

Curriculum Vitae

WILLIAM S. CURRIE

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Professional Appointments

- Current: *Professor*, University of Michigan, School for Environment and Sustainability (SEAS).
Professor, Program in the Environment (PitE), and College of Literature, Science, and the Arts
- 2010-2012 *Associate Dean for Academic Affairs*, School of Natural Resources and Environment (SNRE), University of Michigan
- 2006-2016 *Associate Professor*, University of Michigan, SNRE
- 2003-2005 *Assistant Professor*, University of Michigan, SNRE
- 1997-2003 *Assistant Professor*, University of Maryland Center for Environmental Science, Appalachian Laboratory, Frostburg, MD
- 1995-1997 *Visiting Postdoctoral Scholar*, The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA
- 1984-1986 *Senior Scientist II*, Booz, Allen & Hamilton, Applied Sciences Center, Bethesda, MD
- 1983-1984 *Systems Engineer*, Rockwell International, Space Shuttle Orbiter Division, Downey, CA

Research Interests

My research program focuses on bringing a systems and synthesis perspective to understand ecosystem function in the context of landscapes and regions, including the effects of human activities on ecosystems. I develop and apply computer models of ecosystem function, collaborating with field ecologists, geographers, remote sensing scientists, hydrologists, and land management professionals. I have expertise in biogeochemistry, energy flows, nutrient cycling and carbon storage in the landscape, as well as watershed science, wetlands, invasive species, and terrestrial-aquatic interactions. With collaborators I study social-ecological processes that relate to land use including forest use and forest fragmentation, agriculture and biofuels, the effects of urban sprawl, regional conservation planning, and coastal eutrophication. I also research and develop interdisciplinary case studies related to sustainability issues in the Great Lakes region.

Education

- 1995 Ph.D., Natural Resources, Inst. for Earth, Oceans and Space, University of New Hampshire.
- 1992 M.S., Environmental Sciences, University of Virginia.
- 1983 B.S., *magna cum laude with honors thesis*, Physics, Brown University.

Affiliations and Awards

American Association for the Advancement of Science (AAAS), Elected AAAS Fellow 2019
Provost's Teaching Innovation Prize, finalist 2020 (10 finalists across all of University of Michigan)
Ecological Society of America (ESA)

American Geophysical Union (AGU)

North American chapter of the International Association of Landscape Ecologists (NA-IALE)

Affiliated Faculty, Michigan Institute for Data Science (MIDAS), University of Michigan, 2015-present

Affiliated Faculty, Global Change Biology Institute, University of Michigan, 2019-present

Affiliated Faculty, Sustainable Food Systems Initiative, University of Michigan, 2018-present

Affiliated Faculty, University of Michigan Energy Institute, 2014-present

Affiliated Faculty, Graham Sustainability Institute, University of Michigan, 2010-present

Faculty Associate, Applied Physics PhD Program, University of Michigan, 2006-present

Stockholm University – University of Michigan Faculty Exchange Program Award, 2010

Academic Leadership

I served a leadership role in the planning of the new School for Environment and Sustainability (SEAS) at the University of Michigan, which opened its doors in 2017. I chaired the Provost's Faculty Transition Team to plan the new school, an effort involving 37 faculty working over a 9-month period in 2016-2017.

I currently serve on the Executive Committee of the Graham Sustainability Institute, where duties include advising the Director of the Institute on strategic directions and planning. I recently served on the Promotion and Tenure Committee for the School for Environment and Sustainability (SEAS). I am currently leading the development of a new SEAS Dean's Junior Faculty Mentoring Program, in which I organize group and individualized mentoring sessions on teaching, service, faculty careers, and grantsmanship.

I served as Associate Dean for Academic Affairs in the School of Natural Resources and Environment (2010-2012). Duties included review and approval of faculty teaching portfolios for 45 faculty, standing in for the Dean at university and public events as needed, joint oversight of the undergraduate Program in the Environment (PitE, with 500+ students as majors and minors), and oversight of the graduate Office of Academic Programs (graduate student admissions and recruiting, financial aid, career services, allocation of teaching assistants). As part of this position I also participated in the UM Vice Provosts and Associate Deans Group and the Provost's Campus Leadership Mentoring Program.

As Associate Dean I wrote a successful \$50,000 grant proposal (matched with \$50,000 by the SNRE Dean) to establish the Envoys Diversity Program, to provide fellowships to recruit and retain a more diverse student population. I served as Founding Co-Director of the Program (2011-2012).

As a PhD student at the University of New Hampshire I served as president of the graduate student body and served as the graduate student representative on the university President's Cabinet (1994-1995).

Research Grants

A new model of climate and forest health pressures on forest succession and biomass at the University of Michigan Biological Station. U.S.D.A. McIntire-Stennis Program. 10/1/18 – 9/30/20. \$139,867. *Co-Principal Investigator.*

Quantifying how Global Change and Land Use Legacies Affect Ecosystem Processes at the Land Water Interface Across the Great Lakes Basin. NASA IDS Program. 8/1/17 – 7/31/20. \$1,500,000. *Co-Principal Investigator.*

Modeling socio-ecological adaptation to climate change in temperate forests. Graham Sustainability Institute Catalytic Grant Program. 3/1/17 - 2/28/18. \$10,000. *Co-principal Investigator.*

Human adaptation to climate change and effects on Upper Midwest forests. U.S.D.A. McIntire-Stennis Program. \$146,265. 10/1/16 – 9/30/18. *Co-Principal Investigator*.

Supporting conservation and decision-making in the Northwoods: Mapping forest values, services, and threats. Department of Interior, U.S. Fish & Wildlife Service. \$19,574. 7/5/16 – 7/5/17. *Principal Investigator*.

Factors in forest management to protect carbon sinks on private forestland in the Great Lakes region. UM Energy Institute Beyond Carbon Neutral Seed Funding Program. 7/1/17 – 6/30/18. \$20,000. *Co-Principal Investigator*.

Assessing the potential to protect and enhance carbon sinks on nonindustrial private forest land in the northern Great Lakes region. UM Energy Institute Beyond Carbon Neutral Seed Funding Program. 7/1/16 – 6/30/17. \$20,000. *Co-Principal Investigator*.

Implementing Adaptive Management and Monitoring for Restoration of Wetlands invaded by *Phragmites*. EPA Great Lakes Restoration Initiative Program. \$648,799. 4/1/16 – 9/30/18. *Co-Principal Investigator*.

Comprehensive Invasive *Phragmites* Management Planning. Michigan Invasive Species Grants Program, Michigan Dept. of Natural Resources. \$203,000. 2/1/16 – 1/31/18. *Co-Principal Investigator*.

Climate Change Mitigation: Moving Beyond Carbon Neutral. University of Michigan Office of Research 2016 Distinguished Faculty / Graduate Student Seminar program. \$12,600. 7/1/16 – 6/30/17. *Co-Principal Investigator*.

Investigating social-ecological metrics of forest landscape characteristics across scales: A regional gradient study in northern Michigan. U.S.D.A. McIntire-Stennis Program. \$68,946. 10/1/14 – 9/30/17. *Principal Investigator*.

Assessing Ecosystem Services Provided by Restored Wetlands Under Current and Future Climate and Land-Use Scenarios. University of Michigan Water Center. \$50,000. 9/1/13 – 8/31/14. *Co-Principal Investigator*.

Modeling social-ecological interactions driving land-atmosphere exchanges in forested landscapes. UM Provost's M-Cubed Program. \$60,000. 5/1/13 – 11/10/14. *Lead Principal Investigator*.

Spatial Land-Use Change and Ecological Effects: Interactions of Exurban Land Management and Carbon Dynamics. NSF Coupled Natural-Human Systems Program. \$1,500,000. 3/1/08 – 9/30/14. *Co-Principal Investigator*.

Evidence-based future scenarios for Great Lakes forested landscapes: Development of a new framework. U.S.D.A. McIntire-Stennis Program. \$60,000. 10/1/12 – 9/30/14. *Principal Investigator*.

SNRE Envoys Diversity Initiative. Faculty Allies for Diversity Grant Program, University of Michigan Rackham Graduate School. \$100,000. 9/1/11–8/31/13. *Co-Principal Investigator, Founding Co-Director*.

Linking Remote Sensing and Process-Based Models to Better Understand the Influence of Land Use and Climate Changes on Great Lakes Coastal Wetlands. NASA Interdisciplinary Research in Earth Science Program. \$1,500,000. 1/1/10 – 12/31/14. *Co-Principal Investigator*.

Incorporating ecosystem processes controlling landscape carbon balance into models of coupled human-natural systems. U.S.D.A. McIntire-Stennis Program. \$67,260. 10/1/10 – 9/30/13. *Principal Investigator.*

Atmospheric N Deposition and C Storage in Northern Temperate Forests: Testing and Scaling up with an Enhanced Ecosystem Process Model. U.S.D.A. McIntire-Stennis program. \$60,000. 10/1/08 – 9/30/10. *Principal Investigator.*

Modeling linkages among forest ecology, management, and biogeochemistry in Great Lakes forests. U.S.D.A. McIntire-Stennis Program. \$60,000. 10/1/06 – 9/30/08. *Principal Investigator.*

Alcoa Foundation Conservation and Sustainability Fellowship Program: Enabling Technology for a Sustainable Energy Future Through Interdisciplinary Research and Training. Alcoa Foundation. \$844,000. 11/1/05-10/31/10. *Co-Principal Investigator.*

Modeling the trajectories of forest carbon storage in the Great Lakes region based on interactions among global change, forest history, and management. U.S.D.A. McIntire-Stennis Program. \$59,928. 10/1/04 – 9/30/06. *Principal Investigator.*

Collaborative Research: Effects of elevated CO₂ on forest N cycling: Assessment with large-scale ¹⁵N tracers and modeling. National Science Foundation, Ecosystems Program. \$790,000. 1/1/03-2/28/07. *Co-Principal Investigator.*

Effects of N deposition on forest C balance: long-term responses at stand and regional scales. National Science Foundation, Ecosystems Program. \$639,999. 1999-2003. *Co-Principal Investigator.*

Predicting the influence of N deposition on temperate forest carbon uptake and storage using ¹⁵N tracers and modeling (1). U.S.D.A. Forest Service NERC Program. \$71,818. 2001-2004. *Principal Investigator.*

Predicting the influence of N deposition on temperate forest carbon uptake and storage using ¹⁵N tracers and modeling (2). U.S.D.A. Forest Service NERC Program. \$33,200 subcontract from Marine Biological Laboratory. 2002-2004. *Principal Investigator on subcontract.*

The role of forest-floor nitrogen leaching in ecosystem N retention. U. S. Department of Agriculture, National Research Initiative Competitive Grants Program. \$80,000. 1995-1997. *Principal Investigator.*

Research Opportunities and Collaboration in the Appalachians. Andrew W. Mellon Foundation. \$414,000. 1999-2001. *Senior Personnel.*

Research Opportunities and Collaboration in the Appalachians, Renewal. Andrew W. Mellon Foundation. \$431,751. 2001-2003. *Senior Personnel.*

Assessment of forest disturbance in the Mid-Atlantic region: A multi-scale linkage between terrestrial and aquatic ecosystems. Environmental Protection Agency, NCERQA. \$697,834. 1998-1999. *Senior Personnel.*

A general framework for debiting / crediting carbon sequestration in natural resource industries. Environmental Protection Agency. \$100,000. 1998-1999. *Senior Personnel.*

Papers in Revision or Review

Sharp, S. J., K. Elgersma, J. P. Martina, and **William S. Currie**. Hydrologic flushing rates drive nitrogen cycling and plant invasion in freshwater coastal wetlands. *Ecological Applications* *in review*.

Currie, William S., L. Bourgeau-Chavez, K. Elgersma, P. Higman, J. P. Martina, S. J. Sharp, and M. Vanderhaar. 2019. Wetland process modeling for adaptive management: Restoration of *Phragmites*-invaded coastal wetlands in the Great Lakes region. *Ecological Informatics*, *in revision*.

Peer-Reviewed Publications

Barton, Erin M., Douglas R. Pearsall, and **William S. Currie**. 2020. Human appropriated net primary productivity as a metric for land use planning: A case study in the US Great Lakes region. *Landscape Ecology*, online early view: <https://rdcu.be/b30EW>

Haber, L. T., R. T. Fahey, S. B. Wales, N. Correa Pascuas, **William S. Currie**, and C. M. Gough. 2020. Forest structure, diversity, and primary production in relation to disturbance severity. *Ecology and Evolution* 10:4419-4430. <https://onlinelibrary.wiley.com/doi/epdf/10.1002/ece3.6209>

Jenkins, Liza K., Tom Barry, Karl Bosse, **William S. Currie**, Tom Christensen, Sara Longan, Robert A. Shuchman, Danielle Tanzer, and Jason Taylor. 2020. Satellite-based decadal change assessments of pan-Arctic environments. *Ambio*, 49: 820-832. Link to article: <http://link.springer.com/article/10.1007/s13280-019-01249-z>

Xu, Hui, Daniel G. Brown, Michael R. Moore, and **William S. Currie**. 2018. Optimizing spatial land management to balance water quality and economic returns in a Lake Erie watershed. *Ecological Economics* 145:104-114.

Graham, John B., Joan I. Nassauer, **William S. Currie**, Herbert Ssegane, and M. Cristina Negri. Assessing wild bee abundance in perennial bioenergy landscapes: Effects of bioenergy crop composition, landscape configuration, and bioenergy crop area. 2017. *Landscape Ecology* 32:1023-1037.

Goldberg, Deborah E., Jason P. Martina, Kenneth J. Elgersma, and **William S. Currie**. 2017. Plant size and competitive dynamics along nutrient gradients. *American Naturalist* 190(2): 229-243. doi:10.1086/692438

Elgersma, Kenneth J., Jason P. Martina, Deborah E. Goldberg, and **William S. Currie**. 2017. Effectiveness of cattail (*Typha* spp.) management techniques depends on exogenous nitrogen inputs. *Elementa, Science of the Anthropocene* 5:19. DOI: <http://doi.org/10.1525/elementa.147>

Martina, Jason P., **William S. Currie**, Deborah E. Goldberg and Kenneth J. Elgersma. 2016. Nitrogen loading leads to increased carbon accretion in both invaded and uninvaded coastal wetlands. *Ecosphere* 7(9): e01459.

Currie William S., Sarah Kiger, Joan I. Nassauer, Meghan Hutchins, Lauren L. Marshall, Daniel G. Brown, Rick L. Riolo, Derek T. Robinson, and Stephanie K. Hart. 2016. Multi-scale heterogeneity in vegetation and soil carbon in exurban residential land of Southeastern MI. *Ecological Applications* 26(5): 1421-1436.

Brunner, Anna, **William S. Currie**, and Shelie Miller. 2015. Cellulosic ethanol production: Landscape scale net carbon strongly affected by forest decision making. *Biomass and Bioenergy* 83:32-41.

Elgersma, K.J., R. Wildova, J.P. Martina, **W.S. Currie**, and D.E. Goldberg. 2015. Does clonal resource translocation relate to invasiveness of *Typha* taxa? Results from a common garden experiment.

Aquatic Botany 126 (October 2015):48-53.

- Fouladbash, Lisa and **William S. Currie**. 2015. Agroforestry in Liberia: Household Practices, Perceptions and Livelihood Benefits. *Agroforestry Systems* 89(2):247-266.
- Currie, William S.**, Deborah E. Goldberg, Jason Martina, Radka Wildova, Emily Farrer, and Kenneth Elgersma. 2014. Emergence of nutrient-cycling feedbacks related to plant size and invasion success in a wetland community-ecosystem model. *Ecological Modelling* 282: 69-82.
- Visscher, Rachel S., Joan I Nassauer, Daniel G. Brown, **William S. Currie**, and Dawn C. Parker. 2014. Exurban residential household behaviors and values: Influence of parcel size and neighbors on carbon storage potential. *Landscape and Urban Planning* 132:37-46.
- Kahan, Ari, **William S. Currie**, and Daniel G. Brown. 2014. Nitrogen and Carbon Biogeochemistry in Forest Sites Along an Indirect Urban-Rural Gradient in Southeastern Michigan. *Forests* 5:643-655.
- Nassauer, J.I., Cooper, D.A., Marshall, L.L., **Currie, William S.**, Hutchins, M., Brown, D.G. 2014. Parcel size related to household behaviors affecting carbon storage in exurban residential landscapes. *Landscape and Urban Planning* 129:55-64.
- Robinson, Derek T., Shipeng Sun, Meghan Hutchins, Rick L. Riolo, Daniel G. Brown, Dawn C. Parker, Tatiana Filatova, **William S. Currie**, and Sarah Kiger. 2013. Effects of land markets and land management on ecosystem function: A framework for modeling exurban land-change. *Environmental Modeling and Software* 45:129-140.
- Templer, PH, MC Mack, FS Chapin III, LM Christenson, JE Compton, HD Crook, **WS Currie**, C Curtis, B Dail, CM D'Antonio, BA Emmett, H Epstein, CL Goodale, P Gundersen, SE Hobbie, K Holland, DU Hooper, BA Hungate, S Lamontagne, KJ Nadelhoffer, CW Osenberg, SS Perakis, P Schleppi, J Schimel, IK Schmidt, M Sommerkorn, J Spoelstra, A Tietema, WW Wessel and DR Zak. 2012. Sinks for Nitrogen Inputs in Terrestrial Ecosystems: A Meta-Analysis of ¹⁵N Tracer Field Studies. *Ecology* 93(8): 1816–1829.
- Whittinghill, Kyle A., **William S. Currie**, Donald R. Zak, Andrew J. Burton and Kurt S. Pregitzer. 2012. Anthropogenic N deposition increases soil C storage by decreasing the extent of litter decay: analysis of field observations with an ecosystem model. *Ecosystems* 15(3): 450-461.
- Krause Kim, Isabelle Providoli, **William S. Currie**, Harald Bugmann, Patrick Schleppi. 2012. Long-term tracing of whole catchment ¹⁵N additions in a mountain spruce forest: measurements and simulations with the TRACE model. *Trees - Structure and Function* 26:1683-1702.
- Currie, William S.** 2012. Energy Flow. In *Oxford Bibliographies Online: Ecology*. Ed. David Gibson. New York: Oxford University Press. <http://oxfordbibliographiesonline.com> DOI: 10.1093/OBO/9780199830060-0047.
- Currie, William S.** 2011. Units of nature or processes across scales? The ecosystem concept at age 75. (Invited *Tansley Review*.) *New Phytologist* 190:21-34.
- Hofmockel, Kirsten, Anne Gallet-Budynek, Heather McCarthy, **William S. Currie**, Robert B Jackson, and Adrien C Finzi. 2011. Sources of increased N uptake in forest trees growing under elevated CO₂: Results of a large-scale ¹⁵N tracer study. *Global Change Biology* 17: 3338–3350.
- Currie, William S.**, Harmon, M.E., Burke, I.C., Hart, S.C., Parton, W.J., and Silver, W.L. 2010. Cross-biome

- transplants of plant litter show decomposition models extend to a broader climatic range but lose predictability at the decadal time scale. *Global Change Biology* 16: 1744-1761.
- Robinson, D.T., Brown, D.G., and **W.S. Currie**. 2009. Modelling carbon storage in highly fragmented and human-dominated landscapes: linking land-cover patterns and ecosystem models. *Ecological Modelling* 220:1325-1338.
- Harmon, M. E., W. L. Silver, B. Fasth, H. Chen, I. C. Burke, W. J. Parton, S. C. Hart, and **W. S. Currie**. 2009. Long-term patterns of mass loss during the decomposition of leaf and fine root litter: an intersite comparison. *Global Change Biology* 15:1320-1338.
- Simmons, J. A., **W. S. Currie**, K. N. Eshleman, K. Kuers, S. Monteleone, T. L. Negley, B. R. Pohlada, and C. L. Thomas. 2008. Forest to reclaimed mine land use change leads to altered ecosystem structure and function. *Ecological Applications* 18:104-118.
- Currie, William S.**, and Kathleen M. Bergen. 2008. Temperate Forest. Pages 3494-3503 in S. E. Jorgensen and B. D. Fath, Editors-in-chief, *Ecosystems*, vol. 5 of *Encyclopedia of Ecology*, 5 vols. Elsevier B. V., Oxford.
- Currie, William S.** 2007. Modeling the dynamics of stable-isotope ratios for ecosystem biogeochemistry. Pp 450-479 In Lajtha, K. and Michener, R., Eds, *Stable Isotope Ratios in Ecology and Environmental Science*, 2nd Edition. Blackwell.
- Parton, William, Whendee L. Silver, Ingrid Burke, Leo Grassens, Mark E. Harmon, **William S. Currie**, Jennifer King, E. Carol Adair, Leslie Brandt, Steve Hart, and Becky Fasth. 2007. Global-Scale Similarities In Nitrogen Release Patterns During Long-Term Decomposition. *Science* 315: 361-364.
- Seidl, R., W. Rammer, D. Jäger, **W. S. Currie** and M. J. Lexer. 2007. Assessing trade-offs between carbon sequestration and timber production within a framework of multi-purpose forestry in Austria. *Forest Ecology and Management* 248:64-69.
- Castro, Mark S., Keith N. Eshleman, Louis F. Pitelka, Geoff Frech, Molly Ramsey, **William S. Currie**, Karen Kuers, Jeffrey A. Simmons, Bob R. Pohlada, Carolyn L. Thomas, and David M. Johnson. 2007. Symptoms of nitrogen saturation in an aggrading forested watershed in western Maryland. *Biogeochemistry* 84:333-348.
- Chastain, Robert A. Jr., **William S. Currie**, and Philip A. Townsend. 2006. Carbon Sequestration and Nutrient Cycling Implications of the Evergreen Understory Layer in Appalachian Forests. *Forest Ecology and Management* 231: 63-77.
- Johnston, C. A., P. Groffman, D. D. Breshears, Z. G. Cardon, **William S. Currie**, W. R. Emanuel, J. B. Gaudinski, R. B. Jackson, K. Lajtha, K. Nadelhoffer, D. W. Nelson, W. M. Post, G. J. Retallack, and L. Wielpolski. 2004. The frontier below: Carbon cycling in soil. *Frontiers in Ecology and the Environment* 10:522-528.
- Currie, William S.**, Knute J. Nadelhoffer, and John D. Aber. 2004. Redistributions of ¹⁵N highlight turnover and replenishment of mineral soil organic N as a long-term control on forest C balance. *Forest Ecology and Management*, 196:109-127.
- Nadelhoffer, Knute J., Benjamin P. Colman, **William S. Currie**, Alison Magill, and John D. Aber. 2004. Decadal-scale fates of ¹⁵N tracers added to oak and pine stands under ambient and elevated N inputs at the Harvard Forest (USA). *Forest Ecology and Management*, 196:89-107.

- Magill, Alison H., John D. Aber, **William S. Currie**, Knute J. Nadelhoffer, Mary Martin, William H. McDowell, Jerry M. Melillo, and Paul Steudler. 2004. Ecosystem response to 15 years of chronic nitrogen additions at the Harvard Forest LTER, Massachusetts, USA. *Forest Ecology and Management* 196:7-28.
- Luo, Y., B. Su, **William S. Currie**, J. S. Dukes, A. Finzi, U. Hartwig, B. Hungate, R. McMurtrie, R. Oren, W. J. Parton, D. Pataki, R. Shaw, D. R. Zak, and C. Field. 2004. Progressive nitrogen limitation of ecosystem responses to rising atmospheric carbon dioxide. *BioScience* 54:731-739.
- Aber, John D., Alison Magill, Knute J. Nadelhoffer, Jerry Melillo, Paul Steudler, Patricia Micks, Joseph Hendricks, Richard Bowden, **William S. Currie**, William H. McDowell, and Greg Berntson. 2004. Exploring the process of nitrogen saturation. Pages 259-279 in D. Foster and J. D. Aber, editors. Forests in Time: The Environmental Consequences of 1,000 Years of Change in New England. New Haven: Yale University Press, p. 259-279.
- Aber, John D., **William S. Currie**, Mark Castro, Mary Martin, and Scott Ollinger. 2004. Synthesis and Extrapolation: Models, Remote Sensing and Regional Analysis. Chapter 17 In: Foster, D., and J. Aber (eds.) Forests in Time: The Environmental Consequences of 1,000 Years of Change in New England. New Haven: Yale University Press, p. 338-362.
- Yanai, Ruth D., **William S. Currie**, and Christine L. Goodale. 2003. Soil carbon dynamics following forest harvest: an ecosystem paradigm reconsidered. *Ecosystems* 6:197-212.
- Currie, William S.** 2003. Relationships between carbon turnover and bioavailable energy fluxes in two temperate forest soils. *Global Change Biology* 9(6):919-930.
- Townsend, Philip A., Jane R. Foster, Robert A. Chastain, Jr., and **William S. Currie**. 2003. Application of imaging spectroscopy to mapping canopy nitrogen in forests of the Central Appalachian Mountains using Hyperion and AVIRIS. *IEEE Transactions on Geosciences and Remote Sensing* 41(6):1347-1354.
- Currie, William S.**, Ruth D. Yanai, Kathryn B. Piatek, Cynthia E. Prescott and Christine L. Goodale. 2003. Processes affecting carbon storage in the forest floor and in downed woody debris. Chapter 9 In Kimble, J. M. et al., Eds., The Potential for U.S. Forest Soils to Sequester Carbon and Mitigate the Greenhouse Effect. Lewis Publishers, Boca Raton, FL.
- Currie, William S.** and Knute J. Nadelhoffer. 2002. The imprint of land use history: Patterns of carbon and nitrogen in downed woody debris at the Harvard Forest. *Ecosystems* 5(5):446-460.
- Currie, William S.**, Knute J. Nadelhoffer and Benjamin Colman. 2002. Long-term movement of ¹⁵N tracers into fine woody debris under chronically elevated N inputs. *Plant and Soil* 238:313-323.
- Wullschleger, S. D., R. B. Jackson, **William S. Currie**, A. D. Friend, Y. Luo, F. Mouillot, Y. Pan, and G. Shao. 2001. Below-ground processes in gap models for simulating forest responses to global change. *Climatic Change* 51:449-473.
- Ramsey, Molly, **William S. Currie**, and Madhura V. Kulkarni. 2001. Contrasting pattern and process in natural and rehabilitated ecosystems: The role of microtopography. *Recent Research Developments in Ecology* 1:129-144. Trivandrum, India: Transworld Research Network.
- Currie, William S.** and Knute J. Nadelhoffer. 1999. Dynamic redistribution of isotopically labelled cohorts of nitrogen inputs in two temperate forests. *Ecosystems* 2:4-18.

- Currie, William S.** 1999. The responsive C and N biogeochemistry of the temperate forest floor. *Trends in Ecology and Evolution* 14:316-320.
- Currie, William S.**, Knute J. Nadelhoffer, and John D. Aber. 1999. Soil detrital processes controlling the movement of ¹⁵N tracers to forest vegetation. *Ecological Applications* 9:87-102.
- Currie, William S.**, John D. Aber, and Charles T. Driscoll. 1999. Leaching of nutrient cations from the forest floor: Effects of nitrogen saturation in two long-term manipulations. *Canadian Journal of Forest Research* 29:609-620.
- Moorhead, Darryl, **William S. Currie**, Edward Rastetter, William Parton, and Mark Harmon. 1999. Climate and litter quality controls on decomposition: An analysis of modeling approaches. *Global Biogeochemical Cycles* 13:575-589.
- Aber, John D., William H. McDowell, Knute J. Nadelhoffer, Alison Magill, Greg Berntson, Mark Kamakea, Steven G. McNulty, **William S. Currie**, Lindsey Rustad, and Ivan Fernandez. 1998. Nitrogen saturation in temperate forest ecosystems: Hypotheses revisited. *BioScience* 48:921-934.
- McDowell, William H., **William S. Currie**, John D. Aber, and Yuriko Yano. 1998. Effects of chronic nitrogen amendment on production of dissolved organic carbon and nitrogen in forest soils. *Water, Air and Soil Pollution* 105:175-182.
- Currie, William S.** and John D. Aber. 1997. Modeling leaching as a decomposition process in humid montane forests. *Ecology* 78:1844-1860.
- Hadjimichael, E., **William S. Currie**, and Stavros Fallieros. 1997. The Thomas-Reiche-Kuhn sum rule and the rigid rotator. *American Journal of Physics* 65:335-341.
- Currie, William S.**, John D. Aber, William H. McDowell, Richard D. Boone, and Alison H. Magill. 1996. Vertical transport of dissolved organic C and N under long-term N amendments in pine and hardwood forests. *Biogeochemistry* 35:471-505.
- Currie, William S.**, James N. Galloway, and Herman H. Shugart. 1996. Watershed base-cation cycle dynamics modeled over forest regrowth in a Central Appalachian ecosystem. *Water, Air and Soil Pollution* 89:1-22.
- Merriam, Jeffrey, William H. McDowell, and **William S. Currie**. 1996. A high-temperature catalytic oxidation technique for determining total dissolved nitrogen. *Soil Science Society of America Journal* 60:1050-1055.

Other Publications

- Gundersen, P., B. Berg, **W. S. Currie**, N. B. Dise, B. A. Emmett, V. Gauci, M. Holmberg, O. J. Kjønaas, J. Mol-Dijkstra, C. van der Salm, I. K. Schmidt, A. Tietema, W. W. Wessel, L. S. Vestgarden, C. Akselsson, W. De Vries, M. Forsius, H. Kros, E. Matzner, F. Moldan, K. J. Nadelhoffer, L.-O. Nilsson, G. J. Reinds, U. Rosengren, A. O. Stuanes and R. F. Wright. 2006. Carbon-Nitrogen Interactions in Forest Ecosystems – Final Report. Forest & Landscape Working Papers no. 17-2006, Danish Center for Forest, Landscape and Planning, Hørsholm, Denmark. 62 p.
- Simmons, Jeffrey A. and **William S. Currie**. 2005. Alteration of soil phosphorus pools from coal mining and reclamation. *Annual Proceedings of the West Virginia Academy of Science*, 77(2):31-41

(2005).

Providoli, Isabel, Harald Bugmann, **William S. Currie** and Patrick Schleppei. 2005. A model-based evaluation of nitrogen cycling in a Norway spruce mountain forest. Chapter 5, p. 83-106 in Providoli, I., Pathways of atmospherically deposited nitrogen in two ecosystems in central Switzerland: An experimental and model-based study using the ¹⁵N isotope. PhD Dissertation ETH No. 15887, Swiss Federal Institute of Technology Zurich.

Currie, William S. 2000. Modeling Nutrient Cycling and Decomposition Processes in Forest Vegetation and Soils. In Nolan, R. S. (Ed.), Electric Biology: Ecosystems. Published on CD-ROM by Digital Studios, 209 Santa Clara Avenue, Aptos CA 95003.

Currie, William S. 2000. Definitions of the 'Ecosystem' Concept. In Nolan, R. S. (Ed.), Electric Biology: Ecosystems. Published on CD-ROM by Digital Studios, 209 Santa Clara Avenue, Aptos CA 95003.

Currie, William S. 1996. Book review of Fundamentals of Soil Ecology, by D. C. Coleman and D. A. Crossley. Trends in Ecology and Evolution 11(9):390-391

Other Scholarly Products

Currie, William S. 2008-2020. MONDRIAN community-ecosystem model (Modes of Nonlinear Dynamics, Resource Interactions And Nutrient cycling), version 4.3. Computer model code in Visual Basic.

Currie, William S., Jason Martina, and Kenneth Elgersma. A User Guide for the MONDRIAN model, version 4.3. 2020. 75 pp.

Currie, William S. and David Helmers. 2004. A User Guide for the TRACE Model, version 4.2.0 update 1. 70 pp.

Currie, William S. 1997-2004. Tracer Redistributions Among Compartments in Ecosystems (TRACE), Ecosystem model, version 4.2.0. Computer model code in Visual Basic 6.0.

Synergistic Research Activities (selected)

Stakeholder workshop titled "Planning for the future of Great Lakes coastal ecosystems," Michigan Tech Research Institute, Ann Arbor, MI, December 2019. Workshop co-organizer, with 25 participants from state and federal agencies and NGOs together with academic researchers.

U-M Distinguished Faculty & Graduate Student Seminar Series titled "Climate Change Mitigation: Moving Beyond Carbon Neutral." PI and Co-organizer of this funded (\$12,600) 2016-2017 seminar series, sponsored by the UM Office of Research and co-hosted by the School of Natural Resources and Environment, the Energy Institute and the Erb Institute.

Upper Midwest and Great Lakes Landscape Conservation Cooperative (UMGL LCC). Member of Northern Forests working group, 2015-2018. Workshop participant, Regional Forest Management Workshops, Rhinelander, WI, May 21, 2014, and Sault Ste. Marie, MI, June 27-29, 2016.

Spatial Land Use Change and Ecological Effects: Land Markets, Land Management, and Land Carbon in Exurban Environments. Co-organizer of this NSF-sponsored workshop, May 19-20, 2014, Ann Arbor, MI.

SESYNC (National Socio-Environmental Synthesis Center) Theme Meeting Workshop, Ann Arbor, MI, May 3-4, 2012. Workshop participant.

Stockholm University – University of Michigan Faculty Exchange Award: collaborative research in residence at the Stockholm Resilience Centre, Stockholm, Sweden, 2010. Project title: Designing ecosystem models for sustainability science.

NCEAS (National Center for Ecological Analysis and Synthesis) working group on meta-analyses and modeling for cross-site comparison of large-scale ¹⁵N studies in forest ecosystems, 2005 - 2006. (Publication, Templer et al. 2012). Working group on progressive N limitation under elevated CO₂, 2001 – 2002. (Publication, Luo et al. 2004.)

LIDET project (LTER Intersite Decomposition Experiment Team); NCEAS working group to analyze 10-year dataset, 2004. Team member and workshop participant 1993, 1996, 2002, 2004 (Publications, Moorhead et al. 1999, Parton et al. 2007, Harmon et al. 2009, Currie et al. 2010).

Organizer or Co-organizer of two international workshops on synthesis and modeling of forest carbon-nitrogen interactions under elevated N deposition: Workshop at the University of Michigan Biological Station, 2003 (Organizer), and in Woods Hole MA, 2002 (Co-organizer).

CNTER (Carbon and Nitrogen Interactions; a US – European collaborative project sponsored by the European Union); member of scientific team and modeler of C, N, and ¹⁵N across US and European forest sites, 2001 – 2005.

ROCA (Research Opportunities for Collaboration in the Appalachians), project co-organizer, collaborator, and workshop co-organizer, “Watershed Research Workshop,” Appalachian Laboratory, June 1999, 2000, 2001, 2002, 2003.

University Service

Chair, Provost’s Faculty Transition Team for planning a new School for Environment and Sustainability at the University of Michigan, 2016-2017.

Chair, Committee to review the Practical Experience Requirement, Program in the Environment, 2020 Promotion and Tenure Committee, SEAS, 2016-2017, 2018-2019.

SEAS Deans Junior Faculty Mentoring Program, developed and led this new program, 2019 - 2020.

SEAS Postdoctoral Training Program, 2020

Chair, SEAS COVID-19 Teaching Preparedness Working Group, 2020.

Executive Committee, Graham Sustainability Institute, University of Michigan, 2019-present

Space Committee, SEAS, 2019-present.

MiWorkspace Leadership Committee, SNRE, 2015. Centrally-organized university effort to restructure computing and software delivery for staff, faculty, and research and teaching needs.

Associate Dean for Academic Affairs, School of Natural Resources and Environment (SNRE), 2010-2012.

Member, Executive Committee, SNRE (*Ex officio*), 2010-2012.

Chair, Scholarship Committee, SNRE, 2010-2012.

Chair, PhD Committee, SNRE, 2010-2012; member, 2004-2006.

Chair, Field of Study Coordinating Committee, SNRE, 2010-2012.

Chair, Properties Committee, SNRE, 2010-2012; member, 2009. Oversight and management of University properties including Stinchfield Woods, Newcomb Tract, and Saginaw Forest.

Chair, Ad hoc Committee to prepare SNRE response to Program in the Environment Internal Review, 2012

Executive Advisory Board (*ex officio*), Erb Institute for Sustainable Enterprise, University of Michigan, 2010-2012.

Member, UM Vice Provosts and Associate Deans Group (VPADG), 2010-2012.

Founding Co-Director, Envoys Diversity Program, 2011-2012; Chair, task force for diversity program

development, 2011.

Faculty Search Committees, University of Michigan: Spatial Science of Coupled Human-Natural Systems, SEAS, 2018; Economics of Climate Change, SNRE, 2015-2016; Environmental Informatics, SNRE, 2013 and 2016; Sustainable Food Systems, SNRE, 2012; Sustainable Food Systems, Department of Ecology and Evolutionary Biology, 2012; Aquatic Conservation Ecology, SNRE, 2009; Terrestrial Conservation Ecology, SNRE, 2009; Ecologist, Department of Ecology and Evolutionary Biology, 2004-2005. At University of Maryland: Environmental Educator, 2000; Landscape Ecologist, 1998.

CRLT (Center for Research on Learning and Teaching at UM) faculty Special Interest Group on Instructional Technology in Learning and Teaching, 2013

UM Ginsberg Center External Review, 2012.

Curriculum Committee, University of Michigan Biological Station, 2010-2011.

UM Senate Assembly, elected representative from SNRE, 2006 – 2009.

Specialization (Field of Study) Coordinator, SEAS, Geospatial Data Science 2019-2020, Environmental Informatics 2005-2009, 2015-2016, and 2018-2019; Terrestrial Ecosystems 2008.

Graduate Student Instructor Selection Committee, Program in the Environment, University of Michigan 2006, 2008.

Steering Committee, SNRE Interdisciplinary Seminar and Workshop Series, 2005.

Faculty Advisory Committee, Program in The Environment, University of Michigan 2004 - 2005.

Doris Duke Fellowship Selection Committee (ad hoc), SNRE, 2004.

Faculty Senator, University of Maryland, 2000 - 2003.

Co-chair, Ecology Area of Specialization in the MEES graduate program (Marine, Estuarine, and Environmental Sciences), University of Maryland, 2000 - 2003.

Graduate Council, University of Maryland Center for Environmental Science (UMCES), 2001 – 2003.

Chair, Graduate Education Committee, UMCES Appalachian Laboratory, 2001 – 2003.

Chair, Committee to develop a permanent research station in Maryland, UMCES, 2001.

Other committee membership at UMCES, 1997-2003: Computer Committee, Library Committee, Colloquium Committee, Faculty Forum Committee, Faculty Convocation Committee, Space Allocation Committee.

Organizer of the Ecosystems Center Seminar Series, Marine Biological Laboratory, 1996.

President, Graduate Student Organization, University of New Hampshire, 1994-1995.

Graduate Council, graduate student representative, University of New Hampshire, 1994-1995.

University President's Cabinet, graduate student representative, University of New Hampshire, 1994-1995.

Professional service and outreach

Subject-Matter Editor, Ecological Applications, 2013 – present, Ecological Monographs, 2020 – present.

Editorial Board, Diversity, 2019 – present.

Panelist, National Academies of Science, Engineering, and Medicine, Gulf Research Program, Research and Development Panel, Washington DC, 2017, 2020.

Collaborator, Saginaw Bay CISMA (Cooperative Invasive Species Management Area), 2016 – 2018.

Chair, review of Editor-In-Chief for Ecological Issues, for the Ecological Society of America, 2015.

Participant, Great Lakes Wetland Mapping Workshop, The Nature Conservancy, Grand Rapids, MI, 2015.

Panelist, National Science Foundation Ecosystem Studies Program, 2004, 2006, 2007, 2008, 2013.

Panelist, EPA STAR Grants Program, 2000, 2006, 2013.

Instructor, Michigan Math and Science Scholars, a summer program exposing advanced high school students to college-level mathematics and science courses at the University of Michigan; taught a 2-week full-day course in 2006, 2007, 2008, 2009, 2010.

Co-organizer and Moderator, Symposium, “Advances in Modeling Coupled Human-Natural Systems for Sustainability,” at the 2007 AAAS (American Association for the Advancement of Science) Annual Meeting, 15-19 February 2007, San Francisco, CA.

Associate Editor, *Biogeochemistry*, 2002 – 2006.

Session Presider, “Forest Ecology III, historical and environmental changes”, at the 91st Annual Meeting of the Ecological Society of America, Memphis TN, August 2006.

Panelist, MISTRA Scientific Review Panel to assess LUSTRA Program (Land Use Strategies to Reduce Greenhouse Gas Emissions). MISTRA Foundation for Strategic Environmental Research, Stockholm, Sweden, 2002.

SEEDS Diversity Program field trip participant and presenter, UM Biological Station, 2005; *SEEDS Diversity Mentor* at the Annual Meeting of the Ecological Society of America, 2002.

Member, Finance and Investment Committee, Ecological Society of America, 2001 – 2005.

Session Chair, “Ecosystem Ecology,” 87th Ann. Meeting of the Ecological Society of America, 2002.

Session leader, “Facilitating the input of data into models and model-data comparisons,” Cary Conference IX, “The Use of Models in Ecosystem Science,” Institute for Ecosystem Studies, Millbrook, NY, 2001.

Symposium Organizer and Chair, “Modeling soil N turnover and the availability of inorganic and organic N to forest trees”, for combined annual meeting of the International Society for Ecological Modeling and the Ecological Society of America, August 1999.

Session Chair, “Nitrogen cycling,” 83rd Ann. Meeting of the Ecological Society of America, 1998.

Session Chair, “Biogeochemistry of the Forest Floor,” 81st Ann. Meeting of the Ecological Society of America, 1996.

Organizer, “Science Safari,” bringing local teachers to the Ecosystems Center at the Marine Biological Laboratory, 1997.

Peer reviewer (past 10 years):

Biogeochemistry, Ecology, Ecological Applications, Ecological Monographs, Ecological Modelling, Ecosystems, Diversity, Forest Ecology and Management, Global Change Biology, Journal of Ecology, Journal of Mountain Science, Landscape and Urban Planning, Nature Climate Change, Oecologia, Science of the Total Environment, National Estuarine Research Reserve System Science Collaborative; National Academies of Science, Engineering, and Medicine Gulf Grants Program; Austrian Science Fund; U.S. Environmental Protection Agency Western Ecology Division; US Department of Energy, Bioenergy Research Centers Program; US Department of Energy, Bioenergy Technologies Office; USDA Forest Service McIntyre-Stennis Program; US EPA STAR Grants Program; Great Lakes Integrated Sciences and Assessments (GLISA); NSF Division of Environmental Biology; NSF Integrative Research Challenges, NSF Research Initiation Awards, NSF LTREB (Long-Term Research in Environmental Biology), NSF Atmospheric Chemistry, NSF EpsCor, NSF Physical Oceanography; USDA National Research Initiative Competitive Grants Program; Netherlands Organization for Scientific Research; W. H. Freeman; Pearson; Oxford University Press; Elsevier; Cengage Learning.

Courses taught

Major courses

“Sustainability Issues in the Great Lakes Region” (Environ 305, 3 cr), fall 2018, 2019.

“Ecological Issues” (Environ 201, 4 cr), an undergraduate introductory course in the Program in the Environment (PitE), lectures and 6 discussion sections, winter 2015, 2016.

“Applied Ecosystem Modeling” (NRE 545, 2 cr), graduate interactive-learning course, winter 2014,

2015, 2016, 2017, 2019, 2020.

“Landscape Ecology” (NRE 501, 2 cr), graduate lecture course, fall 2014, 2015, winter 2017, 2019, 2020.

“Ecology: Science of Context and Interaction” (NRE 509, 4 cr), graduate lecture course with 7 lab sections, SNRE, each year fall 2009 through 2013.

“Biofuels and Sustainability” (NRE 501, 3 cr), graduate lecture course, SNRE, winter 2013.

“Bio-based Carbon Mitigation and Biofuels” (NRE 501, 3 cr), graduate lecture course, SNRE, winter 2009.

“Modeling Coupled Human-Natural Systems” (Environ 401, 3 cr), interactive lecture & laboratory course, Program in the Environment, fall 2007, 2008, 2009, winter 2011.

“Ecosystem Modeling and Synthesis” (NRE 501, 3-4 cr), graduate lecture & laboratory course, SNRE, fall 2004, 2005, winter 2008.

“Introduction to Environmental Analysis” (Environ / NRE 239, 4 cr), undergraduate introductory course, lectures and 6 lab sections, Program in the Environment, winter 2004, 2005, 2006.

“Land Margin Interactions”, 4-cr graduate course, including two overnight field trips, University of Maryland Center for Environmental Science (UMCES), 2001, 2002.

“Energetics,” 3-cr graduate course, University of Maryland Center for Environmental Science (UMCES), 1999.

Seminar and laboratory courses

Ecology and Management of Great Lakes Coastal Wetlands (EAS 639, 1 cr), graduate seminar course, SEAS, fall 2017.

Future scenarios of global food security (NRE 639, 1 cr), graduate seminar course, SNRE, winter 2013, 2014.

Modeling dynamic ecological systems in Stella (NRE 507, 1 cr), graduate computer laboratory course, SNRE, fall 2011, 2012, 2013.

Resilience Thinking: Reading case studies of sustainability analysis in human-natural systems (NRE 639, 1 cr), graduate seminar course, SNRE, winter 2008.

Forest history, disturbance, and management in the Great Lakes region (NRE 639, 1 cr), SNRE, winter 2006.

Ecosystem Models as Tools for Research and Decision Making (NRE 639, 1 cr), graduate seminar course, SNRE, fall 2003.

Advanced Ecosystem Modeling (NRE 639, 1 cr) graduate computer laboratory course, SNRE, winter 2005.

Graduate thesis and proposal writing (1 cr), graduate seminar course, University of Maryland Center for Environmental Sciences (UMCES), 2001.

Biogeochemical and Hydrogeochemical Recovery of Disturbed Watersheds (1 cr), graduate seminar course (co-taught), UMCES, 1999.

Nutrient Dynamics at Landscape Scales (1 cr), graduate seminar course (co-taught), UMCES, 1998.

Students and postdocs advised

Postdoctoral fellows advised:

University of Michigan

Sean Sharp, 2018-present
Preeti Rao (co-advised), 2016-2017
Zhiyuan Song (co-advised), 2013-2014
Jason Martina (co-advised), 2012-2014
Kyle Whittinghill (co-advised), 2010-2011
Willem W. Wessel, 2005-2006

PhD student committees chaired:

University of Michigan

Liza Jenkins, 2011-2019
Sarah Kiger, 2009-present
Kristine Crous, 2005-2007
Shanna Shaked, 2004-2005
Tao Zhang, 2003-2005

PhD student committee membership:

University of Michigan

Bridget Shakya, 2019-
Benjamin Lee, 2014-
Arthur Endsley, 2014-2019
John Graham, 2013-2016
Susan Cheng, 2012-2016
Hui Xu, 2012-2016
Elizabeth Entwistle, 2011-2012
Lauren Cline, 2010-2011
Jasmine Crumsey-2007-2014
Derek Robinson, 2006-2009
John Hassett, 2006-2009
Irem Daloglu, 2007-2008
Jason Taylor, 2006-2008
Yuka Makino, 2005-2008
Amy Burnicki, 2004-2008
Nathan Bosch, 2004-2007
Dan Rucinski, 2007-2008
Deborah Hudleston, 2006-2007
Haejin (Jinny) Han, 2005-2006

Swiss Federal Institute for Forest, Snow and Landscape Research, Switzerland

Kim Krause, 2008-2012

University of Maryland

Chris Welcker, 1999-2002

University of New Hampshire

Mark Kamakea, 1996-1998

Masters theses chaired:

University of Michigan

Ye Yuan, 2018-
Erin Barton, 2016-2018
Lisa Fouladbash, 2011-2013
Anna Brunner, 2009-2012
Meghan Hutchins, 2007-2009
Nicolas Enstice, 2005-2007
Ari Kahan, 2005-2007
Alicia Lindauer-Thompson, 2005-2007

University of Maryland

Cynthia Giffen (co-advised), 2001-2003
Madhura Kulkarni, 2001-2003
Molly McFarland Ramsey, 1999-2002

Masters projects and practica advised:

University of Michigan

Kate Keeley, 2016-2017
Elliot Kurtz, 2016-2017
Luxian Li, 2016-2017
Ed Waisanen, 2016-2017
Yu Xin, 2016-2017
Fan Zhang, 2016-2017
Christina Carlson, 2016-2017
Sarah Turner, 2016-2017
Alex Clayton, 2016-2017
Flora Yifan He, 2016-2017
Joshua Flickinger, 2016-2017
Haosong Jiao, 2012-2014
Nancy Gephart, 2012-2013
Hannah Erickson, 2012-2013
Sam Stevenson, 2012-2013
Abby Goldstein, 2012-2013
Karly Zimmerman (co-advised), 2011-2013
Nathan Springer, 2010-2011
Brian Hartmann, 2010-2011

Mike Kasameyer, 2010-2011

Russell Martin, 2009-2010

Masters students advised (non-thesis):

University of Michigan

Colin Welk, 2019-present

Shannon Blair, 2019-present

Sebastian Kasparian, 2019-present

Miye Nakashima, 2019-present

Anna Urso, 2019-present

Joy Yakie, 2018-2020

Jannice Newson, 2018-2019

Rong Xu, 2017-2019

Charlotte Weinstein, 2016-2018

Alice Elliot, 2016-2018

Tonghui Ming, 2015-2017

Fan Zhang, 2015-2017

Wanqi Ouyang, 2015-2017

Meghan Bogaerts, 2014-2017

Stephanie Miller, 2014-2017

Bo Li, 2014-2016

Jiawei Huang, 2014-2016

Zu Dienle Tan, 2014-2016

Gwen Oster, 2013-2015

Meghan Hemken, 2013-2015

Fumi Kikuyama, 2012-2014

Seta Chorbajian, 2012-2013

Xu Xin, 2012-2014

Evan Crane, 2011-2013

Melody Lopez (co-advised), 2011-2013

Justin D'Atri, 2011-2012

Zane Hadzick, 2010-2012

Kailai Zhang, 2009-2010

Zachary Brym, 2009

Katie Pethan, 2008-2011

Kevin Brown, 2008-2009

William Walters, 2007-2008

Peter Gamberg, 2008-2009

Sharon Gourdji, 2003-2005

Masters students thesis committee membership or reader:

University of Michigan

Teegan McClung, 2016

Benjamin Connor Barrie, 2011-2013

Joshua Sims, 2011-2013

Karyl Wentzloff, 2011

Justin Heslinga, 2009

Lauren Lesch, 2009-2010

University of Maryland

Timothy Negley, 1999-2001

Jeremiah Sawma, 1999

Sarah Hypio, 1998-99

Presentations (selected)

- Currie, William S.** Modeling a wetland ecosystem as a complex adaptive system. Seminar given at the Center for the Study of Complex Systems, University of Michigan. January 30, 2020.
- Sharp, Sean J, Ye Yuan, Anthony Kendall, Kenneth Elgersma, Sherry Martin, Luwen Wan, Jason Martina, and **William S. Currie.** Mapping watershed nitrogen removal in emergent wetlands of the Great Lakes. Poster presentation given at the Stewardship Network Conference, East Lansing, MI, Jan 17-18, 2020.
- Currie, William S.,** Kenneth J. Elgersma, Jason P. Martina, Sean J. Sharp and Ye Yuan. Modeling nutrient cycling and retention in wetlands as a simultaneous driver and outcome of ecosystem self-organization. Poster presentation given at the Fall Meeting of the American Geophysical Union, San Francisco, CA, December 9-14, 2019.
- Martina, J.P., K.L. Elgersma, **William S. Currie,** and D.E. Goldberg. Can invasion be reversed by removing the main driver or has a regime shift occurred? A test case using a simulated wetland ecosystem. Oral presentation given at the Texas Aquatic Plant Management Society Annual Conference. Bryan, TX. November 2019.
- Martina, J.P., K.L. Elgersma, **William S. Currie,** and D.E. Goldberg. Can invasion be reversed by removing the main driver or has a regime shift occurred? A test case using a simulated wetland ecosystem. Oral presentation given at the Texas Chapter of the Society of Ecological Restoration. Galveston, TX. November 8-10, 2019.
- Currie, William S.,** Kenneth J. Elgersma, Jason P. Martina, Sean Sharp, and Deborah E. Goldberg. Plant functional traits, community composition, and environmental conditions combine to produce ecosystem-level N cycling dynamics in an individual-based model of wetlands. Oral presentation given at the annual meeting of the Ecological Society of America, August 11-16, 2019 Louisville, KY.
- Martina, Jason P., Kenneth J. Elgersma, Sean Sharp, Deborah E. Goldberg, and **William S. Currie.** Propagule pressure and clonal branching architecture interact along a nitrogen gradient to influence invasion outcomes in a simulated wetland system. Oral presentation given at the annual meeting of the Ecological Society of America, August 11-16, 2019 Louisville, KY.
- Sharp, Sean, Kenneth J. Elgersma, Deborah E. Goldberg, Jason P. Martina, and **William S. Currie.** Disentangling interactions of Phragmites invasion, hydrology and nutrient loading helps predict N-removal in freshwater coastal wetlands. Oral presentation given at the annual meeting of the Ecological Society of America, August 11-16, 2019 Louisville, KY.
- Yuan, Ye, Kenneth Elgersma, Jason Martina, Sean Sharp, and **William S. Currie.** Hydroperiod and water level effects on GHG exchanges in Great Lake coastal wetlands. Poster presentation given at the annual meeting of the Ecological Society of America, August 11-16, 2019 Louisville, KY.
- Meyer, Abigail, and **William S. Currie.** Clonal branching effects on biotic resistance in coastal wetlands. Poster presentation given at Michigan Sea Grant Symposium, Ann Arbor, MI, August 2, 2019.
- Bourgeau-Chavez, Laura L., David Hyndman, **William S. Currie,** Deborah E. Goldberg, Kenneth Elgersma, Anthony Kendall, Jason P. Martina, Sherry Martin, Nancy H.F. French, Bruno Basso, Sean J. Sharp, Andrew F. Poley. Human and environmental effects on Great Lakes coastal ecosystems. Poster presentation at NASA LCLUC Spring Science Team Meeting, Rockville, MD, April 9-11, 2019.
- Sharp, Sean, Kenneth Elgersma, Deborah Goldberg, Jason Martina, and **William S. Currie.** Examining the role of hydroperiod, season, and nitrogen loading on denitrification and N-removal rates in Great Lakes coastal wetlands. Oral presentation given at The Science, Practice, & Art of Restoring Native Ecosystems, East Lansing, MI, January 11-12, 2019.

- Martina, Jason P., Kenneth Elgersma, **William S. Currie**, and Deborah Goldberg. Can invasion be reversed by removing the main driver or has a regime shift occurred? A test case using a simulated wetland ecosystem. Oral presentation given at the annual meeting of the Ecological Society of America, New Orleans, LA, August 5-9, 2018.
- Currie, William S.**, Jason Martina, and Kenneth Elgersma. The Mondrian model: Introduction of an interactive web-based tool for Great Lakes coastal wetland management and restoration. Presentation given at Michigan Tech Research Institute, Ann Arbor, MI, June 5, 2018.
- Currie, William S.**, Preeti Rao, and Stephanie Hart. Forest fragmentation and carbon storage along a regional social-ecological gradient. Poster presentation given at the US-IALE annual conference (US Regional Association of the International Association for Landscape Ecology), Chicago, IL, April 9, 2018.
- Currie, William S.** A sustainability science perspective on the regional scale gradient in forest cover in the Upper Midwest and Great Lakes basin. Invited joint seminar given to the Departments of Ecology and Evolutionary Biology and Ecosystem Science and Management, Texas A&M University, College Station, Texas, Feb 26, 2018.
- Bourgeau-Chavez, Laura, Phyllis Higman, and **William S. Currie**. Sharing insights on invasive *Phragmites* management. Oral presentation and panel discussion, The Science, Practice & Art of Restoring Native Ecosystems 2018. East Lansing, MI, January 12-13, 2018.
- Currie, William S.**, Kenneth J. Elgersma, Jason P. Martina, and Laura Bourgeau-Chavez. The Mondrian model: a tool to develop an adaptive management framework to restore invaded wetlands. Oral presentation, International Association of Great Lakes Researchers (IAGLR), Detroit, MI, May 15-19, 2017.
- Fischer, Paige, **William S. Currie**, Michal Russo. Assessing Potential To Protect and Enhance Carbon Sinks on Private Forests in the Northern Great Lakes Region. Oral presentation, Beyond Carbon Neutral annual meeting, University of Michigan, April 27, 2017.
- Waisanen, Edward, Kathryn Keeley, Elliot Kurtz, Luxian Li, Yu Xin, Fan Zhang, Douglas Pearsall, and **William S. Currie**. Supporting Conservation and Decision-Making in the Northwoods: Mapping Values, Services, and Threats. Oral presentation, International Association of Great Lakes Researchers (IAGLR), Detroit, MI, May 15-19, 2017.
- Keely, Kathryn, Elliot Kurtz, Edward Waisanen, Luxian Li, Fan Zhang, Yu Xin, and **William S. Currie**. Supporting conservation and decision-making in the Northwoods: Mapping forest values, services, and threats. Webinar given to Upper Midwest and Great Lakes Landscape Conservation Cooperative (UMGL LCC), Northwoods Working Group, April 11, 2016.
- Currie, William S.** The Mondrian model role in the Saginaw Bay CISMA wetland restoration initiative. Phragmites Adaptive Management Webinar, Saginaw Bay CISMA, 20 October 2016.
- Currie, William S.** Modeling nutrient inflows and invasive plants in Great Lakes coastal wetlands. Great Lakes Wetland Mapping Workshop organized by The Nature Conservancy, Grand Rapids, MI, Nov. 17, 2015.
- Currie, William S.** Mapping factors likely to affect forest futures across the Great Lakes basin. Webinar given to Upper Midwest and Great Lakes Landscape Conservation Cooperative (UMGL LCC), Northwoods Working Group, October 8, 2015.

- Currie, William S.**, Laura L Bourgeau-Chavez, Kenneth J. Elgersma, Nancy H. F. French, Deborah E. Goldberg, Stephanie Hart, David W Hyndman, Anthony D Kendall, Sherry L Martin and Jason P. Martina. Nutrient-driven plant invasions in wetlands around the Michigan coastline: using satellite and field data to test a model linkage across scales. Oral presentation given at the 100th annual meeting of the Ecological Society of America, August 9-14, 2015, Baltimore, MD.
- Kenneth J. Elgersma, Jason P. Martina, **William S. Currie**, and Deborah E. Goldberg. Native wetland plants provide biotic resistance against non-native cattail invasion in oligotrophic and eutrophic wetlands. Poster presentation given at the 100th annual meeting of the Ecological Society of America, August 9-14, 2015, Baltimore, MD.
- Martina, J.P, K.J. Elgersma, **William S. Currie** and D.E. Goldberg. Effectiveness of cattail (*Typha* spp.) management techniques (mowing, burning, and herbiciding) depends on exogenous nitrogen inputs. Oral presentation given at the 100th annual meeting of the Ecological Society of America, August 9-14, 2015, Baltimore, MD.
- John B. Graham, John B., Joan Iverson Nassauer, **William S. Currie**, M. Cristina Negri, and Herbert Ssegane. A comparison of two techniques for modeling native bee habitat in alternative future landscapes that incorporate perennial bioenergy crops. Oral presentation given at the 100th annual meeting of the Ecological Society of America, August 9-14, 2015, Baltimore MD.
- Deborah Goldberg, Deborah G., Jason Martina, Kenneth Elgersma, and **William Currie**. Community consequences of body size in clonal plants. Oral presentation given at the 11th Clonal Plant Meeting, August 4-7, 2015, Trebon, Czech Republic.
- Currie, William S.**, Laura L. Bourgeau-Chavez, Kenneth J. Elgersma, Nancy H. F. French, Deborah E. Goldberg, Stephanie Hart, David W. Hyndman, Anthony D. Kendall, Sherry L. Martin and Jason P. Martina. Linking a large-watershed hydrogeochemical model to a wetland community-ecosystem model to estimate plant invasion risk in the coastal Great Lakes region, USA. Oral presentation, AGU Annual Fall Meeting, December 15-19, 2014, San Francisco, CA.
- Bourgeau-Chavez, L.L., Miller, M.E., Battaglia, M. Banda, E., Endres, S., **Currie, W.**, Elgersma, K.J., French, N.H.F., Goldberg, D. E., and Hyndman, D.W. 2014. Developing Remote Sensing Products for Monitoring and Modeling Coastal Great Lakes Wetland Vulnerability to Climate Change and Land Use. Poster presentation, AGU Annual Fall Meeting, Dec. 15-19, 2014, San Francisco, CA.
- Currie, William S.** and Stephanie K. Hart. Agriculture, forestry, and human settlements drive a regional gradient in forest fragmentation in the Great Lakes basin, USA. Oral presentation given at the annual meeting of the Ecological Society of America, August 10-15, 2014, Sacramento, CA.
- Brown, Daniel, Shipeng Sun, **William S. Currie**, Joan Nassauer, Scott Page, Dawn Parker, Rick Riolo, Derek Robinson, and Sarah Kiger. Linking Land Markets and Landscape Carbon in Exurban Development. Presentation given at the Global Land Project, Berlin, Germany, March 19-21, 2014.
- Song, Zhiyuan, **William S. Currie**, Arun Agrawal, and Allison Steiner. Modeling the dynamic pattern of household-based forest use driven by labor availability in rural communities of developing countries. Oral presentation given at the American Association for the Advancement of Science (AAAS) Pacific Division 95th Annual Meeting, University of California, Riverside, June 17-20, 2014.

- Brown, Daniel G., **William S. Currie**, Sarah E. Kiger, Joan I. Nassauer, Scott E. Page, Dawn C. Parker, Rick L. Riolo, and Shipeng Sun. Modeling social and ecological processes and carbon outcomes in exurban landscapes. Oral presentation given at the annual meeting of the Ecological Society of America, August 10-15, 2014, Sacramento, CA.
- Martina, J.P., **William S. Currie**, D.E. Goldberg, K.L. Elgersma. Investigating the major drivers of C storage in coastal wetlands using a simulation model: Do plant invasions matter? Invited oral presentation given at the Joint Aquatic Sciences Meeting, Portland, OR, May 18-23, 2014.
- Elgersma, Kenneth J., Jason P. Martina, Deborah E. Goldberg, and **William S. Currie**. Assessing ecosystem services provided by restored wetlands under current and future land-use scenarios. Poster presentation at the UM Water Center Conference, June 24-25, 2014, Ann Arbor, MI.
- Martina, Jason P., **William S. Currie**, Deborah E. Goldberg, and Kenneth J. Elgersma. Physiological trait variation in plant invaders influences invasion success and C cycling across a hydrology and nitrogen gradient in a simulated wetland ecosystem. Oral presentation given at the annual meeting of the Ecological Society of America, August 2014, Sacramento, CA.
- Currie, William S.**, Daniel G. Brown, Sarah Kiger, Joan I. Nassauer, and Derek T. Robinson. Scaling up carbon storage in human-dominated heterogeneous landscapes in the Great Lakes region. Annual fall meeting of the American Geophysical Union, Dec. 9-13, 2013, San Francisco, CA.
- Kiger, Sarah and **William S. Currie**. Modeling ecosystem processes in the human-dominated exurban landscape. Oral presentation given at the annual meeting of the Ecological Society of America, August 4-9, 2013, Minneapolis, Minnesota.
- Elgersma, Kenneth J., Ai Wen, Tomas Herben, **William S. Currie**, and Deborah E. Goldberg. Estimating dynamic allocation to clonal plant growth using static measurements. Oral presentation given at the annual meeting of the Ecological Society of America, August 4-9, 2013, Minneapolis, Minnesota.
- Martina, Jason P., **William S. Currie**, Deborah E. Goldberg, and Kenneth J. Elgersma. Interactive effects of invasion and hydrology influence C storage along a nitrogen gradient in a simulated clonal wetland ecosystem. Oral presentation given at the annual meeting of the Ecological Society of America, August 4-9, 2013, Minneapolis, Minnesota.
- Parker, Dawn, Dan Brown, Joan Nassauer, **William S. Currie**, Rick Riolo, Scott Page, Shipeng Sun, Megan Hutchins, Derek Robinson, Sarah Kiger, Tatiana Filatova, Qingxu Huang. The SLUCE2 project: A complex system approach to modeling exurban development trajectories and terrestrial carbon sequestration in Southeastern Michigan, USA. Oral presentation given at the 2013 Annual Meeting of the American Association of Geographers, Los Angeles, CA, , April 9-13, 2013.
- Fouladbash, Lisa, and **William S. Currie**. Agroforestry in Liberia: Exploring Rural Practices, Perceptions and Potential through a Household Survey. Oral presentation given at the 45th annual Liberian Studies Association conference, April 4-7, 2013, Rutgers University, New Brunswick, NJ.
- Visscher, Rachel, Joan I. Nassauer, Daniel G. Brown, **William S. Currie**, and Rick R. Riolo. Carbon-cycle Ecosystem Service Implications of Resident Behaviors for Exurban Residential Landscapes. Oral presentation given at the 19th International Symposium on Society and Resource Management (ISSRM), June 4-8, 2013, Estes Park, CO.
- Currie, William S.**, Daniel G. Brown, Anna Brunner, Lisa Fouladbash, Zane Hadzick, Meghan Hutchins,

- Sarah E. Kiger, Yuka Makino, Joan I. Nassauer, Derek T Robinson, Rick L. Riolo, Shipeng Sun. Incorporating Ecosystem Processes Controlling Carbon Balance Into Models of Coupled Human-Natural Systems. Poster presentation given at the annual meeting of the American Geophysical Union, December 3-7, 2012, San Francisco CA.
- Brown, Daniel G., Shipeng Sun, **William S. Currie**, Joan I. Nassauer, Scott E. Page, Dawn C. Parker, Rick L. Riolo. An Integrated Model of Market-Driven Dynamics of Carbon in Exurban Landscapes. Oral presentation given at the annual meeting of the American Geophysical Union, December 3-7, 2012, San Francisco CA.
- Currie, William S.**, Deborah E. Goldberg, and Jason Martina. Exploring interwoven cause and effect in nutrient cycling, plant size, and invasion success in a wetland community-ecosystem model. Oral presentation given at North Central Regional Conference, Society of Wetland Scientists, September 28-30, 2012, Indiana Dunes National Lakeshore, IN.
- Martina, Jason P., **William S. Currie**, and Deborah E. Goldberg. The interaction between litter, N loading, and allocation requirement determines invader success in a simulated clonal wetland ecosystem. Oral presentation, North Central Regional Conference, Society of Wetland Scientists, September 28-30, 2012, Indiana Dunes National Lakeshore, IN.
- Goldberg, Deborah E., Kenneth Elgersma, **William S. Currie**, Jason Martina. Building an integrated program to understand wetland plant invasions. Oral presentation given at North Central Regional Conference, Society of Wetland Scientists, September 28-30, 2012, Indiana Dunes National Lakeshore, IN.
- Currie, William S.** Scenario modeling of social-ecological system responses to external economic contact in a Himalayan forest and village. Poster presentation given at Resilience, Innovation and Sustainability: Navigating the Complexities of Global Change; Second International Science and Policy Conference, March 11-16, 2011, Tempe AZ.
- Currie, William S.** and Deborah E. Goldberg. Interwoven cause and effect in nutrient cycling, plant size, and invasion success in a simulated clonal wetland ecosystem. Oral presentation given at the annual meeting of the International Association of Vegetation Science, Lyon, France, June 19-24, 2011.
- Kiger, Sarah, **William S. Currie**, and Meghan Hutchins. Linking an ecosystem process model to ecosystem services. Poster presentation given at the 96th annual meeting of the Ecological Society of America, Austin, TX, August 7-11, 2011.
- Whittinghill, Kyle A., **William S. Currie**, Donald R. Zak. Using an ecosystem process model to examine effects of increased nitrogen deposition on soil carbon storage through decreased decomposition. Oral presentation given at the 96th annual meeting of the Ecological Society of America, Austin, TX, August 7-11, 2011.
- Currie, William S.** Interwoven cause and effect in nutrient cycling, plant size, and invasion success in a simulated clonal wetland ecosystem. Invited seminar given at the Swiss Institute for Snow and Landscape Research, Birmensdorf, Switzerland, June 28, 2011.
- Currie, William S.** Ecosystem model characteristics needed for building models of coupled human-natural systems. Oral presentation given at the 95th Annual Meeting of the Ecological Society of America, August 1-6, 2010, Pittsburgh, PA.

- Kiger, Sarah and **William S. Currie**. Linking an Ecosystem Process Model to Ecosystem Services. Poster presentation given at meeting of ACES (A Community on Ecosystem Services), Chandler, AZ, 6-9 December 2010.
- Hutchins, Meghan D., **William S. Currie**, Rick Riolo and Joan I. Nassauer. Trajectories of carbon storage in low-density residential landscapes: an agent-based modeling approach to study emergence at the neighborhood scale. Illustrated Paper given at the 2010 Annual Meeting of the American Association of Geographers, Washington DC, April 14-18, 2010.
- Lesch, Lauren, Joan I. Nassauer, **William S. Currie**. Strategies for enhancing carbon sequestration in human dominated landscapes. Poster given at the annual meeting of the US section of the International Association of Landscape Ecology (US-IALE), Athens, GA, 5-9 April 2010.
- Brown, Daniel G., Derek T. Robinson, Dawn C. Parker, Tatiana Filatova, Rick Riolo, Shipeng Sun, Meghan Hutchins, **William S. Currie**, and Joan I. Nassauer. A computational framework for integrated modeling of land system interactions in exurban Michigan. Presentation given at the Ester Boserup conference 2010, "Long-term trajectories in population, gender relations, land use, and the environment." Vienna, Austria, Nov. 15-17, 2010.
- Currie, William S.** Carbon, Kyoto, Ecosystem Processes and Mitigation Activities. Invited departmental seminar (graduate colloquium series) given at the Department of Geography, Northern Illinois University, De Kalb IL, April 2009.
- Lindauer-Thompson, Alicia, and **William S. Currie**. The potential use of models as decision support tools in Michigan state forest management: assessing the interplay of carbon storage with other management goals. Oral presentation given at the annual meeting of the American Association of Geographers, Boston, MA, April 2008.
- Goldberg, Deborah E., **William S. Currie**, Radka Wildova, and Emily C. Farrer. Coexistence and dominance of introduced plants in marshes: the importance of clonal traits and plant size along nutrient gradients. 9th Clonal Plant Workshop, Clonal plants: beyond the patterns - ecological and evolutionary dynamics of asexual reproduction, Leuven, Belgium, June 2009.
- Currie, William S.**, K. S. Hofmockel, R. B. Jackson, A. S. Gallet-Budynek, and A. C. Finzi. More rapid acquisition of N in forest trees growing under elevated CO₂. II. Modeling increased plant N demand and sources for N uptake at the Duke FACE site. Oral presentation given at the 91st meeting of the Ecological Society of America, Memphis, TN, August 2006.
- Robinson, Derek T., Brown Daniel G., and **William S. Currie**. Linking Ecosystem and Land-Use Process Models: A Way Forward. Presented at the annual meeting of the American Association of Geographers (AAG), Chicago, IL, March 7-11, 2006.
- Currie, William S.** Dynamics in the ratios of nitrogen isotopes in ecosystem experiments: Modeling for numbers, and modeling for understanding. Invited seminar given at the University of Colorado at Boulder in the Ecology & Evolutionary Biology Colloquium Series, 2004.
- Currie, William S.** Legitimate purposes for ecosystem models. Invited seminar in the Biogeochemistry and Environmental Biocomplexity Seminar Series, Cornell University, 2004.
- Gundersen, Per, Bjorn Berg, **William S. Currie**, et al. (15 co-authors). Carbon - Nitrogen interactions in forest ecosystems: constraints on soil C-sequestration and N-retention. Poster given at N2004, the 3rd International Nitrogen Conference, Nanjing, China, October 2004.

Currie, William S. Interpreting the redistributions of ^{15}N tracers in forests using a biogeochemical process model. Invited seminar given at the Danish Center for Forest, Landscape, and Planning, Copenhagen, Denmark, 2001.

Currie, William S. and Knute J. Nadelhoffer. Decadal-scale C/N interactions in temperate forests assessed with ^{15}N tracer redistributions. Given at N2001, the 2nd International Nitrogen Conference, Potomac, MD, 2001.

Eshleman, K. N., T. L. Negley, **William S. Currie**, M. S. Castro, M. Ramsey, C. J. Giffen. Comparative analysis of hydrological responses of surface-mined and forested watersheds in western Maryland, U.S.A. Given at the 11th Stockholm Water Symposium, Stockholm, Sweden, 2001 (winner of Best Poster Award).

Currie, William S. Coupling and decoupling of carbon and nitrogen cycles in temperate forests. Invited keynote address given at the "Workshop on nitrogen deposition to and cycling in forest ecosystems and linkages to carbon sequestration," held at Indiana University, 1999.

Currie, William S. Dissolved organic nitrogen in forest soils: its production and role in the N cycle across a heterogeneous landscape. Invited seminar given at the Norwegian Institute for Water Research, Oslo, Norway, 1996.