BACCHUS EXHIBIT A
Curriculum Vitae

CURRICULUM VITAE

Sydney T. Bacchus, Ph. D.

EDUCATION

9/91-12/99 - Ph.D.	Institute of Ecology, UGA, Athens, GA 30602-2202 Major Field of Study: Hydroecology Dissertation Topic: Determining sustainable aquifer yield, ecological impacts of anthropogenic groundwater perturbations Committee Chairman: Dr. George Brook
9/89-6/91 (predoctoral)	Department of Geology, University of South Florida, Tampa, FL predoctoral courses in Hydrology, Geochemistry, and Water Quality University of Central Florida, Orlando, FL predoctoral courses in Bryology and Zoogeography
3/77 - M.S.	Florida State University, Tallahassee, FL 32306 Major Field of Study: Botany/Ecology, including water chemistry Thesis Topic: Marsh and aquatic vascular plant communities under tidal influence, Wakulla and St. Marks Rivers, Florida.
6/72 - B.S.	Florida State University, Tallahassee, FL 32306 Major: Biology & Design Minor: Chemistry & Humanities

PROFESSIONAL WORK EXPERIENCE

9/89 - present	Hydroecologist, Applied Environmental Services, LLC P. O. Box 174, Athens, GA 30603-0174 appliedenvirserv@mindspring.com
6/99 - 12/99	Fellowship, US EPA, National Exposure Research Laboratory 960 College Station Road Athens, GA 30605-2700
5/98-9/98	Internship, US EPA, National Exposure Research Laboratory 960 College Station Road Athens, GA 30605-2700
9/92-3/98	Hydroecologist, US EPA, Region 4, Science and Ecological Support Div. 980 College Station Road Athens, GA 30605-2700 (Co-operative Education Program - alternating quarters)
1/89-9/89	Senior Scientist I, Post, Buckley, Schuh & Jernigan, Inc. 800 N. Magnolia Avenue, Suite 600 Orlando, FL 32803
3/87-12/88	Lead Env. Specialist (IV), St. Johns River Water Management District Orlando Regional Office 618 E. South Street, Suite 200, Orlando, FL 32801
11/84-3/87	Jurisdictional Specialist, Jurisdictional Evaluation Section, FDER 2600 Blair Stone Road, Tallahassee, FL 32301
12/81-11/84	Marine/Aquatic Ecologist, Florida Natural Areas Inventory 254 E. Sixth Avenue, Tallahassee, FL 32303
2/80-12/81	Field Project Director (Environmental Specialist IV) Water Resources Restoration & Preservation Section, FDER, Tallahassee
11/77-2/80	Marine Biologist (Environmental Specialist III) Water Resources Restoration & Preservation Section, FDER, Tallahassee

4/77-11/77	Rules Coordinator (Environmental Specialist II) Office of Coastal Zone Coordination, FDER, Tallahassee
1975-1976	Research Assistant Drake Wilson Spoil Island Project, U.S. Army Corps of Engineers (COE) Project Director: Dr. William Kruczynski
1975-1976	Research Assistant St. Marks National Wildlife Refuge, St. Marks, FL 32355 Project Director: Culver S. Gidden

ADDITIONAL EXPERIENCE

Summer 1975	Research Assistant (*Labrunia danae* research project in the Bahamas) FSU, Department of Biology, Tallahassee, FL 32306 Research Directors: Dr. William Herrnkind & Gregg Stanton
Fall 1978	Research Assistant (seagrass research off the west coast of Florida) FSU, Department of Biology, Tallahassee, FL 32306 Research Directors: Dr. Richard Iverson & Henry Bittaker
1989-1992	Instructor for Federal Jurisdictional Wetlands Training Seminars, Southeastern U.S.

Professional Work Experience:

During my employment of approximately eight years with the predecessor agency for the Florida Department Environmental Protection (formerly known as Florida Department Environmental Regulation) I served as Rules Coordinator for the Office of Coastal Zone Coordination the first year, ensuring compliance with federal Coastal Zone Management requirements. Subsequently, I provided oversight for the state-supported restoration projects throughout Florida for the Water Resources Restoration and Preservation Section, initially for coastal projects, then as the Field Project Director over all projects.

Later, during my employment with the Jurisdictional Section of that agency, I evaluated wetlands throughout the State of Florida. On numerous occasions my technical expertise was required by that agency to evaluate sites where various levels of "disturbance" had occurred. In those cases, my responsibility was to determine what the pre-existing condition had been at those sites. Representatives from U. S. Environmental Protection Agency (EPA), and later, the COE frequently were present during those field evaluations, and my findings generally were comparable to their findings.

I also have been employed as the Marine and Aquatic Ecologist for the Florida Natural Areas Inventory (FNAI) Program. I was responsible for evaluating habitat of concern throughout the state and providing guidance to various state agencies and private entities regarding regulatory issues affecting those lands, as well as assisting in prioritizing state purchase of environmentally-sensitive lands. My evaluations included all types of lakes, streams, and coastal areas, as well as habitat for federally-listed species throughout Florida.

My duties and responsibilities as the Lead Environmental Specialist for the St. Johns River Water Management District for approximately two years involved reviewing all environmental aspects of permit applications submitted to that agency's central Florida office. Those reviews included evaluating the impacts of proposed projects on federally-listed species, as well as addressing issues of compliance with environmental regulations. The environmental aspects included training other environmental reviewers regarding wetlands and environmental regulations.

As the Senior Scientist and subsequently the Hydroecologist in the private sector for approximately 10 years, my duties and responsibilities included those similar to the ones I had conducted for the government agencies. During that time, my duties and responsibilities also focused on environmental impacts associated with anthropogenic groundwater alterations.

I have had direct oversight or involvement in evaluating adverse impacts of activities on Endangered Species, Threatened Species, and Species of Special Concern, such as the bald eagle (*Haliaeetus leucocephalus*), the West Indian manatee (*Trichechus manatus latirostris*), wood storks (*Mycteria americana*), all species of sea turtles occurring in Florida (all federally-endangered), the Eastern indigo snake (*Drymarchon corais couperi*), the Florida black bear (*Ursus americanus floridanus*), and the Florida scrub jay. For example, I have been involved in evaluating adverse impacts of proposed roadway projects on wood storks and the Florida black bear.

For approximately six years I was employed as a Hydroecologist for the Ecological Support Division of the United States EPA in Region IV, which has oversight for Florida, Georgia, Alabama, Louisiana and numerous other states. My duties and responsibilities included evaluations of wetlands, streams, and lakes. Among the evaluations that I conducted were detailed laboratory analyses, using techniques developed at that facility. I also provided input regarding the interaction between ground water and surface water. My comments regarding the catastrophic adverse environmental impacts that would result from the proposed location of a well field for Albany, Georgia, located in proximity to the Swamp of Toa, resulted in reconsideration of the proposed location. Ultimately the well field was relocated further east. The State of Georgia recently purchased a significant portion of the Swamp of Toa for protection.

Subsequently, I completed an Internship and Fellowship for the EPA's National Exposure Research Laboratory during 1998 and 1999. My duties and responsibilities for that Research Laboratory included developing research techniques and methods for remediation of hazardous compounds. My professional work experience also has included instruction and training for regional, state, federal, and private employees regarding wetlands in the southeastern coastal plain.

SELECTED PEER-REVIEWED PUBLICATIONS

Bacchus, S. T. 2007. More inconvenient truths: Wildfires and wetlands, SWANCC and Rapanos. National Wetlands Newsletter 29(11):15-21.

Bacchus, S. T. 2006. Nonmechanical dewatering of the regional Floridan aquifer system. pp. 219-234 *in:* R.S. Harmon and C. Wicks (eds.) Perspectives on karst geomorpholgy, hydrology, and geochemistry – A tribute volume to Derek C. Ford and William B. White. Geological Society of America Special Paper 404.

Bacchus, S.T. 2005. Adverse Environmental Impacts of Artificial Recharge Known As "Aquifer Storage and Recovery" (ASR) in Southern Florida: Implications for Everglades Restoration, http://www.thethirdplanet.org/downloads.html, 106 pp.

Bacchus, S. T. and P. J. Barile. 2005. Discriminating sources and flowpaths of anthropogenic nitrogen discharges to Florida springs, streams and lakes. Environmental Geoscience 11(4):293-316.

Bacchus, S. T., D. D. Archibald, K. O. Britton, and B. L. Haines. 2005. Near infrared model development for pond-cypress subjected to chronic water stress and *Botryosphaeria rhodina*. Acta Phytopathologica et Entomologica Hungarica 40(2-3):251-265.

Bacchus, S. T., D. D. Archibald, G. A. Brook, K. O. Britton, B. L. Haines, S. L. Rathbun, and M. Madden. 2003. Near infrared spectroscopy of a hydroecological indicator: New tool for determining sustainable yield for Floridan aquifer system. Hydrological Processes 17:1785-1809.

Bacchus, S. T. 2002. The 'ostrich' component of the multiple stressor model: Undermining Florida. pp. 669-740 *in:* J. W. Porter and K. G. Porter (eds.) Everglades, Florida Bay, and Coral Reefs of the Florida Keys: An Ecosystem Sourcebook. CRC Press.

Bacchus, S. T. 2001. Knowledge of groundwater responses - A critical factor in saving Florida's threatened and endangered species. Part I: Marine ecological disturbances. Endangered Species Update 18(3):79-90.

Bacchus, S. T. 2000a. Predicting nearshore environmental impacts from onshore anthropogenic perturbations of ground water in the southeastern Coastal Plain, USA. pp. 609-614 *in:* Interactive Hydrology: Proceedings of the 3rd International Hydrology and Water Resources Symposium of the Institution of Engineers, Australia, 20-23 November 2000 Perth, Western Australia.

Bacchus, S. T. 2000b. Uncalculated impacts of unsustainable aquifer yield including evidence of subsurface interbasin flow. Journal of American Water Resources Association 36(3):457-481.

Bacchus, S. T., T. Hamazaki, K. O. Britton and B. L. Haines. 2000. Soluble sugar composition of pond-cypress: A potential hydroecological indicator of groundwater perturbations. Journal of American Water Resources Association 36(1):1-11.

Samson, S. A. and **S. T. Bacchus**. 2000. Water marketing: The other side of the coin. Water Resources Impact 2(6):15-16.

Susarla, S., **S. T. Bacchus**, G. Harvey and S. C. McCutcheon. 2000. Phytotransformation of perchlorate contaminated waters. Environmental Technology 21:1055-1065.

Susarla, S., **S. T. Bacchus**, G. Harvey and S. C. McCutcheon. 2000. Uptake and transformation of perchlorate by vascular plants. Toxicological and Environmental Chemistry 74:29-47.

Bacchus, S. T. 1999a. New Approaches for Determining Sustainable Yield from the Regional Karst Aquifer of the Southeastern Coastal Plain. Ph. D. Dissertation, University of Georgia, Athens, GA. 172 pp.

Bacchus, S. T. 1999b. Cumberland Island National Seashore: Linking offshore impacts to mainland withdrawals from a regional karst aquifer. pp. 463-472 *in:* K. J. Hatcher (ed.) Proceedings of the 1999 Georgia Water Resources Conference, held March 30-31, 1999, at The University of Georgia, Athens, GA.

Bacchus, S. T. 1999c. The missing component in forest hydrology models. pp. 586-589 *in:* K. J. Hatcher (ed.) Proceedings of the 1999 Georgia Water Resources Conference, held March 30-31, 1999, at The University of Georgia, Athens, GA.

Bacchus, S. T., Susarla, S., N. L. Wolfe, G. Harvey and S. C. McCutcheon. 1999. Predicting field performance of herbaceous species for phytoremediation of perchlorate. American Chemical Society Division of Environmental Chemistry, Proceedings of the 218th ACS National Meeting, New Orleans, LA August 22-26, 1999, 39(2)98-100.

Susarla, S., **S. T. Bacchus**, S. C. McCutcheon and N. L. Wolfe. 1999. Phytotransformation of perchlorate and identification of metabolic products in *Myriophyllum aquaticum*. International Journal of Phytoremediation 1:97-107.

Susarla, S., **S. T. Bacchus** and S. C. McCutcheon. 1999. Phytotransformation of perchlorate using parrot-feather. Soil and Groundwater Cleanup Magazine. Feb/March:20-23.

Susarla, S., **S. T. Bacchus**, S. C. McCutcheon and N. L. Wolfe. 1999. Potential Species for Phytoremediation of Perchlorate. U. S. Environmental Protection Agency Report EPA/600/R-99/069, Athens, GA. 38 pp. + app.

Tsumura, Y., N. Tomaru, Y. Suyama and **S. T. Bacchus.** 1999. Genetic diversity and differentiation of *Taxodium* in the south-eastern United States using cleaved amplified polymorphic sequences. Heredity 83:229-238.

Bacchus, S. T. 1998a. Preliminary Evaluation of the Hydrobiological Monitoring Station Control Wetlands in the Green Swamp Wilderness Preserve, Florida - Reconnaissance Report. Institute of Ecology, University of Georgia, Athens, GA. 38 pp. (not peer-reviewed due to submittal constraints)

Bacchus, S. T. 1998b. Determining Sustainable Yield in the Southeastern Coastal Plain: A Need for New Approaches. pp. 503-519 *in:* J. Borchers and C. D. Elifrits (eds.) Current Research and Case Studies of Land Subsidence: Proceedings of the Joseph F. Poland Symposium.

Miller, O. K., Jr. and **S. T. Bacchus.** 1998. A Gymnopilus on pond-cypress bark in Florida. Mycotaxon April-June:211-215.

Bacchus, S. T. 1997a. Subsidence Features, and Premature Decline and Death of Trees in Cumberland National Seashore Wilderness Area, Georgia. Reconnaissance Report to the National Park Service. 29 pp.

Bacchus, S. T. 1997b*. Premature decline and death of trees associated with a man-made lake and groundwater withdrawals in Albany, Georgia. pp. 280-286 *in:* K. J. Hatcher (ed.) Proceedings of the 1997 Georgia Water Resources Conference, held March 20-22, 1997, at The University of Georgia, Athens, GA.

Bacchus, S. T., G. A. Brook and T. Hamazaki. 1997. Early Signs of Stress in Wetland Vegetation as an Indicator of Unsustainable Groundwater Use in the Southeastern Coastal Plain. Technical

Completion Report ERC 02-97, USDI/USGS Project 1434-HQ-96-GR02664, in cooperation with the Environmental Resources Center, Georgia Institute of Technology, Atlanta, GA. 50 pp. + app.

Bacchus, S. T. 1996a**. Hydroecological approaches for determining and monitoring sustainable yield of groundwater resources in karst aquifers. pp. 619-626 *in*: Proceedings of the International Conference on Water Resources and Environment Research, October 29-31, 1996, Kyoto, Japan.

Bacchus, S. T. 1996b. Production of volatile hydrocarbons after mechanical wounding of mature pond-cypress and pine: Are increased concentrations an indication of stress from groundwater perturbations? *in*: INTECOL's V International Wetlands Conference, Perth, Australia September, 22-28, 1996. (abs)

Bacchus, S. T. and G. A. Brook. 1996. Geophysical Characterization of Depressional Wetlands: A First Step for Determining Sustainable Yield of Groundwater Resources in Georgia's Coastal Plain. Technical Completion Report, the University of Georgia, Athens, Georgia, in Cooperation with the Environmental Resources Center, Georgia Institute of Technology, Atlanta, GA. pp. 36 + app.

Bacchus, S. T. 1995a. Potential for reduced infiltration and recharge on a local scale following cover type conversions in the Southeastern Coastal Plain. pp. 207-210 *in:* K. J. Hatcher (ed.) Proceedings of the 1995 Georgia Water Resources Conference, held April 11 and 12, 1995, at The University of Georgia, Athens, GA.

Bacchus, S. T. 1995b**. Improved assessment of baseline conditions and change in wetlands associated with groundwater withdrawal and diversion. pp. 158-167 *in:* K. J. Hatcher (ed.) Proceedings of the 1995 Georgia Water Resources Conference, held April 11 and 12, 1995, at The University of Georgia, Athens, GA.

Bacchus, S. T. 1995c. Groundwater levels are critical to success of prescribed burns. pp. 117-133 *in*: Proceedings 19th Tall Timbers Fire Ecology Conference. Fire in Wetlands: A Management Perspective. Tall Timbers Research, Inc., Tallahassee, FL.

Bacchus, S. T. 1994. Initial use of potential ecological indicators to detect subsurface drainage in wetlands of the Southeastern Coastal Plain, U.S.A. pp. 299-308. *in:* Stanford, J. A. and H. M. Valett (eds.) Proceedings of the Second International Conference on Ground Water Ecology. American Water Resources Association, Herndon, VA.

Miller, D., **S. T. Bacchus** and H. Miller. 1993. Chemical differences between stressed and unstressed individuals of baldcypress (*Taxodium distichum*). Florida Scientist 56(3)178-184.

Bacchus, S. T. 1992. Apparent response of baldcypress (*Taxodium distichum*) to short-term inundation during the growing season. Proceedings of the Nineteenth Annual Conference on the Restoration and Creation of Wetlands.

Bacchus, S. T. 1991. The importance of ecological factors in successful restoration and creation of wetlands. Proceedings of the Eighteenth Annual Conference on the Restoration and Creation of Wetlands.

Bacchus, S. T. 1989. Complications arising from the incorporation of a muck layer into created wetlands. Proceedings of the Sixteenth Annual Conference on the Restoration and Creation of Wetlands. pp. 10-23.

GRANTS, RESEARCH, AWARDS, SCHOLASTIC HONORS, AND ACHIEVEMENTS

1993 Odum Research Award

1994 $125,000 one-year grant award for Hydrologic Restoration of Tosohatchee State Reserve

1994 invited speaker re: subsurface drainage of wetlands for Second International Groundwater Ecology Conference

1994 invited speaker re: subsurface drainage of wetlands for American Water Resources Association regional meeting

1994/95 USEPA Merit Scholarship Award

1995 USGS/Georgia Water Resources Research Grant for geophysical evaluation of depressional wetlands

1995 invited speaker re: subsurface drainage of wetlands for Georgia Water Resources Conference

1995 invited speaker re: subsurface drainage of wetlands for FWS, GDNR, COE, former SCS

1995 selected by National Science Foundation & Japan to conduct hydrologic research in Japan

1995** awarded "Best Paper of the Year"/applied sciences from UGA Institute of Ecology

1996 USGS/Georgia Water Resources Research Grant for hydroecologic evaluation of wetlands

1996 USFWS Grant for investigation of near infrared reflectance as an objective means of assessing water stress in pond-cypress

1996 invited speaker re: hydroecological responses of pond-cypress INTECOL V International Wetlands Conference Perth, Australia

1996 invited speaker re: hydroecological responses of pond-cypress for the International Conference on Water Resources and Environment Research, Kyoto, Japan

1997* Georgia Water Resources John "Alec" Little Water Resources Scholarship for Science and Engineering

1997** awarded "Best Paper of the Year"/applied sciences from UGA Institute of Ecology (shared)

1997 invited speaker re: subsurface destruction of wetlands and damage to barrier islands for Smithsonian, DC

1997 invited speaker re: subsurface drainage of wetlands for Georgia Water Resources Conference

1998 invited speaker re: subsidence in depressional wetlands of the southeastern coastal plain at the Symposium on Current Research and Case Studies of Land Subsidence in California

1998 selected for Peer Review of hydrologic issues related to the proposed mining of Trail Ridge in the vicinity of the Okefenokee National Wildlife Refuge

1999 invited speaker re: subsurface drainage of wetlands for Georgia Water Resources Conference

1999 invited speaker re: offshore groundwater flow and seepage for the 22nd General Assembly of the International Union of Geodesy and Geophysics/International Association of Hydrological Sciences, Birmingham, England

2000 invited speaker re: nearshore responses from onshore groundwater perturbations for Geological Society of America SE Conference, Charleston, SC

2000 invited speaker re: phytoremediation using vascular plants for International Conference of Contaminated Soil Sediment and Water, San Diego, CA

2000 invited speaker re: impact of groundwater perturbation on (1) invasion & spread of nuisance species and (2) conservation for Association of Southern Biologists

2000 invited speaker re: restoration factors for linked karst aquifer-wetland systems for International Conference of Geological Society of America/Reno, NV

2000 invited speaker re: predicting nearshore environmental impacts associated with onshore anthropogenic perturbations of ground water for Hydro 2000: Interactive Hydrology, the 26th National and 3rd International Hydrology and Water Resources Symposium of the Institution of Engineers, Australia

2001 guest lecturer, USGS Restin Headquarters: Environmental impacts of groundwater mining and injected wastes on the Everglades, Florida Bay, and the coral reefs

2001 guest lecturer, Mote Marine Lab, Summerland Key, FL: Environmental impacts of groundwater mining and injected wastes on the Everglades, Florida Bay, and the coral reefs

2001 guest lecturer, National Park Service/Everglades National Park: Predicting coastal environmental impacts associated with perturbations of groundwater in karst aquifers

2001 guest lecturer, Green Design Council/Boca Raton: Predicting coastal environmental impacts associated with perturbations of groundwater in karst aquifers

2001 guest lecturer, Volusia/Flagler Environmental Action Committee: Groundwater responses: stepping back to see the big picture

2001 invited speaker, National Natural Areas Association Conference, Cape Canaveral, FL: The unseen destroyer of terrestrial and nearshore natural diversity

2002 invited speaker, Southwide Forest Disease Workshop, 1/7/02, Daytona Beach, FL, Impacts of groundwater alterations on forested ecosystems

2002 guest lecturer, Volusia County League of Women Voters, Daytona Beach, FL, Groundwater responses: stepping back to see the big picture

2002 guest lecturer, Daytona Beach Community College, Arts and Sciences Dept., Groundwater responses: stepping back to see the big picture

2002 guest lecturer, Stetson University, Geography and Environmental Sciences Dept., Groundwater responses: stepping back to see the big picture

Research and Publication Awards:

Two of the publications listed in my CV won awards as "Best Paper of the Year" in the "Applied Science" category (denoted by double asterisks in my CV). A third publication was responsible, in part, for my receipt of the John "Alec" Little Water Resources Scholarship for Science and Engineering in 1997 (denoted by a single asterisk in my CV). That award is presented once every two years by the Georgia Water Resources Association to a graduate student in the field of Science or Engineering whose research and community service have provided the most significant contribution to solving a water resource problem in the southeastern region. The panel of judges for that award includes professional staff from the USGS. The paper involved in that Water Resources Scholarship specifically deals with adverse impacts from anthropogenic alterations of ground water, one of the forms of damage to wetlands that I had observed extensively throughout Florida as the result of direct, indirect, and cumulative impacts of General and Individual projects authorized/permitted under Section 404 (CWA).

Initially, my involvement in the project in Georgia that was the subject of the Water Resources Award was as a wetland expert for a development project in which the consulting firm had failed to identify wetlands within the first phase of a multi-phased project, and had begun construction of the first phase prior to obtaining the required Section 404 permits from the COE for the entire project. At the time of my initial involvement, I had predicted that additional environmental damage, beyond the footprint of the activities that had been initiated prior to my arrival, would occur after several years and as a result of direct, indirect, and cumulative impacts from the activities that required Section 404 permits from the COE. Subsequent inspections approximately six years later revealed that the predicted environmental damage had occurred, and included dead and declining trees. Construction activities had not resumed prior to my subsequent inspections because the COE permitting issues had not been resolved by the time of my subsequent inspections.

Research Focus:

One of the aspects of my research has been the role of anthropogenic alterations of ground water in predisposing trees to pathogens. Predisposition was described by Yarwood in 1959 as "an internal degree of susceptibility resulting from external causes" and "the tendency of nongenetic factors, acting prior to infection, to affect the susceptibility of plants to disease". The phenomenon of predisposition in plants is comparable to predisposition in animals, including man.

Much of my research has involved forested depressional wetlands in the southeastern coastal plain physiographic province. The southeastern coastal plain includes the entire State of Florida, in addition to portions of other southeastern states. Pond-cypress generally is the dominant tree species of forested depressional wetlands in the southeastern coastal plain. It is a deciduous conifer (a cone-bearing tree that is leafless in the winter). Pond-cypress became established in the southeastern coastal plain following the most recent drop in sea level during the Pleistocene epoch. In addition to dehiscing (dropping) its leafy branchlets during dormancy in the winter, pond-cypress has evolved a mechanism for dehiscence (leaf drop) during periods of water stress, to avoid water loss due to transpiration. Periods of reduced (or no) leaf canopy during the growing season, however, result in reduction in the tree's energy reserves, which reduces tree vigor. One specific role of my research has been to develop methods for using pond-cypress trees as ecological indicators of anthropogenic groundwater alterations.

International Conferences and Related Scientific Speaking Engagements:

My research on adverse impacts associated with anthropogenic groundwater perturbations, and my development of techniques for using pond-cypress as a hydroecological indicator of these perturbations, led to invitations to present technical research papers on those topics at the Second International Groundwater Ecology Conference in 1994; the 1996 INTECOL V International Wetlands Conference (Perth, Western Australia); the 1996 International Conference on Water Resources and Environment Research (Kyoto, Japan); the biennial Georgia Water Resources Conferences in 1995, 1997, and 1999; the 1998 Joseph F. Poland Symposium on Current Research and Case Studies of Land Subsidence (California); and the 3rd International Hydrology and Water Resources Symposium of the

Institution of Engineers: Interactive Hydrology (Perth, Western Australia), in addition to less prestigious conferences.

Also as a result of my research, I have been invited to present seminars about the adverse environmental impacts of anthropogenic groundwater alterations to the American Water Resources Association Regional Meeting (Georgia) in 1994; a special meeting of the United States Fish and Wildlife Service (FWS), Georgia Department of Natural Resources, COE, and former United States Soil Conservation Service (Georgia) in 1995; and the Smithsonian Institute (Washington, D. C.) in 1997.

Honors and Achievements:

In 1995, I was honored by being one of a total of 50 Engineering and Science graduate students in the nation selected by the **National Science Foundation** to study abroad, with Research Scientists in Japan. The selection of students for this award primarily is based on the contribution of the student's research to the field of Engineering or Science. I also was nominated as a **Technical Advisory Member** in the field of Hydrology for the proposed mining of Trail Ridge in the vicinity of the Okefenokee National Wildlife Refuge, and was selected to serve as a Peer Reviewer for proposed mining issues related to that field. A "no mining" scenario recently was imposed for Trail Ridge. The "no mining" scenario was selected, in part, because of significant adverse impacts that would occur to wetlands in the Okefenokee Swamp if one of the primary local recharge areas (Trail Ridge) was mined.

PROFESSIONAL AFFILIATIONS

Association for the Environmental Health of Soils
American Geophysical Union
American Water Resources Association
Geological Society of America
Scientific Committee on Oceanic Research/
Land-Ocean Interactions in the Coastal Zone
The Hydrogeology Consortium

My involvement with professional Societies and other organizations is related to large-scale problems associated with interactions of ground water and surface water, anthropogenic groundwater alterations, and the ecological implications of those alterations. One example of such organization is the International Scientific Committee on Oceanic Research Working Group, of which I was an Associate Member. The purpose of this organization was to evaluate the magnitude of submarine groundwater discharge and its influence on coastal oceanographic processes.