**COURTNEY J. DUCHARDT**

Assistant Professor, Department of Natural Resource Ecology and Management, Oklahoma State University, 476 Agriculture Hall, Oklahoma State University, Stillwater, OK 74078-601

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**Education**

2019 University of Wyoming, USA, PhD in Ecology and Rangeland Ecology and Management

2014 University of Illinois Urbana-Champaign, USA, M.S. in Nat. Resources & Env. Sciences

2010 Truman State University, B.S. in Biology.

**Professional Experience**

2021 – Assistant Professor NREM, OSU

2020 Post-Doctoral researcher, U.S. Geological Survey

2019 – 2020 Researcher, University of Wyoming

2018 – 2019 Consulting Biologist, Thunder Basin Grassland Prairie Ecosystem Association

2014 – 2015 Assistant Natural History Biologist, Missouri Department of Conservation

2010 Naturalist/Educator, Crow’s Neck Environmental Education Center

**Research Expertise**

Dr. Duchardt’s research focuses on the roles of disturbance and climate in shaping grassland biodiversity, and integrating this knowledge with rangeland practices to ensure the sustainability of our rangeland ecosystems in the U.S. Her work targets a variety of taxa, including songbirds, invertebrates, burrowing mammals, greater sage-grouse, and free-roaming horses, and employs paradigms from community and landscape ecology. She is also focused on integrating ecological knowledge into accessible teaching materials undergraduates and early-career professionals.

**Recent Honors and Awards**

Dec 2019 Reflections Magazine Student Paper Award, UW

May 2017 & 2019 Dr. Herbert G. Fisser Graduate Fellowship. UW

May 2016 Mary Mead Fellowship for Women in Agriculture. UW

**Recent Synergistic Professional Activities**

2021-2022 OSU Representative for the Rangeland Education Science Council (RSEC) – meet with other rangeland science educators across the country to identify needs in rangeland education.

2015-2022 Steering Committee Thunder Basin Research Initiative- conduct collaborative research efforts with local stakeholders and federal agencies and present on research during annual meetings and field days.

**Advising**

Currently advising 11 undergraduates, 6 undergraduate researchers, 1 MS student, 1 PhD student and 1 post-doctoral researcher

**Teaching**

*Oklahoma State University*

NREM 1014: Introduction to Natural History, Spring 2021, 2022

NREM 4522: Wildlife Applications and Planning Fall 2021, 2022

NREM 4613: Range Resource Planning, Spring 2021,2022

NREM 5030: Advanced Community Ecology Fall 2022

*University of Wyoming*

LIFE 3400: Ecology (with Drs. Tarwater and Laughlin), Fall 2018, Spring 2019

**Grants**

Reuter, R., Goodman, L., Murray, B., Duchardt, C., Wagner, K. USDA Conservation Innovation Grant. “Increasing the pace and scale of adoption of prescribed grazing through virtual fence technology.” Co PI. **$1,365,000**

Duchardt, C. Biodiversity and prairie dog management in Thunder Basin National Grassland. Thunder Basin Grassland Prairie Ecosystem Association & U.S. Forest Service. **$10,000.** Contract

Duchardt, C., Hoback, W., Murray, B. 2023. Oklahoma Department of Wildlife Conservation. (Ozark Glade Biodiversity Inventory and Mapping Project): **$285,000**

Maguire, K., Szmurlo, D., Sichko, C.,Tanner, S., Willinams, R., Winikoff, J., Loss, S., Duchardt, C., Wang, E., Diffendorfer, J., Lopez, A. 2022. U.S. Department of Agriculture. (Climate Change Mitigation and the USDA Conservation Reserve Program: Maximizing the Benefits of Renewable Energy Development in Rural and Agricultural Communities): **$186,000.**

Monroe, A.D, Duchardt, C.D, Augustine, D.A., Aldridge, C., et al. “Predicting grassland bird communities under future climate scenarios”. North Central Climate Adaptation Science Center. $344,600 Status: *pending*.

Duchardt, C.J., Lonsinger, R.C., Davis, C.A. “Natural Resource Support for Cannon AFB and Melrose AFB, New Mexico”. Department of Defense. (invited following preproposal) Base task funding $107,000 (pending)

**Relevant Recent publications**

1. **Duchardt, C. J.** , D. M. Augustine, J. L. Beck, and L. M Porensky, J. Hennig, D. Pellatz, L. Connell, D. Scasta, and A. Davidson. In Press. Disease and weather induce rapid shifts in a rangeland ecosystem mediated by a keystone species (Cynomys ludovicianus). Ecological Applications, *In press*.
2. Davidson, A. D., D. J. Augustine, H. Jacobsen, D. Pellatz, L. M. Porensky, G. McKee, and **C. Duchardt.** 2022. Boom and bust cycles of black-tailed prairie dog populations in the Thunder Basin grassland ecosystem. Journal of Mammalogy, 103: online early.
3. Pilliod, D.S., Beck, J.L**., Duchardt, C.J**., Rachlow, J.L., and Veblen, K.E. Leveraging Rangeland Monitoring Data for Wildlife: From Concept to Practice. Rangelands. Accepted, In press. <https://doi.org/10.1016/j.rala.2021.09.005>
4. **Duchardt, C. J.,** Monroe, A., Heinrichs, J., O'Donnell, M., Edmunds, D. and Aldridge, C. 2021. Prioritizing areas for restoration to conserve multiple sagebrush-associated wildlife species. Biological Conservation. 260:109212.
5. Hennig, J.D., Beck, J.L,. **Duchardt, C.J.** and Scasta, D. Characteristics of sagebrush habitat quality display mixed response to feral horse use. Journal of Arid Environments.192.
6. **Duchardt, C.J.,** Pearse, I., and Porensky, L.M. 2021. Direct and indirect effects of a keystone engineer on a shrubland-prairie food web. Ecology 102(1):e03195
7. **Duchardt, C.J. ,** Augustine, D.M., and Beck, J.L. 2020. Sagebrush bird responses to natural and anthropogenic disturbance at the eastern edge of the sagebrush steppe. Journal of Wildlife Management. 84 (7):1361-1372
8. **Duchardt, C.J. ,** Augustine, D.M., and Beck, J.L. 2020. Drivers of mountain plover habitat selection and nest survival on large prairie dog colonies. The Condor – Ornithological Applications 122 (1):duz059
9. **Duchardt, C.J. ,** Augustine, D.M., and Beck, J.L. 2019. Threshold responses of grassland and sagebrush birds to disturbance by an ecosystem engineer. Landscape Ecology. 34:895-909.
10. Parker, R., **C. Duchardt,** A. M. Dwyer, C. Painter, A. Pierce, T. Michels, M. Wunder. 2019. Trophic ecology warrants multi-species management in a grassland setting: associated species interactions on black-tailed prairie dog colonies. Rangelands.41(3):135-144.
11. **Duchardt, C. J.,** L. M. Porensky, D. J. Augustine, and J. L. Beck. 2018. Disturbance shapes avian communities on a grassland–sagebrush ecotone. Ecosphere 9(10):e02483. 10.1002/ecs2.248
12. Nelson, S.B., Coon, J.J., Duchardt, C.J., Miller, J.R., Debinski, D.M., Schacht, W.H. 2018. Contrasting impacts of invasive plants and human-altered land cover on nest survival and brood parasitism of a grassland bird. Landscape Ecology. 33(10):1799-1813.
13. Nelson, S., Coon, J., Duchardt, C. et al. 2017. Patterns and mechanisms of invasive plant impacts on North American birds: a systematic review. Biological Invasions. 19: 1547–1563.
14. Scasta, J. D., C.J. Duchardt, D.M. Engle, D.M. Debinski, J.R. Miller, and R.N. Harr. 2016. Constraints to restoring fire and grazing ecological processes to engineer habitat structure of grasslands. Ecological Engineering. 95:865-875.
15. Duchardt, C.J., J.R. Miller, D.M. Engle, and D.M. Debinski. 2016. Adapting the fire-grazing interaction to fragmented landscapes for grassland bird conservation. Rangeland Ecology and Management. 69:300-309.

**Manuscripts in revision**

Duchardt, C., Monroe, A, Edmunds, D., and Aldridge, C. Assessing the efficacy of the sagebrush umbrella at eastern range edge. Landscape Ecology. *In revision, Landscape Ecology*

Barrile, G., Shoemaker, K., Hartway, C., Augustine, D., Porensky, L., Derner, J., Duchardt, C., and Davidson, A. Modeling colony expansion and plague epizootics across the range of a keystone engineer. *In revision Ecological Applications*

**Manuscripts in review/prep**

Van Lanen, N., Shyvers, J., Duchardt, C., Monroe, A, Edmunds, D., and Aldridge, C. Prioritizing conservation for disparate avian guilds in the intermountain west. *In prep, Biological Conservation*

Shyvers, J., Tarbox, B., Duchardt, C., Monroe, A., Edmunds, D., Aldridge, C., PReSET 2.0 applications. *In prep, Ecosphere*.

Laughlin, L., Freeman, H., Duchardt, C., Chitwood, C., et al. Assessing efficacy of cellular transmission functionality in camera trapping for wildlife research. *In prep. Wildlife Professional.*

Salas, A., Duchardt, C., and Carr, N. Non-breeding raptor community composition in relation to prairie dog colonies of the Southern Great Plains .*In review. Journal of Raptor Research*

**Recent Extension Publications**

1. **Duchardt, C.J.** 2020. Prairie Dogs - Keystone Species or Calamity? University of Wyoming Reflections. (pgs 28-30)
2. **Duchardt, C.J.** and Connell, L.C. 2018. Sharing Fences. Western Confluence Magazine
3. **Duchardt, C.J.** and Scasta, J. D. 2017. Welcome to Thunder Basin. *Thunder Basin*

*Ecology Factsheet Series.* University of Wyoming Extension.B-1288.1 .