CURRICULUM VITAE

February 2024

Paul A. Knapp
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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 ponderos*a 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 CO_2 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 CO_2-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 CO_2 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 CO_2 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 CO_2 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 owyheei*) 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 owyheei* 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 CO_2 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.

2017 Watkins, Keith E. *Examining Longleaf Pine Spectral Properties to Remotely Map Relict Stands in Central North Carolina*. Thesis, Department of Geography, University of North Carolina, Greensboro, 51 pp.

2017 Patterson, Thomas W. *Longleaf Pine Masting, Climate Variability and Tick-Borne Disease Prevalence in the Southeastern U.S.* Dissertation, Department of Geography, University of North Carolina, Greensboro, 94 pp.

2013 Cummings, Lindsay W. *The Ecological Legacy of the Naval Stores Industry in North Carolina.* Thesis, Department of Geography, University of North Carolina, Greensboro, 109 pp.

2013 Patterson, Thomas W. *Comparing Growth and Morphological Characteristics of North Carolina Longleaf Pine Stands.* Thesis, Department of Geography, University of North Carolina, Greensboro, 89 pp.

2012 Maxwell, Justin T. *Beekeepers' Gold: Reconstructing Tupelo Honey Yield in Northwest Florida Using Nyssa Ogeche Tree-Ring Data*. Dissertation, Department of Geography, University of North Carolina, Greensboro, 92 pp.

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