RYAN PEEK

I have worked in many rivers and aquatic systems in California, and continue to strive to find ways to apply research to conservation management. I am particularly interested in using a confluence of disciplines such as genomics, hydrology, ecology, and geomorphology to better understand current and future impacts to our freshwater ecosystems.

I am a strong advocate for open science, and education; and giving voices, training, and space for folks who support and foster a supportive community with diverse questions and views.

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EDUCATION

2018 | 2014

PhD, Ecology (with certificate in Conservation Management)

UC Davis — Davis, CA

- Population genetics of a sentinel stream-breeding frog (*Rana boylii*)

2010 | 2008

M.S., Biology

University of San Francisco — San Francisco, CA

- Thesis: Landscape Genetics of Foothill Yellow-Legged Frogs (*Rana boylii*) in regulated and unregulated rivers: Assessing connectivity and genetic fragmentation

2002 | 1998

B.S. Wildlife, Fish & Conservation Ecology

UC Davis — Davis, CA

- Emphasis in Behavioral Ecology

RESEARCH EXPERIENCE

2020 | 2018

Post-doctoral Researcher

Center for Watershed Sciences — UC Davis

- Analysis of connectivity and genetic health of rare endemic frogs in CA, NV, and AZ to inform conservation management.
- Analysis of floodplain foodwebs for salmon to better understand connectivity and seasonality for management.
- Research and analysis on how to link ecological bioassessment data with flow management for functional environmental flows.

2018 | 2014

Graduate Student Researcher

Center for Watershed Sciences — UC Davis

- Research in amphibian/aquatic ecology, with particular focus on assessing ecological health with molecular techniques to inform conservation in river ecosystems.

CONTACT

- rapeek@ucdavis.edu
- riverpeek
- github.com/ryanpeek
- ryanpeek.org
- linkedin.com/in/ryan-peek-3a248411

LANGUAGE SKILLS

- R
- Bash
- javascript
- SQL
- Python

*Made with the R package **pagedown**.*

The source code is available at github.com/ryanpeek/cv.

Last updated on 2020-03-02.

2014 | 2011

Jr. Research Specialist

Center for Watershed Sciences — UC Davis

- Research in stream ecology and montane aquatic ecosystems, with particular focus on ecosystem function and hydroclimatic impacts on regulated rivers in the Sierra Nevada.

2010 | 2009

Research Assistant II

UC Berkeley — Berkeley, CA

- As part of a California Energy Commission study of regulated flow effects on foothill yellow-legged frog (*Rana boylii*) breeding habitat, led field research crews for extensive field data collection.
- Collaborated with Sarah Yarnell and Amy Lind on field methodology and integrating graduate research with the grant research.

2009

Research Assistant II

UC Davis — Davis, CA

- Working with Sarah Kupferberg and Alessandro Catenazzi, assisted in research, as part of a California Energy Commission study, of regulated flow effects on water temperatures and foothill yellow-legged frog (*Rana boylii*)
- Including predation experiments and tadpole growth experiments, Helped deploy thermographs in various Sierran rivers throughout California. Conducting research on tributary density in relation to amphibian occupancy in regulated rivers in California.

INDUSTRY EXPERIENCE

2011 | 2002

Fish & Wildlife Biologist

Stillwater Sciences — Davis CA

- Field and Project Manager, conducted research in aquatic, terrestrial, and riparian ecosystems. Assisted in the development of restoration, conservation, and management strategies in various watersheds throughout California and Oregon for amphibian and fisheries related projects.
- Extensive experience completing watershed analyses. Successfully worked independently and collaboratively on various projects including leading field crews, managing budgets, conducting meetings, analyzing data, and writing comprehensive reports.
- Watershed Experience: Alameda Creek (San Francisco Public Utilities Commission), Upper American River (Sacramento Municipal Utility District), South Fork Feather River (South Feather Water & Power), Yuba River (North, Middle, and South) (CH2MHill), Napa River and Floodplain (US Army Corp of Engineers), Santa Clara River (California State Coastal Conservancy), McKenzie River (Eugene Water and Electric Board), Upper Merced River (Merced Alliance), Butte Creek and West Branch Feather River (PG&E), McCloud and Pit Rivers (PG&E)

I have worked in a variety of places including the National Park Service, US Forest Service, environmental consulting, and even a glass fabrication plant. I appreciate supportive and collaborative communities.

2010

Biological Science Technician

USDA Forest Service, Pacific Southwest Research Station — Davis, CA

- Developed and designed website on ecology, river regulation and conservation of the foothill yellow-legged frog (*Rana boylii*), including GIS synthesis and development of a distribution map showing over 6,000 records from multiple sources (http://gis.fs.fed.us/psw/topics/wildlife/herp/rana_boylii/).
- Conducted 1-D RHABSIM modeling and analysis. Coordinate field research, data collection, and writing.

2001

Biological Science Technician

National Park Service — Sequoia & Kings Canyon, CA

- Part of a 2-person backcountry crew working on a federally threatened Sierra/Mountain yellow-legged frog (*Rana sierrae*) conservation and restoration project during the initial year of the project.
- This position involved extensive backpacking and hiking experience while living in remote and rugged terrain at 10,000-12,000 feet for multiple weeks at a time. Required the ability to work independently, efficiently, and safely.
- Conducted amphibian surveys of mountain lakes and identified amphibian species in larval and adult stages, habitat assessment, data collection, and non-native fish removal.

TEACHING EXPERIENCE

2020 | 2019

Strategies & Techniques for Analyzing Microbial Population Structures

Marine Biological Laboratory — Woods Hole, MA

- Research facilitator/teacher for the STAMPS course on analysis of metagenomic data. Provided interdisciplinary bioinformatic and statistical training to practitioners of molecular microbial ecology and genomics.
- Topics covered included acquisition and organization of next generation sequence data; principles of quality control of sequence data and data management; methods of taxonomic assignment and clustering of targeted gene data. Also an introduction to the Linux command-line and R statistical environments. (https://www.mbl.edu/education/courses/stamps/)

2020 | 2016

Data Carpentry Workshops

Various

- Teach researchers in science, engineering, medicine, and related disciplines the computing skills they need to get more done using open source and reproducible tools. Specifically, have taught genomics/ecology/geospatial workshops at Stanford, UC Davis, UC Berkeley, and University of Rhode Island Coastal Institute. (http://software-carpentry.org/) (http://www.datacarpentry.org/)

I am passionate about education, and strive to continue learning how to be a better teacher. I am a proud Carpentries Instructor, and the community they represent.

2019 | 2017

R for Data Analysis and Visualization in Science

UC Davis — Davis, CA

- Lead instructor and creator of graduate course teaching R and version control for 25+ students. Course designed to train students in toolsets applicable to the entire process of reproducible data-driven research and encourage the use of open-source tools.
- Built website and made course materials openly available on github. (https://gge-ucd.github.io/R-DAVIS/).
- now a required graduate course in Ecology

2018

Foothill Yellow-Legged Frog Ecology, Management, and Regulation

Humboldt State — Arcata, CA

- One of three main instructors for workshop designed to cover the natural history and management of the foothill yellow-legged frog.
- Three days of lecture followed by a field day covered ecological requirements of the species, mitigation, restoration, and permitting requirements if listing takes place

2018

Intro to Genomics (Data Carpentry)

DIBSI — Davis, CA

- Co-instructor. Data Intensive Biology Summer Institute at UC Davis is a series of two-day or week-long workshops for biologists to learn bioinformatics and data science. The Intro to R course was built as an interactive, week-long introduction to the programming language R. Following Carpentry workshop content, taught basics of R by live-coding with participants
- (https://dib-lab.github.io/2018-06-27-DIBSI-Genomics/)

2017

Intro to R

DIBSI — Davis, CA

- Co-Instructor. Data Intensive Biology Summer Institute at UC Davis is a series of two-day or week-long workshops for biologists to learn bioinformatics and data science. The Intro to R course was built as an interactive, week-long introduction to the programming language R. Following Carpentry workshop content, taught basics of R by live-coding with participants
- (https://mikoontz.github.io/data-carpentry-week/)

2015

Ecogeomorphology

UC Davis — Davis, CA

- Co-instructor. Taught advanced undergraduate students to multidisciplinary collaborative watershed and stream analysis through combined laboratory and field study of a selected stream system. Educated students from diverse backgrounds to work in interdisciplinary research teams to collect and analyze field data from the Tuolumne River system.
- Serve as rafting guide, as well as lectured, and taught in classroom, lab, and field, including a 3 day rafting trip on the Tuolumne River. (https://watershed.ucdavis.edu/education/classes/)

2010

Geospatial Analysis

University of San Francisco — San Francisco, CA

- Teaching Assistant
- Lab instructor for undergraduate geospatial analysis course using ArcGIS; planned and conducted lab activities and led discussions for one semester

SELECTED DATA SCIENCE WRITING

2016

Cue the Frogs! Water signatures, environmental cues and climate change

California Water Blog

- Story about environmental cues for amphibians in rivers

2015

Time Lapse Photos Expose Nature in the Raw

California Water Blog

- Story about using game cameras to monitor the environment

I like writing stuff about data science, R, making maps, and frogs
ryanpeek.org

SELECTED PRESS (BY)

2020

Tips for Souping of RMarkdown Documents

- Top ten tips for making RMarkdown better

SELECTED PUBLICATIONS, POSTERS, AND TALKS

2020

A functional flows approach to selecting ecologically relevant flow metrics for environmental flow applications

River Research and Applications (9) 12.

- Yarnell, S. M., Stein, E. D., Webb, J. A., Grantham, T., Lusardi, R. A., Zimmerman, J., Peek, R. A., Lane, B. A., Howard, J., & Sandoval-Solis, S.

2019

Hybridization between two sympatric ranid frog species in the northern Sierra Nevada

Molecular Ecology

- Peek, R., M. Bedwell, S. O'Rourke, G. Wengert, C. Goldberg, M. Miller.

2019

A Lentic Breeder in Lotic Waters: Sierra Nevada Yellow-legged Frog (*Rana sierrae*) Habitat Suitability in Northern Sierra Nevada Streams.

Copeia 107(4): 676.

- Yarnell, S.M., R.A. Peek, N. Keung, B.D. Todd, S. Lawler, C. Brown

2019

Flow regulation associated with decreased genetic health of a river-breeding frog species

in prep

- Peek, R.A., S.M. O'Rourke, M.R. Miller.

2018

The ecological importance of unregulated tributaries to benthic invertebrate communities in a regulated river

Hydrobiologia.

- Milner, V.S., S.M. Yarnell, R.A. Peek.

2018

A Freshwater Blueprint for California: Prioritizing freshwater habitat for conservation in California to maximize biodiversity and leverage existing protected areas.

Freshwater Science (37) 417–431. DOI: 10.1086/697996

- Howard, J.K., K.R. Klausmeyer, K.A. Fesenmyer, J. Furnish, T. Gardali, T. Grantham, J.V. Katz, S. Kupferberg, P. McIntyre, P.B. Moyle, P.R. Ode, R. Peek, R.M. Quinones, A.C. Rehn, N. Santos, S. Schoenig, L. Serpa, J.D. Shedd, J. Slusark, J.H. Viers, A. Wright and S.A. Morrison.

2017

Associating Metrics Of Hydrologic Variability With Benthic Macroinvertebrate Communities In Regulated And Unregulated Snowmelt-Dominated Rivers.

Freshwater Biology (1)15 DOI: 10.1111/fwb.12994.

- Steel, A.E., R.A. Peek, R.A. Lusardi, S.M. Yarnell.

2016

Management of the Spring Snowmelt Recession in Regulated Systems.

JAWRA Journal of the American Water Resources Association 52(3) 723–736.

- Yarnell, S., R. Peek, G. Epke and A. Lind.

2016

Missing the boat on freshwater fish conservation in California.

Conservation Letters 10.1111/conl.12249

- Grantham, T., K. Fesenmeyer, R. Peek, E. Holmes, A. Bell, R. Quiñones, N. Santos, J. Howard, J. Viers, P. Moyle.

2015

Patterns of Freshwater Species Richness, Endemism, and Vulnerability in California.

PLoS One 10(7): e0130710.

- Howard, J.K., K.R. Klausmeyer, K.A. Fesenmyer, J. Furnish, T. Gardali, T. Grantham, J.V. Katz, S. Kupferberg, P. McIntyre, P.B. Moyle, P.R. Ode, R. Peek, R.M. Quinones, A.C. Rehn, N. Santos, S. Schoenig, L. Serpa, J.D. Shedd, J. Slusark, J.H. Viers, A. Wright and S.A. Morrison.