

SAMIT KAFLE

MS, Forestry | College of Forestry, Wildlife & Environment, Auburn University, USA
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EDUCATION

Master of Science, Forestry | GPA: 4.0 | Expected Graduation Dec 2025

College of Forestry, Wildlife, and Environment, Auburn University, Auburn, Alabama, USA

- Thesis title: Studying species-specific and environment-related factors affecting the carbon stocks of urban trees

Bachelor of Science, Forestry | 2022

Faculty of Forestry, Agriculture and Forestry University, Hetauda, Nepal

- Thesis title: Species distribution modeling of *Magnolia champaca* using Google Earth Engine in Nepal.

SKILLS

- **Carbon and Biomass Quantification:** Terrestrial Laser Scanning (TLS), UAV-LiDAR, Biomass & Carbon Stock Analysis, i-Tree, Forest Vegetation Simulator (FVS), Near-Infrared Spectroscopy (NIRS).
- **Geospatial & Remote Sensing:** ArcGIS Pro, QGIS, Google Earth Engine, Airborne LiDAR & Satellite Imagery Analysis, Spatial Modeling.
- **Data Analysis & Programming:** R, Python, MATLAB, package development, 3D-data analysis, Advanced Statistical Modeling (Mixed-Effects Models, Spatial Autocorrelation).
- **Field & Research Skills:** Forest Sampling & Inventory, Dendrochronology, GPS/DGPS, Data Visualization, Academic Writing & Peer Review.

PROFESSIONAL EXPERIENCE

Graduate Research Assistant | *Auburn University, Auburn, AL* | Spring 2024 - Present

- Research on urban forest carbon dynamics using Terrestrial Laser Scanning (TLS) and Near-Infrared Spectroscopy (NIRS) to precisely quantify carbon stocks.
- Analyzing complex datasets to assess environmental impacts, specifically drought on carbon storage, contributing new insights to sustainable urban forest management.

Graduate Teaching Assistant | *Auburn University, Auburn, AL* | Spring 2024 - Present

- **WILD 5140** Plant Ecology: Conducted lab experiments related to plant physiology and graded the exams.
- **WILD 6750** Analysis for Wildlife Science: Assisted Dr. Todd Steury in conducting data analysis lab and helping undergraduate students to tackle problems in R.
- **FORY 3180** Forest Resource Sampling: Conducted field experiments related to forest inventory and graded exams and lab.

Internship | *Ministry of Forest and Environment, Nepal* | February 2022 - July 2022

- Played a key role in the publication of Nepal's National Landcover Map (NLCMS) by collecting, verifying, and analyzing critical land use data.

- Contributed to national forestry inventories and wetland mapping projects, applying hands-on skills in data collection and GIS analysis.
- Facilitated group discussions with local stakeholders on invasive species, demonstrating strong communication and community engagement skills.

PROFESSIONAL PRESENTATIONS

Poster Presentation | April 9-11, 2025

International Society of Arboriculture Southern Chapter Annual Conference

- **Title:** A new approach for quantifying urban forest carbon stocks.

Presenter at STEM Expo | April 5, 2025

Alabama Science and Engineering Fair

- Presented a novel application of Terrestrial Laser Scanning (TLS) technology, demonstrating its potential for advanced forest inventory and carbon stock assessment, as part of an outreach program promoting STEM careers and innovations.

Poster Presentation | March 26, 2024

Auburn Research Symposium, Auburn, AL

- **Title:** Studying species-specific and environment-related factors affecting the carbon stocks of urban trees.

REWARDS AND HONORS

International Society of Arboriculture Southern Chapter Memorial Scholarship, Travel Grant to attend 83rd annual conference (\$2000) – April 2025 in Memphis, Tennessee, USA.

RESEARCH PUBLICATIONS

1. Bajagain, S., **Kafle, S.**, Luitel, S. C., Joshi, A. B., Dangaura, H. L., Joshi, D. R., Shrestha, M. B., Pradhan, A., Rokka, P., & Joshi, I. D. (2025). Modelling the distribution of great hornbill (*Buceros bicornis*) in Nepal: Insights for conservation planning using ensemble species distribution models. *Global Ecology and Conservation*, 62, e03787. <https://doi.org/10.1016/J.GECCO.2025.E03787>
2. Joshi, D. P., Ayer, S., **Kafle, S.**, Ghimire, S., Mishra, O., Pathak, T. R., Bhatta, K. P., Ghimire, B., & Adhikari, H. (2025). Climate-driven elevational range shift and habitat loss of *Ageratina adenophora* in Nepal: Predicting invasion using ensemble modeling. *Ecological Frontiers*. <https://doi.org/10.1016/j.ecofro.2025.05.003>
3. Kharel, B., Ayer, S., **Kafle, S.**, Timilsina, S., Bhatta, K. P., Gautam, J., Acharya, A. K., Lamichhane, P., & Airee, J. (2024). Current and future habitat suitability modelling of *Bambusa teres* outside forest areas in Nepal under climate change scenarios. *Advances in Bamboo Science*, 9, 100112. <https://doi.org/10.1016/j.bamboo.2024.100112>
4. **Kafle, S.**, K.C., S., Poudyal, B., & Devkota, S. (2023). Machine learning approach to detect Land Use Land Cover (LULC) change in Chure region of Sarlahi district, Nepal. *Archives of Agriculture and Environmental Science*, 8(2), 168-174, <https://dx.doi.org/10.26832/24566632.2023.0802012>

EXTENSION PUBLICATIONS

1. **Kafle, S.** and Arseniou, G. (2025). Urban Forest Monitoring with Terrestrial Laser Scanning, FOR-2180.
<https://www.aces.edu/blog/topics/forestry/urban-forest-monitoring-with-terrestrial-laser-scanning/>

COURSES (MS)

- **GSEI 6150** Spatial Statistics for Natural Resources
- **GEOG 6820** Aerial Photography and Remote Sensing
- **GEOG 6880** Advanced Geographic Information Systems
- **WILD 6750** Analysis for Wildlife Sciences
- **WILD 7150** Advanced Analysis for Ecology
- **FISH 7350** Meta Analysis
- **PLPA 6820** Principles & Tools for Reproducible Science

TRAININGS

- April 20–May 4, 2023: NASA's Applied Remote Sensing Training (ARSET) – **Fundamentals of Machine Learning for Earth Science**
- April 4–11, 2023: NASA's ARSET – **Advanced Training on Crop Mapping using Synthetic Aperture Radar (SAR) and Optical Remote Sensing**
- March 27–April 5, 2023: NASA's ARSET – **Biodiversity Applications for Airborne Imaging Systems**
- March 20–24, 2023: **Field Course in Conservation Biology & Global Health: At the Human-Environment Interface**, organized by Natural Resources Management Program, Nepal Engineering College, and Washington National Primate Research Center, University of Washington
- January 29, 2023: Completed Course on **Core Python Made Easy for Beginners**, Udemy
- August 23–30, 2022: NASA's ARSET – **Evaluating Ecosystem Services with Remote Sensing**
- February 13–June 29, 2022: Training on **Land Use Landcover Mapping using Google Earth Engine**, Ministry of Forest and Environment (Internship Program)
- September 19–20, 2022: Training on **Operating Terrestrial LiDAR**, Ministry of Forest and Environment (Internship Program)
- March 21–24, 2022: Training on **Handling and Operating Differential Global Positioning System (DGPS)**, Ministry of Forest and Environment (Internship Program)
- August 18, 2021: NASA's ARSET – **Selecting Climate Change Projection Sets for Mitigation, Adaptation, and Risk Management Applications**
- **Re-measurement of Permanent Sample Plots** (Forest Resource Assessment), PEES-RAJDEVI SMART JV with technical support from Forest Research and Training Centre (FRTC)