

Malcolm S. Itter

Department of Environmental Conservation
University of Massachusetts
160 Holdsworth Way
Amherst, MA 01003

Phone: (413) 545-1836
Email: mitter[at]umass.edu
Web: mitter-forestecology.com

EDUCATION

| | |
|---|------------------------------------|
| Michigan State University PhD, Forestry Ecology, Evolutionary Biology, and Behavior | East Lansing, MI Completed 2018 |
| Oregon State University Master of Science, Statistics | Corvallis, OR Completed 2013 |
| Colby College Bachelor of Arts, Major: Biology, Minor: Mathematics | Waterville, ME Completed 2006 |

ACADEMIC EXPERIENCE

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| Assistant Professor Department of Environmental Conservation, University of Massachusetts | 2020–present |
| Postdoctoral Researcher Research Centre for Ecological Change, University of Helsinki | 2018–2019 |

PEER-REVIEWED PUBLICATIONS

2024

Itter, M.S., Kaarlejärvi, E., Laine, A.L., Hamberg, L., Tonteri, T. and Vanhatalo, J., 2024. Bayesian joint species distribution model selection for community-level prediction. *Global Ecology and Biogeography*. <https://doi.org/10.1111/geb.13827>

2023

Markowski-Lindsay, M., Catanzaro, P., Robillard, A., Butler, B.J., Orwig, D.A., D'Amato, A.W., Thompson, J.R., Laflower, D.M., MacLean, M.G. and **Itter, M.S.**, 2023. Forester and Logger Response to Emerald Ash Borer in Massachusetts and Vermont: a Secondary Disturbance. *Journal of Forestry*, p.fvad019

2022

D'Orangeville, L., **Itter, M.S.**, Kneeshaw, D., Munger, J.W., Richardson, A.D., Dyer, J.M., Orwig, D.A., Pan, Y. and Pederson, N., 2022. Peak radial growth of diffuse-porous species occurs during periods of lower water availability than for ring-porous and coniferous trees. *Tree Physiology*, **42**(2): 304-316

2021

Zipkin, E.F., Zylstra, E.R., Wright, A.D., Saunders, S.P., Finley, A.O., Dietze, M.C., **Itter, M.S.** and Tingley, M.W., 2021. Addressing data integration challenges to link ecological processes across scales. *Frontiers in Ecology and the Environment*, **19**(1): 30-38

2020

Hällfors, M.H., Antão, L., **Itter, M.S.**, Lehikoinen, A., Lindholm, T., Roslin, T., Saastamoinen, M. 2020. Shifts in timing and duration of breeding for 73 boreal bird species over four decades. *Proceedings of the National Academy of Sciences*, **117**(31): 18557-18565

2019

Itter, M.S., Vanhatalo, J. and Finley, A.O. 2019. EcoMem: An R package for quantifying ecological memory. *Environmental Modelling & Software*, **119**: 305-308

2018

Itter, M.S., D'Orangeville, L., Dawson, A., Kneeshaw, D., Duchesne, L., Finley, A.O. 2018. Boreal tree growth exhibits decadal-scale ecological memory to drought and insect defoliation, but no negative response to their interaction. *Journal of Ecology*, **107**(3): 1288-1301

Rastogi, B., Berkelhammer, M., Wharton, S., Whelan, M., **Itter, M.S.**, Leen, J.B., Gupta, M.X., Noone, D., Still, C.J. 2018. Large uptake of atmospheric OCS observed at a moist old growth forest: Controls and implications for carbon cycle applications. *JGR Biogeosciences*, **123**(11): 3424-3438

2017

Itter, M.S., Finley, A.O., D'Amato, A.W., Foster, J.R., Bradford, J.B. 2017. Variable effects of climate on forest growth in relation to climate extremes, disturbance, and forest stand dynamics. *Ecological Applications*, **27**(4): 1082-1095

Itter, M.S., Finley, A.O., Hooten, M.B., Higuera, P.E., Marlon, J.R., Kelly, R., McLachlan, J.S. 2017. A model-based approach to wildland fire reconstruction using sediment charcoal records. *Environmetrics*, **28**(7): p.e2450

In Preparation

Kaarlejärvi, E., **Itter, M.S.**, Tonteri, T., Hamberg, L., Salemaa, M., Merilä, P., Vanhatalo, J. and Laine, A.L. 2023. Inferring ecological selection from multidimensional community trait distributions along environmental gradients. In Revision. *Ecology*

*Myers, S.R., Curzon, M.T, and **Itter, M.S.** The relative effects of species, structural, and functional diversity on late-successional, temperate forest biomass. In Revision. *Ecological Applications*

Itter, M.S. and Finley, A.O. Making more with continuous forest inventory data: Toward a scalable, dynamical model of forest change. In preparation.

D'Orangeville, L., **Itter, M.S.**, Dos Santos, J.M. and Taylor, A.R. Highly variable climate-growth coupling in warm-adapted red spruce populations indicates good potential for assisted migration. In preparation.

*Student paper

PEER-REVIEWED BOOK CHAPTERS

D'Orangeville, L., St-Laurent, M.H., Boisvert-Marsh, L., Zhang, X., Bastille-Rousseau, G. and **Itter, M.S.**, 2023. Current Symptoms of Climate Change in Boreal Forest Trees and Wildlife. In *Boreal Forests in the Face of Climate Change: Sustainable Management* (pp. 747-771). Cham: Springer International Publishing.

PROFESSIONAL PAPERS

Itter, M.S. and Catanzaro, P. 2022. Understanding the estimated in-situ forest carbon outcomes of climate-smart forestry practices. Report prepared for The Nature Conservancy.

RESEARCH FUNDING

USGS Northeast Climate Adaptation Science Center, *Informing landscape-scale management for resilient plant communities through the identification of climate-smart native species*, PI, \$399,106, 2023–2025

USDA Forest Service, *Development of a scalable, dynamical model of forest change informed by continuous forest inventory data*, PI, \$99,999, 2023–2025

NSF, *Redefining the ecological memory of disturbance over multiple temporal and spatial scales in forest ecosystems*, Subaward through Michigan State University, \$120,210, 2022–2025

USDA National Institute of Food and Agriculture, *Adaptive forest management options for white ash influenced by the invasive emerald ash borer*, Co-PI, \$111,919, 2021–2025

The Nature Conservancy, *Modeling integrated forest carbon management*, Co-PI, \$49,978, 2021–2022

USDA McIntire-Stennis, *Advancing understanding and process-based prediction of northeastern forest regeneration*, PI, \$21,500 annually (FY 2021, 2022), 2021–2024

PRESENTATIONS (Last 5 years)

Itter, M.S., Finley, A.O. Making more with continuous forest inventory data: toward a scalable, dynamical model of forest change. Northern Hardwood Conference. Fredericton, NB, Canada. August 1, 2023.

Itter, M.S., Finley, A.O. Making more with continuous forest inventory data: toward a scalable, dynamical model of forest change. The International Environmetrics Society. Peterborough, ON, Canada. July 24, 2023.

†Itter, M.S., Finley, A.O. Making more with continuous forest inventory data: toward a scalable, dynamical model of forest change. New England Statistics Symposium. Boston, MA. June 3, 2023.

*Myers, S.R. Curzon, M., Itter, M.S. The relative effects of functional diversity and structural complexity on late-successional, mixed hardwood forest carbon. New England Society of American Foresters Annual Meeting. Nashua, New Hampshire. March 2023.

*Myers, S.R. Curzon, M., Itter, M.S. The relative effects of functional diversity and structural complexity on late-successional, mixed hardwood forest carbon. Forest Ecology and Monitoring Cooperative Annual Meeting. Burlington, Vermont. December 15, 2022.

†Itter, M.S., Finley, A.O. Linking forest dynamics across scales to better predict forest carbon under global change. FIA Science Stakeholder Meeting. Virtual. November 15, 2022.

Itter, M.S., D'Orangeville, L., Pederson, N., Orwig, D. Identifying drought-sensitive trees within uneven-aged eastern temperate forests: connections to adaptive forest management. Society of American Foresters Annual Meeting. Virtual. October 31, 2020.

†Itter, M.S. Process-based, Bayesian methods to advance understanding of forest change and inform adaptive management. Research Training Group: Enrichment of European Beech Forests with Conifers. University of Göttingen. Virtual. June 25, 2020.

Itter, M.S., D'Orangeville, L., Finley, A.O., Kneeshaw, D. Advancing understanding of forest responses to novel disturbance regimes through the quantification of ecological memory. North American Forest Ecology Workshop. Flagstaff, AZ. June 2019.

†Itter, M.S., Vanhatalo, J., Finley, A.O. Methods to filter weather data using ecological memory functions. Climate Informatics Workshop, National Center for Atmospheric Research. Boulder, CO. September 2018.

†Itter, M.S. Methods to model individual variability in forest demographic processes. International Biometric Conference. Barcelona, Spain. July 2018.

Itter, M.S., Vanhatalo, J., Finley, A.O. Methods to estimate ecological memory. International Statistical Ecology Conference. St. Andrews, Scotland. July 2018.

† Invited talk; * Student talk

COURSES TAUGHT

University of Massachusetts

NRC 534 Forest Measurements (4 credits), Fall Semester 2020, 2022, 2023

NRC 526 Silviculture (4 credits), Spring Semester 2021, 2023

NRC 270 Forest Ecology and Conservation (3 credits), Spring Semester 2022

NRC 297F Forest Ecology Lab (1 credit), Spring Semester 2022

University of Helsinki

Current Topics in Ecological Change Research, Co-Instructor, Fall Semester 2018

Michigan State University

Forestry 420 Field Studies (2 credits), Co-Instructor, Summer Semester 2017

Forestry 406 Applied Forest Ecology: Silviculture (4 credits), Fall Semester 2016

Short Courses

Parallel Computing in R, Research Centre for Ecological Change, Annual Meeting, Lammi Biological Station, October 2018

Fourth Annual Graduate Workshop on Environmental Data Analytics, National Center for Atmospheric Research, Co-Instructor, June 2017

INDEPENDENT STUDY PROJECTS

University of Massachusetts

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| William Thayer | Forest productivity | Summer 2021/Fall 2021 |
| Lindsay Gaudette | Tree growth analysis | Fall 2021/Spring 2022 |
| Ethan Aubuchon | Tree growth analysis | Fall 2021/Spring 2022 |
| Adira Cohen | Bayesian data analysis | Fall 2021/Spring 2022 |
| Isaac Gordin | Forest inventory and analysis | Summer 2022 |
| Adira Cohen | Plant community dynamics | Fall 2022/Spring 2023 |

GRADUATE STUDENTS

Chair

Samantha Myers MSc Department of Environmental Conservation

*Emma Zimmerman Greenlee MSc Department of Environmental Conservation

Committee

Matthew Fertakos PhD Organismic & Evolutionary Biology

*Cosmo LaViola MSc Department of Environmental Conservation

*Professional degree

WORKING GROUPS

“Forests at the forefront: Advancing carbon modeling for natural climate solutions”, USDA Forest Service, Working group participant (PIs Christopher Woodall, Holly Munro), 2023-present

UNIVERSITY SERVICE

Forest Ecology and Conservation concentration coordinator, Dept. of Environmental Conservation, 2020-present

UMass research forest liaison, Dept. of Environmental Conservation, 2020-present

Natural Resource Conservation undergraduate advisor (20-25 students/year), Dept. of Environmental Conservation, 2020-present

UMass forestry scholarship review team (lead), Dept. of Environmental Conservation, 2020-present

Faculty search committee (member), Building Construction Technology, Dept. of Environmental Conservation, 2021-2022

Undergraduate recruitment and retention task force (co-lead), Dept. of Environmental Conservation, 2021-2022

Diversity, Equity, Inclusion Committee (member), Dept. of Environmental Conservation, 2021-2022

Society of American Foresters re-accreditation review committee (member), Dept. of Environmental Conservation, 2020

PROFESSIONAL SERVICE

Peer-reviewer for: Canadian Journal of Forest Research, Dendrochronologia, Ecography, Ecological Applications, Ecology, Ecology Letters, Ecological Monographs, European Journal of Forest Research, Forests, Forest Ecology and Management, Journal of Agricultural, Biological, and Environmental Statistics, Journal of Ecology, Methods in Ecology and Evolution, Proceedings of the National Academy of Sciences

AWARDS/DISTINCTIONS

Michigan State University Distinguished Fellow

Phi Beta Kappa National Honor Society

Mu Sigma Rho National Statistics Honor Society

Outstanding Student Paper Award - American Geophysical Union Annual Meeting 2016

Best Research Talk - 2014 & 2015 MSU Forestry Graduate Student Research Symposium