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EDUCATION

Ph.D., Zoology (Minor: Ecosystem Ecology), University of Wisconsin, Madison, 2005.
Dissertation: Influence of land-use change on the long-term persistence of forest understory herbs in the Southern Appalachian Highlands.
Advisor: Monica Turner

M.S. in Ecology, Colorado State University, 2000.
Thesis: Effects of low-density residential development on landscape patterns and avian communities in the Rocky Mountains.
Advisor: John Wiens

B.S., Zoology, University of Wisconsin, Madison, 1997.
Graduated with High Distinction.

PROFESSIONAL POSITIONS

2009-present	Affiliate, Program in Ecology, Evolution, and Conservation Biology, University of Illinois at Urbana-Champaign
2008-present	Assistant Professor, Department of Natural Resources and Environmental Sciences, University of Illinois at Urbana-Champaign
2005-2008	USDA NRI Postdoctoral Fellow, Iowa State University
2002-05	US DOE Graduate Research Fellow, University of Wisconsin, Madison
2000-01	Research Assistant, Department of Forest Ecology and Management and Department of Zoology, University of Wisconsin
2001	Research Assistant, Colorado State University
1997	Research Assistant, Natural Resource Ecology Laboratory, Colorado State University
1996	Research Experience for Undergraduates (NSF-REU), University of Wisconsin
1995-96	Research Experience for Undergraduates (NSF-REU), University of Kentucky

TEACHING EXPERIENCE

NRES 454: Geographic Information Systems in Natural Resources Management
NRES 465: Landscape Ecology
Graduate Teaching Assistant, Department of Biology, Colorado State University; Department of Zoology, University of Wisconsin

PUBLICATIONS

†Graduate student

Fraterrigo, J. M. Landscape legacies. *Encyclopedia of Biodiversity*, in press.

Grandy, A. S., **J. M. Fraterrigo**, and S. A. Billings. 2012. Soil ecosystem resilience and recovery. In: D. H. Wall, R. D. Bardgett, V. Behan-Pelletier, J. E. Herrick, H. Jones, K. Ritz, J. Six, D. R. Strong, and W. H. van der Putten (eds.) *Soil Ecology and Ecosystem Services*. Oxford University Press, Oxford, UK.

- Pearson, S. M. and **J. M. Fraterrigo**. 2011. Habitat quality, niche breath, temporal stochasticity, and the persistence of populations in heterogeneous landscapes. In: J. Liu, V. Hull, A. Morzillo, and J. Wiens (eds.) *Sources, Sinks, and Sustainability across Landscapes*. Cambridge University Press, Cambridge, UK.
- Fraterrigo, J. M.**, M. S. Strickland, A. D. Keiser, and M. A. Bradford. 2011. Nitrogen uptake and preference in a forest understory following invasion by an exotic grass. *Oecologia* **167**:781-791.
- Laliberté, E., J. Wells, F. DeClerck, D. Metcalfe, C. Catterall, C. Queiroz, I. Aubin, S. Bonser, Y. Ding, **J. M. Fraterrigo**, J. Morgan, P. Vesk, and M. Mayfield. 2010. Land use intensification reduces response diversity in plant communities. *Ecology Letters* **13**:76-86.
- Fraterrigo, J.M.**, S.M. Pearson, and M.G. Turner. 2009. Joint effects of habitat configuration and temporal stochasticity on population persistence. *Landscape Ecology* **24**: 863-877.
- Fraterrigo, J.M.**, S.M. Pearson, and M.G. Turner. 2009. The response of understory herbaceous plants to nitrogen fertilization in forests of different land-use history. *Forest Ecology and Management* **257**: 2182-2188.
- Mabry, C. M. and **J.M. Fraterrigo**. 2009. Species traits as generalized predictors of forest community response to human disturbance. *Forest Ecology and Management* **257**: 723-730.
- Fraterrigo, J.M.** and J.A. Downing. 2008. The influence of land use on lake nutrients varies with watershed transport capacity. *Ecosystems* **11**: 1021-1034.
- Fraterrigo, J.M.** and J.A. Rusak. 2008. Disturbance-driven changes in the variability of ecological patterns and processes. *Ecology Letters* **11**: 756-770.
- Fraterrigo, J.M.**, T.C. Balsler, and M.G. Turner. 2006. Microbial community variation and its relationship with nitrogen mineralization in historically altered forests. *Ecology* **87**: 570-579.
- Fraterrigo, J.M.**, M.G. Turner, and S.M. Pearson. 2006. Interactions between past land use, life-history traits and understory spatial heterogeneity. *Landscape Ecology* **21**: 777-790.
- Fraterrigo, J.M.**, M.G. Turner, and S.M. Pearson. 2006. Past land use alters plant allocation and growth in the herb layer. *Journal of Ecology* **94**: 548-557.
- Fraterrigo, J.M.**, M.G. Turner, S.M. Pearson and P. Dixon. 2005. Effects of past land use on spatial heterogeneity of soil nutrients in southern Appalachian forests. *Ecological Monographs* **75**: 215-230.
- Fraterrigo, J.M.** and J.A. Wiens. 2005. Bird communities of the Colorado Rocky Mountains along a gradient of low-density residential development. *Landscape and Urban Planning* **71**: 263-275.
- Miller, J.R., **J.M. Fraterrigo**, N.T. Hobbs, D.M. Theobald, and J.A. Wiens. 2001. Urbanization, avian communities, and landscape ecology. Pages 117-137 in J.M. Marzluff, R. Bowman, and R. Donnelly, editors. *Avian Ecology and Conservation in an Urbanizing World*. Kluwer, New York.
- Westneat, D.F., L.A. McGraw, **J.M. Fraterrigo**, T.R. Birkhead and F. Fletcher. 1998. Patterns of courtship behavior and ejaculate characteristics in male red-winged blackbirds. *Behavioral Ecology and Sociobiology* **43**: 161-171.
- Submitted or in preparation*
- Bain, D. J., M. B. Green, J. L. Campbell, J. F. Chamblee, S. Chaoka, **J. M. Fraterrigo**, S. Kaushal, S. L. Martin, T. E. Jordan, A. J. Parolari, W. V. Sobczak, D. E. Weller, W. M. Wollheim, E. Boose, J. M. Duncan, G. Gettel, B.

Hall, P. Kumar, J. R. Thompson, J. M. Vose, E. M. Ellion, and D. S. Leigh. Legacies in material flux: structural catchment changes pre-date long-term studies.

†Block, C. E., J. D. Knoepp, and **J. M. Fraterrigo**. Interactive effects of disturbance and nitrogen availability on phosphorus dynamics of southern Appalachian forests . Submitted.

†Block, C.E., J.D. Knoepp, K.J. Elliott, and **J.M. Fraterrigo**. Soil nitrogen availability and hemlock loss interact to affect nitrogen retention in the southern Appalachian mountains. In prep.

EXTRAMURAL FUNDING

- 2011 **USDA McIntire-Stennis:** Impacts of invasive species: the roles of environmental variation and disturbance (\$75,000, PI)
- 2011 **USDA Hatch:** A Flow-Injection Analyzer to Quantify Independent and Interactive Effects of Global Environmental Change Drivers on Soil Ecosystems (\$48,000, PI)
- 2010-12 **Environmental Change Institute:** Loss of terrestrial carbon to aquatic systems: pattern detection and hypothesis testing at regional scales (\$25,000, PI)
- 2010 **Campus Research Board:** Evaluating the importance of *Alnus* and salmon for aquatic productivity in southwest Alaska (\$10,500, PI)
- 2010-13 **U.S. Army Corps of Engineers,** Engineer Research Development Center-Construction Engineering Research Lab: Influence of landscape-scale factors on the spread of invasive species at Fort Bragg Military Base (Co-PI with Matt Hohmann).
- 2009-13 **U.S. Fish and Wildlife Service:** The roles of *Alnus* and salmon in aquatic productivity in southwest Alaska (\$145,000, Co-PI with F.S. Hu, P. Walsh, and D. Schindler)
- 2008-14 **National Science Foundation, LTER program:** Coweeta LTER site; T.L. Gragson, lead PI, with many co-PIs, “Southern Appalachia on the Edge: Exurbanization & Climate Interaction in the Southeast,” NSF-DEB #0823293 (\$147,800 subcontract to UI)
- 2005-07 **USDA National Research Initiative:** Effects of landscape-weather interactions on biological water quality in agricultural watersheds (\$119,000)
- 2004 **National Science Foundation LTER Network Synthesis Initiative:** Disturbance and variance: detecting change in terrestrial and aquatic ecosystems (Co-PI Jim Rusak, \$10,000)
- 2002-2005 **US DOE Global Change Education Program Graduate Research Fellowship:** Influence of land-use and climate change on the long-term persistence of forest understory herbs (~\$70,000)
- 2002 **National Fish and Wildlife Foundation:** Influence of land-use and climate change on the long-term persistence of forest understory herbs (\$10,000)

FELLOWSHIPS AND AWARDS

- 2005-2007 USDA NRI Postdoctoral Fellowship
- 2002-2005 US DOE Global Change Education Program Graduate Research Fellowship
- 2004 Vilas International Travel Fellowship, University of Wisconsin
- 2002 Budweiser Conservation Scholarship, Anheuser-Busch and the NFWF
- 2001 Davis Award, University of Wisconsin
- 2000 NASA-MSU Professional Enhancement Award, Michigan State University
Graduate Travel Award, Colorado State University

- 1998 Graduate Fellowship, Colorado State University
Honorable Mention, National Science Foundation Graduate Research Fellowship
- 1993-1997 University of Wisconsin Alumni Club Scholarship

PROFESSIONAL SERVICE

Ad Hoc Grant

Reviewer: Alaska Sea Grant, National Sciences and Engineering Research Council of Canada, National Science Foundation DEB, Research Foundation – Flanders (Belgium), University of Missouri

Review Panels: National Science Foundation, June 2009; declined in 2010

Guest Subject-

Matter Editor: *Ecosphere*

Ad Hoc Journal

Reviewer: *Applied Soil Ecology, Biogeochemistry, BioScience, Ecology, Ecological Applications, Ecology Letters, Ecosystems, Journal of Applied Ecology, Journal of Ecology, Landscape Ecology, Oecologia, Plant and Soil, Plant Ecology, Restoration Ecology, Soil Science Society of America Journal*, as well as several book chapters

- 2009 Invited participant, Biogeochemical Legacies Working Group
- 2009 Invited member, NSF Review Panel
- 2004 Organizer, Disturbance - Variance Workshop (Co-organizer: Jim Rusak)
- 2003 Invited student participant, Tenth Cary Conference, "Ecosystem Function in Heterogeneous Landscapes" Institute of Ecosystem Studies, Millbrook, NY
- 2002-04 Invited presenter, U.S. DOE Global Change Ecology Summer Workshop
- 2001-present Strategic Planning Committee, U.S. Chapter of the International Association for Landscape Ecology (US-IALE)
- 2000-02 Graduate Student Representative, US-IALE

PROFESSIONAL AFFILIATIONS

Ecological Society of America

U.S. Chapter of the International Association for Landscape Ecology (US-IALE)

PRESENTATIONS

Invited Papers

Fraterrigo, J.M. Impacts of grass invasion on nitrogen cycling in a hardwood forest. Department of Natural Resources and Environmental Sciences, University of Illinois, March 2010.

Fraterrigo, J.M. Impacts of a forest invader on nitrogen cycling: a story from the understory. Cary Institute of Ecosystem Studies, Millbrook, NY, October 2009.

Fraterrigo, J.M. Decomposing the Relationship between land use and surface water quality: Sources of Variability at the Watershed Scale. Illinois State Geological Survey, University of Illinois, September 2009.

Fraterrigo, J.M. Human impacts on ecosystem structure and function. US-Army Corp of Engineers, Engineer Research and Development Center -Construction Engineering Research Laboratory, Champaign, IL. May 2009

Fraterrigo, J.M. Linking lakes and watersheds: The importance of landscape plumbing. W. K. Kellogg Biological Station, Hickory Corners, MI, March 2009.

Fraterrigo, J.M. Varying Effects of Land use on Lake Water Quality. Program in Ecology, Evolution, and Conservation Biology, University of Illinois, January 2009.

Pearson, S.M., **J.M. Fraterrigo**, and M.G. Turner. Temporal stochasticity interacts with habitat quality and configuration to affect population persistence. US-IALE 23rd Annual Meeting, Madison, WI, April 2008.

Fraterrigo, J.M. Ecosystem dynamics in anthropogenic landscapes: Recognizing the importance of history and spatial complexity. University of Illinois at Urbana-Champaign, April 2007.

Fraterrigo, J.M. Human impacts on the abiotic template: Reconsidering the temporal and spatial dynamics of ecosystems. Indiana University, March 2007.

Fraterrigo, J.M. and J.A. Downing. Hydrological conductivity influences the extent to which land use affects lake water quality. National Water Conference, Savannah, GA, January 2007.

Fraterrigo, J.M. Soil, plant and microbial legacies of past land use in southern Appalachian forests. University of Wisconsin – Madison, Department of Zoology Colloquium, May 2005.

Fraterrigo, J.M. Land-use legacies in the southeastern United States. Murdoch University, Murdoch, Western Australia, July 2004.

Fraterrigo, J.M. Understanding ecosystem process in the context of broad-scale spatial heterogeneity. Ecology, Evolutionary Biology Interdepartmental Seminar Series, Iowa State University, Ames, IA, November 2003.

Fraterrigo, J.M. Reconciling fine-scale ecosystem processes with broad-scale heterogeneity. Jornada Basin Long Term Ecological Research Site, Las Cruces, NM, October 2003.

Fraterrigo, J.M., M.G. Turner, S.M. Pearson and P. Dixon. Impacts of past land use on spatial heterogeneity of soil nutrients in Southern Appalachian forests. Long-Term Ecological Research All-Scientists Meeting, Seattle, WA, September 2003.

Fraterrigo, J.M., M.G. Turner, S.M. Pearson and P. Dixon. Effects of prior land use on spatial heterogeneity of soil nutrients in southern Appalachian forests. Tenth Cary Conference, Millbrook, NY. April 2003.

Contributed Papers

Pearson, S.M. and **J.M. Fraterrigo.** Habitat quality, niche breath, temporal stochasticity, and the persistence of populations in heterogeneous landscapes. Southern Appalachian Man and the Biosphere 19th Annual Conference, Asheville, NC, November 2009.

Fraterrigo, J.M., M.G. Turner, and S.M. Pearson. Fine-scale heterogeneity of forest herbs: the role of past land use and life-history traits. US-IALE 19th Annual Meeting, Las Vegas, NV, April 2004.

Fraterrigo, J.M., M.G. Turner, S.M. Pearson and P. Dixon. Impacts of past land use on spatial heterogeneity of soil nutrients in Southern Appalachian forests. ESA Annual Meeting, Savannah, GA, August 2003.

Fraterrigo, J.M., M.G. Turner and S.M. Pearson. The effect of prior land use on the spatial distribution of soil chemical properties in southern Appalachian forests. US-IALE 18th Annual Meeting, Banff, Alberta, Canada, April 2003.

Fraterrigo, J.M., M.G. Turner, and S.M. Pearson. Legacies of land use in southern Appalachian soils. US-IALE 17th Annual Meeting, Lincoln, NE, April 2002.

Fraterrigo, J.M. and J.A. Wiens. Low-density human settlement in the Colorado Rocky Mountains: does it matter to bird communities? ESA Annual Meeting, Madison, WI, August 2001.

Fraterrigo, J.M. and J.A. Wiens. Low-density residential development in the Rocky Mountain Region: does it matter to bird communities? US-IALE 15th Annual Meeting, Fort Lauderdale, FL, April 2000.

Miller, J.R., **J.M. Fraterrigo**, N.T. Hobbs, D.M. Theobald, and J.A. Wiens. 1999. Urbanization, avian communities, and landscape ecology. Annual Meeting of the Cooper Ornithological Society, Portland, OR, March 1999.