

Songlin Fei

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EDUCATION

- Ph.D. in Ecology, The Pennsylvania State University, 2004 (Advisor – Kim Steiner)
- M.A. in Statistics, The Pennsylvania State University, 2004 (Advisor – GP Patil)
- M.S. in Plant Ecology, Peking University, 1999 (Advisor – Jingyun Fang)
- B.S. in Environmental Science, Nankai University, 1996

PROFESSIONAL EXPERIENCE

- Professor, Forestry and Natural Resources, Purdue University 2019-present
- Associate Professor, Forestry and Natural Resources, Purdue University 2014-2019
- Assistant Professor, Forestry and Natural Resources, Purdue University 2011-2014
- Assistant Professor, Department of Forestry, University of Kentucky 2005-2011
- Adjunct Professor, Department of Geography, University of Kentucky 2010-2011
- Graduate Faculty member, Alabama A&M University 2010-2014
- Graduate Faculty member, Plant and Soil Science, University of Kentucky 2005-2011

HONORS AND AWARDS

- W.S. Cooper Award, 2019, Ecological Society of America
- University Faculty Scholar, 2018-2023, Purdue University
- Research ranked as the global top 100 science stories of 2017 by *Discover* magazine
- Outstanding Graduate Student Faculty Mentor, 2016, Purdue FNR.
- Master Teacher Award, spring 2011, Gamma Sigma Delta Kentucky Chapter.
- Research Activity Award, 2006-2010, College of Agriculture, University of Kentucky.
- Pinchot Scholar, 1999-2001, School of Forestry Resources, Penn State University.

PROFESSIONAL MEMBERSHIPS

- IUFRO Biological Invasions Task Force (Steering Committee member)
- The Ecological Society of America (Chair of Asian Ecology Section)
- International Biogeography Society
- International Association for Landscape Ecology

PROFESSIONAL ACTIVITIES

- **Associate Editor:** *Ecosphere* (2019- present), *Landscape Ecology* (2018- present), *Invasive Plant Science and Management* (2015- present), *Forest Science* (2011-2015), *Northern Journal of Applied Forestry* (2007-2013)
- **Guest Editor:** *Frontiers in Ecology and the Environment* (2019), *Landscape Ecology* (2015). *Southeastern Naturalist* (2011), *Northeastern Naturalist*

COURSE TAUGHT (last five years)

- FNR59918, Introduction of R Programming. 2017 - present
- FNR59919, Introduction of Automated Content Analysis. 2017 - present
- FNR59900, Advanced GIS and Spatial Analysis. 2014 - present
- FNR35300, Natural Resource Measurement. 2011- present
- FNR35500, Quantitative Methods for Natural Resource Decision Making. 2011- present

RESEARCH HIGHLIGHTS

- Published >80 refereed articles;
- Delivered >200 presentations, and >40 invited presentations;
- Secured >\$3.0 M in funding in the last five years (>95% as PI);
- Advised 17 M.S. students, 3 Ph.D. students, and 9 postdoctoral research associates;

SELECTED RESEARCH GRANTS (last five years)

2016-2021 Modeling Invasion Dynamics Across Scales (MIDAS). *National Science Foundation, MacroSystems Biology*. **PI**, with Q. Guo, A. Liebhold, H. Zhang and K. Potter, Co-PIs. \$1,008,171

2013-2018 USDA, National Institute of Food and Agriculture. Graduate Training in Land use and Landscape Analysis for Sustainable Natural Resource and Agriculture. **PI**. \$202,500

2013-2017 Predicting Regional Invasion Dynamic Processes (PRIDE). *National Science Foundation, MacroSystems Biology*. **PI**, with B. Pijanowski, Q. Guo, and C. Oswalt, Co-PIs. \$721,313

SELECTED PUBLICATIONS (last five years; *denotes primary authors, †denotes corresponding authors, underline denotes advisees, IF = Impact Factor from ISI)

- 1) *LaRue, EA, BS Hardiman, JM Elliott, *†**S. Fei**. 2019. Structural diversity as a predictor of ecosystem function. *Environmental Research Letters*. [IF=6.192, top tier Ecology] [in press]
- 2) *†**Fei, S.**, *R.S. Morin, C.M. Oswalt, and A.M. Liebhold. 2019. Biomass losses resulting from insect and disease invasions in US forests. *Proceedings of the National Academy of Sciences*. 116 (35): 17371-17376 [IF=9.580, top-tier in science]
- 3) *Nunez-Mir, G., Q. Guo, M. Rejmanek, B.Iannone, and *†**S. Fei**. 2019. Predicting invasiveness of exotic woody species using a traits-based framework. *Ecology*. 100 (10): e02797. [IF=5.175, top tier Ecology].
- 4) *Ward, S., †**S. Fei**, A. Liebhold. 2019. Spatial patterns of discovery points and invasion hotspots of non-native forest pests. *Global Ecology and Biogeography*. [IF=5.273, top tier Ecology].
- 5) *†Guo, Q., *†**S. Fei**, K. M. Potter, A. M. Liebhold, and J. Wen. 2019. Co-occurrence of facilitation and dilution: how biodiversity regulates forest pest invasions. *Proceedings of the National Academy of Sciences*. **116**: 7382-7386 [IF=9.661, top-tier in science]
- 6) *Jo, I., *†**S. Fei**, C. Oswalt, G. Domke, R. Phillips. 2019. Shifts in dominant tree-mycorrhizal associations in response to anthropogenic impacts. *Science Advances* **5**: eaav6358 [IF=11.511, top tier].
- 7) *Mushinski, R.M., *R.P. Phillips, Z.C. Payne, R.B. Abney, I. Jo, **S. Fei**, S.E. Pusede, J.R. White, D.B. Rusch, J.D. Raff. 2019. Microbial mechanisms and ecosystem flux estimation for aerobic NO_y emissions from deciduous forest soils. *Proceedings of the National Academy of Sciences*. **116**: 2138-2145. [IF=9.661, top-tier in science]

- 8) *Phillips, R.P., *Brandt, L., Polly, P.D., Zollner, P., Saunders, M.R., Clay, K., Iverson, L., and *†**S. Fei**. Towards an improved understanding of the ecological and economic consequences of climate change for Indiana forests. *Climatic change* [IF=3.496, top tier climatic research] (accepted)
- 9) *McCallen, E., *J. Knott, G. Nunez-Mir, B. Taylor, I. Jo, and *†**S. Fei**. 2019. Trends in ecology: Shifts of ecological research themes in the last four decades. *Frontiers in Ecology and the Environment*. 17: 117-125. [IF=8.039, top tier Ecology]
- 10) *Knott, J., J. Desprez, C. Oswalt, and *†**S. Fei**. 2019. Changes in forest tree abundances in the eastern U.S. *Forest Ecology and Management*. 433: 176-183.[IF=2.826, top tier forestry]
- 11) *†**Fei, S.**, *Jo, I., Guo, Q., Wardle, D.A., Fang, J., Chen, A., Oswalt, C.M., and Brockerhoff, E. 2018. Impacts of climate on the biodiversity-productivity relationship in natural forests. *Nature Communications*. 9: 5436. [IF=12.353, top tier]
- 12) *Shao, G., G.F. Shao, and *†**S. Fei**. 2018. Delineation of individual deciduous trees in plantations with low-density LiDAR data. *International Journal of Remote Sensing*. [IF=1.724, mid-tier Remote Sensing] DOI: 10.1080/01431161.2018.1513664.
- 13) *McCallen, E.B., B.T. Kraus, N.G. Burgmeier, **S. Fei**, and *R.N. Williams. 2018. Movement and habitat use of eastern hellbenders (*Cryptobranchus alleganiensis*) following population augmentation. *Herpetologica*. [IF=1.333, middle tier herpetology] [*S. Fei assisted in statistical analysis and writing*] (accepted)
- 14) *†Chen, A., *S. Peng, and **S. Fei**. 2018. Mapping global forest biomass and its changes over the first decade of the 21st Century. *Science China Earth Sciences* [IF=1.989, mid-tier forestry] [*S. Fei assisted in writing*]
- 15) *Iannone, B. V. III, K. M. Potter, C. M. Oswalt, Q. Guo, A.M. Liebhold, H. Zhang, and *†**S. Fei**. 2018. Evolutionary diversity conveys biotic resistance to invasion across multiple scales. *Neobiota*. 40: 87-105. [IF=3.405, top-tier invasion ecology]
- 16) *LaRue, E. A., J. Atkins, K. Dahlin, R. Fahey, **S. Fei**, C. Gough, *B. Hardiman. Linking Landsat to terrestrial LIDAR: Spectral metrics of greenness and brightness are correlated with canopy structural complexity. *International Journal of Applied Earth Observations and Geoinformation*. [IF=3.930, top tier Remote Sensing] [*S. Fei assisted in writing the article*] (accepted)
- 17) *Shao, G., B. Iannone, and *†**S. Fei**. Enhanced forest interior estimations utilizing lidar-assisted 3D forest cover map. *Ecological Indicators*. [IF=3.898, top tier Ecology] (accepted)
- 18) *Shao, G., G.F. Shao, and *†**S. Fei**. Mapping individual deciduous trees with low-density lidar data using point-density-based algorithm. *International Journal of Remote Sensing*. [IF=1.724, mid-tier Remote Sensing] (accepted)
- 19) *†Guo, Q., ***S. Fei**, Z. Shen, B.V. Iannone, J. Knott, and S. Chown. 2018. Global variation in the elevational distributions of nonnative vs. native species. *Journal of Biogeography*. **45**: 793-803 [IF=4.248, top tier Biogeography]
- 20) *Riitters, K., K. Potter, B.V. Iannone, C. Oswalt, **S. Fei**, and Q. Guo. 2018. Landscape correlates of forest plant invasions: A high-resolution analysis across the eastern United States. *Diversity and Distributions*. **24**: 274-284[IF=4.391, top tier Biodiversity Conservation] [*S. Fei assisted in statistical analysis and writing*].
- 21) *Jo, I, K. Potter, G. Domke, and *†**S. Fei**. 2018. Dominant forest tree mycorrhizal type mediates understory plant invasions. *Ecology Letters*. **21**: 217–224. [IF=10.689, top tier Ecology].
- 22) *Shao, G., *G.F. Shao, J. Gallion, M. R. Saunders, J.R. Frankenberger, and ***S. Fei**. 2018. Improving Lidar-based forest aboveground biomass estimation with regard to site productivity in temperate hardwood forests. *Remote Sensing of Environment*. **204**: 872-882. [IF=5.103, top tier Remote Sensing]
- 23) *Clark, T., B. Iannone, and *†**S. Fei**. 2018. Measuring macroscale invasion and dispersal patterns in the eastern US. *Journal of Plant Ecology*. **11**:64-72[IF=1.769, mid-tier ecology research]

- 24) *Nunez-Mir, G. C., A.M. Liebhold, Q. Guo, E. Brockerhoff, I. Jo, and *†**S. Fei**. 2017. Biotic resistance in forest ecosystems: facts, artifacts, and moving forward. *Biological Invasions*. **19**:3287–3299 [IF=2.473, top-tier invasion ecology research]
- 25) *Wavrek, M., J. M. Heberling, **S. Fei**, and *S. Kalisz. 2017. Herbaceous invaders in temperate forests: a systematic review of their ecology and proposed mechanisms. *Biological Invasions*. **19**:3079-3097 [IF=2.473, top-tier invasion ecology research]
- 26) *†**Fei, S.**, J.M. Desprez, K.M. Potter, I. Jo, J.A. Knott and C.M. Oswalt. 2017. Divergence of species response to climate change. *Science Advances* **3** (5) e1603055 DOI: 10.1126/sciadv.1603055 [IF=11.511, top-tier in science]
- 27) *†Guo, Q., B.V. Iannone, G.C. Nunez-Mir, K.M. Potter, C.M. Oswalt, and *†**S. Fei**. 2017. Global patterns and regional differences in biological invasions and key drivers. *Landscape Ecology* **32**:229–238 [IF=3.615, top-tier ecology research]
- 28) *Nunez-Mir, G. C., B. V., Iannone III, B. C. Pijanowski, N. Kong, and *†**S. Fei**. 2016. Automated content analysis: a response to the big literature challenge. *Methods in Ecology and Evolution*. **7**: 1262-1272 [IF=5.708. top-tier ecology research]
- 29) *Iannone, B. V. III, K. M. Potter, C. M. Oswalt, Q. Guo, and *†**S. Fei**. 2016. Biological invasion hotspots: a trait-based perspective reveals new sub-continental patterns. *Ecography*. **39**:961-969. [IF=4.902, top tier biogeography]
- 30) *†**Fei, S.**, Q. Guo, and K. Potter. 2016. Macrosystems ecology: Novel methods and new understanding of multi-scale patterns and processes. *Landscape Ecology*. **31**:1-6. [IF=3.615, top-tier ecology research]
- 31) *Hamil, K. D., *B. V. Iannone III, W. K. Huang, **S. Fei**, and H. Zhang. 2016. Cross-scale contradictions in ecological relationships. *Landscape Ecology*. **31**:7-18. [IF=3.615, top-tier ecology research]
- 32) *Iannone, B. V. III, K. M. Potter, H. Zhang, C. M. Oswalt, and *†**S. Fei**. 2016. Evidence of biotic resistance to invasions in forests of the Eastern USA. *Landscape Ecology*. **31**:85-99. [IF=3.615, top-tier ecology research]
- 33) *†**Fei, S.** and *F. Yu. 2016. Quality of presence data determines species distribution model performance: a novel index to evaluate data quality. *Landscape Ecology*. **31**:31-42. [IF=3.615, top-tier ecology research]
- 34) *Nielsen, A.M. and *†**S. Fei**. 2015. Assessing the flexibility of the analytic hierarchy process for prioritization of invasive plant management. *Neobiota* **27**:25-36 [IF=3.405, top tier Biological Invasion]
- 35) *Iannone, B. V. III, C. M. Oswalt, A. M. Liebhold, Q. Guo, K. M. Potter, G. C. Nunez-Mir, S. N. Oswalt, B. C. Pijanowski, and *†**S. Fei**. 2015. Region-specific patterns and drivers of macroscale forest plant invasions. *Diversity and Distributions*. **21**:1181-1192. [IF=4.391, top tier Biodiversity Conservation]
- 36) *†Guo, Q, *†**S Fei**, JS Dukes, CM, Oswalt, BV Iannone, and KM Potter. 2015. A unified approach for quantifying invasibility and degree of invasion. *Ecology* **96**: 2613–2621. [IF=4.809, top tier ecology research]
- 37) *†Oswalt, CM, *†**S Fei**, Q Guo, BV Iannone, SN Oswalt, BC Pijanowski, and KM Potter. 2015. A subcontinental view of forest plant invasions. *NeoBiota* **24**:49-54. [IF=3.405, top tier Biological Invasion]
- 38) *Desprez, J., B. Iannone, C. Oswalt, and *†**S. Fei**. 2014. Northward Migration under changing climate: A case study of black gum (*Nyssa Sylvatica*). *Climatic Change*. **126**: 151-162. [IF=3.496, top tier climatic research]
- 39) *†**Fei, S.**, *J. Phillips, and M. Shouse. 2014. Biogeomorphic impacts of invasive species. *Annual Review of Ecology, Evolution, and Systematics*. **45**: 69-87 [IF=10.182, top tier Ecology research]