
Curriculum Vitae
Andrew T. Fullhart

Hydrological Researcher

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Summary My research is accomplished by developing climate parameterizations for hydrologic modeling and applied climatology with scientific objectives related to sustainability and management of watershed function, agriculture, and the environment.

Education

- 2018 PhD in Hydrologic Sciences, University of Wyoming, Laramie, WY
Major Advisor: Dr. Thijs Kelleners
- 2015 Master of Science in Environmental Science, Bemidji State University, Bemidji, MN
Major Advisor: Dr. Timothy Kroeger
- 2010 Bachelor of Science in Geoscience, University of Iowa, Iowa City, IA

Employment

Postdoctoral Research Associate **2018-2023**
USDA Agricultural Research Service, Southwest Watershed Research Center
Tucson, AZ

Development of geospatial climate data for use in modeling applications. This project has involved a diversity of climate data, including different gridded precipitation products and ground networks. The created climate datasets have been used for international studies involving modeling scenarios in the Rangeland Hydrology and Erosion Model (RHEM) and for mapping of extreme precipitation. In doing so, methods were developed for downscaling precipitation from gridded datasets by use of a stochastic weather generator.

Graduate Teaching and Research Assistant **2014-2018**
Department of Ecosystems Science and Management, University of Wyoming,
Laramie, WY

Research in integrated modeling for mountain watersheds to estimate water and energy fluxes. This research incorporated different types of climatological and hydrological instrumentations, and involved both surface and subsurface processes. Teaching assistant for Introduction to Soil Science Laboratory (2014); Soil Physics Laboratory (2015, 2017, 2018).

Graduate Teaching and Research Assistant **2011-2013**
Department of Environmental Science, Bemidji State University, Bemidji, MN.

Research in groundwater/surface water interactions with field study designs. Teaching assistant for Physical Geology Laboratory (2011, 2012, 2013); Historical Geology Laboratory (2012, 2013); Upward Bound Workshops (2013); Field Geoscience for Educators Graduate Assistant (2013).

Wetlands Research Contractor

2012

Minnesota DNR Northwest Region Headquarters, Bemidji, MN

Water resource management project for wetland area and adjacent agricultural area. Development of LIDAR base map and collection of historical records regarding flood control structures and drill logs to assist project scoping and flood modeling.

Field Assistant

2011

USGS Pinewood crude oil spill site, Pinewood, MN

Assisted the functions of the USGS summer field campaign at a site impacted by a pipeline spill with duties that included water-level record keeping, water quality sampling and surveying.

Editorial Board Member

Journal of International Soil and Water Conservation Research (2020-Present)

Awards

Superior Paper Award 2022 (J. ASABE)

Best Paper Award 2022 (J. Big Earth Data)

Peer-reviewed Publications

Fullhart, A., Ponce-Campos, G. E., Meles, M. B., McGehee, R. P., Wei, H., Armendariz, G., Burns, S., & Goodrich, D. C. (in review). Towards global coverage of gridded parameterization for CLimate GENerator (CLIGEN). *Big Earth Data*.

Strongman, K., Goodrich, D., Fullhart, A., & Unkrich, C. (in review). Areal rainfall reduction factors for areas of the US Southwest dominated by thunderstorms during the North American monsoon. *Journal of Hydrologic Engineering*.

Lemos, F. C., Coelho, V. H. R., Freitas, E. D. S., Tomasella, J., Filho, G. M. R., Bertrand, G. F., Meira, M. A., Fullhart, A., & Almeida, C. D. N. (in press). Spatiotemporal distribution of precipitation and its characteristics under the tropical atmospheric system of Brazil: Insights from a large sub-hourly database. *Journal of Hydrology*.

Fullhart, A., Goodrich, D. C., Meles, M. B., Oliveira, P. T. S., das Neves Almeida, C., de Araújo, J. C., & Burns, S. (2023). Atlas of precipitation extremes for South America and Africa based on depth-duration-frequency

relationships in a stochastic weather generator dataset. *International Soil and Water Conservation Research*, 11, 726-742.

Fullhart, A., Ponce-Campos, G. E., Meles, M. B., McGehee, R. P., Armendariz, G., Oliveira, P. T. S., Almeida, C. D. N., de Araújo, J. C., Nel, W., & Goodrich, D. C. (2022). Gridded 20-year climate parameterization of Africa and South America for a stochastic weather generator (CLIGEN). *Big Earth Data*, 1-26.

Fullhart, A., McGehee, R., Nearing, M. A., Hernandez, M., Weltz, M. A., & Goodrich, D. C. (2022). A Global Rain-Driven Soil Erosion Investigation Based on Simulated Breakpoint Precipitation. *Journal of the ASABE*, 65(5), 1081-1096.

Fullhart, A.T., Nearing, M.A., Armendariz, G., & Weltz, M.A. (2021). Climate benchmarks and input parameters representing locations 68 countries for a stochastic weather generator, CLIGEN, *Earth System Science Data*, 13(2), 435-446.

Fullhart, A.T., Nearing, M.A., & Weltz, M.A. (2021). Temporally downscaling precipitation intensity factors for Köppen climate regions in the U.S. *Soil and Water Conservation*, 76(1), 39-51.

Fullhart, A. T., Nearing, M. A., McGehee, R. P., & Weltz, M. A. (2020). Temporally downscaling a precipitation intensity factor for soil erosion modeling using the NOAA-ASOS weather station network. *Catena*, 194, 104709.

Fullhart, A. T., Kelleners, T. J., Speckman, H. N., Beverly, D., Ewers, B. E., Frank, J. M., & Massman, W. J. (2019). Measured and modelled above-and below-canopy turbulent fluxes for a snow-dominated mountain forest using GEOTop. *Hydrological Processes*, 33(18), 2464-2480.

Fullhart, A. T., Kelleners, T. J., Chandler, D. G., McNamara, J. P., & Seyfried, M. S. (2019). Bulk density optimization to determine subsurface hydraulic properties in Rocky Mountain catchments using the GEOTop model. *Hydrological Processes*, 33(17), 2323-2336.

Fullhart, A. T., Kelleners, T. J., Chandler, D. G., McNamara, J. P., & Seyfried, M. S. (2018). Water flow modeling with dry bulk density optimization to determine hydraulic properties in mountain soils. *Soil Science Society of America Journal*, 82(1), 31-44.

Selected Abstracts and Presentations

Fullhart, A. T., Goodrich, D., Miles, M., Ponce-Campos, G., McGehee, R., Oliveira, P. T. S., Almeida, C. N., de Araújo, J. C. (2022). Continental-Scale mapping of extreme precipitation for durations ranging from sub-hourly to monthly using a gridded stochastic dataset. Oral presentation at the American Geophysical Union Conference, Chicago, IL (Dec. 15).

Fullhart, A. T., Goodrich, D. (2021). Simulated breakpoint precipitation from global climate products based on machine learning regressions calibrated with ground network information. Poster presentation at the American Geophysical Union Conference, New Orleans, LA (Dec. 14).

Fullhart, A. T., Nearing, M., Armendariz, G., Weltz, M. (2020). Using a new dataset of international climate parameters to drive soil erosion modeling. Poster presentation at the American Geophysical Union Virtual Conference (Dec. 15).

Fullhart, A.T., Nearing, M.A., Weltz, M.A. (2019). Estimating precipitation intensities from coarse resolution rainfall data. Seminar at Great Basin Rangelands Research, Reno, NV (Nov. 4).

Fullhart, A.T., Nearing, M.A. (2019). Temporally downscaling precipitation intensity factors for Köppen climate regions in the U.S. Seminar at the National Soil Erosion Research Laboratory, West Lafayette, IN (Jun. 17).

Fullhart, A.T., Kelleners, T.J. (2018). Simulating snowmelt-driven streamflow in small mountain catchments with the GEOTop model using a novel calibration method. Oral presentation at the C.S.U. Hydrology Days Conference, Fort Collins, CO (Mar. 19).