CURRICULUM VITAE Jessie K. Pearl

Address	The Nature Conservancy 1510 E Fort Lowell Rd Tucson, AZ 85719	
	orcid: 0000-0002-1556-2159 email: jessie.pearl@tnc.org Internet: https://jessiekpearl.wordpress.com/	
Positions	THE NATURE CONSERVANCY 2021 – Freshwater Scientist The Nature Conservancy, Arizona Chapter	Tucson, AZ
	UNITED STATES GEOLOGICAL SURVEY 2019 – 2021 Mendenhall Postdoctoral Research Fellow Earthquake Science Center	Seattle, WA
	UNIVERSITY OF WASHINGTON COLLEGE OF THE ENVIRONMENT 2019 Future Park Leader of Emerging Change Saguaro National Park	Tucson, AZ
	UNIVERSITY OF ARIZONA 2015 – 2019 Graduate Research Assistant Department of Geosciences Laboratory of Tree Ring Research	Tucson, AZ
	UNIVERSITY OF ARIZONA SKY SCHOOL 2017 – 2019 Science Instructor for K-12 students	Tucson, AZ
	SAGUARO NATIONAL PARK 2018 Guest Scientist Geoscientists-in-the-Park program Geological Society of America AmeriCorps Position	Tucson, AZ
	WOODS HOLE OCEANOGRAPHIC INSTITUTION 2014 – 2019 Affiliated Joint Program Student	Woods Hole, MA
Education	UNIVERSITY OF ARIZONA 2019 Ph.D., Geosciences (Paleoclimatology, Dendrochronology) PhD Minor Area: Global Change Primary Advisor: Kevin J. Anchukaitis Dissertation: <i>Reconstructing Late Holocene Climate and Coastal Evolution</i>	Tucson, AZ for the Northeastern United
	 States TUFTS UNIVERSITY 2013 B.S., (<i>cum Laude</i>) Geology & Environmental Science Foreign study at University of Canterbury (Christchurch, NZ), 2011-2012 	Somerville, MA

- [20] Pearl, J.K., S. Angster, H. Kelsey, D. Caldwell, I. Pryor, B. L. Sherrod, Debris avalanches in the northern California Coast Range triggered by plate boundary earthquakes, *Bulletin of the Seismological Society of America*, doi: 10.1785/0120240008, 2024.
- [19] Angster, S. J., B. L. Sherrod, W. Johns, and J.K. Pearl, Field Observations and Logs from the Rose Hip Trench Exposure Across a North-facing Scarp Within the Seattle Fault Zone, Southern Bainbridge Island, Washington, USGS Scientific Investigations Map, doi: 10.3133/sim3520, 2024.
- [18] [‡] Dwivedi, R., J. Biederman, P. Broxton, J. K. Pearl, K. Lee, B. M. Svoma, W. J.D. van Leeuwen, M. Robles, How three-dimensional forest structure regulates the amount and timing of snowmelt across a climatic gradient of snow stability, *Frontiers in Water, section Water and Critical Zone*, doi: 10.3389/frwa.2024.1374961, 2024.
- [17] Atwater, Brian F., D. Yamaguchi, J.K. Pearl, Earthquake effects surveyed during the nineteenth century as ecological features of Chinookan tidelands, *Northwest Science*, doi: 10.3955/046.097.0109, 2024.
- [16] Black, B., J. K. Pearl, C. Pearson, P. Pringle, D. Frank, M.T. Page, B.M. Buckley, E.R. Cook, G.L. Harley, K.J. Heeter, J. F. Hughes, D.J. Reynolds and B.L. Sherrod, Mass tree mortality reveals a multi-fault earthquake threat for the Seattle metropolitan region, *Science Advances*, doi: 10.1126/sciadv.adh4973, 2023.
- [15] ‡Dwivedi, R., J. A. Biederman, P. D. Broxton, K. Lee, W. J.D. van Leeuwen and J.K. Pearl, Forest density regulates root zone water stress and percolation at sites with contrasting ephemeral or stable seasonal snowpacks, *Journal of Hydrology*, doi: 10.1016/j.jhydrol.2023.129915, 2023.
- [14] Tucker, Clay., J. K. Pearl, E. A. Elliott, J. C. Bregy, J. M. Friedman, M. D. Therrell, Baldcypress false ring formation linked to summer hydroclimatic extremes in the southeastern United States, *Environmental Research Letters*, doi: 10.1088/1748-9326/ac9745, 2022.
- [13] †Dye, Laura, J.K. Pearl, L. Smith, B. Coulthard, C. Butkiewicz, Z. Cooper, J. Degrand, J. Friedman, I. Homfeld, H. Howard, L. Ironcloud, S. Wray, Co-occurring Wyoming conifers have distinct climategrowth relationships, *Tree Ring Research*, doi: 10.3959/TRR2021-5, 2022.
- [12] Pearl, J. K., and L. Staisch (2021), Swipe left on the "big one": Better dates for Cascadia quakes, Eos, 102, doi: 110.1029/2021EO162183, 2021.
- [11] Tucker, C. & Pearl, J.K., Coastal tree-ring records for paleoclimate and paleoenvironmental applications in North America, *Quaternary Science Reviews*, 261, 107044, doi: 10.1016/j.quascirev.2021.107044, 2021.
- [10] Walton, M & Staisch, L, T. Dura, J.K. Pearl, B. Sherrod, J. Gomberg, S. Engelhart, A. Trehu, J. Watt, J. Perkins, N. Bartlow, C. Goldfinger, H. Kelsey, A. Morey, V. Sahakian, H. Tobin, R. Wells, E. Wirth, R.Witter, Towards an integrative geological and geophysical view of Cascadia subduction zone earthquakes, *Annual Review of Earth and Planetary Sciences*, 41, 1 doi: 10.1146/annurev-earth-071620-065605, 2021.
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- [7] Pearl, J.K., K.J. Anchukaitis, J. Donnelly, C. Pearson, A. McNichol, N. Pederson, A.P. McNichol, M. L. Gaylord, E.R. Cook, G.L. Zimmerman, A late Holocene subfossil Atlantic white cedar tree ring record from the northeastern United States, *Quaternary Science Reviews*, 228, 106104, doi: 10.1016/j.quascirev.2019.106104, 2020.

- [6] Pearl, J.K., K.J. Anchukaitis, N. Pederson, J. Donnelly, Multivariate climate field reconstructions using tree-rings for the northeastern United States, *Journal of Geophysical Research – Atmospheres*, 125, e2019JD031619 doi: 10.1029/2019JD031619, 2019.
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- [3] Alexander, M. R., J.K. Pearl, D. A. Bishop, E.R Cook, K.J. Anchukaitis, N. Pederson, The potential to strengthen temperature reconstructions in ecoregions with limited tree line using a multispecies approach, *Quaternary Research*, 1-15, doi: 10.1017/qua.2019.33, 2019.
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- Pearl, J.K., K. Anchukaitis, N. Pederson, J. Donnelly, Reconstructing Northeastern United States temperature using Atlantic white cedar tree-ring width, *Environmental Research Letters*, 12, 114012, doi: 10.1088/1748-9326/aa8f1b, 2017.
- In Revision, Submitted, or In Preparation
- Elliott, Emmily, †J. Friedman, C. S. Tucker, J. C. Bredgy, M. D. Therrell, **J.K. Pearl**, Hydroclimatic Relationships and Stable Isotopic Analysis in Baldcypress Tree Rings, submitted to Science of the Total Environment
- Angster, S, B.L. Sherrod, **J.K. Pearl**, L. Staisch, W. Johns, A new kinematic model of latest Pleistocene to 19th-century earthquakes on bending-moment reverse faults of the Seattle fault zone, in prep for submission to GSA Bulletin
- **Pearl, J.K.**, K.J. Anchukaitis, J. Donnelly, N. Pederson, Coastal forest demise caused by third century New England Hurricanes, in prep
- ‡Broadman, E., D. Meko, J. K. Pearl, B. Svoma, J. C. Bishop, T. Sheriff, F. Sievert, and V. Trouet, A multi-centennial Salt River streamflow record to inform southern Arizona water management, in prep for submission to Water Resources Research

Technical Reports and Published Datasets

- [4] Pearl, J. K., H. Kelsey, S. J. Angster, D. Caldwell, I. Pryor, and B. Sherrod (2024). Dataset supporting the manuscript: Debris avalanches in the northern California coast range triggered by plate boundary earthquakes, doi: 10.5066/P13TERWP.
- [3] **Pearl, J.K.**, D. Swann, C. Filippone, K. O'Brien, Contextualizing recent snowpack trends of a southern Arizona Mountain Range, 2019, *Internal Report, National Park Service*
- [2] Pearl, J.K., C. King, D. Swann, C. Filippone, C. Eastoe, G. Davis, Geohydrology of perennial low elevaton tinajas in the Saguaro National Park, 2018, *Internal Report, National Park Service*
- King, C., J.K. Pearl, D. Swann, G. Davis, Structural and lithological controls on the hydrology at low elevation in the Rincon Mountain District of Saguaro National Park, Tucson, AZ, 2018, *Internal Report, National Park Service*

TEACHING AN	ND MENTORING	T 17	
	UNIVERSITY OF ARIZONA College of Agriculture, Life, and Environmental Sciences	Tucson, AZ	
	Mentor		
	Impact Leader Fellows Program (Spring 2024)		
	UNIVERSITY OF ARIZONA	Tucson, AZ	
	Arizona Institute for Resilient Environments and Societies		
	Mentor Liverman Scholars Program (Fall 2021, Spring 2022, Fall 2022, Spring 2023)		
	North American Dendroecological Field Week	Cody, WY	
	Instructor	·	
	Introduction to Dendrochronology (Summer 2019)		
	UNIVERSITY OF ARIZONA	Tucson, AZ	
	School of Geography and Development		
	Lecturer GEOG 170A1 Introduction to Physical Geography (Fall 2018)		
	University of Arizona	Tucson, AZ	
	Laboratory of Tree Ring Research		
	Co-Facilitator 'PRO-grad' <i>Scientific and Professional Training</i> (Fall 2018)		
	UNIVERSITY OF ARIZONA SKY SCHOOL	Tucson, AZ	
	Geology and Dendrochronology K-12 inquiry based projects in the Catalina Sky Islands (Fall 2017, Spring 2018, Fall 2018, Sp	oring 2019)	
	NATUREBRIDGE Thousa	and Oaks, CA	
	Science Educator		
	K-12 inquiry based projects in Santa Monica Mountains National Recreation Area and Ch National Park (Winter 2014, Spring 2014, Summer 2014)	annel Islands	
Honors	The Nature Conservancy Arizona Chapter 'Drives for Results' award, 2023		
	Frontiers in Hydrology Meeting Early Career Researcher Travel Grant winner, 2022		
	The Association for Tree-Ring Research Best Doctoral Thesis, 2020		
	University of Arizona Laboratory of Tree Ring Research A.E. Douglass Award, 2019		
	P.E.O. Scholar Award Recipient, 2018		
	University of Arizona Department of Geosciences Wilson Thompson Graduate Scholarship, 2018		
	University of Arizona College of Science, Laboratory of Tree Ring Research Scholarship Award, 2018		
	University of Arizona, Herbert E. Carter Travel Award, 2018		
	University of Arizona Graduate & Professional Student Council Travel Grant, 2017 & 2018		
	Arizona Geological Society M. Lee Allison Scholarship, 2017		
	Geologic Society of America Student Research Grant Award, 2017		
	University of Arizona, Department of Geosciences, Chernoff Family Scholarship, 2017		
	University of Arizona College of Science Galileo Circle Scholar, 2017		
	University of Arizona Global Change Travel Grant, 2017		
	American Geophysical Union fall meeting Student Travel Grant, 2016		
	Southern Arizona Environmental Management Society Scholarship, 2016		

	National Science Foundation Graduate Research Fellowship Honorable Mention, 2016	
	Achievement Rewards for College Scientists, University of Arizona Department of Geosciences Nominee, 2016	
	University of Arizona Institute for the Environment Travel Grant, 2016	
Fellowships		
	U.S. Geological Survey Mendenhall Postdoctoral Research Fellowship, 2019-2021	
	University of Arizona Carson Scholar Fellowship, 2016	
	M.I.T. Diversity Fellowship, 2014–2015	
	Climate Change Youth Initiative, George Melendez Wright Fellowship for Climate Change Research, 2013	
GRANTS		
	"Satellite to Streams: Using remote sensing to determine wetted length of Arizona streams", J.K. Pearl, D. Lapides, S. Gao, The Nature Conservancy Innovation Fund, FY2025-FY2027, \$81,800	
	"Leveraging tree-ring records to quantify causes, effects, and recurrence for Arizona's megadrought", E. Broadman, V. Trouet, L. Condon, D. Zamora-Reyes, J.K. Pearl , Arizona Institute for Resilient Environments and Societies (AIRES) Resilience Grant, FY2022-2023, \$88,942	
	"Conserving tree-ring clues to Northwest hazards and climates" coPIs: B. Atwater, J.K. Pearl, B.	

"Conserving tree-ring clues to Northwest hazards and climates" coPIs: B. Atwater, **J.K. Pearl**, B. Black. U.S Geological Survey (USGS) National Geological and Geophysical Data Preservation Program (NGGDPP). FY 2022, \$25,525

"Integrating multiproxy records of Tropical Cyclone activity over the last millennia to contextualize 21st century events in the Northern Gulf of Mexico" coPIs/Advisors: E. Elliott, C. Tucker, **J.K.Pearl**, J. Bredgy. NSF FY21 P2C2 (2103115), 07/15/2021 – 6/30/2023, \$327,532

PRESENTATIONS Invited, Student-Led, or Recent Presenting Author (2020 to present) \dagger = student author

Pearl, J.K., S. Angster, H. Kelsey, D. Caldwell, I. Pryor, B. L. Sherrod, Debris avalanches in the northern California Coast Range triggered by plate boundary earthquakes, Northern California Earthquake Hazards Workshop, January 28-30, virtual ***Invited Talk*

Pearl, J.K., Collaborative hydrological monitoring defines climate and industry threats to Sonoita Creek, Arizona USA, One Conservancy Science Meeting, November 11-15, Mexico City, Mexico

Pearl, J.K., Success of Water Conservation Actions in Arizona, Water Resources Research Center Annual Conference, July 11-12, 2023, Tucson, AZ

Pearl, J.K., H. Kelsey, S. Angster, D. Caldwell, I. Pryor, B. Sherrod, Precise dating of pre-historic plate boundary earthquakes: Dendrochronologically based age estimates for time of failure of mega debris avalanches, USGS Subduction Zone Science Workshop, January 10-11, 2023, Seattle, WA

Pearl, J.K., Climate Change and the Verde, State of the Verde Watershed Conference, September 26-29, 2022, Camp Verde, AZ, ** *Invited Talk*

Pearl, J.K., S. J. Angster, W. Johns, B. L. Sherrod, B. Black, Using drought sensitive trees to understand landslides and flooding events in coastal Cascadia, Frontiers in Hydrology Meeting, June 19-24, 2022, San Juan, Puerto Rico

Pearl, J.K., Precision dating of Cascadia seismicity using multiproxy tree-ring records, Northern California Earthquake Hazards Workshop, January 25-27, 2022 ** *Invited Talk*

Pearl, J.K., Calibration of of 14C Ages Curves & Software, IGCP 725 Radiocarbon Workshop, January 19, 2022 ** *Invited Talk*

Pearl, J.K. & Tucker, C.S., Opportunities in Coastal Dendrochronology, Harvard Forest Tree Ring Lab Discussion, January 10, 2022 ** *Invited Talk*

Pearl, J.K., Reconstructing late Holocene coastal climate and extreme events using multi-proxy records, Northern Arizona University School of Earth and Sustainability Seminar, December 1, 2021, Flagstaff, AZ *** Invited Talk*

Pearl, J.K., B. Black, P. Pringle, B. Sherrod, S. Angster, W. Johns, Establishing precise ages for past Cascadia region seismicity using multiproxy tree-ring records, Geologic Society of America Annual Meeting, October 10-13, 2021 doi: 10.1130/abs/2021AM-366348** *Invited Talk*

Pearl, J.K., Multiproxy reconstructions of coastal climate and extreme events in North America, Central Washington University Department of Geology, May 7, 2021 ** *Invited Talk*

Pearl, J.K., Multiproxy reconstructions of late Holocene coastal climate and extreme events, University of Texas Institute for Geophysics, March 19, 2021 ** *Invited Talk*

Pearl, J.K., Multiproxy reconstructions of Late Holocene coastal climate and extreme events in the United States, University of Tennessee, Knoxville Department of Geography Seminar, February 25, 2021 ** *Invited Talk*

Pearl, J.K., Late Holocene coastal evolution and climate variability in the United States, Lamont-Doherty Earth Observatory Biology and Paleo-environment Seminar, February 8, 2021 ** *Invited Talk*

Pearl, J.K., Multiproxy reconstructions of coastal climate and extreme events in the United States, University of Washington Earth and Space Sciences Seminar, January 14, 2021 ** *Invited Talk*

Pearl, J.K., Black, B. A., Pringle, P., Sherrod, B. L., Multiproxy dendrochronological dating of coseismic land-level changes in the Puget lowlands, American Geophysical Union fall meeting, December 1–18, 2020

[†] Dye, L., C. Butkiewicz, Z. Cooper, J. DeGrand, J. Friedman, I. Homfeld, H. Howard, L. Ironcloud, **J. K. Pearl**, L. Smith, S. Wray, Climate sensitivity and growth response of two conifers on high elevation ridge at Wolf Knob, Shoshone Forest, WY, Geological Society of America Annual Meeting 2020

Pearl, J.K., High Resolution Dating of Paleoseismic Events, presented at the Pacific Northwest Earthquake Science Workshop, November 4-6, 2019, Seattle, WA ** *Invited Talk*

Pearl, J.K., Late Holocene coastal evolution and climate variability in the northeastern United States, Rice University Earth, Environmental and Planetary Sciences Seminar, January 22, 2019, Houston, TX** *Invited Talk*

Pearl, J.K., K. Anchukaitis, J. Donnelly, N. Pederson., Ghost Forest Stories: how ancient coastal trees tell us about shoreline change and past hurricanes, presented at University of Arizona School of Earth and Environmental Sciences "EarthWeek", April 10–13, 2018, Tucson, AZ ** *Invited Talk*

PRESS/POPULAR SCIENCE

- *Research featured in* "A double earthquake threat? Study finds 2 Seattle-area faults ripped about the same time", Seattle Times https://www.seattletimes.com/seattle-news/a-double-earthquake-threat-study-finds-two-seattle-area-faults-ripped-about-the-same-time/, September, 2023
- Research featured in "Huge earthquake shook Seattle 1100 years ago and it could happen again", NewScientist https://www.newscientist.com/article/2394583-huge-earthquake-shook-seattle-1100-years-agoand-it-could-happen-again/, Septemer, 2023
- Research featured in "Dead Trees and a Mysterious Cosmic Explosion Reveal Bigger Quake Risk for Seattle", Scientific American https://www.scientificamerican.com/article/dead-trees-and-a-mysterious-cosmicexplosion-reveal-bigger-quake-risk-for-seattle/, September, 2023
- Research featured in "Brink of Disaster (Season 1 Episode 2): West Coast Superquakes" https://go.discovery.com/show/b of-disaster-discovery-atve-us, streaming on Discovery Plus, January, 2023
- *Research featured in* "Earthstorm: Earthquakes" https://www.netflix.com/title/81346975, Wall to Wall Entertainment, streaming on NETFLIX, October, 2022
- Research featured in "Northwest scientists use ancient trees (and an underwater chainsaw) to uncover our seismic history" https://www.opb.org/article/2021/10/15/northwest-scientists-use-ancient-treesunderwater-chainsaw-study-seismic-history/, October, 2021
- Pearl, J. K., and L. Staisch (2021), Swipe left on the "big one": Better dates for Cascadia quakes, Eos, 102, doi:110.1029/2021EO162183, Published on 20 August, 2021
- "Dendrochronological dating of co-seismic land-level changes along the Washington coast", Association of Environmental & Engineering Geologists Nisqually Chapter, February, 2021
- "A suite of evidence for past earthquakes on Bainbridge Island", Bainbridge Island Day of Preparedness community presentation, September, 2020
- Research featured in "A Massive Earthquake Is Coming to Cascadia- And It Can't Be Stopped", Atlas Obscura, August, 2020
- DATA NUGGET, "A window into a tree's world", http://datanuggets.org/tag/ecology/, December, 2019
- 'Why is there water in the desert? A look at low elevation pools in Saguaro National Park', Friends of Saguaro National Park public lecture, September, 2018
- "Climate at the Core" Science Café: a Public Science Lecture Series, February, 2017
- *Research featured in* 'Climate at the Core: Reconstructing the past to understand the future', The Nature Conservancy Magazine, New Hampshire edition, October, 2016
- Research featured in "Ghostly Findings On the Shores of Montauk Garner Attention", 27east.com, October 27, 2015

SERVICE AND PROFESSIONAL AFFILIATIONS

- Steering Committee Member Past Global Changes (PAGES) Early Career Network Working Group (2020-2024)
- **Professional reviewer** of journal manuscripts including *Science*, *Nature*, *Scientific Reports*, *Climate of the Past*, *Global and Planetary Change*, *The Holocene Dendrochronologia*, *Quaternary Science Reviews*, *Wetlands*, *Journal of Coastal Research*, *Natural Hazards and Earth System Sciences*, *PLOS One*, *Forests*.

Professional reviewer of National Science Foundation grant proposals.

Affiliate Member of the University of Washington Quaternary Research Center (2020-2021)

- Member of USGS Earthquake Science Center Diversity, Equity, and Inclusion Task Force (2020-2021)
- **Outreach Volunteer** for the University of Arizona Laboratory of Tree Ring Research and Department of Geosciences (2016-2019)
- **Member** of American Geophysical Union and Geological Society of America and American Institute of Professional Geologists and Tree Ring Society and Association for Tree-Ring Research and Arizona Geological Society and Association for Women Geoscientists

PARTICIPATION AND TRAINING

- Tribal Water Fluency Workshop, 2023
- Engaging Across Differences Workshop, 2022
- Unlearning Racism in Geoscience (URGE) course, 2021
- Invited Participant, World Dendro Field Week, Jakar, Bhutan, June 2018
- Invited Participant, Past Global Changes Youth Science Meeting, Zaragoaza, Spain, May 2017
- Participant, MATLAB for Geosciences, formal training with Dr. M. Trauth, Tucson, Arizona, October 2016
- Invited Participant, Potsdam Summer School: 'Climate Change Impacts', Potsdam, Germany, September 2016
- Participant, N.C.A.R. CESM Tutorial, Boulder, CO, August 2016
- Participant, American Dendrochronology Field Week, El Bolson, Argentina, March 2016
- Participant, Wood Anatomy and Tree Ring Ecology course, Klösters, Switzerland, December 2015
- Invited Participant, Central American Dendroecology Field Week, Guatemala, March 2015
- Wilderness First Responder (Valid until June 2026)
- CPR/AED Certified (Valid until June 2026)