Tyler J Mitchell
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updated: 2025 September

Education

University of North Carolina at Greensboro. *Greensboro, NC.*
PhD Geography, 2024.
Advisor: Paul Knapp.
Dissertation: Radial growth responses of four southeastern USA pine species to precipitation event types, intense rainfall, and the North Atlantic Subtropical High

University of North Carolina at Greensboro. *Greensboro, NC.*
MA Applied Geography, 2019.
Advisor: Paul Knapp.
Thesis: Tropical Cyclone Frequency Inferred from Intra-annual Density Fluctuations in Longleaf Pine

University of West Florida. *Pensacola, FL.*
BS Environmental Science, 2017.
Advisor: Jason Ortegren.

Employment

University of Wyoming. *Laramie, WY.*
Post Doctoral Research Associate
Department of Ecosystem Science and Management
Colaborative for Intersectoral Modeling of the Earth System
January 2025–current

Esri. *Charlotte, NC.*
Premium Support Analyst
August 2024–December 2024

Support Analyst
March 2023–August 2024

University of North Carolina at Greensboro. *Greensboro, NC.*
Graduate Assistant, Research Assistant, Teaching Assistant, Teaching Associate
Department of Geography, Environment, and Sustainability
August 2017–July 2022

Editorial Assistant, *Southeastern Geographer*
July 2019–July 2023

Publications

Mitchell TJ, Knapp PA (2025) Interannual variability and long-term stability of the North Atlantic Subtropical High since the 18th century: A binary dendroclimatic reconstruction. *Environmental Research Communications*, Accepted.
https://doi.org/10.1088/2515-7620/ae04b7

Strelkow A, Mitchell TJ, Knapp PA, Ortegren JT (2025) Assessing the frequency, duration, and spatial extent of summertime extreme dew point conditions in the Southeastern USA, 1973–2022. *Atmosphere*, 16(3), 265.
https://doi.org/10.1007/s00484-024-02619-3

Knapp PA, Soulé PT, Mitchell TJ, Catherwood AA, Lewis HS (2024) 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*, 68(4), 743–748.
https://doi.org/10.1007/s00484-024-02619-3

Mitchell TJ, Knapp PA (2024) Reconstructing Historical Intense and Total Summer Rainfall in Central North Carolina Using Tree-Ring Data (1770–2020). *Water*, 16(4), 513.
https://doi.org/10.3390/w16040513

Carlton G, Knapp PA, Mitchell TJ (2023) Global patterns of antioxidant-rich food crops based on geographical origins. *Professional Geographer*, 75(6), 947–957.
https://doi.org/10.1080/00330124.2023.2207632

Catherwood AA, Mitchell TJ, Knapp PA (2023) A dendroecological method to examine summertime soil-moisture changes: A case study from North Carolina, USA. *Trees: Structure and Function*, 37(2), 599–607.
https://doi.org/10.1007/s00468-022-02353-6

Rother MT, Patterson TW, Knapp PA, Mitchell TJ, Allen N (2022) 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

Mitchell TJ, Knapp PA (2022) Radial growth responses of four southeastern USA pine species to summertime precipitation event types and intense rainfall events. *Atmosphere*, 13(10), 1731.
https://doi.org/10.3390/atmos13101731

Mitchell TJ, Knapp PA, Ortegren JT (2022) 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

Catherwood AA, Knapp PA, Mitchell TJ (2022) 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

Soulé PT, Knapp PA, Maxwell JT, Mitchell TJ (2021) 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(3), 1065–1074.
https://doi.org/10.1007/s00468-021-02093-z

Knapp PA, Soulé PT, Maxwell JT, Ortegren JT, Mitchell TJ (2021) Tropical cyclone precipitation regimes since 1750 and the Great Suppression of 1843–1876 along coastal North Carolina, USA. *International Journal of Climatology*, 41(1), 200–210.
https://doi.org/10.1002/joc.6615

Mitchell TJ, Knapp PA, Patterson TW (2020) 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*, 1, 100009.
https://doi.org/10.1016/j.tfp.2020.100009

Foglietti RV, Mitchell TJ, Ortegren JT (2020) US tornado outbreak climatologies based on different definitions of "outbreak," 1975–2014. *Southeastern Geographer*, 60(1), 6–22.
https://doi.org/10.1353/sgo.2020.0002

Mitchell TJ, Knapp PA, Patterson TW (2019) Changes in southeastern USA summer precipitation event types using instrumental (1940–2018) and tree-ring (1790–2018) data. *Environmental Research*

Communications, 1(11), 111005.
https://doi.org/10.1088/2515-7620/ab4cd6

Mitchell TJ, Knapp PA, Ortegren JT (2019) Tropical cyclone frequency inferred from intra-annual density fluctuations in longleaf pine in Florida, USA. *Climate Research*, 78(3), 249–259.
https://doi.org/10.3354/cr01573

Mitchell TJ, Patterson TW, Knapp PA (2019) Comparison of climate–growth responses of montane and piedmont longleaf pine (*Pinus palustris* Mill.) chronologies in North Carolina. *Trees: Structure and Function*, 33(2), 615–620.
https://doi.org/10.1007/s00468-019-01823-8

External funding

(non-PI) **Contributor**, Rother MT, Patterson TW, Knapp PA (2019–2021) 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.

(non-PI) **Contributor**, Rother MT, Patterson TW, Knapp PA (2018–2019) North Carolina Policy Collaboratory. A fire history from longleaf pine at the Nichols Preserve, North Carolina. $19,900.

(non-PI) **Contributor**, Knapp PA, Maxwell JT, Soulé PT (2017–2021) 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.

Awards and internal funding

Minerva Scholar (2019–2022) UNC Greensboro Graduate School.

Greensboro Graduate Scholar Award (2019–2022) UNC Greensboro Graduate School. $12,000.

Summer Research Fellowship (2019–2021) UNC Greensboro Graduate School. $6,000.

Research Capstone Fund (2021) UNC Greensboro Graduate School. Mitchell TJ, Catherwood AA, Lewis HS. $1,500.

Diversity Initiatives Mini-Grant (2020) UNC Greensboro College of Arts and Sciences.
Mitchell TJ, Lane JM, Catherwood AA, Harward M. Teaching Geography to K–12 Students Using National Geographic's Giant Map. $1,000.

D. Gordon Bennett Award for Outstanding Geography Graduate Student (2020) UNC Greensboro Department of Geography, Environment, and Sustainability.

Outstanding Graduate Research Award (2019) UNC Greensboro Department of Geography, Environment, and Sustainability.

Michael E. Lewis Graduate Teaching Award for Outstanding Classroom Performance (2019) UNC Greensboro Department of Geography, Environment, and Sustainability.

Best Masters Paper Award (2018) Southeastern Division of the American Association of Geographers. $500.

Michael E. Lewis Graduate Teaching Award for Outstanding Classroom Performance (2018) UNC Greensboro Department of Geography, Environment, and Sustainability.

GeoCUR Award for Excellence in Student Research (2017) National Council on Undergraduate Research - Geoscience Division.

Research Experience Away Fellowship (2017) UWF Hal Marcus College of Science and Engineering. $7,500.

Summer Undergraduate Research Fellowship (2016) UWF Hal Marcus College of Science and Engineering. $3,000.

Teaching

UNC Greensboro *(Instructor of Record/Lab Instructor)*
GES103: Introduction to Earth Science (2020 Fall, 2022 Spring)
GES103L: Earth Science Laboratory (2021 Spring)
GEO106L: Geosystems Science Laboratory (2018 Spring, 2019 Spring)
GES111L: Physical Geology Laboratory (2021 Fall)
GEO311L: Climatology Laboratory (2018 Fall, 2019 Fall)

UNC Greensboro *(Guest Lecturer)*
GES103: Introduction to Earth Science (2019 Fall)
GES106: Our Dynamic Planet (2021 Fall, 2022 Spring)

Invited presentations, outreach, and service

"Applications of dendrochronology: Examining the climatic sensitivity of longleaf pine (*Pinus palustris*) in North Carolina, USA". University of West Florida Spring Seminar Series. (2022)

Departmental Representative, UNC Greensboro Graduate Student Association. (2018–2022)

Co-President, UNC Greensboro Geography Graduate Student Association. (2021–2022)

Treasurer, UNC Greensboro Geography Graduate Student Association. (2019–2021)

Judge, SEDAAG Undergraduate Student Poster Competition. (2019)

"How to apply for and prepare for graduate school". University of West Florida College of Science and Engineering GeoScholars Professional Development Workshop. (2019)

Panelist, University of West Florida College of Science and Engineering Summer Undergraduate Research Program Workshop. (2017)

Departmental Representative, University of West Florida Hal Marcus College of Science and Engineering Open House. (2017)

"Oceanic Precursors to U.S. Tornado Outbreaks". University of West Florida Donor Dinner. (2016)

Chemistry Judge, West Panhandle Regional Science and Engineering Fair. (2016)

Engineering Judge, West Panhandle Regional Science and Engineering Fair. (2015)

Data and herbarium contributions

Mitchell TJ (2024) Uwharrie National Forest *Pinus echinata* + *Pinus virginiana* tree cores. University of North Carolina at Chapel Hill Herbarium.
`https://sernecportal.org/portal/`

Mitchell TJ (2024) Pilot Mountain State Park *Pinus rigida* tree cores. University of North Carolina at Chapel Hill Herbarium.
`https://sernecportal.org/portal/`

Mitchell TJ, Knapp PA, Patterson TW (2020) Uwharrie National Forest – *Pinus palustris* latewood radial growth measurements – ITRDB NC028.

https://www.ncdc.noaa.gov/paleo/study/29272

Mitchell TJ (2020) Gulf Islands National Seashore – *Pinus palustris* tree cores – University of North Carolina at Chapel Hill Herbarium.
https://sernecportal.org/portal/

Journal referee

Climate Research, Environmental Research Letters, Forests, Frontiers in Forests and Global Change, Journal of Hydrology: Regional Studies, North Carolina Geographer, Plant Ecology

Non-peer reviewed writing

(2023) How To: Use emojis in fields for Portal for ArcGIS or ArcGIS Online
https://tinyurl.com/arcgisemoji

Gentry C, Harley G, Maxwell S, Hefner A, Mitchell T, Mustoe N, Rachman R, Scott J, Spriggs J, Struble W, Waldron J, Wind M (2017) Comparing site specific chronologies of Lodgepole pine and Engelmann spruce in the Shoshone National Forest, Wyoming, 27th Annual North American Dendroecological Fieldweek Final Report.