

JEREMY DAVID ASH

Department of Botany, University of Wisconsin, Madison, WI 53706
(608) 234-3300 • jeremyd.ash@gmail.com • <http://jeremyash.info>

EDUCATION

Ph.D. Botany, minor in Quantitative Methods, *current* University of Wisconsin-Madison, WI
Long-term trends in the understory communities of Wisconsin forests: 50 years of climate change and species distribution patterns

M.Sc. Botany, certificate in Ecology, 2007 Miami University, Oxford, OH
*Assessment of sustainable harvest of *Chamaedorea radicalis* leaves in the El Cielo Biosphere Reserve, Mexico*

B.Sc. Environmental Science, 2003 McGill University, Montreal, QC

PROFESSIONAL EXPERIENCE

Graduate Assistant 2012 – Present
University of Wisconsin-Madison, WI

- Investigation of spatiotemporal dynamics of species distribution patterns over 50 years and underlying environmental and anthropogenic drivers
- Characterizing changes in climatic and environmental suitability for 300+ understory plant species for both recent and future time periods
- Processing high volume ecological and environmental datasets to support broader research objectives
- Development and implementation of advanced statistical/analytical methods, including spatial analyses, generalized linear mixed models, multivariate analyses and machine learning methods
- Mentoring and training undergraduates in research design, statistical programming and analysis

Research Specialist 2011 – 2012
University of Wisconsin-Madison, WI

- Supported a regional initiative to identify wildlife species for priority evaluation of the direct and indirect impacts of climate change
- Collaborated with government (county, state and federal), tribal, and other scientific agencies across the Upper Midwest and Great Lakes region through a series of interactive workshops
- Co-led and designed 10 state and regional working groups with over 60 agencies and 220 participants to identify common management objectives and terrestrial species for priority evaluations
- Guided participants in prioritization exercise to leverage expert working knowledge on wildlife management under climate change and identify a subset of species for a thorough vulnerability assessment
- Initiated quantitative vulnerability assessment for a subset of priority species using spatially-explicit simulation models and environmental determinants of population demographics

Conservation Reserve Planner 2010 – 2011
Ministry of Natural Resources, Bancroft District, ON

- Served as planning lead to develop management direction for conservation reserves in accordance with provincial legislation, policies and guidance

- Led planning process, research and background information collection for development of management direction for two conservation reserves
- Facilitated district and regional review of documents, and aboriginal, public and stakeholder involvement; and revise documents as per planning/regional team decisions
- Undertook required evaluations of existing management directives for conservation reserves and update policy and management actions as needed

Species at Risk Technician

2009 – 2010

Ministry of Natural Resources, Aurora District and Toronto and Region Conservation Authority, ON

- Led plant species component of stewardship project to develop an active and dynamic database of species at risk occurrences in the Aurora District of the Ministry of Natural Resources
- Expanded on a species at risk occurrence database for the Greater Toronto Area and fostered data sharing partnerships with naturalist groups and relevant agencies
- Wrote a data reporting protocol to enhance public submission of species at risk data to Ministry of Natural Resources

Internship in Department of Statistics

2009

University of Florida, FL

- Multivariate statistical analysis of long-term ecological monitoring data from coral reef communities in the Florida Keys National Marine Sanctuary
- Identified trends in spatiotemporal dynamics of coral reef community structure, implemented advanced statistical analyses and managed long-term database

Graduate Assistant

2007 – 2009

University of Florida, FL

- Investigated threatened longleaf pine savanna communities under varying fire regimes
- Developed a monitoring protocol to sample overstory composition and highly diverse herbaceous layer (i.e., up to 40 species in a 1 m² quadrat)
- Established permanent plots and collected baseline data to monitor community composition across a varied fire return interval

Graduate Assistant

2005 – 2007

Miami University of Ohio, OH

- Collection and demographic modeling of long-term monitoring data to develop sustainable harvest criteria for a threatened palm species in the El Cielo Biosphere Reserve, Mexico
- Developed statistical model to infer long-term population trends from short-term measurements
- Installed permanent plots and collected data on over 5,000 individual palms
- Established and maintained partnerships with local communities in support of broader initiative on the economic development of rural communities in Mexico

Research Assistant 2005

Archbold Biological Station, FL

- Investigated reproductive ecology and population dynamics of rare plant species and engaged in extensive monitoring efforts
- Monitored species on both public conservation and private landowner properties, maintaining effective and collaborative conservation partnerships
- Worked on recovery efforts, including large scale reintroductions, best management practices and disturbance ecology of threatened communities

Volunteer Resident Naturalist

2004

University of Georgia's Ecolodge San Luis and Research Station, San Luis, Costa Rica

- Environmental education for school groups (all levels) and tourists, with a focus on tropical ecology and natural history

- Taught plant/insect taxonomy workshops and cloud forest ecology through lectures and interpretative hikes
- Served as translator during community engagement activities

Research Experience for Undergraduates (REU) Intern 2003

Mountain Lake Biological Station, Pembroke, Virginia

- Collection of field data to study pollination ecology and evolution of floral displays in *Silene virginica* and *S. stellata*
- Monitored reproductive phenology and pollinator activity, and completed lab work as needed

Environmental Research Intern 2002

McGill University and Nature Conservancy of Canada, QC

- Collaborated in a student team to develop a biodiversity management plan
- Constructed site-specific management recommendations for flora, fauna and habitat
- Co-authored a detailed management plan and presented findings to clients

PUBLICATIONS

Ash, J.D., D. Li, and D.M. Waller. *In prep.* Predicting species-environment relationships with functional traits for the understory flora of Wisconsin.

Ash, J.D., T.J. Givnish, and D.M. Waller. *Submitted.* Tracking lags in historical plant species' shifts in response to regional climate change.

Ash, J.D., D.L. Gorchov and B.A. Endress. 2013. Rapid assessment of sustainable harvest from non-timber forest products: an example using the understory palm, *Chamaedorea radicalis*. *The Southwestern Naturalist*. 58(1): 70-80.

LeDee, O., **J. Ash**, K. Martin and W. Karasov. 2012. Building partnerships and establishing consensus on regional priorities across the Upper Midwest and Great Lakes Landscape Cooperative. Final report (year 1) to U.S. Fish and Wildlife Service for the project titled "Identification of the Most Climate Vulnerable Terrestrial Species and Natural Communities in the Upper Midwest and Great Lakes Landscape Conservation Cooperative."

LeDee, O., **J. Ash**, K. Martin and W. Karasov. 2011-2012. "Upscaling" priorities for climate impact assessments. 10 separate reports summarizing workshop outcomes.

Callis, K.L., L.R. Christ, J. Resasco, D.W. Armitage, **J.D. Ash**, T.T. Caughlin, S.F. Clemmensen, S.M. Copeland, T.J. Fullman, R.L. Lynch, C. Olson, R.A. Pruner, E.H.M. Vieira-Neto, R. West-Singh, and E.M. Bruna. 2009. Improving Wikipedia: educational opportunity and professional responsibility. *Trends in Ecology and Evolution*. 24(4): 177-179.

PRESENTATIONS

Ash, J.D., D. Li and D.M. Waller. Predicting species-environment relationships with functional traits for the understory flora of Wisconsin. American Geophysical Union. December 2015. San Francisco, CA.

Ash, J.D. (*invited speaker*). Plant species' responses to regional climate changes over the past half century. Minnesota Native Plant Society Annual Symposium. March 2015. Minneapolis, MN.

Ash, J.D. and D.M. Waller. Spatial signals of climate change in the abundance and distribution of understory species in Wisconsin over 50 years. Wisconsin Ecology Spring Symposium. March 2015. Madison, WI.

LeDee, O. and **J.D. Ash**. Co-led 10 workshops across Upper Midwest and Great Lakes region on setting priorities for climate change vulnerability assessments. 2011-2012.

Ash, J.D., D.L. Gorchov and B.A. Endress. Assessment of sustainable leaf harvest from the understory palm, *Chamaedorea radicalis*. Association for Tropical Biology and Conservation, July 2007, Morelia, Mexico.

Danielson, N.D., S. Chakravarty, D.L. Gorchov and **J.D. Ash**. Isocratic liquid chromatography of glucosinolate-derived compounds. Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy. Pittcon, March 2006, Orlando, Florida.

GRANTS & AWARDS

Quantitative Spatial Ecology, Evolution, and Environment Fellow, National Science Foundation and University of Florida. 2009

Grinter Fellowship, Department of Botany, University of Florida. 2007-2009.

Heimsch Award in Botany for Outstanding M.S. Student, 2007.

Academic Challenge Grant, Department of Botany, Miami University. 2006. Assessment of sustainable harvest of *Chamaedorea radicalis* leaves in the El Cielo Biosphere Reserve, Mexico.

Academic Challenge Start-up Grant, Department of Botany, Miami University. 2005. Development of a rapid assessment protocol for sustainable leaf harvest from *Chamaedorea radicalis*.

Master's Thesis Research Support, Associate Provost for Research and Dean of Graduate School, Miami University. 2005. Development of a rapid assessment protocol for sustainable leaf harvest from *Chamaedorea radicalis*.

PROFESSIONAL DEVELOPMENT COURSES

Structural Equation Modeling workshop, UW-Madison

Computing in the Cloud tutorial, NIMBioS

Likelihood Methods in Ecology, Columbia University

Data science courses, Coursera

Python, JavaScript and Learn the Command Line, Codecademy

SQL Essential Training, Lynda

Virtual Campus Labs and Creating and Integrating Data for Use in Natural Resource Applications, ESRI

TEACHING EXPERIENCE

Teaching assistant: General Ecology, Department of Botany, University of Wisconsin-Madison, 2012-2014

Lab Instructor: Introductory Botany, Department of Biology, University of Florida, 2008

Lab Instructor: Plant Ecology, Department of Biology, University of Florida, 2008

Teaching assistant: Environmental Principles, Department of Botany, Miami University, 2007

Teaching assistant: Plant Ecology, Department of Botany, Miami University, 2007

Instructor: Field Botany, Department of Botany, Miami University, 2006

PROFESSIONAL SERVICE

Technology Committee, Department of Botany, University of Wisconsin, 2014-2015

Graduate student representative to the Graduate Student Council, Department of Botany, University of Florida, 2007 – 2009

Graduate student representative to Graduate Student Association, Department of Botany, Miami University, 2005 – 2006

Journal Reviewer: *Global Ecology and Biogeography*, *Ecología en Bolivia* and *Forest Science*