

CURRICULUM VITAE

February 2024

Paul A. Knapp

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Greensboro, NC 27412
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Education

- 1985–1989 University of Georgia
Department of Geography
Doctor of Philosophy degree in Geography
- 1983–1985 University of Arizona
Department of Geography
Master of Arts degree in Geography
- 1979–1983 University of Colorado, Boulder
Department of Geography
Bachelor of Arts degree in Geography

Academic Experience

- 2005– University of North Carolina, Greensboro
Department of Geography
Professor and Director, Carolina Tree-Ring Science Laboratory
(Co-Editor, *Southeastern Geographer*, July 2019–June 2023)
- 2011 Arizona State University
School of Geographical Sciences and Urban Planning
Adjunct Faculty
- 2002–2005 Georgia State University
Department of Anthropology and Geography
Professor
- 2002 Portland State University
Department of Geography
Visiting Research Professor

- 1996–2002 Georgia State University
Department of Anthropology and Geography
Associate Professor and Graduate Director
- 1993–1996 Georgia State University
Department of Geography
Assistant Professor and Graduate Director
- 1989–1993 University of Nevada, Reno
Department of Geography
Assistant Professor

Research and Teaching

Interests

Biogeography
Climatology
Dendrochronology

Publications

- 2024 Mitchell, T.J. and Knapp, P.A. 2024. A comparison of intense and total summer-rainfall amounts in central North Carolina, USA using tree-ring data from 1770–2020. **Water** 16, 513. <https://doi.org/10.3390/w16040513>.
- 2024 Knapp, P.A., Soulé, P.T., Mitchell, T.J., Catherwood, A.A., and Lewis, H.S. Increasing radial growth in old-growth high-elevation conifers in southern California, USA during the exceptional “hot drought” of 2000–2020. **International Journal of Biometeorology** <https://doi.org/10.1007/s00484-024-02619-3>.
- 2024 Soulé, P.T., and Knapp, P.A. The evolution of “Hot” droughts in Southern California, USA from the 20th to 21st century. **Journal of Arid Environments** 220:105118 <https://doi.org/10.1016/j.jaridenv.2023.105118>.
- 2024 Catherwood, A.A. and Knapp, P.A. Increasing precipitation variability and climate-growth responses of five tree species in North Carolina, USA. **Environmental Research: Climate** <https://doi.org/10.1088/2752-5295/ad0445>.
- 2023 Lewis, H.S., and Knapp, P.A. 21st century warming, site aspect, and reversal of age-related growth decline in shortleaf pine (*Pinus echinata*) in North Carolina, USA. **Atmosphere** 14, 1240. <https://doi.org/10.3390/atmos14081240>.

- 2023 Carlton, G.J., Knapp, P.A. and Mitchell, T.J. Global patterns of antioxidant-rich food crops based on geographical origins. **The Professional Geographer** <https://doi.org/10.1080/00330124.2023.2207632>.
- 2022 Rother, M., Patterson, T.W., Knapp, P.A., Allen, N., and Mitchell, T.J. A tree-ring record of historical fire activity in a piedmont longleaf pine (*Pinus palustris* Mill.) woodland in North Carolina, USA. **Fire Ecology** 18:34 <https://doi.org/10.1186/s42408-022-00161-4>.
- 2022 Mitchell, T.J., and Knapp, P.A. Radial growth responses of four southeastern pine species to summertime precipitation event types and intense rainfall events. **Atmosphere** 13(10):1731; <https://doi.org/10.3390/atmos13101731>.
- 2022 Catherwood, A.A., Mitchell, T.J., and Knapp, P.A. A dendroecological method to examine summertime soil-moisture changes: a case study from North Carolina, USA. **Trees** <https://doi.org/10.1007/s00468-022-02353-6>.
- 2022 Mitchell, T.J., Knapp, P.A., and Ortegren, J.T. Observations on the frequency, duration, and geographical extent of summertime cold-front activity in the southeastern USA: 1973–2020. **Meteorology** 1(2):211-219. <https://doi.org/10.3390/meteorology1020014>.
- 2021 Catherwood, A.A., Knapp, P.A., and Mitchell, T.J. Loblolly pine traumatic resin ducts serve as indicators of cool-season weather events at Nags Head, North Carolina. **Castanea** 86(2):296–304. <https://doi.org/10.2179/0008-7475.86.2.296>.
- 2021 Maxwell, J.T. Bregy, J.C., Robeson, S.M., Knapp, P.A., and Soulé, P.T. Recent increases in tropical cyclone precipitation extremes over the US East Coast. **PNAS** <http://doi.org/10.1073/pnas.2105636118>.
- 2021 Soulé, P.T., Knapp, P.A., Maxwell, J.T. and Mitchell, T.J. A comparison of the climate response of longleaf pine (*Pinus palustris* Mill.) trees among standardized measures of earlywood, latewood, adjusted latewood, and totalwood radial growth. **Trees - Structure and Function** 35:1065–1074. <https://doi.org/10.1007/s00468-021-02093-z>.
- 2021 Knapp, P.A., Soulé, P.T., Maxwell, J.T., Ortegren, J.O. and Mitchell, T.J. Tropical cyclone precipitation regimes since 1750 and the Great Suppression of 1843–1876 along coastal North Carolina, USA. **International Journal of Climatology** 41:200–210. <https://doi.org/10.1002/joc.6615>.

- 2020 Mitchell, T.J., Knapp, P.A., and Patterson, T.W. The importance of infrequent, high-intensity rainfall events for longleaf pine (*Pinus palustris* Mill.) radial growth and implications for dendroclimatic research. **Trees, Forests and People** <https://doi.org/10.1016/j.tfp.2020.100009>.
- 2020 Kaiser, A., Soulé, P.T., van de Gevel, S., Knapp, P.A., Bhuta, A. Walters, J. and Montpellier, E.E. Dendroecological investigation of red-cockaded woodpecker cavity tree selection in endangered longleaf pine forests. **Forest Ecology and Management** <https://doi.org/10.1016/j.foreco.2020.118291>.
- 2020 Montpellier, E., Knapp, P. A., Soulé, P., and Maxwell, J.T. Microelevational differences affected longleaf pine (*Pinus palustris* Mill.) sensitivity to tropical cyclone precipitation: A case study using LiDAR. **Tree-Ring Research** 76: 89–93. <https://doi.org/10.3959/TRR2019-9>.
- 2020 Montpellier, E., Soulé, P., Knapp, P. A., and Perry, L.B. Reconstructing summer upper-level flow in the northern Rocky Mountains using an alpine larch tree-ring chronology. **Climate Research** 79 (3):207-218. <https://doi.org/10.3354/cr01592>.
- 2020 Bregy, J.C., Maxwell, J.T., Robeson, S.M., Ortegren, J.T., Soulé, P.T., and Knapp, P.A. Spatiotemporal variability of tropical cyclone precipitation using a high-resolution, gridded (0.25° x 0.25°) dataset for the eastern United States, 1948–2015. **Journal of Climate** 33:1803–1819. <https://doi.org/10.1175/JCLI-D-18-0885.1>.
- 2019 Soulé, P.T. and Knapp, P.A. Radial growth rate responses of western juniper (*Juniperus occidentalis* Hook.) to atmospheric and climatic changes: A longitudinal study from central Oregon, USA. **Forests** 10(12), 1127. <https://doi.org/10.3390/f10121127>.
- 2019 Montpellier, E.E., Soulé, P.T., Knapp, P.A., and Maxwell, J.T. Dendroclimatic assessment of ponderosa pine radial growth along elevational transects in western Montana, USA. **Forests** 10(12): 1094. <https://doi.org/10.3390/f10121094>.
- 2019 Mitchell, T.J., Knapp, P.A., and Ortegren, J.T. Tropical cyclone frequency inferred from intra-annual density fluctuations in longleaf pine in Florida, USA. **Climate Research** 78:249–259. <https://doi.org/10.3354/cr01573>.
- 2019 Mitchell, T.J., Knapp, P.A., and Patterson, T.W. Changes in southeastern USA summer precipitation event types using instrumental (1940–2018) and tree-ring (1790–2018) data. **Environmental Research Communications** <https://doi.org/10.1088/2515-7620/ab4cd6>.

- 2019 Soulé, P.T. and Knapp, P.A. A 400-year reconstruction of wintertime Arctic sea-ice extent using a high-elevation, mid-latitude tree-ring record. **International Journal of Biometeorology** <https://doi.org/10.1007/s00484-019-01739-5>.
- 2019 Mitchell, T.J., Patterson, T.W., and Knapp, P.A. Comparison of climate-growth responses of montane and piedmont longleaf pine (*Pinus palustris* Mill.) chronologies in North Carolina. **Trees - Structure and Function** <https://doi.org/10.1007/s00468-019-01823-8>.
- 2019 Soulé, P.T., Maxwell, J.T., and Knapp, P.A. Climate-growth responses from *Pinus ponderosa* trees using multiple measures of annual radial growth. **Tree-Ring Research** 75:25–33. <https://doi.org/10.3959/1536-1098-75.1.25>.
- 2018 Watkins, K.E., Patterson, T.W., and Knapp, P.A. Investigating the climatic sensitivity of shortleaf pine on a southeastern US college campus. **Southeastern Geographer** 58:146–163. <https://doi.org/10.1353/sgo.2018.0019>.
- 2018 Patterson, T.W. and Knapp, P.A. Longleaf pine cone-radial growth relationships in the southeastern U.S.A. **Dendrochronologia** 50:134–141. <https://doi.org/10.1016/j.dendro.2018.05.006>.
- 2018 Patterson, T.W. and Knapp, P.A. Longleaf pine masting, northern bobwhite quail, and tick-borne diseases in the southeastern United States. **Applied Geography** 98:1–8. <https://doi.org/10.1016/j.apgeog.2018.06.010>.
- 2018 Montpellier, E.E., Soulé, P.T., Knapp, P.A. and Shelly, J.S. Divergent growth rates of alpine larch trees (*Larix lyallii* Parl.) in response to microenvironmental variability. **Arctic, Antarctic, and Alpine Research** 50 (1), <https://doi.org/10.1080/15230430.2017.1415626>.
- 2017 Maxwell, J.T., Knapp, P.A., Ortegren, J.T., Ficklin, D., and Soulé, P.T. Changes in the mechanisms causing rapid drought cessation in the southeastern United States of America. **Geophysical Research Letters** <https://doi.org/10.1002/2017GL076261>.
- 2017 Knapp, P.A. and Soulé, P.T. Spatio-Temporal linkages between declining Arctic sea-ice extent and increasing wildfire activity in the western United States. **Forests** 8(9) <https://doi.org/10.3390/f8090313>.
- 2016 Patterson, T.W. and Knapp, P.A. Stand dynamics influence masting/radial growth relationships in *Pinus palustris* Mill. **Castanea** 81:314–322. <https://doi.org/10.2179/16-085>.

- 2016 Hadley, K.S. and Knapp, P.A. Post-windstorm radial growth of *Picea sitchensis* and *Pseudotsuga menziesii*. **Madroño** 63(3):234–248. <https://doi.org/10.3120/0024-9637-63.3.234>.
- 2016 Knapp, P.A., Maxwell, J.T. and Soulé, P.T. Tropical cyclone rainfall variability in coastal North Carolina derived from longleaf pine (*Pinus palustris* Mill.): AD 1771–2014. **Climatic Change** 135:311–323. <https://doi.org/10.1007/s10584-015-1560-6>.
- 2016 Knapp, P.A., Maxwell, J.T., Ortegren, J.O. and Soulé, P.T. Spatio-temporal changes in comfortable weather duration in the continental U.S. and implications for human wellness. **Annals of the American Association of Geographers** 106:1–18. <https://doi.org/10.1080/00045608.2015.1095058>.
- 2016 Patterson, T.W. and Knapp, P.A. Observations on a rare old-growth montane longleaf pine forest in central North Carolina. **Natural Areas Journal** 36:153–161. <https://doi.org/10.3375/043.036.0206>.
- 2016 Patterson, T.W., Cummings, L.W. and Knapp, P.A. Longleaf pine (*Pinus palustris* Mill.) morphology and climate/growth responses along a physiographic gradient in North Carolina. **The Professional Geographer** 68:238–248. <https://doi.org/10.1080/00330124.2015.1059404>.
- 2015 Soulé, P.T., and Knapp, P.A., Analyses of intrinsic water-use efficiency indicate performance differences of ponderosa pine and Douglas-fir in response to CO₂ enrichment. **Journal of Biogeography** 42:144–155. <https://doi.org/10.1111/jbi.12408>.
- 2013 Maxwell, J.T., Ortegren, J.T., Knapp, P.A. and Soulé, P.T. Tropical cyclones and drought amelioration in the Gulf and Southeastern Coastal United States. **Journal of Climate** 26: 8440–8452. <https://doi.org/10.1175/JCLI-D-12-00824.1>.
- 2013 Maxwell, J.T., Knapp, P.A., and Ortegren, J.T. Influence of the Atlantic multidecadal oscillation on tupelo honey production from AD 1800–2010. **Agricultural and Forest Meteorology** 174–175:129–134. <https://doi.org/10.1016/j.agrformet.2013.02.014>.
- 2013 Knapp, P.A., Soulé, P.T. and Maxwell, J.T. Mountain pine beetle selectivity in old-growth ponderosa pine forests, Montana, USA. **Ecology and Evolution** 3:1141–1148. <https://doi.org/10.1002/ece3.522>.

- 2013 Soulé, P.T., and Knapp, P.A. Radial growth rates of two co-occurring coniferous trees in the Northern Rockies during the past century. **Journal of Arid Environments** 94:87–95. <https://doi.org/10.1016/j.jaridenv.2013.02.005>.
- 2012 Knapp, P.A., and Hadley, K.S. A 300-year history of Pacific Northwest windstorms inferred from tree rings. **Global and Planetary Change** 92–93:257–266. <https://doi.org/10.1016/j.gloplacha.2012.06.002>.
- 2012 Maxwell, J.T., Soulé, P.T., Ortegren, J.T. and Knapp, P.A. Drought-busting tropical cyclones in the southeastern Atlantic United States: 1950–2008. **Annals of the Association of American Geographers** 102:259–275. <https://doi.org/10.1080/00045608.2011.596377>.
- 2012 Maxwell, J.T. and Knapp, P.A. Reconstructed tupelo-honey yield in northwest Florida inferred from *Nyssa ogeche* tree-ring data: 1850–2009. **Agriculture, Ecosystems & Environment** 149:100–108. <https://doi.org/10.1016/j.agee.2011.11.004>.
- 2011 Knapp, P.A. and Soulé, P.T. Reconstructing annual area burned in the Northern Rockies, USA: AD 1626-2008. **Geophysical Research Letters** Vol. 38, L1740, <https://doi.org/10.1029/2011GL048119>.
- 2011 Hadley, K.S. and Knapp, P.A. Detection of high-wind events using tree-ring data. **Canadian Journal of Forest Research** 41:1121–1129. <https://doi.org/10.1139/x11-030>.
- 2011 Ortegren, J.T., Knapp, P.A. Maxwell, J.T., Tyminski, W.P. and Soulé, P.T. Ocean-atmosphere influences on low-frequency warm-season drought variability in the Gulf Coast and Southeastern U.S.A. **Journal of Applied Meteorology and Climatology** 50:1177–1186. <https://doi.org/10.1175/2010JAMC2566.1>.
- 2011 Soulé, P.T. and Knapp, P.A. Radial growth and increased water-use efficiency for ponderosa pine trees in three regions in the western United States. **The Professional Geographer** 63(3):1–13. <https://doi.org/10.1080/00330124.2011.574088>.
- 2011 Knapp, P.A. and Hadley, K.S. Lewis and Clarks' Tempest: The *Perfect Storm* of November 1805, Oregon, USA. **The Holocene** 21 (4):693–697. <https://doi.org/10.1177/0959683610391319>.

- 2011 Knapp, P. A. and Soulé, P.T. Increasing water-use efficiency and age-specific growth responses of old-growth ponderosa pine trees in the Northern Rockies. **Global Change Biology** 17:631–641. <https://doi.org/10.1111/j.1365-2486.2010.02209.x>.
- 2008 Knapp, P. A. and Soulé, P.T. Use of atmospheric CO₂-sensitive trees may influence dendroclimatic reconstructions. **Geophysical Research Letters** 35: L24703 <https://doi.org/10.1029/2008GL035664>.
- 2008 Soulé, P.T. and Knapp, P.A. Does an August singularity exist in the Northern Rockies of the United States? **Journal of Applied Meteorology and Climatology** 47:1845–1850. <https://doi.org/10.1175/2007JAMC1735.1>.
- 2007 Knapp, P. A. and Soulé, P.T. Trends in midlatitude cyclone frequency and occurrence during fire season in the Northern Rockies: 1900–2004. **Geophysical Research Letters** 34: L20707. <https://doi.org/10.1029/2007GL031216>.
- 2007 Soulé, P.T. and Knapp, P.A. Topoedaphic and morphologic complexity of foliar damage and mortality within western juniper (*Juniperus occidentalis* var. *occidentalis*) woodlands related to an extreme meteorological event. **Journal of Biogeography** 34:1927–1937. <https://doi.org/10.1111/j.1365-2699.2007.01743.x>.
- 2006 Soulé, P.T. and Knapp, P.A. Radial growth rate increases in naturally occurring ponderosa pine trees: a late 20th century CO₂ fertilization effect? **New Phytologist** 171:379–390. <https://doi.org/10.1111/j.1469-8137.2006.01746.x>.
- 2005 Knapp, P.A. and Soulé, P.T. Impacts of an extreme early season freeze event in the interior Pacific Northwest (October 30th–November 3, 2002) on western juniper woodlands. **Journal of Applied Meteorology** 44:1152–1158. <https://doi.org/10.1175/JAM2261.1>.
- 2004 Knapp, P.A. Window of opportunity: The climatic conditions of the Lewis and Clark expedition of 1804–1806. **Bulletin of the American Meteorological Society** 85:1289–1303.
- 2004 Knapp, P.A., Soulé, P.T. and Grissino-Mayer, H.D. Occurrence of sustained droughts in the interior Pacific Northwest (AD 1733–1980) inferred from tree-ring data. **Journal of Climate** 17:140–150. <https://doi.org/10.1175/BAMS-85-9-1289>.

- 2004 Soulé, P.T., Knapp, P.A. and Grissino-Mayer, H.D. Human agency, environmental drivers, and western juniper establishment history during the late Holocene. **Ecological Applications** 14:96–112.
<https://doi.org/10.1890/02-5300>.
- 2003 Soulé, P.T., Knapp, P.A., and Grissino-Mayer, H.D. Comparative rates of western juniper afforestation in south-central Oregon and the role of anthropogenic disturbance. **The Professional Geographer** 55:43–55.
<https://doi.org/10.1111/0033-0124.010200>.
- 2002 Knapp, P.A., Grissino-Mayer, H.D., and Soulé, P.T. Climatic regionalization and the spatio-temporal occurrence of extreme single-year drought events (1500-1998) in the interior Pacific Northwest, USA. **Quaternary Research** 58:226–233.
<https://doi.org/10.1006/qres.2002.2376>.
- 2001 Knapp, P.A., Soulé, P.T., and Grissino-Mayer, H.D. Detecting potential regional effects of increased atmospheric CO₂ on growth rates of western juniper. **Global Change Biology** 7:903–917.
<https://doi.org/10.1046/j.1365-2486.2001.00452.x>.
- 2001 Knapp, P.A., Soulé, P.T., and Grissino-Mayer, H.D. Post-drought growth responses of western juniper (*Juniperus occidentalis* var. *occidentalis*) in central Oregon. **Geophysical Research Letters** 28:2657–2660.
<https://doi.org/10.1029/2000GL012365>.
- 2000 Soulé, P.T., and Knapp, P.A. *Juniperus occidentalis* (western juniper) establishment on two minimally disturbed research natural areas in central Oregon. **Western North American Naturalist** 60:26–33.
<https://scholarsarchive.byu.edu/wnan/vol60/iss1/3>.
- 1999 Knapp, P.A., and Soulé, P.T. Geographical distribution of an 18th-century heart-rot outbreak in western juniper (*Juniperus occidentalis* ssp. *occidentalis* Hook.). **Journal of Arid Environments** 41:247–256.
- 1999 Soulé, P.T., and Knapp, P.A. Western juniper expansion on adjacent disturbed and near-relict sites. **Journal of Range Management** 52:525–533.
- 1999 Yin, Z.Y., and Knapp, P.A. Winter temperature variability during warming and cooling periods in the conterminous United States: 1947-1992. **Theoretical and Applied Climatology** 62:109-124.
- 1998 Knapp, P.A., and Soulé, P.T. Recent western juniper (*Juniperus occidentalis*) expansion on a protected site in central Oregon. **Global Change Biology** 4:357–367.

- 1998 Knapp, P.A. Spatio-temporal characteristics of large Intermountain West grassland fires. **Global Ecology and Biogeography Letters** 7:259–273.
- 1997 Knapp, P.A. Spatial characteristics of regional wildfire frequencies in Intermountain West grass-dominated communities. **The Professional Geographer** 49:39–51.
- 1996 Knapp, P.A., and Soulé, P.T. Vegetation change and the role of atmospheric CO₂ enrichment on a relict site in central Oregon: 1960-1994. **Annals of the Association of American Geographers** 86:387–411.
- 1996 Knapp, P.A. *Bromus tectorum* L. (Cheatgrass) dominance in the Great Basin Desert: History, persistence, and influences to human activities. **Global Environmental Change** 6:37–52.
- 1996 Soulé, P.T., and Knapp, P.A. The influence of vegetation removal by western harvester ants (*Pogonomyrmex owyheeii*) in a relict area of sagebrush-steppe in central Oregon. **American Midland Naturalist** 136:336–345.
- 1996 Soulé, P.T., and Knapp, P.A. *Pogonomyrmex owyheeii* nest site density and size on a minimally impacted site in central Oregon. **Great Basin Naturalist** 56:162–166.
- 1996 Knapp, P.A., and Yin, Z.Y. Relationships between geopotential heights and temperature in the southeastern United States during wintertime warming and cooling periods. **International Journal of Climatology** 16:195–211.
- 1995 Knapp, P.A. Intermountain West lightning-caused fires: Climatic predictors of area burned. **Journal of Range Management** 48:85–91.
- 1994 Knapp, P.A. Seasonal associations between mid-tropospheric pressure patterns and precipitation in the western Great Basin. **Climate Research** 4:75-78.
- 1994 Knapp, P.A., and Thompson, J.M. Lessons in biogeography: Simulating evolution using playing cards. **Journal of Geography** 93:96–100.
- 1993 Knapp, P.A., Lancaster, J., Bishop, K., and Taylor, R.L. Use of GIS in optimizing timber-thinning strategies in the eastern Sierra Nevada. **The Professional Geographer** 45:323-331.
- 1992 Knapp, P.A. Soil loosening processes following the abandonment of two arid western Nevada townsites. **Great Basin Naturalist** 52:149–154.

- 1992 Knapp, P.A. Correlation of 700 mb height data with seasonal temperature trends in the Great Basin: 1947-1987. **Climate Research** 2:65-71.
- 1992 Knapp, P.A. Secondary plant succession and vegetation recovery in two western Great Basin ghost towns. **Biological Conservation** 60:81-89.
- 1991 Knapp, P.A. The response of semiarid vegetation assemblages following the abandonment of mining towns in south-western Montana. **Journal of Arid Environments** 20:205-222.
- 1991 Knapp, P.A. Long-term soil and vegetation recovery in five semiarid Montana ghost towns. **The Professional Geographer** 43:486-499.
- 1990 Knapp, P.A.; Warren, P.L.; and Hutchinson, C.F. The use of large-scale aerial photography to inventory and monitor arid rangeland vegetation. **Journal of Environmental Management** 31:29-38.
- 1989 Knapp, P.A. Natural recovery of compacted soils in semiarid Montana. **Physical Geography** 10:175-185.

External Grants

- 2019-2021 Rother, M. T. (PI), Patterson, T.W. (coPI), and Knapp, P.A. (coPI). **North Carolina Policy Collaboratory**. *Tree-ring studies of historical fire regimes in longleaf pine forests of the Uwharrie Mountains in the Piedmont of North Carolina*. **\$27,000**.
- 2018-2019 Rother, M. T. (PI), Patterson, T.W. (coPI), and Knapp, P.A. (coPI). **North Carolina Policy Collaboratory**. *A fire history from longleaf pine at the Nichols Preserve, North Carolina*. **\$19,900**.
- 2017-2021 Knapp, P.A. (PI), J.T. Maxwell (coPI), and P.T. Soulé (coPI). **National Science Foundation** Award GSS-1660432. *A paleoclimatic examination of tropical cyclone-derived precipitation variability and atmospheric-oceanic controls inferred from longleaf pine in the coastal Carolinas, USA*. **\$300,886**.
- 2009-2013 Knapp, P.A. (PI) and P.T. Soulé (PI). **National Science Foundation** Award BCS-0851081. *Collaborative Research: Radial growth responses among naturally occurring western U.S. conifers under changing environmental conditions*. **\$342,995**.

- 2008–2012 Knapp, P.A. (PI) and K.S. Hadley (PI). **National Science Foundation**, Award BCS-0750026. *Collaborative Research: The occurrence of severe Pacific Northwest windstorms: A multi-century dendroclimatic assessment of their ecological impacts*. **\$259,997**.
- 2010–2011 Knapp, P.A. (PI) and W.P. Tyminski (coPI). **National Science Foundation** Award BCS-1003402. *Doctoral Dissertation Research: Use of Tree-Ring Data to Reconstruct and Predict Maple Syrup Production in New York*. **\$6930**.
- 2004–2007 Soulé P.T. (PI) and P.A. Knapp (CoPI). **USDA NRI Competitive Grant Program (Plant Adaptations to the Environment)** Award #2005-35100-15226. *Anomalous 20th century ponderosa pine growth and potential CO₂ fertilization in naturally occurring stands the interior West, USA*. **\$150,000**.
- 1998–2001 Knapp, P.A. (PI), P.T. Soulé (CoPI), and H.D. Grissino-Mayer (CoPI). **National Science Foundation**, Award SBR-9809245. *Historic expansion of western juniper on near-relict sites: A dendroecological approach*. **\$190,376**.
- 1997–1998 Knapp, P.A. (PI) and P.T. Soulé (CoPI). **Bureau of Land Management**, Prineville District, Prineville, Oregon. Challenge Cost-Share Program. *Western Juniper (*Juniperus occidentalis*) expansion on minimally-impacted sites in central Oregon: Periods of establishment and probable cause(s)*. **\$30,764**.

Awards

- 2009 *Research Honors Award*, Southeastern Division of the Association of American Geographers.

Directorship of Dissertations, Theses, and Practicums

- 2023 Lewis, Hunter S. *Aspect affects radial growth rates of shortleaf pine (*Pinus echinata*) under 21st Century warming conditions: A case study in the Uwharrie Mountains, NC, USA*. M.A. Thesis, Department of Geography, Environment, and Sustainability. UNC Greensboro. 43 pp.
- 2021 Catherwood, Avery A. *Loblolly Pine Traumatic Resin Ducts Serve as a Proxy for Cool-Season Storm Events at Nags Head, North Carolina, USA*. Thesis, Department of Geography, Environment, and Sustainability, University of North Carolina, Greensboro, 34 pp.

- 2021 Cline, John M. *Age-Related Morphology of Montane Populations of Shortleaf Pine (Pinus echinata) And Longleaf Pine (Pinus palustris) in the Uwharrie Mountains, North Carolina, USA*. Thesis, Department of Geography, Environment, and Sustainability, University of North Carolina, Greensboro, 39 pp.
- 2019 Blount, James R. *Influence of Edaphic Conditions on Temperature Trends across the North Carolina Piedmont*. Thesis, Department of Geography, University of North Carolina, Greensboro, 50 pp.
- 2019 Summers, Jeffy C. *Dendroarchaeology and the Dating of Historic Farm Buildings on the Summers' Farm, Summerfield, NC*. Thesis, Department of Geography, Environment, and Sustainability, University of North Carolina, Greensboro, 33 pp.
- 2019 Mitchell, Tyler J. *Tropical Cyclone Frequency Inferred from Intra-annual Density Fluctuations in Longleaf Pine*. Thesis, Department of Geography, Environment and Sustainability, University of North Carolina, Greensboro, 36 pp.
- 2018 Matej, Andrew T. *Examining the Utility of using Multiple, Co-occurring Tree Species to Increase Climate Sensitivity in Dendrochronology*. Thesis, Department of Geography, University of North Carolina, Greensboro, 50 pp.
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