

# Joseph Edward Fargione

Regional Science Director  
The Nature Conservancy  
Central United States Region

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## **CURRENT POSITION**

2007-Present Regional Science Director, The Nature Conservancy, Central United States Region

## **PAST POSITIONS**

2007-2007 Research Associate, Departments of Applied Economics & Ecology, Evolution, Behavior

2006-2007 Assistant Professor, Departments of Forestry and Natural Resources & Biology, Purdue University

2004-2006 Postdoctoral Fellow, University of New Mexico (with Dr. Scott Collins)

## **EDUCATION**

Ph.D. Ecology; University of Minnesota, St. Paul, MN, 2004

Advisor: Dr. David Tilman

Thesis: *Biodiversity and community structure in a tallgrass prairie: consequences of resource competition in space and time.*

B.A. Ecology; Hampshire College, Amherst, MA, 1996

## **PROFESSIONAL DEVELOPMENT**

Preparing Future Faculty, 1 year course, certificate earned 2002

## **HONORS AND FELLOWSHIPS**

University of Minnesota, Doctoral Dissertation Fellowship, 2003-2004

Charles J. Brand Fellowship, 2001-2002

University of Minnesota, Graduate Student Fellowship, Fall 2000

University of Minnesota, Graduate Student Fellowship, 1998-1999

National Science Foundation, Pre-Doctoral Fellowship Honorable Mention, 1998, 1999

Johnson Scholar, Hampshire College, 1992-1996

## **GRANTS**

Research Experience for Undergraduates, NSF (\$6,000), 2007

“Spatial predictions of species loss due to nitrogen deposition in the United States,” Agricultural Research Program graduate research fellowship, Purdue University (\$36,000; declined), 2007

“Effects of N-fixing plants on diversity and species interactions,” LTER Network Office, Co-PI: Jenn Shah (\$5,760), 2006

Research Experience for Undergraduates, NSF (\$6,000), 2006

“Global change effects on grass-shrub interactions in an arid ecosystem,”

NSF Ecology Panel, Co-PIs: Scott Collins and William Pockman (\$297,494), 2005

Dayton-Wilke Research Grant, Dept. of Ecology, Evolution, and Behavior (\$1,000), 1999-2002

**PUBLICATIONS**

- Dybzinski R, J Fargione, and D Tilman. *Submitted*. The fertility effect: resource supply increases across an experimental plant species diversity gradient. *Oikos*
- Clark CM, EE Cleland, SL Collins, JE Fargione, L Gough, KL Gross, SC Pennings, KN Suding, and JB Grace. *Accepted*. Environmental and plant community determinants of species loss following nitrogen enrichment. *Ecology Letters*
- Fargione J, D Tilman, R Dybzinski, J Hille Ris Lambers, C Clark, WS Harpole, JMH Knops PB Reich, and M Loreau. 2007. From selection to complementarity: Shifts in the causes of biodiversity-productivity relationships in a long-term biodiversity experiment. *Proceedings of the Royal Society B: Biological Sciences* 274: 871-876
- Baez S, J Fargione, DI Moore, SL Collins, JR Gosz. 2007. Nitrogen deposition in the northern Chihuahuan desert: Temporal trends and potential consequences. *Journal of Arid Environments* 68: 640-651
- Diaz S, J Fargione, FS Chapin III, D Tilman. 2006. Biodiversity loss threatens human well-being. *PLoS Biology* 4: 1300-1305
- Fargione J, and D Tilman. 2006. Predicting relative yield and abundance in competition with plant species traits. *Functional Ecology* 20: 533-540
- Diaz S, D Tilman, J Fargione, et al. 2005. Biodiversity and the regulation of ecosystem services. *In* Millennium Ecosystem Assessment editors. *Ecosystems and Human Well Being: Current State and Trends*. Island Press, DC, USA
- Fargione J, and D Tilman. 2005. Niche differences in phenology and rooting depth promote coexistence with a dominant C<sub>4</sub> bunchgrass. *Oecologia*, 143: 598-606
- Fargione J, and D Tilman. 2005. Diversity decreases invasion via both sampling and complementarity effects. *Ecology Letters*, 8: 604-611
- Craine J, J Fargione, and S Sugita. 2005. Supply preemption, not concentration reduction, is the mechanism of competition for nutrients. *New Phytologist*, 166: 933-940
- Tilman D, C Lehman, J Hille Ris Lambers, WS Harpole, R Dybzinski, J Fargione, and C Clark. 2004. Does metabolic theory apply to community ecology? It's a matter of scale. *Ecology*, 85: 1797-1799
- Neuhauser C, and J Fargione. 2004. A mutualism-parasitism continuum model and its application to plant-mycorrhizae interactions. *Ecological Modeling*, 177: 337-352
- Fargione J, CS Brown, and D Tilman. 2003. Community assembly and invasion: An experimental test of neutral versus niche processes. *Proceeding of the National Academy of Sciences*, 100: 8916-8920 (Highlighted on *Minnesota Public Radio* and in *BioScience*)
- Craine JM, PB Reich, GD Tilman, D Ellsworth, J Fargione, and J Knops. 2003. The role of plant species in biomass production and response to elevated CO<sub>2</sub> and N. *Ecology Letters*, 6: 623-630
- Fargione J, and D Tilman. 2002. Competition and coexistence in terrestrial plants. Pages 156-206 *In* U. Sommer and B Worm editors. *Competition and Coexistence*. Springer-Verlag, Berlin, Germany
- Tilman D, J Fargione, B Wolff, C D'Antonio, A Dobson, R Howarth, D Schindler, W Schlesinger, D Simberloff, and D Swackhamer. 2001. Forecasting agriculturally driven global environmental change. *Science* 292: 281-284 (Highlighted in *Trends in Ecology & Evolution*)

**PAPERS IN PREPARATION** (manuscripts available upon request)

- Fargione J, M Loreau, D Tilman, R Dybzinski, J Hille Ris Lambers, WS Harpole, C Clark, PB Reich, and JMH Knops. Quantifying species-level selection and complementarity effects in biodiversity experiments.
- Fargione J, C Lehman, and S Polasky. Capitalism and the concentration of wealth.
- Fargione J, SC Pennings, CM Clark, EE Cleland, SL Collins, L Gough, JB Grace, KL Gross, KN Suding, and D Tilman. No general relationship between species richness and productivity response to N addition in a synthesis of N fertilization studies.

**PAPERS PRESENTED**

- Fargione JE, and D Tilman. 2006. Functional groups and community assembly: Assumptions, predictions, and empirical tests. Invited presentation in the symposium "Niche, neutrality, and community assembly". *Ecological Society of America Annual Meeting*, Memphis, Tennessee.
- Fargione JE, S Pennings, C Clark, KN Suding, L Gough, JB Grace, EL Cleland, SL Collins, and KL Gross. 2005. A negative relationship between species richness and productivity response to N addition in a synthesis of N fertilization studies. *Ecological Society of America Annual Meeting*, Montreal, Canada.
- Fargione J, and D Tilman. 2004. Plant invader abundance increases with differences in invaders and residents seasonal and spatial nitrogen uptake patterns. *Ecological Society of America Annual Meeting*, Portland, Oregon.
- Fargione J, R Dybzinski, C Clark, J Hill Ris Lambers, S Harpole, D Tilman, and M Loreau. 2003. From selection to complementarity: Temporal trends in a long-term biodiversity experiment. *Ecological Society of America Annual Meeting*, Savannah, Georgia.
- Brown CS, JE Fargione, and GD Tilman. 2001. Species diversity, resource competition and community invasibility: a Minnesota grassland experiment. Invited presentation in the symposium "Current status of knowledge on invasive species: Theory and practice". *Ecological Society of America Annual Meeting*, Madison, Wisconsin.
- Hadley JL, J Schedlbauer, J Fargione. 2001. Diffuse illumination in an eastern hemlock (*Tsuga canadensis*) stand: Effects on photosynthesis and carbon storage. *Ecological Society of America Annual Meeting*, Madison, Wisconsin.
- Fargione J, and D Tilman. 2000. Plant invasions are reduced by abundance of native perennial bunchgrass. *Ecological Society of America Annual Meeting*, Snowbird, Utah.
- Fargione JE, CA Klausmeier, and CL Lehman. 1999. Community invasibility is increased by habitat destruction. *Ecological Society of America Annual Meeting*, Spokane, Washington.
- Tilman D, J Fargione, and B Wolff. 1999. Forecasting the long-term effects of human-caused global change. *Ecological Society of America Annual Meeting*, Spokane, Washington.

**POSTERS PRESENTED**

- Suding K, S Collins, E Cleland, L Gough, C Clark, J Fargione, J Grace, K Gross, S Pennings. 2006. The influence of primary productivity, community structure, and the abiotic environment on diversity loss due to nitrogen fertilization. *Long Term Ecological Research network All-Scientists Meeting*, Estes Park, Colorado.
- Dybzinski R, J Fargione, D Tilman. 2006. The fertility effect: resource supply increases across an experimental plant species diversity gradient. *Long Term Ecological Research network All-Scientists Meeting*, Estes Park, Colorado
- Baez S, J Fargione, D Moore, S Collins, J Gosz. 2006. N deposition in the northern Chihuahuan Desert: Temporal trends and potential consequences. *Annual Sevilleta Symposium*, San Acacia, New Mexico.
- Fargione J, S Collins, and W Pockman. 2005. A proposed experiment: Global change effects on grass-shrub interactions. *Global Change and Biodiversity Meeting*, Dourdan, France.
- Fargione J, and D Tilman. 2003. Plant traits and resource competition: Controls on prairie plant abundances. *Long Term Ecological Research network All-Scientists Meeting*, Seattle, Washington.
- Brown CS, GD Tilman, and J Fargione. 2000. The effect of plant species diversity and identity on success of invading plants. *Long Term Ecological Research network All-Scientists Meeting*, Snowbird Utah.
- Fargione JE, and TR Huggins. 1997. Species coexistence and community structure in epiphytic orchids in a citrus orchard on the island of Dominica. *Ecological Society of America Annual Meeting*, Albuquerque, New Mexico.

## **COURSES TAUGHT**

Introduction to Environmental Conservation (Fall 2006, enrollment 440)

## **TEACHING PUBLICATIONS**

Fargione J, and D Tilman. 2004. How does plant species biodiversity affect ecosystem productivity? Teaching Issues and Experiments in Ecology, Vol. 2: Data Set #1. [Online]  
[http://tiee.ecoed.net/vol/v2/issues/data\\_sets/cedar\\_creek/abstract.html](http://tiee.ecoed.net/vol/v2/issues/data_sets/cedar_creek/abstract.html)

## **REVIEWS**

Fargione, J. 2005. Book Review: Models in Ecosystem Science, CD Canham, JJ Cole, and WK Lauenroth editors. *Journal of Vegetation Science* 16: 143-144

## **INVITED SEMINARS**

- Fargione J. 2007. Biofuel's footprint: Current and future land use for biofuel production. Biofuel and Wildlife Conference, University of Minnesota
- Fargione J. 2007. Biofuel production and conversion of natural areas: Consequences for greenhouse gas emissions. Visit by the Japan Ecosystem Conservation Society, University of Minnesota
- Fargione J. 2007. Global change, biodiversity, and invasion. Department of Wildland Resources, Utah State University
- Fargione J. 2007. New insights from long term biodiversity experiments. Biology Department, Purdue University
- Fargione J. 2007. Global change, biodiversity, and invasion. Department of Agronomy, Purdue University
- Fargione J. 2006. Global change, biodiversity, and invasion. Department of Plant Biology, Michigan State University
- Fargione J. 2006. Global change, biodiversity, and invasion. Kellogg Biological Station, Michigan State University
- Fargione J. 2006. Global change, biodiversity, and invasion. Purdue Climate Change Research Center, Purdue University
- Fargione J. 2005. New insights from long term biodiversity experiments. Institute of Environmental Sciences, University of Zurich
- Fargione J. 2005. New insights from long term biodiversity experiments. Institute of Ecology, University of Jena
- Fargione J. 2005. Biodiversity and resource competition in a tallgrass prairie. Department of Botany, University of Toronto
- Fargione J. 2005. Plant species coexistence and global change: current and future research. Department of Botany, University of Toronto
- Fargione J. 2005. New root productivity and global change experiments at the Sevilleta. *Sevilleta Symposium*, Sevilleta National Wildlife Refuge, Socorro, New Mexico
- Fargione J. 2003. Interspecific niche differentiation: Consequences for invasion, coexistence, and biodiversity effects in a prairie plant community. Department of Biology, University of New Mexico
- Fargione J, and D Tilman. 2003. Plant traits and resource competition: Controls on prairie plant abundances. Annual Cedar Creek Symposium, Cedar Creek Natural History Area, University of Minnesota
- Fargione J, C Lehman, and S Polasky. 2003. Capitalism and the concentration of wealth. Environmental Resource Economics Seminar Series, Department of Applied Economics, University of Minnesota
- Fargione J, R Dybzinski, C Clark, J Hill Ris Lambers, S Harpole, D Tilman, and M Loreau. 2003. Species effects and temporal trends in a long-term biodiversity experiment. Cedar Creek Science Seminar Series, Department of Ecology, Evolution, and Behavior, University of Minnesota

### **WORKSHOPS ORGANIZED**

- Fargione J, L Lehman, and D Tilman. Biomass production and wildlife protection: Discovering best management practices for the Great Plains. 2007 (planned for July)
- Shah J, and J Fargione. The effect of nitrogen-fixing plants on diversity and species interactions, LTER cross-site workshop, Sevilleta LTER field station, NM, 2007
- Shah J, J Fargione, and SL Collins. The effect of nitrogen-fixing plants on diversity and species interactions, LTER All Scientists Meeting, Estes Park, CO, 2006

### **INVITED WORKSHOPS**

- LTER Fertilizer Synthesis Working Group, NCEAS, Santa Barbara, CA, 2006
- LTER Fertilizer Synthesis Working Group, Irvine, CA, 2005
- TERACC Global Change and Biodiversity meeting, Dourdan, France, 2005
- LTER Fertilizer Synthesis Working Group, Huston, TX, 2004
- Millennium Ecosystem Assessment, Combined Working Group Meeting, Kuala Lumpur, Malaysia, 2004
- Millennium Ecosystem Assessment, Combined Working Group Meeting, Prague, Czech Republic, 2003
- Millennium Ecosystem Assessment, Conditions Working Group Meeting, Sao Carlos, Brazil, 2002
- Ecological Forecasting, National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, 1999

### **ACADEMIC SERVICE**

- Aquatic Community Ecology Search Committee, Department of Forestry and Natural Resources, Purdue University 2006
- Buell Award Judge, Ecological Society of American Annual Meeting, Montreal, Canada, 2005
- College of Biological Sciences Consultative Committee, University of Minnesota 2002-2003
- Friday Noon Seminar Committee, University of Minnesota 2000-2001
- Co-President Ecology, Evolution and Behavior Graduate Student Association, University of Minnesota 1999-2000
- Ecology, Evolution and Behavior Written Preliminary Examination Committee, University of Minnesota 1999-2000
- College of Biological Sciences Consultative Committee, University of Minnesota 1998-1999

### **JOURNAL REVIEWS**

Acta Oecologia; American Naturalist; Ecological Applications; Ecology; Ecology Letters; Environmental Modeling and Assessment; Functional Ecology; Biological Invasions; Crop Science; Global Change Biology; Journal of Ecology; Journal of Applied Ecology; Journal of Vegetation Science; Mountain Research; Natural Areas Journal; Oecologia; Oikos; Perspectives in Plant Ecology, Evolution, and Systematics; Plant Ecology; Proceedings of the National Academy of Sciences

### **PROPOSAL REVIEWS**

US National Science Foundation  
Swiss National Science Foundation