

Dr. Erin K. Buchholtz

U.S. Geological Survey
South Carolina Cooperative Fish and Wildlife Research Unit
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Education

PhD, Texas A&M University, 2019
Major: Ecology & Evolutionary Biology
Supporting Areas of Emphasis: Applied Biodiversity Sciences

BA, Princeton University, 2011
Major: Ecology & Evolutionary Biology
Supporting Areas of Emphasis: African Studies

Professional Positions

Assistant Unit Leader, South Carolina Cooperative Fish and Wildlife Research Unit. (May 2022 - Present).

Assistant Professor, Clemson University, Department of Forestry & Environmental Conservation. (May 2022 - Present).

Ecologist, US Geological Survey - FORT Science Center (December 2020 - May 2022).

Ecologist - Contractor, US Geological Survey - FORT Science Center (February 2020 - December 2020).

RESEARCH

Publications

15. Buchholtz, E. K., O'Donnell, M. S., Heinrichs, J. A., & Aldridge, C. L. (2023). Temporal Patterns of Structural Sagebrush Connectivity from 1985 to 2020. *Land*, 12(6), 1176. <https://doi.org/10.3390/land12061176>
14. Buchholtz, E.K., J. Kreidler, D. Shinneman, M. Crist, & J. Heinrichs (2023). Assessing large landscape patterns of potential fire connectivity using circuit methods. *Landscape Ecology*. <https://doi.org/10.1007/s10980-022-01581-y>.
13. Buchholtz, E.K., M. McDaniels, G. McCulloch, A. Songhurst, and A. Stronza (2023). A mixed-methods assessment of human-elephant conflict in the Western Okavango Panhandle, Botswana. *People and Nature*. <https://doi.org/10.1002/pan3.10443>
12. Buchholtz, E.K., J. Heinrichs, & M. Crist (2023). Landscape and connectivity metrics as a spatial tool to support invasive annual grass management decisions. *Biological Invasions*. <https://doi.org/10.1007/s10530-022-02945-w>
11. Rogan, J.E., M.R. Parker, Z.B. Hancock, A.D. Earl, E.K. Buchholtz, K. Chyn, J. Martina, & L.A. Fitzgerald (2023). Genetic and demographic consequences of range contraction patterns during biological annihilation. *Scientific Reports* 13, 1691. <https://doi.org/10.1038/s41598-023-28927-z>
10. Sofaer, HR, CS Jarnevich, EK Buchholtz, BS Cade, JT Abatzoglou, CL Aldridge, PJ Comer, D Manier, LE Parker, and JA Heinrichs. 2022. Potential cheatgrass abundance within lightly

invaded areas of the Great Basin. *Landscape Ecology* **37**, 2607–2618.
<https://doi.org/10.1007/s10980-022-01487-9>

9. He, H., Buchholtz, E., Chen, F., Vogel, S. and Yu, C.A.A., 2022. An agent-based model of elephant crop consumption walks using combinatorial optimization. *Ecological Modelling*, **464**, p.109852.
<https://doi.org/10.1016/j.ecolmodel.2021.109852>
8. Buchholtz, E.K., Spragg, S., Songhurst, A., Stronza, A., McCulloch, G. and Fitzgerald, L.A., 2021. Anthropogenic impact on wildlife resource use: Spatial and temporal shifts in elephants' access to water. *African Journal of Ecology*, **59**(3), pp.614-623. <https://doi.org/10.1111/aje.12860>
7. Ghoddousi, A., Buchholtz, E.K., Dietsch, A.M., Williamson, M.A., Sharma, S., Balkenhol, N., Kuemmerle, T. and Dutta, T., 2021. Anthropogenic resistance: accounting for human behavior in wildlife connectivity planning. *One Earth*, **4**(1), pp.39-48.
<https://doi.org/10.1016/j.oneear.2020.12.003>
6. Buchholtz, E., Fitzgerald, L., Songhurst, A., McCulloch, G. and Stronza, A., 2020. Experts and elephants: local ecological knowledge predicts landscape use for a species involved in human-wildlife conflict. *Ecology and Society*, **25**(4). <https://doi.org/10.5751/ES-11979-250426>
5. Buchholtz, E.K., Stronza, A., Songhurst, A., McCulloch, G. and Fitzgerald, L.A., 2020. Using landscape connectivity to predict human-wildlife conflict. *Biological Conservation*, **248**, p.108677.
<https://doi.org/10.1016/j.biocon.2020.108677>
4. Buchholtz, E., Fitzgerald, L., Songhurst, A., McCulloch, G. and Stronza, A., 2019. Overlapping landscape utilization by elephants and people in the Western Okavango Panhandle: implications for conflict and conservation. *Landscape Ecology*, **34**(6), pp.1411-1423,
<https://doi.org/10.1007/s10980-019-00856-1>
3. Buchholtz, E.K., Redmore, L., Fitzgerald, L.A., Stronza, A., Songhurst, A. and McCulloch, G., 2019. Temporal partitioning and overlapping use of a shared natural resource by people and elephants. *Frontiers in Ecology and Evolution*, **7**, p.117. <https://doi.org/10.3389/fevo.2019.00117>
2. Kapsar, K.E., Hovis, C.L., Bicudo da Silva, R.F., Buchholtz, E.K., Carlson, A.K., Dou, Y., Du, Y., Furumo, P.R., Li, Y., Torres, A. and Yang, D., 2019. Telecoupling research: The first five years. *Sustainability*, **11**(4), p.1033. <https://doi.org/10.3390/su11041033>
1. Fitzgerald, L.A., Walkup, D., Chyn, K., Buchholtz, E., Angeli, N. and Parker, M., 2017. The Future for Reptiles: Advances and Challenges in the Anthropocene. *Encyclopedia of the Anthropocene*.
<https://doi.org/10.1016/B978-0-12-409548-9.10291-X>

Presentations

Invited Seminars

Understanding past & present connectivity patterns for sagebrush habitat and wildlife, US Geological Survey Information Transfer Workshop. (January 19, 2023)

Elephants, fire, and the sagebrush sea: making and breaking connections for conservation and management, Clemson University. (November 18, 2022)

Presentations

Buchholtz, E.K., J.A. Heinrichs, A.L. Whipple, M.S. O'Donnell, and C.L. Aldridge. Capturing variation in functional connectivity for data-deficient wildlife species in Wyoming. Annual Conference, International

Association for Landscape Ecology - North America, Riverside, CA. 19 - 23 March 2023. (Presenter & Author, Contributed).

Buchholtz, E.K., J. Kreidler, D. Shinneman, M. Crist, & J. Heinrichs. Assessing large landscape patterns of potential fire connectivity using circuit methods. Presentation (virtual) Annual Meeting, Society for Rangeland Management, Boise, ID, 15-18 February 2023. (Presenter & Author, Invited).

Shyvers, J.E., B.C. Tarbox, C.J. Duchardt, A.P. Monroe, D.R. Edmunds, B.S. Robb, N.J. Van Lanen, E.K. Buchholtz, M.S. O'Donnell, N.D. Van Schmidt, J.A. Heinrichs, C.L. Aldridge. Optimizing conservation and restoration of imperiled sagebrush ecosystems to benefit multiple species. Oral Presentation. The Wildlife Society's 29th Annual Conference, Spokane, WA, November 6-10, 2022. (Author Only, Invited).

Buchholtz, E.K., J.A. Heinrichs, M.S. O'Donnell, and C.L. Aldridge. Understanding past and present connectivity patterns for habitat and wildlife in the sagebrush biome. Annual Conference, The Wildlife Society, Spokane, WA. 6 - 10 November 2022. (Presenter & Author, Invited).

Roche, M., J. Saher, E.K. Buchholtz, M. Crist, D. Shinneman, C. Aldridge, B. Brussee, P. Coates, C. Roth, J. Heinrichs. 2022. A spatial synthesis of fuel breaks in the sagebrush biome in relation to wildfire, invasive annual grasses, and Greater Sage-Grouse. Western Agencies 33rd Sage & Columbian Sharp-tailed Grouse workshop. 15 - 18 August 2022. Logan, Utah. (Author Only, Contributed).

Buchholtz, E.K., J.A. Heinrichs, M.S. O'Donnell, and C.L. Aldridge. Patterns of structural connectivity in the sagebrush biome (1985-2018). Western Agencies 33rd Sage & Columbian Sharp-Tailed Grouse Workshop, Ogden, UT (virtual). 15 - 18 August 2022. (Presenter & Author, Contributed).

Shyvers, J.E., B.C. Tarbox, C.J. Duchardt, A.P. Monroe, D.R. Edmunds, B.S. Robb, N.J. Van Lanen, E.K. Buchholtz, M.S. O'Donnell, N.D. Van Schmidt, J.A. Heinrichs, C.L. Aldridge. Optimizing conservation and restoration of imperiled sagebrush ecosystems to benefit multiple species. Lightning Talk. WAFWA - 33rd Sage and Columbian Sharp-tailed Grouse Workshop, Hybrid format, Logan, UT, 15 - 18 August, 2022. (Author Only, Contributed).

Buchholtz, E.K., J.A. Heinrichs, M.S. O'Donnell, and C.L. Aldridge. Patterns of structural connectivity in the sagebrush biome (1985-2018). North America Congress for Conservation Biology, Reno, NV. 17 - 21 July 2022. (Presenter & Author, Contributed).

Heinrichs, J, E Buchholtz, H Sofaer, C Jarnevich, M Roche, C Aldridge, & M Crist. 2022. Assessing the cover, connectivity, and future proliferation of invasive fine fuels. Oral presentation, North American Congress for Conservation Biology. 17 - 21 July 2022. Reno, NV. (Author Only, Contributed).

Roche, M., J. Saher, E.K. Buchholtz, M. Crist, D. Shinneman, C. Aldridge, B. Brussee, P. Coates, C. Roth, J. Heinrichs. 2022. A Spatial Data Synthesis of Fuel Breaks in the Sagebrush Biome in Relation to Wildfire, Invasive Annual Grasses, and Sagebrush Obligate Wildlife. Oral presentation, North American Congress for Conservation Biology. 17 - 21 July 2022. Reno, NV. (Author Only, Contributed).

Shyvers, J.E., B.C. Tarbox, C.J. Duchardt, A.P. Monroe, D.R. Edmunds, B.S. Robb, N.J. Van Lanen, E.K. Buchholtz, J.A. Heinrichs, C.L. Aldridge. Optimizing conservation and restoration of imperiled sagebrush ecosystems to benefit multiple avian species. Oral Presentation. American Ornithological Society and BirdsCaribbean Ornithological Conference, Puerto Rico, 27 June - 2 July 2022. (Author Only, Contributed).

Buchholtz, E.K., J.A. Heinrichs, M. O'Donnell & C.A. Aldridge. A functional guild approach to multispecies connectivity modeling in the sagebrush biome. International Association for Landscape Ecology - North America Annual Meeting, (virtual) 11 - 14 April 2022. (Presenter & Author, Contributed).

Kreitler, J., E.K. Buchholtz, M. Crist, J. Heinrichs, & D. Shinneman. A return on investment approach for evaluating fuel break priorities. International Association for Landscape Ecology - North America Annual Meeting, 11 - 14 April 2022. (Author Only, Contributed).

Buchholtz, E.K., J. Heinrichs, M. Crist, & C. Aldridge. Quantifying connectivity of invasive annual grasses in the Great Basin, USA. Oral presentation, International Association for Landscape Ecology - North America annual conference, virtual. 12 - 15 April 2021. (Presenter & Author, Contributed).

Professional Society Memberships and Activities

Chair, Foreign Scholar Travel Award Committee, International Association for Landscape Ecology (July 2023 - Present).

Councilor-at-Large, International Association for Landscape Ecology (March 2023 - Present).

TEACHING

Teaching Experience

Wild Hog Creative Inquiry, 2301-FNR-4700-075, (January 18, 2023 - April 26, 2023).

Spatial Analysis for Wildlife and Landscape Ecology, WFB-8610, (January 12, 2023 - May 11, 2023).