

Curriculum Vitae
Kelly Lynn Hondula
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Academic training

- 2021 Ph.D., Marine Estuarine & Environmental Sciences, University of Maryland
- 2012 M.S., Environmental Sciences, University of Virginia
- 2009 B.A., Environmental Sciences, University of Virginia
B.A., Environmental Thought & Practice, University of Virginia

Professional appointments

- 2022–present Associate Research Scientist, Arizona State University, Center for Global Discovery and Conservation Science
- 2022 Carbon Mapper Postdoctoral Research Scholar, Arizona State University, Center for Global Discovery and Conservation Science
- 2022 Aquatic Remote Sensing Scientist, National Ecological Observatory Network
- 2021–2022 NSF Postdoctoral Fellow, National Ecological Observatory Network
- 2014–2021 Faculty Specialist in Data Science & Cyberinfrastructure, National Socio-Environmental Synthesis Center
- 2018 Data Science Fellow, ROpenSci
- 2012–2014 Faculty Research Assistant, National Socio-Environmental Synthesis Center
- 2009–2012 Graduate Teaching and Research Assistant, University of Virginia
Department of Environmental Sciences

Peer-reviewed publications

Link to Google Scholar Profile

1. Swanwick R, QD Read, S Guinn, M Williamson, **KL Hondula**, A Elmore. 2022. Dasymetric population mapping based on US census data and 30-m gridded estimates of impervious surface. *Scientific Data* 9:523. <https://doi.org/10.1038/s41597-022-01603-z>
2. Richardson DC, Holgerson MA, Farragher MJ, Hoffman KK, King KBS, Alfonso MB, Andersen MR, Cheruveil KS, Coleman KA, Farruggia MJ, Fernandez RL, **Hondula KL**, Moreira GL, Paul K, Peierls BL, Rabaey JS, Sadro S, Sánchez ML, Smyth RL, Sweetman JN. 2022. A functional definition to distinguish ponds from lakes and wetlands. *Scientific Reports* 12:10472 <https://doi.org/10.1038/s41598-022-14569-0>
3. Gareis JAL, Larson EI, Ardon M, Berges JA, Brandt JE, Busch KM, Chraibi VLS, Gallagher EN, **Hondula KL**, Kincaid DW, Levine TD, Little CJ, Nodine ER, Rock AM, Shogren AJ, Vanni MJ. 2022. Using Wikipedia assignments teach critical thinking and scientific writing in STEM courses. *Frontiers in Education* <https://doi.org/10.3389/feduc.2022.905777>
4. Read QD, **KL Hondula**, MK Muth. 2022. Biodiversity effects of food system sustainability actions from farm to fork. *Proc Natl Acad Sci*. 119 (15) e2113884119 <https://doi.org/10.1073/pnas.2113884119>
5. **Hondula KL**, CN Jones, MA Palmer. 2021. Effects of seasonal inundation on methane fluxes from forested freshwater wetlands. *Environ Res Lett* 16(8): 084016. <https://doi.org/10.1088/1748-9326/ac1193>

6. Ordway EL +32 coauthors. 2021. Leveraging the NEON Airborne Observation Platform for socio-environmental systems research. *Ecosphere* 12(6): e03640. <http://doi.org/10.1002/ecs2.3640>
7. Nagy RC +118 coauthors. 2021. Harnessing the NEON Data Revolution to Advance Ecological Science and Improve our Management of Environmental Change. *Ecosphere* 12(12): e03833. <https://doi.org/10.1002/ecs2.3833>
8. Knighton, J, **KL Hondula**, C Sharkus, C Guzman, R Elliott. 2021. Flood Risk Behaviors of US Riverine Metropolitan Areas are Driven by Local Hydrology and Shaped by Race. *Proc Natl Acad Sci*. 118 (13) e2016839118. <https://doi.org/10.1073/pnas.2016839118>
9. **Hondula, KL**, B DeVries, CN Jones, MA Palmer. 2021. Estimating Methane Fluxes from Forested Wetlands Using High Resolution Satellite-based Inundation Time Series. *Geophys Res Lett* 48, e2021GL092556. <https://doi.org/10.1029/2021GL092556>
10. Kincaid, DW, WS Beck, JE Brandt, MM Brisbin, KJ Farrell, **KL Hondula**, EI Larson, AJ Shogren. Wikipedia helps resolve information inequality in the aquatic sciences. 2021. *Limnol & Oceanog Lett* 6:18-23. <http://dx.doi.org/10.1002/lol2.10168>
11. Maietta, CE, **KL Hondula**, CN Jones, and MA Palmer. 2020. Hydrological conditions influence soil and methane-cycling microbial populations in seasonally saturated wetlands. *Front Environ Sci*. 8:593942. <https://doi.org/10.3389/fenvs.2020.593942>
12. Stachelek, J, **KL Hondula**, DW Kincaid, AJ Shogren. 2020. Ripples on the web: spreading lake information via Wikipedia. *Limnol & Oceanog Bull*. <http://dx.doi.org/10.1002/lob.10382>.
13. Fernández-Giménez ME, GRH Allington, J Angerer, RS Reid, C Jamsranjav, T Ulambayar, **KL Hondula**, B Baival, B Batjav, T Altanzul, Y Baasandorj. 2018. Using an integrated social-ecological analysis to detect effects of household herding practices on indicators of rangeland resilience in Mongolia. *Environ Res Lett* 13(7):075010. <https://doi.org/10.1088/1748-9326/aacf6f>
14. Woznicki SA, **KL Hondula**, ST Jarnagin. 2018. Effectiveness of landscape-based green infrastructure for stormwater management in suburban catchments. *Hydrol Process*. 32(15): 2346-2361 <https://onlinelibrary.wiley.com/doi/abs/10.1002/hyp.13144>
15. Metson GS, SM Powers, RL Hale, JS Sayles, G Öberg, GK MacDonald, Y Kuwayama, NP Springer, AJ Weatherley, **KL Hondula**, K Jones, RB Chowdhury, AHW Beusen, AF Bouwman. 2017. Socio-environmental consideration of phosphorus flows in the urban sanitation chain of contrasting cities. *Reg Environ Change* 18(5):1387-1401. <https://doi.org/10.1007/s10113-017-1257-7>
16. Suding K, MA Palmer, E Higgs, JB Callicot, C Anderson, J Gutrich, **KL Hondula**, M LaFevor, A Randall, JB Ruhl, K Schwartz, ME Baker. 2015. Taking the path of comprehensive ecological restoration. *Science*. 348:638-640. <https://www.doi.org/10.1126/science.aaa4216>
17. Palmer MA, **KL Hondula**, BJ Koch. 2014. Ecological restoration of streams and rivers: shifting strategies and shifting goals. *Annual Review of Ecology, Evolution & Systematics* 45:247–69. <https://doi.org/10.1146/annurev-ecolsys-120213-091935>
18. Palmer MA & **KL Hondula**. 2014. Restoration as mitigation: analysis of stream mitigation for coal mining impacts in southern Appalachia. *Envir Sci & Tech* 48: 10552–60. <https://doi.org/10.1021/es503052f>

19. **Hondula KL**, ML Pace, JJ Cole, RD Batt. 2014. Hydrogen isotope fractionation in aquatic primary producers: implications of aquatic food web studies. *Aquatic Sci* 76(2): 217–229. <https://doi.org/10.1007/s00027-013-0331-6>
20. **Hondula KL** & ML Pace. 2014. Macroalgal support of cultured hard clams in a low nitrogen coastal lagoon. *Marine Ecology Progress Series* 498:187–201. <https://doi.org/10.3354/meps10644>

Prepared Manuscripts (w/complete drafts available)

1. Dai J, et al. A general methodology for the quantification of crop canopy nitrogen across diverse conditions and species using airborne imaging spectroscopy. Under review for *Remote Sensing of Environment*.
2. Stegen J, T Scheibe, X Chen, A Burgin, D Allen, et al. Variable Inundation as a unifying process across Earth's ecosystems. Review and synthesis paper for submission to *Biogeosciences*.
3. Hondula KL, MR Williams, CN Jones, MA Palmer. Quantifying hydrologic export of methane from headwater wetlands. For submission to *Limnology and Oceanography Letters*.
4. Hondula KL, SW Ploum, CN Jones. Simplified management for complex field data using rodm2. Technical Note for submission to *Hydrology and Earth System Sciences*.

Other Contributions

Link to GitHub profile

1. Hondula KL, N Vaughn, ASU Carbon Mapper Land and Ocean Satellite Team. Mineral detection code & algorithm description. <https://github.com/CMLandOcean/MineralDetection>
2. Palmer MA and KL Hondula. Quantitative synthesis methods for sustainability: data integration. <https://www.sesync.org/resources/quantitative-synthesis-methods-sustainability-data-integration>
3. Knighton J, Hondula KL, and Palmer MA. Socio-hydrology modeling tutorial video. <https://www.sesync.org/resources/socio-hydrology-including-human-behavior-flood-risk-models>; <https://www.youtube.com/watch?v=yqYoR8J8K48>
4. Erdmann, Christopher, Meyer, Michael F., Little, John R., Hondula, Kelly, Stachelek, Jemma, Oleksy, Isabella, Brousil, Matthew R., Claborn, Kelly, Mesman, Jorrit, & Dennis, Tim. (2021). Guidance for AGU Authors: R Script(s)/Markdown. Zenodo. <https://doi.org/10.5281/zenodo.5647998>
5. Wikiproject Limnology & Oceanography videos: why and how to improve aquatic science content on Wikipedia. <https://www.youtube.com/watch?v=6ny9Z7CDWq8>; <https://www.youtube.com/watch?v=Nin4RENHU4>
6. Hondula KL. 2021. Using leaflet for interacting with geospatial data in R. Recorded presentation in AEMON-J/DSOS Workshop Archive. <https://osf.io/682v5/>; <https://youtu.be/WB4RvSGZvpE>
7. Hondula, KL. 2020 November 25. Shiny App Accessibility, Part 2: Accessible design. SESYNC Cyberhelp blog. <https://sesync-ci.github.io/blog/shiny-accessibility.html>
8. Hondula, KL. 2020 November 10. Shiny App Accessibility, Part 1: Only you can prevent link rot. SESYNC Cyberhelp blog. <https://sesync-ci.github.io/blog/shiny-in-pubs.html>
9. Hondula, K.L. 2020 May 13. Oh, the places you can get census population data for! SESYNC Cyberhelp blog. <https://sesync-ci.github.io/blog/census-pops.html>
10. Hondula, K.L. 2020 March 3. Databases, huh? What are they good for? SESYNC Cyberhelp blog. <https://sesync-ci.github.io/blog/db-what-r-they-good-for.html>

11. Farrell KJ, AN Cramer, KL Hondula, SK Thompson, JA Zwart. Support of Early-Career Researchers Supports the Future of ASLO. ASLO Bulletin, February 2019.
<https://doi.org/10.1002/lob.10295>
12. Hondula KL and CN Jones. 2019. rodm2: Use an ODM2 Database in R. R package version 0.1.0. <https://khondula.github.io/rodm2/>
13. Hondula, K.L. 2019 April 12. Publishing Data Papers. SESYNC Cyberhelp Blog.
<https://sesync-ci.github.io/blog/data-papers.html>
14. Hondula K.L. 2019 February 13. Sharing your RShiny app. SESYNC Cyberhelp Blog.
<https://sesync-ci.github.io/blog/shiny-sharing.html>
15. Kelly Hondula, Ian Carroll, Quentin Read, Philippe Marchand, Rachael E. Blake, & Andres Garcia. (2021). SESYNC-ci/leaflet-in-R-lesson: Handouts - Zenodo (v0.5). Zenodo.
<https://doi.org/10.5281/zenodo.5708841>
16. Kelly Hondula, Ian Carroll, Philippe Marchand, Quentin Read, & Rachael E. Blake. (2021). SESYNC-ci/basic-Shiny-lesson: Handouts - Zenodo (v0.7). Zenodo.
<https://doi.org/10.5281/zenodo.5705573>
17. Kelly Hondula, Quentin Read, Rachael E. Blake, & Ian Carroll. (2021). SESYNC-ci/advanced-tidyverse-lesson: Handouts - Zenodo (v0.3). Zenodo.
<https://doi.org/10.5281/zenodo.5708787>
18. Ian Carroll, Kelly Hondula, Rachael E. Blake, Quentin Read, & Philippe Marchand. (2021). SESYNC-ci/basic-R-lesson: Handouts - Zenodo (v0.9). Zenodo.
<https://doi.org/10.5281/zenodo.5705384>
19. Ian Carroll, Kelly Hondula, Philippe Marchand, Mary Glover, Quentin Read, & Rachael E. Blake. (2021). SESYNC-ci/census-data-manipulation-in-R-lesson: Handouts - Zenodo (v0.5). Zenodo. <https://doi.org/10.5281/zenodo.5708315>
20. Ian Carroll, Mary Shelley, Kelly Hondula, Philippe Marchand, Rachael E. Blake, & Quentin Read. (2021). SESYNC-ci/sqlite-lesson: Handouts - Zenodo (v0.5). Zenodo.
<https://doi.org/10.5281/zenodo.5708814>
21. Ian Carroll, Kelly Hondula, Philippe Marchand, Rachael E. Blake, & Quentin Read. (2021). SESYNC-ci/interactive-rmarkdown-lesson: Handouts - Zenodo (v0.3). Zenodo.
<https://doi.org/10.5281/zenodo.5708827>
22. Ian Carroll, Quentin Read, Kelly Hondula, Philippe Marchand, Rachael E. Blake, & Andres Garcia. (2021). SESYNC-ci/basic-git-lesson: Handouts - Zenodo (v0.8). Zenodo.
<https://doi.org/10.5281/zenodo.5705586>
23. Boettiger C, S Chamberlain, A Fournier, K Hondula, A Krystalli, B Mecum, M Salmon, K Webbink and K Woo. 2020. dataspice: Create Lightweight Schema.org Descriptions of Data. R package version 1.0.0. <https://CRAN.R-project.org/package=dataspice>
24. Hondula, KL 2018 January 3. Images for data exploration in RShiny Apps. SESYNC Cyberhelp blog. <https://sesync-ci.github.io/blog/blog-shiny-pix.html>
25. Hondula, KL 2018 January 27. Writing data management plans. SESYNC Cyberhelp blog. <https://sesync-ci.github.io/blog/data-management-plans.html>
26. Hondula, KL 2018 April 19. Build a shiny app to explore MODIS data. SESYNC Cyberhelp blog. <https://sesync-ci.github.io/blog/browse-wms-with-shiny.html>
27. Jones, K., N Magliocca, KL Hondula 2017. An Overview of Conceptual Models, Analytical Frameworks and Research Questions in the Food-Energy-Water Nexus. White paper.
<https://doi.org/10.13016/M2BK10>

Presentations and Seminars

1. G Asner, J Dai, K Hondula (presenter), E Jamalnia, M Koenig, P Martin, N Vaughn, R Duren. Land and Ocean Applications and Approaches for the Carbon Mapper Satellite Mission. AGU Fall Meeting 2022 (virtual).
2. KL Hondula. “Measuring and modeling aquatic ecosystems with remote sensing”. (Invited) UC Berkeley Environmental Science, Policy, & Management department seminar. Oct 2022.
3. KL Hondula. Measuring, modeling, and monitoring aquatic ecosystems. (Invited) Desert Research Institute. April 2022.
4. KL Hondula, RT Hensley, T Goulden, JD Hosen, ER Hotchkiss, MG Tulbure. Landscape scale variability in optical water quality indicators at NEON sites. AGU Fall Meeting 2021 (Recorded oral presentation).
5. KL Hondula, CN Jones, MA Palmer. Inundation Duration and Extent Affect Methane Flux Rates and Scaling for Forested Mineral Soil Wetlands. AGU Fall Meeting 2021.
6. KL Hondula. Using leaflet for interacting with geospatial data in R. July 2021 Hacking Limnology Virtual Summit (online).
7. JD Hosen (presenter), J Blaszcak, MJ Cohen, R Hensley, K Hondula, W McDowell, J Potter, PA Raymond, B Yoon. Spectroscopic time series from continental network of *in situ* sensors indicate hydrology and water clarity influence organic matter processing rates. SFS Annual Meeting 2021.
8. KL Hondula, B DeVries, CN Jones, MA Palmer. Capturing inundation dynamics of small forested wetlands at high spatial resolution for improved estimation of methane fluxes. AGU Fall Meeting 2019.
9. KL Hondula, JE Brandt, K Farrell, DW Kincaid, A Shogren, JA Zwart. From classroom to community: Student contributions to WikiProject Limnology & Oceanography expand public education in the aquatic sciences. AGU Fall Meeting 2019. [Link to iPoster](#).
10. KL Hondula, B DeVries, CN Jones, MA Palmer. Scaling up empirical methane fluxes from forested seasonal wetlands using high resolution satellite-based inundation time series. Gordon Research Conference on Catchment Science: Interactions of Hydrology, Biology and Geochemistry 2019.
11. KL Hondula, B DeVries, CN Jones, MA Palmer. Scaling up field measurements of methane fluxes from forested wetlands using ground and satellite-based inundation time series. AGU Fall Meeting 2018.
12. CE Maietta (presenter), KL Hondula, CN Jones, MA Palmer. Methane-cycling microbial communities vary along a hydrologic gradient in depressional freshwater wetland soils. AGU Fall Meeting 2018.
13. KL Hondula, B DeVries, C Huang, CN Jones, MW Lang, MA Palmer. Unravelling the effects of inundation dynamics on methane cycling in forested wetlands using spaceborne optical and radar data. ForestSat 2018.
14. KL Hondula, C Maietta, & MA Palmer. Seasonal patterns of methane concentrations and fluxes from Delmarva Bays in relation to hydrologic variability. ASLO 2018 Summer Meeting.
15. KL Hondula & MA Palmer. Linking seasonal surface water dynamics with methane emissions and export from small, forested wetlands. AGU Fall Meeting, 2017.
16. (Invited) KL Hondula & MA Palmer. Mitigation mismatches: Ecological interpretation of some common assumptions underlying mitigation protocols. Society for Freshwater Science Annual Meeting 2016.

17. KL Hondula, D Hogan, ST Jarnagin. Accounting for disproportionately large runoff events in urban catchments. Catchment Science Gordon Research Conference, Andover, New Hampshire, June 2015.
18. NR Magliocca, D Hart, KL Hondula, I Munoz, M Shelley, M Smorul. Data-driven synthesis for investigating food systems resilience to climate change. AGU Fall Meeting, 2014.
19. MA Palmer (presenter) & K Hondula. Stream restoration outcomes: What is being measured? What should be measured? European Society for Ecological Restoration Conference. 2014.
20. KL Hondula & MA Palmer. Restoration as mitigation: ecological vs. regulatory approaches to evaluating stream and wetland mitigation. Joint Aquatic Sciences Meeting, 2014.
21. KL Hondula & ML Pace. Diet of cultured hard clams in a Virginia coastal lagoon determined by multiple stable isotopes. Virginia Coast Reserve LTER All Scientists Meeting 2012.
22. KL Hondula, ML Pace, JJ Cole, RD Batt. Hydrogen isotope fractionation in aquatic plants. Robert J. Huskey Research Exhibition, University of Virginia. 21 March 2012. 2nd place Biological and Biomedical sciences.
23. KL Hondula, ML Pace, JJ Cole, RD Batt. Hydrogen isotope fractionation in aquatic plants: implications for food web studies. Fall meeting of the American Geophysical Union 2011.
24. KL Hondula & LK Reynolds. Reproduction of *Zostera marina* in a chronosequence of seagrass meadows. EnviroDay Student Research Symposium, University of Virginia 2009.
25. KL Hondula, M Potapova, D Charles. An Investigation of the Freshwater Diatom Genus *Reimeria*: Distinctions between *Reimeria sinuata* and *Reimeria uniseriata*. North American Diatom Symposium 2007.

Competitive Funding & Synergistic Activities

1. IGARSS 2023 Session co-chair: Scientific Applications for New Space Hyperspectral Missions (with Keely Roth).
2. NSF NEON Postdoctoral Fellowship: Advancing Landscape-Scale Characterization of Watershed Processes Through Integration of Airborne and Aquatic NEON Data Streams (\$144,000)
3. NSF DEB – MacroSysBIO & NEON-Enabled Sci: Uncovering local and regional controls on organic matter processing in freshwaters using in situ optical sensors. PIs: J Hosen, J Blaszczyk (Senior personnel)
4. WikiMedia foundation project grant: [Recruiting Aquatic Editors](#). WikiProject Limnology and Oceanography Project Team (8 members) (\$9,200).
5. rOpenSci 2018 Fellowship: “Enhancing Reproducibility in Watershed Science” to develop open source software to assist scientists with the adoption of best practices for recording metadata associated with spatially discrete earth observations (\$47,000).
6. Invited big data expert mentor at Ecological Society of America SEEDS Power of Data workshop (2021).
7. Invited workshop participant: [rOpenSci unconference](#) (2018); [Ecological Dissertation in Aquatic Sciences](#) (2018); [NEON Science Summit](#) (2019); Variably Inundated Environments Workshop (virtual, April 2022); [Environmental Data Science Summit](#) (2023) .
8. Ad-hoc peer reviewer for: *Limnology and Oceanography Letters*, *Frontiers in Ecology and Evolution*, *Nature Communications*, *Global Biogeochemical Cycles*, *Journal of*

Applied Ecology, Atmospheric Chemistry and Physics, Wetlands, Restoration Ecology, Journal of Hydrology, Aquatic Sciences, rOpenSci (software packages)

Teaching Experience

1. Data Science instructor and lesson developer: SESYNC Computational Summer Institute (annually 2014–2020); SESYNC Geospatial Data Analysis Short Course (2018, 2019); Tidyverse training for SESYNC postdoctoral fellows (2018, 2020); Data skills workshop for UMD Plant Sciences (2017); SESYNC Introduction to Spatial Agent-Based Modeling workshop (2017); SAMSI Software Carpentry workshop: Developing, Maintaining, and Employing Large Computational Frameworks for the Ecological Sciences (2015)
2. Guest lecturer, UMD Global STEWARDS: Project-Based Data Practicum at the Nexus of Food, Energy, and Water Systems MIEH691 (2020); Data Graphics in R graduate seminar, MEES 608Y (2017).
3. Graduate teaching assistant, University of Virginia Department of Environmental Sciences: (2009-2012) for Fundamentals of Ecology (laboratory); Introduction to Environmental Policy (discussion); Beaches, Coasts, and Rivers; Coastal Geomorphology (laboratory)