

Douglas Dunn

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Summary

Database Specialist and Water Resource Specialist with over 13 years of experience advancing water policy, conservation, and sustainability through data driven analysis across Colorado and the Western U.S. Expert in ArcGIS, remote sensing, and data science tools. Proven team player with government agencies, NGOs, and stakeholders, delivering data-driven solutions and clear communication to diverse audiences. Passionate about translating technical expertise into actionable strategies for water supplies, infrastructure, and conservation.

Education

SUNY College at Brockport *B.S. in Water Resources, May 2011*

Oregon State University *Graduate Certificate in Fisheries Management, September 2024*

Colorado State University *Masters in Ecological Science & Sustainability - Water Resources, Anticipated Dec 2025*

Career Experience

Physical Science/Research Scientist – State of Colorado, Department of Water Resources

June 2025 to Present

- Conducted engineering, hydrologic, and geologic analyses to evaluate well permit applications and water court filings across multiple river basins, ensuring compliance with Colorado water law and protecting senior water rights.
- Utilized groundwater models, geospatial datasets, and historical diversion records to assess water availability, augmentation plans, and site-specific impacts.
- Provided technical guidance to stakeholders and contributed to policy development through hydrologic data analysis, regulatory interpretation, and written recommendations.

Database & Hydrology Specialist - National Park Service / Colorado State University

November 2023 to Present

- Developed geospatial databases to catalog groundwater wells, water supply systems, and water rights across U.S. national parks with interactive web maps, ArcGIS Experiences, Power BI Dashboards, R Shiny Apps, and SharePoint sites.
- Modeled hydrologic and hydrogeologic data with field collected data and software modeling using ArcGIS, EarthImager, and AqteSolv. Data was collected by manual measurement, long-term logger installations, well inspections, pump drawdown tests, and ERT mapping.
- Published technical assistance reports to propose new well locations, summarize data collection, infrastructure condition assessments, water supply availability, and climate change vulnerability.

Water Resource Consultant - Self Employed / Aqua Terra LLC

Part Time - June 2015 to April 2024

- Mapped and researched Colorado water rights, legal agreements, property interest, and irrigation frameworks, advising on policy implications for water scarcity and agricultural water use.

- Performed maintenance, repairs, and upgrades to water diversion systems including pumps, meters, water level recorders, weirs, and flumes.

Water Resource Specialist / Project Manager - City of Boulder
July 2015 to August 2022

- Managed the Boulder Creek Instream Flow Protection program to protect variable amounts of target flows on Boulder Creek throughout the year. This included monitoring flow conditions, coordination with State staff and other basin water users, and generating annual reports for the CWCBC.
- Managed the agricultural water leasing program, including determining leasing policy, managing lease request and water availability information, and transitioning to an online platform for the raw water leasing program.
- Produced detailed datasets for water court filings and water accounting filings with DWR, collaborating with attorneys and engineers to navigate legal frameworks and correctly document water use.
- Developed education and outreach materials (maps, brochures, guiding documents) to engage stakeholders on water supply availability, storm water maintenance, and irrigation ditch management.

Water Resource Technician / Specialist – Boulder County Parks & Open Space Department
June 2011 to July 2015

- Mapped water rights and flood restoration projects on St. Vrain Creek post-2013 flood using ArcGIS, supporting watershed resilience and FEMA funding applications.
- Documented water infrastructure (diversions, pipelines, headgates, bypass structures), creating spatial records to guide policy and agricultural water supply strategies in Districts 5 and 6.
- Facilitated partnerships with county agencies and community stakeholders to implement agricultural water quality monitoring, emergency flood repairs and sustainable water plans.

GIS Technician | State of New York, SUNY College at Brockport Facilities & Planning
May 2010 to May 2011

- Designed a stormwater database and flow network with ArcGIS Utility Network Analyst, aligning with EPA MS4 standards for watershed management.
- Mapped campus tree inventories and optimized snowplow routes.

Skills

Geospatial Tools: ArcGIS (ArcMap, Pro, Online, Utility Network Analyst), remote sensing, various GPS receivers

Data Science: Excel, R, Python (hydrologic modeling, spatial analysis, classification, prediction models)

Visualization: Power BI, SharePoint, 3D mapping

Volunteer Experiences

Silver Lake Ditch and Reservoir Company – Community Engagement

Wild Animal Sanctuary – Event Support and Property Improvement

Boulder Flycasters/Boulder Fish Hatchery – Fish Salvage and Rescue