

SARAH ELIZABETH GERGEL

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Born 23 April 1969
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RESEARCH INTERESTS

Landscape ecology of aquatic & terrestrial interfaces, influence of land use patterns on surface-water chemistry, human disruption of flood regimes, spatial analysis and modeling, ecological economics

EDUCATION

- Ph.D.** 2001, Zoology, University of Wisconsin - Madison, Department of Zoology
Dissertation Title: Human-altered disturbance regimes: effects of flood control along the Wisconsin River. Advisor: Monica G. Turner
- M.S.** 1996, Zoology, University of Wisconsin - Madison, Department of Zoology
Thesis Title: Dissolved organic carbon as an indicator of the scale of watershed influence on north temperate lakes and rivers. Advisor: Monica G. Turner
- B.S.** 1992, Forest Resources & Conservation, University of Florida, Honors Program
Department of Wildlife Ecology and Conservation

EXPERIENCE

- Post-doctoral Associate**, National Center for Ecological Analysis and Synthesis (NCEAS), University of California - Santa Barbara. September 2000 - present.
Proposal Title: Protecting water by conserving land: the importance of spatial arrangement in influencing ecosystem processes.
- Instructor**, Department of Zoology, University of Wisconsin - Madison. September 1998 - December 1998.
Duties: Plan curricula, instruct, and grade 'Concepts and Techniques in Landscape Ecology,' a graduate-level laboratory course.
- Research Assistant**, North Temperate Lakes Long Term Ecological Research Program, University of Wisconsin - Madison. January 1995 - December 1997.
Duties: Design and conduct M.S. research in aquatic and terrestrial interactions.
- Teaching Assistant**, Department of Zoology, University of Wisconsin - Madison. Fall 1994.
Duties: Lead two discussion and two laboratory sections of 'Introductory Biology.'
- GIS Technician**, Department of Wildlife Ecology and Conservation, University of Florida - Gainesville. March - May 1994.
Duties: use ARC/INFO GIS to locate and map riverine snail habitat
- Intern / GIS Technician**, CSIRO, Division of Wildlife Ecology, Midland, Western Australia, Australia. September - December 1993.
Duties: Construct GRASS GIS for conservation in agricultural landscape, aid Earthwatch mist-netting expedition, assist with a variety of field sampling.
- GIS Technician**, U.S. Fish & Wildlife Service Grizzly Bear Recovery Program, University of Montana - Missoula. May - August 1993.
Duties: Create ARC/INFO GIS to evaluate landscape connectivity between prospective Grizzly Bear reintroduction sites fragmented by roads, assist captive bear transport.
- Research Assistant**, Department of Wildlife Ecology and Conservation, University of Florida - Gainesville. May 1992 - May 1993, July 1990 - June 1991.
Duties: review articles for proposed graduate-level textbook in reserve design for Professor Larry Harris, examine effects of forest edge predators on forest interior birds.
- Intern**, Defenders of Wildlife, Washington, DC. June - August 1991.

Duties: Research implications of the Migratory Bird Treaty Act for oil development in the Arctic National Wildlife Refuge.

Teaching Assistant, August 1990 - June 1991. Department of Wildlife Ecology and Conservation, University of Florida.

Duties: write and administer exams for several hundred students, lead and grade three 'Wildlife Issues' discussion sections.

PUBLICATIONS (INCLUDING BOOKS AND BOOK CHAPTERS)

Gergel, S.E. In Press. Cumulative impact of levees and dams on the duration of temporary floodplain ponds: a terrain model approach for assessing multiple disturbances a broad scales. *Ecological Applications*.

Gergel, S.E., M.D. Dixon and M.G. Turner. In Press. Effects of altered disturbance regimes: levees, floods and floodplain vegetation on the Wisconsin River. *Ecological Applications*.

Gergel, S.E., M.G. Turner, J.R. Miller, E.H. Stanley, and J.M. Melack. In Press. Landscape metrics as indicators of human impacts on river-floodplain systems. *Aquatic Sciences*.

Gergel, S.E., M.G. Turner and T.K. Kratz. 1999. Dissolved organic carbon as an indicator of the scale of landscape influence on north temperate lakes and rivers. *Ecological Applications* 9(4): 1377-1390.

Gergel, S.E. and M.G. Turner, editors. 2001. *Learning Landscape Ecology: A Practical Guide to Concepts and Techniques*. Springer-Verlag, New York.

Gergel, S.E. and T. Reed-Andersen. 2001. Modeling ecosystem processes. In S.E. Gergel and M.G. Turner, editors. *Learning Landscape Ecology: A Practical Guide to Concepts and Techniques*. Springer-Verlag, New York.

Gergel, S.E., M.G. Turner and D.J. Mladenoff. 2001. Collecting spatial data at broad scales. In S.E. Gergel and M.G. Turner, editors. *Learning Landscape Ecology: A Practical Guide to Concepts and Techniques*. Springer-Verlag, New York.

Greenberg, J.G., S.E. Gergel, and M.G. Turner. 2001. Understanding landscape metrics II: effects of changes in scale. In S.E. Gergel and M.G. Turner, editors. *Learning Landscape Ecology: A Practical Guide to Concepts and Techniques*. Springer-Verlag, New York.

Turner, M.G., D.B. Tinker and S.E. Gergel. 2001. Landscape disturbance: location, pattern and dynamics. In S.E. Gergel and M.G. Turner, editors. *Learning Landscape Ecology: A Practical Guide to Concepts and Techniques*. Springer-Verlag, New York.

Harris, L.D., T.S. Hoctor and S.E. Gergel. 1996. Landscape processes and their significance to biodiversity conservation. Pages 319-347 in O.E. Rhodes, R.K. Chesser, and M.H. Smith, editors. *Population Dynamics in Ecological Space and Time*. University of Chicago Press, Chicago.

SUBMITTED

M.E. McClain, E.W. Boyer, C.L. Dent, S.E. Gergel, N.B. Grimm, P.M. Groffman, S.C. Hart, J.W. Harvey, C.A. Johnston, E. Mayorga, W.H. McDowell, G. Pinay. In Review. Biogeochemical hot spots and hot moments at the interface of aquatic and terrestrial ecosystems. *Ecosystems*.

IN PREPARATION

Gergel, S.E. The impact of landscape arrangement on ecosystem processes: a theoretical framework.

Gergel, S.E., E.H. Stanley, S.R. Carpenter. Modeling the relative impacts of levees and dams on floodplain nitrogen processing.

Gergel, S.E., E.M. Bennett, B.K. Greenfield, C.A. Overdeest, B. Stumborg and S. King. A reassessment of the Environmental Kuznet's Curve using long-term environmental and economic indicators.

Boyer, E.W., C.A. Johnston, S.E. Gergel, C.L. Dent. A method to identify potential wetland mitigation sites based on topography.

INVITED PRESENTATIONS

Department of Zoology, University of British Columbia. 2002.
 Department of Environmental Science, Policy & Management, Berkeley. 2002.
 Department of Geography, McGill University. 2002
 Department of Geography, University of California - Santa Barbara. 2001.
 Department of Ecology and Evolution, State University of New York - Stony Brook. 2001
 Institute for Ecosystem Studies, Millbrook, NY. 2001.
 School of Resource and Environmental Management, Simon Fraser University. 2001.
 Annual Meeting of the North America Benthological Society, LaCrosse, WI. 2001.
 First Annual Meeting on Riverine Landscapes, Ascona, Switzerland. 2001.
 Institute for Ecosystem Studies, Millbrook, NY. 2000.
 Department of Earth and Environmental Sciences, Lehigh University. 2000.

PRESENTATIONS

U.S.-International Association for Landscape Ecology (IALE) Annual Meeting, Lincoln, NE. 2002.
 Special Session on Merging Aquatic and Terrestrial Biogeochemistry, Ecological Society of America
 Annual Meeting, Madison, WI. 2001.
 U.S.- IALE Annual Meeting, Ft. Lauderdale, FL. 2000.
 Ecological Society of America Annual Meeting, Spokane, WA. 1999.
 IALE World Congress, Snowmass, CO. 1999.
 American Society for Limnology and Oceanography (ASLO) Annual Meeting, St. Louis, MO. 1998.
 U.S.- IALE Annual Meeting, East Lansing, Michigan. March 1998.
 ASLO Annual Meeting, Center for Great Lakes Studies, Milwaukee, Wisconsin. 1996.
 U.S.- IALE Annual Meeting, Galveston, Texas. 1996.

GRANTS/AWARDS

Post-doctoral Fellow. National Center for Ecological Analysis and Synthesis, Santa Barbara, CA. Fall 2000 -
 present.
 National Science Foundation Integrated Graduate Education and Research Traineeship Program for Social
 and Aquatic Sciences. University of Wisconsin - Madison. 1998 - 2000.
 U.S. Environmental Protection Agency Grant, 'Ecological indicators for large river-floodplain landscapes,'
 Monica Turner and Emily Stanley, Principal Investigators. Continuing collaboration that has
 included participation in proposal writing and training of vegetation field crew.
 U.S. Environmental Protection Agency STAR Graduate Fellowship (\$102,000), 1998 - 2000.
 National Science Foundation Graduate Research Traineeship for Integration in Limnology (\$35,210), 1995 -
 1997. Included exchange program with the Center for Streamside Studies at University of
 Washington - Seattle.

PROFESSIONAL ACTIVITIES

Reviewed manuscripts for Ecological Applications, Conservation Biology, Ecosystems, and Bioscience.
 Foreign Scholar Travel Award Committee, U.S.-International Association for Landscape Ecology. 2001 -
 present.
 Guest lecturer for graduate-level Landscape Ecology course at University of California - Santa Barbara.
 Winter 2001.
 Aquatic and Terrestrial Biogeochemistry Working Group (ATBGC) and California's Continuing Resource
 Investment Strategy Working Group. National Center for Ecological Analysis and Synthesis, Santa
 Barbara, CA. Spring 2000 - present.
 Member of the Strategic Planning Committee - Phase II, U.S.-IALE, 1999.
 Student Representative, U.S. Chapter, International Association for Landscape Ecology (IALE), 1998 -
 2000.