

Hannah E Birgé

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Education

- 2017 Ph.D., Natural Resources Science, University of Nebraska-Lincoln
 Advisers: Craig R. Allen and David A. Wedin
- 2013 MS, Ecology, Colorado State University
 Advisers: Richart T. Conant and Eldor A. Paul
- 2009 BA, Biology, St. Olaf College

Appointments

- 2017– Postdoctoral Research Associate, School of Natural Resources and Department of
Agronomy and Horticulture, University of Nebraska-Lincoln
- 2012–2017 Graduate Research Assistant, School of Natural Resources, University of Nebraska-
Lincoln
- 2012–2015 Integrative Graduate Education and Research Trainee (IGERT), University of
Nebraska-Lincoln
- 2011–2012 Research Technician for D.H. Wall, School of Global Environmental Sustainability,
Colorado State University
- 2009–2011 Graduate Research Assistant, Natural Resources Ecology Laboratory, Colorado State
University
- 2008 Research Experience for Undergraduates (REU) Student at the Cary Institute of
Ecosystem Studies, Millbrook, NY, and The Baltimore Long Term Ecological Re-
search (LTER) Project, Baltimore, MD
- 2007 Research Technician for J.D. Schade, Angelo Coastal Range Reserve, Mendocino
County, CA.

Publications

- [1] Allen, C.R., **Birge, H.E.**, Angeler, D.G., Arnold, C.A., Chaffin, B.C., DeCaro, D., Garmestani, A.S. & Gunderson, L.H. (2017). Quantifying uncertainty and tradeoffs in resilience assessments. *Ecology and Society*. In press.
- [2] Craig, R.K., Garmestani, A.S., Allen, C.R., Arnold, C.A., **Birge, H.E.**, DeCaro, D.A., Fremier, A.K., Gosnell, H. & Schlager, E. (2017). Balancing stability and flexibility in adaptive governance: the new challenges and a review of tools available. *Ecology and Society*, 22(3), DOI: [10.5751/ES-08983-220203](https://doi.org/10.5751/ES-08983-220203)
- [3] Gunderson, L.H., Cosens, B., Chaffin, B.C., Arnold, C.A., Fremier, A., Garmestani, A.S., Craig, R.K., Gosnell, H., **Birge, H.E.**, Allen, C.R., Benson, M.H., Morrison, R., Stone, M., Hamm, J., Nemeck, K., Schlager, E. & Lewellyn, D. (2017). Regime shifts and panarchies in regional scale social ecological water systems. *Ecology and Society*, 22(1), 306–312. DOI: doi.org/10.5751/ES-08879-220131
- [4] Allen, C.R., **Birge, H.E.**, Slater, J. & Wiggers, E. (2016). The invasive ant, *Solenopsis invicta*, reduces herpetofauna richness and abundance. *Biological Invasions*, 19(2), 306–312. DOI: doi.org/10.1007/s10530-016-1343-7
- [5] **Birge, H.E.**, Bevans, B.A., Allen, C.R., Angeler, D.G., Baer, S.G., & Wall, D.H. (2016). Adaptive management for soil ecosystem services. *Journal of Environmental Management*, 183(2), 371–378. DOI: doi.org/10.1016/j.jenvman.2016.06.024
- [6] **Birge, H.E.**, Allen, C.R., Garmestani, A.S. & Pope, K.L. (2016). Adaptive management for ecosystem services. *Journal of Environmental Management*, 183(2), 343–352. DOI: doi.org/10.1016/j.jenvman.2016.07.054
- [7] Allen, C.R., **Birge, H.E.**, Bartlett-Hunt, S., Burnett, J.L., Cosens, B., Ximing, C., Garmestani, A.S., Linkov, I., Scott, E.A., Solomon, M.D. & Uden, D.R. (2016). Avoiding decline: fostering resilience and sustainability in midsize cities. *Sustainability*, 8(9), 844. DOI: [doi:10.3390/su8090844](https://doi.org/10.3390/su8090844)
- [8] **Birge, H.E.**, Conant, R.T., Haddix, M., Wallenstein, M.D., Morris, S., Follet, R., Snapp, S. & Paul, E.A. (2015). Soil respiration is determined by substrate availability, not microbial biomass: insights from a long-term incubation. *Soil Biology and Biochemistry*, 81, 304–310. DOI: doi.org/10.1016/j.soilbio.2014.11.028
- [9] **Birge, H.E.**, Allen, C.R., Craig, R.K., Garmestani, A.S., Hamm, J.A., Babbitt, C., Nemeck, K. & Schlager, E.A. (2015). Social-ecological resilience and law in the Platte River basin. *Idaho Law Review*, 51(1), 229–256. DOI: <http://www.uidaho.edu/law/law-review/articles/volume-51>
- [10] Angeler, D.G., Allen, C.R., **Birge, H.E.**, McKie, G. & Johnson, R.K. (2014). Assessing and managing freshwater ecosystems vulnerable to global change. *Ambio*, 43(1), 113–125. DOI: doi.org/10.1007/s13280-014-0566-z
- [11] Meyers, P.E., Allen, C.R. & **Birge, H.E.**, (2014). Consuming fire ants reduces Northern Bobwhite survival and weight gain. *Journal of Agricultural and Urban Entomology*, 30(1), 49–58. DOI: doi.org/10.3954/JAUE12-08.1
- [12] Conant, R.T., Ryan, M.G., Ågren, G.I., **Birge, H.E.**, Davidson, E.A., Eliasson, P.E., Evans, S.E., Frey, S.D., Giardina, C.P., Hopkins, F., Hyvönen, R., Kirschbaum, M.U.F., Lavalley, J.M.,

Leifeld, J., Parton, W.J., Steinweg, J., Wallenstein, M.D., Wetterstedt, J.A.M. & Bradford, M.A. (2011). Temperature and soil organic matter decomposition – synthesis of current knowledge and a way forward. *Global Change Biology*, 17(11), 3392–3404. DOI: doi.org/10.1111/j.1365-2486.2011.02496.x

Honors and Awards

- 2017 School of Natural Resources Meritorious Graduate Student
- 2016–17 University of Nebraska Dean’s Fellowship
- 2015–17 University of Nebraska-Lincoln Great Plains Graduate Fellow
- 2016 Wildwood Trust Scholarship
- 2016 Irvin A. and Agnes E. Nelson Memorial Fellowship
- 2016 AAAS Science Program for Excellence in Science
- 2016 Natural Resource Sciences Graduate Student Conference Travel Grant
- 2012–15 NSF Integrative Graduate Education and Research Traineeship (IGERT)
- 2015– Resilience Alliance Young Scholar (RAYS)
- 2015 Guest of August T. Larsson Visiting Fellow in Uppsala, Sweden
- 2014 School of Natural Resources Elevator Speech Competition, 1st Place

Grants Awarded

- 2017– Allen, C.R. (PI), **Birge, H.E.** (Co-PI), Shulksi, M. (Co-PI), Convergent Approaches For Equitable and Desirable Social-Ecological Outcomes in the New Arctic, **\$99,864**, National Science Foundation.
- 2014–17 Allen, C.R. (PI) & **Birge, H.E.** (Co-PI), Better Soil for Birds, **\$214,986**, Nebraska Game and Parks Commission.
- 2013–17 **Birge, H.E.** (PI), Allen, C.R. (Co-PI), Incorporating Soil Ecological Knowledge into Management of Conservation Reserve Program (CRP) Lands, **\$10,000**, United States Department of Agriculture Sustainable Agriculture Research and Education (USDA-SARE)

Teaching

2015	Landscape Ecology (Co-Instructor)	University of Nebraska-Lincoln
2009	Plant Physiology (TA)	St. Olaf College
2007–09	Evolution and Diversity (TA)	St. Olaf College
2008	Ecological Principles (TA)	St. Olaf College
2008	Cell Biology for Non-Majors (TA)	St. Olaf College
2007	Introduction to Biological Sciences (TA)	St. Olaf College
2007	Human Biology for Non-Majors (TA)	St. Olaf College

Supervision

2016	Thanh Nguyen, EnvironMentor Student	North Star High School
2015	Caitlin Olsen, Env. Sciences Thesis Student	University of Nebraska-Lincoln

Professional Activities

- Member, University of Nebraska's Arctic-Mid Latitude Resilience Working Group, 2017–.
- Co-Organizer, Association for Women in Science (AWIS) Mentoring Workshops at University of Nebraska, 2016
- Special Issue Guest Editor, Journal of Environmental Management, 2015–17.
- Participant, University of the Arctic (UARctic) Student Congress in St. Petersburg, Russia and Aberdeen, Scotland, 2016 & 2017.
- Member, The Nature Conservancy of Nebraska's Climate Change Working Group, 2015–.
- Member, University of Nebraska's Complexity Science Working Group, 2015–.
- Member, National Socio-Environmental Synthesis Center's Adaptive Water Governance Working Group, 2016–.
- Special Session Organizer, Soil and Water Conservation Society Annual Meeting, 2014.

Science Communication

- **Birge, H.E.** *What's in a name? 'Soil health' as defined by farmers, managers, and scientists* Beneath Our Feet Blog – Global Soil Biodiversity Initiative. [Link](#). Winter 2017.
- **Birge, H.E.** & Bevens, B.A. *Preserving ecosystem services through adaptive soil management* Beneath Our Feet Blog – Global Soil Biodiversity Initiative. [Link](#). Summer 2016.
- **Birge, H.E.** *Combining private, state, and federal forces to protect Nebraska's natural resources* The Nature Conservancy of Nebraska Press Release. Spring 2016.
- **Birge, H.E.** & Allen, C.R. *Early warning indicators in aquatic ecosystems* Journal of Applied Ecology Blog [Link](#). Fall 2015.
- Allen, C.R. & **Birge, H.E.** *How network analyses can help to find out what happens to ostrich farming after an avian influenza outbreak* Journal of Applied Ecology Blog [Link](#). Fall 2015.
- **Birge, H.E.** *Lessons from the Fire – Research at the Niobrara Valley Preserve* The Nature Conservancy of Nebraska Newsletter. Summer 2015

Presentations

- [1] **Birge, H.E.**, Bevens, R.A., Allen, C.R., Angeler, D.R., Baer, S.G. & Wall, D.H. (2017). Adaptive management for soil ecosystem services. *Stockholm Resilience Alliance Conference*, Stockholm, Sweden. Oral presentation.
- [2] **Birge, H.E.** (2017). Soil Resilience. *The Nature Conservancy of Nebraska*, Omaha, Nebraska. Oral presentation.
- [3] Pope, K.L., Chaffin, B.C., **Birge, H.E.**, Allen, C.R., Sundstrom, S.M. & Angeler, D.G. (2017) Emergent properties of recreational fisheries. *8th World Recreational Fishing Conference*, Victoria, British Columbia, Canada. Poster presentation.
- [4] **Birge, H.E.**, Allen, C.R., Garmestani, A.S. & Pope, K.L. (2016). A cross-scale framework for analyzing ecosystem services. *The Conference on Complex Systems*, Amsterdam, Netherlands. Oral presentation.
- [5] **Birge, H.E.**, Allen, C.R., Garmestani, A.S. & Pope, K.L. (2016). A cross-scale framework for analyzing ecosystem services. *Gordon Research Seminars: Unifying Across Ecological Scales*, Biddeford, ME. Poster presentation.
- [6] **Birge, H.E.**, Allen, C.R., Craig, R.K., Garmestani, A.S., Hamm, J.A., Babbitt, C., Nemec, K. & Schlager, E. (2016). Social-ecological resilience and law in the Platte River basin. *Rural Futures Conference*, Lincoln, NE. Poster presentation
- [7] **Birge, H.E.**, Allen, C.R. & Twidwell, D (2015). Not all disturbances are created equal. *American Association of Geographers Annual Meeting*, Chicago, IL. Oral presentation.
- [8] **Birge, H.E.**, Allen, C.R., Craig, R.K., Garmestani, A.S., Hamm, J.A., Babbitt, C., Nemec, K. & Schlager, E.A. (2014). Social-ecological resilience and law in the Platte River basin. *Water for Food Conference*, Lincoln, NE. Poster presentation.

- [9] **Birge, H.E.**, Sliwinski, M., Nemec, K., Spanbauer, T.L., Hart, N., Weide, D.M., Chan, J., Hamm, J., Hoffman, C., Acosta, L., Allen, C.R., Hefley, T.J., Pan, D. & Shrestha, P. (2013). Operationalizing resilience: a rapid approach to social-ecological system assessment. *NSF IGERT Video & Poster Competition*, Online. Video presentation.
- [10] **Birge, H.E.**, Conant, R.T., Wallenstein, M.D. & Paul, E.A. (2012). Soil organic matter decomposition in long-term incubations. *Front Range Ecology Symposium*, Fort Collins, CO. Oral presentation.
- [11] **Birge, H.E.**, Conant, R.T., Wallenstein, M.D. & Paul, E.A. (2011). Biological controls on soil organic matter (SOM) decomposition. *Ecological Society of America Annual Meeting*, Austin, TX. Oral presentation.
- [12] **Birge, H.E.**, Conant, R.T., Wallenstein, M.D. & Paul, E.A. (2010). The effect of long-term incubation on soil organic matter storage. *Soil Science Society of America Annual Meeting*, Long Beach, CA. Poster presentation.
- [13] Calderon, F., Haddix, M., **Birge, H.E.**, Conant, R.T. & Morris, S. (2011). Mid-infrared soil spectral changes due to cultivation, C mineralization, and short-term substrate utilization. *Agronomy Abstracts*, Central Great Plains Resources Management Research.
- [14] Loecke, T.D., LaDeau, S., Groffman, P.M., Treseder, K., **Birge, H.E.**, & Leon, A. (2010). Long-term elevated atmospheric CO₂ promotes tree productivity. *Ecological Society of America Annual Meeting*, Pittsburgh, PA.