

Shana M Sundstrom

EDUCATION

- 2018 Ph.D. University of Nebraska-Lincoln Advisor: Craig Allen
2009 MeDes (Master of Environmental Design) University of Calgary Advisor: Mary-Ellen Tyler
1998 B.A. (Writing-Intensive English) Marquette University

APPOINTMENTS

August 2018 – current Post-doctoral Research Associate and Adjunct Professor University Nebraska-Lincoln, with Craig Allen

PUBLICATIONS

- Lalanne A, Garmestani A, **Sundstrom SM**. 2022. Discontinuities within regional and subregional urban systems. *Urban Studies (in press)*.
- Garmestani A, Twidwell D, Angeler D, **Sundstrom SM**, Barichev C, Chaffin B, Graham N, Gunderson L, Knutson M, Nash K, Nelson J, Nystrom M, Spanbauer T, Stow C, Allen CR. 2020. Panarchy in practice: opportunities and challenges for ecosystem management. *Frontiers in Ecology and the Environment*, doi:10.1002/fee.2264.
- Angeler DG, Chaffin BC, **Sundstrom SM**, Garmestani A, Pope KL, Uden DR, Twidwell D, Allen CR. 2020. Coerced regimes: management challenges in the Anthropocene. *Ecology and Society* 25:4.
- Sundstrom SM**, Allen CR, Angeler DG. Discontinuities and convergence in global economies. 2019. *Journal of Ecological Economics* doi:10.1007/s00191-019-00650-x.
- Sundstrom SM** and Allen CR. 2019. The adaptive cycle: More than a metaphor. *Ecological Complexity* 39: 100767.
- Angeler DG, Fried-Petersen H, Allen CR, Garmestani A, Twidwell D, Chuang W, Donovan VM, Eason T, Roberts CP, **Sundstrom SM**, Wonkka CL. 2019. Adaptive capacity in ecosystems. *Advances in Ecological Research* 60: 1-24.
- Eason T, Ching-Chuang W, **Sundstrom S**, Cabezas H. 2019. An information theory-based approach to assessing spatial patterns in complex systems. *Entropy* 21: doi:10.3390/e21020182.
- Barichev C, Angeler DG, Eason T, Garmestani AS, Nash KL, Stow C, **Sundstrom SM**, Allen CR. 2018. A method to detect discontinuities in census data. *Ecology and Evolution* doi:10.1002/ece3.4297.
- Sundstrom SM**, Angeler DG, Barichev C, Eason T, Garmestani AS, Gunderson L, Knutson M, Nash KL, Spanbauer T, Stow C, Allen CR. 2018. The distribution and role of functional abundance in cross-scale resilience. *Ecology* doi.org/10.1002/ecy.2508.
- Roberts CP, Burnett JL, Donovan VM, Wonkka C, Bielski C, Allen CR, Garmestani AS, Angeler DG, Eason T, **Sundstrom SM**, Birge HE, Twidwell D. 2018. Early warnings for state transitions. *Rangeland Ecology & Management* doi.org/10.1016/j.rama.2018.04.012.
- Chuang WC, Garmestani AS, Eason TN, Spanbauer TL, Fried-Petersen HB, Roberts CP, **Sundstrom SM**, Burnett JL, Angeler DG, Chaffin BC, Gunderson L, Twidwell D, Allen CR. 2018. Enhancing quantitative approaches for assessing community resilience. *Journal of Environmental Management* 213:353-362.
- Sundstrom SM**, Eason T, Nelson RJ, Angeler DG, Barichev C, Garmestani AS, Graham NAJ, Granholm D, Gunderson L, Knutson M, Nash KL, Spanbauer T, Stow CA, Allen CR. 2017. Detecting spatial regimes in ecological systems. *Ecology Letters* 20:19-32.
- Sundstrom SM**, Allen CR, Gunderson, L. 2016. Resisting resilience theory—a response to Connell, Sean D, and Ghedini, Giulia. 2016. Resisting regime-shifts: the stabilizing effect of compensatory processes. *Trends in Ecology & Evolution* 31:412-413.
- Spanbauer T, Allen CR, Angeler D, Eason T, Fritz SC, Garmestani AS, Nash KL, Stone JR, Stow CA, **Sundstrom SM**. 2016. Body size distributions signal a regime shift in a lake ecosystem. *Proceedings of the Royal Society B* 283:20160249.

- Angeler DG, Allen CR, Barichievy C, Eason T, Garmestani AS, Graham NAJ, Granholm D, Gunderson LH, Knutson M, Nash KL, Nelson RJ, Nyström M, Spanbauer TL, Stow CA, **Sundstrom SM**. 2015. Management applications of discontinuity theory. *Journal of Applied Ecology* doi:10.1111/1365-2664.12494.
- Sundstrom SM**, Angeler DG, Garmestani A, García J, Allen C. 2014. Transdisciplinary application of cross-scale resilience. *Sustainability* 6:6925–48.
- Sundstrom SM**, Allen CR. 2014. Complexity versus certainty in understanding species' declines. *Diversity and Distributions* 20:344-355.
- Nash KL, Allen CR, Angeler DG, Barichievy C, Eason T, Garmestani AS, Graham N, Granholm D, Knutson MG, Nelson RJ, Nystrom M, Stow CA, **Sundstrom SM**. 2014. Discontinuities, cross-scale patterns and the organization of ecosystems. *Ecology* 95:654–67.
- Nash KL, Allen CR, Barichievy C, Nyström M, **Sundstrom SM**, Graham NAJ. 2014. Habitat structure and body size distributions: Cross-ecosystem comparison for taxa with determinate and indeterminate growth. *Oikos* 123:971–83.
- Sundstrom SM**, Allen CR, Barichievy C. 2012. Species, functional groups, and thresholds in ecological resilience. *Conservation Biology* 26:305–14.
- Manuscripts in review or final preparation:**
- Sundstrom SM**, Allen CR. 2022. Resilience science and coerced regimes in agricultural landscapes. *Agriculture, Ecosystems & the Environment* (*in review*).
- Book chapters/Encyclopedia:**
- Sundstrom SM**, Allen CR. 2022. The adaptive cycle: More than a metaphor. In: Gunderson LH, Allen Cr, Garmestani A (eds). *Applied Panarchy: Application and diffusion across scales*. Island Press, DC.
- Sundstrom SM**, Allen CR. 2022. Panarchy, cross-scale resilience, and discontinuous structures and processes. In: Gunderson LH, Allen Cr, Garmestani A (eds). *Applied Panarchy: Application and diffusion across scales*. Island Press, DC.
- Sundstrom SM**, Hodbod J, Allen CR. 2021. Resilience of working agricultural landscapes. In: Ray C, Muddu S, Sharma S (eds). *Food, Energy and Water Nexus: A consideration for the 21st Century*. Springer.
- Holling CS, **Sundstrom SM**. 2015. Adaptive management, a personal history. In: Allen, CR, and AS Garmestani (eds.) *Adaptive Management of Social-Ecological Systems*. Springer pp. 11-25.
- Allen CR, Garmestani AS, **Sundstrom SM**. 2012. Resilience. In: Braig, R., Nagle, J., Pardy, B., Schmitz, O., Smith, W. (eds.) *Berkshire Encyclopedia of Sustainability 5: Ecosystem Management and Sustainability*. Berkshire Publishing pp. 335-339.
- Dissertation:**
- Sundstrom, SM. 2018. Complex adaptive systems: Cross-scale structure and resilience. Dissertation. University of Nebraska, Lincoln, Nebraska.

AWARDS/GRANTS

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| 2021 | Co-PI NSF DISES RCN, 'Resilience in agricultural socio-environmental systems' (\$400,000). |
| 2016 | Fling Fellowship for advanced doctoral students, University of Nebraska-Lincoln (\$20,000). |
| 2014 | University of Nebraska SNR Research Assistantship (~ \$25,000 over 18 months) |
| 2012 | Co-PI USGS Powell Center for Synthesis and Analysis working group, 'Managing for resilience in the face of global change (3 week-long workshops for budget of ~ \$150,000). |
| 2012 | Additional support provided for 3 rd Powell workshop by USGS National Climate Change and Wildlife Center (\$15,000). |
| 2012 | NSERC PGS (Natural Sciences and Engineering Research Council of Canada Graduate Scholarship) (\$21,000 annually for 3 years) |
| 2011 | University of Nebraska SNR Research Assistantship (\$18,000 annually for 3 years) |
| 2011 | University of Nebraska Othmer Fellowship (\$8,000 annually for 3 years) |

- 2006 NSERC CGS (Natural Sciences and Engineering Research Council of Canada Graduate Scholarship) (top-tier rank) (\$17,500 annually for 2 years)
- 2006 University of Calgary Open Scholarship Competition (\$15,000) (Declined in lieu of NSERC)
- 2005 Alberta Advanced Education Achievement Scholarship (\$2000)
- 2005 Faculty of Environmental Design Graduate Research Scholarship (\$4100)
- 2004 Faculty of Environmental Design Scholarship (\$12,000)

RECENT ORAL PRESENTATIONS AT CONFERENCES

- 2017 Detecting spatial regimes in ecosystems. Ecological Society of America annual conference. August, Portland, Oregon.
- 2017 Invited talk in Symposium: Ecological, Evolutionary and Environmental Synthesis in the 21st century. Cross-scale resilience from theory to practice: Results from a synthesis collaboration. Canadian Institute of Ecology and Evolution Conference. May, Victoria, Canada.
- 2016 Discontinuity and convergence in global economies. Conference on Complex Systems. September, Amsterdam, The Netherlands.