught with John Lhotka)
FOR 601 - Research Methods; Fall semester 1998-2000. Taught as FOR 620 in Fall 1998)
FOR 602 - Renewable Natural Resources in a Global Perspective; Fall semester 2005-present. Present one lecture for the course.
NRC 381 - Natural Resource Policy Analysis; Spring semester 2002 (taught 2 weeks of the course).

9. Publications

Extension Publications

Conners, T. and J. Ringe. 2006. Grading hardwood logs according to USFS standard log grades. Univ. of KY, College of Agriculture, Cooperative Extension Service, Publication FORFS 06-02.

Conners, T. and J. Ringe. 2006. Grading hardwood lumber according to NHLA rules. Univ. of KY, College of Agriculture, Cooperative Extension Service, Publication FORFS 06-03.

Other Publications

Conners, T.E., P. Stiglbauer, S. Banerjee, and J.M. Ringe. 2005. Influence of knife angle and ambient temperature on fines generation from flakers. IN Proc. Ninth European Panel Products Symposium, October 5-7, 2005, Llandudno, Wales. pp. 23-30.

Ringe, J.M. 2006. Author of the Interim Progress Report to the SAF Committee on Accreditation. Prepared for the Society of American Foresters.

10. Presentations and Consultations

Invited Presentations

Graves, D. H. and J.M. Ringe. Economic incentives for reclaiming for wildlife habitat as a post-mining land use. U.S. Office of Surface Mining Wildlife Summit. Louisville, KY. June 22-23, 2005.

Other Presentations

True, A., R. Sweigard, D. Graves, V. Badaker, J. Ringe, and C. Barton. 2005. Development of site index curves fir high-value trees on reclaimed surface mined land. Presented at the 2005 SME Annual Meeting and Exhibit, Salt Lake City, UT, February 28-March 2, 2005.

Graves, D.H. and J.M. Ringe. 2005. Economic incentives for reclaiming for wildlife habitat as a post-mining land use. Presented at the U.S. Office of Surface Mining Wildlife Summit, Louisville, KY, June 22-23, 2005.

Stiglbauer, P., T.E. Conners, S. Banerjee, and J.M. Ringe. 2005. Fines reduction at OSB flakers. Presented at the 59th International Convention of the Forest Products Society, Quebec City, Quebec, Canada, June 19-22, 2005.

Conners, T.E., P. Stiglbauer, S. Banerjee, and J.M. Ringe. 2005 Influence of knife angle and ambient temperature on fines generation from flakers. Presented at the Ninth European Panel Products Symposium, Llandudno, Wales. October 5-7, 2005.

11. Membership in Scientific, Professional, and Honor Societies

Forest Products Society (1979-present)
Society of American Foresters (1973-present)
Xi Sigma Pi - National Forestry Honor Society (1976-present)
Gamma Sigma Delta - International Agricultural Honor Society (1977-present)
Alpha Zeta - National Agriculture Honor Society (1976-present)

12. Service and Recognition

Outreach

Participated in the Kentucky Department of Fish and Wildlife Resources Environmental Career Fair at the Salato Wildlife Education Center, February 24 and 25, 2006.

Assisted T.E. Conners, with the Kentucky Master Logger continuing education class on log and lumber grading. Pine Knot, KY. May 24 and 25, 2006.

Meet with prospective students on a regular basis as needed in conjunction with College of Agriculture tours and in response to inquiries to the Department of Forestry.

Assisted with County Agent In-Service Training concerning the wood products industry. August 7-9, 2006.

Assisted T.E. Conners with the "Wood You Believe" program at the Robinson Station All Commodity Field Day. September 28, 2006.

Served on the teaching staff of the 21st Annual RTA (Railroad Tie Association) Crossties Seminar. Assisted in instructing industry personal in wood identification and crosstie grading. July 22-24, 2007. Terre Haute, IN.

Served on the teaching staff of the 23rd Annual RTA (Railroad Tie Association) Crossties Seminar. Assisted in instructing industry personal in wood identification and crosstie grading. August 2-4, 2009. Roanoke, VA.

Awards and Honors

Member of the "Reforestation of Surface Mined Lands" research team. Project designated a University of Kentucky Commonwealth Collaborative by University President Lee T. Todd Jr. – 2005

Finalist for the Provost's Award for Outstanding Teaching - 2006

13. Attendance at Professional and Scientific Meetings

Ohio Valley Section Meetings of the Forest Products Society (1984-present).

The Ninth and Tenth Annual meetings of the European Panel Products Symposium, Llandudno, Wales. (2005, 2006)

Attended the Southern Forestry Programs Recruiting Meeting to confer with 11 southern forestry schools and SAF to discuss recruiting needs, experiences and ideas. March 27, 2008; Knoxville, TN.

CURRICULUM VITAE

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3. Current Position: Assistant Professor of Forest and Natural Resource Policy (12-month appointment)

4. Degrees, with Field, Institution, and Date

B.S. Biochemistry, Virginia Tech, 1995
M.S. Natural Resources, University of Montana, 1998
Ph.D. Forest Resources and Conservation, University of Florida, 2002
J.D. Florida State University, 2006

5. Experience

Assistant Professor of Environmental Science, State University of New York Plattsburgh. August 2007-May 2009.
Visiting Assistant Professor of Economics, Georgia Southwestern State University. August 2006-May 2007.
Paid consultant: School of Forest Resources and Conservation, University of Florida. March 2005.
Paid consultant: Wildlife Conservation Society. Rwanda. July-August 2004.
Post Doctoral Fellow: Natural Resource Policy and Economics. University of Florida. August 2002-May 2003.
Research Assistant: Forest Economics and Policy. University of Florida. 1998-2002.
Teaching Assistant: Natural Resource Policy and Administration. University of Florida. Spring and Fall Semesters 1999.

6. Teaching and Undergraduate Advising

Environmental Law (at SUNY Plattsburgh): Fall 2007, Spring 2008, Fall 2008, Spring 2009
Environmental Management (at SUNY Plattsburgh): Spring 2008, Spring 2009
Environment and Society (at SUNY Plattsburgh): Fall 2008, Spring 2009
Environmental Science Seminar (at SUNY Plattsburgh): Fall 2007, Spring 2008, Fall 2008
Principles of Microeconomics (at Georgia Southwestern State University): Fall 2006, Spring 2007
Principles of Macroeconomics (at Georgia Southwestern State University): Fall 2006, Spring 2007

Number of undergraduate student advisees (at SUNY Plattsburgh) ≈ 30

7. Publications

P. Dwivedi, A. Susaeta, J.R.R. Alavalapati, G.A. Stainback. Carbon sequestration in slash pine (Pinus elliotti) plantations: Integrating life cycle analysis. Canadian Journal of Forest Research.

J. R. Matta, J.R.R. Alavalapati, G.A. Stainback. Effect of conserving habitat for biodiversity on optimal management of non-industrial private forests in Florida. Journal of Forest Economics (in press).

Alavalapati, J.R.R., Jose, S., Stainback, A., Matta, J.R., and D.R. Carter. 2007. Economics of cogongrass control in slash pine forests. Journal of Agricultural and Applied Economics 7: 59-66.

Alavalapati, J.R.R., G. A. Stainback, and J.R. Matta. 2007. Longleaf pine restoration: Economics and policy. pp. 403-412. In: Longleaf Pine Ecosystems: Ecology, Management and Restoration: Jose, S., E.J. Jokela, and D. Miller (eds.). Springer-Verlag, Springer, New York.

Stainback, G.A. and J.R.R. Alavalapati. 2005. Effects of carbon markets on the optimal management of slash pine (Pinus elliottii) plantations. Southern Journal of Applied Forestry 29(1): 27-32.

8. Presentations and Consultations

Rwanda: History and Current Challenges. Third World Perspective Program Seminar. Americus, GA. January 24, 2007.

Third World Development: Successes and Failures. Third World Perspective Program Seminar. Americus, GA. October, 11, 2006.

9. Membership in Scientific, Professional, and Honor Societies

Society of American Foresters
The International Society of Ecological Economics
Association of Third World Studies

10. Service and Recognition

Honor and Awards

Deborah K. Kearney Jurisprudence Book Award for Academic Excellence, Florida State University College of Law (2006)

School of Forest Resources and Conservation Outstanding Dissertation, University of Florida (2002)

Reviewer Service

Canadian Journal of Forest Research

Academic Service

Faculty leader to develop a new master's degree. March 2008-May 2009 (SUNY Plattsburgh)
Campus sustainability committee. August 2008-May 2009 (SUNY Plattsburgh)
Curriculum committee. August 2007-May 2009 (SUNY Plattsburgh)

Faculty search committee. October 2007-March 2008 (SUNY Plattsburgh)

11. Attendance at Professional and Scientific Meetings

Conference on the Ecological Dimensions of Biofuels host by the Ecological Society of America in 2008.

CURRICULUM VITAE

1. Name: Jeffrey Stringer

2. Address and Contact Information

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University of Kentucky
Department of Forestry
Lexington, KY 40546-0073
Phone: 859-257-9153; Fax: 859-323-1031
stringer@uky.edu

3. Current Position: Extension Professor (12-month appointment)

4. Degrees

Ph.D., Plant Physiology/Biochemistry/Molecular Biology Program, University of Kentucky (1993)
M.S., Forestry, Department of Forestry, University of Kentucky (1981)
B.S., in Forestry, Department of Forestry, University of Kentucky (1979)
Forestry Pre-Professional Program, Western Kentucky University, College of Agriculture (1975-1977)

5. Experience

Professor, University of Kentucky, Department of Forestry, 2007-present
Associate Extension Professor, University of Kentucky, Department of Forestry, 2000-2006
Assistant Extension Professor, University of Kentucky, Department of Forestry, 1995-2000
Research Specialist in Hardwood Silviculture, University of Kentucky, Department of Forestry, 1980-1994
Research Assistant, University of Kentucky, Department of Forestry 1978-1980
Forestry Consultant, 1977-1980

6. Research and Extension Grants

Extension Grants

Pending: KDF – KWM Health, KDFWR - Training
Cane Run and Royal Spring Watershed and Basin Plan Project. 2007-2013. Kentucky Energy and Environment Cabinet. $666,564. PI – S. Higgins, C. Agouridis, A. Gumbert. Co-Investigators -J. Stringer, L. Orsmsbee.
Economic Impact of Fire on Forest Product Values in Appalachian Regions of Kentucky and Tennessee. 2009-2010. Kentucky Energy and Environment Cabinet. $294,000. PI – J. Stringer.
Long-Lived Wood Products: Carbon and Competitive Advantages for Hardwood Mills. USDA Forest Service. $79,566. PI – J. Stringer, Co-PI's T. Conners, S. Bullard.
Kentucky Woodland Magazine – Degraded Stand Revitalization and Small Woodland Management Issue. 2009-2010. Kentucky Energy and Environment Cabinet. $30,000. PI - J. Stringer.

Forest Biomass Training for Kentucky. 2008. Southern Forest Research Partnership. $17,000. PI's T. Conners and J. Stringer.
Certified Master Logger Program. 2007-2008. NewPage Corporation. $40,000. PI – J. Stringer
Kentucky Woodland Magazine Special Pine Management Issue. 2008-2009. Kentucky Energy and Environment Cabinet. $20,000. PI – J. Stringer
Kentucky Woodland Magazine Special Forest Health Issue. 2008-2009. Kentucky Energy and Environment Cabinet. $20,000. PI – J. Stringer
Forest Stewardship Public Awareness, Publicity, and Training. 2008-2010. Kentucky Environmental and Public Protection Cabinet. $20,000. PI - J. Stringer
Silvicultural Prescriptions and Guidelines for Managing Degraded Upland Hardwood Stands. 2008. Appalachian Hardwood Forest Research Alliance $10,000. PI- J. Stringer, Co-PI, G. Miller.
Degraded Upland Hardwood Stand Management. 2008. USDA Forest Service Northern Experiment Station. $7,500. PI- J. Stringer.
Kentucky Woodlands Magazine II. 2007-2008. Kentucky Environmental and Public Protection Cabinet. $30,000. PI - J. Stringer, B. Thomas.
Certified Master Logger Program. 2007-2008. NewPage Corporation. $40,000. PI – J. Stringer
Kentucky Woodlands Magazine I. 2007. Kentucky Environmental and Public Protection Cabinet. $16,000. PI - J. Stringer, B. Thomas.
Forest Stewardship Public Awareness, Publicity, and Training. 1999-2008. Kentucky Environmental and Public Protection Cabinet. $90,000. Annually renewed $10,000 per year. PI - J. Stringer
Forest Land Enhancement Program: Public Awareness, Publicity, and Training. 2004-2008. Kentucky Environmental and Public Protection Cabinet. $52,500. PI - J. Stringer
National Fire Plan Economic Action Program for Timber Harvesting and Silvicultural Systems to Promote Forest Health in Kentucky. 2005-2007. Kentucky Environmental and Public Protection Cabinet. $25,000. PI - J. Stringer.
Water Quality and BMPs National Web Based Learning Center. 2004-2005. University of Tennessee – National Web Based Learning Center. $15,000 PI - J. Stringer, Co-Investigators C. Blinn, B. Jackson

Research Grants

Silvicultural Approaches for Regenerating Upland Stands in the Northern Cumberland Plateau. 2009-2010. USDA Forest Service, Southern Research Station. $14,435. PIs J. Lhotka, J. Stringer.
Evaluating Seedling Development, Stand Structure, and Understory Microenvironment Six Growing Seasons Following Midstory Removal. 2008. USDA Forest Service, Southern Research Station. $5,683. PI – J. Lhotka, co-PI. - J. Stringer.
Effectiveness of Improved Skid Trail Ephemeral Channel Crossings. 2007-2008. US Geological Survey 104b, Kentucky Water Resources Research Institute. $4,991. PI – C. Reeves, co-PI - J. Stringer.
Assessing Invasive Exotic Plants in Urban Forests. 2006-2008. National Urban and Community Forestry Advisory Council. $242,992 ($121,005 federal dollars). PI - S. Fei, co-PI - T. Barnes, J. Stringer, B. Lee, W. Thomas.
Post-Mining Reforestation Demonstration Projects I-V. 2001-2008. USDA Forest Service. Total $4,420,000. PI - D. Graves, co-PI - C. Barton, J. Ringe, J. Stringer, R. Sweigard, R. Warner.

Monitoring of Best Management Practices. 2005-2006. US EPA 319 Nonpoint Source Program. Kentucky Natural Resources Environmental Protection Cabinet. $30,280. PI - J. Stringer.

Timber Harvesting Analysis using GPS and GIS. 2004-2007. USDA/CSREES Special Research Grants Program. $133,909. PI - J. Stringer, co-PI - C. Barton, co-Investigators - M. Schmidt, T. McDonald.

Evaluation of Two-Aged Silviculture Options for Upland Hardwoods. 2003-2004. USDA Forest Service, Southern Experiment Station. $5,000. PI - J. Stringer.

Silvicultural and Topographic Controls on American Chestnut Establishment. 2002-2004. USDA Forest Service, Southern Experiment Station. $25,000. PI - C. Rhoades, co-Investigator - J. Stringer.

Carbon Sequestration on Surface Mine Lands. 2002-2004. US Department of Energy. $1,000,000. PI - D. Graves, co-PI - C. Barton, J. Ringe, J. Stringer, R. Sweigard, R. Warner. (extended through 2006).

7. Teaching Summary

Instructor

FOR 376 Silvicultural Practices (two hr.) required course for B.S. in Forestry (annual instruction 2001 to present). Teaching evaluations provided in dossier.

Annual Lecturer

NRC 320 Data Collection Technique (instructor forest measurements)
FOR 350 Silviculture (one - two lectures annually)
FOR 599 Ethics (one lecture annually)
FOR 100 Introduction to Forestry (four lectures annually)
FOR 602 Research Methods (two lectures annually)

Other Formal Courses (taught or assisted)

FOR 599 Independent Work in Forestry (instructor) 1994, 1996, 1998, 2001, 2006
FOR 379 Harvesting and Utilization of Wood (assisted 1992-1998)
FWV 262 Silviculture - Hazard Community College (assisted 1998-2000)
FWV 264 Timber Harvesting - Hazard Community College (assisted 1998-1999)
FOR 300 Forest Measurements (instructor 1990)
FOR 219 Dendrology (instructor 1993)

8. Extension Projects

Primary Extension Programs and Initiatives

The following are recent and/or on-going major extension programs that I have developed and currently direct for three client groups; timber harvesting professionals, forestry and natural resource professionals, and non-industrial private forest owners. Further information and program impacts are provided in the dossier.

Timber Harvesting Professionals

Kentucky-Tennessee Certified Logging Program. 2009. Third party Rainforest Alliance SmartLogging certified point-of-harvest system for loggers in Kentucky and Tennessee.

Currently 42 logging firms are enrolled in the program in western Kentucky and Tennessee. This program is only one of three currently operating in the U.S. providing third party certification for loggers through Rainforest Alliances, SmartWood SmartLogging Program. The effort is supported by funds from NewPage Corp. Director – J. Stringer.

Kentucky Master Logger Program. 1993 to present. Comprehensive logger training and education program mandated as a requirement for logging in Kentucky in 2000 by the Kentucky legislature. 159 three-day programs have graduated a total of 6,886 loggers. Initial monetary support was obtained from the Tennessee Valley Authority and US EPA, currently the program is self sustaining. Director and instructor – J. Stringer, coordinator – M. Schuster.

Kentucky Continuing Education Program for Master Loggers. 2000 to present. One day training programs for Kentucky Master Loggers. 167 training programs have graduated 3,536 loggers. Self supporting with registration fees. Director and instructor – J. Stringer, coordinator – M. Schuster.

The Kentucky LogJam Newsletter. 1995–2009. Publication supporting the Kentucky Master Logging Program and professional timber harvesting in Kentucky. Subscription base 3,000. Editor – J. Stringer.

Non-Industrial Private Forest Owners

Kentucky Woodland Owners Short Course. 2005 to present. Statewide continuing education program for non-industrial private forest owners. Over 600 NIPF owners attended. Supported by RREA funds and registration fees. Director and instructor – J. Stringer, coordinator – W. Thomas.

Kentucky Woodland Magazine. 2006 to present. Statewide magazine devoted to NIPF owners and aligned forestry and natural resource professionals. Subscription base: 10,300. Supported with USDA Forest Service Stewardship Funds and RREA funds. Editors – J. Stringer, and D. Olszowy. Associate Editor – W. Thomas.

Woodlands and Water Workshops. 2001-2005. Statewide training program for water quality protection and forest management. Ten workshops per year graduating a total of 920. Supported by US EPA 319 nonpoint source funds and the Kentucky Division of Water. Director – J. Stringer, coordinators - V. Hilpp, A. Thompson, and D. Dillaway.

Forestry and Natural Resource Professionals

Professional Forestry Workshops Program. 2002 to present. Multi-state continuing education program for forestry and natural resource professionals in Kentucky, Tennessee, and surrounding states. ******18 multi-day programs graduated 335. Supported with USDA Forest Service Stewardship Funds. Directors – J. Stringer, and W. Clatterbuck (University of Tennessee).

Professional Forestry Notes. 2006 to present. Regional technical extension series publications on silviculture. Eight publications printed or in-press. Supported by USDA Forest Service Stewardship Funds. Editors - W. Clatterbuck and J. Stringer.

Forest Certification – Standards Development for the Forest Stewardship Council – Global Green Certification

National and regional work on sustainable forest management through the Forest Stewardship Council. 1999 to present. Member Lake States and Central Hardwood Regional Working Group and Chair, Appalachian Working Group. As a member developed regional standards for FSC – US for the Appalachian and lake states and finalized field testing and standards development for the Appalachian region. Member, National Standards Technical Committee and helped develop national standards for sustainable forestry for FSC – US. Currently Family Forest working group member for revision of the national standards for sustainable forestry.

Extension Magazines, Videos and Web Sites

* Winner, Award for Excellence, Southern Extension Forest Resource Specialists.

** Winner, Award for Outstanding Forestry Communications from the National Woodland Owners Association and USDA Extension Service.

Newsletter and Magazine Editor

* The Kentucky LogJam. 1995-2006. Cooperative Extension Service, University of Kentucky, Department of Forestry. Editor - J. Stringer.

Kentucky Woodlands Magazine. 2006-2008. Cooperative Extension Service, University of Kentucky, Department of Forestry. Editors - J. Stringer and D. Olszowy.

World Wide Web Pages Designed, Developed, and/or Managed

2008 Certified Master Logger Program. Cooperative Extension Service, University of Kentucky, Department of Forestry. www.certifiedmasterlogger.com (developed, and managed)

9. Publications

Book Chapter

Fei, S.L., Kong, K., Stringer, J., and D. Bowker. 2009. Invasion Pattern of Exotic Plants in Forest Ecosystems, pp. 59-69, In: Invasive Plants and Forest Ecosystems, Ed. Kohli, R.K., Jose, S., Singh, H.P., D.R. Batish. CRC Press, NY, USA.

Extension Series - Regional-Multi-State / Professional Forestry Notes (n=4). Professional Forestry Notes are regionally peer reviewed extension publications of Southern Forestry Extension as well as extension series publications of the University of Kentucky and University of Tennessee.

* Stringer, J., Clatterbuck, W., and Seifert, J. 2009. Site Preparation and Hardwood Tree Planting Guide. Professional Forestry Note #7. Southern Regional Extension Forestry. FOR-107: 37pp.

* Miller, G., Stringer, J., and Merker, D. 2007. Technical Guide for Crop Tree Release. Professional Forestry Note #6. Southern Regional Extension Forestry SREF FM 011 and University of Kentucky Cooperative Extension FOR-106. 23pp.

* Stringer, J. 2006. Oak Shelterwood: A Technique to Improve Oak Regeneration. Professional Forestry Note #3. Southern Regional Extension Forestry SREF FM 05 and University of Kentucky FOR-100. 7pp.

* Stringer, J. 2006. Two-Age System and Deferment Harvests. Professional Forestry Note #5. Southern Regional Extension Forestry SREF FM 08 and University of Kentucky Cooperative Extension FOR-103. 12pp.

Extension Series and Extension Fact Sheets

*Stringer, J., Ammerman, B., Fackler, C. and J. Collins. 2009. Forestry Emerald Ash Borer – Industry Note July 2009: Cutting and Hauling Ash Logs. Cooperative Extension Service, University of Kentucky, Department of Forestry, FORFS 09-07. 2pp.

*Stringer, J. 2009. Ice Damage – Safety in the Woods. Cooperative Extension Service, University of Kentucky, Department of Forestry, FORFS 09-01. 2pp.

*Stringer, J. 2009. Ice Damage – Timber Salvage Decisions. Cooperative Extension Service, University of Kentucky, Department of Forestry, FORFS 09-02. 2pp.

*Stringer, J. 2009. Ice Damage – Managing Woodland Damage and Health. Cooperative Extension Service, University of Kentucky, Department of Forestry, FORFS 09-03. 2pp.

*Stringer, J. 2008. Timber Trespass and Theft – Quick Reference. Cooperative Extension Service, University of Kentucky, FORFS 08-03.2pp.

*Stringer, J. 2008. Timber Trespass and Theft. Cooperative Extension Service, University of Kentucky FOR-109. 10pp.

Hill, D., and Stringer, J. 1997-2008. Selling Black Walnuts in Kentucky. Cooperative Extension Service, University of Kentucky, Department of Forestry FORFS (revised annually). 2pp.

Thomas, W., Stringer, J., Conners, T., Hill, D., and Barnes, T. 2007. Kentucky Forest Fact Sheet. Cooperative Extension Service, University of Kentucky FOR-53. 2pp.

* Stringer, J. 2006. Oak Shelterwood: A Technique to Improve Oak Regeneration. Cooperative Extension Service, University of Kentucky FOR-100. 7pp.

* Stringer, J. 2006. Two-Age System and Deferment Harvests. Cooperative Extension Service, University of Kentucky FOR-103. 12pp.

Extension Magazine and Newsletter Articles

Extension Magazine Articles: Multi-State/Regional

Songlin, F., Thomas, B., and J. Stringer. 2008. Empowering Forestry Extension with Geospatial Technology. J. For. 107(2): 84-89.

Stringer, J., and J. Lhotka. 2008. Improving Oak Regeneration through Soil Scarification and Underplanting. Forest Landowner 67(6):38-39.

Stringer, J. 2008. Removing Tree-of-Heaven from Hardwood Stands. Forest Landowner 67(4): 39-40.

Stringer, J. 2008. Defining Stands: A Key to Effective Hardwood Silviculture. Forest Landowner 67(2): 35-36.

Stringer, J. 2007. Logging Equipment and Hardwood Regeneration. Forest Landowner 66(6):50-51.

Stringer, J. 2007. Practical spacing guidelines for hardwood plantings. Forest Landowner 66(4): 41-42.

Stringer, J., and Barnes, T. 2007. Hardwood management options for wildlife. Forest Landowner 66(2): 30-31.

Stringer, J. 2006. Cost of individual tree herbicide treatments for hardwood management. Forest Landowner 65(6): 40-41.

Stringer, J. 2006. Herbicide applications in hardwoods. Forest Landowner 65(4): 39-40.
Stringer, J. 2006. Regenerating hardwoods using group openings: the economics of opening size. Forest Landowner 65(2): 20-22.
Stringer, J. 2005. Naturally regenerating hardwoods: assessing the potential of your stand. Forest Landowner 64(6): 17-20.
Stringer, J. 2005. Oak shelterwood: how to apply the system to stimulate oak regeneration. Forest Landowner 64(2): 27-29.
Stringer, J. 2005. Oak shelterwood: basics of a new system used to naturally regenerate oak. Forest Landowner 64(2): 48-49.

Extension Magazine and Newsletters: In-State

Stringer, J. 2009. Evaluating Ice Damage. Kentucky Woodlands Magazine 4(1): ***
Olszowy, D., and J. Stringer. 2009. Woodland Health. Kentucky Woodlands Magazine 4(1): ***
Thomas, B., and J. Stringer. Basics of Pine Management. Kentucky Woodlands Magazine 3(3): 8-11.
Stringer, J. Selective Harvesting – Part Two: How to Know Your Harvest is Sustainable. Kentucky Woodlands Magazine 3(3): 1-3.
Stringer, J., Cox, J., and B. Thomas. 2008. Invasive Plant Hit List: Bush Honeysuckle. Kentucky Woodlands Magazine 3(3): 1-3. 13-15.
Stringer, J. 2008. Invasive Plant Hit List: Japanese Stilt Grass. Kentucky Woodlands Magazine 3(2): 8-9.
Stringer, J. 2008. Selective Harvesting – Part One: Sustainable Management or High-Grading? Kentucky Woodlands Magazine 3(2): 1-3.
Stringer, J., and T. Barnes. 2008. Invasive Plant Hit List: Garlic Mustard. Kentucky Woodlands Magazine 3(1):12-13.
Stringer, J. 2008. Timber Trespass in Kentucky. Kentucky Woodlands Magazine 3(1): 1-3.
Stringer, J. 2008. Invasive plant hit list: garlic mustard. Kentucky Woodlands Magazine 3(1):12-13.
Stringer, J., and Barnes, T. 2007. Improving woodland wildlife habitat. Kentucky Woodlands Magazine 2(3): 6-9.
Stringer, J. 2007. Tree vigor. Kentucky Woodlands Magazine 2(2): 8-9.
Stringer, J. 2007. Spring freeze, summer drought, and our woodlands future. Kentucky Woodlands Magazine 2(2): 1-3.
Stringer, J. 2007. Woodland owners - getting paid your real worth through ecosystem services. Kentucky Woodlands Magazine 2(1): 1.
Stringer, J. 2007. Kentucky master loggers and woodland owners. Kentucky Woodlands Magazine 2(1): 22-23.
Stringer, J. 2007. Invasive plant hit list: tree-of-heaven. Kentucky Woodlands Magazine 2(1): 14-15.
Stringer, J. 2006. Defending Kentucky's forests. Kentucky Woodlands Magazine 1(1): 1.
Stringer, J. 2006. Clarifying the use of glyphosate herbicides. Kentucky Woodlands Magazine 1(1): 16-17.
Floyd, M., and Stringer, J. 2006. Blackside dace and logging in Kentucky. The Kentucky LogJam 9(3): 2-4.
Thomas, B., and Stringer, J. 2006. Kentucky woodland facts. Kentucky Woodlands Magazine 1(2): 1.

Stringer, J. 2006. Sustainable management – one acre or a thousand. Kentucky Woodlands Magazine 1(2): 12-15.
Stringer, J. 2006. Hardwood silviculture. Kentucky Woodlands Magazine 1(2): 18.
Stringer, J. 2005. Logging and the 2005 legislature. The Kentucky LogJam 9(2):1-2.
Stringer, J. 2005. Workers compensation rates. The Kentucky LogJam 8(4):1-2.

Extension Training Manuals and Workshop Materials

Silvicultural Prescriptions for Degraded Hardwood Stands. 2009. Cooperative Extension Service, University of Kentucky, Department of Forestry. 113pp.

Extension Satellite Programs

Stringer, J., and Morehead, D. 2008. Master Tree Farmer, Risk and Risk Management. Southwide Satellite Forestry Conference. September 2008. Cooperative Extension Service, Clemson University.
Stringer, J. and Jackson, B. 2006. Forestry Best Management Practices. Master Tree Farmer II. Satellite Forestry Conference. February – March 2006. Cooperative Extension Service, Clemson University.

Refereed

Oswalt, C.M., Stringer, J.W., and J.A. Turner. 2008. Shifts in relative stocking of common tree species in Kentucky from 1975 to 2004. In Proceedings 16th Central Hardwood Forest Conference. USDA Forest Service e-GTR NRS P-24: 194-203. (refereed proceedings)
Dillaway, D., Stringer, J., and Reiske-Kinney, L. 2007. Light availability influences root carbohydrates, and potentially vigor, in white oak advance regeneration. Forest Ecology and Management 250:227-233.
Dillaway, D., and Stringer, J. 2007. Effects of shade on the growth of natural and artificially established white oak (*Quercus alba L*) regeneration. In Proceedings 15th Central Hardwood Forest Conference. USDA Forest Service e-GTR SRS-101: 638-643. (refereed proceedings)
Svec, J., Kolka, R. and Stringer, J. 2005. Defining perennial, intermittent, and ephemeral channels in eastern Kentucky: application to forestry best management practices. Forest Ecology and Management 214: 170-182.

Non-Refereed

Reeves, C., J. Stringer, C. Barton, and C. Agouridis. 2008. Sedimentation rates of temporary skid trail headwater stream crossings. In: Addressing Forest Engineering Challenges of the Future, Proceedings of the 31st Annual Meeting of the Council on Forest Engineering. 2008 Jun 25-28. Charleston, SC. Available on CD.Reeves – Council of Forest Engineering
Stringer, J., and Cecil, L. 2007. Thinning guidelines from crown area relationships for young hardwood plantations. In Proceedings 14th Biennial Southern Silviculture Conference. USDA Forest Service GTR SRS. In Press.
Stringer, J. 2006. Effect of ground skidding on oak advance regeneration. In Proceedings 13th Biennial Southern Silvicultural Research Conference. USDA Forest Service GTR SRS-92: 535-537.
Dillaway, D., and Stringer, J. 2006. Release of suppressed oak advance regeneration. In Proceedings 13th Biennial Southern Silvicultural Research Conference. USDA Forest Service GTR SRS-92: 283-286.

10. Extension Invited Presentations

Silvicultural Prescriptions for Degraded Stands. USFS Ohio Oak Silvah Workshop. Athens, OH. June 2009.

Introduction to Streamside Management Zone Hydrologic Study. Society of American Foresters East Kentucky Chapter. Quicksand, KY, May 2009.

Silvicultural Prescriptions for Degraded Hardwood Stands. Annual Meeting of the Appalachian Hardwood Manufactures, Incorporated. Princeton, WV, May 2009.

* Certified Forest and Wood. Annual Meeting of the Kentucky Woodland Owners Association, Warsaw, KY, March 2009.

* Certified Master Logger Program. Certification for Kentucky Forests and Products, Lexington, KY, January 2009.

* Global and Economic Ramifications of Certification. Certification for Kentucky Forests and Products, Lexington, KY, January 2009.

* Carbon Credits for NIPF Owners, Joint Meeting Southern Forestry Extension and Southern Group of State Foresters Management Chiefs, Athens GA, December 2008.

*Timber Marketing and Theft, Kentucky Farm Bureau, Louisville, KY, December 2008.

*Timber Theft, Kentucky House Legislative Task Force on Forestry, Frankfort, KY, November 2008.

Certified Master Logger Program. Tennessee Forestry Association. October 2008.

Basics of Oak Regeneration and Mid-Story Removal Indiana SAF. August, 2008.

Oak Shelterwood Methods for White and Black Oak. Indiana SAF. August, 2008.

Low Quality Stand Prescriptions. USDA Forest Service Silvicultural Certification Training: PASS Local Mountain Module, Southern Research Station, Ashville, NC. May 2008.

Degraded Stand Management Options. USDA Forest Service, Southern Region Upland Hardwood Silviculture Training Workshop. Ashville, NC. (annually 1997-2008).

Regeneration and Best Management Practices. USDA Forest Service, National Silviculture Certification School. Robinson Forest. April 2008.

Crop Tree Release. Ohio River Valley Woodland and Wildlife Workshop. Highland Heights, KY. March 2008.

Marketing Timber. Kentucky Farm Bureau Annual Meeting. Louisville, KY, December 2007.

Research on Two-Age Management Alternatives for Cumberland Plateau Forests. Scientific Foundations of Conservation Planning in the Cumberland Plateau and Mountains. Knoxville, TN, November 2007.

Southern Group of State Foresters. Water Quality Monitoring Working Group. Robinson Forest, October 2007.

Kentucky Master Logger Program. Best Management Practices for Logging and Timber Harvest Planning Workshop. Ohio Division of Forestry, Portsmith, OH. October 2007.

Balancing Science and Technology Transfer between Cooperative Extension and the Southern Research Station. USDA Forest Service Southern Station. Hot Springs AK. August 2007.

Crop Tree Release and Timber Stand Improvement. KY Woodland Owners Association Annual Meeting. Blue Licks State Park. March 2007.

Managing Timber to Maximize Income. Ohio River Valley Woodland and Wildlife Workshop. Lawrenceburg, IN. March 2007.

Hardwood Management Options for Wildlife. Kentucky Chapters of the Wildlife Society and American Fisheries Society Annual Meeting. Caneyville, KY. February 2007.

Practicing Forestry in the Future in Kentucky. Kentucky/Tennessee Society of American Foresters. Jackson, TN. January 2007.
Low Quality Stand Prescriptions. USDA Forest Service Silvicultural Certification Training: PASS Local Mountain Module, Southern Research Station, Ashville, NC. May 2006.
One Pass Forest Management Practice. Annual Meeting of the Kentucky Woodlands Owners Association. Harrodsburg, KY. March 2006.
Silvicultural Prescriptions for Degraded Stands. USDA Forest Service, SILVAH: Oak Ecology and Silviculture Workshop. Brookville, PA. September 2005.
Kentucky's Forest Stewardship Program. Non-Federal Forest Lands: Partnerships for the 21st Century. National Association of State Foresters. Atlanta, GA. June 2005.
Oak Regeneration: Fire, Herbicides, and other Control Measures. Annual meeting Kentucky Woodland Owners Association. Mammoth Cave, KY. April 2005.
Forest Planning on the Daniel Boone National Forest. Society of American Foresters, Kentucky-Tennessee Annual Meeting. Kingsport, TN. January 2005.

Extension Poster Presentations

Thomas, W., Stringer, J., and J. Cox. 2008. Research and Demonstration of Control Methods for Amur (Bush) Honeysuckle in the Bluegrass. University of Kentucky, Invasive Species Conference, Lexington, KY, December 12-13, 2008.
Fei, S., Thomas, B., and Stringer, J. 2007. Empowering Forestry Extension with Geospatial Technology. Society of American Foresters Annual Meeting. Portland, OR. October 2007

11. Extension Education and Trainings Produced and/or Instructed

Education Programs for Woodland Owners

Master Tree Farmer – Risk and Risk Management. Webinar/DVD based Program for 11 counties. Feb-Mar 2009.

Training for Foresters and Natural Resource Professionals

Professional Forestry Workshops – Webinars

Silvicultural Prescriptions for Degraded Hardwood Stands. Webinar, May 2009.
Invasive Shrub Cost Share Training. Centra Webinar. March 2009. 35 participants.

Professional Forestry Workshops Series

Silvicultural Prescriptions for Degraded Hardwood Stands. Appalachian Hardwood Manufactures, Inc. May 2009. (18)
Level II Silviculture Training. Kentucky Division of Forestry, Frankfort, KY. April 2009.
*Pesticide Application for Forestry. University of Kentucky, Lexington, KY. December 2008.
Level II Silviculture Training. Kentucky Division of Forestry, Robinson Forest, KY. April 2008.
Oak Regeneration and Management. Radisson Hotel, Lexington KY. October 2007.
Applied Hardwood Silviculture for Kentucky. Kentucky Division of Forestry, Pennyrile State Forest, KY. April 2007.
Professional Training in Artificial Regeneration. University of Tennessee, Caryville, TN. May 2006.
Applied Hardwood Silviculture. Kentucky Division of Forestry, Robinson Forest, KY. April 2006.

Professional Training in Artificial Regeneration. University of Tennessee, Jackson, TN. March 2006

Professional Training in Artificial Regeneration. University of Tennessee, Carthage, TN. March 2006

Applied Hardwood Silviculture for Kentucky. University of Kentucky, Pennyrile, KY. September 2005.

Hardwood Silviculture for Western Kentucky and Tennessee. University of Kentucky and University of Tennessee, Pennyrile, KY. February 2005

Hardwood Silviculture for Western Kentucky and Tennessee. University of Kentucky and University of Tennessee, Jackson, TN. January 2005.

In-Service Training for County Agents

County Agent Evaluations 2005-2006 (last evaluation period available)

Year	# Agents	Overall Program Score (1-3)	Dept. Avg.	College Avg.
2005	30	2.56	2.30	2.42
2006	42	2.95	2.61	2.76

Agriculture and Natural Resource Annual Updates: Forestry Programming. October 2006. Winchester, KY.

Forestry in Eastern Kentucky I: Basic Training for County Agents. April 2006. Robinson Forest.

Forestry in Eastern Kentucky II: Timber and Wildlife Management. May 2006. Robinson Forest.

Forestry in Eastern Kentucky III: Timber Utilization and marketing. August 2006. Kingsport, TN.

Summary of Woodland Owner and Logger Workshops: personally directed and conducted)

2009 – KML ____ woodland owner (Lyon Co. Ice Damage)

2008 – May 30 – kml -6 , woodland owner 2

2007 to August: 11 training days. Six one-day program for the Kentucky Master Logger Program and five landowner field days.

2006: 21 training days. 15 one-day programs for the Kentucky Master Logger Program and six landowner field days including the Kentucky Woodland Owner Short Course.

2005: 19 training days. 10 one-day programs for the Kentucky Master Logger Program and nine field days for landowners including the Kentucky Woodland Owner Short Course.

Extension Radio and TV

Regular Extension Radio Series – three per year. Cooperative Extension Service, College of Agriculture. 1994-2009.

Timber Talk - Three Invited Presentations. Reynolds Forestry Service, Magnolia, AK. 2000-2009.

Extension Press Releases

Woodland Owners Can Protect Land from Timber Trespass, Theft. Cooperative Extension Service, University of Kentucky. January 2008

Pilot Logging Program Has Possibilities. Cooperative Extension Service, University of Kentucky. January 2008.

12. Awards and Recognition

Awards

2008 Fellow Society of American Foresters
2008 University of Kentucky Forestry Graduate Student Award of Excellence for Christopher Reeves, MS Student.
2008 Gold Award for Excellence with High Distinction for Exceptional Programming in the Area of Extension Publications. A peer award from the Sponsored by Southern Region Extension Forestry.
2006 Outstanding Student Paper Award, Biennial Southern Silviculture Research Conference for Dillaway, D., and Stringer, J. Release of suppressed oak advance regeneration. Presented at the 13th Biennial Southern Silvicultural Research Conference in Memphis, TN.
2005 University of Kentucky, Commonwealth Collaborative Award

Membership

Society of American Foresters
Association of Kentucky Extension Specialists
Association of Natural Resource Extension Professionals
Kentucky Forest Industries Association (Associate Member)
Kentucky Woodland Owners Association
Forest Stewardship Guild
American Paulownia Association
National Walnut Council
Vegetation Management Association of Kentucky
International Union of Forestry Research Organizations, Whole Plant and Canopy Processes Working Groups
Gamma Sigma Delta
Xi Sigma Pi
Kentucky Woodworkers Association

13. Service

Board, Appointments, Professional Elected Offices – National/Regional
Hardwood Tree Improvement and Research Center (US Forest Service, Purdue University) 2005 to present.
U.S. Forest Stewardship Council National Family Forest Working Group – appointed member 2007-2009
Forest Landowners Association – board member 2005–2007
U.S. Forest Stewardship Council, National Technical Standards Committee – appointed member 2000-2005

CURRICULUM VITAE

1. Name: David B. Wagner

2. Address and Contact Information

209A Thomas Poe Cooper Forestry Building
University of Kentucky
Department of Forestry
Lexington, KY 40546-0073
(859) 257-3773 (voice)
(859) 257-7596 (department office)
(859) 323-3031 (fax)
dwagner@uky.edu

3. Current Position: Associate Professor of Forest Genetics, Director of Graduate Studies, Learning Outcomes Assessment Coordinator (for B.S. (Forestry) and M.S. (Forestry) degree programs) (12-month appointment)

4. Degrees, with Field, Institution, and Date

B.Sc., Forest Science, University of Alberta, 1977
Ph.D., Genetics, University of California (Davis), 1986

5. Experience

July 1992 – Present: Associate Professor of Forest Genetics, Department of Forestry, University of Kentucky, Lexington, KY
September 1990 – May 1993: Adjunct Assistant Professor of Forest Genetics, Department of Biology, University of Louisville, Louisville, KY
June 1986 – July 1992: Assistant Professor of Forest Genetics, Department of Forestry, University of Kentucky, Lexington, KY
September 1981 – June 1986: Graduate Research and Teaching Assistant, Department of Genetics, University of California, Davis, CA
September 1979 – October 1980: Vice-President of Operations, Northcoast Agricultural Services, Inc., St. Helena, CA
September 1974 – April 1977: Undergraduate Research and Teaching Assistant, Department of Forest Science, University of Alberta, Edmonton, AB, Canada

6. Graduate Students Supervised

Rémy J. Petit, Doctorat de l'Université de Paris XI, 1992
Jinsheng Dong, Ph.D., 1993
Tianquan Li, Ph.D., 1995
Jeffrey A. Tomlin, M.S., 1996

7. Post-Doctoral and Visiting Scholars Supervised

Didahally R. Govindaraju, 1986 – 1989
Sun Zhong-xu, 1987 – 1988
Robin W. Kimmerer, 1988

Wang Cong, 1990
Konstantin V. Krutovskii, 1991
Richard C. Hamelin, 1991 – 1992
Jean-Michel Lopez, 1994
Andrew David, 1996 – 1998

8. Teaching and Undergraduate Advising

Fall 2009 Courses

FOR 110 (Forestry and Natural Resource Issues, 1 credit); this new course was taught for the first time in fall 2009 as GEN 109 (section 002), which is a "special topics" course number used for new courses that have not yet been approved by the University Senate
FOR 601 (Research Methods in Forestry, 3 credits)
FOR 602 (Renewable Natural Resources in a Global Perspective, 3 credits)
FOR 770 (University Forestry Teaching, 1 credit)

Spring 2010 Courses

ABT/BIO/ENT/FOR 461 (Introduction to Population Genetics, 3 credits)
FOR 100 (Introduction to Forestry, 3 credits)
GEN 200 (Issues in Agriculture: Contemporary Problems in Agriculture and Natural Resources, 3 credits)
FOR 770 (University Forestry Teaching, 1 credit)

Number of Undergraduate Advisees (currently): 4

9. Publications (during the last five years)

Wagner, D.B. 2007. Immediate feedback assessment: freeing classroom time from lecture. Peer-Reviewed Proceedings of Technical Session: Quality assurance in higher forestry education. International Union of Forestry Research Organizations (IUFRO) Division VI Symposium: Integrative Science for Integrative Management, 14-20 August 2007, Saariselkä, Finland. (http://www.metla.fi/tapahtumat/2007/iufro-d6/presentations/17-08-fri/kalotti/Wagner%20IUFRO%206.15.00%2017%20Aug%202007%20for%20web.pdf)

10. Presentations and Consultation (during the last five years)

Wagner, D.B. 2007. Immediate feedback assessment: freeing classroom time from lecture. Presented at Technical Session of IUFRO Working Party on Education (6.15.00): Quality assurance in higher forestry education. International Union of Forestry Research Organizations (IUFRO) Division VI Symposium: Integrative Science for Integrative Management, 14-20 August 2007, Saariselkä, Finland.
Wagner, D.B. 2008. Immediate-feedback assessment in undergraduate instruction. Department of Forestry Seminar, University of Kentucky, Lexington, KY. 29 October 2008.

11. Membership in Scientific, Professional, and Honor Societies (during the last 5 years)

American Genetic Association, 1995 - present
International Union of Forestry Research Organizations
Working Party on Molecular Genetics – 2.04.06, 1985 – present

Working Party on Education – 6.15.00, 2007 – present
Xi Sigma Pi (National Forestry Honor Society), 1987 - present

12. Service and Recognition (during the last five years)

Administrative Assignments
Director of Graduate Studies, May 2002 - present
Learning Outcomes Assessment Coordinator (for B.S. (Forestry) and M.S. (Forestry) degree programs), January 2009 - present

Editorships, Review Panels, Reviewer Service
Associate Editor, Journal of Heredity, 1995 – present
Invited Reviews: Genetics, Journal of Heredity, Kentucky Agricultural Experiment Station, Molecular Ecology, Plant Systematics and Evolution, Robinson Forest White Paper (Answers to Recent Issues Regarding Robinson Forest), Texas Agricultural Experiment Station

Committees, Elected Positions, Offices Held (current/recent)

Department of Forestry
Undergraduate Committee (Member, 1986-present)
Forestry Graduate Program (Member, 1986-present)
Forestry Graduate Program Committee (Director of Graduate Studies, May 2002-present)
Forestry Strategic Planning Committee (Member, January 2006-present)
Forestry Undergraduate Curriculum Revision Committee (Member, February 2006-present)
Graduate Student Excellence Award Committee (Member, April 2008; Chair, April 2009)
Faculty Merit Review Committee (Member, November 2008-present)
Department Chair Search Committee (Member, May 2009-present)

College of Agriculture
Crop Science Graduate Program (Member, 1986-present)
Graduate Curriculum Committee (Member, 2002-2009)
Review Committee for Advanced Genetic Technologies Special Grant (Member, April 2006-present)
Advisory Committee on Promotion and Tenure (May 2007-May 2009)
Teaching and Learning Advisory Committee (Center for Excellence in Teaching and Learning, Member, August 2007-present)

University of Kentucky
Plant Physiology / Biochemistry / Molecular Biology Graduate Program (Member, 1986-present)
Center for Ecology, Evolution, and Behavior (Member, 1992-present).

13. Attendance at Professional and Scientific Meetings, and Professional Development Activities (during the last 5 years)
The Engaged Student (Southern Region Teaching Workshop), 8-10 August 2005, College of Agriculture, University of Kentucky, Lexington, KY.

Diversity Training, Office of Institutional Equity and Equal Opportunity, 31 March 2006, University of Kentucky

Genetics of Speciation (American Genetics Association Annual Symposium), 21-24 July 2006, University of British Columbia, Vancouver, BC, Canada.

Gallup Organization Strengths Quest Educator Seminar, 1-2 August 2006, University of Kentucky, Lexington, KY.

College of Agriculture Teaching Workshop, 16 August 2006, University of Kentucky, Lexington, KY.

Designing Courses for Significant Learning Workshop (presented by L. Dee Fink, University of Oklahoma), 18 October 2006, College of Agriculture, University of Kentucky, Lexington, KY.

International Union of Forestry Research Organizations (IUFRO) Division VI Symposium: Integrative Science for Integrative Management, 14-20 August 2007, Saariselkä, Finland. (This included a technical session of the IUFRO Education Working Party (6.15.00): Quality assurance in higher forestry education.)

UK College of Agriculture Spring Teaching Workshop, 6 May 2008, Lexington, KY

Kentucky Conference on the Scholarship of Teaching and Learning: Challenging Students to Think Critically and Learn Deeply, 21-22 May 2008, Marriott Griffin Gate, Lexington, KY

Carbon Cap and Trading Webinar, 14 November 2008, Department of Forestry, University of Kentucky, Lexington, KY

College of Agriculture Teaching Workshop, 18 August 2009, University of Kentucky, Lexington, KY.

University of Kentucky Learning Outcomes Assessment Workshops, Lexington, KY:

30 March 2009
15 April 2009
24 April 2009
23 June 2009
17 September 2009
13 October 2009

Visiting Team Report

REPORT OF THE

SOCIETY OF AMERICAN FORESTERS

REACCREDITATION VISITING TEAM

Department of Forestry
University of Kentucky

By

Dr. Kamran K. Abdollahi
Professor of Urban Forestry and Ecophysiology
Urban Forestry Program
Southern University, Baton Rouge

Dr. Steven Anderson
President and C.E.O.
Forest History Society

Dr. Kim C. Steiner (chair)
Professor of Forest Biology
School of Forest Resources
The Pennsylvania State University

March 25, 2010

TABLE OF CONTENTS

EXECUTIVE SUMMARY

A Visiting Team of the Committee on Accreditation of the Society of American Foresters (SAF) reviewed the program leading to the Bachelor of Science degree in Forestry in the Department of Forestry at the University of Kentucky, during the period of March 23-25, 2010. Our general findings are summarized below, and additional detail is contained in the body of this report.

Standard I: Forestry Program Mission, Goals, and Objectives

- The mission of the Forestry program is posted and explained on the department's Web site and displayed prominently throughout the forestry building. The goals and objectives of the program are declared in its strategic plan for 2009-2014.

- Overall, the mission, goals, and objectives as stated appear to be consistent with the SAF Standards for Accreditation.

Standard II: Curriculum

- The new curriculum has 121 total semester credit hours with 84 hours required for forestry and 37 hours of general education requirements. The new plan identifies desired general and technical competencies that are parallel with SAF standards, provides integration through prerequisites and course linkages, defines learning outcomes for each course, and maps courses to nine identified pedagogical themes or common threads.

- The curriculum provides a minimum of 7 credits in Communications, 12 in Science and Mathematics, 15 in Social Science & Humanities, 31 in Ecology & Biology, 12 in Measurements, 24 in Management, and 12 in Policy etc.

- Analytical and critical reasoning skills are addressed in capstone and management courses and in the general education component of the curriculum. Professional ethics are covered in the required administration and policy course.

Standard III: Forestry Program Organization and Administration

- The department is currently administered by an interim chair, but they have extended an offer to a candidate for the position following a national search.

- Staff support appears to have improved substantially since 2004, and the Visiting Team heard only positive comments about departmental staff.

- Recruitment into the Forestry program is primarily the responsibility of the college. We perceived that recruitment at the departmental level was fairly passive, and there might be opportunities to significantly increase enrollments if this is a desirable goal.

- The department appears to incorporate stakeholder input, and it is in the department's new strategic plan to create a standing advisory committee.

- The program has just begun implementing a very formal and systematic program of outcomes assessment that involves, at a minimum, feedback from students each semester through tailor-made rubrics for each course.

Standard IV: Faculty

- There are 14 full-time faculty members who report to the Forestry program head. All have Ph.D.s, and their degrees come from 11 different institutions.

- Eleven of the 14 faculty members teach required forestry courses. A few teach much more than others, some as many as four or five required courses.

- Stakeholders report that faculty members have increased their presence outside of the university, commenting that the faculty is more "out and about" than in years past.

- Notably, students expressed disappointment remarked that the Forestry program is obscure within the university, and there may be more opportunities for campus-wide engagement than the faculty is currently exploiting.

- Faculty members appear to be deeply committed to teaching and the success of their students.

Standard V: Students

- The current Forestry enrollment is 50 and has varied from 40 to 52 over the last four years. Currently, 18% of the students are female and one is African-American.

- As stated above, it appeared to the Visiting Team that the program could be more proactive in its recruiting efforts, including minority recruitment.

- There is no formal alumni program, and both students and faculty expressed a desire to develop closer relationships with their alumni.

- The program enjoys a strong reputation for readily available, quality advising, although most of the advising appears to be handled by a single faculty member.

Standard VI: Parent Institution Support

- There is uncertainty about the capacity of the faculty to cover the new curriculum. The Visiting Team believes that priority should be placed on filling two recently vacated positions, one in management/economics and another in conservation biology.

- Low faculty salaries continue to be a concern, particularly at the professor level.

- The department has adequate office and classroom space, and the classrooms have received technology upgrades, but the building is in overall poor condition and (in the estimation of the dean) in need of about $10 million in improvements.

INTRODUCTION

During March 23-25, 2010, an SAF Accreditation Visiting Team, composed of Kamran Abdollahi, Steven Anderson, and Kim Steiner, visited the Department of Forestry at the University of Kentucky to review their program and the curriculum of study leading to the Bachelor of Science degree in Forestry.

The purpose of the SAF visit was to verify as factual the information contained in the faculty's Self-Evaluation Report, which had been provided to us in February, several weeks prior to the visit, and to offer other observations from interviews conducted during the site visit. During the visit we met with the university provost, Kumble Subbaswamy; the dean of the College of Agriculture, Scott Smith; the acting head of Department of Forestry, Michael Lacki; several external stakeholders and recent graduates; several undergraduate students; several graduate students; and most of the faculty members in four separate meetings. In addition, we toured the facilities of the department in their main building, the Thomas Poe Cooper Building. We were given ready access to all facets of the program and were received with warm hospitality by the faculty, staff, and students. We wish to thank the department for their many efforts to make this a productive and meaningful visit.

STANDARD I: FORESTRY PROGRAM MISSION, GOALS, AND OBJECTIVES

The mission of the Forestry program is posted and explained on the department's Web site, with explicit reference to the program's accredited status. The mission is also displayed prominently throughout the forestry building. The mission appears to be consistent with the SAF Standards for Accreditation:

> "Research, teaching, and outreach programs of the Department of Forestry at the University of Kentucky will effectively enhance sustainable economic, ecological, and social benefits of forests and related natural resources in Kentucky and beyond. Our programs will elevate the quality of life by:
>
> - enhancing the integrity, stability, and health of forests and related biotic communities; and
> - increasing the long-term value-added, sustainable income, and sustainable flow of services from forests and natural resources."

The goals and objectives of the program are declared in its strategic plan for 2009-2014, which is currently under formal review by the college and university. Overall, the goals and objectives as stated are also consistent with the Standards for Accreditation: they recognize forestry an interdisciplinary profession, the needs of the program's constituencies, the role of foresters in meeting diverse and changing needs and values, and the importance of professionalism and ethical behavior. The departmental goals are as follow:

- Prepare students for leading roles in an innovation-driven economy and global society,

- Promote research and creative work to increase the intellectual, social, and economic capital of Kentucky and the world beyond its borders,

- Develop the human and physical resources of the university to achieve the institution's Top 20 goals,

- Promote diversity and inclusion, and

- Improve the quality of life of Kentuckians through engagement, outreach and service.

When we read the mission of the department to students, they uniformly felt that their training and experiences were consistent with the mission. Of particular note is that the department sought out and received extensive input on the newly revised curriculum from departmental faculty, students, and external stakeholders. The Visiting Team felt that each of these groups was pleased with its involvement and the outcome of the effort.

If the department is able to revise its strategic plan during the current process of approval and adoption, we suggest the addition of language that explicitly mentions the interdisciplinary efforts the department is hoping to achieve as well as ethical behavior components. It is also recommended that the department review the metrics presented in the strategic plan, include quantitative metrics where they do not yet exist, and provide additional measurable metrics for financial support and fundraising strategies.

STANDARD II: CURRICULUM

The curriculum recently underwent a major revision as the culmination of a several-year process of review and development by the faculty with input from employers, agency personnel, producers, students, and alumni. Their revision process was cited by the university's Office of Assessment as a best-practices example of planning. The new curriculum was approved by the University of Kentucky in fall 2009. According to the Self -Evaluation Report, the curriculum was revised to address economic, ecological, and social issues involving forest resources today and skills graduates need for successful forestry careers. The new curriculum has the following goal:

> *"[To] produce graduates who are 'society-ready,' i.e., capable of dealing effectively with the complex economic, ecological, and social issues involving forest resources today. In Kentucky and beyond, our graduates must be prepared to effectively enhance the integrity, stability, and health of forests and related biotic communities, and to increase the long-term value added, sustainable income, and sustainable flow of services from forests and related resources."* (Curriculum Revision Handbook 2006/2007)

The new curriculum has 121 total semester credit hours with 84 hours required for forestry and 37 hours of general education requirements (Tables 1 and 2). In the revision, specific measures were taken to identify and address general and technical competencies, integrate the curriculum through prerequisites and linkages among courses, define learning

outcomes for each course, and map courses to nine identified themes or common threads to be reinforced throughout the curriculum. These common threads include collaborative problem solving, communication, ecosystem approach, ethics, forest health and protection, geospatial competencies, human dimensions of natural resources, information literacy, and managerial leadership. The Visiting Team believes that the curriculum is consistent with SAF Standards for Accreditation.

Table 1: General Education (credit hours)

Curriculum	Communications	Science and Mathematics	Social Science & Humanities
B.S. in Forestry	7-19	12-21	15-21

Table 2: Forestry Education (credit hours)

Curriculum	Ecology & Biology	Measurement of Forest Resources	Management of Forest Resources	Policy, Economics, & Administration
B.S. in Forestry	31	12	24.5	12

The new curriculum contains several new courses. To provide students with instruction on the latest forestry technologies, a computer applications course and a spatial analysis course have been added. Forestry ethics, policy, economics, human dimensions, and natural resource issues courses have been added to give students skills to address the complex socioeconomic issues encountered in forestry practice. A new course on forest health and protection is designed to prepare graduates to effectively enhance the integrity and health of forests.

The curriculum provides a heavy emphasis on biology/ecology and management. However, adequate credit hours are assigned to other areas. The Self-Evaluation Report and interviews indicated that the program integrates training in communication skills throughout the curriculum. The general education and forestry components of the curriculum emphasize analytical and critical thinking skills as required. Capstone and management courses provide students an opportunity to demonstrate analytical and critical thinking abilities. Professional ethics are covered in the required administration and policy course.

The Forestry program employs a wide range of pedagogies to enable students to apply scientific methodologies to desired forest outcomes and conditions. Nearly all required professional classes have some lecture component to provide basic and advanced knowledge to students. Over half of the courses contain significant content in field instruction and practice. The 8-week forestry summer camp at Robinson Forest has been dropped and replaced with a 15-week (spring semester, junior year) field “camp” based in Lexington. This will be an integrated semester of study at various distant locations focusing on hands-on training in forest fire, landscape assessment, inventory, measurements, silvicultural practices, forest operations, and utilization.

Opportunities exist to connect students with on-the-ground forest management activities. Local practitioners abound, and those we met with are willing to interact more regularly with faculty and students. Examination of course requirements suggests that these opportunities are being utilized.

Faculty research enriches the curriculum and provides opportunities for undergraduate students to participate in research activities. Research in the department enhances courses such as conservation biology, geographic information systems, forest ecology, silviculture, and watershed management. The undergraduate forestry program does not have a distance learning component.

STANDARD III: FORESTRY PROGRAM ORGANIZATION AND ADMINISTRATION

Organization

The College of Agriculture is one of 15 academic colleges on the Lexington campus, and the Department of Forestry is one of 11 academic departments in the college. The department offers one undergraduate program, in Forestry, and it participates in one interdepartmental program called Natural Resource Conservation and Management. It also offers a Master of Science degree in Forestry, and faculty members participate in a variety of doctoral programs offered within the college.

Academic departments at the University of Kentucky are administered by chairs, who are appointed for six-year, renewable terms. Chairs enjoy considerable responsibility with regard to program direction and operations and in recommendations to the dean for the appointment, promotion, tenure, and termination of faculty members. The department is currently administered by an interim chair, Prof. Michael Lacki. They have recently finished the interview process following a national search for a replacement chair. The faculty and administration appear to be in near-unanimous agreement about the best candidate, and an offer has been extended to this person.

Instruction

The chair is responsible for leading the faculty in its development of policies for academic requirements, curricula, class schedules, and other academic matters. Modifications to the curriculum are subject to review and approval by the college Curriculum Committee, the Undergraduate Council, and ultimately the Faculty Senate, but departmental recommendations are given wide deference in the higher levels of review. The faculty appears to have had complete freedom in its recent curriculum revision, subject of course to university requirements.

As is common in other universities, faculty hires are made by the dean of the college following nationwide searches. Requests to fill a position are guided by the department's strategic plan. The position description and search are the responsibility of the chair, in conjunction with a departmental faculty committee, and hires are based upon the recommendation of the chair as informed by the faculty and search committee. Decisions about

faculty salary raises are based upon merit and the annual average increment set by the university president, and these decisions are made by the dean and his staff using the chair's merit ratings, with discrepancies resolved in conference with the chair if necessary. Faculty differed in their opinions about how well this process works. Generally, it appears to work well, but we heard complaints that the variation in numerical ratings from year to year does not always correspond with the faculty member's own strong sense year-to-year variations in achievement and productivity.

The promotion and tenure process at the University of Kentucky is a formal one that involves extensive documentation by the candidate, a minimum of 6 outside letters of evaluation, and multiple levels of review by faculty and administrators. Teaching competence appears to be given due weight in the review of candidates, and documentation includes a "teaching portfolio" with summaries of student evaluations. Faculty members perceive that the process is a fair one.

Staff Resources

The department appears to enjoy sufficient staff support. Staff support appears to have improved substantially since 2004, and we heard only positive comments about quantity and quality. At Lexington, there are 4 FTE administrative/clerical staff members, a departmental business manager, a senior account clerk, senior laboratory technician, 2.0 FTE research analyst positions, a full-time data systems manager, and a research specialist housed within the department who serves as curator of the University of Kentucky Herbarium.

Student Recruitment, Admission, and Transfer

Recruitment into the Forestry program is handled primarily by the college's Associate Dean for Academic Programs. The department takes opportunities to advertise its programs through appropriate venues, but we perceived that recruitment was fairly passive and there might be opportunities to significantly increase enrollments if this is a desirable goal. Currently, the department's major effort toward recruitment appears to through extension activities throughout the state.

Most students entering the Forestry program are transfers from other institutions or change-of-majors. Admission requirements to the Forestry program are identical to those for the rest of the university and are based upon high school grades, standardized test scores, and completion of a high school curriculum with a minimum number of courses, each, in math, science, social studies, and foreign language. Students may transfer from other colleges or universities if they have a minimum 2.0 grade point average. Transfer credits are assigned by the Office of Admissions.

Program Planning

Strategic planning in the department is done within the context of the college's strategic plan. The department's current plan was adopted in 2008 based upon recommendations of an ad hoc faculty committee with final approval by the department's faculty and staff. Alumni and stakeholders were provided with opportunities for input. Currently, the department is in the

process of updating its strategic plan to align with the college's 2009-2014 plan, and we were provided a copy of the department's draft plan for that time frame. In addition to strategic planning, university-mandated, periodic reviews of the department assist in identifying priorities and opportunities for improvement. Review teams consist of selected departmental faculty members, representatives from other departments, and external stakeholders. The last review was completed in 2001.

The department does not have an organized, external advisory committee, but they actively sought external input for ad hoc purposes such as the curriculum revision and recent interviews for department chair candidates. The dean is supportive of the creation of an external committee but notes, accurately we think, that an external committee can be a help or a burden depending upon how effectively it is used by the department. We believe that an external committee might be an effective step toward greater departmental stature and influence. It is in the department's new strategic plan to create a standing Advisory Committee.

In 2008, the dean of the College of Agriculture appointed a Natural Resource Initiative Planning Committee to identify opportunities for future directions in this area of the college's programs. One of the recommendations of the committee was to form a School of Natural Resources. Creation of the school would have meant reorganization of several departments, including the Department of Forestry. This initiative has been tabled because of resistance elsewhere in the college, but it appears to be favored by the forestry faculty, and it appears to be still regarded by the dean as a desirable goal.

Program Assessment

The university is attempting to standardize assessment of learning outcomes across degree programs and has mandated that all units must develop formal assessment strategies. The Department of Forestry was on the forefront of this effort according to the university provost. Its assessment plans for the undergraduate Forestry program are posted on the department's Web and documented in Appendix C of the Self-Evaluation Report. Expected learning outcomes are identical (or nearly so) to the learning outcomes of Standard II in our Accreditation Handbook. To evaluate progress for each learning outcome, the department has identified courses for the initial (generally lower-division courses) and final (generally upper division) assessments. Under the direction of one of the faculty members, the department began the process of defining assessment rubrics in January 2010 for three courses and their associated outcomes. Two or three outcomes will be assessed in each academic year, and all eight will be assessed over a three-year period. These curriculum-embedded assessments are intended to measure value added by the program and are one of a number of "direct" methods of assessment currently employed. According to the university's assessment inventory, the Forestry program currently uses eight of the university's cataloged methods of direct assessment and eight of its methods of indirect assessment. It is planned that the assessment results generated in each academic year will be discussed at the last faculty meeting for that year, at which time learning improvement decisions will be made for the coming year. In the opinion of the Visiting Team, the program's assessment plan is very comprehensive and well thought-out, and it might serve as a model for others.

STANDARD IV: FACULTY

Academic and Professional Competency

The faculty background summary and academic summary information were provided in the Self-Evaluation Report including budgeted time allocation and teaching assignments in the Forestry program. There are 14 full-time faculty members who report directly to the Forestry program head. All have Ph.D.s and 13 are in tenure-track appointments. There are an additional three faculty members in other departments who teach courses in the curriculum. Eleven of the 14 faculty members teach required forestry courses. Faculty time allocations indicate a total of 4.07 teaching FTEs, a slight increase since 2004. Although nearly all faculty members teach in the curriculum, a few teach much more than others, some as many as four or five required courses. Students expressed a desire for their courses to be more evenly spread across the faculty.

The educational backgrounds of the faculty are diverse having terminal degrees from 11 different institutions. Seven of the faculty members have over 20 years experience at the current institution. The department has made periodic strides towards greater gender and cultural diversity through the recruitment process but with turnover, loss of faculty line positions, and a shortfall in diversity candidates have all worked against progress in this direction. Currently, two of the faculty members are female and one is Asian. Faculty recruitment policies follow the University of Kentucky's policies and guidelines, and the department completes an affirmative action report for every faculty and professional staff search. Faculty reported that they were satisfied with the process and success of recent searches.

Nearly all faculty members hold split appointments between teaching, research, and/or extension. These budgetary lines do not interfere with the assignment of competent faculty to the teaching program. Some discrepancy among faculty members was reported in available support for professional education opportunities. Research and Extension faculty seem to have slightly better access to such funds. All faculty members perceive a diminishing opportunity for sabbatical opportunities due to shrinking budgets, and the small size of the department does not lend itself well to covering course loads when sabbaticals occur. Only two faculty sabbaticals were taken during the last five years. Left unchecked, these decreasing opportunities could have a detrimental effect on long-term professional competency. The Visiting Team strongly encourages continued participation by the faculty in sabbatical opportunities.

The faculty helps to maintain the visibility of the department by serving on the faculty senate, participating with other departments in joint efforts such as the Natural Resources Conservation and Management undergraduate program, and conducting workshops and giving papers at professional meetings and workshops for varied audiences. Stakeholders report that faculty members have increased their presence outside of the university, commenting that the faculty is more "out and about" than in years past. Notably, students expressed disappointment that the Forestry program is obscure within the university, and there may be more opportunities for campus-wide engagement than the faculty is currently exploiting.

Teaching Skills

From meetings with faculty and students it was evident that the faculty members have a deep commitment to teaching and the success of the forestry students. Faculty members generally teach in their areas of expertise but exhibit willingness to take on additional courses to benefit students and the department. Students report that they have a high degree of access to the faculty.

The faculty is to be commended for its willingness to approve an innovative curriculum that will require significant changes in the courses taught by most faculty members. After several interviews with diverse groups it became clear that the faculty is functioning well and apparently better than at some times in the past.

STANDARD V: STUDENTS

The Forestry program has always been relatively small. Current enrollment is 50 and has varied from 40 to 52 over the last four years, with the highest number in the two most recent years. Currently, 18% of the students are female and one of the students is African-American. They have graduated an average of 10 students per year for the past five years. Graduates have enjoyed a relatively high level of success in securing professional positions or admission to graduate school, and some believe that the program could successfully recruit (and place) a larger number of students.

Although the department appears to comply with University of Kentucky guidelines and policies regarding recruitment and retention, it appeared to the Visiting Team that it could be more proactive in its recruiting efforts, including minority recruitment. The recruitment narrative on pages 73-75 of the Self-Evaluation Report does not address cultural, ethnic, and gender diversity, and our interviews reinforced the impression that this has not been a priority for the department. Interestingly, the program has hosted Alabama A&M students for one week during the summer camp at Robinson Forest in each of the past three years. We learned this only through the students, who remarked about how positive the experience was for all involved.

Students and faculty expressed the desire to develop closer relationships with alumni. Although the program has been graduating students for nearly 40 years, there is no formal alumni program, no alumni newsletter, and, apparently, no in-house database of graduates. Better stewardship of their alumni could raise the prominence of the department and help with recruitment efforts.

As attested to strongly in our interview with students, the Department of Forestry enjoys a strong reputation for readily available, quality advising. Most of the advising appears to be handled by a single faculty member. Advisers work closely with students to keep them on track for graduation. Both advisers and students have electronic access to unofficial transcripts and to the APEX (Academic Program Evaluation and Xploration) system, which tracks the completion of curriculum requirements and allows students and advisors to monitor progress toward graduation.

Students enjoy multi-level assistance with professional and career opportunities. The university's Stuckert Career Center has assigned one of their career counselors to the College of Agriculture on a part-time basis. Students can meet with this individual (or any other career counselor) for help with resume preparation, interview skills, and job searching strategies. Students retain access to the Career Center's on-line resources for a year following graduation. The college conducts an annual career fair, and the department works with the assigned career counselor to ensure that forestry employers are included in this fair. The career counselor assigned to the college is also invited every fall to talk to the seniors about their employment searches and to acquaint them with the services of the Career Center.

The students with whom we met were persuasive advocates for the effectiveness of the Forestry program. If they were at all representative, then students in the program appear to be bright, engaging, and enthusiastic about their education.

STANDARD VI: PARENT INSTITUTION SUPPORT

At the time of the 2004 review the department was in search of a chair and had lost faculty positions in forest policy, management and economics, harvesting, and restoration ecology. The chair was hired, apparently with the promise that four faculty positions could be filled. These positions (in biometrics, management/economics, silviculture, and policy) were filled in the following years. However, the management/economics position has since been vacated by the departure of faculty member, and the department's conservation biologist has died in an accident. The department chair has now left for a more senior position at another university, and the department is currently attempting to hire a new chair. There is great uncertainty about the capacity of the faculty to cover the new curriculum, and priority should be placed on filling the two currently vacant positions in management/economics and conservation biology.

Faculty salary averages for the College of Agriculture lag those for the university as a whole by 12% at the assistant and associate professor levels and 14% at the professor level. Departmental salaries are only slightly lower than college means except at the professor level, where the departmental mean is 24% below the college mean. Again, departmental means are comparable to those for Southern Association of Forestry Schools except at the professor level, where the department lags by 19%. Because the number of salaries in the departmental mean at the professor level is moderately large (6), the salary discrepancy at that level appears to be a matter of significant concern. The salary deficiency at the professor level has been a long-standing issue (it was mentioned in the 1999 Visiting Report), and we do not believe it can be sufficiently explained by lack of achievement and productivity within the full professor rank.

Most courses are taught in the forestry building (Thomas Poe Cooper Building), which is physically isolated from other college buildings, rather decrepit, and (according to the dean) in need of about $10 million in deferred maintenance improvements. A new roof was recently installed to correct chronic leaking. A new building for the department has been on the university's capital improvements list for a number of years but has significantly dropped in position of priority as other projects were moved ahead. The problem is quality of space rather than quantity, and the department appears to have adequate classroom facilities and equipment to

support its courses. Most classrooms in which forestry courses are taught have modern teaching equipment such as LCD projectors, tabletop computers, white boards, and wireless Internet access. The department works diligently to continually upgrade its microcomputer laboratories, one in the forestry building and one at Robinson Forest, where the field semester is held.

Recently, two faculty members successfully applied for a Hewlett-Packard "Technology for Teaching" grant to upgrade the computers in its GIS laboratory. The award included 21 tablet PCs with expansion bases and travel batteries amongst other mobile equipment. The project is important to both students and instructors as the technology facilitates the use of immediate feedback software, computer simulations, and field/data collection analysis to enhance student learning.

The 14,800-acre Robinson Forest provides an excellent facility for the program's field camp. Primary control of the forest has been removed from the department and placed under a new Robinson Center for Appalachian Resource Sustainability. This is a mixed blessing for the department. Students and faculty will now have to pay for the use of the facility, which may raise the cost of field camp for students, but the department no longer has to subsidize operation of the forest. As with many programs nationally, the department has lost approximately 5% of its instructional budget, 8% of its state and federally funded research budget, and 23% of its Extension budget over the past five years. To help offset the costs of instructional support, the university implemented a fee for laboratory courses in 2009, and 80% of the revenues from this will return to departments.

The university offers extensive services in support of its students and the instructional and research missions, as one would expect of as institution of this stature. Library holdings are extensive in both print and electronic media, and they include 75 full-text forestry and wildlife sciences journals available electronically from two computer labs in the forestry building or from personal computers. Staff support in the library, which is a 5-minute walk from the forestry building, appears to be adequate. The library provides an extensive system of computers and computer ports that is freely available to students. It also houses the university's Center for Statistical Computing and its Writing Center.

GENERAL OBSERVATIONS

The Visiting Team would like to compliment the program on its analytical and structured approach to its recent curriculum revision. We were also impressed with the program's success at identifying specific learning outcomes for each of the areas of study in Standard II and associating these with specific courses in the curriculum. When you have finished with identifying rubrics for each course and outcome, your assessment tool will be among the best we have seen and could well serve as a model for other programs. Finally, we were very grateful for the program's clear, comprehensive, and well-organized Self-Evaluation Report. If only they were all written that well!

Department of Forestry Response to SAF Review

UNIVERSITY OF KENTUCKY

COLLEGE OF AGRICULTURE
Department of Forestry

106 T.P. Cooper Hall
Lexington, KY 40546-0073

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15 August 2010

Dr. Kim Steiner
Chair, SAF Accreditation Review Committee
Professor of Forest Biology
Pennsylvania State University
301 Forest Resources Building
University Park, PA 16802

Dear Dr. Steiner:

On behalf of the faculty, staff and students of the Department of Forestry at the University of Kentucky, I wish to extend our appreciation to you and the other members of the SAF review team for your thoughtful and thorough evaluation of our Bachelor of Science undergraduate program in Forestry and its suitability for reaccreditation by the Society of American Foresters. The review team met with faculty, staff, students and administrative officials of the University of Kentucky during the period of 23-25 March 2010. Our response to the content in the Visiting Team Report is provided below.

We found the comments and reactions of the review team to be accurate and reflective of our program and the new directions and changes that the Department of Forestry at the University of Kentucky has been implementing. During the past academic year the Department has been actively engaged in development of a new mission statement and strategic plan, both of which outline new goals and objectives for the Department. This change was identified in the review team's assessment. In fall semester 2009 the Department initiated a revamped undergraduate curriculum leading to a Bachelor of Science in Forestry. These changes will be phased in over several years and are intended to set higher standards of instruction and prepare our graduates for entry into forestry and allied professions. We are confident these adjustments will better enable our students to meet the complex economic, ecologic, and social challenges they will face in their careers. This new curriculum involves considerable integration among courses and is the culmination of several years of planning, discussion, and input from external stakeholders. The review team's assessment of this curriculum and the changes made relative to previous offerings is accurate and reflective of the directions we as a Department are taking in undergraduate instruction in forestry. Furthermore, as required of all programs at the University, we are now implementing a series of student-input driven rubrics to assess the effectiveness of our instructional activities. This assessment will be ongoing over several years and we are embracing this tool as a means to help the Department refine our new curriculum and ensure that its intended goals and objectives are satisfactorily achieved.

The review team also recognized that considerable improvement had been made since the previous SAF review in the area of professional staffing and administrative support for the Department. At the time of the current review, our Department was engaged in a national

search for a Chair to replace the Dr. Steven Bullard who accepted the position of Dean of the College of Forestry and Agriculture at Stephen F. Austin University. This search is now complete and I arrived in July to begin my term as Chair of the Department of Forestry. I truly believe that the bones of this department are strong, that there is a group of deeply committed faculty and staff here, and that this department has the potential to meet the objectives that it has set for itself and more.

The review team indicated fluctuating student numbers and correctly identified that student recruitment into the program has been largely handled by administrative staff of the College of Agriculture. However, during the search for a new Chair and the concurrent SAF program review, the need for a more proactive approach by the department to recruit students into the program was identified by the faculty as a direction that should be taken under the leadership of the new Chair. We have now secured support from the College administration to invest in the recruiting effort, have begun developing a proactive strategy to address our recruitment needs, and are confident this will have a positive impact on our student enrollment. We will invest in both undergraduate and graduate recruiting, and seek to attract minority students into our program concurrently. Efforts to better capitalize on our relationships with Colleges and Universities that are comprised primarily of African American students have not met with success, but renewed efforts in these areas, specifically by the new Chair and recruitment staff under a revised recruitment strategy, may yield results. A student lounge in the Cooper Forestry Building, not present at the time of the SAF review, has just been completed at a cost of approximately $10,000 and is intended to enhance the undergraduate student experience, show proactive effort by the Department toward students in the program, and help foster opportunities for student interaction and aid in student recruitment and retention. This student lounge will also foster collegiality between our students and the students of the College-wide Natural Resources Conservation Management Program – which added support and financial backing toward the construction of the lounge.

The number of faculty in the Department remains below the level achieved in the 1990s. This is typical of most departments at the University of Kentucky due to budget cuts resulting in an inability to fill vacancies when they emerge. Thus, the reductions in staffing at the University have made it difficult for most programs to sustain historic numbers. At the time of the SAF review the Department had three faculty vacancies. One has been filled with the hiring of the new Chair, who subsequently received approval to fill a second vacancy by the College administration. This second faculty vacancy will have an instructional component to the individual's distribution of effort and, thus, will provide further instructional support for the new curriculum in Forestry. I have also provisionally received approval to fill the third vacancy for next year (2011), depending on the depth of budget cuts that year. This third position would further add to our capacities in instruction and research.

The faculty of the Department continues to bring success in research and extension to the University, with an influx of extramural funds that averages approximately $1 million per year; an amount equaling almost 50% of the department's baseline budget. This success is reflected in the review team's report. Also, input from external stakeholders in Kentucky suggested that the faculty in the Department have a higher visibility in the Commonwealth than was historically the case. The student perception of low visibility of the Department within the University is puzzling and may be a function of faculty and administration not adequately advertising their roles across campus. Individual faculty of the Department serve significant roles on faculty councils, seats on the University Senate, and currently one faculty member is the coordinator for the College-wide program in Natural Resource Conservation and Management, to name a few. It is worth mentioning that additional steps are being taken

to further “advertise” and inform our students of our larger mission and role, not only throughout the university, but also the state. These measures include, but are not limited to, a departmental newsletter, displays throughout the building of faculty and staff activities, and video/photographic exhibits of our efforts throughout the state. These efforts will also serve to better inform our stakeholders and university colleagues, visitors to the building, and alumni, about the breadth and scope of work in which our faculty and staff are involved. We have just completed an update of our alumni list and are putting the final touches on our first departmental newsletter as a means to re-establish close working relationships with our alumni and to serve as a starting point for getting them engaged with our students in a more formal way.

Clearly, the College administration is committed to investing in the Forestry Department given the recent approvals to hire a new chair, faculty members, and staff, as well as help us invest in student recruitment. It is also evident that support for these hires has come from the University level, which maintains a close watch on hiring during the current fiscal environment. We do acknowledge that some of our physical resources could use improvement. The Cooper Forestry Building is old and needs repair. Central heat and air would be a vast improvement. However, several classroom upgrades have been made in recent years via competitive grants, providing state-of-the-art teaching equipment. We hope to enjoy similar success in the future with our extramural efforts in this arena. While faculty salaries at the entry level are competitive with benchmark institutions, salaries at the level of full Professor are well below those at benchmark institutions and remain a concern relative to retaining successful and motivated faculty.

The Department of Forestry at the University of Kentucky has been a long-standing member program and contributor to the Society of American Foresters. It is our wish to remain a part of this important society long into the future. Maintaining the accreditation of our undergraduate program in Forestry is fundamental to this association. It is the perception of Department faculty that the additions to our faculty and changes made to the undergraduate curriculum, combined with new directions planned in recruitment and alumni relations, will allow the Department to move forward in addressing societal needs in forestry and natural resources, particularly those of the Commonwealth of Kentucky. We submit our materials to the SAF Committee on Accreditation in the hope that our efforts are deemed appropriate for reaccreditation of the Bachelor of Science degree program in Forestry at the University of Kentucky. If you have any questions, or require further information, please do not hesitate to contact me.

Respectfully,

Terrell T. “Red” Baker, Ph.D.
Professor and Chair
Department of Forestry

cc: M. Scott Smith, Dean
Kumble R. Subbaswamy, Provost

SAF
Summary Findings

Society of American Foresters
Growing better all the time

December 15, 2010

CONFIDENTIAL

Terrell T. Baker
Chair & Professor, Department of Forestry
College of Agriculture / University of Kentucky
106 T.P. Cooper Hall
Lexington, KY 40546-0073

Dear Dr. Baker:

The Society of American Foresters (SAF) appreciates the University of Kentucky's dedication to excellence in forest resources education and its continued support of specialized forestry accreditation review. The SAF Committee on Accreditation grants continued Accreditation through December 31, 2020 to the Forestry curriculum leading to Bachelor of Science degree in Forestry in the Department of Forestry at the University of Kentucky.

The Society's goal is to maintain a responsive accreditation process; therefore, I encourage you to make any suggestions that may help to keep accreditation an effective tool for assessing and improving the quality of forestry education. Should you have any comments or questions, please direct them to Ms. Carol Redelsheimer, CF, Director, Science and Education. She may be reached at (301) 897-8720 extension 240 or by email at redelsheimerc@safnet.org.

Sincerely,

Michael T. Goergen, Jr.

Cc: Dr. Mike Lacki

Enclosure: SAF Committee on Accreditation Summary Findings and Action

5400 Grosvenor Lane | Bethesda, MD 20814-2198 | (301) 897-8720 | toll-free (866) 897-8720 | fax (301) 897-3690 | www.safnet.org

Society of American Foresters
Committee on Accreditation
5400 Grosvenor Lane
Bethesda, MD 20814-2198
(301) 897-8720 Extension 240

Committee on Accreditation
Summary Findings and Action

University of Kentucky
2010

Current Review:
Continued Accreditation

Currently Accredited Curriculum:
Forestry curriculum leading to a BS Degree

Initial Accreditation:	1974
Previous Onsite Visit:	1999
Interim Review:	2004
Substantive Change:	2008
Progress Report:	2006
Accreditation Expires:	2010

INTRODUCTION

The Department of Forestry is one of 11 academic departments in the College of Agriculture at the University of Kentucky. The Department offers one undergraduate program (BS in Forestry) that was reviewed during a March 23-25, 2010 site visit. The curriculum for this degree was recently revised based on a several-year process of review and development by the faculty with input from employers, agencies, industry, students, and alumni. The revision process was cited by the university's Office of Assessment as a best-practices example of planning. The SAF visiting team found the analytical and structured approach to curriculum, and alignment of detailed learning outcomes in the revised curriculum to Accreditation Standards was especially commendable.

SUMMARY FINDINGS

STANDARD I: FORESTRY PROGRAM MISSION, GOALS, AND OBJECTIVES

The goals and objectives of the forestry program were developed as part of its strategic plan for 2009-2014. The goals and objectives are consistent with SAF accreditation standards: they recognize forestry as an interdisciplinary profession, the needs of the program's constituencies, the role of foresters in meeting diverse and changing needs and values, and the importance of professionalism and ethical behavior. The mission of the Forestry program is explained on the Department's Web site, with explicit reference to the program's accredited status. The mission is also displayed prominently throughout the forestry building.

The standard is met.

STANDARD II: CURRICULUM

The new curriculum was approved by the University of Kentucky in the Fall, 2009. The curriculum was revised to improve the knowledge and skills graduates need to gain to address contemporary economic, ecological, and social issues related to effective forest resource management. Knowledge and technical competencies were identified and integrated into the curriculum through prerequisites and linkages among courses. Learning outcomes connected to nine common threads are reinforced throughout the curriculum. The common threads include collaborative problem solving, communication, ecosystem approach, ethics, forest health and protection, geospatial competencies, human dimensions of natural resources, information literacy, and managerial leadership.

The new curriculum has 121 total semester credit hours with 84 hours required for forestry and 37 hours of general education requirements. Although the curriculum provides a heavier emphasis on biology/ecology and management, there is sufficient breadth in the other two core areas (measurements and policy/economics/ administration). Communication, analytical, and critical thinking skills are integrated throughout the curriculum and the capstone course provides students an opportunity to demonstrate competencies in these skills. Professional ethics are covered in a required administration and policy course.

The standard is met.

STANDARD III: FORESTRY PROGRAM ORGANIZATION AND ADMINISTRATION

Academic departments at the University of Kentucky are administered by chairs, who are appointed for six-year, renewable terms. Chairs enjoy considerable responsibility with regard to program direction and operations. The outcomes-based assessment plan developed concurrently with the curriculum revision provides ongoing and meaningful feedback through multiple "capture points" that are used in an adaptive model to inform curriculum change.

The standard is met.

STANDARD IV: FACULTY

The number of faculty is in excess of the minimum required to meet the accreditation standard. Although 11 of the 14 faculty teach forestry courses, a few have heavier loads associated with required courses and students expressed a desire for their courses to be more evenly spread across the faculty. The faculty is to be commended for its willingness to approve an innovative curriculum that will require significant changes in the courses taught by most faculty members. The faculty is collegial and functioning better than at some times in the past. The faculty have diverse backgrounds and seven have over 20 years experience at UK. Although periodic strides toward greater gender and cultural diversity have been made, turnover, loss of faculty line-positions, and a shortfall in diversity candidates have worked against progress in this direction. Currently, two of the faculty members are female and one is Asian.

There has been sufficient turnover in both faculty and the chair to create uncertainty about the ability of the faculty to cover the new curriculum, particularly in the areas of management/economics and conservation biology. In addition, faculty salaries, particularly at the full professor rank, are low relative to the College and peer Institutions and it may be

difficult to retain new faculty as they move up in rank. A new Chair has been hired and there is a commitment to address these faculty issues.

The standard is met.

STANDARD V: STUDENTS

The Forestry program has always been relatively small. Current enrollment is 50 and has varied from 40 to 52 over the last four years, with the highest number in the two most recent years. Currently, 18% of the students are female and one student is African-American. They have graduated an average of 10 students per year for the past five years. Graduates have enjoyed a relatively high level of success in securing professional positions or admission to graduate school, and some believe that the program could successfully recruit (and place) a larger number of students. Students were persuasive advocates for the effectiveness of their program.

The standard is met.

STANDARD VI: PARENT INSTITUTION SUPPORT

Although the classrooms and building that house the forestry program appear old, there is adequate technology in the classrooms. The 14,800-acre Robinson Forest provides an excellent facility for the program's field camp. Primary control of the forest has been removed from the department and placed under a new Robinson Center for Appalachian Resource Sustainability. Although students and faculty will now have to pay for the use of the facility, the department no longer has to subsidize operation of the forest. As with many programs nationally, the department has lost approximately 5% of its instructional budget, 8% of its state and federally funded research budget, and 23% of its Extension budget over the past five years. To help offset the costs of instructional support, the university implemented a fee for laboratory courses in 2009, and 80% of the revenues from this will return to departments.

The university offers extensive services in support of its students and the instructional and research missions, as one would expect of an institution of this stature. Library holdings are extensive in both print and electronic media, and they include 75 full-text forestry and wildlife sciences journals available electronically from two computer labs in the forestry building or from personal computers. Staff support in the library, which is a 5-minute walk from the forestry building, appears to be adequate. The library provides an extensive system of computers and computer ports that is freely available to students. It also houses the university's Center for Statistical Computing and its Writing Center.

The standard is met.

GENERAL COMMENTS

The SAF commends the Department of Forestry for its innovative curriculum revision, detailed outcomes based assessment plan, and outstanding self-study report.

COMMITTEE ACTION

The SAF COA grants continued accreditation to the Forestry curriculum leading to a BS in Forestry through December 31, 2020.

The above summary findings and action by the SAF Committee on Accreditation are based upon a review of the visiting team's March 25, 2010 report, written responses and oral comments provided to the Committee by Terrell Baker, Dept. Chair, Mike Lacki, past Interim Dept. Chair and Kim C. Steiner, Visiting Team Chair.

By: Laura E. DeWald

Laura E. DeWald, Chair
SAF Committee on Accreditation

Date: December 15, 2010

Department of Forestry Strategic Plan

University of Kentucky

Department of Forestry

2009-2014 Strategic Plan

MISSION

Research, teaching, and outreach programs of the Department of Forestry at the University of Kentucky will effectively enhance sustainable economic, ecological, and social benefits of forests and related natural resources in Kentucky and beyond. Our programs will elevate the quality of life by:

- enhancing the integrity, stability, and health of forests and related biotic communities; and
- increasing the long-term value-added, sustainable income, and sustainable flow of services from forests and natural resources.

VISION

The University of Kentucky Department of Forestry will be widely recognized for improving the lives of people and for improving the condition of human and biotic communities through learning, discovery, and outreach activities relating to forests and natural resources.

PREAMBLE

Major forces of change are transforming forests and natural resources in Kentucky, the nation, and the world. Transformational forces of particular interest and concern in Kentucky today include:

- globalization of forest industry capital and forest products trade;
- increasing loss, fragmentation and degradation of forests and parcelization of ownerships;
- urban sprawl and the expanding wildland-urban interface;
- significant threats from exotic invasive plants, pathogens, insects, and other animals; and
- changing technologies of communication, analysis, and utilization.

To thrive in today's environment of change, university-based programs of forestry research, teaching, and outreach must be of high quality in terms of scientific and academic rigor, productive in terms of measured outputs, and innovative in the use of new scientific, teaching, and communications technologies. Increasingly today, state-supported university forestry programs are held closely accountable for their use of funds, and are expected to generate an increasing share of their financial support from extramural sources. To operate effectively, these programs must be highly leveraged in terms of funding beyond traditional revenue sources such as tuition, state funds, and federal "formula" funds.

To be truly successful in the 21st century university-based forestry research, teaching, and outreach programs must be more than highly rigorous, productive, innovative, and financially leveraged – they must be recognized as effectively meeting important societal needs. That is, such programs must be

widely recognized for effectively addressing important challenges facing the people and communities they serve. The Department of Forestry's research, teaching, and outreach programs must therefore be highly relevant, and their relevance must be widely recognized by potential students, forest landowners, forest industry, policy makers, conservationists, and many other important constituents in Kentucky and beyond.

The overall purpose of the Department of Forestry's planning process is to help ensure a high level of quality, effectiveness, and relevance in our research, teaching, and outreach programs. To accomplish this, the planning process is designed to guide the Department in:

- establishing and communicating a clear, Department-level core ideology, as well as overall vision and specific mission statements for our research, teaching, and outreach activities; and
- developing, communicating, and measuring progress toward broad goals and specific objectives and action steps for the Department's research, teaching, and outreach programs.

An important goal of the planning process is therefore to produce and continuously update a Strategic Plan that clearly states the Department's core ideology, vision, mission, goals, objectives, and action steps. The Plan's purpose is to serve as a compass to orient the Department in broad terms, and also to serve as a map to guide the Department in achieving our vision and accomplishing our tri-partite mission and related goals and objectives through specific routes or actions over time. For the Strategic Plan to be effective, it should help guide the Department with many diverse issues and decisions – from macro-level, relatively long-term issues such as setting priorities among broad areas of research, to micro-level, relatively short-term decisions such as determining appropriate content for specific undergraduate courses in a particular semester.

The Strategic Plan is an important goal or end-product of the planning process, but it is not the only goal of planning and program directioning. If designed and implemented properly, the Department-level planning process will be just as important as the Plan produced. The process must be on going and dynamic, with the Plan being continuously updated as progress is reported and assessed, as issues, challenges, and opportunities change, and as goals, objectives, and specific strategies in research, teaching, and outreach evolve over time.

Finally, for faculty, staff, administrators, and other important stakeholders to view the planning process as meaningful and the Strategic Plan as useful, they must be involved in the process of developing the Plan and in revising its content, as well as in assessing progress toward goals and objectives over time. Therefore, a very important goal of the planning process is that it result in shared ownership through appropriate involvement of key stakeholders within the Department, College, and University, as well as important constituents who are external to the University.

Department of Forestry Goal 1

GOAL 1.

Prepare Students for Leading Roles in an Innovation-driven Economy and Global Society

Educating students is a fundamental means by which the University of Kentucky Department of Forestry enhances the future of the Commonwealth. The Department expects graduates to become leaders in forestry and natural resource professions, and also expects that graduates will become leaders in their communities. Forestry graduates will serve the Commonwealth, region, and nation by helping enhance sustainable economic, ecological, and social benefits of forests in Kentucky and beyond.

Objective 1.1 Recruit and retain students with high academic and professional potential.

Strategy 1.1.1 Scholarship funding will be enhanced to recruit and retain students with high academic and professional potential (see also Goal 1, Objective 1.3).

Strategy 1.1.2 To recruit graduate students with high potential, financial support will be competitive with peer institutions.

Strategy 1.1.3 The Department's laboratory facilities and equipment, computers, and other teaching-related resources will be consistent with offering nationally competitive degree programs at undergraduate and graduate levels.

Strategy 1.1.4 Graduate course offerings will be continuously reviewed for meeting the needs of current and potential students.

Strategy 1.1.5 We will effectively publicize undergraduate and graduate teaching programs.

Strategy 1.1.6 Job announcements will be effectively communicated.

Strategy 1.1.7 The Department will support student organizations in their efforts to enhance professionalism, and will support student involvement in professional and scientific activities and organizations.

Strategy 1.1.8 Mechanisms will be developed to maintain contact with Forestry alumni, to engage them in our recruiting, teaching, and placement programs, and to track the employment and job responsibilities of our graduates.

Objective 1.2 The learning environment in the Department of Forestry will be rigorous and will also be highly relevant to career opportunities for our graduates. The teaching program will be focused and structured to prepare graduates for success in achieving the Department's overall mission of enhancing the sustainable economic, ecological, and social benefits of forests and related natural resources.

Strategy 1.2.1 Society of American Foresters (SAF) accreditation of the B.S. degree in Forestry will be maintained. Input and guidance from the SAF Committee on Accreditation will be obtained between accreditation periods.

Strategy 1.2.2 The curriculum of the B.S. degree in Forestry will be revised with emphasis on producing B.S. graduates who are 'society-ready,' i.e., capable of dealing effectively with the complex economic, ecological, and social issues involving forest resources today.

Strategy 1.2.3 Department of Forestry graduate students will be well prepared for further scientific study, and/or for successful careers as practitioners, scientists, educators, and/or Extension professionals.

Strategy 1.2.4 Opportunities for students to participate in cooperative education and student internship programs will be increased; we will also increase other teaching-related cooperation and interaction with federal and state agencies, landowners, non-governmental organizations, and private industry.

Strategy 1.2.5 We will increase the use of University facilities (i.e., Robinson Forest, Wood Utilization Center, UK Herbarium, greenhouses), and other teaching-related facilities and resources to enhance student learning.

Strategy 1.2.6 As presented under Goal 3 (Objective 3.2), an Advisory Committee of external stakeholders will be created. The Committee will include employers of our graduates, and an important objective of the Advisory Committee will be to help orient the Department's teaching program in both content and delivery.

Strategy 1.2.7 Learner-centered, experiential activities will be emphasized in our courses where possible and practical. In these activities, students will be engaged in service learning and other important issues where they can help provide solutions to current forest resource challenges – while learning through 'hands on' experiences.

Strategy 1.2.8 The faculty will be involved in scholarly activities relating to teaching, and will actively pursue opportunities for professional development that lead to more effective and innovative teaching.

Strategy 1.2.9 The values, vision, mission, goals, objectives, and actions in the Department's Strategic Plan that relate to teaching will be effectively communicated to Advisory Committee members, faculty, students, and other stakeholders each year; these groups will be appropriately involved in implementing the Strategic Plan and in updating it over time.

Objective 1.3 Increase support for teaching-related activities.

Strategy 1.3.1 Funding and other needs for support relating to teaching will be effectively communicated within the College and University, as well as with key partners and constituents with an interest in our undergraduate and graduate teaching programs.

Strategy 1.3.2 Excellence in undergraduate and graduate teaching and advising will be recognized and rewarded.

Strategy 1.3.3 We will work with the Development Office on a continuing basis to increase the endowment funding relating to teaching in the Department of Forestry, and will communicate with faculty and others regarding development funding targets and progress that are teaching related.

Strategy 1.3.4 Following Department, College, and University guidelines, we will continue to develop high quality adjunct faculty, and will encourage their participation in appropriate teaching and advising activities at both undergraduate and graduate levels.

Department of Forestry Goal 1 Metrics

By 2014, the Department of Forestry will demonstrate achievement of Goal 1 as indicated by the following metrics:

Metric 1-1. Maintain a retention/graduation rate for forestry students (sophomore to graduation) in excess of 90%.

Metric 1-2. Maintain a graduating student placement rate (employment in forestry or related professions or graduate school) in excess of 75%.

Metric 1-3. Maintain an operating budget for teaching equipment purchase, upkeep, and repair.

Department of Forestry Goal 2

GOAL 2.

Promote Research and Creative Work to Increase the Intellectual, Social, and Economic Capital of Kentucky and the World Beyond its Borders

The land-grant mission of the University, College, and Department encourages research activities that result in the discovery of new knowledge. Discovery is an essential part of the Department's vision of being widely recognized for improving the lives of people and for improving the condition of human and biotic communities. Research in the Department of Forestry will therefore help provide insight and solutions to important challenges relating to sustaining long-term economic, ecological, and social benefits provided by forests and natural resources in Kentucky and beyond.

Objective 2.1 Continuously improve the quality, relevance, and effectiveness of the Department's research program.

Strategy 2.1.1 National review processes will be used on a periodic basis to orient the research program of the Department.

Strategy 2.1.2 The values, mission, goals, objectives, and actions in the Department's Strategic Plan that relate to research will be effectively communicated to Advisory Committee members, faculty, students, research partners, and other stakeholders; these groups will be appropriately involved in implementing the Strategic Plan and in updating it over time.

Strategy 2.1.3 We will develop and sustain highly collaborative relationships with individuals, institutions, agencies, and organizations that enhance the quality, capacity, and relevance of our research and scholarly activities.

Strategy 2.1.4 We will increase the use of University facilities (i.e., Robinson Forest, Wood Utilization Center, UK Herbarium, Griffith Woods), and other physical resources and facilities in research and scholarly activities.

Strategy 2.1.5 We will adhere to College of Agriculture and Human Environmental Sciences guidelines for McIntire-Stennis research project proposals.

Strategy 2.1.6 We will continue to seek innovative and effective means of sharing and applying research developments and results.

Objective 2.2 Obtain additional support for research.

Strategy 2.2.1 Research accomplishments, benefits, needs, and opportunities will be effectively communicated; we will involve important constituents in this process.

Strategy 2.2.2 Assistance will be provided in proposal preparation as well as in other aspects of obtaining extramural support for research and scholarly activity.

Strategy 2.2.3 We will work with the Development Office on a continuing basis to increase endowment funding supporting research in the Department of Forestry, and will communicate with faculty and others regarding development funding targets and progress that are research related.

Strategy 2.2.4 Federal funding for research to help develop and sustain forestry and natural resources in Kentucky will be sought.

Strategy 2.2.5 Department of Forestry scientists will participate in federal special grants where appropriate.

Department of Forestry Goal 2 Metrics

By 2014, the Department of Forestry will demonstrate achievement of Goal 2 as indicated by the following metrics:

Metric 2-1. Maintain extramural funding at no less than $100,000 per year per research faculty FTE.

Metric 2-2. Maintain refereed publications at no fewer than three per year per research faculty FTE.

Metric 2-3. All research faculty with 25% or higher research DOE will have a formula funded project.

Metric 2-4. Maintain Master's degrees awarded at five per year for a three year running average.

Metric 2-5. Double the number of departmental assistantships.

Department of Forestry Goal 3

GOAL 3.

Develop the Human and Physical Resources of the University to Achieve the Institution's Top 20 Goals

As a unit within the University of Kentucky College of Agriculture and Human Environmental Sciences, the Department of Forestry offers access to knowledge and learning for citizens and students throughout the Commonwealth. Forests and related natural resources are vital components of Kentucky's economic future, and they are equally critical elements of long-term environmental and quality of life challenges in the Commonwealth, the region, and the nation. The Department of Forestry has a prominent role in ensuring that forests and related natural resources provide sustainable economic, ecological, and social benefits in Kentucky and beyond. While effectively addressing this important mission, the Department seeks to be recognized as one of the preeminent forestry research, teaching, and outreach programs in the nation.

Objective 3.1 Enhance the Department's national and regional prominence and the impact of its research, teaching, and outreach programs.

Strategy 3.1.1 The Department will be an active member of the National Association of University Forest Resources Programs (NAUFRP) and the National Association of University Fisheries and Wildlife Programs (NAUFWP). The Department Chair will represent the Department in NAUFRP and NAUFWP meetings, as well as in other activities at national and regional levels.

Strategy 3.1.2 Faculty and professional staff will take leadership roles in appropriate professional and scientific organizations and activities at national and regional levels; examples include serving as officers, associate editors, committee leaders, peer review panelists, and serving as planners and participants in nationally and regionally prominent conferences.

Strategy 3.1.3 Where appropriate, faculty and professional staff will be involved in multi-state, multi-agency, and multi-institutional projects and activities that leverage our capabilities and increase the regional and national visibility of our programs.

Strategy 3.1.4 Faculty, professional staff, and students will publish research, teaching, and Extension articles in appropriate outlets including refereed journals and non-refereed journals, books, book chapters, and national and regional conference proceedings. Where appropriate, they will also embrace electronic and other new publication media to effectively reach audiences for research, teaching, and outreach materials.

Strategy 3.1.5 Faculty, professional staff, and students will be competitive in acquiring extramural funding at the national level.

Strategy 3.1.6 Faculty, professional staff, and students will be recognized nationally and regionally for excellence.

Strategy 3.1.7 The website maintained by the Department will be continuously updated and enhanced, and will accurately reflect the stature and impact of our programs.

Strategy 3.1.8 The Department's accomplishments and benefits will be effectively communicated at College, University, and Commonwealth levels, as well as at regional and national levels.

Objective 3.2 Continuously improve the quality, effectiveness, and relevance of the Department's research, teaching, and outreach programs.

Strategy 3.2.1 National review processes will be used on a periodic basis to orient the research, teaching, and outreach programs of the Department.

Strategy 3.2.2 A standing Advisory Committee will be created to help ensure the Department is effectively addressing nationally, regionally, and locally significant issues and challenges. The Committee will meet at least once each year to discuss progress toward objectives, and to help revise objectives and actions over time.

Strategy 3.2.3 The resources, infrastructure, facilities, and equipment operated by or made available to Departmental faculty and staff will be improved on a continuing basis.

Strategy 3.2.4 Nationally prominent individuals will be brought to the Department as seminar speakers and guest lecturers – to heighten the awareness of nationally significant issues, and to increase the interaction of faculty, staff, and students with national leaders, agencies, and organizations. (In accordance with UK Administrative Regulations II-1.0-2)

Objective 3.3 Maintain a distinguished faculty committed to the Department's core purpose and values, and dedicated to achieving the Department's mission through high quality research, teaching, and outreach activities.

Strategy 3.3.1 Faculty positions will be filled with the most highly qualified individuals identified through nationwide search processes.

Strategy 3.3.2 We will ensure effective mentoring and professional development of all faculty. Professional development of the faculty will be encouraged and supported through sabbatical and other leave programs, through appropriate consulting activities, by encouraging faculty coursework on and off campus, and by encouraging faculty attendance at professional development conferences, workshops, and seminars. We will seek additional funding to support faculty development, including activities that expose faculty to international issues and opportunities. A handbook will be developed for new faculty hires.

Strategy 3.3.3 On a continuing basis, the values, vision, mission, goals, objectives, and actions in the Department's Strategic Plan will be communicated to faculty; faculty will be appropriately engaged in implementing the Strategic Plan and in updating it over time.

Strategy 3.3.4 Superior faculty achievement and scholarship will be recognized and rewarded.

Strategy 3.3.5 Faculty salary goals will be set that are consistent with maintaining excellence; increased funding will be obtained for endowed chairs and professorships, and other policies and incentives that help retain superior faculty will be developed.

Strategy 3.3.6 Performance evaluation of faculty at the Department level will be an objective, meaningful, and productive process.

Strategy 3.3.7 Following Departmental, College, and University guidelines, a strong cadre of adjunct faculty members will be developed to leverage our capacity in research, teaching, and outreach programs.

Objective 3.4 Improve recruitment, retention, and remuneration of technical, clerical, and professional staff to help ensure the highest quality of support for all programs.

Strategy 3.4.1 Staff positions will be filled with highly qualified individuals identified through competitive search processes.

Strategy 3.4.2 Staff development will be encouraged by providing mentoring where appropriate, and by encouraging participation in appropriate conferences, courses, workshops, seminars, and other professional development activities.

Strategy 3.4.3 On a continuing basis, the values, vision, mission, goals, objectives, and actions in the Department's Strategic Plan will be communicated to staff members; staff will be appropriately involved in implementing the Strategic Plan and in updating it over time.

Strategy 3.4.4 Superior staff achievement and performance will be recognized and rewarded.

Strategy 3.4.5 Performance evaluation of staff at the Department level will be an objective, meaningful, and productive process.

Department of Forestry Goal 3 Metrics

By 2014, the Department of Forestry will demonstrate achievement of Goal 3 as indicated by the following metrics:

Metric 3-1. Hire faculty to fill all vacant positions.

Metric 3-2. Fund faculty salaries at all levels, particularly full professor, to at least 90% of benchmark institutions.

Metric 3-3. Create and increase annually a permanent endowment for the department.

Metric 3-4. Find, use and purchase/access significant forest acreage close to Lexington for Teaching/Research/Extension Activities.

Metric 3-5. Create and update annually a faculty mentoring handbook.

Department of Forestry Goal 4

GOAL 4.

Promote Diversity and Inclusion

The Department is committed to creating and maintaining an environment where diversity is valued and all individuals can achieve their highest potential. Our actions and programs in research, teaching, and extension are based on respect for diversity of thought, culture, and human differences. The Department must be aware of and responsive to the diverse needs of all communities in the Commonwealth.

Objective 4.1 Develop and implement actions that will result in a more diverse student body, faculty, and staff.

Strategy 4.1.1 We will work with the College's Assistant Dean for Diversity, the Office of University Engagement and Multicultural Affairs, and others to develop an action plan for fostering the Department's diversity; we will ensure that the process of developing an action plan involves faculty, staff, students, and external constituents.

Strategy 4.1.2 Our actions and progress in developing a more diverse student body, faculty, and staff will be reported, and recruitment and retention strategies will be modified for best results.

Department of Forestry Goal 4 Metrics

By 2014, the Department of Forestry will demonstrate achievement of Goal 4 as indicated by the following metrics:

Metric 4-1. Maintain or increase undergraduate female enrollment at a minimum of 15%.

Metric 4-2. Maintain and enhance diversity of gender, ethnicity/racial/county of origin among our graduate student population.

Metric 4-3. Maintain and enhance the gender/ethnic diversity among our faculty.

Metric 4-4. Maintain and enhance the gender/ethnic diversity among our departmental staff.

Department of Forestry Goal 5

GOAL 5.

Improve the Quality of Life of Kentuckians through Engagement, Outreach and Service

In recent years, many forest-related changes have occurred that have great potential to impact the quality of life of Kentuckians. These include increased globalization of forest products markets, increasing urban sprawl, forest ownership fragmentation, and very significant forest threats from exotic invasive plants, insects, and pathogens. These and other changes represent significant challenges to environmental and economic quality of life for Kentuckians. For the future of Kentucky's citizens, the research, teaching, extension and other outreach programs of the University of Kentucky's Department of Forestry must actively develop and deliver significant insight and solutions to these important challenges.

Objective 5.1 Ensure that our research, teaching, and outreach programs are highly relevant to important environmental and economic issues involving the forests and related natural resources of Kentucky.

Strategy 5.1.1 The Department of Forestry's standing Advisory Committee will help ensure that our research, teaching, and outreach programs are effectively addressing significant issues and challenges in Kentucky. The Committee will include representatives from key partnering agencies and organizations within the Commonwealth, as specified under Goal 3 (Objective 3.2). The Advisory Committee will meet with the Department's faculty and professional staff at least once each year to discuss progress toward objectives, and to help revise objectives and actions over time. A significant part of the discussion each year will relate to our plans and actions that elevate the quality of life for Kentuckians.

Strategy 5.1.2 In our research, teaching, and outreach programs and activities, we will sustain and enhance productive collaborations focusing on forest-related issues in the Commonwealth.

Objective 5.2 Our Cooperative Extension Service faculty and staff will effectively deliver knowledge, insight, and solutions that address forest-related challenges affecting the quality of life of Kentuckians.

Strategy 5.2.1 As stated under the previous objective, the Department's Advisory Committee will be used to help ensure that our Extension programs are effectively addressing significant issues and challenges in Kentucky.

Strategy 5.2.2 The Department will participate in the Kentucky Agriculture Advisory Council.

Strategy 5.2.3 We will work with the Kentucky Woodland Owners Association, Kentucky Division of Forestry, county agent network, and others to establish county-level forestry organizations; one of the primary purposes of these organizations will be to more effectively disseminate up-to-date knowledge and information affecting Kentuckians and their forest resources.

Strategy 5.2.4 Departmental Extension publications and related information will be made easily available electronically, through our website and other online outlets.

Strategy 5.2.5 We will be innovative in our use of electronic and other media in Extension outreach, as well as in developing new mechanisms for reaching Kentuckians with information relating to forests and related natural resources.

Strategy 5.2.6 We will provide Extension education and training programs and materials for diverse audiences in Kentucky, including: teachers and youth; the general public; woodland owners; county agents; professionals in timber harvesting and wood-based industries; and foresters and natural resource professionals.

Objective 5.3 Our graduates will be well-prepared for dealing effectively with forest-related issues affecting the quality of life of Kentuckians.

Strategy 5.3.1 As stated under Goal 1 (Objective 1.2) and Goal 5 (Objective 5.1), the Department's Advisory Committee will be used to help ensure that our teaching program is preparing UK Forestry graduates for significant issues and challenges affecting the quality of life in Kentucky.

Strategy 5.3.2 Forestry alumni contacts will be established and maintained. Input will be obtained from alumni in Kentucky on job-related responsibilities, and how we may better prepare our graduates for success in dealing with forest-related resource challenges in the Commonwealth.

Strategy 5.3.3 The curriculum of the B.S. degree in forestry will be revised with emphasis on producing B.S. graduates who are 'society-ready,' i.e., capable of dealing effectively with the complex economic, ecological, and social issues involving forest resources today.

Department of Forestry Goal 5 Metrics

By 2014, the Department of Forestry will demonstrate achievement of Goal 5 as indicated by the following metrics:

Metric 5-1. Total sustained direct and indirect contacts over 10,000 per extension faculty, associates, and specialists FTE.

Metric 5-2. Programs that will sustain or increase dollars saved/earned by forest industry (including logging) and woodland owners.

Metric 5-3. Programs that result in sustainable impacts to forests, open lands, and forest resources and the habitats and wildlife that they sustain.

Metric 5-4. On-going production and distribution of education, awareness, and training resources including electronic, video, and hardcopy materials.

Metric 5-5. Educational, awareness, and training programs/presentations developed and conducted for woodland owners, natural resource professionals, forest industry, youth, and the general public.

Department of Forestry Annual Reports

2005-2006 Forestry

2005-2006 Degrees Awarded

		Male	Female	Minority	African American
Master's	3	1	2	0	0
Bachelor's	8	6	2	0	0
Total	11	7	4	0	0

Degrees Awarded Five-Year Trend

	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
Master's	3	7	3	4	3
Bachelor's	20	16	11	14	8
Total	23	23	14	18	11

2005-2006 Enrollment

		Male	Female	Minority	African American
Master's	23	16	7	0	0
Post-Doc	1	1	0	0	0
Bachelor's	43	38	5	0	0
Total	67	55	12	0	0

Enrollment Five-Year Trend

	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
Master's	16	18	14	21	23
Post-doc	2	2	1	3	1
Bachelor's	52	48	53	43	43
Total	70	68	68	67	67

2005-2006 Student Credit Hours Enrolled

		SSI	SSII	Fall	Spring
Total	1198	0	50	709	439

Direct Awards Five-Year Trend

2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
$1,484,941	$1,877,911	$1,975,330	$2,136,231	$1,233,493

Research Faculty With Formula Funded Projects as of 5/06

25% or higher research DOE	6
Active Project	4
Percentage	67%

Faculty/Primary Grant Dollar Ratio

	FT Faculty (head count)	FTE Research Faculty
	14	5.3
Total Primary Grant Dollars	$1,233,493	$1,233,493
Average	$88,107	$232,735

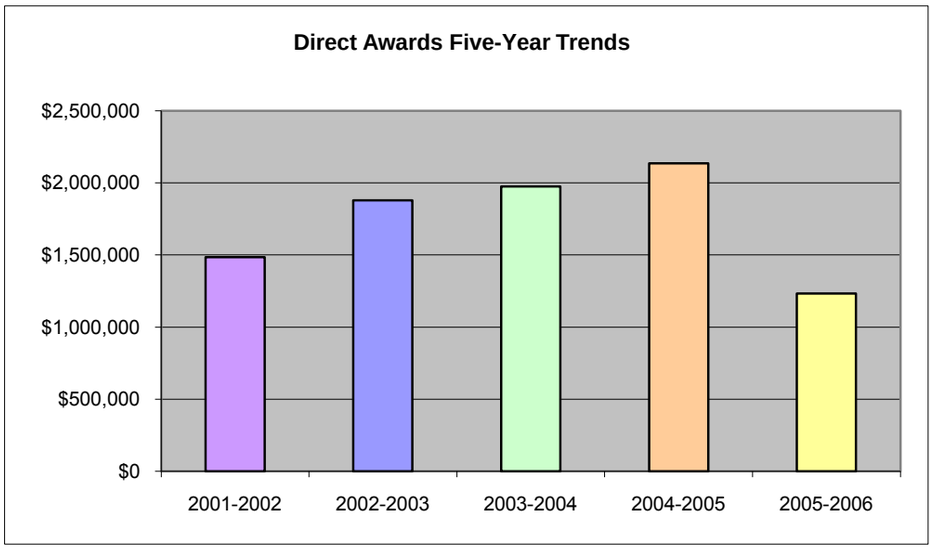
2005-2006 Fiscal Year Grants

Direct Awards	$1,233,493
Federal Competitive	$38,249
% Federally Competitive	3%
Collaborative	$2,397,612

2005 Calendar Year Publications

Books & Chapters	3
Refereed Journal Articles	5
Published Abstracts	0
Other Research	25
Total	33

2005 Calendar Year Patents 0



2006-2007 Forestry

2006-2007 Degrees Awarded

		Male	Female	Minority	African American
Master's	10	8	2	0	0
Bachelor's	13	12	1	0	0
Total	23	20	3	0	0

Degrees Awarded Five-Year Trend

	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Master's	7	3	4	3	10
Bachelor's	16	11	14	8	13
Total	23	14	18	11	23

2006-2007 Enrollment

		Male	Female	Minority	African American
Master's	20	14	6	0	0
Post-Doc	1	1	0	0	0
Bachelor's	40	36	4	0	0
Total	61	51	10	0	0

Enrollment Five-Year Trend

	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Master's	18	14	21	23	20
Post-doc	2	1	3	1	1
Bachelor's	48	53	43	43	40
Total	68	68	67	67	61

2006-2007 Student Credit Hours Enrolled

		SSI	SSII	Fall	Spring
Total	1285	0	104	723	458

Direct Awards Five-Year Trend

2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
$1,877,911	$1,975,330	$2,136,231	$1,233,493	$906,709

Research Faculty With Formula Funded Projects as of 3/07

25% or higher research DOE	6
Active Project	5
Percentage	83%

Faculty/Primary Grant Dollar Ratio

	FT Faculty (head count)	FTE Research Faculty
	14	4.8566
Total Primary Grant Dollars	$906,709	$906,709
Average	$64,765	$186,696

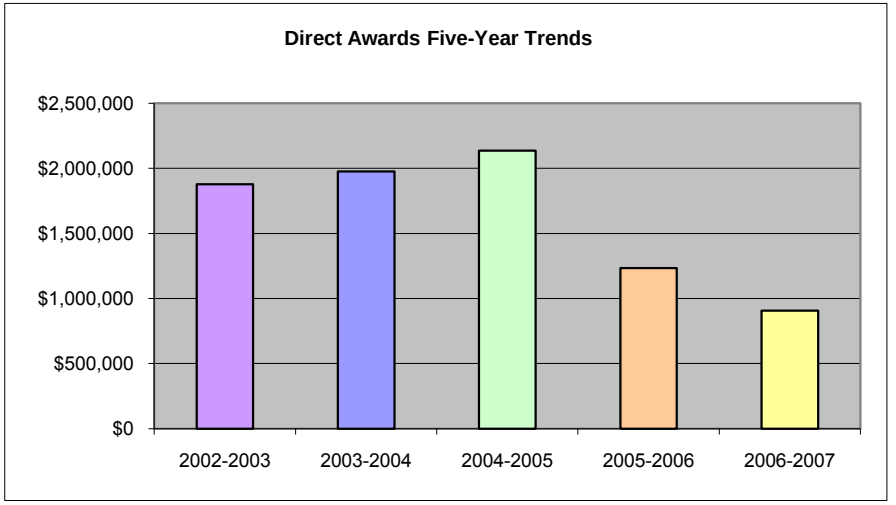
2006-2007 Fiscal Year Grants

Direct Awards	$906,709
Federal Competitive	$40,344
% Federally Competitive	4%
Collaborative	$2,667,606

2006 Calendar Year Publications

Books & Chapters	4
Refereed Journal Articles	13
Other Research	10
Total	27

2006 Calendar Year Patents 0



2007-2008 Forestry

2007-2008 Degrees Awarded

		Male	Female	Minority	African American
Master's	7	4	3	0	0
Bachelor's	8	8	0	0	0
Total	15	12	3	0	0

Degrees Awarded Five-Year Trend

	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
Master's	3	4	3	10	7
Bachelor's	11	14	8	13	8
Total	14	18	11	23	15

2007-2008 Enrollment

		Male	Female	Minority	African American
Master's	19	13	6	0	0
Post-Doc	1	0	1	0	0
Bachelor's	41	38	3	0	0
Total	61	51	10	0	0

Enrollment Five-Year Trend

	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
Master's	14	21	23	20	19
Post-doc	1	3	1	1	1
Bachelor's	53	43	43	40	41
Total	68	67	67	61	61

2007-2008 Student Credit Hours Enrolled

		SSI	SSII	Fall	Spring
Total	1252	*	56	706	490

Direct Awards Five-Year Trend

2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
$1,975,330	$2,136,231	$1,233,493	$906,709	$783,677

Research Faculty With Formula Funded Projects as of 2/08

25% or higher research DOE	8
Active Project	5
Percentage	63%

Faculty/Primary Grant Dollar Ratio

	FT Faculty (head count)	FTE Research Faculty
	15	5.78
Total Primary Grant Dollars	$783,677	$783,677
Average	$52,245	$135,584

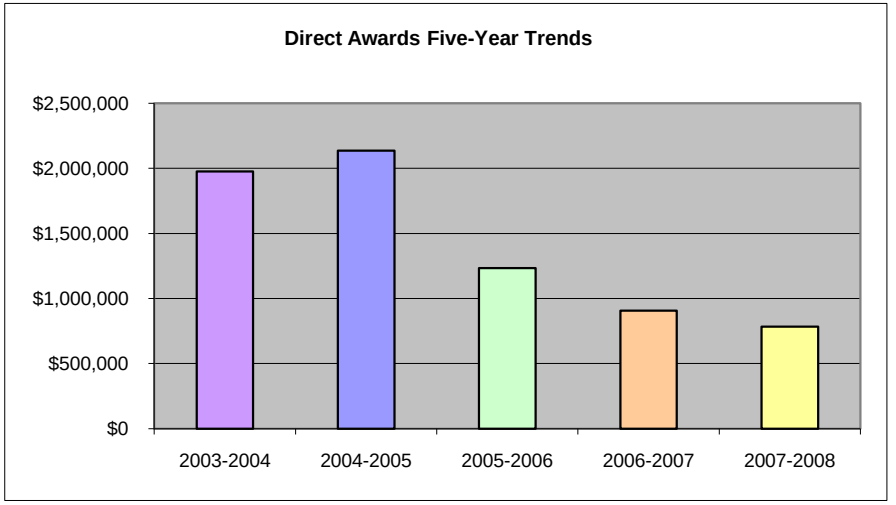
2007-2008 Fiscal Year Grants

Direct Awards	$783,677
Federal Competitive	$0
% Federally Competitive	0%
Collaborative	$3,146,590

2007 Calendar Year Publications

Books & Chapters	4
Refereed Journal Articles	17
Other Research	10
Total	31

2007 Calendar Year Patents 0



* Data for Summer 1 are not available

2008-2009 Forestry

2008-2009 Degrees Awarded

		Male	Female	Minority	African American
Master's	3	1	2	0	0
Bachelor's	15	13	2	0	0
Total	18	14	4	0	0

Degrees Awarded Five-Year Trend

	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Master's	4	3	10	7	3
Bachelor's	14	8	13	8	15
Total	18	11	23	15	18

2008-2009 Enrollment

		Male	Female	Minority	African American
Master's	17	13	4	0	0
Post-Doc	3	1	2	0	0
Bachelor's	52	43	9	1	1
Total	72	57	15	1	1

Enrollment Five-Year Trend

	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Master's	21	23	20	19	17
Post-doc	3	1	1	1	3
Bachelor's	43	43	40	41	52
Total	67	67	61	61	72

2008-2009 Student Credit Hours Enrolled

FOR		SSI	SSII	Fall	Spring
Total	1423	0	85	832	506

Direct Awards Five-Year Trend

2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
$2,136,231	$1,233,493	$906,709	$783,677	$814,098

2008-2009 Primary Grant Dollar/Faculty Ratio

	FT Faculty (head count)	FTE Research Faculty
	14	5.28
Total Primary Grant Dollars	$814,098	$814,098
Average	$58,150	$154,185

Research Faculty With Formula Funded Projects as of 6/09

25% or higher research DOE	6
Active Project	6
Percentage	100%

2008-2009 Fiscal Year Grants

Direct Awards	$814,098
Federal Competitive	$0
% Federally Competitive	0%
Collaborative	$1,298,456

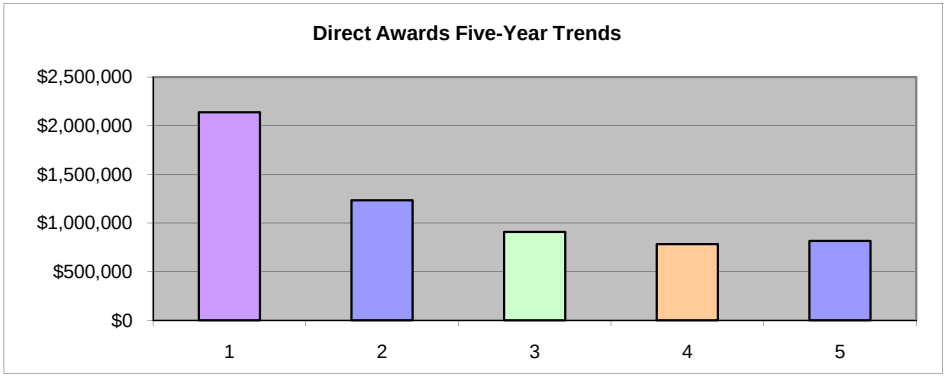
Grant Expenditures Five-Year Trend

2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
$2,031,189	$1,922,238	$1,376,113	$976,134	$715,339

2008 Calendar Year Publications

Books & Chapters	2
Refereed Journal Articles	19
Other Research Articles	10
Total	31

2008 Calendar Year Patents 0



2009-2010 Forestry
CIP Code 030502

2009-2010 Degrees Awarded

		Female	Male	Minority	African American
Bachelor's	6	1	5	0	0
Master's	7	2	5	0	0
Total	13	3	10	0	0

2009-2010 Enrollment (majors)

		Female	Male	Minority	African American
Bachelor's	47	10	37	1	1
Master's	14	2	12	0	0
Post-doc	2	1	1	0	0
Total	63	13	50	1	1

2009-2010 Student Credit Hours Enrolled

		SSI	SSII	Fall	Spring
FOR	1222	0	128	648	446

2009-2010 Primary Grant Dollar/Faculty Ratio

	FT Faculty (head count)	FTE Research Faculty
	13	4.34
Total Primary Grant Dollars	$714,857	$714,857
Average	$54,989	$164,714

2009-2010 Fiscal Year Grants

Direct Awards	$714,857
Federal Competitive	$0
% Federal Competitive	0%
Collaborative	$1,989,557

2009 Calendar Year Publications

Books & Chapters	3
Refereed Journal Articles	14
Other Research Articles	4
Total	21

2009 Calendar Year Patents 0

Degrees Awarded Five-Year Trend

	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Bachelor's	8	13	8	15	6
Master's	3	10	7	3	7
Total	11	23	15	18	13

Enrollment (majors) Five-Year Trend

	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Bachelor's	43	40	41	52	47
Master's	23	20	19	17	14
Post-doc	1	1	1	3	2
Total	67	61	61	72	63

Direct Awards Five-Year Trend

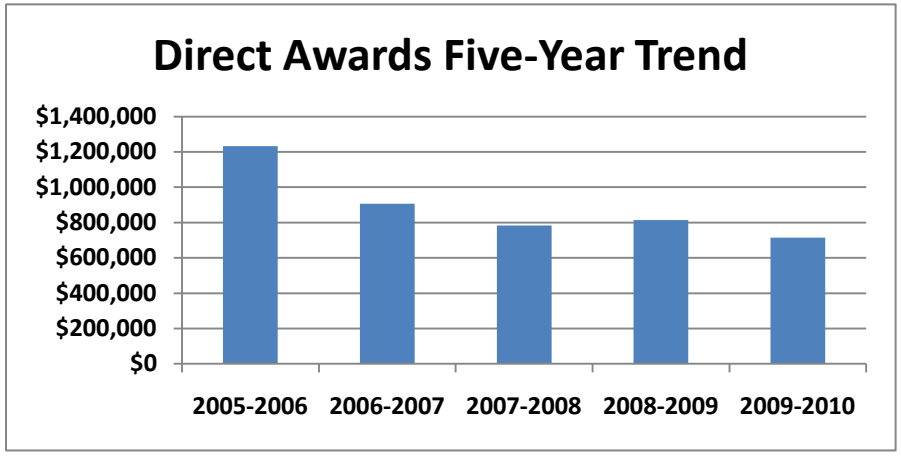
2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
$1,233,493	$906,709	$783,677	$814,098	$714,857

Grant Expenditures Five-Year Trend

2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
$1,922,238	$1,376,113	$976,134	$715,339	$655,423

Research Faculty with Formula Funded Projects as of 8/10

25% or higher research DOE	6
Active Project	5
Percentage	83%



Retention

University of Kentucky
Office of Institutional Research
Report on Performance of First-Year, Full-Time Students
Status of Students Over a 6 Year Reporting Period
By College and Department of Initial Program

College of Initial Program=Agriculture - Department of Initial Program=Forestry

	First Fall Enrollment	First Fall to Spring Retention			First Fall to Second Fall Retention			First Fall to Third Fall Retention			Four Year Degree Completion			Six Year Degree Completion			HS GPA	ACT Comp	First Fall UK GPA	First Year UK GPA
		Dep	Coll	UK	Dep	Coll	UK	Dep	Coll	UK	Dep	Coll	UK	Dep	Coll	UK				
Cohort	N	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	Mean	Mean	Mean	Mean
2000	12	66.7	75.0	91.7	50.0	58.3	66.7	41.7	41.7	58.3	16.7	16.7	25.0	41.7	41.7	58.3	3.55	25.08	2.50	2.64
2001	12	100.0	100.0	100.0	75.0	83.3	83.3	58.3	58.3	66.7	41.7	41.7	41.7	50.0	58.3	66.7	3.55	25.33	2.78	2.70
2002	8	87.5	87.5	87.5	25.0	37.5	37.5	12.5	37.5	37.5	12.5	25.0	25.0	12.5	37.5	37.5	3.49	20.63	2.34	1.77
2003	12	75.0	75.0	75.0	50.0	50.0	66.7	41.7	41.7	58.3	33.3	33.3	41.7	33.3	33.3	50.0	3.72	25.42	2.79	2.63
2004	7	100.0	100.0	100.0	71.4	71.4	71.4	28.6	28.6	71.4	28.6	28.6	57.1				3.50	26.57	2.89	2.68
2005	9	66.7	66.7	77.8	44.4	44.4	55.6	33.3	33.3	44.4	11.1	11.1	11.1				3.38	23.00	1.61	1.47
2006	8	100.0	100.0	100.0	62.5	62.5	62.5	62.5	75.0	75.0							3.30	23.75	1.88	1.88
2007	14	85.7	85.7	92.9	64.3	64.3	78.6	42.9	50.0	78.6							3.22	24.07	2.57	2.48
2008	19	73.7	84.2	89.5	52.6	63.2	73.7										3.12	23.42	2.35	2.11
2009	15	66.7	66.7	73.3													3.48	22.93	2.19	

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Dr. Red Baker, Chair
Department
of Forestry
Curriculum Vita

TERRELL T. "RED" BAKER
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RESIDENCE
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EDUCATION

Ph.D.	Forest Biology	**Auburn University**	December, 1998
M.S.	Forest Resources	**Clemson University**	December, 1994
B.A.	Economics	**University of the South**	May, 1989

CURRENT EMPLOYMENT

University of Kentucky

2010-present Chairman and Professor, James Graham Brown Endowed Professor of Forestry, Department of Forestry, College of Agriculture

PREVIOUS EMPLOYMENT

New Mexico State University

2009-2010 ***Coordinator/Director***, Range Improvement Task Force (RITF)
2007-2009 ***Interim Coordinator/Director***, RITF
2006-2007 ***Professor, Riparian Management Specialist***, Extension Animal Science & Natural Resources Dept., New Mexico State University, 60% Cooperative Extension Service (CES), 40% Agricultural Experiment Station (AES)
2004-2006 ***Associate Professor, Riparian Specialist***, New Mexico State University
1998-2004 ***Assistant Professor, Riparian Specialist***, New Mexico State University

Emphases/Efforts

Administrative:
Coordinator/Director of Range Improvement Task Force, a 30-year old multi-disciplinary applied research and extension team comprised of 8 faculty members (and up to 45 staff) from three CES and AES departments. Responsible for vision, leadership, and management of partial faculty appointments including nearly $680,000 annual hard-dollar budget, not including grants and contracts totaling approximately $630,000 annually. Work closely with agricultural industry, state and federal agency directors, county commissioners, state legislators, and NM Congressional Delegation to bring timely and relevant expert testimony to natural resource conflicts throughout state. Responsibilities required detailed knowledge of public policy, public land history and law, and state and federal land management agency policies and regulations. Appointed to serve on NM Executive Directors' Committee, a team of leaders from the primary state and federal natural resource agencies in the state to coordinate programming and

troubleshoot problems. Serve as periodic Interim Department Head for Extension Animal Sciences and Natural Resources Department.

Extension:
Developed and managed first *Riparian Ecology and Management Program* for CES in NM. Program focuses on teaching fundamentals of riparian ecology and management strategies to improve watershed, riparian, and stream function while maintaining economic integrity of management units (livestock, forestry, wildlife). Much of work focuses on management of uplands and watershed processes. Work closely with County CES faculty, state and federal agencies, industry groups, conservation organizations, and elected officials at all levels. Riparian extension programs are often designed and delivered around research and monitoring projects, closely integrating Extension and Research missions.

Developed and managed first *Forest Ecology and Management Program* for CES in NM. Provided educational services to state and federal forest management entities to develop strategies for restoring southwestern forest structure, reduce wildfire potential, improve understory production, improve watershed hydrological processes, and improve wildlife habitat. Multi-disciplinary approaches are used for educational programs and demonstration projects. Extension programs and Research activities are fully integrated and complementary. Work closely with elected officials, other universities, and state agency personnel to bolster Cooperative Extension Service capability in Forest Management realm.

Research:
Riparian research focuses on vegetation dynamics in riparian habitat, livestock effects and livestock/wildlife interactions on functional processes within southwestern riparian areas, and management strategies to appropriately and sustainably graze southwestern riparian systems. Selected specific projects include: meadow forage utilization in Gila National Forest, livestock grazing effects on montane riparian streams, rangeland response to application of dairy manure, riparian vegetation ID guide, supplementation strategies to manage riparian shrubs, and browsing effects on selected riparian shrubs. Cooperate closely with County CES Faculty and agricultural producers to identify research needs, develop relevant and applied research, and collaboratively conduct research. Research results inform and serve as site-specific riparian educational programs, demonstration projects, and vehicle for collaboration.

Forestry-related research focuses on ecology and management in southwestern National Forests, silvicultural treatments to reduce wildfire potential and improve forest understory production and watershed processes, and mechanical harvesting effects on forest soils, runoff, and erosion. Selected specific projects include: wildland fire response to silvicultural treatments in southwestern forests, silvicultural treatment effectiveness in reducing wildland fire danger at the Wildland-Urban Interface, effects of silvicultural treatments on ungulate foraging relationships, soil disturbance from mechanical harvesting and effects on runoff and erosion, and multiple combined silvicultural treatments to reduce wildland fire danger and improve forest condition. Cooperators include state and federal agencies, producer groups, County Extension faculty and on-campus faculty. Work closely with Rocky Mountain Research Station (Flagstaff, Arizona). Work closely with agency personnel to conduct necessary NEPA, install research treatments, and transfer knowledge to be put into practice.

Courses:
Range Science 550 (Masters Special Topics), Range Science 650 (Ph.D. Special Topics), Range Science 599 (Masters Thesis), Range Science 600 (Doctoral Research), Range Science 700 (Doctoral Dissertation). Annual Riparian Ecology and Management Field Laboratory for Range Science 440. Annual 2-day Introduction to Southwestern Natural Resources Ecology and

Management lab for Philmont Scout Ranch Summer Staff. Courses taught as needed, guest lectures/labs frequently delivered upon request.

PREVIOUS RELATED POSITIONS

1994-1998 ***Graduate Research Assistant***, School of Forestry, Auburn University
Advisor: Dr. B. Graeme Lockaby
Dissertation: *Fine root dynamics on a forested floodplain and litter decomposition in four forested floodplain communities in the southern United States.*

- Designed and executed regional floodplain decomposition and fine root study
- Assisted with other floodplain field research throughout southeastern US
- Member of field research team in Tapajos National Forest in the Brazilian Amazon
- Developed graduate seminar and served as part-time teaching assistant

1992-1994 ***Research Assistant***, Department of Forest Resources, Clemson University
Advisor: Dr. David Van Lear
Thesis: *The influence of Rhododendron maximum on species richness in the riparian ecosystem of Wine Spring Creek*.

- Acquired funding through Coweeta Hydrological Lab for Masters research
- Designed and executed southern Appalachian riparian study examining *Rhododendron maximum* effects on riparian vegetation
- Provided field support for numerous other studies

1991-1992 ***Programs Manager***, National Wilderness Institute, Washington, DC

- Developed community, corporate, and membership programs for nonprofit think tank.
- Drafted fundraising, project proposals, wrote column for quarterly magazine (NWI *Resource*), and drafted speeches.
- Supervised general office management, membership database, internship programs, and assisted with government relations on Capitol Hill.

1990 ***Volunteer***, The Georgia Chapter of The Nature Conservancy

- Hiked entire 2,162 miles of Appalachian Trail
- Raised approximately $6,000 for TNC Georgia Chapter

SUMMARY OF SCHOLARLY ACTIVITIES

Principal Investigator/Co-PI on grants or contracts totaling approx. $4.44 million from state, federal, county, and private sources.
Author/co-author on 27 peer-reviewed publications (*additional 10 in review or preparation*).
Author/co-author on 10 Range Improvement Task Force/Agricultural Experiment Station Reports.
Author/co-author on 42 Extension, outreach publications, or expert testimony.
Author/co-author on 70 papers, presentations, abstracts, and posters at professional conferences.
Author/co-author on 30 popular press articles (newspaper, magazine, TV/Radio, press releases).
Presenter/co-presenter to local groups/organizations or requested to provide expert testimony on more than 560 occasions.
Service on 35 graduate committees (23 M.S. and 12 Ph.D.) – Chaired 5 M.S. and 3 Ph.D.

Honors:

NM Extension Specialists' Association Distinguished Service Award (2008)
NM Section SRM Rangeland Manager of the Year (2006)
NMSU CAHE Extension Early Career Award, Epsilon Sigma Phi, (2005)
Academic Keys Who's Who in Agricultural Higher Education (2003)
Gamma Sigma Delta, Honor Society of Agriculture (2000)
USDA Certificate of Appreciation, Iatt Creek Ecosystem Research Project (2000)
Xi Sigma Pi, Forestry Honor Society (1993)
Order of Gownsmen, University of the South Academic Honor Society (1989)

SELECTED SERVICE

National

Society for Range Management (1998-present)
Advisory Council (2008-present)
Watershed and Riparian Committee (2001-present)
NM Section President (2009)

Other Professional Organization Affiliations: Society of American Foresters (1992-present), New Mexico Riparian Council (1998 - 2001), New Mexico Watershed Coalition (1999-2000), New Mexico Extension Specialists Association (1998 - present), Ecological Society of America (1997 - 1999), Society of Wetland Scientists (1997 - 1999).

Journal Reviewer: *Rangeland Ecology and Management, Southeastern Naturalist, Journal of American Water Resources Association, Plant and Soil, Biotropica, Journal of Environmental Quality, Soil Science Society of America Journal, Journal of Range Management, Hydrobiologia, Soil Science Society of America Journal.*

State

New Mexico Natural Resource Agency Executive Directors' Committee (2009-present)
4-H Wildlife Habitat Evaluation Program State Planning Committee (2002, 2009)
New Mexico Section of the Society of Range Management (1998-present)
President (2009)
Board of Directors (2006-2008)
Chair, Youth Activities Committee; Co-Founder, High School Youth Forum (2000-2006)
Board of Directors, NM Forest and Watershed Restoration Inst. at NM Highlands Univ. (2007-present)
Advisory Board, NM Forest and Watershed Coordinating Group, NM State Forestry (2007-present)
Member, New Mexico State Technical Committee (1998-2008)

Technical Reviewer: *NM Water Resources Research Institute, NRCS Geographical Priority Area Proposals, NMSU Agricultural Experiment Station, Middle Rio Grande Endangered Species Collaborative Research Program.*

University/College

Faculty Senator (2007-2008)
University Affairs Committee
Cooperative Extension Service Director's Advisory Board (2005-2006, 2007-2010)
Chair, NMSU College of Agriculture & Home Economics All College Conference (2003)
Chair, Joe Skeen Institute for Rangeland Restoration Conference (2006)
NMSU Extension Specialists' Association
President – (2005-2006)
Treasurer – (1998-2000)
NMSU Performance Evaluation Review Committee (2005-2006)
Chair, NMSU College of Agricultural, Consumer, & Environmental Sciences All College Conference Planning Committee 2003, Co-Chair 2002.

New Employee Orientation and Coaching Program (2000-present)
NMSU CAHE Ad Hoc Publications Committee (2001-2002)
Instructor, New Mexico 4-H Sportfishing Program (2000-2001)
Instructor, New Mexico Shooting Sports (Archery) (2000-2003)
NM Ag in the Classroom Organizing Committee (2000)
NMSU Animal & Range Science Department Graduate Faculty Committee (2001-present)
Advisor, NMSU Animal and Range Sciences Department Range Club (1999-2002)
Student Senator, Auburn University Graduate Student Organization (1995-1997)
Auburn Univ. School of Forestry Strategic Planning Committee (1995-1997)
Auburn Univ. School of Forestry Graduate Policy & Procedures Committee (1995-1997)
Search Committees:

1. Chair, RITF Non-Tenure Track, College-Rank Extension Spec. for Forest & Fire-Adapted Systems (2009)
2. Chair, Research Specialist I, RITF (2009)
3. Chair, Southwest District Cooperative Extension Service Department Head (2004)
4. Gerald Thomas Distinguished Chair (2004)
5. Chair, Research Specialist I, RITF and Ext. Animal Resources Department (2003)
6. Chair, Research Specialist I, RITF and Ext. Animal Resources Department (2002)
7. Chair, Research Specialist I, RITF and Ext. Animal Resources Department (2001)
8. NMSU Agricultural Communications Editor (2001)
9. Assistant Professor of Watershed Studies (2000-2001)
10. Extension Natural Resource Specialist (2000)

Local/Community
Board of Directors, Tombaugh Elementary School Afterschool Program (2007-present)
Head Coach, Vipers U8-U10 Las Cruces Soccer Team (2006-present)
Treasurer, Auburn Chapter Ducks Unlimited (1997-1998)

PEER-REVIEWED PUBLICATIONS

- 27 total

1) Cram, D.S. and T.T. Baker. 2011. Pinon-juniper management regulations and practices in New Mexico: A review of potential economic and ecological effects. *Ecological Restoration* Invited Paper, In Review.

2) Fernald, A.G., J. Gallegos, T.T. Baker, and D. VanLeeuwen. Evaluation of litter hydrology in ponderosa pine and mixed conifer stands of northern New Mexico. *Journal of Soil and Water Conservation* In Preparation.

3) Lujan, A., T.T. Baker, S.A. Utsumi, R.E. Estell, A.F. Cibils, S.L. Ivey, J.C. Boren and S.T. Smallidge. Use of supplements to manipulate use of coyote willow (*Salix exigua* Nutt.*)* by sheep. *Sheep and Goat Research Journal* 25:32-38.

4) Utsumi, S.A., A.F. Cibils, R.E. Estell, T.T. Baker, and J.H. Walker. One-seed juniper sapling use by goats in relation to stocking density and mixed grazing with sheep. *Rangeland Ecology and Management* 63(3)273-286.

5) Cram, D.S., T.T. Baker, and C.B. Edminster. Treated vs. untreated Southwest forest response following wildland fire. *Forest Ecology and Management* In Press.

6) Mason, G.J., T.T. Baker, D.S. Cram, J.C. Boren, A.G. Fernald, and D.M. VanLeeuwen. 2009. Mechanical fuel treatment effects on vegetation in a New Mexico dry mixed conifer forest. *Forest Ecology and Management* 257(3):868-875.

7) Helmus, A.M., A.G. Fernald, D.M. VanLeeuwen, L.B. Abbott, A.L. Ulery, and T.T. Baker. 2009. Surface water seepage effects on shallow ground-water quality along the Rio Grande in northern New Mexico. *Journal of American Water Resources Association* 45(2):407-418.

8) Cabrera, V.E., L.J. Stavast, T.T. Baker, M.K. Wood, D.S. Cram, R.P. Flynn, and A.L. Ulery. 2009. Soil and runoff response to dairy manure application on New Mexico rangeland. *Agriculture, Ecosystems, Environment* 131(3-4) pp 255-262.

9) Lucas, R.W., T.T. Baker, M. K. Wood, C.D. Allison, and D.M. VanLeeuwen. 2009. Response of streambanks to different intensities and seasons of cattle grazing in two montane riparian areas in western New Mexico. *NM Water Resources Research Institute* Miscellaneous Report No. M29.

10) Wampler, C.R., J.K. Frey, D.M. VanLeeuwen, J.C. Boren, and T.T. Baker. 2008. Mammals in mechanically thinned and non-thinned mixed-coniferous forest in the Sacramento Mountains, New Mexico. *The Southwestern Naturalist* 53(4):431-443.

11) Cabrera, V.E., C.P. Mathis, R.E. Kirksey, and T.T. Baker. 2008. Case Study: Development of New Mexico Dairy Manure, a Seasonal Prediction Model for Manure Excretion by Dairy Cattle. *Professional Animal Scientist* 24:175-183.

12) Mason, G.J., T.T. Baker, D.S. Cram, J.C. Boren, A.G. Fernald, and D.M. VanLeeuwen. 2007. Mechanical fuel treatment effects on fuel loads and indices of crown fire potential in a south central New Mexico dry mixed conifer forest. *Forest Ecology and Management* 251(3):195-204.

13) Ortiz, M., C. Brown, A.G. Fernald, T.T. Baker, R. Creel, and S. Guldan. 2007. Land Use Change Impacts on *Acequia* Water Resources in Northern New Mexico. *Journal of Contemporary Water Research and Education* (137):47-54.

14) Fernald, A.G., T.T. Baker, and S. Guldan. Hydrologic, Riparian, and Agroecosystem Functions of Traditional *Acequia* Irrigation Systems. 2007. *Journal of Sustainable Agriculture* 30(2):147-171.

15) Allison, C.D., J.L. Holechek, T.T. Baker, J.C. Boren, N.K. Ashcroft, and J.M. Fowler. 2007. Rapid assessment methodology for proactive rangeland management. *Rangelands* 29(2):45-50.

16) Cram, D.S., T.T. Baker, A.G. Fernald, C.D. Allison, A. Madrid, and R. Rummer. 2007. Mechanical thinning impacts on runoff, infiltration, and sediment yield following fuel reduction treatments in a southwestern dry mixed-conifer forest. *Journal of Soil and Water Conservation* 62(5):359-366.

17) Cram, D.S., T.T. Baker, A.G. Fernald, C.D. Allison, A. Madrid, and R. Rummer. 2007. Reducing the impacts of mechanical thinning in a southwestern forest. Technical Transfer Briefing, *Journal of Soil and Water Conservation* 62(5):121A.

18) Madrid, A., A.G. Fernald, T.T. Baker, and D.M. VanLeuweeen. 2006. Evaluation of silvicultural treatment effects on infiltration, runoff, sediment yield, and soil moisture in a mixed conifer New Mexico forest. *Journal of Soil and Water Conservation* 61(3):159-168.

19) Cram, D.S., T.T. Baker, and J.C. Boren. 2006. Wildland Fire Effects in Silviculturally Treated vs. Untreated Forest Stands of New Mexico and Arizona. *USDA Forest Service Rocky Mountain Research Station Research Paper* RMRS-RP-55.

20) Holechek, J.L., T.T. Baker, J.C. Boren, and D. Galt. 2006. Grazing impacts on rangeland vegetation: What we have learned. *Rangelands* 28(1):7-13.

21) Stavast, L.J., T.T. Baker, A.L. Ulery, R.P. Flynn, M.K. Wood, and D.S. Cram. 2005. New Mexico blue grama rangeland response to dairy manure application. *Rangeland Ecology and Management 58:423-429*.

22) Lucas, R.W., T.T. Baker, M.K. Wood, C.D. Allison, and D.M. VanLeeuwen. 2004. Riparian vegetation response to different intensities and seasons of cattle grazing in western New Mexico. *Journal of Range Management* 57:466-474.

23) Boren, J.C., T.T. Baker, D. Cowley, B.J. Hurd, S. Eaton, and G.J. Mason. 2004. Terrestrial vegetation inventory of water delivery systems between San Acacia Diversion and the Bosque del Apache National Wildlife Refuge. *New Mexico Water Resources Research Institute* Technical Completion Report 333.

24) Baker, T.T., B.G. Lockaby, W.H. Conner, C.E. Meier, J.A. Stanturf, and M.K. Burke. 2001. Leaf litter decomposition and nutrient dynamics in four southern forested floodplain communities. *Soil Science Society of America Journal* 65(4):1334-1347.

25) Baker, T.T., W.H. Conner, B.G. Lockaby, J.A. Stanturf, and M.K. Burke. 2001. Fine root productivity and dynamics on a forested floodplain in South Carolina. *Soil Science Society of America Journal* 65(2): 545-556.

26) Baker, T.T. and D.H. Van Lear. 1998. Relations between density of Rhododendron thickets and diversity of riparian forests. *Forest Ecology and Management* 109: 21-32.

27) Lockaby, B.G., R.G. Clawson, and T.T. Baker. 1997. Response of three hardwood species to irrigation and fertilization on an upland site. *Southern Journal of Applied Forestry* 21(3): 123-129.

RANGE IMPROVEMENT TASK FORCE & AGRICULTURAL EXPERIMENT STATION REPORTS (peer-reviewed)

- 10 total

1) Ashcroft, N.K., C.P. Mathis, S.T. Smallidge, J.M. Fowler, and T.T. Baker. 2010. Re-establishment of the Mexican grey wolf: the economics of depredation. *Range Improvement Task Force* Report 80. New Mexico State University. Las Cruces, NM. In Review.

2) Gomez, J., S.T. Smallidge, N.K. Ashcroft, and T.T. Baker. 2008. Data entry, organization, and analysis for Rapid Assessment Methodology. New Mexico State University *Range Improvement Task Force* Report 76.

3) Cabrera, V.E., C.P. Mathis, R.E. Kirksey, and T.T. Baker. 2007. NM-Manure, a Seasonal Prediction Model for Manure Excretion by Dairy Cattle. New Mexico State University *Agricultural Experiment Station* Research Bulletin 797.

4) Boren, J.C. and T.T. Baker. 2007. Challenges and opportunities for developing prescribed grazing guidelines to enhance habitat for endangered species in the Southwest. Pages 47-59 *In* Proceedings of the Symposium presented at the 59th Annual Society for Range Management Meeting, Vancouver, BC. Montana State University Press.

5) Baker, T.T. and J.C. Boren. 2007. Livestock grazing prescriptions to enhance riparian wildlife habitat? Pages 30-46 *In* Proceedings of the Symposium presented at the 59th Annual Society for Range Management Meeting, Vancouver, BC. Montana State University Press.

6) Allison, C.D., J. Holechek, J.C. Boren, T.T. Baker, J.M. Fowler, and N.K. Ashcroft. 2004. RAM: Rapid Assessment Methodology for Assessing Range Condition. New Mexico State University Cooperative Extension Service *Range Improvement Task Force* Report 58.

7) Holechek, J., T.T. Baker, and J.C. Boren. 2004. Controlled Grazing Versus Grazing Exclusion Impacts on Rangeland Ecosystems: What We Have Learned. New Mexico State University *Range Improvement Task Force* Report 57.

8) Allison, C.A., T.T. Baker, J.C. Boren, B.D. Wright, and A.G. Fernald. 2001. Range, riparian, water quality, and wildlife monitoring for New Mexico ranchers. New Mexico State University Cooperative Extension Service *Range Improvement Task Force* Report 53.

9) Baker, T.T. and J.C. Boren. 2000. Livestock management in southwestern riparian areas dominated by woody vegetation: A summary and extrapolation of the literature. New Mexico State University Cooperative Extension Service *Range Improvement Task Force* Report 50.

10) Allison, C.A., J.C. Boren, and T.T. Baker. 2000. Herbaceous utilization by elk in selected mountain meadows in the Gila National Forest. New Mexico State University Cooperative Extension Service, *Range Improvement Task Force* Report 49.

PROFESSIONAL ORGANIZATION CONFERENCE PRESENTATIONS, ABSTRACTS, AND PROCEEDINGS

- ❖ 70 total

1) Thorpe, J., A.F. Cibils, D. Bailey, and T.T. Baker, Organizers. 2009. Tales of tradition and innovation on the NM Range: Producers' Forum. Symposium of Society for Range Management 62nd Annual Meeting. Albuquerque, NM. February 11, 2009.

2) Cram, D.S., T.T. Baker, and C.B. Edminster. 2009. Treated vs. Untreated southwest forest response following wildland fire. Society for Range Management 62nd Annual Meeting. Albuquerque, NM. February 8-12, 2009.

3) Cram, D.S., T.T. Baker, and C.B. Edminster. 2009. Treated vs. Untreated southwest forest response following wildland fire. Tall Timbers Research Station 24th Fire Ecology Conference: Future of Prescribed Fire, Public Awareness, Health, and Safety. Tallahassee, Florida. January 11-15, 2009.

4) Baker, T.T. Organizer. 2009. Meeting Energy Challenges for the New Century: Implications for Range Management. New Mexico Section Society for Range Management Annual Winter Meeting. Albuquerque, NM. January 8-9, 2009.

5) Baker, T.T. Organizer. 2008. Philmont Scout Ranch. Managing rangelands, livestock, and boy scouts since 1938. New Mexico Section Society for Range Management Summer Tour. Cimarron, NM. July 24-25, 2008.

6) Baker, T.T., C.P. Mathis, J.C. Boren, S.T. Smallidge, G. Hawkes, A.G. Fernald, C.D. Allison, and J.M. Fowler. 2008. New Mexico Range Improvement Task Force: An Integrated Team. J. Anim. Sci. 86 (Suppl. 2): Laramie, WY. June 23-27, 2008.

7) Cram, D.S., T.T. Baker, G.J. Mason. 2008. Evaluation of silvicultural treatment effects on infiltration, runoff, and sediment yield in a south central New Mexico dry mixed conifer forest. Mixed Conifer/Aspen Ecology and Management Meeting, Santa Fe, NM. February 20, 2008.

8) Mason, G.J., T.T. Baker, J.C. Boren, D.M. VanLeeuwen, A.G. Fernald, and D.S. Cram. 2008. Crown fire potential and vegetative response under different frequencies and intensities of silvicultural treatments in mixed conifer stands in the Lincoln National Forest, New Mexico. Mixed Conifer/Aspen Ecology and Management Meeting, Santa Fe, NM. February 20, 2008.

9) Mason, G.J., T.T. Baker, J.C. Boren, D.M. VanLeeuwen, A.G. Fernald, D.S. Cram, and C.B. Edminster. 2007. Vegetative response of dry mixed-conifer stands to silvicultural treatment. Joe Skeen Institute for Rangeland Restoration Annual Workshop. Helena, MT. August 21-24, 2007.

10) Mason, G.J., T.T. Baker, J.C. Boren, D.M. VanLeeuwen, A.G. Fernald, D.S. Cram, and C.B. Edminster. 2007. Fuel loads and crown fire potential in silviculturally treated dry mixed conifer forests. Joe Skeen Institute for Rangeland Restoration Annual Workshop. Helena, MT. August 21-24, 2007.

11) Cram, D.S., T.T. Baker, and C.B. Edminster. 2007. Mixed silvicultural treatments on the Sacramento Ranger District, Cloudcroft, New Mexico. Joe Skeen Institute for Rangeland Restoration Annual Workshop. Helena, MT. August 21-24, 2007.

12) Madrid, A., A.G. Fernald, and T.T. Baker. 2007. Evaluation of silvicultural treatment effects on infiltration, runoff, sediment yield, and soil moisture in a mixed conifer New Mexico forest. Joe Skeen Institute for Rangeland Restoration Annual Workshop. Helena, MT. August 21-24, 2007.

13) Lujan, A., T.T. Baker, A.F. Cibils, S.A. Utsumi, S. Ivey, R. Estell, and M. Peterson. 2007. Manipulating sheep browse on willow. Joe Skeen Institute for Rangeland Restoration Annual Workshop. Helena, MT. August 21-24, 2007.

14) Ashcroft, N.K.., T.T. Baker, A.G. Fernald, J.C. Boren, A.F. Cibils, D.M. VanLeeuwen, and J.M. Fowler. 2007. Biological Landscape Enhancement in Natural Resource Development (BLEND). Joe Skeen Institute for Rangeland Restoration Annual Workshop. Helena, MT. August 21-24, 2007.

15) Hurd B.J., J.C. Boren, T.T. Baker, D.C. Cram, and G.J. Mason. 2007. Effects of grazing, timber harvest, and wildfire on big game forage quantity and quality. Joe Skeen Institute for Rangeland Restoration Annual Workshop. Helena, MT. August 21-24, 2007.

16) Wampler, C.R., J.K. Frey, J.C. Boren, T.T. Baker. 2007. Effects of silvicultural treatments on the small mammal community in a southwest coniferous forest. Joe Skeen Institute for Rangeland Restoration Annual Workshop. Helena, MT. August 21-24, 2007.

17) Cram, D.S., T.T. Baker, A.G. Fernald, C.D. Allison, A. Madrid, R. Rummer. 2007. Mechanical thinning impacts on runoff, infiltration, and sediment yield following fuel reduction treatments in a southwestern dry mixed-conifer forest. Soil and Water Conservation Society Annual Meeting. Tampa, FL. July 21- 26, 2007.

18) Cram, D.S., G.J. Mason, and T.T. Baker. 2007. Upper Watershed Management: Forests, Fire, and Water. NM Section of the Society for Range Management. Albuquerque, NM. January 10-11, 2007.

19) Ortiz, M., C. Brown, R. Creel, A.G. Fernald, S. Guldan, and T.T. Baker. 2006. The impacts of land use change on water resources, riparian vegetation, and traditional acequia culture in north-central New Mexico. New Mexico Water Research Symposium**,** New Mexico Tech, Socorro, New Mexico. August 15, 2006.

20) Ortiz, M., C. Brown, A.G. Fernald, R. Creel, T.T. Baker, and S. Guldan. 2006. The impacts of land use change on water resources, riparian vegetation, and traditional acequia culture in north-central New Mexico. Annual Meeting of the Universities Council on Water Resources, Santa Fe, NM. July 19, 2007.

21) Ortiz, M., C. Brown, R. Creel, A.G. Fernald, S. Guldan, and T.T. Baker. 2006. The impacts of land use change on water resources, riparian vegetation, and traditional acequia culture in north-central New Mexico. ESRI Annual Users Conference, San Diego, CA, July 7-11, 2006.

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COOPERATIVE EXTENSION SERVICE & OUTREACH PUBLICATIONS, INCLUDING WRITTEN EXPERT TESTIMONY

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1) Smallidge, S.T. and T.T. Baker. Review of misuse of animal unit equivalencies and conversion factors in USFS management of federal grazing permits. March 2009.

2) Baker, T.T. Review of Senate Joint Memorial 40/Off-Road Vehicle proposal to create new legislation guiding management and regulation of off-road vehicles. November 2008.

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1) Baker, T.T. 2011. Letter from the Chair. Department of Forestry Fall Newsletter, University of Kentucky. January 2011.

2) Baker, T.T. 2010. Letter from the Chair. Kentucky Woodlands Magazine. November 2010.

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EXTERNAL FUNDING

- Cumulative Funding $4.44 million

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Baker, T.T. 2010. Multiple-use issues within Otero County related to the Lincoln National Forest. ($25,000).

Fernald, A., S. Guldan, and T.T. Baker. 2010. Efficient irrigation for water conservation. AES and CES through CSREES and TAMU. ($50,000).

Baker, T.T., N. Ashcroft, and S.T. Smallidge. 2009. Rangeland Improvement: Analyzing the cumulative impacts of federal land policy and management. ($200,640).

Baker, T.T. 2009. Multiple-use issues within Otero County related to the Lincoln National Forest. ($25,000).

Smallidge, S.T., T.T. Baker, and C.D. Allison. 2008. Monitoring the effects of salt cedar control on the Canadian River Riparian Restoration Project. ($42,000).

Schneberger, M., D.S. Cram, and T.T. Baker. 2008-2013. Eastern Gila Forest and Community Restoration Project. USDA Region 3 CFRP Grants. ($60,000 for 3 years).

Baker, T.T., N. Ashcroft, and S.T. Smallidge. 2008. Multiple-use issues within Otero County related to the Lincoln National Forest. ($25,000).

Baker, T.T. 2008. Analyzing the cumulative impacts of federal land policy and management. ($225,000).

Baker, T.T., and J.M. Fowler. 2008. New Mexico State University Vegetation Monitoring Team. 2008 New Mexico State Legislature. ($99,300).

Fowler, J. and T.T. Baker, T.T. 2007. Analyzing the cumulative impacts of federal land policy and management. ($225,000).

Baker, T.T. and J.C. Boren. 2007-2009. Inventory of southwestern national forest wildfires: An assessment of silviculturally treated versus untreated wildland fires. USDA Rocky Mountain Experiment Station Grant ($224,504).

Boren, J.C. and T.T. Baker. 2007-2009. Effects of silvicultural treatments for fuels management and forest restoration on habitat and wildlife responses on southwestern national forests. USDA Rocky Mountain Experiment Station Grant $200,000).

Allison, C.D., T.T. Baker, S.T. Smallidge. 2007. PSA between the Ute Creek Watershed Restoration & Management Project and NMSU. September 18, 2006 through June 30, 2007. ($21,184).

Allison, C.D., T.T. Baker, S.T. Smallidge. 2006-2007. Monitoring the effects of salt cedar control on the Canadian River. Canadian River Riparian Restoration Project. September 18, 2006 through June 30, 2007. ($80,500).

Baker, T.T., D.S. Cram, G.J. Mason, and J.C. Boren. 2006. Wildfire and fuels management effects in treated stands on southwestern national forests 2007-2008. Amendment submitted to Rocky Mountain Research Station. May 2006. $90,833.

Allison, C.D, T.T. Baker, S.T. Smallidge. 2006-2007. Ute Creek Riparian Restoration Monitoring Project. ($19,800).

Baker, T.T. 2007. Riparian Vegetation Restoration along South-Central New Mexico Montane Stream Systems. USDA MacIntire-Stennis Program ($150,000 – 30,000 per year for 5 years).

Allison, C.D, T.T. Baker, S.T. Smallidge. 2005-2006. Canadian River Riparian Restoration Monitoring Project. ($80,500).

Baker, T.T., J.C. Boren, D.S. Cram, J.M. Fowler, and C.D. Allison. 2006-2008. New Mexico State University's Joe Skeen Institute for Forest and Rangeland Management Research – Forest/Rangeland Restoration Initiative. Joe Skeen Institute for Rangeland Restoration. ($110,546).

Brown, C., A.G. Fernald, T.T. Baker, R. Creel, and M. Ortiz. 2005-2006. The Impacts of Land Use Change on Water Resources and Traditional *Acequia* Culture in North Central New Mexico. NMSU Research Mini-Grant Program Water Science and Education Center of the Natural Resources Cluster. ($25,000).

Baker, T.T., J.C. Boren, D.S. Cram, and B.J. Hurd. 2006-2007. Inventory of southwestern national forest wildfires: An assessment of silviculturally treated versus untreated wildland fires. USDA Rocky Mountain Experiment Station Grant $105,696).

Boren, J.C., T.T. Baker, B.J. Hurd, and D.S. Cram. 2004 – 2006. Effects of silvicultural treatments for fuels management and forest restoration on habitat and wildlife responses on southwestern national forests. USDA Rocky Mountain Experiment Station Grant ($169,610 for two years).

Baker, T.T., D.S. Cram, A.G. Fernald, and C. Ochoa. 2004-2005. Mechanical Harvesting Impacts on Site Disturbance, Ground Cover and Runoff/Erosion. USDA Forest Service Southern Research Station Agreement. ($26,000).

Baker, T.T., J.C. Boren, D.S. Cram, J.M. Fowler, and C.D. Allison. 2005-2007. New Mexico State University's Joe Skeen Institute for Forest and Rangeland Management Research – Forest/Rangeland Restoration Initiative. Joe Skeen Institute for Rangeland Restoration. ($136,477).

Baker, T.T., J.C. Boren, D.S. Cram, J.M. Fowler, and C.D. Allison. 2004-2006. New Mexico State University's Joe Skeen Institute for Forest and Rangeland Management Research – Forest/Rangeland Restoration Initiative. Joe Skeen Institute for Rangeland Restoration. ($115,465).

Boren, J.C., Baker, T.T., D.S. Cram, J.C. Boren, J.M. Fowler, and C.D. Allison. 2004-2006. New Mexico State University Joe Skeen Institute for Forest and Range Management Research and Education: Wildlife Management and Ecology. ($115,464 total).

Baker, T.T., J.C. Boren, D.S. Cram, J.M. Fowler, and C.D. Allison. 2003-2005. New Mexico State University's Joe Skeen Institute for Forest and Rangeland Management Research – Forest/Rangeland Restoration Initiative. Joe Skeen Institute for Rangeland Restoration. ($139,121).

Boren, J.C., T.T. Baker, D.S. Cram, J.M. Fowler, and C.D. Allison. 2003-2005. New Mexico State University Joe Skeen Institute for Forest and Range Management Research and Education: Wildlife Management and Ecology. ($145,102).

Baker, T.T., J.C. Boren, D.S. Cram, and B.J. Hurd. 2004-2006. Inventory of southwestern national forest wildfires: An assessment of silviculturally treated versus untreated wildland fires. USDA Rocky Mountain Experiment Station Grant ($102,702).

Boren, J.C. and T.T. Baker, B.J. Hurd, and D.S. Cram. 2004. Foraging relationships between elk, mule deer and cattle on salvage-logged sites in southwestern national forests: Research joint venture amendment for Phase Four. USDA Rocky Mountain Experiment Station Grant ($83,488 total).

Baker, T.T., J.C. Boren, D.S. Cram, and B.J. Hurd. 2003. Inventory of southwestern national forest wildfires: An assessment of silviculturally treated versus untreated wildland fires. USDA Rocky Mountain Experiment Station Grant ($84,799).

Boren, J.C., T.T. Baker, B.J. Hurd, J.M. Fowler. 2002-2003. Foraging relationships between elk, mule deer and cattle on southwestern national forests: Research joint venture amendment for phase three. USDA Forest Service Rocky Mountain Research Station Grant ($80,000).

Baker, T.T. and L. Stavast. 2002. Evaluating the effects of manure applications on broom snakeweed populations, other vegetation, soil, and runoff on rangelands in New Mexico. New Mexico State University snakeweed research project ($24,000).

Boren, J.C., T.T. Baker, and B.D. Wright. 2001. Natural Resources Education for New Mexico Youth. US Fish and Wildlife Service, Extension Sea Grant Program ($25,000).

Fernald, A.G., S. Guldan, T.T. Baker, J.P. King. 2001. Irrigation ditch seepage effects. USDA Special Projects: Efficient Irrigation for Water Conservation in the Rio Grande Basin, College of Agriculture and Home Economics ($139,033)

Baker, T.T., J.C. Boren, J.M. Fowler, and A.G. Fernald. 2001. Inventory of southwestern national forest wildfires: An assessment of silviculturally treated versus untreated wildland fires. USDA Rocky Mountain Experiment Station Grant ($225,000)

Baker, T.T. and L. Stavast. 2001. Evaluating the effects of manure applications on broom snakeweed populations, other vegetation, soil, and runoff on rangelands in New Mexico. New Mexico State University snakeweed research project ($24,000).

Baker, T.T. 2001. Riparian area response to different seasons and intensities of livestock use on southwestern riparian forests. USDA MacIntire-Stennis Program ($100,000 – 20,000 per year for 5 years).

Boren, J.C., B.D. Wright, and T.T. Baker. 2000. Foraging relationships between elk, mule deer and cattle on southwestern national forests: Research joint venture amendment for Phase Two. USDA Rocky Mountain Experiment Station Grant ($120,000).

Baker, T.T., J.C. Boren, J.M. Fowler, and C.D. Allison. 2000. Grazing Management of southwestern riparian areas. Scarborough-Lineberry Foundation ($15,000).

Abbott, L., T.T. Baker, and C.D. Allison. 2000. An assessment of Jaguar habitat in northern Mexico in relation to traditional livestock operations. Center for International Studies, New Mexico State University ($800).

Visiting Team Report

Society of American Foresters
Growing better all the time

December 15, 2010

CONFIDENTIAL

Terrell T. Baker
Chair & Professor, Department of Forestry
College of Agriculture / University of Kentucky
106 T.P. Cooper Hall
Lexington, KY 40546-0073

Dear Dr. Baker:

The Society of American Foresters (SAF) appreciates the University of Kentucky's dedication to excellence in forest resources education and its continued support of specialized forestry accreditation review. The SAF Committee on Accreditation grants continued Accreditation through December 31, 2020 to the Forestry curriculum leading to Bachelor of Science degree in Forestry in the Department of Forestry at the University of Kentucky.

The Society's goal is to maintain a responsive accreditation process; therefore, I encourage you to make any suggestions that may help to keep accreditation an effective tool for assessing and improving the quality of forestry education. Should you have any comments or questions, please direct them to Ms. Carol Redelsheimer, CF, Director, Science and Education. She may be reached at (301) 897-8720 extension 240 or by email at redelsheimerc@safnet.org.

Sincerely,

Michael T. Goergen, Jr.

Cc: Dr. Mike Lacki

Enclosure: SAF Committee on Accreditation Summary Findings and Action

5400 Grosvenor Lane | Bethesda, MD 20814-2198 | (301) 897-8720 | toll-free (866) 897-8720 | fax (301) 897-3690 | www.safnet.org

Society of American Foresters
Committee on Accreditation
5400 Grosvenor Lane
Bethesda, MD 20814-2198
(301) 897-8720 Extension 240

Committee on Accreditation
Summary Findings and Action

University of Kentucky
2010

Current Review:
Continued Accreditation

Currently Accredited Curriculum:
Forestry curriculum leading to a BS Degree

Initial Accreditation:	1974
Previous Onsite Visit:	1999
Interim Review:	2004
Substantive Change:	2008
Progress Report:	2006
Accreditation Expires:	2010

INTRODUCTION

The Department of Forestry is one of 11 academic departments in the College of Agriculture at the University of Kentucky. The Department offers one undergraduate program (BS in Forestry) that was reviewed during a March 23-25, 2010 site visit. The curriculum for this degree was recently revised based on a several-year process of review and development by the faculty with input from employers, agencies, industry, students, and alumni. The revision process was cited by the university's Office of Assessment as a best-practices example of planning. The SAF visiting team found the analytical and structured approach to curriculum, and alignment of detailed learning outcomes in the revised curriculum to Accreditation Standards was especially commendable.

SUMMARY FINDINGS

STANDARD I: FORESTRY PROGRAM MISSION, GOALS, AND OBJECTIVES

The goals and objectives of the forestry program were developed as part of its strategic plan for 2009-2014. The goals and objectives are consistent with SAF accreditation standards: they recognize forestry as an interdisciplinary profession, the needs of the program's constituencies, the role of foresters in meeting diverse and changing needs and values, and the importance of professionalism and ethical behavior. The mission of the Forestry program is explained on the Department's Web site, with explicit reference to the program's accredited status. The mission is also displayed prominently throughout the forestry building.

The standard is met.

STANDARD II: CURRICULUM

The new curriculum was approved by the University of Kentucky in the Fall, 2009. The curriculum was revised to improve the knowledge and skills graduates need to gain to address contemporary economic, ecological, and social issues related to effective forest resource management. Knowledge and technical competencies were identified and integrated into the curriculum through prerequisites and linkages among courses. Learning outcomes connected to nine common threads are reinforced throughout the curriculum. The common threads include collaborative problem solving, communication, ecosystem approach, ethics, forest health and protection, geospatial competencies, human dimensions of natural resources, information literacy, and managerial leadership.

The new curriculum has 121 total semester credit hours with 84 hours required for forestry and 37 hours of general education requirements. Although the curriculum provides a heavier emphasis on biology/ecology and management, there is sufficient breadth in the other two core areas (measurements and policy/economics/ administration). Communication, analytical, and critical thinking skills are integrated throughout the curriculum and the capstone course provides students an opportunity to demonstrate competencies in these skills. Professional ethics are covered in a required administration and policy course.

The standard is met.

STANDARD III: FORESTRY PROGRAM ORGANIZATION AND ADMINISTRATION

Academic departments at the University of Kentucky are administered by chairs, who are appointed for six-year, renewable terms. Chairs enjoy considerable responsibility with regard to program direction and operations. The outcomes-based assessment plan developed concurrently with the curriculum revision provides ongoing and meaningful feedback through multiple "capture points" that are used in an adaptive model to inform curriculum change.

The standard is met.

STANDARD IV: FACULTY

The number of faculty is in excess of the minimum required to meet the accreditation standard. Although 11 of the 14 faculty teach forestry courses, a few have heavier loads associated with required courses and students expressed a desire for their courses to be more evenly spread across the faculty. The faculty is to be commended for its willingness to approve an innovative curriculum that will require significant changes in the courses taught by most faculty members. The faculty is collegial and functioning better than at some times in the past. The faculty have diverse backgrounds and seven have over 20 years experience at UK. Although periodic strides toward greater gender and cultural diversity have been made, turnover, loss of faculty line-positions, and a shortfall in diversity candidates have worked against progress in this direction. Currently, two of the faculty members are female and one is Asian.

There has been sufficient turnover in both faculty and the chair to create uncertainty about the ability of the faculty to cover the new curriculum, particularly in the areas of management/economics and conservation biology. In addition, faculty salaries, particularly at the full professor rank, are low relative to the College and peer Institutions and it may be

difficult to retain new faculty as they move up in rank. A new Chair has been hired and there is a commitment to address these faculty issues.

The standard is met.

STANDARD V: STUDENTS

The Forestry program has always been relatively small. Current enrollment is 50 and has varied from 40 to 52 over the last four years, with the highest number in the two most recent years. Currently, 18% of the students are female and one student is African-American. They have graduated an average of 10 students per year for the past five years. Graduates have enjoyed a relatively high level of success in securing professional positions or admission to graduate school, and some believe that the program could successfully recruit (and place) a larger number of students. Students were persuasive advocates for the effectiveness of their program.

The standard is met.

STANDARD VI: PARENT INSTITUTION SUPPORT

Although the classrooms and building that house the forestry program appear old, there is adequate technology in the classrooms. The 14,800-acre Robinson Forest provides an excellent facility for the program's field camp. Primary control of the forest has been removed from the department and placed under a new Robinson Center for Appalachian Resource Sustainability. Although students and faculty will now have to pay for the use of the facility, the department no longer has to subsidize operation of the forest. As with many programs nationally, the department has lost approximately 5% of its instructional budget, 8% of its state and federally funded research budget, and 23% of its Extension budget over the past five years. To help offset the costs of instructional support, the university implemented a fee for laboratory courses in 2009, and 80% of the revenues from this will return to departments.

The university offers extensive services in support of its students and the instructional and research missions, as one would expect of an institution of this stature. Library holdings are extensive in both print and electronic media, and they include 75 full-text forestry and wildlife sciences journals available electronically from two computer labs in the forestry building or from personal computers. Staff support in the library, which is a 5-minute walk from the forestry building, appears to be adequate. The library provides an extensive system of computers and computer ports that is freely available to students. It also houses the university's Center for Statistical Computing and its Writing Center.

The standard is met.

GENERAL COMMENTS

The SAF commends the Department of Forestry for its innovative curriculum revision, detailed outcomes based assessment plan, and outstanding self-study report.

COMMITTEE ACTION

The SAF COA grants continued accreditation to the Forestry curriculum leading to a BS in Forestry through December 31, 2020.

The above summary findings and action by the SAF Committee on Accreditation are based upon a review of the visiting team's March 25, 2010 report, written responses and oral comments provided to the Committee by Terrell Baker, Dept. Chair, Mike Lacki, past Interim Dept. Chair and Kim C. Steiner, Visiting Team Chair.

By: Laura E. DeWald

Laura E. DeWald, Chair
SAF Committee on Accreditation

Date: December 15, 2010

Implementation Plan

UK Program Review Implementation Plan

*This **required** form is described as Appendix A in AR II-I.0.6.*

College/Unit: College of Agriculture, Dept. of Forestry **Date: 2-23-11**

Recommendation/ Suggestion	Source I/ E/ H*	Accept/ Reject**	Unit Response (resulting goal or objective)	Actions (including needed resources)	Time Line
Recruitment into the Forestry program is primarily the responsibility of the college. We perceived that recruitment at the departmental level was fairly passive, and there might be opportunities to significantly increase enrollments if this is a desirable goal. It appeared to the Visiting Team that the program could be more proactive in its recruiting efforts, including minority recruitment. Recruitment into the Forestry program is handled primarily by the college's Associate Dean for academic Programs. The department takes opportunities to advertise its programs through appropriate venues, but we perceived that recruitment was fairly passive and there might be opportunities to significantly increase enrollments if this is a desirable goal. Currently, the department's major effort toward recruitment appears to be through extension activities throughout the state.	E	Accept	During the search for a new Chair and the concurrent SAF program review, the need for a more proactive approach by the Department to recruit students into the program was identified by the faculty as a direction that should be taken under the leadership of the new Chair. We have now secured support from the College administration to invest in the recruiting effort, have begun developing a proactive strategy to address our recruitment needs, and are confident this will have a positive impact on our student enrollment. We will invest in both undergraduate and graduate recruiting, and seek to attract minority students into our program. Our goal is to maintain enrollment approximately equal to that of undergraduate Forest Management programs at peer institutions. We have not set a specific goal for graduate students, primarily due to a limited ability to secure perennial funding for stipends and the costs of supporting graduate students. We are currently identifying opportunities and developing strategies to increase funding available to graduate students in order to create a more vibrant graduate student recruitment program.	The College administration provided funds for an Academic Coordinator upon the hiring of the new Department Chair. We have hired a person into this position and she has begun her recruiting efforts. She will also concentrate on other student services such as Retention, student life within the department, access to scholarships and programs within the College and University, placement of students into internships and employment, and finally, alumni relations. The Academic Coordinator will serve as a contact for visiting students, ensure a strategic and proactive effort takes place toward identifying prospective students, and providing materials to faculty and staff who are in contact with prospective students.	0-5 years
Notably, students expressed disappointment that the Forestry program is obscure within the university, and there may be more opportunities for campus-	E	Accept	The student perception of low visibility of the Department within the University is puzzling and may be a function of faculty and department administration not	Additional steps are being taken to further "advertise" and inform our students of our larger mission and role, not only throughout the university, but	

wide engagement than the faculty is currently exploiting.			adequately advertising their roles across campus. Individual faculty of the Department serve significant roles on faculty councils, seats on the University Senate, and currently one faculty member is the coordinator for the College-wide program in Natural Resource Conservation and Management, to name a few.	also the state. These measures include, but are not limited to, a departmental newsletter, displays throughout the building of faculty and staff activities, and video/photographic exhibits of our efforts throughout the state. The Department also plans to sponsor undergraduate and graduate student outreach efforts across campus by handing out tree seedlings on Arbor Day. These efforts will also serve to better inform our stakeholders and university colleagues, visitors to the building, and alumni, about the breadth and scope of work in which our faculty and staff are involved.	
There is no formal alumni program, and both students and faculty expressed a desire to develop closer relationships with their alumni.	E	Accept	Clearly relationships with our alumni have existed on an informal basis in recent memory. A strategic and sustained and coordinated effort is required to connect and reconnect with our alumni. We have set as a goal of the Department to develop an active alumni program and taken a number of steps in this direction.	The new Academic Coordinator will work closely with the Department Chair on Alumni relations. We are installing a new student exit interview process where all graduating students visit with the Department Chair in order to, among other things, build and develop the relationship between the department and our graduates. We have begun an active campaign of informing our alumni through a variety of media that we value their role as member of the Department's extended family. We have just completed an update of our alumni list and have begun publishing a departmental newsletter as a means to re-establish close working relationships with our alumni and to serve as a starting point for getting them engaged with our students in a more formal way. Many of our alumni throughout the state are potential employers for our students and also serve as points of contact and partners for faculty programs, particularly Cooperative Extension. We have also developed a Fall picnic for faculty, staff, students, and alumni and we plan a similar and larger event for the Spring Semester. We will continue to seek and develop ways to maintain and improve	

				relations with our alumni both through formal and informal means.	
If the department is able to revise its strategic plan during the current process of approval and adoption, we suggest the addition of language that explicitly mentions the interdisciplinary efforts the department is hoping to achieve as well as ethical behavior components, It is also recommended that the department review the metrics presented in the strategic plan, include quantitative metrics where they do not yet exist, and provide additional measurable metrics for financial support and fundraising strategies.	E	Partially Accept	Specific steps have been taken to improve interdisciplinary efforts in the Department and capitalize on recent advances in terms of curricula revision and strategic plan development. The Department recognizes that fundraising efforts need to be made both in terms of extramural research funding and endowments.	A variety of changes have been made within the last several months to the Department's Committee structure. We have incorporated an Undergraduate Program Committee to create a venue for proactively and strategically thinking about how we are teaching our students and what adjustments can be made. We will use this venue to incorporate needed adjustments identified through the assessment process. We have also established an Outreach Committee to deal specifically and proactively with extolling the accomplishments and activities of the Department to the outside world. Within the last couple of months, we have formed a Research Committee, which will devote specific time and efforts toward identifying the Department's strength areas, developing strategies for capitalizing on those strengths in the context of 1) communicating and collaborating internally, 2) identifying and pursuing funding sources, and 3) developing partnerships with peer departments and institutions to pursue funding in strength and strength-related areas. We are, essentially, taking a proactive role in pursuing extramural funding as related to our core faculty expertise. The Department Chair is also developing relationships with alumni, stakeholders, and other clientele in an effort to pursue development opportunities.	
The department does not have an organized, external advisory committee, but they actively sought external input for ad hoc purposes such as the curriculum revision and recent interviews for department chair candidates. The dean is supportive of the creation of an external	E	Accept	The Department recognizes the need for some form of Advisory Committee. Movement on this was delayed until the arrival of the new Department Chair.	As the review committee points out, an Advisory Committee can be helpful or burdensome, so particular care and caution will be used to plan and develop the Advisory Committee. This effort will be coordinated by the Chair with considerable input from faculty and staff.	

committee but notes, accurately we think, that an external committee can be a help or a burden depending upon how effectively it is used by the department. We believe that an external committee might be an effective step toward greater departmental stature and influence. It is in the department's new strategic plan to create a standing Advisory Committee.					
The Visiting Team strongly encourages continued participation by the faculty in sabbatical opportunities.	E	Accept	The Department recognizes that faculty grow personally and contribute to Department growth overall by taking advantage of Sabbatical Leave.	One faculty member, Dr. Mary Arthur, took sabbatical leave during 2009 and at least one additional faculty member has expressed interest.	
It appeared to the Visiting Team that it could be more proactive in its recruiting efforts, including minority recruitment. The recruitment narrative on pages 73-75 of the Self-Evaluation Report does not address cultural, ethnic, and gender diversity, and our interviews reinforced the impression that this has not been a priority for the department.	E	Accept	Recruitment in general has been passive and the Department has developed strategies for being more proactive (see above). We also recognize opportunities to increase minority participation in our program, particularly the undergraduate.	The Department will begin to cultivate relationships with minority-serving institutions such as Kentucky State University and take advantage of existing programs. We are also seeking scholarship programs for minority graduate students which will allow us to bring in new graduate students. A recently-hired minority graduate student has expressed interest in assisting with recruitment and student services for minority students, and the Department will encourage her to work with our new Academic Coordinator. Unfortunately, the discipline of Forestry is traditionally underrepresented by minority students.	
The salary deficiency at the professor level has been a long-standing issue and we do not believe it can be sufficiently explained by lack of achievement and productivity within the full professor rank.	E	Accept	Our Department recognizes the salary issue and wholeheartedly agrees that compensation is warranted.	Our Associate Professor salaries are now $13,958 (17.7%) below the "top three" Forestry Schools in the Southern Region. In 1997-98 the average salary figure for our Associate Professors was 1.8% below the average for the "top three" institutions. The Department of Forestry's average salary compensation for Associate Professor currently ranks thirteenth in the Southern Region, a drop from second place. The greatest discrepancy is at the Full Professor rank. The University of Kentucky salary table shows that the Full Professors in the Department of Forestry are receiving average salaries that are $30,337 (29%) below those of similar rank in similar	

				institutions, ranking fourteenth out of the 15 Southern Region Forestry Programs in 2002-03. This is a problem that affects our ability to retain faculty and needs to be addressed at the College and University levels.	
Most courses are taught in the forestry building (TP Cooper), which is physically isolated from other college buildings, rather decrepit, and (according to the dean) in need of about $10 million in deferred maintenance improvements. The problem is quality of space rather than quantity…	E	Accept	We acknowledge that some of our physical resources could use improvement. It is not uncommon for office temperatures to be greater than 80 degrees. The building is only questionably ADA compliant.	The Cooper Forestry Building is old and needs repair. Central heat and air would be a vast improvement. We have worked with facilities over the last 6 months closely to identify needed improvements. We will upgrade lighting, landscaping, and some climate control. Several classroom upgrades have been made in recent years via competitive grants, providing state-of-the-art teaching equipment. We hope to enjoy similar success in the future with our extramural efforts in this arena. We all love our historic building and its independence. Ideally, the Forestry Building would be LEEDS certified and posses the many advantages of a contemporary structure housing an environment and natural resources program. Reportedly, we have been on the list for a new building for many years. We have identified a new building as a longer-term goal for the Department, and the Chair will pursue this possibility with Administration as well as stakeholders who may be willing to support this realization.	

*** Source of Recommendation (I = Internal recommendation; E = External Review Committee recommendation; H = Unit Head recommendation)**
**** Accept/Reject Recommendation (A=Accept; R=Reject)**

Unit Head Signature: _____ Unit Head Supervisor Signature: _____ Date: _____