

ALBERT RUHI

Dept. Environmental Science, Policy, and Management
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EDUCATION

- 2012 Ph.D. Ecology
Institute of Aquatic Ecology, University of Girona (Catalonia, Spain)
Dissertation: *Primary succession in human-made wetlands: biodiversity, structure, and dynamics of macrofaunal assemblages* [co-advised by Daniel Boix & Stephanie Gascon]
Extraordinary Doctoral Degree Award
Excellent *Cum Laude*, European Doctorate Mention
Research stays: University of Georgia (USA), Linnaeus University (Sweden)
- 2008 M.S. (DEA), Fundamental and Applied Ecology. Interuniversity Degree by the University of Girona, the University of Barcelona, CEAB-CSIC (Catalonia, Spain)
- 2006 B.S. Biology, University of Girona (Catalonia, Spain)

RESEARCH APPOINTMENTS

- 2023 Associate Professor, Department of Environmental Science, Policy, and Management, University of California, Berkeley
- 2018 Assistant Professor, Department of Environmental Science, Policy, and Management, University of California, Berkeley
- 2016-17 Postdoctoral Fellow
National Socio-Environmental Synthesis Center (SESYNC), University of Maryland
- 2013-16 Postdoctoral research scholar, Assistant Research Professor
John Sabo's *Riverine Ecology & Freshwater Sustainability* lab
Julie Ann Wrigley Global Institute of Sustainability, Arizona State University
- 2012-13 Postdoctoral researcher
Sergi Sabater's *Resources and Ecosystems* lab, Catalan Institute for Water Research, Spain.

PUBLICATIONS

[† are papers led by members of my group, or by members of a project I supervised as a Principal Investigator]

- † Fournier, R.J., Colombano, D.D., Latour, R.J., Carlson, S.M. & A. Ruhi. *Long-term data reveal widespread phenological change across major US estuarine food webs*. **Ecology Letters**, in press. DOI: 10.1111/ele.14441.
- † Leathers, K., Herbst, D., de Mendoza, G., Doerschlag, G. & A. Ruhi (2024). *Climate change is poised to alter mountain stream ecosystem processes via organismal phenological shifts*. **Proceedings of the National Academy of Sciences of the USA**, 121(14):e2310513121. [[media coverage](#)]
- † Moravek, J., Soto, T., Brashares, J. & A. Ruhi (2024). *Restored off-channel pond habitats create thermal regime diversity and refuges within a Mediterranean-climate watershed*. **Restoration Ecology**, 32(4), p.e14110.
- † Siqueira, T., Hawkins, C., Olden, J., [...*] & A. Ruhi (2024). *Understanding temporal variability across trophic levels and spatial scales in freshwater ecosystems*. **Ecology**, 105(2):e4219. *26 additional coauthors.
- Carlson, S.M., Ruhi, A., Bogan, M.T., Wölflé Hazard, C., Ayers, J., Grantham, T.E., Batalla, R.J. & C. Garcia (2024). *Losing flow in free-flowing, Mediterranean-climate streams*. **Frontiers in Ecology and the Environment**, p.e2737.

- Gill, B.A., Allen, D.C., Mims, M.C. Neeson, T.M., [Ruhi, A.](#), [...] & M. T. Bogan (2024). *Combined benthic and stream edge sampling better represent macroinvertebrate assemblages than benthic sampling alone along an aridity gradient*. **Limnology & Oceanography Methods**, 22(4):208-216. *14 additional coauthors.
- Fernández-Calero, J.M., Cunillera-Montcusí, D., Hermoso, V. Quevedo-Ortiz, G. Fortuño, P., Acosta, R., Gomà, J., Cid, N., Vinyoles, D., [Ruhi, A.](#), Cañedo-Argüelles, M. & Núria Bonada (2024). *Integrating spatiotemporal hydrological connectivity into conservation planning to protect temporary rivers*. **Aquatic Conservation: Marine and Freshwater Ecosystems**, 34(3):e4139.
- Saccò, M., Mammola, S., Altermatt, F. [...]*, [Ruhi, A.](#), Marthe M. Gagnon, M., Allentoft, M.E. & R. Reinecke (2024). *Groundwater is a hidden global keystone ecosystem*. **Global Change Biology**, 30(1):e17066. *44 additional coauthors. [[media coverage](#)].
- † Chalise, D.R., Sankarasubramanian, A., Olden, J.D. & [A. Ruhi](#) (2023). *Spectral signatures of flow regime alteration by dams across the United States*. **Earth's Future**, 11(2):e2022EF003078.
- † Leathers, K., Herbst, D., Safeeq, M. & [A. Ruhi](#) (2023). *Dynamic, downstream-propagating thermal vulnerability in a mountain stream network: implications for biodiversity in the face of climate change*. **Limnology and Oceanography**, 68(S1): 101-114.
- † Pak, N., Colombano D.D., Greiner, T., Hobbs, J.A., Carlson, S.M. & [A. Ruhi](#) (2023). *Disentangling abiotic and biotic controls of Pacific herring population stability across the San Francisco Estuary*. **Ecosphere**, 14(5): e4440. [[media coverage](#)]
- † Tu, T., Comte, L. & [A. Ruhi](#) (2023). *The color of environmental noise in river networks*. **Nature Communications**, 14:1728.
- Baruch, E.M., Harms, T.K., [Ruhi, A.](#), Lu, M., Gaines-Sewell, L. & J.L. Sabo (2023). *Food web efficiency in desert streams*. **Limnology & Oceanography**, 68(3): 723-734.
- Carvajal-Quintero, J., Comte, L., Giam, X., Olden, J.D., Brose, U., Eros, T., Filipe, A.F., Fortin, M.J., Irving, K., Jacquet, C., Larsen, S., [Ruhi, A.](#), Sharma, S., Villalobos, F. & P.A. Tedesco (2023). *Scale of population synchrony confirms macroecological estimates of minimum viable range size*. **Ecology Letters**, 26(2): 291-301.
- Sanchez-Montoya, M.M., Detry, T., [Ruhi, A.](#), Carlson, S.M., Corti, R. & K. Tockner (2023). *Intermittent rivers and ephemeral streams are pivotal corridors for aquatic and terrestrial animals*. **BioScience**, 73(4): 291–301.
- † Fournier, R., de Mendoza, G., Sarremejane, R. & [A. Ruhi](#) (2023). *Isolation controls reestablishment mechanisms and post-drying community structure in an intermittent stream*. **Ecology**, 104(2):e3911.
- † [Ruhi, A.](#), Hwang, J., Devineni, N., Mukhopadhyay, S., Kumar, H., Comte, L., Worland, S. & A. Sankarasubramanian (2022). *How does flow alteration propagate across a large, highly-regulated basin? Dam attributes, network context, and implications for biodiversity*. **Earth's Future**, 10(6): e2021EF002490.
- † Colombano, D., Carlson, S.M., Hobbs, J. & [A. Ruhi](#) (2022). *Four decades of climatic fluctuations and fish recruitment stability across a marine-freshwater gradient*. **Global Change Biology**, 28(17): 5104-5120.
- Baruch, E.M., [Ruhi, A.](#), Harms, T.K. & J.L. Sabo (2022). *Flow variation at multiple scales filters fish life histories and constrains community diversity in desert streams*. **Ecosphere**, 13(6):e4086.
- † Mor, J.R, Muñoz, I., Sabater, S., Zamora, L. & [A. Ruhi](#) (2022). *Energy limitation or sensitive predators? Trophic and non-trophic impacts of wastewater pollution on stream food webs*. **Ecology**, 103(2): e03587.
- † Benito, X., Luethje, M., Schneider, T., Fritz, S.C., Baker, P., Pedersen, E., Gauzere, P., Nascimiento, M., Bush, M. & [A. Ruhi](#) (2022). *Ecological resilience in tropical Andean lakes: a paleolimnological perspective*. **Limnology & Oceanography**, 67:S23–S37.
- Hwang, J., Kumar, H., [Ruhi, A.](#), Sankarasubramanian, A. and Devineni, N., 2021. *Quantifying dam-induced fluctuations in streamflow frequencies across the Colorado River Basin*. **Water Resources Research**, 57(10):p.e2021WR029753.

- † Comte, L., Olden, J.D., Tedesco, P., Ruhi, A. & X. Giam (2021). *Climate and land-use changes interact to drive long-term reorganization of riverine fish communities globally*. **Proceedings of the National Academy of Sciences of the USA**, 118(27):118 (27) e2011639118.
- † Sarremejane, R., Stubbington, R., England, E., Sefton, C.E.M., Eastman, M., Parry, S. & A. Ruhi (2021). *Drought effects on invertebrate metapopulation dynamics and quasi-extinction risk in an intermittent river network*. **Global Change Biology**, 27(17):4024–4039.
- † Chalise, D.R., Sankarasubramanian, A. & A. Ruhi (2021). *Dams and climate interact to alter river flow regimes across the United States*. **Earth's Future**, 9(4), p.e2020EF001816.
- Larsen, L., Comte L., Filipe A.F., Fortin M.-J., Jacquet C., Remo Ryser, Tedesco P.A., Brose U., Erős T., Giam X., Irving K., Ruhi A., Sharma S., Olden J.D (2021). *The geography of metapopulation synchrony in dendritic river networks*. **Ecology Letters**, 24:791–801.
- † Vander Vorste, R., Stubbington, R., Acuña, V., Bogan, M.T., Bonada, N., Cid. N., Datry, T., Storey, R., Wood, P.J. & A. Ruhi (2021). *Climatic aridity increases temporal nestedness of invertebrate communities in naturally drying rivers*. **Ecography**, 44(6):860-869.
- Patrick, C.J., McCluney, K.E., Ruhi, A., Gregory, A., Sabo, J. & J.H. Thorp (2021). *Multi-scale biodiversity drives temporal variability in macrosystems*. **Frontiers in Ecology and the Environment**, 19(1):47-56.
- † Comte, L., Grantham, T. & A. Ruhi (2021). *Human stabilization of river flows is linked with fish invasions across the United States*. **Global Ecology and Biogeography**, 30(3):725–737.
- † Comte, L., et al.* (2021). *RivFishTIME: A global database of fish time-series to study global change ecology in riverine systems*. **Global Ecology and Biogeography**, 30(1):38-50. [*more than 30 co-authors].
- Allen, D., Datry, T., Boersma, K., Bogan, M., Boulton, A.J., Bruno, D., Busch, M., Costigan, K., Dodds, W.K., Fritz, K., Godsey, S.E., Jones, J.B., Kaletova, T., Kampf, S.K., Mims, M.C., Neeson, T.M., Olden, J.D., Pastor, A.V., Poff, N.L. Ruddell, B.L., Ruhi, A., Singer, G., Vezza, P., Ward, A.S. & M. Zimmer (2020). *River ecosystem conceptual models and non-perennial rivers: A critical review*. **Wiley Interdisciplinary Reviews: Water**, 7(5):e1473.
- Erős, T., Comte, L., Filipe, A.F., Ruhi, A., Tedesco, P.A., Brose, U. Fortin, M.J., Giam, X., Irving, K., Jacquet, C., Larsen, S., Sharma, S. & J.D. Olden (2020). *Effects of nonnative species on the stability of riverine fish communities*. **Ecography**, 43(8): 1156-1166.
- † Sanchez-Montoya, M., Tockner, K., von Schiller, D., Miñano, J., Catarineu, C., Lencina, J.L., Gonzalez-Barbera, G. & A. Ruhi (2020). *Dynamics of ground-dwelling arthropod metacommunities in intermittent streams: the key role of dry riverbeds*. **Biological Conservation**, 241:108328.
- Palmer, M* & A. Ruhi* (2019) [*equal contribution]. *Linkages between flow regime, biota, and ecosystem processes: implications for river restoration*. **Science**, 365(6459):eaaw2087.
- Anderson, E.P., Jackson, S., Tharme, R.E., Douglas, M., Flotemersch, J.E., Zwarteveen, M., Lokgariwar, C., Montoya, M., Wali, A., Tipa, G.T. Jardine, T.D., Olden, J.D., Cheng, L., Conallin, J., Cosens, B., Dickens, C., Garrick, D., Groenfeldt, D., Kabogo, J., Roux, D., Ruhi, A. & A.H. Arthington (2019). *Understanding rivers and their social relations: A critical step to advance environmental water management*. **Wiley Interdisciplinary Reviews: Water**, 6(6):e1381.
- Tonkin, J.D., Poff, N.L., Bond, N.R., Horne, A., Merritt, D.M., Reynolds, L.V., Olden, J.D., Ruhi, A. & Lytle, D.A., 2019. *Prepare river ecosystems for an uncertain future*. **Nature**, 570(7761):301.
- Sabo, J.L., Holtgrieve, G.W., Ruhi, A., Arias, M.E., Ngor, P.B., Elliott, V., Räsänen, T.A. & S. Nam (2019). *Response to Comment on “Designing river flows to improve food security futures in the Lower Mekong Basin”*. **Science**, 364(6444):eaav9887.
- Holtgrieve, G.W., Arias, M.E., Ruhi, A., Elliott, V., Nam, S., Ngor, P.B., Räsänen, T.A. & J.L. Sabo (2018). *Response to Comments on “Designing river flows to improve food security futures in the Lower Mekong Basin”*. **Science**, 361(6398):p.eaat1477.
- Palmer, M. & A. Ruhi (2018). *Measuring Earth’s rivers*. **Science**, 361(6402):546-547.
- Ruhi, A., Messenger, M. & J.D. Olden (2018). *Tracking the pulse of the Earth’s fresh waters*. **Nature Sustainability**, 1(4):198–203.

- Ruhi, A., Dong, X., Holt, C., Batzer, D.P. & J.L. Sabo (2018). *Detrimental effects of a novel flow regime on the functional trajectory of an aquatic invertebrate metacommunity*. **Global Change Biology**, 24(8):3749-3765.
- Sabo, J.L., Caron, M., Doucett, R., Dibble, K., Ruhi, A., Marks, J.C., Hungate, B & T.A. Kennedy (2018). *Pulsed flows, tributary inputs, and food-web structure in a highly regulated river*. **Journal of Applied Ecology**, 55(4):1884-1895.
- Kominoski, J.S., Ruhi, A., Hagler, M.M., Petersen, K., Sabo, J.L., Sinha, T., Arumugam, S. & J.D. Olden (2018). *Patterns and drivers of fish extirpations in rivers of the American Southwest and Southeast*. **Global Change Biology**, 24(3):1175–1185.
- Mor, J.R., Ruhi, A., Muñoz, I., Tornés, E., Acuña, V., & S. Sabater (2018). *Dam regulation and riverine food-web structure in a Mediterranean river*. **Science of the Total Environment**, 625:301-310.
- Sabo, J.L., Ruhi, A., Elliot, V., Arias, M., Holtgrieve, G. & N. So (2017). *Designing river flows to improve food security futures in the Lower Mekong Basin*. **Science**, 358(6368):eaao1053.
- Sankarasubramanian, A., Sabo, J. L., Larson, K., Seo, S., Sinha, T., Bhowmik, R., Ruhi, A., Kunkel, K., Mahinthakumar, G., Berglund, E. & J. Kominoski (2017). *Synthesis of public water supply use in the U.S.: Spatio-temporal patterns and socio-economic controls*. **Earth's Future**, 5(7):771-788.
- Dong, X., Ruhi, A. & N.B. Grimm (2017). *Evidence for self-organization in determining spatial patterns of stream nutrients, despite primacy of the geomorphic template*. **Proceedings of the National Academy of Sciences of the USA**, 114(24):4744–4752.
- Rosset, B., Ruhi, A., Bogan, M.T. & T. Datry (2017). *Do lentic and lotic communities respond similarly to drying?* **Ecosphere**, 8(7):e01809.
- Ruhi, A., Datry, T. & J.L. Sabo (2017). *Interpreting beta diversity components over time to conserve metacommunities in highly-dynamic ecosystems*. **Conservation Biology**, 31(6):1459-1468.
- Acuña, V., Hunter, M. & A. Ruhi (2017). *Managing temporary streams and rivers as unique rather than second-class ecosystems*. **Biological Conservation**, 211(B):12-19.
- Boix, D., Caria, M.C., Gascón, S., Mariani, M.A., Sala, J., Ruhi, A., Compte, J. & S. Bagella (2017). *Contrasting intra-annual patterns of six biotic groups with different dispersal mode and ability in Mediterranean temporary wetlands*. **Marine and Freshwater Research**, 68, 1044-1060.
- Ruhi, A., Olden, J. & J.L. Sabo (2016). *Declining streamflow induces collapse and replacement of native fish in the American Southwest*. **Frontiers in Ecology and the Environment**, 14(9):1-8.
[F1000 Prime recommended]
- Ruhi, A., Muñoz, I., Tornés, E., Batalla, R.J., Vericat, D., Ponsatí, L., Acuña, V., von Schiller, D., Marcé, R., Bussi, G., Francés, F. & S. Sabater (2016). *Flow regulation increases food-chain length through omnivory mechanisms in a Mediterranean river network*. **Freshwater Biology**, 61(9):1536-1549.
- Ruhi, A., Acuña, V., Barceló, D., Huerta, B., Mor, J.R., Rodríguez, S. & S. Sabater (2016). *Bioaccumulation and trophic magnification of pharmaceuticals and endocrine disruptors in a Mediterranean river food web*. **Science of the Total Environment**, 540: 250-259.
- Sánchez-Montoya, M., von Schiller, D., Ruhi, A., Sting Pechar, G., Proia, L., Miñano, J., Vidal-Abarca, R.R., Suárez, M.L., & K. Tockner (2016). *Responses of ground-dwelling arthropods to surface flow drying in channels and adjacent habitats along Mediterranean streams*. **Ecohydrology**, 9(7):1376–1387.
- Escoriza, D. & A. Ruhi (2016). *Functional distance to recipient communities may favour invasiveness: insights from two invasive frogs*. **Diversity and Distributions**, 22(5):519-533.
- Gascón, S., Arranz, I. Cañedo-Argüelles, M., Nebra, A., Ruhi, A., Rieradevall, M., Caiola, N., Sala, J., Ibáñez, C., Quintana, X.D. & D. Boix (2016). *Environmental filtering determines metacommunity structure in wetland microcrustaceans*. **Oecologia**, 181(1):193-205.
- Compte, J., Montenegro, M., Ruhi, A., Gascón, S., Sala, J. & D. Boix (2016). *Microhabitat selection and diel patterns of zooplankton in a Mediterranean temporary pond* **Hydrobiologia**, 766(1):201-213.
- Huerta, B., Rodriguez-Mozaz S., Nannou C., Nakis L., Ruhi A., Acuña V., Sabater, S. & D. Barcelo (2016). *Determination of a broad spectrum of pharmaceuticals and endocrine disruptors in biofilm from a WWTP-impacted river*. **Science of the Total Environment**, 540:241-249.

- Ruhi, A., Holmes, E., Rinne, J. & J.L. Sabo (2015). *Anomalous droughts, not invasion, decrease persistence of native fishes in a desert river*. **Global Change Biology**, 21(4):1482-1496. [[media coverage](#)]
- Arranz, I., Sala, J., Gascón, S., Ruhi, A., Quintana, X.D., Amoedo, J., Martinoy, M. & D Boix (2015). *Contribution to the knowledge of the distribution of Chaoborus species (Diptera: Chaoboridae) in NE Iberian Peninsula, with notes on the spatial and temporal segregation among them*. **Limnetica**, 34:57-68.
- Huerta, B., Jakimska, A., Llorca, M., Ruhi, A., Margaoutidis, G., Acuña, V., Sabater, S., Rodriguez-Mozaz, S. & D. Barceló (2015). *Development of an analytical method for the determination of multi-class pharmaceuticals and endocrine disruptors in freshwater invertebrates*. **Talanta**, 132:373-381.
- Ruhi, A., Chappuis, E., Escoriza, D., Jover, M., Sala, J., Boix, D., Gascón, S. & E. Gacia (2014). *Environmental filtering determines community patterns in temporary wetlands – a multi-taxon approach*. **Hydrobiologia**, 723(1):25-39.
- Ruhi, A. & D. Batzer (2014). *Assessing congruence and surrogacy among wetland macroinvertebrate taxa towards efficiently measuring biodiversity*. **Wetlands**, 34(6):1061-1071.
- Escoriza, D. & A. Ruhi (2014). *Macroecological patterns of amphibian assemblages in the Western Palearctic: Implications for conservation*. **Biological Conservation**, 176:252-261.
- Rouissi, M., Boix, D., Muller, S.D., Gascón, S., Ruhi, A., Sala, J., Bouattour, A., Ben Haj Jilani, I., Ghrabi-Gammar, Z., Ben Saad-Limam, S. & A. Daoud-Bouattour (2014). *Spatio-temporal variability of faunal and floral assemblages in Mediterranean temporary wetlands*. **Comptes Rendus Biologies**, 337(12):695-708.
- Ruhi, A., Boix, D., Gascón, S., Sala, J. & D. Batzer (2013). *Functional and phylogenetic relatedness in temporary wetland invertebrates: current macroecological patterns and implications for future climatic change scenarios*. **PLOS One**, 8(11):e81739.
- Tornés, A. & A. Ruhi (2013). *Flow intermittency decreases nestedness and specialization of diatom communities in Mediterranean rivers*. **Freshwater Biology**, 58(12):2555-2566.
- Batzer, D. & A. Ruhi (2013). *Is there a core set of organisms that structure invertebrate assemblages in freshwater wetlands?* **Freshwater Biology**, 58(8):1647-1659.
- Ruhi, A., Boix, D., Sala, J., Gascón, S. & X.D. Quintana (2013). *Nestedness and successional trajectories of macroinvertebrate assemblages in created wetlands*. **Oecologia**, 171(2):545-556.
- Ruhi, A., Herrmann, J., Gascón, S., Sala, J., Geijer, J. & D. Boix (2012). *Change in biological traits and community structure of macroinvertebrates through primary succession in a man-made Swedish wetland*. **Freshwater Science**, 31(1):22-37.
- Ruhi, A., San Sebastian, O., Feo, C., Franch, M., Gascón, S., Richter-Boix, À., Boix, D. & G. Llorente (2012). *Man-made Mediterranean Temporary Ponds as a tool for amphibian conservation*. **Annales de Limnologie – International Journal of Limnology**, 48(1):81-93. [Editor's choice]
- Ruhi, A., Herrmann, J., Gascón, S., Sala, J. & D. Boix (2012). *How do early successional patterns in man-made wetlands differ between cold temperate and Mediterranean regions?* **Limnologia**, 42(4):328-339.
- Boix, D., Ruhi, A., Gascón, S. & J. Sala (2012). *First record of *Holocentropus stagnalis* (Albarda, 1874) (Trichoptera: Polycentropodidae) for the Iberian Peninsula*. **Boletín de la Sociedad Entomológica Aragonesa**, 51:343–345.
- Ruhi, A., D. Boix, J. Sala, S. Gascón & X. D. Quintana (2009). *Spatial and temporal patterns of pioneer macrofauna in recently created ponds: taxonomic and functional approaches*. **Hydrobiologia**, 634(1):137-151.

Book Chapters

- Ruhi, A., Cross, W., Catford, J., Escoriza, D. & J.D. Olden (2019). *Understanding the nexus between hydrological alteration and biological invasions*. In: Sabater, S., Elozegi, A. & R. Ludwig (Eds), *Multiple Stressors in River Ecosystems*. Elsevier.
- Datry, T., Bonada, N., Corti, R., Heino, J., Hugueny, B., Rolls, R. & A. Ruhi (2017). *Habitat Fragmentation and Metapopulation, Metacommunity, and Metaecosystem Dynamics in Intermittent*

Rivers and Ephemeral Streams. In: Datry, T., Bonada, N. & A. Boulton (Eds.), *Intermittent Rivers and Ephemeral Streams: Ecology and Management*. Elsevier.

Ruhi, A., Fairchild, G.W., Spieles, D.J., Becerra-Jurado, G. & D. Moreno-Mateos (2016). *Invertebrates in Created and Restored Wetlands*. In: Batzer, D. & D. Boix. *Invertebrates in Freshwater Wetlands: An international perspective on their ecology*. Springer.

Books

Ruhi, A. (Coord.) (2012). *El Riu Ter: passat, present i futur*. Consorci Alba-Ter Ed., 37 p. [in Catalan]

Ruhi, A. (2010). *Paisatges vius. Patrimoni natural de les terres gironines* [book + DVD]. Diputació de Girona Ed., 307 p. [in Catalan]

Feliu, P. & A. Ruhi (2009). *Guia d'itineraris per l'entorn de Girona*. Brau Ed., 126 p. [in Catalan]

Ruhi, A. (2008) *La naturaleza en tu jardín. Guía práctica para conocer y acoger la fauna cercana*. Brau Ed., 123 p. [in Spanish]

Software

Shah, S., Ruhi, A., Future H2O (2019). *R Package 'discharge'. Fourier Analysis of Discharge Data*. v.1.0.0, CRAN. <https://CRAN.R-project.org/package=discharge>

GRANTS AND FELLOWSHIPS

- 2021-26 Sole PI, NSF CAREER: *Drought and metacommunity stability in riverine networks* (DEB-2047324). [\$894k].
- 2024-25 Co-PI (Lead PI: Grantham), California Sea Grant. *Understanding flow-ecology relationships to inform the restoration of effluent-influenced coastal streams in Southern California*. PhD Fellow: Melissa von Mayrhauser. [\$45k]
- 2022-24 Sole PI, 2022 Delta Science / California Sea Grant Award. *Restoring tidal marsh food-webs: assessing restoration effects on trophic interactions and energy flows in the San Francisco Bay-Delta*. PhD Fellow: Megan Pagliaro. [\$151k].
- 2022-24 Lead PI (co-PI: Carlson), 2022 Delta Science / California Sea Grant Award. *Examining the relationship between Longfin Smelt, zooplankton, and flow in the San Francisco Estuary*. Postdoc Fellow: Parsa Saffarinia [\$206k].
- 2021-25 Lead PI (co-PI: Carlson), California Department of Fish and Wildlife Prop. 1 Awards. *Will climate change disrupt pelagic food webs via phenological mismatches? Assessing past evidence and future potential in the San Francisco Bay-Delta*. [\$667K].
- 2021 Sole PI, California Sea Grant "New Faculty Awards". *Anticipating the effects of future climates and river flow regimes on Pacific Herring recruitment in the San Francisco Bay*. [\$52k].
- 2020-21 Sole PI, Hellman Fellows Fund. *Drought on Riverine Networks: How Does Flow Intermittency Disrupt Stream Ecosystem Processes?* [\$53k].
- 2020-21 Lead PI (co-PI: Carlson), Delta Science / California Sea Grant. *Predicting freshwater, brackish, and marine fish community responses to variable climate regimes and habitat mosaics along the estuarine gradient*. Postdoc Fellow: Denise Colombano. [\$192k].
- 2019-23 Lead PI at Berkeley, California Department of Fish and Wildlife Prop. 1 Awards. *Reconnecting Delta food webs: evaluating the influence of tidal marsh restoration on energy flow and prey availability for native fishes*. [Ruhi: \$358K].
- 2019-20 Sole PI, Subaward from the National Socio-Environmental Synthesis Center, University of Maryland. *Advancing quantitative methods to understand causal pathways and feedbacks within complex socio-hydrological systems*. [Ruhi: \$162K].
- 2019-20 Sole PI, California Institute for Water Resources (CIWR) Water Research Program. *Towards a Mechanistic Understanding of the Multi-Scale Effects of Drought on Riverine Biodiversity*. [Ruhi: \$25K].

- 2019-23 Lead PI at Berkeley, *Collaborative Proposal: NSF MSB-FRA: Scaling Climate, Connectivity, and Communities in Streams* (DEB-1802714) [Ruhi: \$422K; \$252K+\$169K supplement].
- 2016-17 Postdoctoral Fellowship, National Socio-Environmental Synthesis Center (SESYNC). *Dams and social-ecological resilience to water scarcity*.
- 2015 Co-PI, ASU SOLS-RTI grant, *Collaborative research: how does increasing variation in resource availability affect biodiversity?* [Ruhi & Gherardi; \$7.5K].
- 2015 Co-PI, Central Arizona-Phoenix Long-Term Ecological Research (CAP LTER) grant, *Time-series analysis of Tempe Town Lake Biogeochemistry* [Hartnett, Palta, Ruhi; \$9.8K].
- 2015 Co-PI, Central Arizona-Phoenix Long-Term Ecological Research (CAP LTER) grant, *Long-term analysis of land-use and climate anomalies on urban community structure: food web dynamics and biodiversity patterns* [Allen, Bateman, Martin, Sabo, Stutz & Ruhi; \$15.4K].
- 2015 Travel Awardee, Annual meeting of Water Sustainability and Climate (WSC) investigators at the National Science Foundation [\$1.2K].
- 2013 Postdoctoral fellowship awardee, EC-funded NESSIE grant, *A food web perspective on the impacts of hydrological interruptions in rivers* [declined due to job incompatibility].
- 2011 PhD mobility grant awardee, Spanish Ministry of Education. Temporary research transfer to the University of Georgia, U.S.A., 6 months [6.793€].
- 2009 PhD mobility grant awardee, Spanish Ministry of Education. Research visit to Linnaeus University, Sweden, 3 months [5.100€].
- 2007-11 PhD fellowship awardee, Spanish Ministry of Science and Innovation (ref: FPU AP2006-00807), University of Girona, Spain, 4 years [64.400€].
- 2005 Undergraduate research fellowship awardee, University of Girona, Spain. Internship at the Technical Office of the EU-LIFE Project LIFE03 NAT/E/000067 [1.600 €].

AWARDS AND HONORS

- 2023 Winkler Scholars Award, UC Berkeley.
- 2021 UC Berkeley, *Extraordinary Teaching in Extraordinary Times* Award.
- 2021 NSF CAREER Award.
- 2021 California Sea Grant New Faculty Award.
- 2020 Hellman Foundation Fellow.
- 2013 Extraordinary Doctoral Degree Award in Environmental Sciences, University of Girona.
- 2010 *XXI Pica d'Estats* award for a story in *Descobrir Catalunya* journal on NE Spain's natural heritage, Diputacio Provincial de Lleida (Spain).
- 2008 Award to participate in the IUCN World Conservation Congress, Barcelona City Council.
- 2002 Youth Leadership Award '*Protagonistas del mañana*', Rotary Club Girona (Spain).

INVITED TALKS AND LECTURES

- 2023 Speaker, Stanford University, Watershed Restoration Conference.
- 2023 Speaker, French Embassy, Office for Science and Technology (OST) of the Embassy of France, on US-France cooperation on climate change ecology research, Washington D.C., USA.
- 2023 Seminar speaker, Virginia Tech, Department of Ecology, Evolution, and Behavior, Blacksburg, Virginia, USA.
- 2023 Seminar speaker, The Pennsylvania State University, Department of Ecosystem Science and Management, State College, Pennsylvania, USA.
- 2022 Seminar speaker, Southern California Coastal Water Research Project (SCCWRP), Costa Mesa, California, USA.
- 2022 Seminar speaker, INRAE (National Institute of Agricultural Research) Lyon, France.
- 2022 Seminar speaker, Fisheries and Oceans Canada, Canada (remote).
- 2022 Seminar speaker, University of California Davis, USA (remote).
- 2021 Invited speaker, International Forum on Transitions ([link](#)), Université de Pau et des Pays de l'Adour, Biarritz, France (remote).

- 2021 Seminar speaker, Interdisciplinary Centre For Water (ICWaR), Indian Institute of Science, Bangalore, India (remote).
- 2021 Seminar speaker, University of Georgia, Dept. Entomology. Athens, GA, USA (remote).
- 2020 Seminar speaker, University of Oklahoma, Dept. Biology. Norman, OK, USA (remote).
- 2020 Science chat, UC Berkeley BEST Region (Biological, Environmental, Science & Technology).
- 2019 Seminar speaker, California Academy of Sciences. Institute for Biodiversity Science and Sustainability Seminar Series. San Francisco, CA, USA.
- 2019 Invited speaker, Thresholds and Ecosystem Restoration Symposium. Coastal and Marine Sciences Institute & Delta Science Program. UC Davis, CA, USA.
- 2019 Panelist, Delta Independent Science Board, Roles and Impacts of Non-native Species in a Dynamic Delta. Sacramento, CA, USA.
- 2019 Seminar speaker, Oregon State University, Ecology, Evolution and Conservation of Biodiversity Seminar Series. Corvallis, CA, USA.
- 2019 Seminar speaker, UC Berkeley, Wildlife and Conservation Biology Series. Berkeley, CA.
- 2018 Seminar speaker, UC Riverside, Evolution, Ecology, & Organismal Biology Colloquium. Riverside, CA, USA.
- 2018 Seminar speaker, UC Santa Cruz, Ecology and Evolutionary Biology Seminars. Santa Cruz, CA, USA.
- 2018 Seminar speaker, UC Berkeley, ESPM Seminar Series. Berkeley, CA, USA.
- 2017 Hydropower Reform Coalition (Washington, D.C.): *Dam reoperation and designer environmental flows.*
- 2015 American Geophysical Union Fall Meeting (San Francisco, CA, USA): *Systemic and intensifying drought induces collapse and replacement of native fishes: a time series approach.* Special session on watershed resilience.
- 2015 Catalan Institute for Water Research (ICRA, Spain): *Discharge anomalies and persistence of fish communities in the American Southwest: a time series approach.*

PROFESSIONAL SERVICE

Working Groups and Advisory Committees:

- 2024- The National Academies of Sciences, Engineering, and Medicine. Committee member, *Central Valley Project and State Water Project operations.*
- 2019-22 Steering and Advisory Committee, Research Coordination Network (RCN) ‘Dry Rivers’.
- 2020-21 Advisor to the National Ecological Observatory Network (NEON) Aquatic Technical Working Group.
- 2019 Member, sDiv Working Group, *The geography of synchrony in dendritic networks: understanding the causes, dynamics, and consequences across multiple scales (sYNGEO).*
- 2018 Member, Powell Center Working Group, *A global synthesis of land-surface fluxes under natural and human-altered watersheds using the Budyko framework.*
- 2017 Member, SESYNC workshop, *Social and Ecohydrological Science Connections for Environmental Flows.*
- 2017 Member, SESYNC workshop, *Cross-Disciplinary Socio-Environmental Statistics in the Anthropocene.*
- 2015-16 Member, Stream Resiliency RCN, *Time Series Analysis Working Group.*

Evaluation panels (selection):

- 2022 NSF DEB - Population & Community Ecology.
- 2022 University of California President's Postdoctoral Fellowship Program (PPFP).
- 2022 New Mexico Water Resources Research Institute.
- 2021 Scientific panel committee member, US Geological Survey - Grand Canyon Monitoring and Research Center, *Colorado River ecosystem response to the 2018-2020 Macroinvertebrate Production Flow Experiment at Glen Canyon Dam.*

- 2021 NSF - Earth and Environmental Sciences division.
- 2020 Natural Sciences and Engineering Research Council of Canada (NSERC), Discovery Grants.
- 2020 Reviewer for Public Policy Institute of California, Delta Science Council technical reports.
- 2019 National Geographic - Early Career Grants reviewer.
- 2016 NSF Graduate Research Fellowship Program (GRFP) panel.

Associate Editor: Conservation Letters (since 2019).

Ad-hoc Editor: PNAS, Ecological Applications.

Reviewer: PNAS, Ecology Letters, Global Change Biology, Frontiers in Ecology and the Environment, Conservation Letters, Journal of Applied Ecology, Journal of Animal Ecology, BioScience, Diversity and Distributions, Ecography, Conservation Biology, Biological Conservation, Limnology and Oceanography, others (total > 80 reviews).

Special session organizer:

- 2023 Freshwater Sciences Meeting (Brisbane, Australia). *Current challenges and opportunities for flow ecology in adaptive flow management.*
- 2021 Society for Freshwater Science Annual Meeting (online due to COVID). *Scaling the effects of flow regimes over space, time, and levels of biological organization.*
- 2019 Society for Freshwater Science Annual Meeting (Salt Lake City, UT). *Towards a predictive understanding of metacommunity dynamics in freshwater ecosystems.*
- 2018 Society for Freshwater Science Annual Meeting (Detroit, MI). *Emerging Approaches to Modeling Population and Community Dynamics in Fresh Waters.*
- 2018 Society for Freshwater Science Annual Meeting (Detroit, MI). *Transcending aquatic-terrestrial boundaries - Ecology, conservation, and management of temporary freshwaters.*
- 2017 Society for Freshwater Science Annual Meeting (Raleigh, NC). *Towards a predictive freshwater ecology: using time-series data to understand and forecast responses to a changing environment.*

TEACHING EXPERIENCE

- 2020-23 Instructor; *Applied time series analysis for ecology and environmental sciences* (ESPM 174A), UC Berkeley [Fall semesters].
- 2019-23 Instructor, *Freshwater Ecology* (ESPM C115A / IB 171), UC Berkeley [Spring semesters].
- 2022 Instructor; *Biology and Geomorphology of Tropical Islands* (ESPM C107 / IB 158LF), UC Berkeley [Fall semester].
- 2018-19 Instructor, *Senior Seminar in Conservation and Resource Studies* (ESPM 194A), UC Berkeley [Fall semesters].
- 2015 Co-instructor, *Biometry* (BIO 614), Arizona State University.
- 2012-13 Teaching Assistant, *Aquatic ecology*. Tourism and Water International Campus of Excellence, e-MTA Campus of the University of Girona. Mentoring of 2 undergraduate research projects (2 semesters).
- 2008-12 Teaching Assistant, *Sustainability*. Conflict Resolution Graduate Program, University of Girona Foundation (4 semesters).

SUPERVISING EXPERIENCE

- 2024-25 Member & chair of the Qualifying Exam Committee of Taylor Walker (ESPM, UC Berkeley).
- 2023-24 Member of the Qualifying Exam Committee of Maya Munstermann (Integrative Biology, UC Berkeley) and Yihong Zhu (ESPM, UC Berkeley). Host and guiding committee member of visiting M.Sc. student Tim Jäger (University of Greifswald, Germany).
- 2022-23 Member & chair of the Qualifying Exam Committee of Mariska Obedzinski (ESPM, UC Berkeley).
- 2021-22 Guiding advisor of Ph.D. student Rose Mohammadi. Host of visiting Univ. Barcelona visiting Ph.D. student José María Fernández-Calero.

- 2020-21 Guiding advisor of Ph.D. student Melissa von Mayrhauser. Member of the Qualifying Exam Committee of Lucy Andrews (ESPM, UC Berkeley).
- 2019-20 Guiding advisor of Ph.D. students Jessie Moravek and Megan Pagliaro. Member of the Qualifying Exam Committee of Brian Kastl, Rachael Ryan, Ben Goldstein, Courtenay Ray (ESPM, UC Berkeley), Dol Raj Chalise (North Carolina State University), and Jose Fernández-Calero (University of Barcelona). Host of visiting professor Tadeu Siqueira (São Paulo State University), and visiting Ph.D. student Zhenhua Sun (Chalmers University of Technology).
- 2018-19 Guiding advisor of Ph.D. student Kyle Leathers, member of the Qualifying Exam Committee of Lorenzo Rosa, Jimena Diaz, and Hana Moidu, member of the Dissertation Committee of Hana Moidu, member of the Master's Thesis Committee of Jordan Wigenroth (ESPM, UC Berkeley). External advisor of Postdoc Fellow Xavier Benito (SESYNC, University of Maryland). Host of visiting professor Maria Sanchez-Montoya (University of Murcia), and of visiting graduate student Jordi-Rene Mor (Catalan Institute for Water Research).
- 2015-16 Supervisor of Hannah M. Davies, intern and research scholar; Ashley Sanders, research technician; and Michael Folk, NSF-REU assistant (Arizona State University).
- 2014 Ph.D. dissertation committee member of Isabel Mas-Marti (University of Barcelona).
- 2012-13 Co-supervision of Adriana Hecht, M.S. student (University of Barcelona).

SELECTED SERVICE

- 2023- Faculty Co-Director, Institute for Parks, People, and Biodiversity, UC Berkeley.
- 2023- UC Berkeley representative, Californian Cooperative Ecosystem Studies Unit (CESU).
- 2019- Faculty advisor for the Ecological Society of America's program 'Strategies for Ecology Education, Diversity' (SEEDS), UC Berkeley chapter.
- 2019- Member, Conservation and Resource Studies committee, ESPM, UC Berkeley.
- 2019-22 Chair (2022, 2020) & co-chair (2019) of the ESPM Seminar Series committee; ESPM, UC Berkeley.
- 2018-19 Member, Graduate Admissions Committee, Organisms & Environment Division, ESPM, UC Berkeley.
- 2018- Member, Strawberry Creek Environmental Quality Committee, UC Berkeley.