

Gabrielle F.S. Boisramé

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EDUCATION:

University of California, Berkeley, CA

Ph.D., Civil & Environmental Engineering, Dec 2016

Area of Emphasis: Hydrology

Minors in Numerical Analysis and Statistics

M.S., Civil & Environmental Engineering, May 2012

GPA: 3.9

Research Advisor: Dr. Sally Thompson

Dissertation: Wildfire Effects on the Ecohydrology
of a Sierra Nevada Watershed

Whitman College, Walla Walla, WA

B.A., Applied Mathematics, May 2010

Minor in Chemistry

GPA: 3.9, Summa Cum Laude

Senior Thesis: The Use of Linear Algebra to
Determine the Probabilities of Predicted
Future Occurrences

RESEARCH/WORK EXPERIENCE:

Desert Research Institute, Las Vegas, NV

Postdoctoral Fellow, Division of Hydrologic Sciences

November 2018 to Present

40 hours/week

- PI on project quantifying water balance at Amargosa River headwaters.
- Collect and analyze data relevant to desert soil properties.
- Model the hydrologic response of Sierra Nevada watersheds to wildfire.
- Publish original research.

Delta Stewardship Council Delta Science Program, Sacramento, CA

Environmental Scientist

August 2017 - November 2018

40 hours/week

- Manage the creation, editing, and dissemination of a publicly available framework document for using adaptive management to increase water supply reliability.
- Compile data from multiple sources to create a comprehensive water budget for the Sacramento-San Joaquin Delta watershed. Evaluate uncertainty of said datasets.
- Evaluate projects' consistency with the regulations outlined in the State-mandated Delta Plan, with the goal of protecting both water supply reliability and the environment.
- Support the implementation of integrated modeling projects.
- Lead structured decision-making teams in developing conceptual models and prioritizing actions.
- Provide relevant hydrological information for other science program staff's projects.

UC Berkeley Dpt. of Civil & Environmental Engineering, Berkeley, CA

Visiting Researcher

December 2017 – December 2018

4 hours/week

- Organize fieldwork.
- Provide hydrologic modelling training.
- Write scientific articles related to watershed hydrology.

UC Berkeley College of Natural Resources, Berkeley, CA

Hydrologic Modeler and Postdoctoral Scholar

January - August 2017

40 hours/week

- Managed teams of field and lab technicians, including designing fieldwork protocols and providing training in research methods and safety.
- Modeled the hydrologic response of Sierra Nevada watersheds to wildfire.
- Maintained weather stations in remote locations.
- Published original research.

UC Berkeley Dpt. of Civil & Environmental Engineering, Berkeley, CA

Graduate Student Researcher

May 2013 - December 2016

10 hours/week during school year, 40 hours/week summers (May-August)

- Developed and implemented methodology for a long-term hydrologic research project. Methods included remote sensing, isotope analysis, and field measurements of soil moisture, streamflow, and meteorological variables.
- Conducted fieldwork, data analysis, literature searches, and computer modeling related to the ecohydrology of a Sierra Nevada watershed experiencing frequent fires.
- Supervised and mentored undergraduate research assistants, including providing training in research methods and fieldwork safety.
- Published original research.

UC Berkeley Dpt. Of Civil & Environmental Engineering, Berkeley, CA

Graduate Student Instructor, Surface Water Hydrology

August-December 2013

10 hours/week

- Prepared homework solutions, held office hours, and led review sessions for graduate-level hydrology course.
- Instructed students in the use of HYDRUS 1D software.

Contra Costa Water District, Concord, CA

Water Resources Group Student Intern

May-August 2012

40 hours/week

- Provided technical assistance including hydrologic model calibration and automation of data acquisition.
- Analyzed data including CalSIM II model results and observed water quality for comparison with water district objectives and regulations.
- Conducted an energy assessment of a water treatment plant.
- Used MATLAB to model changing water conditions affecting district operations using G-model and other tools.
- Developed user-friendly tool for planning required reservoir releases based on rainfall.

John Muir Institute of the Environment, UC Davis, CA

Junior Specialist

February-June 2011

30 hours/week

- Analyzed data to determine relationships between fish populations and stream hydrology.

National Agricultural Research Institute (INIA), Montevideo, Uruguay

Soils and Irrigation Intern

August-December 2010

40 hours/week

- Compared weather generators' results in terms of ability to reproduce statistics important to agronomy and water availability.
- Created an automated process for preparing data sets needed for hydrological modeling using the SWAT model.

Whitman College Mathematics Department, Walla Walla, WA

Math Lab Consultant

August 2009 - May 2010

8 hours/week

- Supervised the math department computer lab and assisted students using the math lab computers.

Whitman College Academic Resource Center, Walla Walla, WA

Calculus Tutor

October 2006 – May 2010

4 hours/week

- Tutored Whitman students in all levels of Calculus, both individually and in group sessions.

University of Idaho Department of Fish and Wildlife, Moscow, ID

Natural Resources Research Technician

May-August 2009

40 hours/week

- Analyzed output from hydrologic models forced by various climate scenarios.
- Wrote annotated bibliographies of papers on climate change and spread of invasive species.

University of California Natural Reserve System, Davis, CA

Natural Reserve System Intern

May-August 2008

30 hours/week

- Compiled and analyzed data on species diversity in several of UCD's nature reserves.
- Assisted with field surveys of grassland species.

UC Davis Land, Air, and Water Resources, Davis, CA

Laboratory Assistant

June-August 2006, May-August 2007

40 hours/week

- Ran chemical and instrumental analyses on water and soil samples.
- Assisted in fieldwork collecting soil and water samples and surveying riparian habitats.

CERTIFICATIONS

Engineering Intern

- FE - Environmental Engineering Exam passed May 1 2018
- Nevada State Board of Professional Engineers and Land Surveyors Certificate # OT7951

Wilderness First Aid Certified

UNIVERSITY/COMMUNITY SERVICE:

Clark County Wetlands Park educational volunteer – Lead educational activities for children related to the biology and hydrology of the Clark County Wetlands (2019-Present).
Bay Area Scientists in Schools (BASIS) – Taught fire ecology to elementary school students (2015-2017).
Environmental Engineering Seminar Series – Served on committee organizing weekly seminar on current topics in environmental engineering (Spring 2014).
Student Association for Fire Ecology at Berkeley – Planned and engaged in public outreach related to California’s fire ecology; member (2013-2017) and treasurer (2016-2017).
Tech Girls – Mentored elementary school girls during weekly after-school science program (2011-2017).
Engineers Without Borders, UC Berkeley – Provided technical assistance on a project to remediate groundwater arsenic contamination in Peru (2011-2013).
Rotary Club Biosand Filter Project – Travelled to Honduras to teach a 5-day course on water quality and biosand filters (2012).
Village Education Project, Otavalo, Ecuador - Taught elementary-school level math in Spanish, prepared course materials, created and graded homework and exams (Summer 2010).

SKILLS:

Computer: Adobe Actionscript, Adobe Photoshop, ArcGIS, C++, eCognition, GRASS GIS, HYDRUS, LaTeX, Maple, Matlab, Microsoft Office, MODFLOW, R, RHESys

Foreign Languages: Fluent in French (written and oral); proficient in Spanish (written and oral).

HONORS/AWARDS:

UC Berkeley Philomathia Graduate Fellowship in Environmental Sciences (2015, 2016)
UC Berkeley Summer Mentoring and Research Teams (SMART) graduate student mentor (2014)
Sigma Xi Grant-in-Aid of Research Award (2014)
UC Berkeley Chancellor’s Fellowship for Graduate Study (2011)
Honorable Mention, NSF Graduate Research Fellowship Program (2011)
Associate Member, Sigma Xi Scientific Research Society (2010)
Member, Phi Beta Kappa Honor Society (2009)
Mensa Diana Mossip Memorial Scholarship (2007)
Whitman College Walter A Brattain Scholarship (2006)
Robert C. Byrd Honors Scholarship (2006)
National Merit Scholar (2006)

PROFESSIONAL AFFILIATIONS

Association of Environmental & Engineering Geologists – Las Vegas Branch Treasurer since 2019
Association for Fire Ecology – Member since 2013, Treasurer 2015-2016
Groundwater Resources Association – Member since 2013
American Geophysical Union – Member since 2011
Sigma Xi Scientific Research Society – Member since 2010
Phi Beta Kappa Honor Society – Member since 2009

PUBLICATIONS:

Stevens, Jens, Gabrielle Boisramé, Ekaterina Rakhmatulina, Sally Thompson, Brandon Collins, and Scott Stephens. Forest vegetation change and surface hydrology following 47 years of managed wildfire. *Ecosystems. In Review.*

Boisramé, Gabrielle, Sally Thompson, Christina (Naomi) Tague, and Scott Stephens. Restoring a Natural Fire Regime Alters the Water Balance of a Sierra Nevada Catchment. *Water Resources Research* 55(7): 5751-5769. 2019. <https://doi.org/10.1029/2018WR024098>

Ariyama, Jiro, Gabrielle Boisramé, and Marina Brand. A water budget for the Sacramento-San Joaquin Delta Watershed: Putting together the many disparate pieces. *San Francisco Estuary and Watershed Sciences* 17(2). 2019. <https://doi.org/10.15447/sfews.2019v17iss2art3>

Boisramé, Gabrielle, Sally Thompson, and Scott Stephens. Hydrologic responses to restored wildfire regimes revealed by soil moisture-vegetation relationships. *Advances in Water Resources* 112: 1242-146. 2018. <https://doi.org/10.1016/j.advwatres.2017.12.009>

Boisramé, Gabrielle, Sally Thompson, Maggi Kelly, Julia Cavalli, Kate Wilkin, and Scott Stephens. Vegetation Change During 40 Years of Repeated Managed Wildfires in the Sierra Nevada, California. *Forest Ecology and Management* 402:241-252. 2017. <https://doi.org/10.1016/j.foreco.2017.07.034>

Boisramé, Gabrielle, Sally Thompson, Brandon Collins, and Scott Stephens. Managed wildfire effects on forest resilience and water in the Sierra Nevada. *Ecosystems* 20:717-732. 2017. <https://doi.org/10.1007/s10021-016-0048-1>

Boisramé, Gabrielle. Wildfire Effects on the Ecohydrology of a Sierra Nevada Watershed. *Doctoral Dissertation*. 2016. Available from: <https://escholarship.org/uc/item/19b6f3q9>

Dralle, David, Gabrielle Boisramé and Sally Thompson. Spatially variable water table recharge and the hillslope hydrologic response: Analytical solutions to the linearized hillslope Boussinesq equation. *Water Resources Research* 50:8515-8530. 2014. <https://doi.org/10.1002/2013WR015144>

Boisramé, Gabrielle. The use of linear algebra in modeling the probabilities of predicted future occurrences. *Undergraduate Thesis*. 2010. Available from: <https://arminda.whitman.edu/theses/57/>

SOFTWARE:

Boisramé, Gabrielle, Frank Dunnivant and Albert Schueller. *The Dispersion Calculator*. Free educational software for estimating dispersion coefficients from laboratory data. 2010. Available from <http://people.whitman.edu/~dunnivfm/software.html>.

Boisramé, Gabrielle. *wgnMaker*. Excel Macro which prepares data for the Soil and Water Assessment Tool (SWAT) model. 2010. Available from <https://swat.tamu.edu/software/>.

PRESENTATIONS:

Boisramé, Gabrielle. "Resilience Through Disturbance: Wildfire's Role in Maintaining Yosemite's Meadows." Sierra Meadows Partnership Annual Gathering. Invited Oral Presentation. Graegle, CA, 2019.

Boisramé, Gabrielle. "Water and Wildfires: Restoring Natural Disturbance to Mountain Landscapes Impacts Water Supply and Forest Health." Desert Research Institute Hydrologic Sciences Colloquium. Invited Oral Presentation. Las Vegas, NV, 2018.

Boisramé, Gabrielle. "The State of Upper Watershed Hydrology in California." University of California ANR Conference. Invited Oral Presentation. Ontario, CA, 2018.

Boisramé, Gabrielle. "Water and Wildfires: How returning fire to the mountain landscape affects rivers, snowpack, and forest health." Yosemite Forum Seminar. Invited Oral Presentation. Yosemite National Park, CA, 2018.

Boisramé, Gabrielle. "Restoring wildfire to the Sierra Nevada: Impacts on water resources and drought response." California Fire Science Consortium Webinar. 2017. www.cafiresci.org/events-webinars-source/category/managed-wildfire-impacts-on-water-resources-and-drought-response-in-the-sierra-nevada.

Boisramé, Gabrielle, Sally Thompson, Scott Stephens, Brandon Collins, Maggi Kelly, and Naomi Tague. "Effects of a restored fire regime on forest resilience and water in Yosemite National Park." Reclaiming the Sierra Conference. Invited Oral Presentation. Sacramento, CA, 2017.

Boisramé, Gabrielle, Sally Thompson, Scott Stephens, Brandon Collins, and Naomi Tague. "Is Managed Wildfire Protecting Yosemite National Park from Drought?" American Geophysical Union Fall Meeting. Oral Presentation. San Francisco, CA, 2016.

Boisramé, Gabrielle, Sally Thompson, Scott Stephens, Brandon Collins, and Naomi Tague. "Managed Wildfire Effects on the Ecohydrology of the Illilouette Creek Basin, Yosemite National Park." 3rd Southwest Fire Ecology Conference. Oral Presentation. Tucson, AZ, 2016.

Boisramé, Gabrielle, Sally Thompson, Scott Stephens, and Brandon Collins. "Managed Wildfire Effects on the Drought Resilience of Yosemite's Illilouette Creek Basin." Natural Areas Conference. Oral Presentation. Davis, CA, 2016.

Boisramé, Gabrielle, Sally Thompson, Scott Stephens, and Brandon Collins. "Managed Wildfire Effects on the Drought Resilience of Yosemite's Illilouette Creek Basin." Yosemite Hydroclimate Meeting. Oral Presentation. Yosemite National Park, CA, 2016.

Boisramé, Gabrielle, Sally Thompson, Scott Stephens, Brandon Collins, and Naomi Tague. "Resilience through Disturbance: Effects of Wildfire on Vegetation and Water Balance in the Sierra Nevadas." Poster Presentation GC33E-1337. American Geophysical Union Fall Meeting, San Francisco, 2015.

Boisramé, Gabrielle, Scott Stephens, Sally Thompson, Brandon Collins, Miguel Naranjo, Julia Cavalli, and Melissa Ferriter. "Long-Term Effects of Wildfire on Vegetation and Water Balance in Yosemite's Illilouette Creek Basin." Oral Presentation. California-Nevada-Hawaii Forest Fire Council workshop, South Lake Tahoe, 2015.

Boisramé, Gabrielle, Scott Stephens, and Sally Thompson. "Seeing the Forest Without the Trees: Long-term influence of wildfire on the ecohydrology of a mountain watershed." Oral Presentation. Gordon Research Conference on Catchment Science, Andover, NH, 2015.

Boisramé, Gabrielle, Scott Stephens, Sally Thompson, Miguel Naranjo, and Andy Wong. "Seeing the Forest Without the Trees: Long-term influence of wildfire on the ecohydrology of a mountain watershed." Poster Presentation. Science for Parks, Parks for Science Summit, Berkeley, CA, 2015.

Boisramé, Gabrielle and Sally Thompson. "Using Seasonal Changes to Explore Vegetation's Influence on Streamflow Generation." Oral Presentation H13N-02. American Geophysical Union Fall Meeting, San Francisco, 2013.

Boisramé, Gabrielle and Sally Thompson. "What Can Seasonal Vegetation Changes Teach Us About Controls of Vegetation on Streamflow?" Poster. Gordon Research Conference on Catchment Science, Proctor Academy, New Hampshire, 2013.

Boisramé, Gabrielle and Sally Thompson. "Spring is arriving earlier every year - What are the implications for water balance and streamflow generation in North America?" Poster GC41A-0942. American Geophysical Union Fall Meeting, San Francisco, 2012.

Fremier, Alex, Gabrielle Boisramé and Evan Girvetz. "How Will the Hydrograph Change in Predicted Future Climates?" Poster GC21A-0734. American Geophysical Union Fall Meeting, San Francisco, 2009.

Boisramé, Gabrielle and Elizabeth Townsend. "Trincheras: Use of Rock Dams for Private Stream Restoration." Whitman Undergraduate Conference, Walla Walla, WA, 2009.