

Kathryn Willi

916 Laporte Ave. · Fort Collins, CO 80521 · 540.247.9221 · kathryn.willi@colostate.edu

Education

M.S. Watershed Science, Certificate in Data Analysis

GPA: 3.8

Colorado State University (CSU), Fort Collins, CO

Graduation: May 2021

B.S. Environmental Health, Honors Program

GPA: 3.6

Colorado State University (CSU), Fort Collins, CO

Graduation: May 2015

Relevant Skills

- Gathering, analyzing, and reporting on technical information, with expertise in statistical and geospatial analyses using R Software, ArcGIS, and Microsoft Excel
- Coordinating and performing field work and laboratory analyses including stream sampling, flow and water quality monitoring, instrument calibration, and QA/QC development
- Balancing complex projects, meeting deadlines, and effectively communicating with individuals in the federal, state, municipal, and non-profit sectors

Research and Other Published Materials

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| <i>Water Quality Inventory for Wild and Scenic Rivers, National Park Service</i> | In Review |
| • National Park Service Natural Resource Report publication, primary author | |
| <i>The Precautionary Principle and the Environment: A Case Study of an Immediate Global Response to the Molina and Rowland Warning</i> | Nov 2021 |
| • ACS Earth and Space Chemistry publication, primary author | |
| <i>Are Wild and Scenic Rivers Really “Free-Flowing”?</i> | March 2021 |
| • Master’s thesis | |
| <i>Predicting Mean Annual and Mean Monthly Streamflow in Colorado Ungauged Basins</i> | Feb 2021 |
| • River Research and Applications publication, contributing author | |
| <i>Wild and Scenic River Currents</i> | 2019 – 2021 |
| • National Park Service annual online newsletter, editor | |
| <i>The Case for an Open Water Balance: Re-envisioning Network Design and Data Analysis for a Complex, Uncertain World</i> | June 2020 |
| • Water Resources Research publication, contributing author | |
| <i>Evaluation of State Water Quality Assessments and the National Wild and Scenic Rivers System</i> | Oct 2018 |
| • Interagency Wild and Scenic Rivers Coordinating Council White Paper, primary author | |
| <i>A Look Below the Surface: Water Quality of the National Park Service’s Wild and Scenic Rivers</i> | Oct 2018 |
| • ArcGIS Online Story Map, primary creator | |
| <i>Embolized Stems Recover Overnight in Zea mays: The Role of Soil Water, Root Pressure, and Nighttime Transpiration</i> | April 2017 |
| • Frontiers in Plant Science publication, contributing author | |

Current Position

Lab Manager, CSU Dept. of Ecosystem Science and Sustainability, Fort Collins, CO

Oct 2021 – Current

Supervisor: Matthew Ross, PhD

- Maintain and manage the lab’s GitHub and code base
- Develop R ‘shiny’ apps, ‘blogdown’ websites, and other products for lab and project needs
- Oversee data quality checks and data management across lab projects
- Maintain an urban water quality sonde network through a partnership with the City of Fort Collins

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Past Professional Experience

Water Quality Sampler and Spatial Analyst, CSU Geospatial Centroid, Fort Collins, CO
Supervisor: Matthew Ross, PhD

April 2021 – Oct 2021

- Coordinated the field operations of several research projects associated with the effects of the Cameron Peak Fire in the Cache la Poudre watershed
- Selected monitoring locations, designed sampling protocols, and trained field crews to implement research related to water quality issues in the watershed
- Installed, managed, and maintained a network of water quality and flow sensors
- Assisted the U.S. Forest Service's Rocky Mountain Research Station in tasks such as preparing maps, data visualization, and laboratory analyses

Research Assistant, CSU Dept. of Ecosystem Science and Sustainability, Fort Collins, CO
Supervisor: Stephanie Kampf, PhD

Jan 2019 – March 2021

- Assessed the water quality and hydrologic condition of Wild and Scenic River (WSR) watersheds by integrating streamflow statistics, water quality data, and geospatial data in R and ArcGIS
- Synthesized reports, data, and conversations with WSR partners to develop a WSR watershed framework for National Park Service WSRs
- Collected data from and maintained long-term intermittent stream monitoring sites across Colorado
- Assisted the National Park Service's Water Rights Branch in tasks such as preparing maps, compiling water rights records, and quantifying stream discharge to support park unit water rights

AmeriCorps Fellow, National Park Service Water Resources Division, Fort Collins, CO
Supervisor: Jennifer Back

Jan 2017 – Nov 2018

National Wild and Scenic River (WSR) Program

- Used knowledge of federal water policies to identify methods of improving water quality and flow conditions in WSR watersheds
- Incorporated National Park Service WSRs into the Hydrographic and Impairment Statistics online water quality database
- Awarded and oversaw a \$55,000 grant from the National Park Foundation to develop a program that supports citizen science water quality monitoring projects
- Evaluated the National WSR System's compliance to state water quality standards and assisted Adventure Scientists in identifying WSRs with limited water quality data for their citizen science project

Water Rights Branch

- Inventoried municipal water withdrawals and discharges in the Obed WSR watershed for use in park resource management plans
- Investigated the historic and current consumptive water use patterns at Furnace Creek in Death Valley National Park for water rights review and compliance
- Assisted in the coordination and collection of water quality samples at Theodore Roosevelt National Park with the U.S. Geological Survey to identify the contributing aquifers of seeps and springs in the park
- Became familiar with the National Park Service's water rights dockets and how water rights records are maintained

Science Technician, U.S. Department of Agriculture Water Management Unit, Fort Collins, CO
Supervisor: Louise Comas, PhD

Oct 2015 – Nov 2016

- Oversaw the research and development of a tool for Colorado farmers that monitors water stress in corn
- Collected and analyzed an array of data, including ET calculations, growth staging/biomass, multispectral and thermal imaging, sap flow, leaf water potential, stomatal conductance, root phenology/density, and crop yield
- Helped manage the research farm by preparing land for off season, harvesting, operating farm machinery, and other research farm maintenance

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Sustainability Coordinator, ZeroHero, Fort Collins, CO

May 2015 – Oct 2015

Supervisor: Kara Breitung

- Ran recycling, composting, and landfill waste services at local and national zero-waste events
- Applied extensive knowledge of waste management and environmental stewardship to high-energy environments
- Educated staff, vendors, attendees, and volunteers on zero-waste practices

Research Assistant, CSU Dept. of Atmospheric Science, Fort Collins, CO

Jan 2014 – May 2015

Supervisor: A. R. Ravishankara, PhD

- Studied elements pertaining to stratospheric ozone and ozone-related ordinances, specifically the roles of various ozone-depleting substances in the formation of the stratospheric ozone hole and their effects on global warming
- Simulated global atmospheric chemistry processes with models in Fortran
- Prepared reports, tables, and charts that documented findings from research

High School Work Study, Winchester-Frederick Service Authority, Winchester, VA

Jan 2011 – June 2011

Supervisor: Jesse Moffett

- Explored plausible methods of eliminating non-point sources of phosphorus and nitrogen in Frederick County, VA waterways to meet Chesapeake Bay Total Maximum Daily Load objectives
- Reported research findings to a televised board of community leaders
- This early exposure to environmental policy prompted my enduring interest in water resources management

Professional Organizations

River Network

- Helped develop and implement River Network's funding source for nonprofit groups conducting community watershed science on National Park Service WSRs

River Management Society

- Assisted in the promotion and production of River Management Society's 2021 Online Symposium as a member of their marketing team