ORGANIZATION ROLE

FloodID® Product Lead

PROJECT ROLE / FOCUS AREAS

Strategic development

Hydrological modeling

Statistical analysis

Resource management

EDUCATION

Ph.D., Biological and Agricultural Engineering, Kansas State University, 2018

MS, Biological and Agricultural Engineering, Kansas State University, 2016

BS, Biological and Agricultural Engineering, Kansas State University, 2014

PROFESSIONAL CERTIFICATIONS

Oxford Strategic Management Executive Program

KELSEY MCDONOUGH, PH.D.

FloodID® Product Lead

Kelsey McDonough, Ph.D., is a solutions-focused hydrologist and proven team leader with more than a decade of experience bridging research, private sector innovation, and international collaboration to build resilience in the face of climate and flood risk. As the FloodID® Product Lead at The Water Institute, she guides the strategic development, operations, and go-to-market strategy of our real-time flood intelligence technology, advancing decision-making tools for communities, emergency responders, and resource managers.

Kelsey brings deep subject matter expertise in hydrology, water resources management, nature-based solutions, and ecosystem services. Her peer-reviewed work spans operational forecasting, environmental monitoring, and climate change impacts, with a focus on translating science into action. She has held technical and leadership roles across the U.S. and abroad, and her diverse portfolio includes partnerships with federal agencies, academic institutions, and international organizations, demonstrating a commitment to evidence-based approaches and global collaboration.

Kelsey holds a Ph.D. and M.S. in Biological and Agricultural Engineering from Kansas State University, and a B.S. in Biological Engineering from NC State University. She was selected as a 2024 and 2025 Research Theme Lead for the National Water Center's Innovator's Program, where she mentors student researchers and explores how operational hydrologic forecasting can improve post-disaster outcomes. A Fulbright alumna and advocate for sustainable water futures, Kelsey is driven by a passion for connecting science, technology, and people to shape more adaptive communities.

PROFESSIONAL EXPERIENCE

2025–Present: FloodID® Product Lead, The Water Institute

2024–2025: Research Theme Lead, National Water Center & Consortium for the Advancement of Hydrological Science

2022–2024: Head of Customer and Flood Solutions, FloodMapp

2020-2022: Professional Services Manager, AEM (formerly Vieux & Associates)

2020: Fulbright Postdoctoral Scholar, Australian-American Fulbright Commission and the University of Newcastle

2019–2020: Research Scientist, Professorship of Ecological Services at University of Bayreuth

SELECTED PUBLICATIONS

1. McDonough, K. Sandi, S., Saco, P.M., Rodriguez, J. (In review). Quantifying habitat provision services for waterbirds breeding in semi-arid wetlands. Science of the Total Environment.
2. Hackenburg, D., McDonough, K., Kadykalo, A., Marquina, T., Winkler, K. (2023). Ecosystem services in postsecondary and professional education: an overview of programs and courses. Ecosystems and People, 19(1). DOI:10.1080/26395916.2023.2201351 https://doi.org/10.1007/s41781-020-00051-x
3. Saco, P.M., McDonough, K., Rodriguez, J., Rivera-Zayas, J., Sandi, S. The role of soils in the regulation of hazards and extreme events. Philosophical Transactions B, 376(1834):20200178. DOI:10.1098/rstb.2020.0178
4. Tavakol, A., McDonough, K., Rahmani, V., Hutchinson, S.L., Hutchinson, J.M.S. (2021). The soil moisture data bank: The ground-based, model-based, and satellite-based soil moisture data. Remote Sensing Applications Society and Environment, 24(11). DOI:10.1016/j.rsase.2021.100649
5. McDonough, K.R., Hutchinson, S.L., Hutchinson, J.M.S. (2020). Declining soil moisture threatens water availability in the U.S. Great Plains. Transactions of the ASABE, 63(5). DOI:10.13031/trans.13773
6. McDonough, K.R., Hutchinson, S.L., Liang, J., Hefley, T., Hutchinson, J.M.S. (2020). Spatial configurations of land cover influence flood regulation ecosystem services. Journal of Water Resources, Planning and Management, 146(11): 04020082. DOI: 10.1061/(ASCE)WR.1943-5452.0001294
7. Hackenburg, D., Adams, A., Brownson, K., Borokini, T., Gladkikh, T., Herd-Hoare, S., Jolly, H., Kadykalo, A., Kraus, E., McDonough, K., Morse, J., Sandhu, S., Tugjamba, N., Vallet, A. (2019). Meaningfully engaging the next generation of ecosystem services specialists. Ecosystem Services, 40: 101041. DOI: 10.1016/j.ecoser.2019.101041
8. McDonough, K.R., Hutchinson, S.L., Hutchinson, J.M.S., Case, J.L., Rahmani, V. (2018). Validation and assessment of SPoRT-LIS surface soil moisture estimates for water resources management applications. Journal of Hydrology, 566: 43-54. DOI: 10.1016/j.jhydrol.2018.09.007
9. McDonough, K., Hutchinson, S., Moore, T., Hutchinson, J.M.S. (2017). Analysis of publication trends in ecosystem services research. Ecosystem Services, 25: 82-88. DOI: 10.1016/j.ecoser.2017.03.022
10. McDonough, K., Moore, T., Hutchinson, S. (2017). Understanding the relationship between stormwater control measures and ecosystem services in an urban watershed. Journal of Water Resources Planning and Management, 143(5): 04017008. DOI: 10.1061/ASCE)WR.1943-5452.0000751
11. Vogel, J.R., Moore, T.L., Coffman, R. R., Rodie, S.N., Hutchinson, S.L., McDonough, K., McLemore, A.J., McMaine, J.T. (2015). Critical review of technical questions facing low impact development and green infrastructure: A perspective from the Great Plains. Water Environment Research, 87(9): 849-862. DOI: 10.2175/106143015X14362865226392