Alec Reeb

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EDUCATION

University of Georgia, May 2027 (anticipated)
Masters of Science in Physical Geography

University of North Georgia, May 2025
Bachelors of Science in Environmental Spatial Analysis *magna cum laude*
Minor in Earth Science
Relevant coursework: *Remote Sensing of the Environment, Earth Materials, Geomorphology, Geospatial Science and Technology, Python Programming for Geospatial Science, Global Navigation Satellite Systems, Hydrology, Physical and Historical Geology, Cartography and Earth Measurements, Environmental Studies in Sustainability*

ACADEMIC HONORS & AWARDS

- 3.84 Cumulative GPA, Dean's List, President's Honor Roll
- Nominated and inducted into The National Honors Society of Geospatial Technology

PUBLICATIONS

- Ignatius, A.R..; Annis, A.R. Helton, C.A., Reeb, A.W., Ricke, D.F. Spatiotemporal Vegetation Dynamics Along the Triple Crown National Scenic Trail Network, USA. Submitted to Remote Sensing January 29, 2025.

RESEARCH EXPERIENCE

Directed Research Project, Spring 2023
Under The Supervision of Dr. Jamie Mitchem, Professor of Geography
Research Thesis: *"Unlocking Lake Emissions: Remote Sensing Insights into Methane, Carbon Dioxide, and Lake Dynamics."*
Involved researching eutrophication processes and collaborating with water scientists to create a map and poster using remote sensing to display results.

Remote Sensing Research Project, Spring 2024
Research Thesis: *"Exploring the Geomorphological, Hydrological and Ecological Impacts of the Elwha Dam Removal through Remote Sensing."*
Involved using various remote sensing techniques (i.e. LiDAR, Landsat, NAIP, Machine learning classifications etc.) to investigate the effects of the largest damn removal in history on the surrounding environments Geomorphology, Hydrology and Ecology. Presented at the ASPRS Mid-South conference at Oak Ridge National Laboratory.

Collaborative Research with Google Earth Engine API, Fall 2024
Research Thesis: "Exploring Spatiotemporal Vegetation Dynamics Along the Appalachian Trail Corridor."
Involved investigating the effects of wildfires, climate change, and invasive species on ecosystems along the Appalachian Trail, focusing on phenological changes driven by environmental stressors. Utilized remote sensing techniques, including vegetation indices such as NDVI and EVI, and datasets from MODIS, and Sentinel satellites, alongside NAIP aerial imagery, to assess vegetation dynamics across various ecoregions over the past 30 years. Processed data using the Google Earth Engine API to analyze shifts in vegetation phenology and document impacts on Eastern Hemlock populations due to the invasive Woolly Adelgid. Findings provided insights into ecological shifts, with implications for trail management, conservation efforts, and climate adaptation strategies.

Small Scale Topographical Survey Accuracy Assessment, Fall 2024
Research Thesis: "*Assessing Device Accuracy in Small Scale Topographical Surveys: A Comparative Study of Drainage Ditch Cross-Sections and Longitudinal Profiles*"

Involved comparing cross-sectional and longitudinal profiles of a drainage ditch using data collected from different GNSS devices, including multiple Garmin eTrex units, smartphones and an Emlid RTK system. Aimed to evaluate the accuracy, precision, and repeatability of these devices in capturing fine-scale topographical details. Conducted surveys over two separate days, using four temporary benchmarks and collecting data at 0.5-meter intervals along cross-sections, as well as along the longitudinal profile at 5-meter intervals. Analyzed results to determine the viability of using consumer-grade GPS systems for small-scale surveys, with implications for hydrological modeling and flood risk assessment.

OTHER WORK EXPERIENCE

GIS Technician

Pike Engineering | 2025 – Present

- Collaborating with engineers to implement autonomous distributed generation and smart grid energy infrastructure in the southeastern United States.
- Rebuilding compliant and disaster-resilient infrastructure through storm hardening projects.
- Utilizing Geographic Information Systems technology to spatially represent infrastructure and optimize energy distribution.

Environmental Research, Education, and Outreach Assistant

Lewis F. Rogers Institute of Environmental Spatial Analysis | 2022 – 2025

- Conducted research on water quality, campus sustainability, and geospatial data applications.
- Led outreach sessions at high schools and community events to promote environmental awareness.
- Collaborated with university administration to develop and implement sustainability initiatives.

Geology/Geography/GIS Teaching Assistant,

University of North Georgia | 2023 –2025

- Assisted in planning and administering geology labs, grading, and tutoring students in Geology and GIS.
- Maintained lab equipment and manage inventory of research materials.

RELATED SKILLS

- Working knowledge of ArcGIS Pro, Google Earth Engine, AutoCAD, and other geospatial software
- Working knowledge of Python, ArcPy, JavaScript and ability to adapt to other coding languages
- Familiarity with geologic research methods and equipment
- Familiarity with self-driven research
- Experience in water quality testing, and geologic / geographic research methods
- Proficient in MS Office, as well as Publisher and Photoshop
- Accurate attention to detail
- Precise Data Management

PROFESSIONAL AFFILIATIONS

Gamma Sigma Theta - National Honor Society for Geospatial Technology, *Faculty Nominated Member* (2024-Present)
Citizens Climate Lobby (2023- present)
American Society for Photogrammetry and Remote Sensing (2024-present)
American Association of Geographers (2024-present)

PROFESSIONAL DEVELOPMENT

ASPRS Mid-South Regional Conference*,* 2024
-Poster presentation and Geomorphology talk

SEDAAG Regional Conference
-Poster presentation on GNSS research
-Poster presentation on Appalachian phenology using Google Earth Engine API

CAMPUS AND COMMUNITY INVOLVEMENT

Geospatial Alliance, *Vice President* (2023-Present
Citizens Climate Lobby, *Member* (2022-Present)