

CURRICULUM VITAE
DONNA R. STRENG

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EDUCATION:

High School	Gillett High School, Gillett, WI		1971
B. S.	University of Wisconsin (with distinction), Madison	Botany	1975
M. A.	Rice University, Houston, TX	Biology	1979
Ph. D.	Rice University, Houston, TX	Biology	1986

EMPLOYMENT:

2007-2008 Beadel Fellow, Tall
Timbers Research Station, Tallahassee, FL

July '90-present Research Associate, Tall Timbers Research Station, Tallahassee, FL

Sept. '87-July '90 Postdoctoral Associate, Tall Timbers Research Station, Tallahassee, FL
(working with Dr. William J. Platt, Botany Department, Louisiana State
University, Baton Rouge, LA)

PREVIOUS EMPLOYMENT EXPERIENCE:

1987 Postdoctoral Associate, Biology Department, Rice University, Houston, TX

July 1987 Instructor (Ecology section), Summer Institute in the Life Sciences for Middle
School Teachers, Rice University, Houston, TX

1986 Project Assistant, Institute of Ecosystem Studies, The New York Botanical
Garden, Millbrook, NY

1976-85 Graduate Student, Biology Department, Rice University, Houston, TX

1976-79 Teaching Assistant for Introductory Biology (2 semesters), Ecology (2
semesters), and Botany (2 semesters), Biology Department, Rice University,
Houston, TX

1972-75 Laboratory Assistant, Botany Department, U. of Wis., Madison, WI

SCIENTIFIC PUBLICATIONS:

1982 Streng, D. R., and P. A. Harcombe. Why don't East Texas savannas grow up
to forests? *The American Midland Naturalist* 108: 278-294.

- 1986 Glitzenstein, J. S., P. A. Harcombe, and D. R. Streng. Disturbance, succession, and maintenance of species diversity in an East Texas forest. *Ecological Monographs* 56:243-258.
- 1989 Streng, D. R., J. S. Glitzenstein, and P. A. Harcombe. Woody seedling dynamics in an East Texas floodplain forest. *Ecological Monographs* 59:177-204.
- 1990 Glitzenstein, J. S., C. D. Canham, M. J. McDonnell, and D. R. Streng. Effects of environment and land-use history on upland forests of the Cary Arboretum, Hudson Valley, New York. *Bulletin of the Torrey Botanical Club* 117:106-122.
- 1991 Platt, W. J., J. S. Glitzenstein, and D. R. Streng. Evaluating pyrogenicity and its effects on vegetation in longleaf pine savannas. *Proceedings of the Tall Timbers Fire Ecology Conference* 17:143-161.
- 1993 Streng, D. R., J. S. Glitzenstein, and W. J. Platt. Evaluating effects of season of burn in longleaf pine forests: a critical literature review and some results from an ongoing long-term study. *Proceedings of the Tall Timbers Fire Ecology Conference* 18: 227-263.
- 1995 Glitzenstein, J. S., W. J. Platt, and D.R. Streng. Effects of fire regime and habitat on tree dynamics in north Florida longleaf pine savannas. *Ecological Monographs* 65: 441-476.
- 1996 Brewer, J. S, W. J. Platt, J. S. Glitzenstein, and D. R. Streng. Effects of fire-generated gaps on growth and reproduction of golden aster (*Pityopsis graminifolia*). *Bulletin of the Torrey Botanical Club* 123:295-303.
- 1996 Glitzenstein, J. S., D. R. Streng, J. MacBride, D. D. Wade, E. Kjellmark, P. McMillan, and R. K. Peet. A historical perspective on longleaf pine groundcover vegetation in the Francis Marion National Forest. *Proceedings of the 1st Longleaf Alliance Conference* : 76-78.
- 1996 Glitzenstein, J. S., D. R. Streng, and D. D. Wade. Species introductions in longleaf pine groundcover vegetation. *Proceedings of the 1st Longleaf Alliance Conference* : 79-81.
- 1996 Streng, D. R., J. S. Glitzenstein, W. J. Platt, and D. D. Wade. Effects of fire frequency and season on longleaf pine groundcover vegetation: results of three studies. *Proceedings of the 1st Longleaf Alliance Conference* : 149-151.

- 1998 Glitzenstein, J. S., D. R. Streng, D. D. Wade, and W. J. Platt. Maintaining and restoring species diversity in longleaf pine groundcover: effects of fire regimes and seed/seedling introductions. Proceedings of the Longleaf Pine Ecosystem Restoration Symposium. Longleaf Alliance Report No. 3:72-75.
- 1998 Glitzenstein, J. S., D. R. Streng, and D. D. Wade. A promising start for a new population of *Parnassia caroliniana* Michx. Proceedings of the Longleaf Pine Ecosystem Restoration Symposium. Longleaf Alliance Report No. 3:44-58.
- 1998 Hermann, S. M., T. Van Hook, R. W. Flowers, L. A. Brennan, J. S. Glitzenstein, D. R. Streng, J. L. Walker, and R. L. Myers. Fire and biodiversity: studies of vegetation and arthropods. Transactions of the 63rd North American Wildland and Natural Resource Conference:384-401.
- 1998 Harcombe, P. A., R. B. W. Hall, J. S. Glitzenstein, E. R. Cook, P. Krusic, M. Fulton, and D. R. Streng. Sensitivity of Gulf Coast forests to climate change. Pages 45-66 in G. R. Guntenspergen and B. A. Vairin, editors. Vulnerability of coastal wetlands in the Southeastern United States: climate change research results, 1992-97. Biological Science Report USGS/BRD/BSR—1998-0002.
- 1999 Glitzenstein, J. S., D. R. Streng, and D. D. Wade. Fire and site effects on grasses outplanted into longleaf pine groundcover. Proceedings of the 2nd Longleaf Alliance Conference. Longleaf Alliance Report No. 4:87.
- 2001 Glitzenstein, J. S., D. R. Streng, D. D. Wade, J. Brubaker. Starting new populations of longleaf pine ground-layer plants in the outer coastal plain of South Carolina. Natural Areas Journal 21:89-110.
- 2002 Glitzenstein, J.S., D.R. Streng, and D.D. Wade. Starting new populations of rare longleaf plants: the economy approach. Pages 121-130 in J. Randall and J.C. Burns, editors. Eastern Native Grass Symposium Proceedings 3. Chapel Hill, NC, October 1-3, 2002. 331 pp. Omnipress, Madison, WI, USA.
- 2003 Glitzenstein, J.S., D.R. Streng, and D.D. Wade. Fire frequency effects on longleaf pine (*Pinus palustris* P. Miller) vegetation in South Carolina and northeast Florida. Natural Areas Journal 23:22-37.
- 2006 Naeher, L. P., G. L. Achtemeier, J. S. Glitzenstein, D. McIntosh, and D. R. Streng. Real time and time-integrated PM_{2.5} and CO from prescribed burns in chipped and unchipped plots—firefighter and community exposure and health implications. Journal of Exposure Analysis and Environmental Epidemiology: 16:351-361.

- 2006 Glitzenstein, J. S., D. R. Streng, G. L. Achtemeier, L. P. Naeher, D. D. Wade. Fuels and fire behavior in chipped and unchipped plots: implications for land management near the wildland/urban interface. *Forest Ecology and Management* 236(1):18-29.

ADMINISTRATIVE REPORTS:

- 1978 Streng, D. R., and P. A. Harcombe. Fuel loading inventory: Hickory Creek Savanna Unit, Big Thicket National Preserve (BTNP). Report to the National Park Service, BTNP, Beaumont, TX. 40 pp.
- 1979 Streng, D. R., and P. A. Harcombe. Fuel loading inventory: Turkey Creek Unit, Big Thicket National Preserve (BTNP). Report to the National Park Service, BTNP, Beaumont, TX. 52 pp.
- 1990 Glitzenstein, J. S., D. R. Streng, and W. J. Platt. Evaluating the effects of season of burn on vegetation in longleaf pine savannas. Final report to the Non-Game Section, Florida Game and Fresh Water Fish Commission, Tallahassee, FL. 118 pp.
- 1993 Glitzenstein, J. S., D. R. Streng, and S. Hermann. Effects of mechanical and chemical site preparation treatments on vegetation of the Apalachicola National Forest: final report. Report to the US Forest Service, Tallahassee, FL. 29 pp.
- 1995 Glitzenstein, J. S., D. R. Streng, and W. J. Platt. Vegetation recovery in small-scale natural and artificial disturbances: an additional test of the importance of burning season to management and restoration of longleaf pine savanna communities in North Florida. Report to the Florida Game and Fresh Water Fish Commission, Nongame Wildlife Program. 193 pp.
- 1995 Glitzenstein, J. S., and D. R. Streng. 1995. An experimental approach to restoration of longleaf pine savannas in the Francis Marion National Forest, Phase I. Final report to the USDA, Forest Service, Southern Research Station, Athens, GA. Cooperative Research Grant No. 29-703. 41 pp.
- 1995 Glitzenstein, J. S., and D. R. Streng. 1995. Floristic diversity after three decades of prescribed winter fires applied at various periodicities. Final report to the USDA, Forest Service, Southern Research Station, Athens, GA. Cooperative Research Grant No. 29-634. 22 pp.
- 1998 Glitzenstein, J. S., and D. R. Streng. An experimental approach to groundcover restoration in the Francis Marion National Forest, SC, including plotless density measurements for uncommon species. Final report to the USDA, Forest Service, Southern Research Station, Athens, GA. Cooperative Research Grant No. 29-1267 and SRS 33-G-97-110. 53 pp.

- 1999 Porcher, R. D., P. McMillan, D. R. Streng, and J. S. Glitzenstein. A floristic and ecological inventory of potential high quality longleaf pine sites in South Carolina. Final report to the Natural Heritage Program, Department of Natural Resources, Columbia, SC.
- 1999 Glitzenstein, J. S., D. R. Streng, and M. Bailey. Pre-treatment vegetation survey of proposed chipper restoration sites in the Francis Marion National Forest: part 1. Report to the USDA Forest Service, Francis Marion and Sumter National Forests, Columbia, SC. 13 pp.
- 2000 Glitzenstein, J. S., and D. R. Streng. Vegetation surveys of proposed chipper restoration sites in the Francis Marion National Forest. Report to the USDA Forest Service, Francis Marion and Sumter National Forests, Columbia, SC. 30 pp.
- 2000 Glitzenstein, J. S., and D. R. Streng. Census of *Schwalbea americana* in the Francis Marion National Forest, 1999. Report to the USDA Forest Service, Francis Marion and Sumter National Forests, Columbia, SC.
- 2000 Glitzenstein, J. S., and D. R. Streng. Rare plant survey of Steed Creek Road. Report to the USDA Forest Service, Francis Marion and Sumter National Forests, Columbia, SC. 8 pp.
- 2001 Glitzenstein, J. S., and D. R. Streng. Survey for rare plant species (including PETS) in proposed mid-story control areas in the Francis Marion National Forest. Report to the USDA Forest Service, Francis Marion and Sumter National Forests, Columbia, SC.
- 2001 Glitzenstein, J. S., and D. R. Streng. Historic vegetation of the Francis Marion National Forest, SC, as determined from plat maps. Final report to the USDA Forest Service, Asheville, NC.
- 2003 Glitzenstein, J. S., John Brubaker, D. R. Streng, Robin Roecker, Dominick Giordano, and Danny Carlson. Keep the Wild Alive Species Recovery Fund: South Carolina Native Plant Society Pondberry Final Report. Report to The National Wildlife Federation. Washington, DC.
- 2003 Glitzenstein, J. S., and D. R. Streng. Survey for threatened, endangered, and sensitive (TES) plants and their habitat on the Wambaw and Witherbee Ranger Districts, Francis Marion National Forest. Report to the USDA Forest Service, Francis Marion and Sumter National Forests, Columbia, SC.

- 2004 Glitzenstein, J. S., and D. R. Streng. Evaluating the NatureServe preliminary plant community classification for the Francis Marion National Forest. Report to NatureServe, Durham, NC.
- 2004 Glitzenstein, J. S., and D. R. Streng. Survey for threatened, endangered, and sensitive plant species in the Francis Marion National Forest. Report to the USDA Forest Service, Francis Marion and Sumter National Forests, Columbia, SC.
- 2004 Francis Marion National Forest: Pondberry (*Lindera melissifolia*) monitoring report. Report to the USDA Forest Service, Francis Marion and Sumter National Forests, Columbia, SC.
- 2004 Population sizes of *Schwalbea americana* in the Francis Marion National Forest. Report to the USDA Forest Service, Francis Marion and Sumter National Forests, Columbia, SC.
- 2004 Fire Ecology of Longleaf Pine Woodlands and Savannas. Pp. xxx-xxx in Fire Ecology of Southern Ecosystems. S. Hermann and D. Kennard, editors. (in prep). Web Site Encyclopedia, USFS and Joint Fire Science Program.
- 2005 Maintaining longleaf pine woodlands: is mechanical shearing a surrogate for prescribed burning? Preliminary report to USDA Forest Service, Southern Research Station, 320 Green Street, Athens, GA.
- 2006 Effects of season of burn on groundcover composition in North Florida longleaf pine woodlands: results after 20 years of biennial burning. Report to USFWS, Fire Ecology Field Office, 13093 Henry Beadel Drive, Tallahassee, FL.
- 2006 Survey for Proposed, Endangered, Threatened, and Sensitive (PETS) plant species, and their habitat in the Francis Marion National Forest, SC. Report to the USDA Forest Service, Francis Marion and Sumter National Forests, Columbia, SC.
- 2007 Survey for Proposed, Endangered, Threatened, and Sensitive (PETS) plant species, and their habitat on 3,800 acres in the Francis Marion National Forest, SC. Report to the USDA Forest Service, Francis Marion National Forest, Cordesville, SC.

FUNDED RESEARCH PROJECTS:

- 1985-86 Southwest Parks and Monuments Association. Describing effects of the December 1983 tornado on forest vegetation of the East Texas Big Thicket. With P. A. Harcombe, co-principal investigator. \$5,000.

- 1990-92 United States Forest Service. Effects of mechanical site preparation methods on longleaf pine communities in the Apalachicola National Forest. With S. Hermann, co-principal investigator. \$9,800.
- 1991-94 United States Forest Service. Floristic diversity after 3 decades of prescribed winter fires applied at various periodicities. \$32,000.
- 1992-95 United States Forest Service. Reconstructing vegetation and land-use history in the Francis Marion National Forest. \$35,969.
- 1992-94 United States Forest Service. An experimental approach to restoration of longleaf pine savannas in the Francis Marion National Forest. \$58,028.
- 1992-95 Non-Game Wildlife Program, State of Florida. Vegetation recovery in small-scale natural and artificial disturbances: an additional test of the importance of burning season to management and restoration of pine savanna communities in north Florida. With W. J. Platt, project co-director. \$83,304.
- 1992-95 United States Forest Service. An experimental approach to the restoration of longleaf pine savannas in the Francis Marion National Forest--Phase II. \$39,994.
- 1993-97 National Park Service Global Climate Change Initiative--Gulf Coast Biogeographic Region. Using dendrochronology to help predict effects of global climate change on forests of the Big Thicket National Preserve. With E. R. Cook, co-principal investigator. \$133,760.
- 1995-97 United States Forest Service. Plotless density measurements for rare plants in the Streng/Glitzenstein/Wade fire plots, Francis Marion National Forest. \$45,000.
- 1995-99 United States Department of Energy. An experimental approach to restoration of understory vegetation in longleaf pine forests: seed introduction trials in the field and garden. \$30,000.
- 1995-00 United States Forest Service and United States Department of Energy. Early settlement forest vegetation-soil/landscape relations: a GIS based integration of original land surveys. \$8,500.
- 1997-01 United States Forest Service, Challenge Cost-Share Agreement. Use of native plant species for revegetating disturbances in the Francis Marion and Sumter National Forests. With numerous other collaborators. \$2,000.

- 1999 United States Forest Service, Challenge Cost-Share Agreement. Botanical surveys in the Francis Marion National Forest for PETS species, and population information on *Schwalbea americana*. \$7,000.
- 2000 United States Forest Service, Challenge Cost-Share Agreement. Botanical surveys in the Francis Marion National Forest for PETS species. 2 agreements: \$9,000 and \$3,000.
- 2001-05 Joint Fire Science Program. Maintaining longleaf pine woodlands: is mechanical shearing a surrogate for prescribed burning? With Dale D. Wade, project co-director. \$107,738.
- 2001 Botanical surveys in the Francis Marion National Forest for Threatened, Endangered, and Sensitive species. With Jean Everett and Patrick McMillian. \$8237.
- 2001-06 Effects of season of burn on groundcover composition in North Florida longleaf pine woodlands: results after 20 years of biennial burning. U.S. Fish and Wildlife Service. \$2,100.
- 2002 Pondberry (*Lindera melissifolia*) Restoration in the Francis Marion National Forest, SC. National Wildlife Federation, Keep the Wild Alive, Species Recovery Fund. \$7000.
- 2003 Simulation modeling of eastern and north-central Texas forests: Biocomplexity Project, M. Acevedo and P.A. Harcombe, PI's (NSF Grant): consulting and parameter set development. \$2000.
- 2003 Survey for threatened, endangered, and sensitive (TES) plants and their habitat on the Wambaw and Witherbee Ranger Districts, Francis Marion National Forest. USDA Forest Service. \$7531.
- 2004 Evaluating the NatureServe preliminary plant community classification for the Francis Marion National Forest. \$3000.
- 2004 Population sizes of *Schwalbea americana* and *Lindera melissifolia* in the Francis Marion National Forest. USDA Forest Service. \$5000.
- 2004 Survey for threatened, endangered, and sensitive plant species in the Francis Marion National Forest. USDA Forest Service. \$11,189.
- 2004 Fire Ecology of Longleaf Pine Woodlands and Savannas. Pp. xxx-xxx in Fire Ecology of Southern Ecosystems. S. Hermann and D. Kennard, editors. (in prep). Web Site Encyclopedia, USFS and Joint Fire Science Program. \$2200.

- 2006 Survey for Proposed, Endangered, Threatened, and Sensitive (PETS) plant species, and their habitat in the Francis Marion National Forest, SC. Participating Agreement with the USDA Forest Service, Francis Marion and Sumter NF. \$10,000.
- 2006-08 Restoration of longleaf pine ground layer plants at Yeaman's Hall Club, Hanahan, SC. \$23,656.
- 2007 Survey for Proposed, Endangered, Threatened, and Sensitive (PETS) plant species, and their habitat on 3,800 acres in the Francis Marion National Forest, SC. USDA Forest Service, \$15,200.
- 2007-08 Survey of the vegetation on the Stoddard fire plots, Tall Timbers Research Station, Tallahassee, FL. \$6,000.
- 2008-11 Status survey and population re-initiation for *Schwalbea americana* in South Carolina. Grant agreement with the US Fish and Wildlife Service. Grant to be administered by the SC Native Plant Society. \$20,356.

OPERATIONAL SCALE RESTORATION PROJECTS:

A new population of *Parnassia caroliniana* in the Francis Marion NF. *Parnassia caroliniana* is one of the rarest wet savanna forbs, with only a handful of known populations in SC. In 1993 and 1994 with USFS funding, we initiated seven new subpopulations of this species in experimental fire plots in the Francis Marion NF. Over a decade later yearly survival of original outplants has stabilized at close to 100%, new reproduction is occurring from seed, and clonal expansion of original clusters is increasing exponentially. Furthermore, population models project population survival time in the hundreds of thousands of years.

Pond-berry Restoration in the Francis Marion NF. (Funded by the National Wildlife Federation). We directed a collaboration between SC Native Plant Society volunteers and the US Forest Service to reinvigorate a moribund population of the federally endangered pond-berry (*Lindera mellisifolia*). The restoration site is the proposed Honey Hill Research Natural Area, formerly the site of the largest population of this rare shrub in the state of South Carolina but declining for decades due to fire exclusion and invasion of pond borders by competing vegetation. Volunteers and USFS workers have been clearing canopy openings and removing competing brush. Restoration was initiated in 2002 and is still ongoing. Results to date show dramatic improvements in the status of pond-berry populations including increases in stem sizes and reproduction.

American Chaffseed Restoration in the Francis Marion NF. With a permit from USFWS we have been growing and out-planting seedlings of the federally endangered American Chaffseed (*Schwalbea americana*), one of the rarest longleaf pine ground-layer forbs. This is a pioneering effort since no one previously has started a new population of this species in the field. The restoration site is Roy's Place Road in the FMNF, site of a previously extirpated population.

U.S. Fish and Wildlife Service Partners For Fish and Wildlife: Private Land Longleaf Ecosystem Restoration. The ecological services division of US Fish and Wildlife Service works with public and private landowners to facilitate ecological restoration and management. In the southeastern Coastal Plain region a major emphasis is on longleaf ecosystem restoration, especially ground-layer plant communities. As part of a ground-layer restoration working group we have, over the last several years, worked closely with a number of agency and academic biologists on several restoration projects in various stages of planning and completion in GA and AL (landowner names are confidential). Treatments involve prescribe fire and/or herbicide to control weed populations and dense brush followed by propagation and out-planting of plugs of common longleaf ground-layer plants typical of that area. Species propagated and out-planted include wiregrass (*Aristida beyrichiana*), little bluestem (*Schizachyrium scoparium*), grass-leaved goldenaster (*Pityopsis graminifolia*), lopsided Indiangrass (*Sorghastrum secundum*), arrowleaf threeawn (*Aristida purpurascens*), woollysheath threeawn (*Aristida lanosa*), southern aster (*Aster tortifolius*), gayfeathers (*Liatris* spp.), beggar's ticks (*Desmodium* spp.), roundleaf sunflower (*Helianthus radula*) and many others. Plugging began in 2001 and is ongoing. Original plantings have high survival (>80%), good growth, and several of the species have reproduced *in situ*. Plugs for plantings are grown at several nurseries including American Tree Seedling Co, Bainbridge, GA, Blanton Nursery, Madison, FL, Deep South Nursery, near Valdosta GA, and state of FL Andrews Nursery in Chiefland FL. Contact information for our USFWS collaborator Mr. Jim Bates is provided below. Mr. Bates is in charge of Partners restoration projects in AL and part of GA.

Yeamans Hall Restoration. This privately funded project aimed to restore longleaf pine ground layer plants to a former loblolly plantation. Seed for the restoration was collected locally from Francis Marion National Forest, Naval Weapons Station, and from remnant natural habitat at Yeamans Hall itself. We worked with staff at the National Seed Laboratory in Macon, GA, to determine seed viability and germination requirements. The propagation work was carried out at ATS Partners Nursery in Bainbridge, GA. More than 40,000 nursery plugs from 42 different species were grown from the collected seed and planted at the restoration site.