

# Kathryn M. Miller

National Park Service- Northeast Temperate Network  
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US Citizen

## POSITIONS

2020-present Quantitative Ecologist (GS-0408-12), National Park Service Inventory and Monitoring Program, Northeast Temperate Network, Bar Harbor, ME  
2009-2020 Plant Ecologist (GS-0430-11), National Park Service Inventory and Monitoring Program, Northeast Temperate Network, Bar Harbor, ME  
2013-2018 External Graduate Faculty, University of Maine School of Forest Resources, Orono, ME  
2007-2009 Natural Resources Specialist (GS-0404-09), National Park Service Inventory and Monitoring Program, Northeast Temperate Network, Bar Harbor, ME  
2006 Forest Crew Leader, SUNY – ESF & National Park Service Inventory and Monitoring Program, Northeast Temperate Network, Bar Harbor, ME  
2005 Consulting Botanist, School of Forest Resources, University of Maine, Orono, ME  
2003 Consulting Botanist, USGS- Biological Resources Division, Ann Arbor, MI  
2002-2003 Adjunct Professor of Natural Resources, Northland College, Ashland, WI  
2000-2002 Plant Ecology Research Assistant, Northland College, Ashland, WI

## EDUCATION AND TRAINING

2014-2018 University of Maine- Ph.D., Biological Sciences  
Advisor: Dr. Brian McGill. Thesis: *Big data for small parks: Examining regional vegetation patterns to assess current condition and vulnerability of eastern national parks to climate change.*  
2003-2006 University of Maine- M.S., Ecology and Environmental Science  
Advisor: Dr. Robert Wagner. Thesis: *Arboreal associations with epiphytes and the effects of gap harvesting in the Acadian forest of central Maine.*  
1998-2002 Northland College- B.S., Natural Resources, Summa cum laude

## TEACHING EXPERIENCE

Fall 2020 R for NPS Resource Managers (training website: [https://katemmiller.github.io/R\\_Training/](https://katemmiller.github.io/R_Training/))  
Spring 2017, Fall 2018 Guest Lecture for 5041 Forest Ecology at College of the Atlantic  
Fall 2015-17 Guest Lecture for EES 489 Capstone Class at University of Maine  
Fall 2005 Graduate Teaching Assistant (TA) for General Entomology at University of Maine  
2004-2005 National Science Foundation GK-12 Teaching Fellow at University of Maine  
2003-2004 Graduate TA for Introductory Biology and Biology of Organisms at University of Maine  
2002-2003 Adjunct Professor in Natural Resources at Northland College

## AWARDS

National Park Service Inventory and Monitoring Division: 2019 Excellence in Science Award  
University of Maine:  
2017 Fay Hyland-Hilborn Prize for Outstanding Graduate Student in Plant Biology  
2004 Mark W. Houseweart Memorial Award for Forest Research  
Northland College:  
Natural Science Faculty Award for Class of 2002  
Class of 2001 Award for Class of 2002  
2002 Matthew Berg Endowment Award for Natural Resources

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## PUBLICATIONS

- Miller, K.M.**, B.J. McGill, A.S. Weed, C.E. Seirup, J.A. Comiskey, E.R. Matthews, S.J. Perles, and J.P. Schmit. *In Press*. Long-term trends indicate that invasive plants are pervasive and increasing in eastern national parks. *Ecological Applications*. <https://doi.org/10.1002/eap.2239>
- Miller, K.M.**, and B.J. McGill. 2019. Compounding human stressors cause major regeneration debt in over half of eastern US forests. *Journal of Applied Ecology* 56(6):1355-1366. <https://doi.org/10.1111/1365-2664.13375>.
- Miller, K.M.**, B.J. McGill, B.R. Mitchell, J. Comiskey, F.W. Dieffenbach, E.R. Matthews, S.J. Perles, J.P. Schmit, and A.S. Weed. 2018. Eastern national parks protect greater species diversity than unprotected matrix forests. *Forest Ecology and Management* 414:74-84. <https://doi.org/10.1016/j.foreco.2018.02.018>.
- Miller, K.M.**, and B.J. McGill. 2018. Land use and life history limit migration capacity of eastern tree species. *Global Ecology and Biogeography* 27(1): 57-67. <http://dx.doi.org/10.1111/geb.12671>
- Fischelli, N.A., and **K.M. Miller**. 2017. Weeds, worms, and deer: positive relationships among common forest understory stressors. *Biological Invasions*. <https://doi.org/10.1007/s10530-017-1630-y>
- Miller, K.M.**, F.W. Dieffenbach, J.P. Campbell, W.B. Cass, J.A. Comiskey, E.R. Matthews, B.J. McGill, B.R. Mitchell, S.J. Perles, S. Sanders, J.P. Schmit, S. Smith, A.S. Weed. 2016. National Parks in the eastern United States harbor important older forest structure compared with matrix forests. *Ecosphere* 7(7): 1-20. <http://dx.doi.org/10.1002/ECS2.1404>
- Miller, K.M.**, B.R. Mitchell, and B.J. McGill. 2016. Constructing multimetric indices and testing ability of landscape metrics to assess condition of freshwater wetlands in the Northeastern US. *Ecological Indicators* 66:143-152.
- Miller, K.M.**, and B.R. Mitchell. 2014. A new tool for power analysis of fixed plot data: Using simulations and mixed effects models to evaluate forest monitoring metrics. *Ecosphere* 5(9): 1-23.
- Grace, J.B., D.R. Schoolmaster, Jr., E.W. Schweiger, B.R. Mitchell, **K.M. Miller**, and G.R. Guntenspergen. 2014. Connecting the dots: a collaborative USGS-NPS effort to expand the utility of monitoring data. *The George Wright Forum* 31(2): 181-190
- Schoolmaster Jr., D.R., J.B. Grace, E.W. Schweiger, G.R. Guntenspergen, B.R. Mitchell, **K.M. Miller**, and A.M. Little. 2013. An algorithmic and information-theoretic approach to multimetric index construction. *Ecological Indicators* 26: 14-23.
- Grace, J.B., D.R. Schoolmaster Jr., G.R. Guntenspergen, A.M. Little, B.R. Mitchell, **K.M. Miller**, and E. W. Schweiger. 2012. Guidelines for a graph-theoretic implementation of structural equation modeling. *Ecosphere* 3(8):73. <http://dx.doi.org/10.1890/ES12-00048.1>
- Miller, K.M.**, R. Wagner, and S. Woods. 2008. Arboreal arthropod associations with epiphytes following gap harvesting in the Acadian forest of Maine. *The Bryologist* 111: 424-434.
- Miller, K.M.**, R. Wagner, and S. Woods. 2007. Effect of gap harvesting on epiphytes and bark-dwelling arthropods in the Acadian forest of central Maine. *Canadian Journal of Forest Research* 37: 2175- 2187.

## BOOK CHAPTERS

- Mitchell, B.R., G.L. Tierney, E.W. Schweiger, **K.M. Miller**, D. Faber-Langendoen, and J.B. Grace. 2014. Getting the message across: Using ecological integrity to communicate with resource managers. In: Guntenspergen, G.R. (ed.) *Application of Threshold Concepts in Natural Resource Decision Making*. Springer, New York.

## PRESS COVERAGE & OUTREACH

- MDIslander News. "ANP least invaded park in study" *MDIslander*. 21, December 2020. p. B002.
- Schmitt, C. "The Understory: The Future Forest of Acadia, Part 4." 2 October 2019. <https://schoodicinstitute.org/understory-the-future-forest-of-acadia-part-4/>
- Barton, A. "Are Eastern USA Temperate Forests Regenerating?" 16 April 2019. *Envirobites Blog*. <https://envirobites.org/2019/04/16/are-eastern-usa-temperate-forests-regenerating/>
- McLeish, T. "Discoveries: Barriers Ahead." 2019. *Northern Woodlands Magazine*. 26(3): 72-73.
- Broom, D. "Acadia's forests 'super healthy'." *MDIslander*. 12 September 2019. p. A2.

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Schmitt, C. "The Understory: The Future Forest of Acadia, Part 3." 31 July 2019.

<https://schoodicinstitute.org/understory-the-future-forest-of-acadia-part-3/>

Ostrander, M. "Can we help our forests prepare for climate change?" *SIERRA Magazine*. January/February 2019 Issue. <https://www.sierraclub.org/sierra/2019-1-january-february/feature/can-we-help-our-forests-prepare-for-climate-change>

McDonough MacKenzie, C. "Hidden in plain sight: the secret tree diversity of cultural national parks in the east." *PLOS Ecology Community Blog*. 6 June 2018. <https://blogs.plos.org/ecology/2018/06/06/hidden-in-plain-sight-the-secret-tree-diversity-of-cultural-national-parks-in-the-east/>

Miller, K.M. 2016. Healthy Forests are Messy Forests! *Friends of Acadia Journal*. 21(2): 16-17.

### TECHNICAL REPORTS

Miller, K.M., and A.S. Weed. 2017. Freshwater wetland monitoring in Acadia National Park: Northeast Temperate Network 2011-2016 summary report. National Resource Report NPS/NETN/NRR—2017/1418. National Park Service, Fort Collins, CO.

Tierney, G.L., B.R. Mitchell, K.M. Miller, J. Comiskey, A. Kozlowski, and D. Faber-Langendoen. 2015. Northeast Temperate Network long-term forest monitoring protocol: 2015 revision. Natural Resource Report NPS/NETN/NRR—2015/923. National Park Service, Fort Collins, CO.

Wheeler, J.S., K.M. Miller, and B.R. Mitchell. 2015. Forest health monitoring in the Northeast Temperate Network: 2014 summary report. National Resource Report NPS/NETN/NRR—2015/973. National Park Service, Fort Collins, CO.

Miller, K.M. 2014. Salt marsh vegetation monitoring at Boston Harbor Islands National Recreation Area: 2013 summary report for Thompson Island. Natural Resource Data Series NPS/NETN/NRDS—2014/664. National Park Service, Fort Collins, CO.

Miller, K.M., B.R. Mitchell, P.J. Curtin, and J.S. Wheeler. 2014. Forest health monitoring in Acadia National Park: 2006-2011 summary report. Natural Resource Report NPS/NETN/NRR—2014/777. National Park Service, Fort Collins, CO.

Miller, K.M., B.R. Mitchell, J.S. Wheeler. 2014. Forest health monitoring in the Northeast Temperate Network: 2013 summary report. Natural Resource Technical Report NPS/NETN/NRTR—2014/894. National Park Service, Fort Collins, CO.

Tierney, G.L., B.R. Mitchell, K.M. Miller, J. Comiskey, A. Kozlowski, and D. Faber-Langendoen. 2014. Northeast Temperate Network long-term forest monitoring protocol: 2014 revision. Natural Resource Report NPS/NETN/NRR—2014/805. National Park Service, Fort Collins, CO.

Tierney, G.L., K.M. Miller, and B.R. Mitchell. 2014. Rare woodland and forest community monitoring protocol for Acadia National Park: 2014 revision. Natural Resource Report NPS/NETN/NRR—2014/893. National Park Service, Fort Collins, CO.

Wheeler, J.S., and K.M. Miller. 2014. Invasive species early detection in the Northeast Temperate Network: 2013 summary report. Natural Resource Data Series. NPS/NETN/NRDS—2014/638. National Park Service, Fort Collins, Colorado.

Miller, K.M., E.K. Heck, and B.R. Mitchell. 2013. Ecological integrity of tree regeneration in Acadia National Park spruce-fir forests. Natural Resource Report NPS/ACAD/NRR—2013/660. National Park Service, Fort Collins, CO.

Miller, K.M., B.R. Mitchell, F.W. Dieffenbach, and J.S. Wheeler. 2013. Forest health monitoring in the Northeast Temperate Network: 2012 summary report. Natural Resource Report NPS/NETN/NRTR—2013/678. National Park Service, Fort Collins, CO.

Miller, K.M., and B.R. Mitchell. 2013. Permanent freshwater wetland monitoring protocol for Acadia National Park. Natural Resource Report NPS/NETN/NRR—2013/653. National Park Service, Fort Collins, CO.

Tierney, G.L., F.W. Dieffenbach, B.R. Mitchell, and K.M. Miller. 2013. Appalachian National Scenic Trail plot-based forest monitoring protocol. Natural Resource Report NPS/NETN/NRR—2013/633. National Park Service, Fort Collins, Colorado.

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- Tierney, G.L., B.R. Mitchell, K.M. Miller, J.A. Comiskey, A.J. Kozlowski, and D. Faber-Langendoen. 2013. Northeast Temperate Network long-term forest monitoring protocol: 2013 revision. Natural Resource Report NPS/NETN/NRR—2013/639. National Park Service, Fort Collins, CO.
- Wheeler, J.S., and K.M. Miller. 2013. Invasive species early detection in the Northeast Temperate Network: 2012 summary report. Natural Resource Data Series NPS/NETN/NRDS—2013/470. National Park Service, Fort Collins, CO.
- Miller, K.M., B.R. Mitchell, and J.S. Wheeler. 2012. Forest health monitoring in the Northeast Temperate Network: 2011 summary report. Natural Resource Technical Report NPS/NETN/NRTR—2012/604. National Park Service, Fort Collins, CO.
- Tierney, G.L., K.M. Miller, and B.R. Mitchell. 2012. Rare woodland and forest community monitoring protocol for Acadia National Park: Northeast Temperate Network. Natural Resource Report NPS/NETN/NRR—2012/529. National Park Service, Fort Collins, CO.
- Wheeler, J.S., and K.M. Miller. 2012. Invasive species early detection report in the Northeast Temperate Network: 2010-2011 summary report. Natural Resource Data Series. NPS/NETN/NRDS—2012/267. National Park Service, Fort Collins, CO.
- Miller, K.M., B.R. Mitchell, G.L. Tierney, and J.S. Wheeler. 2011. Northeast Temperate Network forest health monitoring report: 2010. Natural Resource Report NPS/NETN/NRR—2011/399. National Park Service, Fort Collins, CO.
- Miller, K.M., G.L. Tierney, and B.R. Mitchell. 2010. Northeast Temperate Network forest health monitoring report: 2006-2009. Natural Resource Report NPS/NETN/NRR—2010/206. National Park Service, Fort Collins, Colorado.
- Miller, K.M., G.L. Tierney, and B.R. Mitchell. 2009. Northeast Temperate Network 2006-2008 forest health monitoring report. Natural Resource Report NPS/NETN/NRR—2009/104. National Park Service, Fort Collins, Colorado.

### PRESENTATIONS

- Miller, K.M. 2020. Forest health monitoring in eastern national parks: Lessons learned and future concerns. Forest Ecosystem Monitoring Cooperative Conference. December 17, 2020 (Invited Plenary).
- Perles, S.J., K.M. Miller (co-presenters), E. Sharron. 2020. All hope is not lost: Trends in invasive plants in eastern national parks and a strategic tool to protect park resources. Inventory and Monitoring Division Webinar. December 10, 2020.
- Miller, K.M. 2020. Regeneration issues in northeastern forests. Northern Institute of Applied Climate Science [Forest Adaptation Webinar Series](#), 25 June 2020 (Invited Speaker).
- Miller, K.M. 2019. Forest health in eastern national parks: Current trends and future concerns. Human Ecology Forum at College of the Atlantic, Bar Harbor, ME, 12 November 2019 (Invited Speaker).
- Miller, K.M. 2019. 20 years after the Natural Resource Challenge: What next? Acadia National Park Science Symposium, Bar Harbor, ME, 24 October 2019 (Invited Speaker).
- Miller, K.M. 2019. Managing for climate change in eastern national parks. Sierra Club- Maine Chapter Climate Action Conference, Belfast, ME, 4 May, 2019 (Invited Speaker).
- Miller, K.M. 2018. Forest health in eastern national parks: current condition and future concerns. NPS-National Capital Region Science Forum Webinar Series, 12 December, 2018 (Invited Speaker).
- Miller, K.M. 2018. Forest health in eastern national parks: current condition and future concerns. Sigurd Olson Environmental Institute Evening Lecture, Ashland, WI, 7 November, 2018 (Invited Speaker).
- Miller, K.M. 2018. Forest health in eastern national parks: current condition and future concerns. Yale University Forest Forum, New Haven, CT, 25 October 2018 (Invited Speaker).
- Miller, K.M., C.E. Seirup, and A.S. Weed. 2018. Invasive species trends in Northeast Temperate Network park forests. Acadia National Park Science Symposium, Bar Harbor, ME, 20 October 2018 (poster).
- Bietsch, S.A., K.M. Miller, C.E. Seirup, and A.S. Weed. Forest trends in Acadia National Park. Acadia National Park Science Symposium, Bar Harbor, ME, 20 October 2018 (poster).
- Miller, K.M. 2018. Managing for change in Acadia's Forests. Acadia National Park Brown Bag Series, Bar Harbor, ME, 19 July 2018 (Invited Speaker).

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- Miller, K.M., and C.E. Seirup. 2018. Forest health trends in the Northeast Temperate Network. Acadia National Park Brown Bag Series, Bar Harbor, ME, 12 July 2018 (Invited Speaker).
- Miller, K.M. 2018. Big data analyses for eastern temperate forests. NPS-Inventory and Monitoring Division National Scientist Meeting, Grand Canyon, AZ, 31 January 2018 (Invited Speaker).
- Miller, K.M. 2017. Forests in Acadia National Park and impacts of red pine scale. Red Pine Decline and the Management of Acadia's Forests: A Community Discussion. Northeast Harbor Library, Northeast Harbor, ME, 17 August 2017 (Invited Speaker).
- Miller, K.M., and B. Henkel. 2017. Wetland monitoring in Acadia National Park and implications for Great Meadow. Acadia National Park Brown Bag Series, Bar Harbor, ME, 14 February 2017 (Invited Speaker).
- Miller, K.M., 2016. Wetland Monitoring in Acadia National Park. Northeast and Mid-Atlantic Wetland Working Group Joint Meeting. Galloway, NJ, 1 November 2016 (Invited Speaker).
- Miller, K.M., 2016. New tools to assess condition of freshwater wetlands in the Northeastern US: Multimetric indices for vegetation, soil, chemistry, algae taxa, and water chemistry. New England Wetlands Webinar Series, 10 March 2016 (Invited Speaker).
- Miller, K.M. 2015. Forest and Wetland Communities in Acadia National Park. Interpretive Division Resource Session. Acadia National Park, Bar Harbor, ME, 7 July 2015 (Invited Speaker).
- Miller, K.M. 2015. Forest health in northeastern national parks: Current status and future concerns. University of Maine Forestry Seminar, April 17, Orono, ME (Invited Speaker).
- Miller K.M., and J.S. Wheeler. 2014. 9 Years of forest health monitoring in Acadia National Park. Acadia National Park Science Symposium, Winter Harbor, ME, 1 October 2014 (poster).
- Miller, K.M., B.R. Mitchell, and B.J. McGill. Using the Forest Service Climate Change Tree Atlas and National Land Cover Data to predict changes in forest composition in Northeastern National Parks. Ecological Society of America Annual Meeting, Baltimore, MD, 9-14 August 2015 (poster).
- Miller, K.M. 2014. 8 Years of Forest Health Monitoring in Acadia National Park. Schoodic Institute, Winter Harbor, ME, 05 March 2014 (Invited Speaker).
- Miller, K.M., and J.S. Wheeler. 2014. 8 Years of forest health monitoring in Acadia National Park. Acadia National Park Science Symposium, Winter Harbor, ME, 16 April 2014 (poster).
- Miller K.M. 2014. 8 Years of Forest Health Monitoring in Acadia National Park. Interwoods. Bar Harbor, ME, 18 June 2014 (Invited Speaker).
- Wheeler, J.S., K.M. Miller, F.W. Dieffenbach, and B.R. Mitchell. 2014. Comparing metrics of forest health between Acadia national Park and surrounding forestlands. Northeast Natural History Conference 2014, Springfield, MA, 7-9 April 2014.
- Wheeler, J.S. K.M. Miller, F.W. Dieffenbach, and B.R. Mitchell. 2014. 2014. Comparing metrics of forest health between Acadia national Park and surrounding forestlands. Acadia National Park Science Symposium, Winter Harbor, ME, 16 April 2014 (poster).
- Miller, K. M., F.W. Dieffenbach, and B.R. Mitchell. 2013. Comparing metrics of forest health between national parks and surrounding forestlands using data collected by the Northeast Temperate Network and the U.S. Forest Service Forest Inventory and Analysis program. Ecological Society of America annual meeting. 7 August 2013 Minneapolis, MN.
- Miller, K.M. 2013. Vital Signs Monitoring in the Northeast Temperate Network. Maine Association of Professional Soil Scientists Annual Meeting. 12 March 2013, Hallowell, ME. (Invited Speaker)
- Miller, K. M. and S. J. Perles. 2012. Patterns in forest soil chemistry across Eastern U.S. national parks. Ecological Society of America annual meeting. 7 August 2012, Portland, OR.
- Miller, K.M., J.S. Wheeler, and B.R. Mitchell. 2012. 7 years of forest health monitoring in Acadia National Park. Acadia Science Symposium. Winter Harbor, ME, 23 October 2012 (poster).
- Wheeler, J.S., and K.M. Miller. 2012. Early detection of invasive species – surveillance monitoring and rapid response in northeastern parks. Acadia Science Symposium. Winter Harbor, ME, 23 October 2012.
- Miller, K.M. 2011. Applications of vegetation monitoring data for management and planning. George Wright Society Biennial Meeting, 16 March 2011, New Orleans, LA. (presented by J. Comiskey)
- Miller, K.M., G.L. Tierney, B.R. Mitchell, and D. Faber-Langendoen. 2010. Using the USNVC to enhance assessment of forest health in Northeastern U.S. National Parks. Ecological Society of America annual

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meeting. 3 August 2010, Pittsburgh, PA.

Miller, K.M., and S.A. Woods. 2005. Arboreal invertebrate associations with lichen epiphytes and impacts of harvested canopy gaps. Entomological Society of America annual meeting. 17 December 2005, Fort Lauderdale, FL.

Miller, K.M., S.A. Woods, and S.B. Selva. 2005. Characterizing the influence of canopy gaps on the arboreal invertebrate and macrolichen community in the Acadian spruce/fir forest. Society for Conservation Biology annual meeting. 18 July 2005, Brasilia, Brazil (poster).

Miller, K.M., and S.A. Woods. 2005. Arboreal lichen and invertebrate associations and impacts of gap harvesting. Acadian Entomological Society annual meeting. 20 June 2005, Fredericton, New Brunswick.

### SERVICE

Reviewer for: Forest Ecology and Management, Frontiers in Ecology and the Environment, Global Ecology & Biogeography, Journal of Ecology, and Natural Areas Journal

### WEBSITES

GitHub: <https://github.com/KateMMiller>

Google Scholar: [https://scholar.google.com/citations?user=p8gc\\_rEAAAAJ&hl=en&oi=sra](https://scholar.google.com/citations?user=p8gc_rEAAAAJ&hl=en&oi=sra)

Research Gate: [https://www.researchgate.net/profile/Kathryn\\_Miller8](https://www.researchgate.net/profile/Kathryn_Miller8)

### PROFESSIONAL REFERENCES

Dr. Brian Mitchell (supervisor from 2007-2015)

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Dr. Brian McGill (PhD advisor)

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