Robert O. Hall, Jr. Oct. 2025

Professor
Flathead Lake Biological Station
University of Montana
Polson, MT 59911
(307) 690-6284 (cell)
bob.hall@flbs.umt.edu
https://scholar.google.com/citations?user=UDfwrOkAAAAJ&hl=en

Education

B.S. 1989. Cornell University, Ithaca, NY.
Ph.D. 1996. Institute of Ecology, University of Georgia, Athens, GA.

Research Interests

Stream and river ecology, food webs, nutrient cycling, primary and secondary production, invasive species, river impoundments, biogeochemical modeling.

Appointments

2017-present	Professor, Flathead Lake Biological Station, University of Montana, Polson, MT 59860
2021-2025	Director, Ecology and Evolution, Division of Biological Sciences, University of Montana, Missoula, MT 59812
2017-present	Professor Emeritus, Department of Zoology and Physiology, University of Wyoming, Laramie, WY 82071.
2010-2017	Professor. Department of Zoology and Physiology, University of Wyoming, Laramie, WY 82071.
2011-2017	Director, Program in Ecology, University of Wyoming, Laramie, WY 82071
2004-2010	Associate Professor. Department of Zoology and Physiology, University of Wyoming, Laramie, WY 82071.
1998-2004.	Assistant Professor. Department of Zoology and Physiology, University of Wyoming, Laramie, WY 82071.
1996-1998	Postdoctoral Associate. Institute of Ecosystem Studies, Box AB, Millbrook NY 12545
1989-1991	Technician, Ecosystems Research Center, Cornell University, Ithaca, NY14853

Publications

Journal articles

Genzoli, L., and R. O. Hall. 2025. Linking aquatic vegetation structure with ecosystem metabolism throughout the Klamath River, California, USA. *Ecological Applications*. 35: e70089. 10.1002/eap.70089

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Sadler, J. M., L. E. Koenig, G. Gorski, A. M. Carter, and R. O. Hall. 2024. Evaluating a process-guided deep learning approach for predicting dissolved oxygen in streams. *Hydrological Processes*, 38: e15270. https://doi.org/10.1002/hyp.15270

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Shangguan, Q., R.A. Payn, R. O. Hall, Fischer L. Young, H. M. Valett, and M. D. DeGrandpre. 2024 Divergent metabolism estimates from dissolved oxygen and inorganic carbon: Implications for river carbon cycling. *Limnology and Oceanography* https://doi.org/10.1002/lno.12666

Boedecker, A. R., J. M. T., T. H. Tappenbeck, R.O. Hall., C. J. Robbins, and J. T. Scott. 2024. Evaluating O_2:Ar, N_2:Ar, and $^{29,30}N_2$ using membrane inlet mass spectrometry configured

to minimize oxygen interference. *Limnology and Oceanography: Methods* https://doi.org/10.1002/lom3.10644

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Hall, R. O., M. F. Dybdahl, and M. C. VanderLoop. 2006. Extremely high secondary production of introduced snails in rivers. *Ecological Applications* 16:1121-1131.

Hall, R. O. and J. L. Tank. 2005. Correcting whole-stream estimates of metabolism for groundwater input. *Limnology and Oceanography: Methods* 3:222-229.

Bernhardt, E.S., G.E. Likens, R.O. Hall, D.C. Buso, S.G. Fisher, T.M. Burton, J.L. Meyer, W.H. McDowell, M.S. Mayer, B. Bowden, S. Findlay, K.H. Macneale, R. Stelzer, W. Lowe. 2005. Can't see the forest for the stream? In-stream processing and terrestrial nitrogen exports. *BioScience* 55:219-230.

Feck, J., and R. O. Hall. 2004. Response of American Dippers (*Cinclus mexicanus*) to variation in stream water quality. *Freshwater Biology* 49: 1123-1137.

Marshall, M. C. and R. O. Hall. 2004. Hyporheic invertebrates affect nitrogen cycling and respiration in stream sediment microcosms. *Journal of the North American Benthological* Society 23:416-428.

Likens, G. E., D. C. Buso, B. K. Dresser, E. S. Bernhardt, R. O. Hall, K. H. Macneale, and S. W. Bailey. 2004. Buffering an acidic stream in New Hampshire with a silicate mineral. *Restoration Ecology* 12:419-428.

Hall, R. O., J. L. Tank, and M. F. Dybdahl. 2003. Exotic snails dominate nitrogen cycling in a highly productive stream. *Frontiers in Ecology and the Environment*. 1: 407-411.

Hall, R. O., and J. L. Tank. 2003. Ecosystem metabolism controls nitrogen uptake in streams in Grand Teton National Park, Wyoming. *Limnology and Oceanography* 48: 1120-1128.

Hall, R. O. 2003. A stream's role in watershed nutrient export. *Proceedings of the National Academy of Sciences* 100: 10137-10138.

Bernhardt, E. S., R. O. Hall, and G. E. Likens. 2002. Whole-system estimates of nitrification and nitrate uptake in streams at the Hubbard Brook Experimental Forest. *Ecosystems* 5: 419-430.

Paul, M. J. and R. O. Hall. 2002. Particle transport and transient storage along a stream gradient in the Hubbard Brook Experimental Forest. *Journal of the North American Benthological Society* 21:195-205.

Hall, R. O., E. S. Bernhardt, and G. E. Likens. 2002. Relating transient storage and nutrient uptake in forested mountain streams *Limnology and Oceanography* 47: 255-265.

Hall, R. O., G. E. Likens, and H. M. Malcom. 2001. Trophic basis of invertebrate production in two forest streams. *Journal of the North American Benthological Society* 20:432-447.

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Hall, R. O., and G. E. Likens. 2000. Ecological implications of high discharge variability in streams of the Hubbard Brook Experimental Forest. *Proceedings of the International Society of Theoretical and Applied Limnology* 27:2353-2358.

Hall, R. O., J. B. Wallace, and S. L. Eggert. 2000. Organic matter flow in stream food webs with reduced detrital resource base. *Ecology* 81:3445-3463.

Hall, R. O., and J. L. Meyer. 1998. The trophic significance of bacteria in a detritus-based stream food web. *Ecology* 79:1995-2012.

Hall, R. O., B. J. Peterson, and J. L. Meyer. 1998. Testing a nitrogen cycling model of a forest stream by using a nitrogen-15 tracer addition. *Ecosystems* 1:283-298.

Hall, R. O., C. L. Peredney, and J. L. Meyer. 1996. The effect of invertebrate consumption on bacterial transport in a mountain stream. Limnology and Oceanography, 41:1180-1187.

Couch, C. A., J. L. Meyer, and R. O. Hall. 1996. Incorporation of bacterial extracellular polysaccharide by black fly larvae (Simuliidae). *Journal of the North American Benthological Society* 15:289-299.

Hall, R.O. 1995. The use of a stable carbon isotope addition to trace bacterial carbon in a stream food web. *Journal of the North American Benthological Society* 14: 269-277.

Hambright, K.D., and R.O. Hall. 1992. Differential zooplankton feeding behaviors, selectivities, and community impacts of two planktivorous fishes. *Environmental Biology of Fishes* 35: 401-411.

Book Chapters

Hall, R. O. and E. S. Bernhardt. 2024. Stream ecosystem energetics. Pages 91-106 in Foundations of Stream and River Ecology, W. F. Cross, J. P. Benstead, A. M. Marcarelli, and R. A. Sponseller, editors. University of Chicago Press.

Hall, R. O., and E. R. Hotchkiss. 2017. Stream metabolism. Pages 219–233 *in* F. R. Hauer and G. A. Lamberti, editors. *Methods in stream ecology, Volume 2*. Third Edition. Elsevier.

Hall, R. O. 2016. Metabolism of streams and rivers: Estimation, controls and application. Pages 151-180 in J. B. Jones, and E. H. Stanley, editors. *Streams in a Changing Environment.* Elsevier.

Hall, R. O., B. J. Koch, M. C. Marshall, B. W. Taylor, and L. M. Tronstad. 2007. How body size mediates the role of animals in nutrient cycling in aquatic ecosystems. Pages 286-305 in A. Hildrew, D. Rafaelli, and R. Edmonds-Brown, editors. *Body Size: The Structure and Function of Aquatic Ecosystems*. Cambridge University Press.

Hall. R. O., S. Thomas and E. E. Gaiser. 2007. Measuring primary production and respiration in freshwater ecosystems. Pages 175-203 in *Principles and Standards for Measuring Net Primary Production*. T.J. Fahey and A. K. Knapp, editors. Oxford University Press, Oxford.

Harmon, M. E., D. L. Phillips, J. J. Battles, A. Rassweiler, R. O. Hall, and W. K. Lauenroth. 2007. Quantifying uncertainty in net primary production measurements. Pages 238-264 in *Principles and Standards for Measuring Net Primary Production*. T.J. Fahey and A. K. Knapp, editors. Oxford University Press, Oxford.

Covich, A.P., K.C. Ewel, R. O. Hall, P.G. Giller, W. Goedkoop, D. Merritt,. 2004. Ecosystem services provided by freshwater benthos. Pages 45-72 in D. H Wall, editor. *Integrating concepts of biodiversity in soils and sediments: a transdisciplinary assessment of the most critical taxa, functions and habitats for sustainability, their vulnerability and management options*.

Giller, P. S., A.P. Covich, K.C. Ewel, R.O. Hall, and D. Merritt. 2004. Vulnerability and management of ecological services in freshwater systems. Pages 137-160 in D. H Wall, editor. *Integrating concepts of biodiversity in soils and sediments: a transdisciplinary assessment of the most critical taxa, functions and habitats for sustainability, their vulnerability and management options.*

Ineson P., Levin, L.A., R. Kneib, R.O. Hall, J.M.Weslawski, R.D. Bardgett, D.A. Wardle, D.H. Wall, W.H. van der Putten and H. Zadeh. 2004. Terrestrial soils and freshwater and

marine sediments: cascading effects of deforestation on ecosystem services across spatially separated habitats. Pages 225-248 in D. H Wall, editor. *Integrating concepts of biodiversity in soils and sediments: a transdisciplinary assessment of the most critical taxa, functions and habitats for sustainability, their vulnerability and management options.*

Grant support

2024-2027. Subtropical Underwater Biogeochemistry and Subsurface Export Alliance. Schmidt Sciences Foundation. $9.5M . Matt Church, PI.

2020-2024 RII Track-2 FEC: Highly predictive, explanatory models to harness the life science data revolution. $856,000 subaward from University of Wyoming from a $6,000,000 grant from National Science Foundation. Lauren Shoemaker, PI

2021-2025 Phosphorus budget for Colorado River Grand Canyon. USGS. $170,000.

2021-2025 River Corridor Hydrobiogeochemistry from Reaction to Basin Scale. PNNL $89,000

2020-2022. Fish consumption and advisory awareness among food pantry patrons receiving products of lake trout suppression on Flathead Lake, Montana. EPA, $129,000. Nanette Nelson, PI

2018-2020. Scaling hyporheic nitrogen cycling in large river alluvial aquifers. Department of Energy, $180,000.

2018-2020 COLLABORATIVE RESEARCH: Rivers and the carbon cycle: A mechanistic basis for dissolved organic carbon removal. National Science Foundation $84,000

2015-2019 COLLABORATIVE RESEARCH: Defining Stream Biomes to Better Understand and Forecast Stream Ecosystem Change. National Science Foundation. $360,000 (This grant is a part of a Macrosystems project awarded with Duke U. as the lead institution)

2015-2016. Continental-scale overview of stream primary productivity, its links to water quality, and consequences for aquatic carbon biogeochemistry. USGS Powell Center Synthesis project (Funds administered by USGS for this project).

2015 Calculate and Analyze Long Term Trends in Lower Klamath River Ecosystem Metabolism. Contract through Kier Associates. $17,000

2013-2015 Collaborative Research: Leaky rivers, nutrient retention, and productivity in Rocky Mountain streams under alternative stable states. National Science Foundation, $326,000.

2009-2012. Collaborative research: Using empirical and modeling approaches to extend nutrient spiraling from rivulets to rivers. National Science Foundation, $161,000.

2006-2010. Linking whole-system carbon cycling to quantitative food webs in the Colorado River. USGS, $1,140,000.

2005-2007. Land use impacts on nitrogen fixation in streams. Wyoming Water Development Commission and USGS. $56,000.

2003-2006 Collaborative Research: Migratory fish as material and functional linkages across tropical Andean landscapes. National Science Foundation $ 230,552.

2003 Isotope ratio mass spectrometers for biological and environmental research and training at the University of Wyoming. National Science Foundation $398,885.

2002-2004 Influence of stream-lake interactions on nutrient transport and function in aquatic ecosystems: Modeling ^{15}N experiments and watershed analyses. National Science Foundation. $222,336 subcontract of a 1,000,000 grant to Utah State University.

2002-2004 Influence of bio-pollution on ecosystem processes: the impact of introduced lake trout on streams, predators and forests in Yellowstone National Park. EPA / EPSCoR $200,000.

2001-2005 Nitrate uptake and retention in streams: mechanisms and effects of human from stream reaches to landscapes. National Science Foundation. $98,000 subcontract from a $3,000,000 grant to University of Tennessee.

2001-2004 Impacts of piscicide treatments on aquatic invertebrates. US Geological Survey. $64,920

2000-2005 Hyporheic storage of marine-derived nitrogen in SE Alaska streams. US Forest Service $98,940.

Teaching

Ecological Models and Data, Stream Ecology, Limnology, Limnology Laboratory, General Biology, General Ecology

Honors and awards

2024 Fellow, Society for Freshwater Science
2022 Sustaining Fellow, Association for the Sciences of Limnology and Oceanography
2010 Extraordinary Merit in Teaching. College of Arts and Sciences, University of Wyoming.
2010 T. S. Harris Faculty Award, Dept. of Zoology and Physiology, University of Wyoming.
2002 Extraordinary Merit in Research. College of Arts and Sciences, University of Wyoming.

2000 Hynes award from the North American Benthological Society for best paper (Hall and Meyer 1998) published by a young investigator.
1996 Best student paper award (Hall et al. 1996) for basic research. Institute of Ecology, University of Georgia.
1995 Best student paper award (Hall 1995) for basic research. Institute of Ecology, University of Georgia.
1994 Wildco Award for best oral presentation describing basic research at the 1994 North American Benthological Society Meeting.
1994 Outstanding Teaching Assistant Award. University of Georgia.
1993 Frigid Units Award for best oral presentation describing a new method at the 1993 North American Benthological Society Meeting.

Graduate students supervised

Rachel Johnson M.S., Current
Andrew Britton M.S. (coadvised), Current
Cora Steinbach M.S. Current
Matthew Nichols M.S. 2025
Laurel Genzoli, M.S. 2013, PhD. 2024
Pavel Garcia, PhD. 2023
Brady Kohler, PhD. 2020
Hilary Madinger, Ph.D. 2018
Natalie Day, M. S. 2015
Erin Hotchkiss, MS 2006, Ph.D. 2013.
Amber Ulseth Ph.D. 2012
Lisa Kunza Ph.D. 2012
Ben Koch M.S. 2005, Ph.D. 2011
Lusha Tronstad Ph.D. 2008
Michael Marshall, M.S., 2002 Ph.D. 2006.
Brad Taylor, Ph.D., 2005
Kenneth Cerreto M.S. 2004
Laura Curry, M.S. 2004
Jules Feck, MS 2002

Postdoctoral associates

Deepika Sahoo 2025-present
Christa Torrens 2022-2025
Alice Carter 2021-2024
Lauren Koenig 2021
Matthew Trentman 2020-2022
Joanna Blaszczak 2018-2019
Wyatt Cross 2006-2008

Professional Service

2025-2026 Organizing committee, Society for Freshwater Science annual Meeting, Spokane, WA.
2023-present Publications Committee, Society for Freshwater Science
2020-2021 NSF NEON annual operations review panel
2020-2021 Past Vice President. Society for Freshwater Science
2019-2020 Vice President. Society for Freshwater Science
2018-2019 Vice President-elect. Society for Freshwater Science
2019-present. Editorial Board, *Limnology and Oceanography*.
2009-present. Editorial Board, *Oecologia*.
2008-present. Editorial Board, *Freshwater Science*
2009-present. Various National Science Foundation panels.
2018 Member, Scientific Steering Committee, ASLO meeting, Victoria, BC, 2018
2007-2008 Member and Chair, Hynes Award Committee, North American Benthological Society
2002-2004. Panel member, National Science Foundation Graduate Research Fellowship Program.
2000, Member, NAS/NRC Committee, Science and technology for environmental cleanup at Hanford.
1999 Agricultural Experiment Station Competitive Grant Program, University of Wyoming
1995-present Ad hoc reviewer for 22 journals and 4 granting agencies.
1994-1995 Executive Committee student member, North American Benthological Society.

Memberships in professional societies

Association of Sciences for Limnology and Oceanography
Society for Freshwater Science

Workshops

2023 Co-instructor, Stream Metabolism workshop, Macrolatinos Conference Guatemala (online)
2018 Heterotrophic regimes workshop, Ovronnaz, Switzerland
2016 C-CASCADES workshop, Lausanne, Switzerland
2012 Global Food Web workshop, Barcelona, Spain
2011 Global Food Web workshop, Melbourne, Australia
2009 Aquatic invasive species monitoring plan for Greater Yellowstone Area, UW/NPS Research Station, Moran, WY
2007 Control and management of aquatic animal invaders. Nature Conservancy, Las Vegas, NV
2002. Integrating concepts of biodiversity in soils and sediments: a transdisciplinary assessment of the most critical taxa, functions and habitats for sustainability, their vulnerability and management options. SCOPE workshop.
2002 Measurement of Net Primary Production. Organized by Long-Term Ecological Research sites.