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### **Professional Preparation**

- 2013-June 2018 **Ph.D.**, University of Wisconsin, Madison, Dept. of Zoology, Minor: Spatial Ecosystem Ecology. Dissertation: *Changing Climate and Fire: Implications for Post-fire Forest Regeneration in High-elevation and High-latitude Conifer Forests*. Advisor: Monica G. Turner
- 2011-2013 **M.S.**, University of Alaska, Fairbanks, Dept. of Forest Sciences. Thesis: *Linked Disturbance Interactions in South-central Alaska: Implications for Ecosystems and People*. Advisors: T. Scott Rupp, Terry Chapin
- 2005-2010 **B.A.**, University of Montana. Major: Biology with emphasis in Ecology
- 2005-2010 **B.A.**, University of Montana. Major: Economics

### **Research Interests**

Forest ecology, Social-ecological systems, Ecosystem science, Ecological simulation modeling

### **Appointments**

- 2018-2020 Postdoctoral Fellow, Earth Institute, Columbia University
- 2017-2018 Graduate Research Assistant, University of Wisconsin, Madison, Zoology Department
- 2016-2017 Graduate Teaching Assistant, University of Wisconsin, Madison, Zoology Department
- 2013-2014 Graduate Research Assistant, University of Wisconsin, Madison, Zoology Department
- 2011-2013 Graduate Research Assistant University of Alaska, Fairbanks, Alaska Climate Science Center

### **Grants, Fellowships, and Scholarships (~\$385,000)**

- 2018-2020 Earth Institute Postdoctoral Fellowship, Columbia University (~\$150,000)
- 2017 Department of the Interior National Park Service Fuels Research Reserve Funds (~\$20,000)
- 2012-2016 NSF Graduate Research Fellowship (~\$120,000)

- 2016 “Origins of alternate ecosystem states? Effects of 21<sup>st</sup> century drought on postfire tree regeneration and shifting dominance of western conifers.” NSF Doctoral Dissertation Improvement Grant (~\$20,000)
- 2016 “Shifting baselines: The changing role of smaller stand-replacing fires in high-elevation and high-latitude conifer forests.” Alaska Climate Science Center (~\$25,000)

## Publications

### In review or published

- Hansen, W.D.** and M.G. Turner. *In Review*. Origins of abrupt change? Postfire subalpine conifer regeneration declines nonlinearly with warming and drying. *Ecological Monographs*.
- Braziunas, K.D., **Hansen, W.D.**, Seidl, R., Rammer, W., and Turner, M.G. 2018. Beyond the mean: Drivers of variability in postfire stand development of Rocky Mountain conifers. *Forest Ecology and Management* 430: 460-471.
- Hansen, W.D.**, Braziunas, K.H., Rammer, W., Seidl, R., and Turner, M.G. 2018. It takes a few to tango: Interactions between changing climate and fire can cause regeneration failure in two subalpine conifers. *Ecology*, 99:966-977.
- Hansen, W.D.**, Fisher, K.E., Klassen, J.A., Scholl, J.P., Calle, L., Kandlikar, G.S., Kortessis, N., Kucera, D., Marias, D.E., Narango, D.L., O’Keefe, K., Recart, W., Ridolfi, E., Shea, M., Sorensen, A.E. 2018. Student reflections on careers and culture of 21<sup>st</sup> century ecology. *Ecosphere*, 9: e02099.
- Morris, J.L., S. Cottrell, C.J. Fettig, R.J. DeRose, K.M. Mattor, V.A. Carter, J. Clear, J. Clement, **W.D. Hansen**, J.A. Hicke, P.E. Higuera, A.W.R. Seddon, H. Seppa, R.L. Sherriff, J.D. Stednick, and S.J. Seybold. 2018. Bark beetles as agents of change in social-ecological systems. *Frontiers in Ecology and the Environment*, 16: S34-S43.
- Rose, K.C., Graves, R.A., **Hansen, W.D.**, Harvey, B.J., Qiu, J., Wood, S.A., Ziter, C. and Turner, M.G. 2017. Foundations and future directions in macrosystems ecology. *Ecology Letters*, 20:147-157.
- Morris, J.L., S. Cottrell, C.J. Fettig, **W.D. Hansen**, R.L. Sherriff, V.A. Carter, J. Clear, J. Clement, R.J. DeRose, J.A. Hicke, P.E. Higuera, K.M. Mattor, A.W.R. Seddon, H. Seppa, J.D. Stednick, and S.J. Seybold. *Accepted*. Managing bark beetle impacts on ecosystems and society: Priority questions to motivate future research. *Journal of Applied Ecology*.
- Brinkman, T.J., **W.D. Hansen**, F.S. Chapin III, G.P. Kofinas, S. BurnSilver, and T.S. Rupp. 2016. Perceptions of impacts of climate trends on subsistence resources: Importance of access. *Climatic Change*, 1-15.
- Hansen, W.D.**, F.S. Chapin III, H.T. Naughton, T.S. Rupp, and D. Verbyla. 2016. Forest-landscape structure mediates effects of a spruce bark beetle (*Dendroctonus rufipennis*) outbreak on subsequent likelihood of burning in Alaskan boreal forest. *Forest Ecology and Management*, 369: 38-46.
- Hansen, W. D.**, W. H. Romme, A. Ba, and M. G. Turner. 2016. Shifting ecological filters mediate postfire expansion of seedling aspen (*Populus tremuloides*) in Yellowstone. *Forest Ecology and Management*, 362: 218-230.

- Turner, M. G., D. C. Donato, **W. D. Hansen**, B. J. Harvey, W. H. Romme, and A. L. Westerling. Climate change and novel disturbance regimes in national park landscape. In: Beissinger, S.R., D.D. Ackerly, H. Doremus, and G. Machlis (Editors). 2016. Science for Parks, Parks for Science: The Next Century. University of Chicago Press, Chicago, Illinois
- Hansen, W.D.** J. M. Mueller, and H. T. Naughton. 2014. Wildfire in hedonic property value studies. *Western Economics Forum*, 13(1): 23-35.
- Hansen, W.D.** 2014. Generalizable principles for ecosystem stewardship-based management of social-ecological systems: Lessons learned from Alaska. *Ecology and Society*, 19(4):13.
- Hansen, W.D.**, and H. T. Naughton. 2013. The effects of a spruce bark beetle outbreak and wildfires on property values in the wildland-urban interface of south-central Alaska, USA. *Ecological Economics*, 96: 141-154.
- Brinkman T.J., G.P. Kofinas, **W.D. Hansen**, F.S. Chapin, S. BurnSilver, and S. Rupp. 2013. Evaluating hunting opportunities: Shifting from *abundance* to *availability*. *The Wildlife Professional*, 7(3): 38-43.
- Hansen, W.D.**, T.J. Brinkman, M. Leonawicz, F.S. Chapin, and G.P Kofinas. 2013. Changing daily wind speeds: Implications for a subsistence hunting system. *Arctic*, 66(4): 448-458.
- Hansen, W.D.**, and H.T. Naughton. 2013. Social and ecological determinants of land clearing in the Brazilian Amazon: A spatial analysis. *Land Economics*, 89(4): 699-721.
- Hansen, W.D.**, T.J. Brinkman, F.S. Chapin, and C. Brown. 2013. Meeting indigenous subsistence needs: The case for prey switching in rural Alaska. *Human Dimensions of Wildlife*, 18(2): 109-123.

### **Professional Presentations (Presenting author only)**

#### *Invited*

- Hansen, W.D.**, 2018. Forest resilience in high elevation and high latitude conifer forests of western North America. Lamont-Doherty Earth Observatory Biology and Paleo-environment Seminar Series.

#### *Conferences*

- Hansen, W.D.**, W. Rammer, R. Seidl, and M.G. Turner. 2018. Effects of fire suppression on 21<sup>st</sup> century wildfire and subalpine forests of Greater Yellowstone. Presented at the 14<sup>th</sup> Biennial Scientific Conference on the Greater Yellowstone Ecosystem. Big Sky, MT, USA. *Oral Presentation*.
- Hansen, W.D.**, W. Rammer, R. Seidl, and M.G. Turner. 2018. Effects of fire suppression on 21<sup>st</sup> century wildfire and subalpine forests of Greater Yellowstone. Presented at the Ecological Society of America Annual Symposium, New Orleans, USA. *Oral Presentation*.
- Hansen, W.D.**, K.B. Braziunas, W. Rammer, R. Seidl, and M.G. Turner. 2017. The perfect storm: Multiple stressors interact to drive postfire regeneration failure of two widespread Rocky-mountain conifers. Presented at the American Geophysical Union Annual Symposium, New Orleans, USA. *Poster Presentation*.
- Hansen, W.D.**, K.B. Braziunas, W. Rammer, R. Seidl, and M.G. Turner. 2017. The perfect storm: Multiple stressors interact to drive postfire regeneration failure of two widespread

Rocky-mountain conifers. Presented at the Ecological Society of America Annual Symposium, Portland, OR, USA. *Oral Presentation*.

**Hansen, W.D.** and M.G. Turner. 2016. Origins of alternate ecosystem states? Effects of 21<sup>st</sup> century drought on postfire regeneration of two widespread rocky mountain conifers. 13<sup>th</sup> Biennial Scientific Conference on the Greater Yellowstone Ecosystem. Jackson Hole, WY, USA. *Oral Presentation*.

**Hansen, W.D.** and M.G. Turner. 2016. Origins of alternate ecosystem states? Effects of 21<sup>st</sup> century drought on postfire regeneration of two widespread rocky mountain conifers. Presented at the Ecological Society of America Annual Symposium, Fort Lauderdale, FL, USA. *Oral Presentation*.

**Hansen, W.D.,** W. H. Romme, A. Ba, and M.G. Turner. 2015. Shifting ecological filters mediate postfire expansion of seedling aspen (*Populus tremuloides*) in Yellowstone. Presented at the Ecological Society of America Annual Symposium, Baltimore MD, USA. *Oral Presentation*.

**Hansen, W.D.** 2015. Managing natural disturbances in human dominated landscapes. Presented at the Western Forest Insect Work conference, Santa Fe, NM, USA. *Oral Presentation*.

**Hansen, W.D.,** W. Romme, and M.G. Turner. 2014. Fire, climate, and reduced browsing foster an expansion of seedling aspen (*Populus tremuloides*) after the 1988 Yellowstone fires. Presented at the 12<sup>th</sup> Biennial Scientific Conference on the Greater Yellowstone Ecosystem. Mammoth, WY, USA. *Poster Presentation*.

**Hansen, W.D.,** W. Romme, and M.G. Turner. 2014. Fire, climate, and reduced browsing foster an expansion of seedling aspen (*Populus tremuloides*) after the 1988 Yellowstone fires. Presented at the Ecological Society of America Annual Symposium, Sacramento California, USA. *Oral Presentation*.

**Hansen, W.D.** 2014. Complex interactions between people and natural disturbance: Lessons learned and questions raised from a case study of beetle outbreak, wildfires, and property values in south-central Alaska. Presented at Large Wildland Fires: Social, Political, and Ecological Effects, Missoula Montana, USA. *Oral Presentation*.

**Hansen, W.D.** 2014. Generalizable principles for ecosystem-stewardship-based management of social-ecological systems: Lessons learned from Alaska. Presented at Resilience: The Third International Science and Policy Conference, Montpellier, France. *Oral Presentation*.

**Hansen, W.D.,** T.S. Rupp, F.S. Chapin, H.T. Naughton, and D. Verbyla. 2012. Linked Disturbance Interactions: Implications for Ecosystems and People. Presented at the Ecological Society of America Annual Symposium, Portland Oregon, USA. *Oral Presentation*.

**Hansen, W.D.,** T.S. Rupp, F.S. Chapin, H.T. Naughton, and D. Verbyla. 2012. Linked Disturbance Interactions: Implications for Ecosystems and People. Presented at the 2012 Alaska EPSCoR All Hands Meeting. University of Alaska, Fairbanks, Fairbanks, Alaska, USA. *Poster Presentation*.

**Hansen, W.D.,** T.J. Brinkman, M. Leonawicz, F.S. Chapin, and G.P. Kofinas. 2012. Changing Daily Wind Speeds: Implications for a Subsistence Hunting System. Presented at International Polar Year 2012 Conference. Palais des Congres, Montreal, Quebec, Canada. *Oral Presentation*.

- Hansen, W.D.,** T.S. Rupp, F.S. Chapin, H.T. Naughton, and D. Verbyla. 2012. Linked Disturbance Interactions: Implications for Ecosystems and People. Presented at the 2012 Alaska Chapter of the Society of American Foresters Meeting. Pikes Riverfront Lodge, Fairbanks, Fairbanks, Alaska, USA. *Poster Presentation.*
- Hansen, W.D.,** T.S. Rupp, F.S. Chapin, H.T. Naughton, and D. Verbyla. 2012. Linked Disturbance Interactions: Implications for Ecosystems and People. Presented at the 2012 Alaska Cooperative Fish and Wildlife Research Unit Meeting. University of Alaska, Fairbanks, Fairbanks, Alaska, USA. *Poster Presentation.*
- Hansen, W.D.,** T.J. Brinkman, M. Leonawicz, F.S. Chapin, and G.P. Kofinas. 2012. Changing Daily Wind Speeds: Implications for a Subsistence Hunting System. Presented at the Alaska Forum on the Environment. Dena'ina Civic and Convention Center, Anchorage, Alaska, USA. *Oral Presentation.*
- Hansen, W.D.,** T.J. Brinkman, M. Leonawicz, F.S. Chapin, and G.P. Kofinas. 2011. Changing Daily Wind Speeds: Implications for a Subsistence Hunting System. Presented to the National Petroleum Reserve-Alaska Subsistence Advisory Panel. Organized by the US Bureau of Land Management. Fairbanks, Alaska, USA. *Oral Presentation.*
- Hansen, W.D.,** T.J. Brinkman, F.S. Chapin, and C. Brown. 2011. Meeting indigenous subsistence needs: Prey switching in rural Alaska. Presented at the Annual Alaska Chapter of the American Fisheries Society. Alyeska Resort, Girdwood, Alaska, USA. *Oral Presentation.*
- Hansen, W.D.,** T.J. Brinkman, F.S. Chapin, and C. Brown. 2011. Meeting indigenous subsistence needs: Prey switching in rural Alaska. Presented at the 96<sup>th</sup> Ecological Society of American Annual Symposium. Austin Convention Center, Austin, Texas, USA. *Oral Presentation.*
- Hansen, W.D.,** T. Brinkman, and F.S. Chapin. 2011. Prey switching as an adaptive strategy to manage restrictions on subsistence wildlife harvest in rural Alaska. Presented at Resilience Second International Science and Policy Conference, Tempe, Arizona, USA. *Oral Presentation.*
- Hansen, W.D.,** 2010. Deforestation in the Amazon: An exploration in how measurements of environmental quality may contribute to peasant land use decisions. Presented at The National Conference for Undergraduate Research, University of Montana, Missoula, Montana, USA. *Oral Presentation.*

## **Teaching Experience**

### *Classroom*

- Spring 2017 Graduate Teaching Assistant, Introductory Biology (Biology 152, 2<sup>nd</sup> semester), University of Wisconsin, Madison, Zoology Department, Discussion TA.
- Fall 2016 Graduate Teaching Assistant, Honors Introductory Biology (Biology 381, 1<sup>st</sup> semester of four semester sequence), University of Wisconsin Madison, Zoology Department, Discussion TA.
- Fall 2013 Graduate Teaching Assistant, Introductory Biology (Biology 152, 2<sup>nd</sup> semester), University of Wisconsin, Madison, Zoology Department, Laboratory TA.

### *Invited seminars*

- 2017 Alaska Fire Science Consortium, Spring Fire Managers Workshop.
- 2015 University of Alaska, Fairbanks Resilience and Adaptation Program: All Rap Seminar.
- 2012 Center for Alaska Coastal Studies: Linked Disturbance Interactions in South-central Alaska: Implications for Ecosystems and People.

### *Undergraduate mentoring*

- 2016-current Ryan Fitzsimmons- University of Wisconsin, Madison Introductory Biology Mentored Research Program and UW Holstrom Undergraduate Research Fellowship “*Joint effects of herbivory, pathogens, and altered fire regimes on the stability of deciduous dominated boreal forest in interior Alaska.*”
- 2013-2016 Aisha Ba- University of Wisconsin, Madison Introductory Biology Mentored Research Program and UW Hilldale Undergraduate Research Fellowship “*Climate and forest productivity affect microbial communities in the young conifer forests of Yellowstone National Park.*”

### *Supervised field assistants*

- 2016 Ryan Fitzsimmons
- 2015 Aisha Ba
- 2015 Matthew Norman
- 2014 Kari Forseth
- 2013 Sarah Winter

## **Professional Activities and Service**

### *Elected positions*

- 2015-2016 Chair, Ecological Society of America Student Section. As elected chair, I was responsible for leading the ESA’s second largest section of nearly 550 members. Responsibilities included overseeing preparation of student-focused events and content for the annual meeting and providing resources and updates to our student members throughout the year.
- 2014-2015 Vice Chair: Ecological Society of America Student Section. Assisted the co-chairs in preparing student-focused events and content for the annual meeting and providing resources and updates to student members throughout the year.
- 2014-2015 Vice President: UW Chapter Student Section Association for Fire Ecology. Helped found and run the UW-Madison chapter.
- 2011-2012 Student Representative: University of Alaska Fairbanks Resilience and Adaptation IGERT Steering Committee. Provided a student perspective to the steering committee as we successfully navigated the institutionalization of the IGERT at the end of NSF funding.

### *Workshops and organized sessions*

- 2015-2016 Organizer: EcoFutures Initiative, envisioning 21<sup>st</sup>-century ecology careers. As chair of the ESA Student Section. I organized a student-led horizon scanning exercise to reflect on careers and culture in the field of ecology that resulted in a synthesis paper. The initiative also formed into an ongoing program to provide students with resources about career development, inclusive engagement, and communicating ecology with the public (<http://www.esastudents.org/resources/>).
- 2014 Participant: Social-ecological Dimensions of Forest Bark Beetle Disturbances: Past Present and Future. I participated in a workshop that brought together experts on social and ecological aspects of bark beetle outbreaks. We worked to identify the 50 priority research questions on the frontiers of bark-beetle research. This resulted in two papers, one published at the Journal of Applied Ecology and the other in review and Frontiers in Ecology and the Environment.
- 2013 Organizer: Special Session on Social-ecological solutions to the wildfire paradox, Association for Fire Ecology Large wildland fire conference. In this special session, we brought together experts in the economics, social science, and ecology of wildfires to develop solutions for the increasing unsustainability of wildfire management.

#### *Reviewing*

- 2014 Ad hoc Reviewer: NSF Arctic System Science Program, Division of Polar Programs
- Reviewed ~16 manuscripts for journals including *Ecology Letters*, *Journal of Ecology*, *BioScience*, *Climatic Change*, *Ecological Modelling*, *Forest Ecology and management*, and *Ecological Economics*

#### *Outreach*

2012-2014 Founding Editor: Early Career Climate Forum. Cofounded and served as editor of the Early Career Climate Forum. Supported by the USGS Climate Science centers, the forum is an online community of early career climate change researchers and professionals who share resources, collaborate to support individual professional development, and improve the efficiency and efficacy of climate change research and response strategies. The Forum strives to be an accessible outlet where all people can learn about climate science. (<https://www.eccforum.org/>)

#### **Professional Memberships**

Ecological Society of America, American Geophysical Union

#### **Media Reports and Research Features**

Hansen et al. (2013, *Ecological Economics*)

- ALASKA DISPATCH NEWS
  - Yereth Rosen, Massive burns of beetle-killed trees benefit Alaska home values, study says. (<http://www.adn.com/environment/article/large-burns-beetle-killed-trees-benefit-home-values-study-says/2013/12/16/>)
- ALASKA BUISNESS INSIDER

- Wildfires, Beetle outbreaks may boost Kenai Peninsula property values.  
(<http://www.akbizmag.com/Alaska-Business-Monthly/December-2013/Wildfires-beetle-outbreaks-may-boost-Kenai-Peninsula-property-values/>)
- KBBI radio station, Homer Alaska
- ABC/FOX news Affiliate, Anchorage Alaska

Hansen et al. (2013, Arctic)

- ALASKA DISPATCH NEWS
  - Yereth Rosen, Study: Windy weather increasingly deters Wainwright subsistence hunters. (<http://www.adn.com/science/article/study-windy-weather-increasingly-deterrent-wainwright-hunters/2013/12/04/>)