CARI DANON FICKEN

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Research Interests

Plant resource use strategies · trait-based ecology · climate change impacts on community and ecosystem functioning · plant-mycorrhizal-soil interactions · species coexistence · nutrient cycling following disturbance · community assembly

Education

2012 – 2018	PhD Ecology, Duke University *Effects of Fire and Drought on Ecological Processes Via Plant-Soil Interactions* Committee: Justin P. Wright (advisor), Emily Bernhardt, James Heffernan, Daniel Richter
2005 – 2009	BA Biology, Kenyon College

Appointments

2019 – present	Research Assistant Professor; Department of Geology; University at Buffalo
2018 – 2020	Postdoctoral Research Fellow, Department of Biology; University of Waterloo
2018	Biology Department Fellow, Duke University
2018	Maternity Leave (6 month modified appointment, Duke University)
2016 – 2017	Graduate Opportunities Fellow, Oak Ridge National Lab
2012 – 2015	Graduate Research and Teaching Assistant, Duke University

Publications *published and in review*

13. Hogan, JA, C. Baraloto, **C Ficken**, MD Clark, D Weston, and JM Warren. The physiological acclimation and growth response of *Populus trichocarpa* to warming. In review: J. Experimental Botany.

12. Wright, J, D. DeLaMater, A Simha, E. Ury, and **C Ficken.** Changes in fire frequency alter ecosystem carbon dynamics. Ecosystems. 10.1007/s10021-020-00540-5

11. **Ficken, CD** and RC Rooney. 2020. Linking plant conservatism scores to plant functional traits. Ecological Indicators. 10.1016/j.ecolind.2020.106376.

10. **Ficken, CD**, D Cobbaert, and RC Rooney. 2019. Low extent but high impact of human land use on wetland flora across the boreal oil sands region. Science of the Total Environment. 10.1016/j.scitotenv.2019.133647.

9. **Ficken, CD** and JP Wright. 2018. Nitrogen uptake and biomass resprouting show contrasting relationships with resource acquisitive and conservative plant traits. Journal of Vegetation Science. 10.1111/jvs.12705.

8. **Ficken, CD** and JM Warren. 2018. Soil respiration sensitivity to drought differs between an arbuscular and an ectomycorrhizal system. Plant and Soil 435(1), 407-422. 10.1007/s11104-018-03900-2.

7. **Ficken, CD** and JP Wright. 2017. Effects of fire frequency on litter decomposition as mediated by changes to litter chemistry and soil environmental conditions. PLoS ONE. 10.1371/journal.pone.0186292.

6. **Ficken, CD** and JP Wright. 2017. Contributions of microbial activity and ash deposition to post-fire nitrogen availability in a pine savanna. Biogeosciences. 10.5194/bg-2016-303.

5. Bernhardt, ES, J Blaszczak, **CD Ficken***,* M Fork, K Keiser, E Seybold. (All authors contributed equally.) 2017. Catchy phrase or critical advance? Assessing and enhancing the impact of the hot spot hot moment concept in ecosystem science. Ecosystems. 10.1007/s10021-016-0103-y.

4. Phillips, RL, **CD Ficken**, M Eken, J Hendrickson, and O Beeri. 2016. Wetland soil carbon in a watershed context for the Prairie Pothole Region. Journal of Environmental Quality. 45(1): 368-375.

3. **Ficken, CD**, M Fork, and M Fuller. 2015. The drivers of landscape pattern: Physical template, biotic interactions, and disturbance regime. Teaching Issues and Experiments in Ecology, Vol. 10. http://tiee.esa.org/vol/v10/issues/figure_sets/ficken/abstract.html

2. **Ficken, CD** and E Menges. 2014. Seasonal wetlands on the Lake Wales Ridge, Florida: Does a seed bank persist despite long term disturbance? Wetlands Ecology & Management (6): 373-385. 10.1007/s11273-013-9308-4

1. Phillips, RL and **CD Ficken**. *Nitrous oxide emissions at the surface of agricultural soils in the Red River Valley of the north, U.S.A.* In: Understanding Greenhouse Gas Emission from Agricultural Management. Guo, L, AS Gunasekara, and LL McConnell, Eds. ACS Symposium Series 1072. American Chemical Society: Washington, D.C., 2011, pp 29 – 49.

Publications *in preparation* (*manuscript available upon request)

***Ficken, CD,** M Jeanmougin, JJH Ciborowski, and RC Rooney. Inverse responses of species richness and niche specialization to human development.

Holm, JA, D Medvigy, J B Smith, J Dukes, C Beier, M Mischurow, X Xu, J Lichstein, C Allen, K Larsen, Y Luo, **CD Ficken**, W Pockman, W Anderegg, and A Rammig. Exploring the impacts of unprecedented climate extremes on forest ecosystems: Hypotheses to guide modeling and experimental studies.

Grants, Fellowships, and Awards

2017	Jo Rae Wright Fellowship for Outstanding Women in Science - $5,000
2016	DOE-ORNL Go! Fellowship - $50,000 over two years
2016	American Society of Naturalists Student Research Award - $2,000
2015	NSF Doctoral Dissertation Improvement Grant - $20,400
2015	New Phytologist Best Student Presentation - $500
2015	Bass Summer Research Fellowship - $5,500
2015	Aleane Webb Dissertation Research Award - $400
2014	Sigma Xi Grant-in-Aid of Research - $500
2013	NSF Graduate Research Fellowship Program Honorable Mention
2013	Duke University Biology Grant-in-Aid of Research - $800

Teaching Experience and Development

2019	Inclusive Teaching and Learning Conference, University of Waterloo
2018, 2019	"The Nature of Ecological Knowledge"; Guest lecture in Integrating Knowledge Class 220
2015, 2017	Teaching Assistant, BIOL 361: Field Ecology, Duke University
2015	Teaching Assistant, BIOL 212: General Microbiology, Duke University
2009	Teaching Assistant, BIOL 104: Bio of Female Sexuality, Kenyon College
2008, 2009	Teaching Assistant, BIOL 244: Animal Physiology, Kenyon College

Professional Service and Development

2020 – present	Chair of ESA Early Career Ecologists section
2019 – 2020	Vice-Chair of ESA Early Career Ecologists section
2016	CLIMMANI-INTERFACE workshop "After the extreme: Measuring and modeling impacts on terrestrial ecosystems when thresholds are exceeded". Florence, Italy Poster presented.

Reviewer: Ecology, Global Change Biology, Frontiers in Forests and Global Change, Functional Ecology, Phil. Transactions B, Ecological Indicators, Ecology, Restoration Ecology, Rhizosphere, Wetlands Ecology and Management

Selected Presentations

Ficken, CD, D Cobbaert, and R Rooney. "Low extent but high impact of human development on wetlands in the Oil Sands Region". Oral presentation. Ecological Society of America. 2019.

Ficken, CD. "Fire history but not nitrogen availability mediates plant responses to subsequent disturbances". Oral presentation. Ecological Society of America. 2018.

Ficken, CD. “Effects of fire and drought disturbances on ecological processes via plant-soil interactions.” Wake Forest University – Ecology Lunch Seminar Series. 2018. Invited.
Ficken, CD. “Effects of fire and drought disturbances on ecological processes via plant-soil interactions.” Duke University – University Program in Ecology Seminar Series 2018.
Ficken, CD and JM Warren. “Linking mycorrhizal functioning to soil carbon dynamics under extreme drought”. Poster presentation: AGU Annual Meeting 2016.
Ficken, CD and JM Warren. Effects of mycorrhizae on carbon cycling in response to extreme drought. 2016. Poster. Gordon Research Conference “Unifying Ecology Across Scales”.
Ficken, CD and JP Wright. Differential plant responses to N pulses. 2015. Oral. Ecological Society of America. *Awarded Best Student Presentation of Biogeosciences section*
Ficken, CD and JP Wright. Fire-driven increases in soil nitrogen availability in a longleaf pine forest. 2014. Poster Presentation. Ecological Society of America. 2014
Ficken, CD. “Comparing the vegetation communities of disturbed and reference wetlands: A seed bank study” 2012. Oral Presentation to Archbold Expeditions scientists.
Ficken, CD. “Comparing the vegetation communities of disturbed and reference wetlands: A seed bank study” 2012. Oral Presentation to Archbold Expeditions scientists.

Outreach

Woman and Math, Group Mentor, Durham, NC
Females Excelling in Math, Engineering and Sciences, Science Camp Counselor, Durham, NC
Archbold Biological Station, Research Mentor, Venus, FL
Kenyon College, Undergraduate Biology Advisor, Gambier, OH