

# Lucas Johnson

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## Education

**State University College of Environmental Science and Forestry**

*Doctor of Philosophy in Environmental Science*

**Syracuse, NY**

2019 - Present

**Tufts University**

*Bachelor of Science in Computer Science*

**Boston, Massachusetts**

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/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/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 heterogeneous 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

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### 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 Cooperative 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

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**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

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

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

## Community Service

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

## Affiliations

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

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