SHILI MIAO, PhD

Senior Supervising Scientist

Education:

Postdoctor Harvard University 1990-93

Research projects: Interactive effects of elevated atmospheric CO_2 concentration and nitrogen deposition on regeneration and nutrient cycling of New England deciduous forests.

Ph.D., Biology/Ecology Boston University 1987-90

Thesis research: Effects of nutrient pulses on the life history of two *Plantago* species requiring different frequency of disturbances.

M.S., Biology/Ecology Southwest China Normal University 1982-84

Thesis research: Ecophysiology of an important evergreen broad-leaved tree, *Gordonia arcumenata*, in relation to net photosynthesis.

B.S., Biology/Ecology Southwest China Normal University 1978-82

Thesis research: Species composition and structure of subtropical evergreen broad-leaved forests on Jingyun Mountain, China.

Professional Profile:

Senior Supervising Scientist,	South Florida Water Management District	2003-present
Senior Scientist,	South Florida Water Management District	1994-2003
Adjunct Professor,	Institute of Botany, Chinese Academy of science	2004- present
Adjunct Professor of Biology,	Florida Atlantic University	1994- present
Adjunct Professor of Biology,	Southwest China Normal University	1993- present
Visiting Scientist,	Harvard University	1986-87
Assistant Professor of Biology,	Southwest China Normal University	1984-86

Ecological journals served

- Editorial board, Frontiers in Ecology and the Environment 2006-
- Editor-In-Chief, Journal of Plant Ecology 2005-present
- Guest editor, the special issue of Biological Invasions 2005
- Editorial member for Acta Ecological Sinica 2001-2004
- Review manuscripts for Ecology, Journal of Environmental Management, American Journal of Botany, Aquatic Botany, Wetlands, Vegetation Science, and Biomedical and Environmental Sciences;
-

Symposiums organized

- Organizer, 91st ESA Annual Meeting Symposium entitled "Large-Scale Studies: Challenges in Experimental Design and Analysis" Jan.-Aug., 2006
- Organizer, 90th ESA Annual Meeting Symposium entitled "Ecological Impacts of Asia on Global Sustainability at Multiple Scales" Jan.-Aug., 2005
- Co-organizer, 90th ESA Annual Meeting Symposium entitled "Ecological Impacts of Asia on Global Sustainability at Multiple Scales" Aug., 2005
- Main organize and co-chair, "Beijing International Symposium on Biological Invasions"
- June 2004
- Co-organizer, 89th ESA Annual Meeting Symposium entitled "Biological invasions: Species changes between North America and Eastern Asia" Aug., 2004
- Co-organizer, 88th ESA Annual Meeting evening session entitled "Cross continental invasions of wetland non-indigenous species: Comparing the experience among Asia, America, and Europe" Aug., 2003
- Co-chair of Symposium titled "Succession Theory and Ecosystem Restoration Workshop", South China Institute of Botany, Chinese Academy of Sciences. Dec., 2002
-

Ecological organizations served

- Chair, Asian Ecology Section, Ecological Society of America 2004-2006
- President, Sino-Ecologists Association Overseas 2002-2004

Publications:

60. Miao S.L., M. Dong, and K.P. Ma. 2006. Development of biological invasions and invasion biology in the 21th century. Lectures in Modern Ecology (III) (ed. J.G. Wu) (in press)

59. Callaway, R.M., S.L. Miao, Q.F. Guo. 2006. Are trans-Pacific invasions the new wave? The Special Issue of the Journal of Biological Invasions (in press)

58. Liu, J., M. Dong. S.L. Miao, Z.Y. Li, M.H. Song, and R.Q. Wang. 2006. Invasive alien plants in China: role of clonality and geographical origin. The Special Issue of the Journal of Biological Invasions (in press)

57. Miao, S.L. and S. Carstenn. 2006. A new direction for large-scale experimental design and analysis. Frontiers in ecology and the Environment. 4 (5): 227.

56. Alpert, P., S.L. Miao, M. Dong, and H.G. Han. 2005. Meeting report: The Beijing Internationa; Symposiums on Biological invasions, 6-11 June 2004. **Acta Phytoecologica Sinica**, 29: 520-522.

55. Chen, H.J, I.A. Mendelssohn, B. Lorenzen, H. Brix. and S.L. Miao. 2005 Growth and nutrient responses of *Eleocharis cellulosa* to phosphate level and redox intensity. **American J. Botany,** 92:1457-1466.

54. Sklar, F.H., Chimney, M. J, Newman, S., McCormick, P. Gawlick, D., S.L. Miao, C.McVoy, W., Said, J., Newman, C., Coronado, M., Korvela, and K., Rutchey. 2005. The ecological-societal underspinnings of Everglades restoration. **The Frontiers in Ecology and the Environment**, 3:161-169.

53. Zhao, S.Q., J.Y. Fang, S.L. Miao, Gu, S., Tao, G., Peng, C.H., and Z.Y. Tang. 2005. The 7-decade degradation of a large freshwater lake in central Yangtze River, China. **Environ. Sci. Technol**., 39:431-436.

52. Zhao L., L. Robinson, R.L., Paul, R.R. Greenberg, and S.L. Miao. 2005. Determination of carbon, nitrogen, and phosphorus in cattail using cold neutron prompt gamma activation analysis. **The Journal of Radioanalytical and Nuclear Chemistry,** 263:805-810.

51. Miao, S.L. 2004. Different rhizome growth and nutrient resorption of two wetland species with contrasting life history. **Aquatic Botany** 78:55-56.

50. Lorenzen, B., H. Brix, I.A. Mendelssohn, K.L. McKee, and S.L. Miao. 2004. The effect of P and oxygen deprivation on growth and nutrient partitioning in *Cladium jamaicense* and *Typha domingensisas*. **Annals of Botany**

49. Weisner, S.E.B. and S.L. Miao. 2004. Use of morphological variability in *Cladium jamaicense* and *Typha domingensis* to understand vegetation changes in an Everglades marsh. **Aquatic Botany** 78:319-335.

48. S. Newman, P. V. McCormick, S.L. Miao, J.A. Liaing, W. C. Kennedy, and M.B. O'Dell. 2004. The effect of phosphorus enrichment on the nutrient status of a northern Everglades slough. **Wetlands Ecology and Management** 12: 63-79.

47. Lissner,J., I. A. Mendelssohn, B. Lorenzen, H. Brix, K. L. McKee, and S.L. Miao. 2003. Interactive effects of redox intensity and phosphate availability on growth and nutrient relations of *Cladium jamaicense*. **American J. Botany,** 90:736-748.

46. Busch, L., I. A. Mendelssohn, B. Lorenzen, H. Brix, and S.L Miao. 2002. Root-shoot growth responses of the Everglades wet prairie species, *Eleocharis cellulosa* and *Rhynchospora tracyi*, to water level and phosphate. **Aquatic Botany** 78:37-54.

45. Kuhn, N.L., I.A. Mendelssohn, K.L. McKee, B. Lorenzen, H. Brix, and S.L. Miao. 2002. Root Phosphatase Activity in *Cladium jamaicense* and *Typha domingensis* Grown in Everglades Soil at Ambient and Elevated Phosphorus Levels. **Wetlands,** 22,794-800.

44. Miao. S.L., 2002. Ecological studies on species replacement and restoration in the Florida Everglades, USA. In Wu, J, Han, Xinguo, and Huan, Jianhui (Eds.) **Lectures in Modern Ecology (II) From Basic Science to Environmental Issues.** p.159-177.

43. Miao, S.L., Y. Luo, and Y. Liu. 2002. Interactive effects of atmospheric CO_2 enrichment and other environmental stresses on the structure and function of plants. In Wu, J, Han, Xinguo, and Huan, Jianhui (Eds.) **Lectures in Modern Ecology (II) From Basic Science to Environmental Issues.** p.121-143.

42. Sklar, F.H., C. McVoy, R. van Zee, D. E. Gawlick, K. Tarnoton, D. Rudnick, S. L. Miao, and T. Armentano. 2001. The effects of altered hydrology on the ecology of the Everglades. In Porter, P. (Ed.) **Connections between Ecosystems in the South Florida Hydroscape: The River of Grass Continues**. CRC Press LLC.

41. Lorenzen, B., H. Brix, K.L. McKee, I.A. Mendelssohn, and S.L. Miao. 2001. Biomass allocation and nutrient utilization in of *Cladium jamaicense* and *Typha domingensis* at different phosphorus availability. **Aquatic Botany** 70:117-133.

40. Miao, S.L., P.V. McCormick, S. Newman, and S. Rajagopalan. 2001. Interactive effects of seed availability, water depth, and phosphorus enrichment on cattail colonization in an Everglades wetland. **Wetlands Ecology and Management** 9:39-47.

39. Miao, S.L., S. Newman, and F.H. Sklar. 2000. Effects of soil nutrients and seed sources on growth of cattail in the Florida Everglades. **Aquatic Botany** 68:297-311.

38. Li, L., Z. C. Zhong, S.L. Miao, and L. Yun. 2000. The physiological and biochemical responses and adaptive capacity to water stress in Orgchorphragmus violaceus**. J. Southwest China Normal University (Natural Science**) 25: 33-37.

37. Lorenzen, B., H. Brix, K.L. McKee, I. A. Mendelssohn, and S. L. Miao. 2000. Seed germination of two Everglades species, *Cladium jamaicense* and *Typha domingensis*. **Aquatic Botany** 66:169-180.

36. McCormick, P. V., S. Newman, S.L. Miao, R. Reddy, D. Gawlik, C. Fitz, T. Fontaine, and D. Marley. 1999. Ecological needs of the Everglades. In Porter, P. (Ed.) **Connections between Ecosystems in the South Florida Hydroscape: The River of Grass Continues**. CRC Press LLC.

35. Miao, S.L. and W. F. DeBusk. 1999. Effects of phosphorus enrichment on structure and function of sawgrass and cattail communities in Florida Everglades. In Reddy, K. R. (Ed.) **Phosphorus Biogeochemistry in Subtropical Ecosystems**. p275-299. CRC Press/Lewis Publishers.

34. Miao, S.L., L. Kong, B. Lorenzen, and R. Johnson. 1998. Versatile modes of propagation in *Cladium jamaicense* (sawgrass) in the Florida Everglades. **Annals of Botany** 82: 285-290.

33. Miao, S.L. and F. H. Sklar. 1998. Biomass and nutrient allocation of sawgrass and cattail along an environmental gradient in Florida Everglades. **Wetland Ecosystems and Management** 5: 245-264.

32. Carraher Jr., C. E., A. Gaonkar, H. H. Stewart, S.L., Miao, D. Mitchell, C. Barosy, M. Colbert, and R. Duffield. 1997. Synthesis and structural characterization of plant growth hormone containing polymers based on gibberellic acid and organostannane dichlorides for use in the Florida Everglades. **Polymer P. American Chemical Society** 38:572-573.

31. Miao, S.L., R. E. Borer, and F.H. Sklar. 1997. Sawgrass seedling responses to transplanting and nutrient addition. **Ecological Restoration** 5: 162-168.

30. Stewart, H. H., S.L. Miao, M. Colbert, and C.E. Carraher, Jr.. 1997. Seed germination of two cattail (*Typha*) species as a function of Everglades nutrient levels. **Wetlands** 17: 116-122.

29. Carraher Jr., C.E., A. Gaonkar, H. H. Stewart, S. L., Miao, M. Colbert, S. Casanova Clark, and D. Sterling. 1997. Influence of gibberellic acid and gibberellic acid-containing polymers in the reestablishing of the Everglades. **Polymeric Materials Science and Engineering** 76:580-581.

28. Stewart, H.H., C.E. Carraher Jr., W.J. Soldani, L. Reckleben, J. De la Torre, and S.L. Miao. 1996. Structural characterization and effects of gibberellic acid-containing organometallic polymers as plant growth regulators. Eds. by C. U. Pittman, Jr. **Metal- Containing Polymeric Materials**. p93-107. Plenum Press, New York.

27. Miao, S. L. 1995. Acorn size and CO_2 responses in red oak. **Journal of Vegetation Science** 6: 697-700.

26. Carraher Jr., C. E., H. H. Stewart, S. L. Miao, L. Recklenben, W. Soldani, and D. Sterling. 1995. Structural characterization of polymers containing plant growth regulators**. Polymeric Materials Science and Engineering** 72: 372-373.

25. Primack, R. B., S. L. Miao, and C. Becker. 1994. Costs of reproduction in the pink lady's slipper orchid (*Cypripedium acanle*): defoliation, increased fruit production, and fire. **American Journal of Botany** 81: 1083-1090.

24. Bazzaz, F. A., S. L. Miao, and P. M. Wayne. 1993. CO_2-induced growth enhancement of co-occurring temperate tree species declined at different rates. **Oecologia** 96:478-482.
23. Morse, S., P. M. Wayne, S. L. Miao, and F. A. Bazzaz. 1993. Interactive effects of carbon dioxide and soil moisture availability on tree seedling's tissue water relations. **Oecologia** 95:599-602.

22. Bazzaz, F. A. and S. L. Miao. 1993. Successional status, seed size and responses of tree seedlings to CO_2, light and nutrient availability: A search for patterns. **Ecology** 74: 104-112.

21. Miao, S. L. 1992. Plant physiological today. In Jianguo Liu (Editor) **Modern Ecology of America**. p180-220. Academic Press, Beijing, P. R. China.

20. Primack, R. B. and S. L. Miao. 1992. Effects of seed dispersal on the distribution of rare plant species. **Conservation Biology** 4: 513-519.

19. Miao, S. L., P. Wayne, and F. A. Bazzaz. 1992. Elevated CO_2 differentially alters the responses of birch and maple seedlings to a moisture gradient. **Oecologia** 90: 300-304.

18. Primack, R. B. and S. L. Miao. 1991. "Safe sites" for germination using *Plantago* seeds: A repetition of a thrice–published experiment. **Bulletin of the Torrey Botanical Club** 118: 154-160.

17. Miao, S. L., F. A. Bazzaz, and R. B. Primack. 1991. Persistence of maternal nutrient effects in *Plantago major*: The third generation. **Ecology** 72:1634-1642.

16. Miao, S. L., F. A. Bazzaz, and R. B. Primack. 1991. Effects of maternal nutrient pulses on the reproduction of two colonizing Plantago species. **Ecology** 72: 586-596.

15. Miao, S. L. and F. A. Bazzaz. 1990. Responses to nutrient pulses of two colonizers requiring different disturbance frequencies. **Ecology** 71: 2166-2178.

14. Miao, S. L. 1990. Ecological effects of nutrient pulses on the life history of colonizing *Plantago* species. Ph.D. Dissertation. Boston University, Boston, MA. pp. 219.

13. Schmid, B., S. L. Miao, and F. A. Bazzaz. 1990. Effects of simulated root herbivore and fertilizer application on growth and biomass allocation in the clonal perennial *Solidago canadensis*. **Oecologia** 84: 9–15.

12. Fliervoet, L. M., Z. C. Zhong, Y. C. Liu, S. L. Miao, M. Dong, and M. J. A. Werger. 1989. Diversity and above–ground structure of the understory *Phyllostachys pubesces* groves on Mount Jinyun, Sichuan, China. **Flora** 182: 203–219.

11. Miao, S. L. and Y. C. Liu. 1988. A study on the secondary succession of subtropical evergreen broad-leaved forests in the Natural Preserve of Jinyun Mountain I. Species diversity. In Zhong Zhangcheng (ed.) **Ecological Studies on Evergreen Broad-leaved Forests**. p387–412. Southwest Normal University Press, Chongqing, China.

10. Zhong, Z. C., Y. C. Liu, and S. L. Miao. 1987. Sichuan Vegetation, China. **Journal of Southwest Normal University**, 2:33–56.

9. Miao, S. L. 1987. A preliminary study on the ecophysiology of *Gordonia arcumenata* in relation to net photosynthesis. **Acta Ecologia Sinica** 2:120–127.

8. Miao, S. L. and L. Q. Zhang. 1986. The ecological balance and natural conservation. **Journal of Chongqing Environmental Conservation**, 1:36–41.

7. Zhong, Z. C. and S. L. Miao. 1986. Outline of the Dutch vegetation types**. Journal of Southwest Normal University**, 2:32–38.

6. Zhong, Z. C. and S. L. Miao. 1986. Chinese vegetation and its regularities of distribution. **Journal of Southwest Normal University**, 1:1–36.

5. Liu, Y. C. and S. L. Miao. 1984. Studies on *Fokienia hodginsii* forest on Shimian Mountain in Jiangjing County, Sichuan, China. **Ecological Science**, 2:26–33.

4. Liu, Y. C. and S. L. Miao. 1984. A preliminary study on forest vegetation of Shimian Mountain in Jiangjing County, Sichuan, China. **Ecological Science**, 1: 19–24.

3. Miao, S. L 1982. The role of plants in environmental conservation**. Journal of Chongqing Environmental Conservation**, 1: 33–39.

2. Liu, Y. C. and S. L. Miao. 1982. Quantitative classification of evergreen broad-leaved forests in the Natural Preserve of Jinyun Mountain. **Ecological Science**, 2:33–39.

1. Liu, Y. C. and S. L. Miao. 1981. Vegetation types in limestone areas of Chongqing, China. **Journal of Southwest Normal University**, 3:14–18.