

Emily Guyu Yang

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EDUCATION

Duke University, Nicholas School of the Environment, Durham, NC May 2026
Master of Environmental Management; Concentrations: Terrestrial and Freshwater Ecosystems & Environmental Analytics and Modeling

Relevant coursework: Fundamental of GIS and Geospatial Analysis, Environmental Data Exploration

William & Mary, Arts & Science, Williamsburg, VA May 2024
Bachelor of Science, Biology Major, Data Science Minor; *Magna cum laude*

Relevant coursework: Intro to Remote Sensing, Wetland Ecosystems, Environmental Justice, Intro to Biostatistics

RESEARCH EXPERIENCE

Independent Research

Independent Researcher May 2024 – Present

Advisor: Jennifer Swenson, Kunwar Singh

- Analyzed the impact of the invasive Emerald Ash Borer (EAB) on North American ash trees using NDVI time series (2017-2023) with Sentinel-2 imagery and Google Earth Engine.
- Confirming post-2020 vegetation health decline, correlating with EAB emergence, to inform ecological management and early detection of invasive species.

Virginia Department of Conservation and Recreation; Virginia State Parks

Intern January 2023 – May 2024

- Designed an invasive species management plan for 41 Virginia state parks, including a decision tree with 102 branches and 64 species profiles, offering tailored solutions for each park's unique scenario.
- Collaborated with Natural Resource Manager at Virginia State Parks, delivering weekly updates and refining the plan based on progress; received positive feedback.
- Led pilot implementation at Machicomoco State Park, mapping invasive species with GPS and collaborating with park staff on execution; awarded a \$3,000 research grant from W&M Charles Center for Summer 2023.

Applied Conservation and Ecological Research Lab, William & Mary

Research Assistant January 2022 – May 2023

- Analyzed environmental factors affecting salamander distributions in the Lake Matoaka watershed, focusing on human land use impacts.
- Designed and implemented a sampling protocol, trained new lab members, and led weekly fieldwork across 72 sites with 8 team members over three semesters; analyzed 60+ salamander images using digital software.

Independent Research, William & Mary Biology Department

Independent Researcher September 2022 – December 2022

- Processed 257,572 U.S. wildfire records (2014-2022) using Python and ArcGIS Pro, focusing on wildfire causes in California's landscapes; conducted data visualization and analysis, including histograms and two-sample t-tests.
- Provided insights for regulating human activities and informed wildfire risk mitigation strategies; presented findings and authored a 13-page research paper, received positive feedback.

WORK EXPERIENCE

AidData TUFF Energy Transition Minerals Research Internship, William & Mary

Research Assistant (Part-Time) December 2023 – May 2024

- Reviewed literature on clean energy transition, critical mineral extraction, and associated ESG risks and mitigations; identified China's role in critical mineral extraction in developing countries.

Population Lab, William & Mary

Research Assistant (Part-Time) December 2022 – December 2023

- Managed daily care for a flock of 200+ Zebra Finches, and trained new lab assistants in bird care, including monitoring conditions, replenishing supplies, and conducting inspections.

RELEVANT SKILLS

Computational: ArcGIS Products, Google Earth Engine, Google Earth Pro, ImageJ, Python, R, Microsoft Office Suite, Adobe Premiere Pro

Laboratory: GPS operation, PCR testing

Languages: Mandarin (native), English (fluent), Spanish (beginner)