

## **C. Ken Smith**

Associate Professor of Forestry and Geology  
Chair, Environmental Studies Program  
The University of the South  
735 University Avenue  
Sewanee, TN 37383

### **EDUCATION:**

University of Florida, Gainesville, Florida  
Ph.D., 1996 Forest Resources and Conservation  
M.S., 1992 Forest Tree Improvement  
Colorado State University, Fort Collins, Colorado  
B.S., 1986 Major: Forestry

### **TEACHING EXPERIENCE:**

Associate Professor of Forestry  
University of the South, Sewanee, TN July 1998 - present

I currently teach two lecture courses (one with a lab) during the fall and spring semesters. Courses taught include Tropical and Boreal Forest Ecosystems (FOR 311), Forest Soils (FOR/GEO 303), Forestry in the Developing World (FOR 212), Introduction to Forestry (FOR 121), Natural Resource Issues and Policies (FOR 201), Introduction to Environmental Studies (ENST 200), Junior Seminar (FOR/GEO332), and Senior Seminar (FOR/GEO 432).

### **RESEARCH EXPERIENCE:**

Forestry, Soils, Land Use Change  
University of the South, Sewanee, TN July 1998 - present

My recent work has focused on an examination of land use change on the Cumberland Plateau in cooperation with Sewanee's Landscape Analysis Lab (GIS lab). Our most recent effort will focus on urban development into the plateau and Sequatchie Valley. While at Sewanee, I have continued to collaborate with colleagues at Laval University in Quebec and the Para School of Agrarian Sciences in Brazil on soils/forest ecology projects related to my previous work with those institutions (see publications). I have also recently started a project on St. Catherine's Island (Georgia barrier island) in a collaboration with an archaeologist and the island's land managers to better understand the relationship between past land use, current soil chemical and physical properties, and current vegetation patterns on the island.

### Forest Ecology and Soils

Université Laval, Forest Biology Research Center, Quebec City January 1997 - June 1998

Conducted research to examine differences in soil nutrient dynamics and tree regeneration among black spruce sites that were 1) fire-disturbed or 2) harvested with protection of advanced tree regeneration (CPRS). This project was designed to assess how selective cutting affects ecosystem function compared to natural fire disturbance.

### Forest Ecology and Soils

University of Florida, School of Forest Resources and Conservation, Gainesville, Florida  
September 1992 - December 1996

A Ph.D. study that investigated plant-induced changes of soil carbon and nitrogen dynamics in Brazil Amazon Basin. The study was conducted at the Curua-Una Forest Reserve, and the primary focus of this research was to determine if plantations consisting of tree species with different resource requirements and biochemical characteristics altered carbon and nitrogen dynamics when planted on an initially uniform soil.

### Forest Genetics and Tree Improvement

University of Florida, School of Forest Resources and Conservation  
Gainesville, Florida August 1990 - August 1992

Developed and implemented an early selection research project with slash pine families used in the Cooperative Forest Genetics Research Program. The research focus was aimed at identifying juvenile characteristics that were predictive of mature field performance.

### **PROFESSIONAL EXPERIENCE :**

University of the South, **University Forester**, 2000 – present. Responsible for the management of the university's 11, 000 acre forest.

**Forester**, Peace Corps, United Nations-FAO Watershed Protection Project, Guinea, West Africa, 1986 – 1989

**Forest Ecology Technician**, U.S. Forest Service, Siskiyou National Forest, Grants Pass, Oregon, 1990, Spruce-Fir Community Ecology Project, Colorado State University, Roosevelt National Forest, Colorado, 1985, U.S. Forest Service, St. Joe National Forest, Avery, Idaho, 1984

## **PUBLICATIONS:**

D. Lemoine, J. Evans, **K. Smith**. A landscape-level GIS analysis of streamside management zones on the Cumberland Plateau. In press, *Journal of Forestry*.

McGrath, D.A. and **C.K. Smith**. A soils perspective on tropical deforestation. In: Tropical Deforestation Exploring Environmental Challenges: A Multidisciplinary Approach. S. L. Spray and M. D. Moran (eds), Acada Books. *In press*.

**C.K. Smith**, M. Coyea, and A. Munson. 2005. The response of fine roots to fertilized ingrowth cores in burned and harvested black spruce ecosystems. *Communications in Soil Science and Plant Analysis*, 36:1361-1372.

**Smith, C.K.** 2005. Redefining the role of natural resource extraction in forest conservation (book review). *BioScience* 55:625-626.

McGrath, D.A., J.P. Evans, **C.K. Smith**, D.G. Haskell, N.W. Pelkey, R.R. Gottfried, C.D. Brockett, M.D. Lane, E. D. Williams. 2004. Mapping land-use change and monitoring the impacts of hardwood-to-pine conversion on the southern Cumberland Plateau in Tennessee. *Earth Interactions* 8:1-24.

**C.K. Smith**, H.L. Gholz, and F. de Assis Oliveira. 2002. Soil carbon storage and dynamics after forest conversion to plantations in lowland Amazonia, Brazil. *Forest Ecology and Management* 164: 257-263.

McGrath, D., **K. Smith**, H. Gholz, and F. de Assis Oliveira. 2001. Land use effects on soil nutrient dynamics in Amazonia: A review of previous work. *Ecosystems* 4: 625-645.

**C.K. Smith**, M. Coyea, and A.D. Munson. 2000. Soil carbon, nitrogen, and phosphorus stocks and dynamics in disturbed black spruce forests. *Ecological Applications*. 10(3):775-788.

**C.K. Smith**, H.L. Gholz, and F. de Assis Oliveira. 1998. Soil nitrogen dynamics and plant-induced soil changes under plantations and primary forest in lowland Amazonia, Brazil. *Plant and Soil*. 200:193-204.

**C.K. Smith**, H.L. Gholz, and F. de Assis Oliveira. 1998. Fine litter chemistry, early-stage decay, and nitrogen dynamics under plantations and primary forest in lowland Amazonia. *Soil Biology and Biochemistry*. 30(14): 2159-2169.

**C. K. Smith**, A.D. Munson, and M.R. Coyea. 1998. Nitrogen and phosphorus release from humus and mineral soil under black spruce forests in central Quebec. *Soil Biology and Biochemistry*. 30(12): 1491-1500.

**Ken Smith**, Henry L. Gholz, and Francisco de Assis Oliveira. 1998. Litterfall and nitrogen-use efficiency of plantations and primary forest in the eastern Brazilian Amazon. *Forest Ecology and Management*. 109:209-220.

**K. Smith**, H.D. Davignon, and A.D. Munson. 1997. Report on the Development of Indicators for the Criteria of the Canadian Council of Forest Ministers. The Maintenance and Improvement of Forest Ecosystem Productivity. Quebec Minister of Natural Resources, Quebec City, Canada.

**C.K. Smith** 1996. Book Review of The Literature of Forestry and Agroforestry. P. McDonald and J. Lassoie Eds. *Agroforestry Systems*.34:221-224.

**C.K. Smith**, T.L. White, G.R. Hodge, M.L. Duryea, and A.J. Long. 1993. Genetic variation in first-year slash pine shoot components and their relationship to mature field performance. *Canadian Journal of Forest Research*. 23: 1557-1565.

**C.K. Smith**, T.L. White, and G.R. Hodge. 1993. Genetic variation in second-year slash pine shoot traits and their relationship to 5- and 15-year volume in the field. *Silvae Genetica*. 42: 266-275.

#### **PRESENTATIONS:**

**K. Smith**. 2005. Forest management at Sewanee. Kentucky/Tennessee SAF Annual Summer Meeting, Sewanee, TN.

**K. Smith**. 2004. Environmental performance of uneven-aged approaches contrasted with plantation systems, examples from the Cumberland Plateau. Missouri: Keeping the Forest 2004. The Pioneer Forest, Salem, Missouri.

McGrath, D., **K. Smith**, J. Kingston, J. Evans, D. Haskell, R. Gottfried. 2003. Mapping Land Use Change and Monitoring Ecological Impact on the Cumberland Plateau in Southern Tennessee. American Geophysical Union, Biogeochemistry sub-group. Santa Fe, New Mexico, June 2003.

**Smith, K.**, J. Burckle, E. Ogilvie. 2002. One hundred and four years of forest management at Sewanee. Annual Convention of the Society of American Foresters, Winston-Salem, North Carolina, October 2002.

**Smith, C. K.**, A. Munson, and M. Coyea. 2000. Fine root responses to microsite nutrient additions in disturbed black spruce ecosystems. 85<sup>th</sup> Annual Meeting, Ecological Society of America, Snowbird, Utah, August 2000.

McGrath, D., **K. Smith**, H. Gholz, and F. de Assis Oliveira. 2000. Land use effects on soil nutrient dynamics in Amazonia: A review of previous work. 1<sup>st</sup> NASA Large-scale Biosphere and Atmosphere Scientific Conference, Belem, Para, Brazil, June 2000.

Coyea, M., A. Munson, **K. Smith**, H. Margolis, and R. Paquin. 2000. Soil CO<sub>2</sub> fluxes and temperatures of harvested and fire-origin sites in boreal black spruce ecosystems. The Role of Boreal Forests and Forestry in the Global Carbon Budget, An International Science Conference. Edmonton, Alberta, May 2000.

McGrath, D.A., **C. K. Smith**, H. L. Gholz, F. de Assis Oliveira. 1999. Changes in soil N, P, and Ca cycling after forest conversion to other land uses in the Amazon Basin: A literature review. 84<sup>th</sup> Annual Meeting of the Ecological Society of America, Spokane, WA.

**Smith, C.K.**, Munson, A.D., Coyea, M. 1999. Comparative studies of CPRS and natural disturbance by fire: Developing a basis for sustainable practices in black spruce ecosystems. Canadian Sustainable Forest Management Network Conference, Edmonton, Alberta.

**Smith, C.K.**, Munson, A.D., Coyea, M. 1998. Carbon, nitrogen, and phosphorus dynamics under disturbed black spruce ecosystems. 83rd Annual Meeting of the Ecological Society of America, Baltimore, Maryland.

**Smith, C.K.**, Munson, A.D., Coyea, M. 1998. Changement des reserves et de la dynamique des nutriments suite aux perturbations naturelles et anthropiques dans les pessieres noires a mousses de la region centrale de Quebec. 66th Meeting of the French-Canadian Association for the Advancement of Science (ACFAS), Quebec City, Canada.

**Smith, C.K.**, H.L. Gholz, F. de Assis Oliveira. 1997. Plant-induced changes of forest floor and soil nitrogen dynamics in lowland Amazonia. Ecological Society of America Annual Meeting, Albuquerque, New Mexico.

**Smith, C.K.**, Munson, A.D., Coyea, M., Bernier, P. 1997. Nitrogen and phosphorus dynamics under disturbed black spruce forests in Central Quebec. Canadian Centers of Excellence Forest Dynamics Workshop, Calgary, Alberta.

**Smith, C.K.**, H.L. Gholz, F. de Assis Oliveira. 1996. Mechanisms of soil nitrogen transformations under monocultures and native forest in the central Brazilian Amazon. Ecological Society of America Annual Meeting, Providence, Rhode Island.

**Smith, C.K.**, H.L. Gholz, F. de Assis Oliveira. 1996. Fine litter nitrogen dynamics under monocultures and primary forest in lowland Amazonia. Soil Science Society of America Annual Meeting, Indianapolis, Indiana.

#### **COMPETITIVE GRANTS AND AWARDS:**

1998, Co-PI, Canadian Sustainable Forest Management Network (NSERC), Comparative Studies of CPRS and natural disturbance by fire: Developing a basis for sustainable practices in black spruce ecosystems

1998, Co-PI, NASA-LBA project, "Nitrogen and phosphorus dynamics in forests and converted forest sites in the Amazon Basin: A review and synthesis of previous research"

1997, Post-doctoral fellowship funded by the Canadian Network of Centers of Excellence, Forest Biology Research Center, Forestry Department, Université Laval

1994 - 1996, Co-PI, Competitive grant from USDA/NRI Forest, Range, and Cropland Ecosystems Program

1995 - 1996, USDA International Institute of Tropical Forestry Grant

1994, National Security Education Program Fellow

1993, Grant from the Tropical Conservation and Development Program (University of Florida) and the USDA IITF

1992 - 1994, Jennings Scholastic Award, School of Forest Resources and Conservation, University of Florida

### **CONFERENCES ORGANIZED**

2003 Annual Meeting of the Forest Stewards Guild, Sewanee, TN (150 participants)

2005 Annual Summer Meeting of the Kentucky/Tennessee Society of American Foresters, Sewanee, TN (80 participants)

### **MEMBERSHIPS**

Forest Guild 2002- present

Society of American Foresters 1991- present