



ACADEMIC APPOINTMENTS

Scripps Institution of Oceanography, University of California San Diego 2022 – Present
Postdoctoral Research Associate
Co-Advisors: Drs. Brice Semmens and Colleen Petrik

EDUCATION

University of Washington 2016 –2022
Ph.D., Quantitative Ecology and Resource Management
Co-Advisors: Drs. Gordon Holtgrieve and E. Ashley Steel

University of Notre Dame 2012 –2016
B.S., Environmental Science, Applied and Computational Mathematics and Statistics
Co-Advisors: Drs. Gary Lamberti and Dominic Chaloner

WATER POLICY

Gulf States Marine Fisheries Commission, Statistical Consultant, 2022

- Programmed a non-linear optimization routine to allocate sampling effort across multiple Gulf of Mexico fisheries surveys given user-input constraints. Developed an interactive RShiny app to visualize results.

United Nations Food and Agriculture Organization Forestry Division, Watershed Statistician Consultant, 2021

- Provided statistical expertise and geostatistical support for the project “Counting Fish from Forests for Food Security: Multidisciplinary Watershed Management.”

The Future of Instream Flows in Washington State Science Panel, Member, 2021

Snoqualmie Science Coordination and Advisory Team, Member, 2017-2022

Northwest Climate Science Center, Actionable Science Fellow, 2017-2016

PUBLICATIONS

1. B. Brown, A.H. Fullerton, D. Kopp, F. Tromboni, A. Shogren, J.A. Webb, C. Ruffing, M. Heaton, L. Kuglerova, D. Allen, **L.M. McGill**, J. Zarnetske, M. Whiles, J. Jones, B. Abbot. In Press. *Water Resources Research*. The music of rivers: How the mathematics of waves reveals global drivers of streamflow regime.
2. S. McNulty, E.A. Steel, E. Springgay, B. Caldwell, K. Shono, G. Pess, S. Funge-Smith, W. Richards, S. Ferraz, D. Neary, J. Long, B. Verbist, J. Leonard, G. Sun, T. Beechie, M. Lo, **L.M. McGill**, A.H. Fullerton, S. Borelli. Managing Forests for Water, pp 31-73. In FAO, IUFRO and USDA. 2021. A guide to forest-water management. FAO Forestry Paper No. 185. Rome
3. **L.M McGill**, J.R. Brooks, E.A Steel. 2021. Spatiotemporal dynamics of water sources in a mountain river basin inferred through $\delta^2\text{H}$ and $\delta^{18}\text{O}$ of water. *Hydrological Processes*. 35(3): e14063.
4. **L.M McGill**, E.A Steel, J.R. Brooks, A.H. Fullerton, R.T. Edwards. 2020. Elevation and spatial structure explain most surface-water isotopic variation across five Pacific Coast basins. *Journal of Hydrology*. 583: 124610.
5. N. Weber, B. Gerig, **L.M McGill**, D.T. Chaloner, G.A. Lamberti. 2018. Interactive effects of introduced Pacific salmon and brown trout on native brook trout: an experimental and modeling approach. *Canadian Journal of Fisheries and Aquatic Sciences*. 75(4): 538-548.
6. **L.M McGill**, B. Gerig, D.T. Chaloner, G.A. Lamberti. 2017. An ecosystem model for evaluating the effects of introduced Pacific salmon on contaminant burdens of stream-resident fish. *Ecological Modelling*. 355: 39–48.



IN REVIEW AND SUBMITTED PUBLICATIONS

1. **L.M. McGill**, E.A. Steel, A.H. Fullerton. Empirical stream thermal sensitivities cluster on the landscape according to geology and climate. In revision at *Hydrology and Earth System Sciences*.
2. B. Brown, A.H. Fullerton, D. Kopp, F. Tromboni, A. Shogren, J.A. Webb, C. Ruffing, M. Heaton, L. Kuglerova, D. Allen, **L.M. McGill**, J. Zarnetske, M. Whiles, J. Jones, B. Abbot. Global river flow shows dramatic shifts since 1980's, especially in small, warm catchments. In review at *Science Advances*.
3. **L.M. McGill**, G.W. Holtgrieve, M.S. Scheuerell. Spatial covariance of hydrologic change among river discharge time series across Western North America. *In preparation*.
4. **L.M. McGill**, T. Sleugh, B. Semmens, C. Petrik. Context dependent control on fish DDT bioaccumulation across a gradient of sediment contamination. *In preparation*.

SELECTED PRESENTATIONS (Φ invited presentation)

- Φ **L.M. McGill**. Fisheries Population Estimation and Management. Fisheries Oceanography Seminar, Scripps Institution of Oceanography. *April 2023*.
- Φ **L.M. McGill**, G. Holtgrieve. Hydrologic change and spatial covariance among time series of river discharge across Western North American. School of Aquatic and Fishery Sciences Quantitative Seminar. *November 2021*.
- Φ **L.M. McGill**, E.A. Steel, J.R. Brooks. The spatial and temporal dynamics of water sources across the Snoqualmie River: a stable isotope approach. Snoqualmie Science Coordination and Advisory Team Meeting. *April 2020*.
- L.M. McGill**, E.A. Steel, J.R. Brooks, A. Fullerton. Examining spatial patterns of water stable isotopes across multiple river basins. Society for Freshwater Science Annual Conference. *May 2018*.
- L.M. McGill**, E.A. Steel, J.R. Brooks, A. Fullerton. The spatial and temporal dynamics of water sources across the Snoqualmie River: a stable isotope approach. American Geophysical Union Fall Meeting. *December 2019*.

FUNDING & AWARDS

- 2018-23: National Science Foundation Graduate Research Fellowship (3 years graduate tuition + stipend)
- 2019: National Science Foundation Graduate Research Internship Program Participant (\$5,000)
- 2017-18: Northwest Climate Science Center Actionable Science Fellowship (1 year graduate tuition + stipend)
- 2018: UW College of the Environment Student Organized Meeting Fund Award to support WaterHackWeek (\$1,500)
- 2018: Society for Freshwater Science Best Presentation Emphasizing Methodology (\$250)
- 2016-17: UW QERM First Year Fellowship (3 quarters graduate tuition + stipend)
- 2015: University of Michigan CILER Great Lakes Summer Research Fellowship (\$6,000)

SKILLS

- **Statistics and Machine Learning:** Hierarchical and generalized linear regression, Bayesian hierarchical models, linear and integer optimization, classification, time series modeling and forecasting, spatiotemporal data analysis
- **Data Visualization:** R (Shiny, ggplot2, leaflet, base graphics), Python (matplotlib, seaborn), ArcGIS
- **Data Processing, Preparation & Management:** R (dplyr, R Markdown), Python (pandas, numpy), Excel
- **Communication & Collaboration:** Authored six scientific publications, gave eight formal presentations, awarded over \$200,000 in fellowships and grants; Git and Github