

# Matthew Woodworth

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## **Watershed and Environmental Sciences Professional Summary**

As an emerging professional in the field of Water Resources, I am passionate about various facets of hydrology and aquatic environments. Throughout my college career I have been involved in a wide array of extracurricular activities and student organizations, allowing me to expand on my skill sets and discover how I work with others on different projects. Through my coursework and volunteer experiences, I have gained hands-on skills in field sampling, data analysis, and environmental assessment. With proficiency in R, GIS, and Scientific communication, I am confident in the application of my skills towards understanding complex environmental and ecological systems.

## **Education**

**Professional Science Master's Program in Ecosystem Science, Colorado State University ♦ Fort Collins, CO**

Graduation Date: December 2025

Concentration: Water Resources

**Bachelors of Science, Colorado State University ♦ Fort Collins, CO**

Graduation Date: May 2024

Major: Ecosystem Science and Sustainability | Minor: Watershed Science | GPA: 3.84 | Cum Laude

## **Relevant Skills**

- **Field Sampling and Monitoring:** Riverine/lake biological, chemical, and physical sampling techniques using various water quality probes and sondes.
- **Data Analysis & Modeling:** R, Excel, GIS, statistical analysis, and advanced data visualization
- **Technical Reporting & Communication:** Scientific writing, report development, and data presentation with proficiency in the Microsoft office suite
- **Team Collaboration:** Effective interdisciplinary teamwork in research, restoration projects, and extracurriculars
- **Hydrologic Instrumentation:** Proficient in deploying and maintaining water quality sensors and data loggers

## **Relevant Work and Volunteer Experience**

**Volunteer Weather Observer | Campus Weather Station, Fort Collins, CO**

*2024-2025*

- Conduct manual observations of precipitation, snowfall, temperature, dew point, pressure, wind, etc. twice a week to report to the NWS and add to historical climatic data set
- Strong aptitude and knowledge of climate data collection and monitoring

**Trails Crew Member, Larimer County Conservation Corps**

*June 2024-August 2024*

- Constructed 1,000s of feet of sustainable trails around Larimer County, CO
- Maintained trail sustainability and managed invasive species in Lory State Park
- Thinned dozens of acres of fire-prone forest in the foothills West of Fort Collins, CO working closely with the Coalition for the Poudre River Watershed and the Northern Colorado Fireshed Collaborative

**WRV "Wildlands Restoration Volunteers"**

*2022-2024*

- Served on a team, constructed of ESS Club members and other volunteers, to plant trees after a wildfire in Boulder County. Total individuals planted was roughly 1500 seedlings
- Worked with a Loveland, Colorado organic vegetable farmer to plant Colorado native cover crops to protect harvest against harsh winds and temperatures during shoulder seasons
- Planted 500+ plants in Boise Bend Natural Area to restore biodiversity after the Big Thompson flood

**CSU Watershed Club Bi-annual Poudre River Cleanup**

*2020, 2021, 2022*

- Club members and officers worked together to collect a dozen bags of garbage
- 50 pounds of garbage was collected from the sides of the Poudre River just below Kelly Flats campground along a one mile stretch of Colorado Hwy 14

**CSU Wildlife Society Raptor Monitoring | Boyd Lake State Park** *2020, 2021*

- Club members and officers met weekly each Sunday morning to observe and ID raptor species for use in a long term monitoring program of Colorado Raptors

**Student Involvement**

**CSU Ecosystem Science and Sustainability Club Co-President** *2022-2024*

- Answered emails and planned prospective events while promoting the club through various social media
- Engaged with community stakeholders and volunteer organizations to perform restoration projects and/or hold guest speaker lectures

**CSU Concert and Symphonic Bands | Rampage Basketball Band | Trumpet** *2022-2025*

- Principal trumpet for CSU Concert and Symphonic Bands, with daily rehearsals and formal performances.
- Represented CSU through leadership, professionalism, and adherence to performance standards.
- Performed with CSU Rampage Basketball Band at all games, including NCAA tournaments in OH and NC.

**Academic Experience and Coursework**

**Environmental Data Science Applications** *Fall 2024/Spring 2025*

- Applied R to analyze, model, and visualize environmental and spatial data using advanced packages
- Developed high quality and reproducible reports to communicate scientific findings effectively

**Advanced Snow Hydrology and Field Methods** *Fall 2024/Spring 2025*

- Selected a study location to model hydrologic variables across a watershed with regard to snowfall, undercatch, wind transport, sublimation, and interception
- Produced publication-ready graphs to effectively communicate the findings
- Conduct field tests to observe spatial and temporal variability within the snowpack across Colorado

**Watershed Capstone | Watershed Problem Analysis** *Spring 2024*

- Applied my cumulative skill set to closely analyze a watershed's function using R and ArcGIS to produce a research report and final presentation of my finding ultimately being presented to my fellow graduates and faculty of the Warner College of Natural Resources

**Limnology** *Fall 2022*

- Analyzed lake and reservoir biogeochemistry as a function of depth, temperature, etc.
- Collected limnological data at Horsetooth reservoir and conducted analyses in R software
- Studied interactions between Phytoplankton, Zooplankton, and Macroinvertebrates in a lake system

**Land Use Hydrology | Watershed Measurements | Land Use and Water Quality** *22/23/24*

- Conceptualized advanced water resource challenges in a changing climate while developing mathematical models to compute streamflow velocity, volume, soil moisture, ET, and other hydrologic processes
- Conducted weekly field measurements on the Poudre River using handheld water quality probes and processed In-Situ water sonde continuous data in R to compare hydrograph responses to various water quality parameters alongside ecological health assessments across multiple reaches on the Poudre

**Natural Resource Ecology and Measurements** *Summer 2023*

- Spent one Month at the CSU Mountain Campus taking a variety of field measurements within forestry, wildlife biology, watershed science, etc.
- Can ID 200+ Species via their common or scientific name during different stages of their life
- Can effectively produce grant proposals for restoration and remediation efforts

**Geospatial Information Systems** *Spring 2022*

- Produced a variety of map products using open source spatial data
- Conducted geospatial analysis on the Cameron Peak (2020) and high Park (2012) fires' burn scars

**Ecosystem Ecology** *Fall 2022*

- Studied how various facets of the ecosystem interact on a broad and molecular scale
- Studied annual biogeochemical cycles of organic and inorganic carbon and nitrogen