

Elizabeth K. Perkin

Environmental Specialist
Environmental Monitoring & Assessment Group
Hatfield Consultants
305, 1228 Kensington Rd. NW
Calgary, AB T2N 3P7, Canada

Phone: +1 587 443 1279
Skype: lizperkin
website: <http://lizperkin.org>
email: lizperkin@gmail.com
Twitter: @riverperkin

EDUCATION

- 2013 Dr. rer. nat. (PhD), Biology, Freie Universität Berlin, Germany
The effects of artificial lighting on stream and riparian ecosystems
Advisors: Prof. Dr. Klement Tockner and Dr. Franz Hölker
- 2009 M. S., School of Aquatic and Fishery Sciences, University of Washington
The relationship of soil nitrogen availability and water holding capacity to riparian tree growth on the Queets River, Washington
Advisor: Dr. Robert J. Naiman
- 2004 B. A., Biology, Reed College, Portland, OR
The effects of additional coho salmon carcasses on macroinvertebrate drift in western Oregon streams
Advisors: Dr. David Dalton, Reed College and Burke Strobel, United States Forest Service

PUBLICATIONS (PEER-REVIEWED)

Summary Metrics

Citations: 848 (Google Scholar)

- [9] Dominoni, D., Halfwerk, W., Baird, E., Buxton, R., Fernández-Juricic, E., Fristrup, K., McKenna, M., Mennitt, D., **Perkin, E. K.**, Seymoure, B., Stoner, D., Tennesen, J., Toth, C., Tyrell, L., Wilson, A., Francis, C., Carter, N., and Barber, J. Why conservation biology can benefit from sensory ecology. *Nature Ecology and Evolution* 4: 502-511.
- [8] Owens, A. C. S., Cochard, P., Durrant, J., Farnworth, B., **Perkin, E. K.**, and Seymoure, B. 2020. Light pollution is a driver of insect declines. *Biological Conservation* 241: 208259.
- [7] Wilson, M. J., Ramey, T. L., Donaldson, M. R., Germain, R. R., and **Perkin, E. K.** 2016. Communicating science: sending the right message to the right audience. *FACETS* 1: 127-137.
- [6] Degen, T., Mitesser, O., **Perkin, E. K.**, Weiß, N.-S., Oehlert, M., Matting, E., and Hölker, F. 2016. Street-lighting: sex-independent impacts on moth movement. *Journal of Animal Ecology* 85: 1352-1360.
- [5] **Perkin, E. K.**, Hölker, F., Tockner, K., and Richardson, J. S. 2014. Artificial light as a disturbance to light-naïve streams. *Freshwater Biology* 59: 2235-2244.
- [4] **Perkin, E. K.**, Hölker, F., Heller, S., and Berghahn, R. 2014. Artificial light and nocturnal activity in Gammarids. *PeerJ* 2:e279; DOI 10.7717/peerj.279. [selected as one of the ten most interesting animal behavior papers of 2014 in the journal by *PeerJ* editors]
- [3] **Perkin, E. K.**, Hölker, F., and Tockner, K. 2014. The effects of artificial lighting on adult aquatic and terrestrial insects. *Freshwater Biology* 59: 368-377.
- [2] **Perkin, E. K.**, Hölker, F., Richardson, J. S., Sadler, J. P., Wolter, C., and Tockner, K. 2011. The influence of artificial light on freshwater and riparian ecosystems: questions, challenges, and perspectives. *Ecosphere* 2: 122.
- [1] Hölker, F., Wolter, C., **Perkin, E. K.**, and Tockner, K. 2010. Light pollution as a biodiversity threat. *Trends in Ecology and Evolution* 25: 681-682.

PUBLICATIONS IN REVIEW/SUBMITTED

Tabor, R. A., **Perkin, E. K.**, Beauchamp, D. A, Britt, L. L., Haehn, R., Green, J., Robinson, T., Stolnack, S., Lantz, D. W., and Moore, Z. J. Effect of six types of artificial nighttime lights on the attraction of subyearling salmonids in the nearshore area of south Lake Washington. *Lakes and Reservoir Management*, In review.

NON-PEER REVIEWED PUBLICATIONS/REPORTS

- 2020 2019 Wolverine Mine Environmental Effects Monitoring Program Annual Report. Hatfield Consultants, Vancouver, BC.
- 2020 2019 Willow Mine Environmental Effects Monitoring Program Annual Report. Hatfield Consultants, Vancouver, BC.
- 2020 2019 Brule Mine Environmental Effects Monitoring Program Annual Report. Hatfield Consultants, Vancouver, BC.
- 2019 Musreau Creek Pipeline Release: Aquatic Effects Assessment. Hatfield Consultants, Calgary, AB.
- 2019 Fall 2019 Water Quality Screening Assessment for the CNOOC Wetlands and Waterbodies Monitoring Program. Hatfield Consultants, Vancouver, BC.
- 2019 Apetowun Creek Reconstruction 2019 Annual Aquatics Summary Report. Hatfield Consultants, Calgary, AB.

SCIENCE OUTREACH/COMMUNICATION

- 2019 A surprising effect of light pollution: It disrupts aquatic insects. The Revelator. Online News Magazine published by the Center for Biological Diversity
URL: <https://therevelator.org/light-pollution-aquatic-insects/>
- 2018 Darkness and Enlightenment: Looking for a world without light pollution. Stranger's Guide. Online News Magazine.
URL: <https://strangersguide.com/articles/darkness-and-enlightenment/>
- 2017 Science Storytelling in Salem, Salem, OR. The Mayfly Caper. Public Talk
- 2015 Anecdotal Evidence, Vancouver, BC. Finding My Home Stream. Public Talk
- 2012 Science Slam. Competitive talk to the public of Berlin. Artificial light and the dispersal of adult aquatic insects...oder Wie Batman der Herren der Fliegen wurde. Voted best talk by the audience of 500+
- 2009 Hölker, F., Voigt, C., Wolter, C., **Perkin, E. K.**, and Tockner, K. Der Verlust der Nacht ist auch ein ökologisches Problem. Leibniz Gemeinschaft Zwischenruf 2: 18-21. (Policy brief, in German)

PROFESSIONAL EXPERIENCE

- 2019- Environmental Consultant, Hatfield Consultants, Calgary, AB
- 2018-19 Visiting Assistant Professor, Environmental Studies, McDaniel College, Westminster, MD
- 2015-17 Visiting Assistant Professor, Biology, Willamette University, Salem, OR
- 2013-15 Postdoctoral Research Fellow, Department of Forest and Conservation Sciences, University of British Columbia, Vancouver, BC
- 2001-04 Biology Outreach Teacher, Reed College, Portland, OR. Taught basic biology to 4-6 grade students in Portland Public Schools.

2001 Salmon Camp Counselor, Oregon Museum of Science and Industry, Fossil, OR. Counselor at science research camp for Indigenous middle and high schoolers.

TEACHING

Instructor of Record

2019 Urban Ecology, McDaniel College

2018-19 Environmental Problem Solving (Introduction to Environmental Studies), McDaniel College

2018 Freshwater Ecology, McDaniel College

2016-17 Undergraduate Thesis Supervisor, Willamette University. Lydia Vanderburg, "Illuminating drift differences: Higher nighttime light levels reduce behavioral drift in stream invertebrates."

2016 Special Topics: River and Riparian Ecology, Willamette University

2016-17 General Ecology, Willamette University

2016-17 Intro Biology (Ecology, Evolution, and Diversity) for Majors, Willamette University

2015-16 Intro Biology for Non-majors, Willamette University

2014 Supervisor, Undergraduate Directed Studies Project, University of British Columbia. Sandra Ramsden, "Seasonal variations in Cutthroat Trout foraging behavior."

Teaching Assistant

Freie Universität Berlin: Fundamentals of Aquatic Ecology, Evolution and Biodiversity I (Zoology); University of Washington: Watershed Ecology and Management (with Dr. Robert Naiman), River Ecology (with Dr. Robert Naiman), Attaining a Sustainable Society (with Dr. James Karr)

GRANTS AND RESEARCH AWARDS

2016 Aquatic Luminous Environment Grant, Zoological Lighting Institute. **Perkin, E. K.** Determining the Plasticity of Larval Mayfly Response to Artificial Lighting. \$5000 USD.

2016 Liberal Arts Research Collaborative (LARC), Willamette University. **Perkin, E. K.**, and Lenox, S. Streams of Consciousness: Using Creative Writing and Lab Experiments to Better Understand our Relationship to Light and Streams. \$21,200 USD.

2012 Ecological Society of America Student Section Travel Award. \$500 USD.

2011 University of British Columbia Graduate Student International Research Mobility Award. \$1500 CAD.

2010 North American Benthological Society President's Fund Award. \$900 USD.

2008 Galen and Helen Maxfield Fisheries Scholarship, University of Washington. The Relationship of Soil Nitrogen Availability and Water Holding Capacity to Riparian Tree Growth on the Queets River, Washington. \$7673 USD.

2007 H. Mason Keeler Lake Washington Fund in Fisheries, University of Washington. The Relationship of Soil Nitrogen Availability and Water Holding Capacity to Riparian Tree Growth on the Queets River, Washington. \$2489 USD.

2003 Milton L. Fischer Field Memorial Fellowship, Reed College. The Effects of Hatchery Salmon Carcasses on Aquatic Insects in Western Oregon Streams. \$3000 USD.

- 2002 Independent Summer Research Project Award, Reed College. The Effects of Juniper Stand Density on Riparian Plant Diversity. \$3000 USD.

INVITED TALKS

- 2017 University of Washington, Tacoma. Research Seminar. Rivers of Light: Artificial light and its potential interactions with temperature & flow in urban streams.
- 2016 Gorge Night Sky Symposium, The Dalles, OR. Keynote. The effects of light pollution on river and riparian ecosystems.
- 2016 King County Water and Land Resources Division, Seattle, WA. Invited Talk. Rivers of light: how artificial light at night affects stream ecosystems.
- 2015 International Dark Sky Association Annual General Meeting, Phoenix, AZ. Invited Speaker. Artificial light at night: impacts to fishes.
- 2015 School of Aquatic and Fisheries Sciences, University of Washington, Seattle, WA. Departmental Seminar Speaker. Rivers of light: how artificial light at night affects stream ecosystems.
- 2013 First International Conference on Artificial Light at Night, Berlin, Germany. Plenary speaker. Artificial light and streams ecosystems: what we know and where we're headed.
- 2013 Annual Professional Biology Conference, Richmond, BC. Artificial light and stream ecosystems: what we know and where we're headed.
- 2008 Leibniz-Institute for Freshwater Ecology and Inland Fisheries, Berlin. Colloquia of the Institute. Relationship between soil N availability and riparian tree growth on the Queets River, WA.

HONORS & AWARDS

- 2015 Acceptance to "Scaling Up" Faculty Mentoring Network. Ecological Society of America and Quantitative Undergraduate Biology Education and Synthesis. Included up to \$1000 to attend the Life Discovery Conference in March 2016.
- 2013 Best Student Oral Presentation in Applied Research. Society for Freshwater Science Annual Meeting.

SELECT CONFERENCE PRESENTATIONS

[†]Signifies undergraduate researcher

- 2018 Perkin, E. K. & Vanderberg, L. V.[†] Stream insect acclimation to artificial light at night. Artificial Light at Night Conference. Snowbird, UT. Oral Presentation.
- 2016 Perkin, E. K. & Richardson, J. S. Seasonal variation in foraging and competitive behaviors in Coastal Cutthroat Trout. Society for Freshwater Science Annual Meeting. Sacramento, CA. Oral Presentation.
- 2014 Perkin, E. K. & Richardson, J. S. The effects of artificial light at night on trout activity and foraging behavior. Artificial Light at Night Conference. Leicester, UK. Oral Presentation.
- 2013 Perkin, E. K., Hölker, F., Tockner, K., & Richardson, J. S. The short-term effects of artificial light on different trophic levels in small streams. Society for Freshwater Science Annual Meeting. Jacksonville, FL. Oral Presentation.
- 2011 Perkin, E. K., Hölker, F., & Tockner, K. Artificial light interferes with the dispersal of adult aquatic insects across the terrestrial landscape. North American Benthological Society Annual Meeting. Providence, RI. Oral Presentation.

- 2008 Perkin, E. K. & Naiman, R. J. Soil N availability, water holding capacity and riparian tree growth. Annual Meeting of the Ecological Society of America. Milwaukee, WI. Poster.

PROFESSIONAL/INSTITUTIONAL SERVICE

- 2018 Served on Singleton-Mathews Farm property management committee, McDaniel College.
- 2016 Judged student oral presentations, Society for Freshwater Science Annual Meeting, Sacramento, CA.
- 2015 Reviewed applications for Instars undergraduate program, Society for Freshwater Science.
- 2014 Judged student oral presentations, Society for Freshwater Science, Joint Aquatic Sciences Meeting, Portland, OR.
- 2014 Jointly organized special session (with John Richardson), Emerging Issues in Freshwater Ecology. Joint Aquatic Sciences Meeting, Portland, OR.
- 2012 Jointly organized special session (with Franz Hölker), Ecological Effects of Artificial Light at Night. Annual Meeting of the Ecological Society of America, Portland, OR.
- 2012 Reviewer for undergraduate travel award committee, Society for Freshwater Science.
- 2011 Jointly organized special session (with John Richardson), Conservation Challenges for Organisms with Complex Life-Cycles. North American Benthological Society Annual Meeting. Providence, RI.
- 2011 Served as an Instars Graduate Mentor. North American Benthological Society Annual Meeting. Providence, RI.

Reviewer for the following publications/agencies:

Aquatic Sciences, Aquatic Ecology, Biological Conservation, Biology Letters, Ecological Applications, Ecology, Ecosphere, Entomological News, Environmental Conservation, Freshwater Science, Geosciences, Global Change Biology, Journal of Applied Ecology, Journal of Experimental Marine Biology and Ecology, PLOS ONE, Washington Department of Natural Resources, and Urban Ecosystems.

Reviewer for the following funding agencies:

Hungarian Science Research Fund, National Environment Research Council (U.K.), The Ohio State University Grants Program, and Washington Sea Grant.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Society for Freshwater Science 2009-present
 Ecological Society of America 2009-present
 American Fisheries Society 2014-present

OTHER

Languages: English (native), German (conversational)
 Computer languages: R (use regularly) and Python (online course)
 Currently enrolled in *Indigenous Canada* course through Coursera/the University of Alberta