

Benjamin O. Knapp

Curriculum Vitae

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PROFESSIONAL EXPERIENCE

- Interim Director, Center for Agroforestry, School of Natural Resources, University of Missouri, Columbia, MO 65211 2023 – Present
- Associate Professor, School of Natural Resources, University of Missouri, Columbia, MO 65211 2018 – Present
- Adjunct Assistant Professor, Department of Forestry, Wildlife and Fisheries, University of Tennessee, Knoxville, TN 37996 2017 - Present
- Superintendent/Faculty Manager, Baskett Forest, University of Missouri, Columbia, MO 65211 2015 – Present
- Assistant Professor, School of Natural Resources, University of Missouri, Columbia, MO 65211 2012 – 2018
- Forestry Research Technician (GS-7), USDA Forest Service, Southern Research Station, Clemson, SC 29634 2006-2011

EDUCATION

- Ph.D., Forest Resources; Clemson University, Clemson, SC 29634 May 2012
Dissertation: Developing silvicultural protocols for longleaf pine (*Pinus palustris*) restoration in loblolly pine (*Pinus taeda*) stands
Advisor: Dr. G. Geoff Wang
- M.S., Forest Resources; Clemson University, Clemson, SC 29634 May 2005
Thesis: Effect of site preparation treatments on first-year survival and growth of planted longleaf pine (*Pinus palustris*) seedlings
Advisor: Dr. G. Geoff Wang
- B.S., Forestry; Purdue University, West Lafayette, IN 47907 May 2003
graduated with highest distinction; overall GPA of 3.98

HONORS AND RECOGNITION

- Buddy Temple Visiting Scholar, Boggy Slough Conservation Area 2021
- Outstanding Young Alumni Award; Forestry and Natural Resources; Purdue University 2020
- CAFNR Early Investigator Research Achievement Award 2019
- CAFNR Outstanding Early Career Teacher Award 2018
- Douglas R. Phillips Graduate Student Award; Clemson University 2011
- Outstanding Graduate Paper, 16th Biennial Southern Silvicultural Research Conference, Charleston, SC 2011
- USDA Forest Service Safety Award 2011

PUBLICATIONS

Peer-Reviewed Journals - *denotes student or post-doctoral advisee

I have published or have accepted 55 peer-reviewed journal articles, with 1 additional article currently in review.

In Review

- Hayford, I. Knapp, B.O., Wood, J., Argerich, A., Kabrick, J., Elliott, G., Olson, M. Effects of silvicultural release on artificial regeneration in bottomland hardwood forests in northern Missouri. Canadian Journal of Forest Research.

2023

1. Vickers, L.A., Knapp, B.O., Dey, D.C., and Pile Knapp, L.S. 2023 Do forest health threats affect upland oak regeneration and recruitment? Advance reproduction is a key co-morbidity. Forest Ecosystems. 10: 100152 <https://doi.org/10.1016/j.feecs.2023.100152>
2. Pile Knapp, L.S., Coyle, D.R., Dey, D.C., Fraser, J.S., Hutchinson, T., Jenkins, M.A., Kern, C.C., Knapp, B.O., Maddox, D., Pinchot, C., and Wang, G.G. 2023. Invasive plant management in eastern North American forests: a systematic review. Forest Ecology and Management. 550:121517.
3. *Fillingim, H., Knapp, B.O., Kabrick, J.M., Stambaugh, M.C., Elliott, G.P., and Dey, D.C. 2023. Direct and indirect effects of fire on germination of shortleaf pine seeds. Fire Ecology 19:53.
4. *Hayford, I., Knapp, B.O., Kabrick, J.M. 2023. Responses of natural and artificial pin oak (*Quercus palustris*) regeneration to a sequence of silvicultural release treatments in bottomland hardwood forests in southern Missouri. Forest Ecology and Management. 529:120699 <https://doi.org/10.1016/j.foreco.2022.120699>
5. *Anderson, S.E., Knapp, B.O., Kabrick, J.M. 2023. Stand density effects on aboveground carbon dynamics in second-growth *Pinus* and *Quercus* forests of central USA. Forest Science. fxac053 <https://doi.org/10.1093/forsci/fxac053>

2022

6. Aguilar, F.X., Sudekum, H., McGarvey, R., Knapp, B.O., Domke, G., and Brandeis, C. 2022. Wood pellet industry effects on local forest carbon stocks: evidence from the US coastal southeast. Scientific Reports 12:19449. <https://doi.org/10.1038/s41598-022-23870-x>
7. Knapp, B.O., *Maginel, C.J., Graham, B., Kabrick, J.M., Dey, D.C. 2022. Escaping the fire trap: does frequent, landscape-scale burning inhibit tree recruitment in a temperate broadleaf ecosystem? Forest Ecology and Management. 513:120191. <https://doi.org/10.1016/j.foreco.2022.120191>
8. *Crouch, Connor, Knapp, B.O., Cohen, S.A., Glitzenstein, J., Walker, J., and Wang, G.G. 2022. Longleaf pine restoration on hydric sites: understory plant community responses to site preparation through 15 years. Applied Vegetation Science. 21:e12637. <https://doi.org/10.1111/avsc.12637>

2021

9. Dibala, R. Jose, S., Gold, M., Kallenbach, R., and Knapp, B.O. 2021. Initial performance of red mulberry (*Morus rubra* L.) under a light gradient: an overlooked alternative livestock forage? Agroforestry Systems. <https://doi.org/10.1007/s10457-021-00699-3>
10. Lyczak, S.J., Kabrick, J.M., Knapp, B.O. 2021. Long-term effects of biomass removal, compaction, and vegetation control on tree survival and growth in coarse-textured, low-productivity soils. Forest Ecology and Management. 15: 119428. <https://doi.org/10.1016/j.foreco.2021.119428>

11. Dibala, R., Jose, S., Gold, M., Hall, J., Kallenbach, R., and Knapp, B.O. 2021. Tree density effects on soil, dry matter production, and nutritive value of understory *Megathyrsus maximus* in a seasonally dry tropical silvopasture in Panama. *Agroforestry Systems* 95: 741-753. <https://doi.org/10.1007/s10457-021-00628-4>
 12. *Vickers, L.A., Knapp, B.O., Kabrick, J.M., Kenefic, L.S., D'Amato, A.W., Kern, C.C., MacLean, D.A., Raymond, P., Clark, K.L., Dey, D.C., Rogers, N.S. 2021. Contemporary status, distribution, and trends of mixedwoods in the northern United States. *Canadian Journal of Forest Research*. <https://doi.org/10.1139/cjfr-2020-0467>
 13. *Wang, S., Knapp, B.O., Ehlers, S., Graham, B., Gao, X., Timm, S. 2021. Forest management effects on downed dead wood at stand and landscape scales in a temperate forest of the central United States. *Forest Ecology and Management* 482: 118905. <https://doi.org/10.1016/j.foreco.2020.118905>
 14. Kenefic, L.S., Kabrick, J.M., Knapp, B.O., Raymond, P., Clark, K.C., D'Amato, A.W., Kern, C.C., Vickers, L.A., Dey, D.C., Rogers, N.S. 2021. Mixedwood silviculture in North America: the science and art of managing complex, multi-species temperate forests. *Canadian Journal of Forest Research*. <https://doi.org/10.1139/cjfr-2020-0410>
- 2020
15. Refsland, T., Knapp, B.O., Stephan, K., Fraterrigo, J. 2020. Sixty-five years of fire manipulation reveals climate and fire interact to determine growth rates of *Quercus* spp. *Ecosphere*. 11 e03287. <https://doi.org/10.1002/ecs2.3287>
 16. *Rives, R.G., Knapp, B.O., Olson, M.G., Weegman, M.D., and Muzika, R.M. 2020. Regenerating mixed bottomland hardwood forests in north Missouri: effects of harvest treatment on structure, composition, and growth through 15 years. *Forest Ecology and Management* 475, 118371. <https://doi.org/10.1016/j.foreco.2020.118371>
 17. *Curtin, P.J., Knapp, B.O., Jack, S.B., Vickers, L.A., Larsen, D.R., and Guldin, J.M. 2020. Recruiting under a canopy: effects of overstory competition on tree recruitment patterns of naturally regenerated longleaf pine on two site types. *Canadian Journal of Forest Research* 50(7). <https://doi.org/10.1139/cjfr-2019-0343>
 18. *Crouch, C.D., Knapp, B.O., Cohen, S.A., Stambaugh, M.C., Walker, J.L., and Wang, G.G. 2020. Site preparation for longleaf pine restoration on hydric sites: stand development through 15 years. *Forest Ecology and Management* 461. <https://doi.org/10.1016/j.foreco.2020.117928>
 19. Newbold, C., Knapp, B.O., and Pile, L.S. 2019. Are we close enough? Comparing prairie reconstruction chronosequences to remnants following two site preparation methods in Missouri, USA. *Restoration Ecology*. 28(2): 358-368. <https://doi.org/10.1111/rec/13078>
- 2019
20. Wang, S., Qi, G., and Knapp, B.O. 2019. Topography affects tree species distribution and biomass variation in a warm temperate, secondary forest. *Forests* 10: 895. <https://doi.org/10.3390/f10100895>
 21. *Vickers, L.A., McWilliams, W.H., Knapp, B.O., D'Amato, A.W., Dey, D.C., Dickinson, Y.L., Kabrick, J.M., Kenefic, L.S., Kern, C.C., Larsen, D.R., Royo, A.A., Saunders, M.R., Shifley, S.R., and Westfall, J.A. 2019. Are current seedling demographics poised to regenerate northern US forests? *Journal of Forestry* 117(6): 592-612. <https://doi.org/10.1093/jofore/fvz046>
 22. Knapp, B.O., *Anderson, S.E., *Curtin, P.J., *Ghilardi, C., and *Rives, R.G. 2019. Can clearcutting reset successional trajectories in upland oak-hickory forests? A case study from mid-Missouri. *Journal of Forestry* 117(5): 435-442. <https://doi.org/10.1093/jofore/fvz041>

23. *Vickers, L.A., Larsen, D.R., Knapp, B.O., Kabrick, J.M., and Dey, D.C. 2019. Height development milestones for canopy recruitment after overstory removal in the Missouri Ozarks. *Forest Ecology and Management* 445:122-133. <https://doi.org/10.1016/j.foreco.2019.04.049>
 24. *Maginel, C.J., Knapp, B.O., Kabrick, J.M., and Muzika, R.M. 2019. Landscape and local responses of ground flora to 16 years of prescribed fire in the Missouri Ozarks. *Canadian Journal of Forest Research* 48(8): 1004-1014. <https://doi.org/10.1139/cjfr-2018-0492>
 25. Dey, D.C., Knapp, B.O., Deal, R.L., Hart, J.L., Battaglia, M.L., Schweitzer, C.J., and Schuler, T.M. 2019. Barriers to natural regeneration in temperate forests across the United States. *New Forests*. 50:11-40. <https://doi.org/10.1007/s11056-018-09694-6>
 26. *Vickers, L.A., McWilliams, W.H., Knapp, B.O., D'Amato, A.W., Saunders, M.R., Shifley, S.R., Kabrick, J.M., Dey, D.C., Larsen, D.R., and Westfall, J.A. 2019. Using a tree seedling mortality budget as an indicator of landscape-scale forest regeneration security. *Ecological Indicators*. 96:718-727. <https://doi.org/10.1016/j.ecolind.2018.06.028>
- 2018
27. Knapp, B.O. and Pallardy, S.G. 2018. Forty-eight years of forest succession: tree species change across four forest types in mid-Missouri. *Forests*. 9:633, <https://doi.org/10.3390/f9100633>
 28. Knapp, B.O., Pile, L.S., Walker, J.L., and Wang, G.G. 2018. Fire effects on a fire-adapted species: response of grass stage longleaf pine seedlings to experimental burning. *Fire Ecology*. 14:2. <https://doi.org/10.1186/s42408-018-0003-y>
 29. Wood, J.D., Knapp, B.O., Muzika, R.M., Stambaugh, M.C., and Gu, L. 2018. The importance of drought-pathogen interactions in driving oak mortality events in the Ozark Border Region. *Environmental Research Letters* 13: 015004. <http://doi.org/10.1088/1748-9326/aa94fa>
- 2017
30. Vickers, L.A., Larsen, D.R., Knapp, B.O., Kabrick, J.M., and Dey, D.C. 2017. Reference charts for young stands: a quantitative methodology for assessing tree performance. *Canadian Journal of Forest Research* 47: 1677-1686. <http://dx.doi.org/10.1139/cjfr-2017-0258>
 31. Pile, L.S., Wang, G.G., Knapp, B.O., Liu, G., and Yu, D. 2017. Morphological and physiological adaptations to frequent surface fire regimes: a comparative study on seedlings of three *Pinus* species native to southeast United States. *Annals of Forest Science*. 74: 68. <http://doi.org/10.1007/s13595-017-0666-6>
 32. Pile, L.S., Wang, G.G., Knapp, B.O., Walker, J.L., and Stambaugh, M.C. 2017. Chinese tallow (*Triadica sebifera*) invasion in maritime forests: the role of anthropogenic disturbance and its management implication. *Forest Ecology and Management*. 398: 10-24. <http://dx.doi.org/10.1016/j.foreco.2017.05.006>
 33. Knapp, B.O., Olson, M.G., and Dey, D.C. 2017. Early stump sprout development following two levels of harvest in a Midwestern bottomland hardwood forest. *Forest Science*. 63: 377-387. <http://dx.doi.org/10.5849/FS-2016-029R2>
 34. Kabrick, J.M., Clark, K.L., D'Amato, A.W., Dey, D.C., Kenefic, L.S., Kern, C.C., Knapp, B.O., MacLean, D.A., Raymond, P., and Waskiewicz, J. 2017. Managing hardwood-softwood mixtures for future forests in eastern North America: assessing suitability to projected climate change. *Journal of Forestry*. 115: 190-201. <http://dx.doi.org/10.5849/jof.2016-024>
 35. *Vickers, L.A., Larsen, D.R., Dey, D.C., Knapp, B.O., and Kabrick, J.M. 2017. The impact of overstory density on reproduction establishment in the Missouri Ozarks – models for simulating regeneration stochastically. *Forest Science* 63: 71-86. <http://dx.doi.org/10.5849/forsci.15-183>

36. Knapp, B.O., *Hullinger, M.A., and Kabrick, J.M. 2017. Effects of fire frequency on successional development of an oak-hickory forest in Missouri, U.S.A. *Forest Ecology and Management*. 387: 19-29. <http://dx.doi.org/10.1016/j.foreco.2016.07.013>
 37. Olson, M.G., Knapp, B.O., and Kabrick, J.M. 2017. Dynamics of a temperate deciduous forest under landscape-scale management: implications for adaptability to climate change. *Forest Ecology and Management*. 387: 73-85. <http://dx.doi.org/10.1016/j.foreco.2016.07.033>
- 2016
38. Hu, H., Knapp, B.O., Wang, G.G., and Walker, J.L. 2016. Silvicultural treatments for converting loblolly pine to longleaf pine dominance: effects on ground layer and midstory vegetation. *Applied Vegetation Science*. 19: 280-290. <http://dx.doi.org/10.1111/avsc.12217>
 39. Knapp, B.O., Wang, G.G., Walker, J.L., and Hu, H. 2016. Using silvicultural practices to regulate competition, resource availability, and growing conditions for *Pinus palustris* seedlings underplanted in *Pinus taeda* forests. *Canadian Journal of Forest Research*. 46: 902-913. <http://dx.doi.org/10.1139/cjfr-2016-0066>
 40. *Maginel, C.J., Knapp, B.O., Muzika, R.M., Kabrick, J.M., and Olson, E.K. 2016. Floristic Quality Index for woodland restoration: utility and effectiveness in a fire-managed landscape. *Ecological Indicators*. 67: 58-67. <http://dx.doi.org/10.1016/j.ecolind.2016.02.035>
- 2015
41. Addington, R.N., Knapp, B.O., Sorrell, G.A., Elmore, M.L., Wang, G.G., and Walker, J.L. 2015. Factors affecting broadleaf woody vegetation in upland pine forests management for longleaf pine restoration. *Forest Ecology and Management*. 354: 130-138. <http://dx.doi.org/10.1016/j.foreco.2015.06.028>
 42. Kabrick, J.M., Knapp, B.O., Dey, D.C., and Larsen, D.R. 2015. Effect of initial seedling size, understory competition, and overstory density on the survival and growth of *Pinus echinata* seedlings underplanted in hardwood forests for restoration. *New Forests*. 46: 897-918. <http://dx.doi.org/10.1007/s11056-015-9487-3>
 43. Knapp, B.O., Stephan, K., and Hubbart, J.A. 2015. Structure and composition of an oak-hickory forest after over 60 years of repeated prescribed burning in Missouri, U.S.A. *Forest Ecology and Management*. 344: 95-109. <http://dx.doi.org/10.1016/j.foreco.2015.02.009>
- 2014
44. Knapp, B.O., Olson, M.G., Larsen, D.R., Kabrick, J.M., and Jensen, R.G. 2014. Missouri Ozark Forest Ecosystem Project: a long-term, landscape-scale, collaborative forest management research project. *Journal of Forestry*. 112: 513-524. doi: <http://dx.doi.org/10.5849/jof.13-102>
 45. Knapp, B.O., Walker, J.L., Wang, G.G., Hu, H., and Addington, R.N. 2014. Effects of overstory retention, herbicides, and fertilization on sub-canopy vegetation structure and functional group composition in loblolly pine forests restored to longleaf pine. *Forest Ecology and Management* 320: 149-160. <http://dx.doi.org/10.1016/j.foreco.2014.03.021>
 46. Knapp, B.O., Wang, G.G., Clark, S.L., Pile, L.S., and Schlarbaum, S.E. 2014. Leaf physiology and morphology of *Castanea dentata* (Marsh.) Borkh., *Castanea mollissima* Blume, and three backcross breeding generations planted in the southern Appalachians. *New Forests* 45: 283-293. <http://dx.doi.org/10.1007/s11056-014-9408-x>
 47. *Vickers, L.A., Larsen, D.R., Knapp, B.O., Kabrick, J.M., and Dey, D.C. 2014. The impact of overstory density on sapling height growth in the Missouri Ozarks: implications for interspecific differentiation during canopy recruitment. *Canadian Journal of Forest Research*. 44: 1320-1330. <http://dx.doi.org/10.1139/cjfr-2014-0237>

48. Yang, Y., Fang, J., Ji, C., Datta, A., Li, P., Ma, W., Anwar, M., Shen, H., Hu, H., Knapp, B.O., and Smith, P. 2014. Stoichiometric shifts in surface soils over broad geographical scale: evidence from China's grasslands. *Global Ecology and Biogeography* 23: 947-955. <http://10.1111/geb.12175>

2013

49. Knapp, B.O., Wang, G.G., and Walker, J.L. 2013. Effects of canopy structure and cultural treatments on the survival and growth of *Pinus palustris* Mill. seedlings underplanted in *Pinus taeda* L. stands. *Ecological Engineering* 57: 46-56.
<http://dx.doi.org/10.1016/j.ecoleng.2013.04.014>

2012

50. Hu, H., Wang, G.G., Walker, J.L., and Knapp, B.O. 2012. Silvicultural treatments for converting loblolly pine to longleaf pine dominance: effects on resource availability and their relationships with planted longleaf pine seedlings. *Forest Ecology and Management* 282: 115-123.
<http://dx.doi.org/10.1016/j.foreco.2012.07.009>
51. Hu, H., Wang, G.G., Walker, J.L., and Knapp, B.O. 2012. Silvicultural treatments for converting loblolly pine to longleaf pine dominance: effects on planted longleaf pine seedlings. *Forest Ecology and Management* 276: 209-216. <http://dx.doi.org/10.1016/j.foreco.2012.03.031>

2011

52. Knapp, B.O., Wang, G.G., Hu, H., Walker, J.L., and Tennant, C. 2011. Restoring longleaf pine (*Pinus palustris* Mill.) in loblolly pine (*Pinus taeda* L.) stands: effects of restoration treatments on natural loblolly pine regeneration. *Forest Ecology and Management* 262: 1157-1167.
<http://dx.doi.org/10.1016/j.foreco.2011.05.044>

2008

53. Knapp, B.O., Wang, G.G., and Walker, J.L. 2008. Relating the survival and growth of planted longleaf pine seedlings to microsite conditions altered by site preparation treatments. *Forest Ecology and Management* 225: 3768-3777. <http://dx.doi.org/10.1016/j.foreco.2008.03.013>

2006

54. Knapp, B.O., Wang, G.G., Walker, J.L., and Cohen, S. 2006. Effects of site preparation treatments on early growth and survival of planted longleaf pine (*Pinus palustris* Mill.) seedlings in North Carolina. *Forest Ecology and Management* 223: 122-128.
<http://dx.doi.org/10.1016/j.foreco.2006.01.029>
55. Knapp, B.O., Wang, G.G., Van Lear, D.H., and Walker, J.L. 2006. Predicting root biomass of burned and unburned white oak advance reproduction from diameter and height. *Southern Journal of Applied Forestry* 30: 40-45.

Book Chapters

I am an author of 3 published book chapters.

1. Jack, S.B., Knapp, B.O., and McIntyre, R.K. 2023. Ecological silviculture for longleaf pine woodlands in the southeastern U.S. In: Palik, B., D'Amato, A. (editors). *Ecological Silvicultural Systems: Exemplary Models for Adaptive Management*. Wiley.
2. Stambaugh, M.C., Knapp, B.O., Dey, D.C. 2021. Fire ecology and management of the western Central Hardwoods. In: Greenberg, C.H., Collins, B. (editor). *Fire Ecology and Management: Past, Present, and Future Fire Ecology and Management across US Forested Ecosystems*. Managing Forest Ecosystems, vol. 39. Springer. https://doi.org/10.1007/978-3-030-73267-7_5

- Hanberry, B.B., Kabrick, J.M., Dunwiddie, P.W., Hartel, T., Jain, B., Knapp, B.O. 2017. Restoration of temperate savannas and woodlands. Murphy, S. and Allison, S. (editors). Routledge Handbook of Ecological and Environmental Restoration. New York, NY. 142-157.

Technical Book Chapters

I have been an author of 3 technical book chapters.

- Dey, D.C., Larsen, D., Kabrick, J., Knapp, B.O., Shifley, S., and Olson, M. 2014. Generally accepted principles of silviculture. In: Bill, M. (compiler). Missouri Forest Management Guidelines, Missouri Department of Conservation. Jefferson City, MO. 87-104.
- Knapp, B.O., Dey, D.C., Larsen, D., Kabrick, J., Shifley, S., and Olson, M. 2014. The fundamentals of forest regeneration. In: Bill, M. (compiler). Missouri Forest Management Guidelines, Missouri Department of Conservation. Jefferson City, MO. 105-116.
- Larsen, D., Dey, D.C., Kabrick, J., Knapp, B.O., Shifley, S., and Olson, M. 2014. Tending treatments. In: Bill, M. (compiler). Missouri Forest Management Guidelines, Missouri Department of Conservation. Jefferson City, MO. 119-124.

*Conference Proceedings – †denotes the conference proceedings were peer-reviewed; *denotes student advisee*

I have published 20 conference proceedings, of which 16 were peer-reviewed.

2022

- †Kabrick, J.M., Hanberry, B.B., Dey, D.C., Knapp, B.O., Larsen, D.R., Pile Knapp, L.S. 2022. Adapting Gingrich stocking guides for managing oak woodlands and savannas. In: Jain, T.B., Schuler, T.M. (comp.) Foundational concepts in silviculture with emphasis on reforestation and early stand improvement – 2022 National Silviculture Workshop Proceedings. RMRS-P-80. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 5 p.

2020

- †*Crouch, C.D., Knapp, B.O., Stambaugh, M.C., Cohen, S. Walker, J.L., Wang, G.G. 2020. Site preparation for longleaf pine restoration on hydric sites: tree- and stand-level responses 15 years after planting. Bragg, D.C., Koerth, N.E., Holley, A.G. eds. Proceedings of the 20th Biennial Southern Silvicultural Research Conference. e-Gen. Tech. Rep. SRS-253. U.S. Department of Agriculture, Forest Service, Southern Research Station. Asheville, NC.
- †Kabrick, J.M., Clark, K.L., D’Amato, A.W., Munoz Delgado, B.L., Dey, D.C., Kenefic, L.S., Kern, C.C., Keyser, T.L., Knapp, B.O., MacLean, D.A., Raymond, P., Schweitzer, C.J., Vickers, L.A. 2020. Research and management partnerships for resolving regeneration and recruitment challenges in hardwood-softwood mixtures in eastern North America. In: Pile, L.S., Deal, R.L., Dey, D.C., Gwaze, D., Kabrick, J.M., Palik, B.J., Schuler, T.M. (comps.) The 2019 National Silviculture Workshop: a focus on forest management-research partnerships. Gen. Tech. Rep. NRS-P-193: U.S. Department of Agriculture, Forest Service, Northern Research Station, Madison, WI.

2019

- †Dey, D.C., Knapp, B.O., and Stambaugh, M.C. 2019. Silviculture to restore oak woodlands and savannas. Clark, S.L.; Schweitzer, C.J. eds. Oak Symposium: Sustaining Oak Forests in the 21st

Century through Science-based Management. e-Gen. Tech. Rep. SRS-237. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. pp 125-137.

5. Knapp, B.O., Stambaugh, M.C., and Dey, D.C. 2019. Practical considerations for long-term maintenance of oak woodlands. Clark, S.L.; Schweitzer, C.J. eds. Oak Symposium: Sustaining Oak Forests in the 21st Century through Science-based Management. e-Gen. Tech. Rep. SRS-237. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. pp 138-140.
6. Stambaugh, M.C., Dey, D.C., and Knapp, B.O. 2019. Applied historical ecology: bringing perspective and questions about oak woodland ecology and management. Clark, S.L.; Schweitzer, C.J. eds. Oak Symposium: Sustaining Oak Forests in the 21st Century through Science-based Management. e-Gen. Tech. Rep. SRS-237. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. pp 123-124.

2017

7. †*Ghilardi, C.R., Knapp, B.O., He, H.S., Larsen, D.R., and Kabrick, J.M. 2017. Evaluation of the Fire and Fuels Extension of the Forest Vegetation Simulator within the Missouri Ozarks. Proceedings of 2017 Forest Vegetation Simulator (FVS) e-Conference. e-Gen. Tech. Rep. SRS-224. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 94-97.
8. †*Good, G.T., Knapp, B.O., *Vickers, L.A., Larsen, D.R., and Kabrick, J.M. 2017. Evaluation of sapling height development and intraspecific differentiation after clearcut and group harvests in the Missouri Ozarks. In: Kabrick, J.M., Dey, D.C., Knapp, B.O., Larsen, D.R., Shifley, S.R., and Stelzer, H.E. (eds.). Proceedings of the 20th Central Hardwood Forest Conference. Gen. Tech. Rep. NRS-P-167. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 78-86.
9. † Knapp, B.O., Marschall, J.M., and Stambaugh, M.C. 2017. Effects of long-term prescribed burning on timber value in hardwood forests of the Missouri Ozarks. In: Kabrick, J.M., Dey, D.C., Knapp, B.O., Larsen, D.R., Shifley, S.R., and Stelzer, H.E. (eds.). Proceedings of the 20th Central Hardwood Forest Conference. Gen. Tech. Rep. NRS-P-167. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 304-313.
10. †Olson, M.G. and Knapp, B.O. 2017. Stump sprouting dynamics during stand initiation under alternative silvicultural treatments in a Midwestern bottomland, mixed-species hardwood forest. In: Kabrick, J.M., Dey, D.C., Knapp, B.O., Larsen, D.R., Shifley, S.R., and Stelzer, H.E. (eds.). Proceedings of the 20th Central Hardwood Forest Conference. Gen. Tech. Rep. NRS-P-167. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 99-109.

2016

11. †Knapp, B.O., Wang, G.G., Walker, J.L., and Addington, R.N. 2016. Fate of residual canopy trees following harvesting to underplant longleaf pine seedlings in loblolly pine stands in Georgia. In: Schweitzer, C.J.; Clatterbuck, W.K.; Oswalt, C.M. (eds.). Proceedings of the 18th Biennial Southern Silvicultural Research Conference. E-Gen. Tech. Rep. SRS-212. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 60-67.
12. †*Vickers, L.A., Larsen, D.R., Kabrick, J.M., Dey, D.C., and Knapp, B.O. 2016. A collection of sprouting parameters for simulating regeneration establishment in the Missouri Ozarks. In: Schweitzer, C.J.; Clatterbuck, W.K.; Oswalt, C.M. (eds.). Proceedings of the 18th Biennial Southern Silvicultural Research Conference. E-Gen. Tech. Rep. SRS-212. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 238-244.

13. †Wang, G.G., Pile, L.S., Knapp, B.O., and Hu, H. 2016. Longleaf pine adaptation to fire: is early height growth pattern critical to fire survival? In: Schweitzer, C.J.; Clatterbuck, W.K.; Oswalt, C.M. (eds.). Proceedings of the 18th Biennial Southern Silvicultural Research Conference. E-Gen. Tech. Rep. SRS-212. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 214-218.

2015

14. † Knapp, B.O., Wang, G.G., Walker, J.L., and Hu, H. 2015. From loblolly to longleaf: fifth-year results of a longleaf pine restoration study at two ecologically distinct sites. In: Holley, A.G., Connor, K.F., and Haywood, J.D. (eds.). Proceedings of the 17th Biennial Southern Silvicultural Research Conference. Gen. Tech. Rep. SRS-203. USDA Forest Service, Southern Research Station. 470-472.

2014

15. †Kabrick, J.M., Dey, D.C., Kinkead, C.O., Knapp, B.O., Leahy, M., Olson, M.G., Stambaugh, M.C., and Stevenson, A. 2014. Silvicultural considerations for managing fire-dependent oak woodland ecosystems. In: Groninger, J.W., Holzmueller, E.J., Nielsen, C.K., and Dey, D.C. (eds.). Proceedings, 19th Central Hardwood Forest Conference. Gen. Tech. Rep. NRS-P-142. USDA Forest Service, Northern Research Station. 2-15.
16. †Olson, M.G., Stevenson, A., Knapp, B.O., Kabrick, J.M., and Jensen, R.G. 2014. Is there evidence of mesophication of oak forests in the Missouri Ozarks? In: Groninger, J.W., Holzmueller, E.J., Nielsen, C.K., and Dey, D.C. (eds.). Proceedings, 19th Central Hardwoods Forest Conference. Gen. Tech. Rep. NRS-P-142. USDA Forest Service, Northern Research Station. 139-153.
17. *Vickers, L.A., Larsen, D.R., Dey, D.C., Kabrick, J.M., and Knapp, B.O. 2014. A potential quantitative method for assessing individual tree performance. In: Groninger, J.W., Holzmueller, E.J., Nielsen, C.K., and Dey, D.C. (eds.). Proceedings, 19th Central Hardwoods Forest Conference. Gen. Tech. Rep. NRS-P-142. USDA Forest Service, Northern Research Station. 201.

2013

18. †Hu, H., Knapp, B.O., Wang, G.G., and Walker, J.L. 2013. Effects of canopy treatments on first year growth of planted longleaf pine seedlings: a preliminary study. In: Guldin, J.M. (ed.) Proceedings of the 15th Biennial Southern Silvicultural Research Conference. Gen. Tech. Rep. SRS-175. USDA Forest Service, Southern Research Station. 157-161.
19. † Knapp, B.O., and Walker, J.L. 2013. Using existing growth models to predict RCW habitat development following site preparation: pitfalls of the process and potential growth response. In: Guldin, J.M. (ed.). Proceedings of the 15th Biennial Southern Silvicultural Research Conference. Gen. Tech. Rep. SRS-175. USDA Forest Service, Southern Research Station. 499-506.

2010

20. † Knapp, B.O., Wang, G.G., and Walker, J.L. 2010. Artificially regenerating longleaf pine on wet sites: preliminary analysis of effects of site preparation treatments on early survival and growth. In: Stanturf, J.A. (ed.). Proceedings of the 14th Biennial Southern Silvicultural Research Conference. Gen. Tech. Rep. SRS-121. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 247-251.

Reports – †denotes the report was peer-reviewed

I have published 3 reports, of which 1 was peer-reviewed.

1. Walker, J.L., Wang, G.G., Knapp, B.O., Hu, H. 2017. Establishing longleaf pine seedlings under a loblolly pine canopy (user's guide). Strategic Environmental Research and Development Program. 29 p.
2. Shifley, S., Knapp, B.O., Kabrick, J. 2013. Summary report for change in basal area from 1991 to 2010 for the Missouri Ozark Forest Ecosystem Project. Report produced for the Missouri Forest Products Association, Jefferson City, MO. 48 p.
3. †Wang, G.G., Knapp, B.O., Clark, S.L., and Mudder, B.T. 2013. The silvics of *Castanea dentata* (Marsh.) Borkh., American chestnut, Fagaceae (beech family). General Technical Report SRS-173. USDA Forest Service, Southern Research Station, Asheville, NC. 18 p.

ORAL PRESENTATIONS

Invited Presentations

I have authored 21 invited oral presentations.

1. Knapp, B.O. and Kabrick, J.M. 2023. Climate-smart forestry: the role of forest management in terrestrial carbon dynamics. Missouri Forest Products Association Summer Meeting. July 29, 2023, Branson, MO.
2. Knapp, B.O. 2023. Balancing objectives: effects of managing stand density on carbon dynamics. Northeast-Midwest State Foresters Alliance Meeting. May 25, 2023.
3. Knapp, B.O. 2023. Is underplanting a viable option for regeneration? Lessons from pine and oak forests of the eastern US. Pennsylvania Forest Health, Insect, and Disease Briefing. March 14, 2023, State College PA.
4. Knapp, B.O. 2023. Practical considerations for long-term maintenance of oak woodlands. Indiana Society of American Foresters Winter Meeting. February 24, 2023, Nashville, IN.
5. Knapp, B.O., 2021. Frequent fire and tree regeneration in eastern forest ecosystems: implications for stand development and age structure. Northern Arizona University seminar series. September 29, 2021.
6. Knapp, B.O., Vickers, L.A. 2021. White oak status and challenges. Forestry Summit, August 10, 2021, Columbia, MO.
7. Knapp, B.O., Kabrick, J.M. 2020. Current shortleaf pine research collaborations of US Forest Service and University of Missouri. Shortleaf Pine Initiative Meeting, January 30, 2020, West Plains, MO.
8. Shifley, S., Kabrick, J., Dey, D., and Knapp, B.O. 2019. A leisurely look at the history of shortleaf pine research and development in Missouri. 5th Biennial Shortleaf Pine Conference. October 1-3, 2019. Van Buren, MO.
9. Knapp, B.O. 2018. Underplanting shade intolerant southern pine species: an oxymoron or ecological approach to regeneration? 2018 International Conference on Protective Forests. August 2-5, 2018. Shenyang, China.
10. Knapp, B.O. 2018. Use of silviculture for ecological restoration of pine and oak woodland ecosystems of the eastern United States. July 16, 2018. Center for International Forestry Research, Seminar Series. Bogor Indonesia.
11. Stambaugh, M.C., Dey, D.C., and Knapp, B.O. 2017. Applied historical ecology of oak woodlands. Oak Symposium: Sustaining Oak Forests in the 21st Century through Science-based Management. October 24-26, 2017. Knoxville, TN.

12. Dey, D.C., Knapp, B.O., and Stambaugh, M.C., 2017. Silviculture approaches to restoring oak-pine woodlands and savannas. Oak Symposium: Sustaining Oak Forests in the 21st Century through Science-based Management. October 24-26, 2017. Knoxville, TN.
13. Knapp, B.O., Stambaugh, M.C., Dey, D.C., and Kabrick, J.M. 2017. Practical considerations for long-term maintenance of oak woodlands. Oak Symposium: Sustaining Oak Forests in the 21st Century through Science-based Management. October 24-26, 2017. Knoxville, TN.
14. Knapp, B.O. 2017. Repeated burning in oak woodlands: long-term prescribed fire effects on forest stand development in the Missouri Ozarks. September 29, 2017. Fire and Forest Management in Middle Tennessee. University of Tennessee, Tullahoma, TN.
15. Dey, D.C., Battaglia, M., Deal, R., Knapp, B.O., O'Hara, K., Schuler, T., and Schweitzer, C.J. 2017. Barriers to natural regeneration. Reforestation Matters Workshop: Understanding the Costs of Inadequate Reforestation. April 12-13, 2017. Portland, OR.
16. Knapp, B.O. 2016. Striking a balance in woodland management: effects of fire on forest regeneration in eastern woodland ecosystems. June 30, 2016. Joseph W. Jones Ecological Research Center 2016 Seminar Series. Ichauway, GA.
17. Knapp, B.O. 2015. Balancing ecosystem processes and ecosystem services: regenerating trees in woodlands. October 19, 2015. Department of Forestry Fall Seminar Series, University of Kentucky, Lexington, KY.
18. Knapp, B.O. 2015. Restoration potential: what is it, and what are the implications? January 7-9, 2015. Challenges and Priorities for Managing Frequent Fire Conifer Ecosystems. Joseph W. Jones Ecological Research Center, Newton, GA.
19. Knapp, B.O. 2014. Effects of fire on forest regeneration: implications for restoration and management with prescribed burning. November 7, 2014. Department of Forestry Fall Seminar Series, University of Missouri. Columbia, MO.
20. Knapp, B.O., Wang, G.G., Pile, L.S., and Walker, J.L. 2013. Fire effects on grass stage longleaf pine seedlings. September 19, 2013. South Carolina Prescribed Fire Council Annual Meeting. Brosnan Forest, Dorchester, SC.
21. Knapp, B.O., Walker, J.L., and Wang, G.G. 2009. Early effects of overstory harvest on planted longleaf pine seedlings, resource availability, and understory vegetation. Presentation to land managers of Fort Benning, GA. August 27, 2009. Fort Benning, GA.

*Professional Conferences – *denotes student advisee ‡denotes student competition award*

I have been an author on 97 oral presentations at professional conferences, of which student advisees have delivered 36 and I have delivered 30.

2023

1. *Scott, S., Knapp, B.O., Pile Knapp, L.S. 2023 Pollinator habitat in log landings (PhiLL) project. Society of American Foresters National Convention. October 25-28, 2023. Sacramento, CA.
2. Knapp, B.O., Kabrick, J.M., and Fraser, J. 2023. Frequent fire effects on tree regeneration and implications for stand dynamics in oak woodlands of the western Central Hardwood Region. Society of American Foresters National Convention. October 25-28, 2023. Sacramento, CA.
3. Puhlick, J., Knapp, B.O., Goldberg, I., Rutledge, B.T., Taylor, R.S., Willis, J.L. 2023. Silvicultural strategies for promoting longleaf pine recruitment in multi-aged stands. Biennial Southern Silvicultural Research Conference. March 21-23, 2023. Nacogdoches, TX.
4. Knapp, B.O., Anderson, S., Kabrick, J.M. 2023. Mitigation: thinning effects on carbon using local examples. Missouri Natural Resources Conference. February 7-9, 2023. Osage Beach, MO.

5. *Fillingim, H., Knapp, B.O., Kabrick, J.M. 2023. Sprouting dynamics of shortleaf pine and oak regeneration following prescribed fire in the Missouri Ozarks. Missouri Natural Resources Conference. February 7-9, 2023. Osage Beach, MO.
6. *Hayford, I., Knapp, B.O., Buchanan, M., Graham, B. 2023. Effects of silvicultural release and environmental conditions on oak regeneration in northern Missouri bottomland forests. Missouri Natural Resources Conference. February 7-9, 2023. Osage Beach, MO.
7. *Maddox, D., Pile Knapp, L., Knapp, B.O., Vickers, L., Dey, D., Fraser, J. 2023. Quantifying the abundance of nonnative invasive woody plants and their response to seasonal removal. Missouri Natural Resources Conference. February 7-9, 2023. Osage Beach, MO.

2022

8. *Vickers, L.A., Royo, A., Stout, S., Pile Knapp, L.S., Knapp, B.O. 2022. Rise and fall: evaluating the extent and magnitude of regeneration successes and failures for black cherry and sweet birch in the Alleghenies and beyond. Society of American Foresters National Convention. September 20-24, 2022. Baltimore, MD.
9. *Vickers, L.A., Knapp, B.O., Dey, D.C. 2022. Do forest health issues in oak forests accelerate compositional shifts to non-oaks? Society of American Foresters National Convention. September 20-24, 2022. Baltimore, MD.
10. *Fillingim, H., Knapp, B.O. 2022. Sprouting dynamics of shortleaf pine and oak regeneration following prescribed fire in the Missouri Ozarks. Central Hardwood Forest Conference. April 6-8, 2022, Morgantown, WV.
11. *Harpold, T., Knapp, B.O. 2022. Uneven-aged management in the Missouri Ozarks: effects of stocking and site condition on oak regeneration. Central Hardwood Forest Conference. April 6-8, 2022, Morgantown, WV.
12. *Hayford, I., Knapp, B.O., Buchanan, M., Graham, B. 2022. Effects of silvicultural release and environmental conditions on oak regeneration in northern Missouri bottomland forests. Central Hardwood Forest Conference. April 6-8, 2022, Morgantown, WV.
13. Knapp, B.O., Maginel, C., Graham, B., Kabrick, J.M., Dey, D.C., 2022. Does frequent, landscape-scale burning inhibit tree recruitment in Central Hardwood forests? Central Hardwood Forest Conference. April 6-8, 2022, Morgantown, WV.
14. *Maddox, D., Knapp, B.O., Pile Knapp, L.S., Kabrick, J., Dey, D., Newbold, C. 2022. Oak woodland ground flora composition restoration in a recently thinned, degraded oak woodland. Central Hardwood Forest Conference. April 6-8, 2022, Morgantown, WV.
15. *Vickers, L.A., Royo, A., Stout, S., Pile Knapp, L.S., Knapp, B.O. 2022. Rise and fall: evaluating the extent and magnitude of regeneration successes and failures for black cherry and sweet birch in the Alleghenies and beyond. Central Hardwood Forest Conference. April 6-8, 2022, Morgantown, WV.
16. *Vickers, L.A., Knapp, B.O., Dey, D.C. 2022. Do forest health issues in oak forests accelerate compositional shifts to non-oaks? Central Hardwood Forest Conference. April 6-8, 2022, Morgantown, WV.
17. *Harpold, T., Knapp, B.O. 2022. Uneven-aged management in the Missouri Ozarks: effects of stocking and site condition on oak regeneration. Missouri Natural Resources Conference. February 2-4, 2022, Osage Beach, MO.
18. *Maddox, D., Knapp, B.O., Dey, D.C., Kabrick, J.M., Pile Knapp, L.S. 2022. Seeding native woodland understory species over a gradient of light in a recently thinned oak woodland to restore native woodland understory composition. Missouri Natural Resources Conference. February 2-4, 2022, Osage Beach, MO.

19. *Vaughan, I., Knapp, B.O., Gardiner, E., Kabrick, J.M., Davis, M. 2022. Determining the effects of dormant season flooding on pin oak root development. Missouri Natural Resources Conference. February 2-4, 2022, Osage Beach, MO.
20. *Vickers, L.A., Knapp, B.O., Dey, D.C. 2022. Do forest health issues in oak forests accelerate compositional shifts to non-oaks? Missouri Natural Resources Conference. February 2-4, 2022, Osage Beach, MO.

2021

21. *Filligim, H., Knapp, B.O., Kabrick, J.M. 2021. Competition dynamics of shortleaf pine seedlings planted for restoring oak-pine mixtures. Society of American Foresters National Convention. November 3-6, 2021.
22. *Harpold, T., Knapp, B.O. 2021. Uneven-aged management in the Missouri Ozarks: effects of stocking and site conditions on oak regeneration. Society of American Foresters National Convention. November 3-6, 2021.
23. *Hayford, I., Knapp, B.O., Buchanan, M. 2021. Effects of silvicultural release and environmental conditions on oak regeneration in northern Missouri bottomland forests. Society of American Foresters National Convention. November 3-6, 2021.
24. Knapp, B.O., Anderson, S., Kabrick, J.M. 2021. Effects of stand density on carbon dynamics in shortleaf pine and upland oak forests. Society of American Foresters National Convention. November 3-6, 2021.
25. Kenefic, L.S., Kabrick, J.M., Knapp, B.O., Raymond, P., Clark, K.C., D'Amato, A.W., Kern, C.C., Vickers, L.A., Dey, D.C., Rogers, N.S. 2021. Managing mixedwoods with a shade-tolerant softwood component in the northeastern US. Society of American Foresters National Convention. November 3-6, 2021.
26. Nilon, C., Knapp, B.O., Rotman, R., Saunders, L. 2021. National Needs Fellowship in Forest Resource Management. Missouri Natural Resources Conference. February 2-4, 2021.
27. Knapp, B.O., Wang, S., Ehlers, S., Graham, B., Gao, S., Timm, S. 2021. Forest management effects on downed dead wood in hardwood forests of Missouri. Missouri Natural Resources Conference. February 2-4, 2021.
28. *Maddox, D., Knapp, B.O., Pile Knapp, L.S., Kabrick, J.M., Dey, D.C., Newbold, C. 2021. Reintroduction of macroflora to a restored prairie and a degraded woodland: a tale of trees and seeds. Missouri Natural Resources Conference. February 2-4, 2021.
29. *Hayford, I., Knapp, B.O., and Kabrick, J.M. 2021. Evaluating the initial responses of natural and artificial pin oak regeneration to midstory and understory competition control and subsequent overstory release in bottomland hardwood forest in southern Missouri. Missouri Natural Resources Conference. February 2-4, 2021.

2020

30. Pile, L.S., Coyle, D., Dey, D., Hutchinson, T., Jenkins, M., Kern, C., Knapp, B.O., Pinchot, C., Rebbeck, J., Wheeler, G., Wang, G.G. 2020. Nonnative invasive plant management in eastern North American forests: a systematic review and meta-analysis. Society of American Foresters National Convention. October 29, 2020. Virtual
31. Kabrick, J.M., Raymond, P., Kenefic, L.S., Knapp, B.O., Vickers, L.A., Dey, D.C. 2020. A conceptual framework for identifying silvicultural practices for temperate mixedwood management in eastern North America. Society of American Foresters National Convention. October 29, 2020. Virtual

32. Knapp, B.O., Wang, S., Ehlers, S., Graham, B., Gao, S., Timm S. 2020. Forest management effects on downed dead wood in hardwood forests of Missouri. Society of American Foresters National Convention. October 29, 2020. Virtual
 33. Knapp, B.O., *Curtin, P.J., Jack, S.B. 2020. Recruiting under a canopy: effects of stand density on patterns of height growth, suppression, and release of longleaf pine in southwestern GA. 13th Biennial Longleaf Conference. October 20-23, 2020. Virtual
 34. Knapp, B.O., Maginel, C., Buchanan, M. 2020. Landscape-scale burning and tree regeneration. Missouri Natural Resources Conference. February 6, 2020. Osage Beach, MO.
 35. Dee, J.R., Knapp, B.O., and Olson, E. 2020. Long-term effects of forest management on the composition of ground flora within the Missouri Ozark Forest Ecosystem Project (MOFEP). Missouri Natural Resources Conference. February 6, 2020. Osage Beach, MO.
- 2019
36. *Crouch, C.D., Knapp, B.O., Cohen, S.A., Walker, J.L., and Wang, G.G. 2019. Longleaf pine restoration on hydric sites: long-term vegetation responses to site preparation. Society of American Foresters National Convention. October 30-November 3, 2019. Louisville, KY.
 37. Knapp, B.O., Kabrick, J.M., Dey, D.C., and Vickers, L.A. 2019. Using regeneration ecology to understand development and maintenance of shortleaf pine-oak mixedwoods of Missouri, USA. 12th North American Forest Ecology Workshop. June 23-27, 2019. Flagstaff, AZ.
 38. Knapp, B.O., Dey, D.C., Kabrick, J.M., *Maginel, C.J., Pile, L.S., and Wang, G.G. 2019. Balancing ecosystem processes: dynamics of tree regeneration in frequent-fire woodland ecosystems of the eastern USA. 12th North American Forest Ecology Workshop. June 23-27, 2019. Flagstaff, AZ.
 39. Kabrick, J.M., Clark, K.L., Dey, D.C., Kenefic, L.S., Kern, C.C., Munoz-Delgado, D.L., Keyser, T.L., Schweitzer, C.J., Knapp, B.O., MacLean, D.A., Raymond, P., D'Amato, A.W. 2019. Research and management partnerships for resolving regeneration and recruitment challenges in hardwood-softwood mixtures. National Silviculture Workshop. May 21-23, 2019. Bemidji, MN.
 40. Wang, G.G., Pile, L.S., Knapp, B.O., Blood, B.L., Stambaugh, M.C., Hutchinson, T.F., Dickinson, M.B., and Dey, D.C. 2019. Prescribed fire in eastern forests: are we using the right frequency prescription? National Silviculture Workshop. May 21-23, 2019. Bemidji, MN.
 41. *‡Crouch, C.D., Knapp, B.O., Stambaugh, M.C., Cohen, S.A., Walker, J.L., and Wang, G.G. 2019. Site preparation for longleaf pine restoration on hydric sites: tree-level and stand-level responses 15 years following planting. 20th Biennial Southern Silvicultural Research Conference. March 12-14, 2019. Shreveport, LA.
 42. *Lyczak, S., Kabrick, J.M., Larsen, D.R., Walter, W.W., Dey, D.C., and Knapp, B.O. 2019. Increasing the survival probability, height growth, and diameter growth of 1-0 bareroot shortleaf pine seedlings through genetic selection, site preparation, and vegetation control. 20th Biennial Southern Silvicultural Research Conference. March 12-14, 2019. Shreveport, LA.
 43. Blood, B.L., *Wachuta, M., Knapp, B.O., Dey, D.C., and Wang, G.G. 2019. Modeling fire-induced tree mortality for eastern hardwood forests: evaluating and refining the First Order Fire Effects Model. 20th Biennial Southern Silvicultural Research Conference. March 12-14, 2019. Shreveport, LA.
 44. Knapp, B.O., *Anderson, S.E., *Curtin, P.J., *Ghilardi, C., and *Rives, R.G. 2019. Can clearcut harvest reset long-term successional trajectories of hardwood forests of mid-Missouri? Missouri Natural Resources Conference. February 5-7, 2019. Osage Beach, MO.

45. *Lyczak, S.J., Kabrick, J.M., Dey, D.C., Larsen, D.R., and Knapp, B.O. 2019. Predicting future tree performance and survival of shortleaf pine (*Pinus echinata*) through novel height growth percentiles. Missouri Natural Resources Conference. February 5-7, 2019. Osage Beach, MO.
46. Dey, D.C., Kabrick, J.M., Knapp, B.O., *Lyczak, S.J., Robinson, S., and Stevens, M. 2019. Adaptive management – research partnerships to restore shortleaf pine mixedwoods. Missouri Natural Resources Conference. February 5-7, 2019. Osage Beach, MO.
47. *Beckerman, T., Knapp, B.O., Pile, L.S., and Weegman, M. 2019. Wildlife and vegetation responses to legacy effects of land management in mid-Missouri. Missouri Natural Resources Conference. February 5-7, 2019. Osage Beach, MO.

2018

48. Kenefic, L., Clark, K., Munoz-Delgado, B., Dey, D., Kabrick, J., Kern, C., Knapp, B., MacLean, D., and Raymond, P. 2018. Challenges to regenerating and recruiting temperate mixedwoods in northeastern and central North America. Eastern Canada USA Forest Science Conference. October 18-20, 2018. Fredericton, New Brunswick, Canada.
49. *Crouch, C.D., Knapp, B.O., Stambaugh, M.C., Cohen, S.A., Walker, J.L., and Wang, G.G. 2018. Site preparation for longleaf pine restoration on hydric sites: tree-level and stand-level responses. Society of American Foresters National Convention. October 3-7, 2018. Portland, OR.
50. Blood, B., *Wachuta, M., Knapp, B.O., Wang, G.G., and Dey, D.C. 2018. Evaluating and refining the First Order Fire Effects Model for use in hardwood forests of the eastern US. The Fire Continuum Conference: Preparing for the Future of Wildland Fire. May 21-24, 2018. Missoula, MT.
51. Knapp, B.O., *Anderson, S.A., *Curtin, P., *Ghilardi, C., and *Rives, R.G. 2018. Can clearcutting reset long-term successional trajectories of hardwood forests of mid-Missouri? 21st Central Hardwood Forest Conference. May 15-17, 2018. Bloomington, IN.
52. *Lyczak, S., Kabrick, J., Knapp, B.O., and Larsen, D. 2018. Effects of organic matter removal, soil compaction, and vegetation control on 22nd year height and survival: LTSP Missouri. 21st Central Hardwood Forest Conference. May 15-17, 2018. Bloomington, IN.
53. Vickers, L.A., McWilliams, W.H., and Knapp, B.O. 2018. Examining forest regeneration across the northern United States using the FIA Regeneration Indicator and advance reproduction mortality budgets. 21st Central Hardwood Forest Conference. May 15-17, 2018. Bloomington, IN.
54. *Wachuta, M., Knapp, B.O., and Dey, D.C. 2018. Accuracy of FOFEM mortality predictions for eastern hardwood species after one prescribed burn. Missouri Natural Resources Conference. February 2, 2018. Osage Beach, MO.
55. *Lyczak, S.J., Kabrick, J.M., Dey, D.C., Knapp, B.O., and Larsen, D.R. 2018. Survival and growth of 1-0 shortleaf pine seedlings relative to planted and natural oak in forest restoration. Missouri Natural Resources Conference. February 2, 2018. Osage Beach, MO.
56. Knapp, B.O., Stambaugh, M.C., Dey, D.C., and Kabrick, J.M. 2018. Practical considerations for long-term maintenance of oak woodlands. Missouri Natural Resources Conference. February 2, 2018. Osage Beach, MO.

2017

57. *Curtin, P., Knapp, B.O., and Jack, S.B. 2017. Midstory growth and canopy recruitment in naturally regenerated longleaf pine woodlands. Society of American Foresters National Convention. November 15-19, 2017. Albuquerque, NM.
58. *Anderson, S., Knapp, B.O., Stambaugh, M.C., and Kabrick, J.M. 2017. Shortleaf pine response to thinning at the onset of a severe drought. Society of American Foresters National Convention. November 15-19, 2017. Albuquerque, NM.

59. Knapp, B.O., Wang, G.G., and Kabrick, J.M. 2017. Underplanting shade intolerant southern pine species: an oxymoron or ecological approach to regeneration? Society of American Foresters National Convention. November 15-19, 2017. Albuquerque, NM.
 60. Dey, D.C., Battaglia, M., Deal, R., Knapp, B.O., O'Hara, K., Schuler, T., and Schweitzer, C.J. 2017. Barriers to natural regeneration. Society of American Foresters National Convention. November 15-19, 2017. Albuquerque, NM.
 61. Jin, W., He, H.S., Knapp, B.O., Aguilar, F.X., Shifley, S.R., and Kabrick, J.M. 2017. Ecological-economic trade-offs of long term pine-oak woodland restoration in the Missouri Ozarks. Natural Areas Conference. October 10-12, 2017. Fort Collins, CO.
 62. *Vickers, L.A., Larsen, D.R., Kabrick, J.M., Dey, D.C., and Knapp, B.O. 2017. Modeling the impact of overstory density on the regeneration dynamics of Missouri Ozark forests. 2017 Forest Vegetation Simulator (FVS) e-Conference. February 28-March 2, 2017.
 63. *Ghilardi, C.R., Knapp, B.O., He, H.S., Larsen, D.R., and Kabrick, J.M. 2017. Evaluation of the Fire and Fuels Extension (FFE) of the Forest Vegetation Simulator (FVS) within the Missouri Ozarks. 2017 Forest Vegetation Simulator (FVS) e-Conference. February 28-March 2, 2017.
- 2016
64. Walker, J.L., Knapp, B.O., Wang, G.G., and Hu, H. 2016. Planting longleaf pine under a loblolly canopy: research results and management guidelines. 11th Biennial Longleaf Alliance Regional Conference, The Longleaf Alliance. November 1-4, 2016. Savannah, GA.
 65. *Vickers, L.A., Larsen, D.R., Dey, D.C., Kabrick, J.M., and Knapp, B.O. 2016. Modeling the impact of overstory density on the regeneration dynamics of Missouri Ozark forests. 2016 Northeastern Mensurationist Organization Conference. November 13-15, 2016. Concord, MA.
 66. *Anderson, S.E., Knapp, B.O., and Kabrick, J.M. 2016. Short- and long-term effects of thinning on shortleaf pine growth and carbon dynamics. Society of American Foresters National Convention. November 2-5, 2016. Madison, WI.
 67. *Ghilardi, C.R., Knapp, B.O., He, H.S., Larsen, D.R., and Kabrick, J.M. 2016. Evaluation of the Fire and Fuels Extension of the Forest Vegetation Simulator within the Missouri Ozarks. Society of American Foresters National Convention. November 2-5, 2016. Madison, WI.
 68. *Rives, R.G., Knapp, B.O., and Olson, M.G. 2016. Oak regeneration in bottomland hardwood forests of northern Missouri: quantifying the competitive environment 15 years after regeneration harvests. Society of American Foresters National Convention. November 2-5, 2016. Madison, WI.
 69. Knapp, B.O., Kabrick, J.M., and Dey, D.C. 2016. Putting the mixed in mixedwoods: silvicultural approaches to shortleaf pine regeneration in pine-oak forests of the Missouri Ozarks. Society of American Foresters National Convention. November 2-5, 2016. Madison, WI.
 70. *‡Good, G., Knapp, B.O., *Vickers, L.A., Larsen, D.R., and Kabrick, J.M. 2016. Evaluation of species height and density after clearcutting and group selection in the Missouri Ozarks. 20th Central Hardwood Forest Conference. March 28-April 1, 2016. Columbia, MO.
 71. Knapp, B.O., and Olson, M.G. 2016. Stump sprouting dynamics during stand initiation following clearcutting a Midwestern bottomland, mixed-species hardwood forest. 20th Central Hardwood Forest Conference. March 28-April 1, 2016. Columbia, MO.
 72. Knapp, B.O., Hullinger, M.A., and Kabrick, J.M. 2016. Effects of fire frequency on long-term stand dynamics of an oak-hickory forest in southeastern Missouri. 20th Central Hardwood Forest Conference. March 28-April 1, 2016. Columbia, MO.
 73. Knapp, B.O., Olson, M.G., and Kabrick, J.M. 2016. Dynamics of Missouri Ozark forests under landscape management: implications for climate change. 20th Central Hardwood Forest Conference. March 28-April 1, 2016. Columbia, MO.

2015

74. Kabrick, J.M., Clark, K.L., Dey, D.C., Kenefic, L.S., Kern, C.C., Knapp, B.O., MacLean, D.A., Raymond, P., D'Amato, A.W., and Waskiewicz, J. 2015. Managing mixedwoods for future forests in eastern North America: current state of knowledge and research needs. Society of American Foresters National Convention. November 3-7, 2015. Baton Rouge, LA.
75. Knapp, B.O., Wang, G.G., Walker, J.L., and Addington, R.N. 2015. Fate of residual canopy trees following harvesting to underplant longleaf pine seedlings in loblolly pine stands in Georgia. 18th Biennial Southern Silvicultural Research Conference. March 2-5, 2015. Knoxville, TN.
76. *Maginel, C., Knapp, B.O., Muzika, R.M., Kabrick, J.M., Olson, E.K. 2015. Landscape-scale prescribed fire: ground flora response and ecological implications. 6th International Fire Ecology and Management Congress. November 16-20, 2015. San Antonio, TX.
77. *Vickers, L.A., Larsen, D.R., Kabrick, J.M., Dey, D.C., and Knapp, B.O. 2015. A strategy for simulating regeneration establishment – stand development hypotheses and empirical models. 18th Biennial Southern Silvicultural Research Conference. March 2-5, 2015. Knoxville, TN.
78. Wang, G.G., Pile, L.S., Knapp, B.O., and Hu, H. 2015. Longleaf pine adaptation to fire: is early height growth pattern critical to fire survival? 18th Biennial Southern Silvicultural Research Conference. March 2-5, 2015. Knoxville, TN.
79. Knapp, B.O., *Hullinger, M.A., and Kabrick, J.M. 2015. Effects of fire frequency on long-term stand dynamics of an oak-hickory forest in southeastern Missouri. Missouri Natural Resources Conference. February 4-6, 2015. Osage Beach, MO.

2014

80. Kabrick, J.M., Dey, D.C., Knapp, B.O., Leahy, M., Olson, M.G., Stambaugh, M.C., and Stevenson, A. 2014. Silvicultural considerations for managing fire-dependent oak woodland ecosystems. 19th Central Hardwoods Forest Conference, March 10-12, 2014. Carbondale, IL.
81. Knapp, B.O. and Kabrick, J. 2014. Effects of long-term prescribed burning on structure, composition, and timber quality of oak-hickory forests in the Missouri Ozarks. 19th Central Hardwoods Forest Conference, March 10-12, 2014. Carbondale, IL.
82. Knapp, B.O., Wang, G.G., Pile, L.S., and Walker, J.L. 2014. Fire effects on a fire-adapted species: effects of simulated prescribed burning on grass-stage longleaf pine seedlings. Society of American Foresters National Convention. October 5-11, 2014. Salt Lake City, UT.
83. Olson, M.G., Stevenson, A., Jensen, R., Kabrick, J., and Knapp, B.O. 2014. Is there evidence of mesophication of oak forests in the Missouri Ozarks? 19th Central Hardwoods Forest Conference, March 10-12, 2014. Carbondale, IL.
84. Vickers, L.A., Larsen, D.R., Kabrick, J.M., Dey, D.C., and Knapp, B.O. 2014. A potential method for assessing tree performance. 19th Central Hardwoods Forest Conference, March 10-12, 2014. Carbondale, IL.

2013

85. Knapp, B.O., Olson, M.G., Larsen, D.R., Kabrick, J., and Jensen, R. 2013. MOFEP: A success story for long-term, landscape-scale, collaborative silvicultural research. Society of American Foresters National Convention. October 23-27, 2013. Charleston, SC.
86. Knapp, B.O., Wang, G.G., Walker, J.L., and Hu, H. 2013. From loblolly to longleaf: five-year results of a longleaf pine restoration study at two ecologically distinct sites. 17th Biennial Southern Silvicultural Research Conference. March 5-7, 2013. Shreveport, LA.
87. Wang, G.G., Knapp, B.O., Hu, H., and Walker, J.L. 2013. Restoring longleaf pine ecosystems in loblolly pine plantations. Society of American Foresters National Convention. October 23-27, 2013. Charleston, SC.

2011

88. Knapp, B.O., Walker, J.L., and Wang, G.G. 2011. Effects of longleaf pine restoration management on ground layer vegetation in existing loblolly pine forests of the southeastern United States. 96th Ecological Society of America Annual Meeting. August 7-12, 2011. Austin, TX.
89. Knapp, B.O., Wang, G.G., Hu, H., Walker, J.L., and Tennant, C. 2011. Developing silvicultural protocols for longleaf pine (*Pinus palustris* Mill.) ecosystem restoration in loblolly pine (*Pinus taeda* L.) forests at Fort Benning, GA. 16th Biennial Southern Silvicultural Research Conference. February 15-17, 2011. Charleston, SC.

2010

90. Knapp, B.O., Hu, H., Walker, J.L., and Wang, G.G. 2010. Restoration of native grass species following harvesting treatments at Camp Lejeune, NC and Fort Benning, GA. 71st Annual Meeting of the Association of Southeastern Biologists. April 8-10, 2010. Asheville, NC.
91. Knapp, B.O., Wang, G.G., and Walker, J.L. 2010. Resource availability and planted longleaf pine (*Pinus palustris*) seedling response across canopy gaps in a loblolly pine (*Pinus taeda*) forest. 95th Ecological Society of America Annual Meeting. August 1-6, 2010. Pittsburgh, PA.
92. Walker, J.L. and Knapp, B.O. 2010. Wild leek (*Allium tricoccum*) populations in the Southern Appalachians: 1999-2009. 95th Ecological Society of America Annual Meeting. August 1-6, 2010. Pittsburgh, PA.

2009

93. Knapp, B.O., Walker, J.L., Hu, H., and Wang, G.G. 2009. Longleaf pine restoration with non-traditional silviculture: early effects of harvesting treatments on ground layer vegetation at two military installations. Annual Symposium and Membership Meeting of the Southeastern Chapter of the Society for Ecological Restoration. March 24-26, 2009. Auburn, AL.

2008

94. Hu, H., Wang, G.G., Walker, J.L., and Knapp, B.O. 2008. Effects of canopy treatments on first year growth of planted longleaf pine seedlings: preliminary results. 15th Biennial Southern Silvicultural Research Conference. November 17-20, 2008. Hot Springs AR.

2007

95. Knapp, B.O., Walker, J.L., Cohen, S. and Silletti, A.M. 2007. Early effects of site preparation on the native ground layer vegetation of a hydric soil in North Carolina, USA. 2007 Ecological Society of America/Society for Ecological Restoration Joint Meeting. August 4-11, 2007. San Jose, CA.
96. Knapp, B.O., Wang, G.G., and Walker, J.L. 2007. Artificially regenerating longleaf pine on wet sites: preliminary analysis of effects of site preparation treatments on early survival and growth. 14th Biennial Southern Silvicultural Research Conference. February 26-March 1. Athens, GA.

2006

97. Knapp, B.O., Wang, G.G., and Walker, J.L. 2006. Effects of site preparation treatments on microsite conditions in relation to growth and survival of planted longleaf pine seedlings in North Carolina. Ecological Society of America 91st Annual Meeting. August 6-11. Memphis, TN.

POSTER PRESENTATIONS

Professional Conferences - *denotes student advisee; ‡denotes student competition award

I have been an author on 83 poster presentations, of which student advisees have delivered 43 and I have delivered 18.

2023

1. *‡Scott, S., Knapp, B.O., Pile Knapp, L.S. 2023. Pollinator habitat in log landings (PHiLL) Project. Biennial Southern Silvicultural Research Conference, March 21-23, 2023. Nacogdoches, TX.
2. *Goldberg, I.M., Knapp, B.O., Stambaugh, M.C., Huffman, A., Vaughan, I. 2023. Aging the grass stage from a known aged outplanting of longleaf pine using modern dendrochronological techniques. Biennial Southern Silvicultural Research Conference, March 21-23, 2023. Nacogdoches, TX.
3. *Scott, S., Chapman, A., Pile Knapp, L., Knapp, B.O., Kabrick, J.M., Dey, D. 2023. Pollinator habitat in log landings (PHiLL) Project. Missouri Natural Resources Conference. February 7-9, 2023. Osage Beach, MO.
4. *Chapman, A., Pile Knapp, L., Knapp, B.O., Newbold, C., Halsey, S. 2023. Are we succeeding in controlling invasive sericea lespedeza (*Lespedeza cuneata*) populations at Prairie Fork Conservation Area? Missouri Natural Resources Conference. February 7-9, 2023. Osage Beach, MO.

2022

5. *Huffman, A.L., Knapp, B.O., Dey, D.C. 2022. Light availability and deer herbivory effects on planted white oak (*Quercus alba*) seedlings. Central Hardwood Forest Conference. April 6-8, 2022. Morgantown, WV.
6. *Clubb, J., *Winfrey, B., Pile Knapp, L.S., Knapp, B.O. 2022. Impacts of seeding and soil treatments on log landing pollinator habitat. Missouri Natural Resources Conference. February 2-4, 2022. Osage Beach, MO.
7. *Fillingim, H., Knapp, B.O. 2022. Effects of fire season and heat exposure on shortleaf pine seed germination. Missouri Natural Resources Conference. February 2-4, 2022. Osage Beach, MO.
8. *Huffman, A.L., Knapp, B.O., Dey, D.C. 2022. Light availability and deer herbivory effects on planted white oak (*Quercus alba*) seedlings. Missouri Natural Resources Conference. February 2-4, 2022. Osage Beach, MO.

2021

9. *Jensen, G.L., Knapp, B.O., Cannon, J.G. 2021. Turning up the heat: do adaptive silviculture treatments affect applied high intensity fire behavior? 9th International Fire Ecology and Management Congress; Association for Fire Ecology. November 30 – December 3, 2021.
10. Knapp, B.O., Anderson, D., *Gillespie, K., *Kerley, D., *Maile, M., 2021. Missouri maple syrup: production methods and lesson learned from the School of Natural Resources sugar shack. Missouri Natural Resources Conference. February 2-4, 2021.
11. *Harpold, T., Knapp, B.O. 2021. Oak regeneration in the Missouri Ozarks: a preliminary analysis of how site variables and stocking affect temporal patterns of advanced reproduction abundance. Missouri Natural Resources Conference. February 2-4, 2021.
12. Pile Knapp, L.S., Knapp, B.O., Newbold, C. 2021. Are we succeeding in controlling invasive sericea lespedeza (*Lespedeza cuneata*) populations at Prairie Fork Conservation Area? Missouri Natural Resources Conference. February 2-4, 2021.

2020

13. Knapp, B.O., *Crouch, C.D., Wang, G.G., Walker, J.L. 2020. Site preparation for longleaf pine restoration on hydric sites: effects on stand development and individual tree growth through 15 years. SERDP and ESTCP 2020 Symposium. November 30-December 4, 2020.

14. *Hayford, I., Knapp, B.O., and Buchanan, M. 2020. Effects of overstory harvest and midstory release on oak regeneration in bottomland forests of northern Missouri. Missouri Natural Resources Conference. February 4-6, 2020. Osage Beach, MO.
15. *Maddox, D., Knapp, B.O., Pile, L.S., Kabrick, J.M., Dey, D.C., and Newbold, C. 2020. Reintroduction of macroflora for savanna reconstruction and woodland restoration: a tale of trees and seeds. Missouri Natural Resources Conference. February 4-6, 2020. Osage Beach, MO.
16. Steppe, C., Pile, L.S., Knapp, B.O., and Newbold, C. 2020. Are we succeeding in controlling invasive sericea lespedeza (*Lespedeza cuneata*) populations at Prairie Fork Conservation Area? Missouri Natural Resources Conference. February 4-6, 2020. Osage Beach, MO.

2019

17. Knapp, B.O., *Crouch, C.D., Wang, G.G., and Walker, J.L. 2019. Site preparation for longleaf pine restoration on hydric sites: effects on stand development and individual tree growth through 15 years. SERDP and ESTCP Symposium: Enhancing DoD's Mission Effectiveness. December 3-5, 2019. Washington, DC.
18. Higgins, S.J., Kabrick, J.M., Knapp, B.O., Abney, M. 2019. Soil health parameters on forested landscapes as a function of past land use. Soil Science Society of American Annual Meeting. November 10-12, 2019. San Antonio, TX.
19. *Hayford, I., Knapp, B.O., Buchanan, M. 2019. Effects of overstory harvest and midstory release on oak regeneration in bottomland forests in northern Missouri. Society of American Foresters National Convention. October 30-November 3, 2019. Louisville, KY.
20. *Lamb, S.T., Knapp, B.O., Pile, L.S., Fraser, J. 2019. Invasive plant survey of Baskett Research Area and Mark Twain National Forest in mid-Missouri. Society of American Foresters National Convention. October 30-November 3, 2019. Louisville, KY.
21. *Maddox, D., Knapp, B.O., Pile, L.S., Kabrick, J.M., Dey, D.C., and Newbold, C. 2019. Reintroduction of macroflora for a savanna reconstruction and woodland restoration: a tale of trees and seeds. Society of American Foresters National Convention. October 30-November 3, 2019. Louisville, KY.
22. Knapp, B.O., *Kerley, D., and Wickenhauser, B. 2019. Missouri maple syrup: production methods and lessons learned from the School of Natural Resources sugar shack. Missouri Natural Resources Conference. February 5-7, 2019. Osage Beach, MO.

2018

23. Knapp, B.O., *Crouch, C.D., Wang, G.G., and Walker, J.L. 2018. Site preparation for longleaf pine restoration on hydric sites: effects on stand development and individual tree growth through 15 years. SERDP and ESTCP Symposium: Enhancing DoD's Mission Effectiveness. November 27-29, 2018. Washington, DC.
24. Blood, B.L., Wang, G.G., Knapp, B.O., Larsen, D.R., Oswalt, C.M., and Pile, L.S. 2018. Testing bark thickness estimate used in fire effect modeling systems. Society of American Foresters National Convention. October 3-7, 2018. Portland, OR.
25. *Nugraha, M.N., Knapp, B.O., Larsen, D.R., Wicksono, A., Nugraha, A.K., and Duda, L. 2018. Height-age model for *Acacia mangium* plantations in East Kalimantan, Indonesia. Society of American Foresters National Convention. October 3-7, 2018. Portland, OR.
26. Blood, B.L., Wang, G.G., Knapp, B.O., Larsen, D.R., Oswalt, C.M., and Pile, L.S. 2018. Testing bark thickness estimate used in fire effect modeling systems. 103rd Annual Meeting of the Ecological Society of America. August 5-10, 2018. New Orleans, LA.

27. *Beckerman, T., Weegman, M., and Knapp, B.O. 2018. Forest wildlife response to legacy effects of land management in mid-Missouri. University of Missouri, School of Natural Resources Research Day. May 3, 2018.
 28. *Crouch, C.D., Knapp, B.O., Wang, G.G., and Walker, J.L. 2018. Site preparation for longleaf pine restoration on hydric sites: effects on short-term seedling response and stand development through 15 years. University of Missouri, School of Natural Resources Research Day. May 3, 2018.
 29. *Farver, M., Knapp, B.O., and Weegman, M. 2018. Restoration ecology: impacts of agricultural use and abandonment on forest structure and composition in central Missouri. University of Missouri, School of Natural Resources Research Day. May 3, 2018.
 30. *Kerley, D.F., Knapp, B.O., and Wickenhauser, B. 2018. Operational techniques and data collection for sugar maple (*Acer saccharum*) syrup production. University of Missouri, School of Natural Resources Research Day. May 3, 2018.
 31. *Nugraha, M.N., Hastanto, H., Wicaksono, A., Knapp, B.O., Muzika, R.M., Nugraha, A.K., and Wright, J.A. 2018. Evaluation of important pest and disease incidence over time in a new tropical *Acacia mangium* plantation in east Borneo, Indonesia. University of Missouri, School of Natural Resources Research Day. May 3, 2018.
 32. *Wachuta, M., Knapp, B.O., Dey, D.C., Wang, G.G., Arthur, M.A., Hutchinson, T., Schuler, T.M., Schweitzer, C., and Wiedenbeck, J. 2018. Accuracy of FOFEM mortality predictions for eastern hardwood species after one prescribed burn. University of Missouri, School of Natural Resources Research Day. May 3, 2018.
 33. *Nugraha, M.N., Hastanto, H., Wicaksono, A., Knapp, B.O., Muzika, R.M., Nugraha, A.K., and Wright, J.A. 2018. Evaluation of important pest and disease incidence over time in a new tropical *Acacia mangium* plantation in east Borneo, Indonesia. 2018 International Society of Tropical Foresters Conference. February 2, 2018. Yale University.
- 2017
34. Refsland, T., Knapp, B.O., Fraterrigo, J. 2017. Effects of experimentally manipulated fire regimes on the response of forests to drought. American Geophysical Union Fall Meeting. December 11-15, 2017. New Orleans, LA.
 35. *Crouch, C.D., Knapp, B.O., Wang, G.G., and Walker, J.L. 2017. Site preparation for longleaf pine restoration on hydric sites: effects on short-term seedling response and stand development through 15 years. SERDP and ESTCP Symposium: Enhancing DoD's Mission Effectiveness. November 28-30, 2017. Washington, DC.
 36. *Crouch, C.D., Knapp, B.O., Wang, G.G., and Walker, J.L. 2017. Site preparation for longleaf pine restoration on hydric sites: effects on short-term seedling response and stand development through 15 years. Society of American Foresters National Convention. November 15-19, 2017. Albuquerque, NM.
 37. *Wachuta, M., Knapp, B.O., Dey, D.C., Wang, G.G., Arthur, M.A., Hutchinson, T., Schuler, T.M., Schweitzer, C., and Wiedenbeck, J. 2017. Accuracy of FOFEM mortality predictions for eastern hardwood species after one prescribed burn. Society of American Foresters National Convention. November 15-19, 2017. Albuquerque, NM.
 38. Kabrick, J.M., *Lyczak, S.J., Knapp, B.O., Dey, D.C., and Larsen, D.R. 2017. Survival and growth of 1-0 *Pinus echinata* seedlings relative to planted and natural hardwoods for restoration. 3rd Restoring Forests: Regeneration and Ecosystem Function for the Future, IUFRO Conference. September 12-14. Lund, Sweden.

39. *‡Curtin, P.J., Knapp, B.O., Jack, S.B., and Nieminen, M.F. 2017. Survival and growth of longleaf pine seedlings over a 10-year period in southwestern GA. 19th Biennial Southern Silvicultural Research Conference. March 13-16. Blacksburg, VA.
40. *Vickers, L.A., Larsen, D.R., Kabrick, J.M., Dey, D.C., and Knapp, B.O. 2017. Modeling the impacts of overstory density on regeneration dynamics of Missouri Ozark forests. 19th Biennial Southern Silvicultural Research Conference. March 13-16. Blacksburg, VA.
41. *Curtin, P.J., Knapp, B.O., and Jack, S.B. 2017. Canopy recruitment dynamics in naturally regenerated longleaf pine (*Pinus palustris*) woodlands. Joseph W. Jones Ecological Research Center Annual Symposium. February 2, 2017.
42. *Dick, D.L., Kabrick, J.M., Goynes, K.W., and Knapp, B.O. 2017. Variation in soil carbon across an oak-pine composition gradient. Missouri Natural Resources Conference. February 1-3, 2017. Osage Beach, MO.
43. *Maginel, C.J., Knapp, B.O., Muzika, R.M., Olson, E.K., and Stevenson, A.P. 2017. Prescribed fire promotes landscape-scale ground flora compositional shifts. Missouri Natural Resources Conference. February 1-3, 2017. Osage Beach, MO.
- 2016
44. *Vickers, L.A., Larsen, D.R., Dey, D.C., Kabrick, J.M., and Knapp, B.O. 2016. Modeling the impacts of overstory density on the regeneration dynamics of Missouri Ozark Forests. Society of American Foresters National Convention. November 2-5, 2016. Madison, WI.
45. *Vickers, L.A., McWilliams, W.H., Knapp, B.O., Dey, D.C., Kabrick, J.M., Larsen, D.R., Saunders, M.R., Shifley, S.R., and Westfall, J.A. 2016. Evaluating reproduction adequacy in the Central States using the NRS-FIA Regeneration Indicator. Society of American Foresters National Convention. November 2-5, 2016. Madison, WI.
46. *O'Brien, T.G., and Knapp, B.O. 2016. Show MO carbon storage: an assessment of standing forest carbon in mid-Missouri. Undergraduate Research and Creative Achievements Forum, University of Missouri. April 26, 2016. Columbia, MO.
47. *Anderson, S.E., Knapp, B.O., and Kabrick, J.M. 2016. Effects of long-term density management on carbon storage in oak-hickory forests of the Missouri Ozarks. 20th Central Hardwood Forest Conference. March 28-April 1, 2016. Columbia, MO.
48. *Ghilardi, C., Knapp, B.O., He, H., Larsen, D.R., and Kabrick, J.M. 2016. Evaluation of the Fire and Fuels Extension of the Forest Vegetation Simulation within the Missouri Ozarks. 20th Central Hardwood Forest Conference. March 28-April 1, 2016. Columbia, MO.
49. Knapp, B.O., Marschall, J.M., and Stambaugh, M.C. 2016. Effects of long-term prescribed burning on timber value in hardwood forests of the Missouri Ozarks. 20th Central Hardwood Forest Conference. March 28-April 1, 2016. Columbia, MO.
50. *Vickers, L.A., Larsen, D.R., Dey, D.C., Kabrick, J.M., and Knapp, B.O. 2016. Modeling the impact of overstory density on the regeneration dynamics of Missouri Ozark forests. 10th IUFRO International Workshop on Uneven-aged Silviculture. May 31-June 2, 2016. Little Rock, AR.
51. *Vickers, L.A., McWilliams, W., Knapp, B.O., Dey, D.C., Kabrick, J.M., Larsen, D.R., Shifley, S., and Westfall, J. 2016. An evaluation of reproduction adequacy for forests in the Central Hardwood Region. 20th Central Hardwood Forest Conference. March 28-April 1, 2016. Columbia, MO.
52. *Anderson, S.E., Knapp, B.O., and Kabrick, J.M. 2016. Effects of long-term density management on carbon storage in oak-hickory forests of the Missouri Ozarks. Missouri Natural Resources Conference. February 3-5, 2016. Osage Beach, MO.

53. *Ghilardi, C., Knapp, B.O., Larsen, D.R., and He, H. 2016. Evaluation of the Fire and Fuels Extension of the Forest Vegetation Simulation within the Missouri Ozarks. Missouri Natural Resources Conference. February 3-5, 2016. Osage Beach, MO.
54. *Dick, D.L., Kabrick, J.M., and Knapp, B.O. 2016. Organic horizon depth and mass is related to distance from shortleaf pines. Missouri Natural Resources Conference. February 3-5, 2016. Osage Beach, MO.

2015

55. *Maginel, C.J., Knapp, B.O., Muzika, R.M., Olson, E.K., and Stevenson, A.P. 2015. Prescribed fire promotes landscape-scale ground flora compositional shifts. Natural Areas Conference. November 3-5, 2015. Little Rock, AR.
56. *Vickers, L.A., Larsen, D.R., Knapp, B.O., Kabrick, J.M., and Dey, D.C. 2015. Reference charts, a quantitative methodology for assessing tree performance. 18th Biennial Southern Silvicultural Research Conference. March 2-5, 2015. Knoxville, TN.
57. *Vickers, L.A., Larsen, D.R., Knapp, B.O., Kabrick, J.M., and Dey, D.C. 2015. The impact of overstory density on sapling height growth in the Missouri Ozarks. 18th Biennial Southern Silvicultural Research Conference. March 2-5, 2015. Knoxville, TN.
58. *Good, G., Knapp, B.O., Larsen, D.R., Kabrick, J.M., and Jensen, R. 2015. Composition and growth of forest regeneration following two silvicultural prescriptions in the Missouri Ozarks. Missouri Natural Resources Conference. February 4-6, 2015. Osage Beach, MO.
59. *Maginel, C.J., Knapp, B.O., Thombs, L.A., Olson, E.K., and Muzika, R.M. 2015. Drip torches and *Desmodium*: landscape-scale prescribed fire effects on ground flora. Missouri Natural Resources Conference. February 4-6, 2015. Osage Beach, MO.
60. *Rives, R.G., Knapp, B.O., and Olson, M.G. 2015. Bottomland hardwood management: determining the effectiveness of past silvicultural treatments implemented to increase oak species regeneration. Missouri Natural Resources Conference. February 4-6, 2015. Osage Beach, MO.

2014

61. Kabrick, J.M., Knapp, B.O., Dey, D.C., and Larsen, D.R. 2014. Competitive dynamics of underplanted shortleaf pine for restoration in the Ozark Highlands. 2nd Restoring Forests Congress, October 13-15, 2014, West Lafayette, IN.
62. *Maginel, C.J., Knapp, B.O., and Muzika, R.M. 2014. Effects of repeated landscape-scale prescribed burning on conservative Ozark woodland ground flora. 19th Central Hardwoods Forest Conference, March 10-12, 2014. Carbondale, IL.
63. *Hullinger, M.A. and Knapp, B.O. 2014. Investigating long-term effects of prescribed burning on stand structure in a Missouri Ozark oak/hickory forest. 2014 Missouri Natural Resources Conference. February 5-7, 2014. Osage Beach, MO.
64. *Maginel, C.J., Knapp, B.O., and Muzika, R.M. 2014. Effects of repeated landscape-scale prescribed burning on conservative Ozark woodland ground flora. 2014 Missouri Natural Resources Conference. February 5-7, 2014. Osage Beach, MO.

2013

65. Pile, L.S., Wang, G.G., Walker, J.L., and Knapp, B.O. 2013. Disturbance history affects the invisibility of forest communities by Chinese tallow (*Triadica sebifera*). Society of American Foresters National Convention, October 23-27, 2013. Charleston, SC.
66. Knapp, B.O., Wang, G.G., Clark, S.L., Pile, L.S., and Schlarbaum, S.E. 2013. Photosynthetic response of field-planted American chestnut (*Castanea dentata*), Chinese chestnut (*Castanea*

mollissima), and chestnut hybrid seedlings to different light levels. 17th Biennial Southern Silvicultural Research Conference. March 5-7, 2013. Shreveport, LA.

67. Knapp, B.O., Kabrick, J.M., and Olson, M.G. 2013. Contemporary distribution, density, structure, and regeneration potential of shortleaf pine in pine-oak mixtures with respect to site factors in the Missouri Ozark Highlands. Missouri Natural Resources Conference, January 30-February 1. Osage Beach, MO.
68. Kabrick, J.M., Leahy, M., Grabner, K.W., Stambaugh, M.C., Knapp, B.O., and Olson, M.G. 2013. Sustaining woodlands: allowing for tree regeneration and recruitment using area-based scheduling of prescribed burning. Missouri Natural Resources Conference, January 30-February 1. Osage Beach, MO.

2012

69. Knapp, B.O., Hu, H., Tennant, C., Wang, G.G., and Walker, J.L. 2012. Effects of underplanting and silvicultural manipulation on longleaf pine ecosystem restoration. Society of American Foresters National Convention, October 24-28. Spokane, WA.
70. Walker, J., Knapp, B.O., and Cohen, S. 2012. Longleaf pine establishment affects site restoration potential through changes in vegetation, fuels, and fire behavior. Ecological Society of America 97th Annual Meeting, August 5-10. Portland, OR.

2011

71. Knapp, B.O., Hu, H., Tennant, C., Ryu, S.R., Walker, J.L., and Wang, G.G. 2011. Managing declining pine stands for red-cockaded woodpecker habitat at Fort Benning, GA and Camp Lejeune, NC (RC-1474). The Partners in Environmental Technology Technical Symposium and Workshop. November 29-December 1, 2011. Washington, DC.
72. Hu, H., Wang, G.G., Knapp, B.O., and Walker, J.L. 2011. Effects of silvicultural treatments on longleaf pine seedlings and ground layer vegetation at Camp Lejeune, NC. 16th Biennial Southern Silvicultural Research Conference. February 15-17, 2011. Charleston, SC.

2010

73. Knapp, B.O., Hu, H., Tennant, C., Ryu, S.R., Walker, J.L., and Wang, G.G. 2010. Evaluating effects of restoration management on longleaf pine ecosystem establishment at Fort Benning, GA and Camp Lejeune, NC. The Partners in Environmental Technology Technical Symposium and Workshop. November 30-December 2, 2010. Washington, DC.

2009

74. Knapp, B.O., Hu, H., Walker, J.L., and Wang, G.G. 2009. From loblolly to longleaf: developing silvicultural protocols for longleaf pine restoration in loblolly pine stands. The Partners in Environmental Technology Technical Symposium and Workshop. December 1-3, 2009. Washington, DC.

2008

75. Knapp, B.O., Ryu, S.R., Hu, H., Walker, J.L., and Wang, G.G. 2008. From loblolly to longleaf: determining loblolly pine stand susceptibility to decline and silvicultural protocols for longleaf pine restoration. The Partners in Environmental Technology Technical Symposium and Workshop. December 2-4, 2008. Washington, DC.
76. Knapp, B.O. and Walker, J.L. 2008. Using existing growth models to predict RCW habitat development following site preparation: pitfalls of the process and potential growth response. 15th Biennial Southern Silvicultural Research Conference. November 17-20, 2008. Hot Springs, AR.
77. Ryu, S.R., Wang, G.G., Walker, J.L., and Knapp, B.O. 2008. A preliminary assessment on the health of loblolly pine stands at Fort Benning, GA. 15th Biennial Southern Silvicultural Research Conference. November 17-20, 2008. Hot Springs, AR.

2007

78. Knapp, B.O., Walker, J.L., Cohen, S. and Silletti, A.M. 2007. Plantation management effects on ground layer vegetation: short-term effects diminish but long-term differences are evident. The Partners in Environmental Technology Technical Symposium and Workshop. December 4-6, 2007. Washington, DC.
79. Ryu, S.R., Wang G.G., Walker, J.L., Knapp, B.O., and Wangen, S. 2007. Predicting the occurrence of loblolly pine decline in potential red-cockaded woodpecker habitat at Fort Benning, Georgia. 14th Biennial Southern Silvicultural Research Conference. February 26-March 1. Athens, GA.

2005

80. Cohen, S., Walker, J.L., and Knapp, B.O. 2005. Restoring longleaf pine on hydric soils: early effects on soil chemistry and seedling survivorship. Soil Science Society of America International Meeting. November 6-10, 2005. Salt Lake City, Utah.
81. Knapp, B.O., Wang, G.G., and Walker, J.L. 2005. Early survival and growth of planted longleaf pine seedlings in relation to light, soil moisture and soil temperature. The 13th Biennial Southern Silvicultural Conference. February 28-March 4. Memphis, TN.
82. Knapp, B.O., Wang, G.G., Van Lear, D.H., and Walker, J.L. 2005. Can root biomass of advance white oak regeneration be reliably predicted from diameter and height? The 13th Biennial Southern Silvicultural Conference. February 28-March 4. Memphis, TN.

2004

83. Knapp, B.O., Wang, G.G., and Walker, J.L. 2004. Effects of site preparation on the first year growth of planted longleaf pine seedlings. Society of American Foresters and Canadian Institute of Forestry Joint Annual General Meeting and Convention. October 2-4. Edmonton, Alberta, Canada.

WEBINARS

- Knapp, B.O. 2016. Repeated burning for oak woodland restoration: long-term effects on stand development in the Missouri Ozarks. Oak Woodlands and Forests Fire Consortium. 2016 Webinar Series, December 6, 2016.

WORKSHOPS

- Bottomland hardwood management training, Missouri Department of Conservation and Missouri Society of American Foresters October 24-25, 2022
- Fueling Collaboration: Timber/Fire Management in Mixedwoods, Oak Woodlands and Forests Fire Consortium December 9, 2021
- Site preparation field day at Camp Lejeune Marine Corps Base June 24-25, 2021
- Organized Virtual Field Day for Baskett Wildlife Research and Education Center, including 10 videos October 13, 2020
- Presented session on timber stand improvement and creating silvopasture at the 2018 Agroforestry Academy, Center for Agroforestry, University of Missouri August 27, 2009 July 26, 2018
- Organized and led field tour for 'Mixedwoods Initiative' April 11-12, 2018
- Presented research and tour for Missouri chapter of Society of American Foresters fall meeting at Deer Ridge Conservation Area October 30, 2017
- Presented session on timber stand improvement and creating silvopasture at July 27, 2017

Silvopasture Showcase at Green Pastures Farm, Center for Agroforestry, University of Missouri

- Presented at Bottomland Hardwood Management Workshop, hosted by Missouri Department of Conservation, Cape Girardeau, MO March 21, 2017
- Presented at USDA Forest Service Mark Twain National Forest, Region 9 Silviculture Workshop, Salem MO March 7, 2017
- Contributed to organization of mixedwoods field tour prior to Society of American Foresters national meeting, with approximately 10 participants November 1, 2016
- Presented session on timber stand improvement and creating silvopasture at the 2016 Agroforestry Academy, Center for Agroforestry, University of Missouri July 28, 2016
- Presented at the Ecological Society of American SEEDS program at the Sinkin Experimental Forest May 21, 2016
- Presented at the woodlands field tour, associated with the 20th Central Hardwood Forest Conference April 1, 2016
- Presented at MOFEP field tour, associated with the 20th Central Hardwood Forest Conference March 28, 2016
- Participated in “Shortleaf pine training” workshop, organized and led by Dr. Wayne Clatterbuck of University of Tennessee and designed for Tennessee Division of Forestry. I taught a section on artificial regeneration of shortleaf pine. August 18-20, 2015
- Frequent Fire Conifer Ecosystems – Hosted by the USDA Forest Service and the Joseph W. Jones Ecological Research Center at Newton, GA. January 7-9, 2015
- I participated in the “Forest Stand Dynamics” workshop, organized and led by Dr. David Larsen of University of Missouri and hosted by the Missouri Department of Conservation for forestry professionals within the agency. I taught a section on using fire as a silvicultural tool. April 22, 2014
- Participated in leading a workshop for land managers at Marine Corps Base Camp Lejeune, NC to communicate research results for converting loblolly pine forests to longleaf pine and to discuss operational challenges to restoration efforts. The workshop included a presentation and office discussion along with field tours. June 25, 2012
- Participated in leading a workshop for land managers at Fort Benning, GA to communicate research results for converting loblolly pine forests to longleaf pine. The workshop included several presentations and office discussion of the results and challenges to implementation. August 27, 2009

POPULAR PRESS

- Prescribed forest fire frequency should be based on land management goals. Science Daily. April 18, 2017
- A sweet success – CAFNR news. Logan Jackson. March 24, 2017.
- Warm weather crimps flow of sap – and syrup – at MU maple grove. The Missourian. February 28, 2017
- Midwestern Foresters’ Conclave features flying wood, flannel, and plenty of beards. The Missourian. April 16, 2016.

- Forestry club to host conclave – CAFNR news. Logan Jackson. March 28, 2016.

GRANT PROPOSALS

Awarded Funding

I have been awarded a total of \$6,776,333 in funding, including \$2,592,934 in competitive research grants from external funding sources.

\$314,511	Missouri Department of Conservation Sustainability of uneven-aged oak forest management in the Missouri Ozarks: how are current practices affecting white oak regeneration and recruitment? Grant type: competitive, external (Co-PIs: Stambaugh, M.C., Knapp, B.O. – Contribution: 50%)	2022-2025
\$234,644	USDA National Institute of Food and Agriculture Agroforestry for climate risk management: effectiveness of windbreaks in reducing crop loss in Midwest, USA Grant type: competitive, external (Co-PIs: Thapa, B., Knapp, B.O. – Contribution: 100%)	2022-2025
\$2,877,906	USDA Agriculture Research Service Improving resilience and diversification of small farms through agroforestry and specialty crops Grant type: non-competitive, external (Contribution: 100%)	2020-2025
\$27,983	Jones Center at Ichauway Silvicultural strategies for promoting longleaf pine recruitment in multi-aged stands Grant type: non-competitive, external (Contribution: 100%)	2022-2024
\$158,038	Missouri Department of Conservation MOFEP woody vegetation Grant type: non-competitive research, external (Contribution: 100%)	2022-2023
\$164,113	TLL Temple Foundation Regenerating mixed pine-oak forests in east Texas ecosystems of Boggy Slough Conservation Area Grant type: fellowship, external (Contribution: 100%)	2021-2023
\$19,354	US Geological Survey National Atmospheric Deposition Program Grant type: non-competitive, external (Contribution – 100%)	2021-2023
\$238,500	US Department of Agriculture, National Institute of Food and Agriculture, National Needs Graduate and Postgraduate Fellowship Grants Program National Need for Disciplinary Integration in Forest Resource Management Grant type: competitive teaching, external	2020-2024

	(Co-PIs: Nilon, C.H., <u>Knapp, B.O.</u> , Rotman, R.M., and Saunders, L.A. – Contribution: 32%)	
\$24,402	Allegheny Hardwood Utilization Group Examining the extent, severity, and potential causes of increased birch regeneration Grant type: non-competitive research, external	2020-2021
	(Co-PIs: Vickers, L.A., Knapp, B.O. – Contribution: 100%)	
\$21,852	Joseph W Jones Ecological Research Center Effects of adaptive silviculture for climate change on fuel characteristics, fire behavior, and fire effects in longleaf pine ecosystems of southwestern GA Grant type: non-competitive research, external	2020-2021
	(PI: Knapp, B.O. – Contribution: 100%)	
\$60,000	L-A-D Foundation Are current harvest levels sustainable? Describing forest regeneration through time across Pioneer Forest Grant type: non-competitive research, external	2020-2022
	(PI: Knapp, B.O. – Contribution: 100%)	
\$136,631	USDA Forest Service, Northern Research Station Can we facilitate the rapid establishment of functional pollinator habitat in log landings? Grant type: non-competitive research, external	2020-2025
	(Co-PIs: Kabrick, J.M., Pile, L.S., Knapp, B.O. – Contribution: 10%)	
\$313,104	Missouri Department of Conservation Evaluating the effect of greentree reservoir water management on the health, productivity, and regeneration of desirable bottomland hardwood forest tree species Grant type: competitive, external	2019-2023
	(Co-PIs: Knapp, B.O., Stambaugh, M.C. – Contribution: 50%)	
\$57,000	USDA Forest Service, Northern Research Station Evaluating factors affecting regeneration challenges of upland oak species (<i>Quercus</i> spp.) in mid-Missouri Grant type: non-competitive research, external	2019-2023
	(Contribution: 100%)	
\$205,974	Missouri Department of Conservation Effects of even-aged and uneven-aged forest management on ground flora and soft mast production in Missouri's Ozark forests and woodlands Grant type: competitive research, external	2018-2020
	(Co-PIs: Olson, E., Knapp, B.O., Muzika, R.M. – Contribution: 25%)	
\$498,441	US Department of Agriculture, National Institute of Food and Agriculture Socio-economic and environmental implications of growth in woody biomass use for biopower Grant type: competitive research, external	2017-2020
	(Co-PIs: Knapp, B.O., McGarvey, R. – Contribution: 60%)	
\$81,599	US Department of Agriculture, Forest Service, Forest Health Monitoring Program Do forest health issues in oak forests of the eastern US accelerate	2018-2020

	compositional shifts to non-oak species? Grant type: competitive research, external (Co-PIs: Vickers, L.A., Knapp, B.O., Dey, D.C. – Contribution: 40%)	
\$4,880	SNR Mini-Grant Program	2017
	Restoration ecology and agricultural legacy: developing research, teaching, and demonstration opportunities at Baskett Wildlife Research and Education Center Grant type: teaching, internal (PI: <u>Knapp, B.O.</u> , Co-PIs: Li, C., Weegman, M., Wood, J. – Contribution: 75%)	
\$3,977	CAFNR International Programs Incentive Fund	2017
	Developing international, experiential learning opportunities in Costa Rica: immersion in culture and natural resource practice Grant type: internal, teaching (PI: <u>Knapp, B.O.</u> , Co-PI: Muzika, R.M. – Contribution: 50%)	
\$126,480	Evaluating effects of method and timing of release on shortleaf pine regeneration in the Missouri Ozarks	2017-2022
	Grant type: non-competitive research, external (PI: <u>Knapp, B.O.</u> , Co-PI: Kabrick, J.M. – Contribution: 75%)	
\$249,115	Strategic Environmental Research and Development Program, US Department of Defense	2017-2019
	Site preparation for longleaf pine restoration on hydric sites: stand development and ground layer response 15 years following planting Grant type: competitive research, external (PI: <u>Knapp, B.O.</u> ; Collaborators: Wang, G.G., Walker, J.L. - Contribution: 80%)	
\$37,735	United States Geological Survey	2017-2021
	National Atmospheric Deposition Program Grant type: non-competitive service, external (PI: <u>Knapp, B.O.</u> ; Contribution: 100%)	
\$284,358	Joint Fire Science Program, Sponsored by USDA and USDI	2016-2019
	Modeling fire-induced tree mortality for eastern hardwood species Grant type: competitive research, external (PI: <u>Knapp, B.O.</u> ; Co-PIs: Wang, G.G., Dey, D.C. – Contribution: 50%)	
\$25,000	USDA Forest Service	2016-2019
	The survival and performance of improved shortleaf pine seedlings Grant type: non-competitive research, external (PI: Kabrick, J.M., Co-PIs: <u>Knapp, B.O.</u> , Walter, D. – Contribution: 30%)	
\$25,688	Joseph W. Jones Ecological Research Center	2015-2018
	Recruitment dynamics in naturally regenerated longleaf pine woodlands. Grant type: non-competitive research, external (PI: <u>Knapp, B.O.</u> ; Co-PIs: Jack, S.B., Guldin, J., Larsen, D.R. – Contribution: 80%)	
\$28,364	USDA Forest Service, Southern Research Station	2015-2018
	Recruitment dynamics in naturally regenerated longleaf pine woodlands. Grant type: non-competitive research, external	

	(PI: <u>Knapp, B.O.</u> ; Co-PIs: Jack, S.B., Guldin, J., Larsen, D.R. – Contribution: 80%)	
\$150,000	USDA Forest Service, Northern Research Station, Forest Inventory and Analysis Program Tree regeneration adequacy metrics for the Central States. Grant type: non-competitive research, external	2015-2018
\$1,716	(PI: <u>Knapp, B.O.</u> ; Co-PIs: McWilliams, W., Dey, D.C.; Collaborators: Shifley, S., Kabrick, J.M., Larsen, D.R. – Contribution 50%) Missouri Department of Natural Resources Mercury Deposition Network (MDN) Grant type: non-competitive service, external	2015-2016
\$119,800	(PI: <u>Knapp, B.O.</u> ; Collaborators: Hubbart, J.A – Contribution 75%) USDA Forest Service, Northern Research Station Effects of stand density and composition on mitigation and adaptability to climate change in pine and hardwood forests and woodlands of Missouri. Grant type: non-competitive research, external	2014-2019
\$220,020	(PI: <u>Knapp, B.O.</u> ; Collaborators: Kabrick, J.M., Dey, D.C. – Contribution 80%) Missouri Department of Conservation Silvicultural options for improving the quality and composition of mixed bottomland hardwood forests of northern Missouri. Grant type: competitive research, external	2014-2023
\$158,642	(PI: <u>Knapp, B.O.</u> ; Co-PI: Olson, M.; Collaborators: Henderson, D., Elliot, A., Gao, S., Bixler, T., Treiman, T., Fleming, J., Hartwig, D., Jacobson, J. – Contribution: 50%) Joint Fire Science Program, Sponsored by USDA and USDI Effects of fuels treatments on reduction of fire risk and restoration of oak-pine forests in Central Hardwood Forest landscapes. Joint Fire Science. Grant type: competitive research, external	2014-2017
\$50,000	(Co-PIs: <u>Knapp, B.O.</u> , He, H.; Collaborators: Kabrick, J.M., Hanberry, B.B., He, H. – Contribution: 40%) USDA Forest Service, Northern Research Station Mixed woods workshop. Grant type: non-competitive service, external	2014-2017
\$6,119	(Co-PIs: <u>Knapp, B.O.</u> , Kabrick, J.M.; Collaborators: Dey, D.C. – Contribution: 25%) MU Research Council Effects of prescribed burning frequency on stand structure, foliar nutrients, and radial growth of hardwood trees in the Missouri Ozarks. Grant type: competitive research, internal	2013-2014
\$2,000	(PI: <u>Knapp, B.O.</u> ; Collaborator: Stambaugh, M.C. – Contribution: 90%) Richard Wallace Faculty Incentive Grant Integrating education and research through demonstration sites: effects of the frequency and season of prescribed burning on prairie restoration at the Baskett Wildlife Research and Education Center. Grant type: competitive teaching, internal	2013-2014

\$14,416	(PI: <u>Knapp, B.O.</u> ; Collaborator: Hosman, K. – Contribution: 50%) Clemson University Public Service Activities Do seedling size and fire intensity affect post-fire responses of grass stage longleaf pine seedlings? Grant type: competitive internal (Clemson University)	2012-2013
\$39,945	(Co-PIs: <u>Knapp, B.O.</u> , Wang, G.G. – Contribution: 50%) United States Geological Survey National Atmospheric Deposition Program Grant type: non-competitive service, external (PI: Hubbart, J.A.; Collaborator: <u>Knapp, B.O.</u> – Contribution: 10%)	2011-2016

STUDENT ADVISING*Visiting Scholars*

I have advised one visiting scholar.

<u>Name</u>	<u>Employer</u>	<u>Time period</u>
Wang, Shunzhong	Chinese Academy of Sciences	December 2018-December 2019

Post-doctoral Advising

I have advised two post-doctoral researchers.

<u>Name</u>	<u>Funding agency</u>	<u>Time period</u>
Dee, Justin	Missouri Dept. of Conservation	August 2019-January 2020
Vickers, Lance	USDA Forest Service	August 2015-August 2022

Graduate Student Advising

I have served as the chair for 3 Ph.D. student and 17 M.S. students. I have served as co-chair for 1 M.S. student and 1 Ph.D student and have served on the committees of 5 Ph.D. students and of 6 M.S. students.

<u>Student</u>	<u>Role</u>	<u>Degree</u>	<u>Status</u>
Anderson, Samantha	Chair	M.S.	2015-2017 (graduated)
Crouch, Connor	Chair	M.S.	2017-2019 (graduated)
Curtin, Patrick	Chair	M.S.	2015-2017 (graduated)
Esparza-Harris, Kendra	Co-Chair	Ph.D.	2023-Present
Fillingim, Hope	Chair	Ph.D	2019-Present
Ghilardi, Casey	Chair	M.S.	2014-2016 (graduated)
Goldberg, Ian	Chair	M.S.	2022-Present
Good, Guerric	Co-chair	M.S.	2014-2019 (graduated)
Grochowski, Jacob	Chair	M.S.	2021-Present
Hayes, Jered	Chair	M.S.	2015-2019
Harpold, Trystan	Chair	M.S.	2020-2022 (graduated)
Hayford, Isaac	Chair	Ph.D.	2019-Present
Huffman, Abby	Chair	M.S.	2020-2022 (graduated)
Jensen, George	Chair	M.S.	2020-2022 (graduated)
Kronenberg, Raelin	Co-Chair	Ph.D.	2023-Present
Maddox, Dacoda	Chair	M.S	2019-2022 (graduated)
Maginel, Calvin	Chair	M.S.	2013-2015 (graduated)

Nugraha, Muhamad	Chair	M.S.	2017-2019 (graduated)
Rives, Robert	Chair	M.S.	2014-2016 (graduated)
Scott, Sloane	Chair	M.S.	2022-Present
Vaughan, Ian	Chair	M.S.	2020-2022 (graduated)
Wachuta, Mary	Chair	M.S.	2016-2018 (graduated)
Cooley, Amanda	Member	M.S.	2015-2017 (graduated)
Clabo, David	Member	Ph.D.	2016-2018 (graduated)
Dibala, Ryan	Member	Ph.D.	2015-2019 (graduated)
Hix, David	Member	M.S.	2020-Present
Kinkead, Carter	Member	Ph.D.	2014-2017
Lyczak, Stephen	Member	M.S.	2016-2019 (graduated)
Ritter, Sam	Member	M.S.	2020-2021 (graduated)
Sudokum, Houston	Member	M.S.	2017-2019 (graduated)
Vickers, Lance	Member	Ph.D.	2012-2015 (graduated)
Weber, Nathan	Member	Ph.D.	2014-Present
Wolfgeher, Amanda	Member	M.S.	2014-Present

Undergraduate research

I have advised 4 undergraduate research students and 30 undergraduate internship students.

<u>Student</u>	<u>Role</u>	<u>Semester</u>	<u>Graduation</u>
Gross, Ryan	Intern Advisor	Summer 2022	2023
Hamilton, Brad	Intern Advisor	Summer 2022	2023
Mahoney, Brendan	Intern Advisor	Summer 2022	2023
McCully, Kyle	Intern Advisor	Summer 2022	2023
Noel, Luke	Intern Advisor	Summer 2022	2023
Stitzer, Grayden	Intern Advisor	Summer 2022	2023
Swizdor, Johnnie	Intern Advisor	Summer 2022	2023
Stevens, Erin	Intern Advisor	Spring 2022	2024
Clubb, Jackson	Intern Advisor	Summer 2021	2022
Hurley, Taylor	Intern Advisor	Summer 2021	2023
Palumo, Cole	Intern Advisor	Summer 2021	2023
Stocking, Jacob	Intern Advisor	Summer 2021	2021
Watkinson, Kyle	Intern Advisor	Summer 2021	2022
Winfrey, Benton	Intern Advisor	Summer 2021	2022
Howard, Brayden	Intern Advisor	Summer 2020	2021
Waller, Nathan	Intern Advisor	Summer 2020	2021
Worsham, Jacob	Intern Advisor	Summer 2020	2020
Gillespie, Kayla	Intern Advisor	Spring 2020	2021
Jackson, Caroline	Intern Advisor	Fall 2019	
Villhardt, Nicholas	Intern Advisor	Fall 2019	
Eckelkamp, Aaron	Intern Advisor	Summer 2019	
Grimm, Nicholas	Intern Advisor	Summer 2019	
Jensen, Clay	Intern Advisor	Summer 2019	
Lamb, Spencer	Intern Advisor	Summer 2019	

Stelzer, Dominic	Intern Advisor	Summer 2019	
Maile, Michelle	Intern Advisor	Spring 2019	
Thompson, Ryan	Intern Advisor	Spring 2019	
Bender, Catlin	Intern Advisor	Summer 17	05/2019
Bross, Alexander	Intern Advisor	Summer 18	2019
Corbett, Kristopher	Intern Advisor	Summer 16	05/2017
Cornelison, Aidan	Intern Advisor	Summer 18	2020
Easton, Matthew	Intern Advisor	Summer 16	05/2017
Farver, Lyle	Intern Advisor	Spring 18	12/2018
Hart, Jacob	Intern Advisor	Summer 18	2019
Holland, Sera	Intern Advisor	Summer 17	05/2018
Kerley, David	Intern Advisor	Spring 18	12/2018
Kinn, Eric	Intern Advisor	Summer 17	05/2018
Trantham, Jeffrey	Intern Advisor	Summer 16	05/2017
Beckerman, Tyler	Research Adviser	Fall 18	12/2018
Feicht, Anthony	Research Adviser	Fall 15	05/2016
Hullinger, Michael	Research Adviser	Fall 13; Spring 14	12/2014
O'Brien, Trevor	Research Adviser	Spring 16	05/2016

Undergraduate advising

I have served as the academic adviser of 20 undergraduate students.

TEACHING EXPERIENCE

I currently teach 4 courses each year (AFRI 2191, FOREST 2544, FOREST 4330/7330, and FOREST 3207) and one course (FOREST 8430 every other year).

- Instructor, AFRI 2191, Agriculture and Natural Resources – Humanities Winter 2023
Tropical Ecology and Conservation, Study Abroad, Costa Rica
Undergraduate level; Enrollment: 10 students
- Instructor, FOREST 3207, Forest Fire Control and Use; University of Fall 2017-Present
Missouri, 3 credit hours; Undergraduate level; Enrollment: 30 students
- Co-Instructor, FOREST 3207, Forest Fire Control and Use; University of Fall 2015
Missouri; 2 credit hours; Undergraduate level; Enrollment: 30 students
- Instructor, FOREST 9087, Seminar in Forestry; University of Missouri; 1 Spring and Fall 2015
credit hour; Graduate level; Enrollment: 5-10 students
- Instructor, FOREST 8430, Applied Silviculture; University of Missouri; 3 Spring (e) 2014-Present
credit hours; Graduate level; Enrollment: 5-10 students
- Instructor, FOREST 4320/7320, Forest Ecology, University of Missouri; 5 Fall 2020
credits; undergraduate/graduate level; 20-30 students
- Instructor, FOREST 4330/7330, Practice of Silviculture, University of Spring 2013-Present

Missouri; 4 credit hours; Undergraduate/graduate level; 20-30 students

- Instructor, FOREST 2544, Introduction to Silviculture and Management, University of Missouri; 1 credit hour; Undergraduate level; 10-20 students Summer 2013-Present
- Instructor, NAT_R 2160, Issues in Natural Resources and the Environment, University of Missouri; 3 credit hours; Undergraduate level; 60 students Fall 2013-2016

SERVICE POSITIONS

National

- Society of American Foresters Silviculture Working Group (D2) Chair 2020-2022
- Society of American Foresters Silviculture Working Group (D2) Communication coordinator 2016-2020
- Conference session organizer, *The Benefits and Challenges of Managing Hardwood-Softwood Mixtures in Eastern North America*, Society of American Foresters National Convention 2016

State of Missouri

- Society of American Forests, Missouri Chapter – Secretary 2020-2021
- Society of American Foresters, Missouri Chapter – Science and Technology Committee Chair 2014-2020
- Missouri Department of Conservation, Silviculture Committee Management Guidelines 2012-2014

University of Missouri

- Research Council Grant Review board 2020-Present
- Committee on Undergraduate Education (CUE) 2018-2021
- Student Fee Capital Improvement Committee 2015-2020

College of Agriculture, Food, and Natural Resources

- Website Design Committee 2022-2023
- CAFNR Policy Committee Chair 2021-2022
- CAFNR International Education Committee 2017-Present
- Advising, Learning, and Teaching Enhancement Committee 2016-2018
- Scholarship and Awards Committee 2015-2017

School of Natural Resources

- Director's Faculty Advisory Council member 2019-Present
- Agroforestry and Forestry Graduate Student Association faculty advisor 2019-Present
- Promotion and Tenure committee member 2019-2022
- Policy committee chair 2021-2022
- Policy committee member 2019-2021
- Undergraduate curriculum committee member 2016-2020
- Forestry Club faculty advisor 2016- Present
- Undergraduate Degree Restructuring Committee 2016-2017

- Search committee member – Assistant Professor Avian Ecology 2015-2016
- Search committee member – Assistant Professor Wildlife Ecology 2015-2016
- Search committee member – Research Scientist, Grasslands Biomass and Natural Resources Conservation 2015

Department of Forestry (dissolved in 2016 restructuring)

- Website/Facebook page – manager 2013-2016
- Fire Curriculum Committee 2012-2016
- Student Forestry Club – Faculty Adviser 2012-2016

EDITORIAL AND REVIEWER*Conference proceeding editor*

1. Kabrick, J.M., Dey, D.C., Larsen, D.R., Knapp, B.O., Shifley, S., and Stambaugh, M.C. Editors. 2017. Proceedings of the 20th Central Hardwood Forest Conference. Gen. Tech. Rep. NRS-P-167. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 313 p.

Associate editor

- New Forests; 9 manuscripts handled 2019-Present

Journal reviews

I have regularly reviewed manuscripts since 2012, for the following journals: American Midland Naturalist; AoB PLANTS; Canadian Journal of Forest Research; Ecology; Ecosphere; Forest Ecology and Management; Forest Science; Forest Systems; Forestry; Forests; Journal of Forestry; New Forests; Northern Journal of Applied Forestry; Restoration Ecology; Scandinavian Journal of Forest Research; Southeastern Naturalist; Southern Journal of Applied Forestry

Grant proposal reviews

- Joint Fire Science Program, Graduate Student Research 2018
- Lincoln University Ag Research Funds 2014
- University of Missouri Research Board 2013

Other

- 1 book proposal review 2013
- USDA Forest Service, Central Hardwoods Climate Change Response Framework “Adaptation Strategies and Approaches” 2012

MENTORSHIPS

- Member of mentoring committee of Michael Byrne, Assistant Professor, School of Natural Resources, University of Missouri 2018-Present
- Member of mentoring committee of Mitch Weegman, Assistant Professor, School of Natural Resources, University of Missouri 2017-Present
- Mentor for MU undergraduate students graduating with honors (2 students in May 2014, 1 student in December 2014) 2014-Present
- Nicodemus Wilderness Project – Apprentice Ecologist Initiative 2013

AFFILIATIONS

- Conservation Federation of Missouri
- Ecological Society of America
- Golden Key International Honor Society
- Phi Kappa Phi
- Society for Ecological Restoration
- Society of American Foresters

PROFESSIONAL DEVELOPMENT

- University of Missouri Provost Leadership Program 2023-2024
- Online Teaching Foundations, Course Design and Technology, University of Missouri October 2019
- CAFNR Grant Writing Workshop, University of Missouri April 2017
- Promotion and Tenure Workshop, University of Missouri March 2017
- Training in online tools (MU Connect), University of Missouri July 2016
- Wakonse Conference on College Teaching, Camp Miniwanca, Shelby, MI May 2014
- Promotion and Tenure Workshop, University of Missouri May 2014
- Training in online tools (MU Connect), University of Missouri January 2014
- Training in online teaching tools (Blackboard, MyZou), University of Missouri August 2012