Lucas Johnson

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Education

State University College of Environmental Science and Forestry — **Syracuse, NY**
Doctor of Philosophy in Environmental Science — *2019 - Present*

Tufts University — **Boston, Massachusetts**
Bachelor of Science in Computer Science — *2013-2017*

Publications

In Review

1. Mahoney, M. J., Johnson, L. K., Silge, J., Frick, H., Kuhn, M., & Beier, C. M. (2023). *Assessing the performance of spatial cross-validation approaches for models of spatially structured data*. arXiv. https://doi.org/10.48550/ARXIV.2303.07334

Peer-Reviewed Publications

1. Johnson, L. K., Mahoney, M. J., Desrochers, M. L., & Beier, C. M. (2023). Mapping historical forest biomass for stock-change assessments at parcel to landscape scales. *Forest Ecology and Management*, *546*, 121348. https://doi.org/https://doi.org/10.1016/j.foreco.2023.121348
2. Desrochers, M. L., Tripp, W., Logan, S., Bevilacqua, E., Johnson, L., & Beier, C. M. (2022). Ground-Truthing Forest Change Detection Algorithms in Working Forests of the US Northeast. *Journal of Forestry*, *120*(5), 575–587. https://doi.org/10.1093/jofore/fvab075
3. Johnson, L. K., Mahoney, M. J., Bevilacqua, E., Stehman, S. V., Domke, G. M., & Beier, C. M. (2022). Fine-resolution landscape-scale biomass mapping using a spatiotemporal patchwork of LiDAR coverages. *International Journal of Applied Earth Observation and Geoinformation*, *114*, 103059. https://doi.org/https://doi.org/10.1016/j.jag.2022.103059
4. Mahoney, M. J., Johnson, L. K., Bevilacqua, E., & Beier, C. M. (2022). Filtering ground noise from LiDAR returns produces inferior models of forest aboveground biomass in heterogenous landscapes. *GIScience & Remote Sensing*, *59*(1), 1266–1280. https://doi.org/10.1080/15481603.2022.2103069
5. Mahoney, M. J., Johnson, L. K., Guinan, A. Z., & Beier, C. M. (2022). Classification and mapping of low-statured shrubland cover types in post-agricultural landscapes of the US northeast. *International Journal of Remote Sensing*, *43*(19-24), 7117–7138. https://doi.org/10.1080/01431161.2022.2155086

Book Chapters

1. Mahoney, M. J., Johnson, L. K., & Beier, C. M. (2023). Chapter 11 - AI for shrubland identification and mapping. In Z. Sun, N. Cristea, & P. Rivas (Eds.), *Artificial intelligence in earth science* (pp. 295–316). Elsevier. https://doi.org/https://doi.org/10.1016/B978-0-323-91737-7.00010-4

Conference Activity

Invited Talks

2022: **Lucas K. Johnson,** Michael J. Mahoney, and Colin M. Beier. Historical Time Series Biomass Modeling: To Train on Plots or Pixels? FIA Science Stakeholder Meeting (Virtual).

Contributed Talks

2022: **Lucas K. Johnson,** Michael J. Mahoney, and Colin M. Beier. A Map-based Stock Change Approach for Fine-scale Biomass and Carbon Accounting in NYS. Forest Ecosystem Monitoring Cooperateive Conference, Burlington, VT.

2022: **Lucas K. Johnson,** Michael J. Mahoney, and Colin M. Beier. Historical Time Series Biomass Modeling: To Train on Plots or Pixels? American Geophysical Union Fall Meeting (Virtual).

2022: Michael J. Mahoney, **Lucas K. Johnson,** and Colin M. Beier. Detecting regenerating forestland at a landscape level Ecological Society of America and Canadian Society for Ecology and Evolution Joint Annual Meeting, Montreal, Quebec, Canada.

2022: **Lucas K. Johnson,** Michael J. Mahoney, Eddie Bevilacqua, and Colin M. Beier. Filtering ground noise from LiDAR returns produces inferior models of forest aboveground biomass North American Forest Ecology Workshop, Sault Ste Marie, Ontario (Virtual).

2021: **Lucas K. Johnson,** Michael J. Mahoney, Eddie Bevilacqua, and Colin M. Beier. Broad-scale forest biomass mapping: generating contiguous high-resolution predictions using a spatio-temporal patchwork of LiDAR coverages across a mixed-use landscape American Geophysical Union Fall Meeting (Virtual).

2021: **Lucas K. Johnson,** Michael J. Mahoney, and Colin M. Beier. Greening Up Before Growing Up: Challenges in Modeling Forest Biomass Recovery Post-Harvest Using Satellite Imagery Society of American Foresters National Convention (Virtual).

Experience

2019 - Present: **Climate and Applied Forest Research Institute (SUNY ESF)**
Research Assistant.

2017 - 2019: **Lightkeeper, LLC**
Data Engineer. Developed internal data management tools and software in python.

Service to the Profession

2023: **Reviewer:** Journal of Applied Earth Observation and Geoinformation.

2023: **Reviewer:** Forest Ecology and Management.

Community Service

July 2020 - July 2021: **Code for Burlington - Courtbot Project** Technical Lead (Volunteer). A free service providing text message notifications for court appearances..

Affiliations

2021 - Present: **American Geophyiscal Union**. Member.

2021 - Present: **NYS GIS Association**. Member.