Scott Cunningham

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EDUCATION

B.S. | GEOGRAPHICAL SCIENCES – GIS & COMPUTER CARTOGRAPHY
University of Maryland | College Park, MD | May 2020

WORK & RESEARCH EXPERIENCE

NATURAL RESOURCE ECOLOGY LAB | COLORADO STATE UNIVERSITY
Field Technician, Data Analyst *| Fort Collins, Colorado | May 2023 – Present*

- Collecting data to inform a variety of research projects related to land management
- Conducting stream surveys, monitoring post-fire forest conditions using LIDAR systems, sampling rangelands while identifying plants, studying forest changes due to disturbances
- Traveling to remote locations throughout Colorado and navigating diverse landscapes safely
- Performing data QA/QC, processing and summarizing hundreds of data points using R

NASA | DEVELOP NATIONAL PROGRAM | SSAI, INC.
Center Lead, Geoinformatics Fellow *| Fort Collins, Colorado | Jan 2021 – April 2022*

- Managed two research teams simultaneously, provided participants support through 10-week long feasibility studies utilizing remote sensing to solve real-world environmental issues
- Conducted application review, interviewing, and team-building at the Colorado location each project term (3 terms per year, 2 teams per term)
- Cultivated partnerships with environmental, research, and public policy organizations
- As a part of the program's Geoinformatics team, maintained archive of code and evaluated for quality, provided technical support and software troubleshooting, led coding workshops

NASA | DEVELOP NATIONAL PROGRAM | SSAI, INC.
Researcher, Project Lead* *| Fort Collins, CO & Greenbelt, MD | Jan 2020 – Dec 2020*

- Conducted three 10-week long feasibility studies- applying remote sensing to environmental issues, collaborating with a variety of partner organizations, working remotely in small teams

*Southern Colorado Disasters** – Summary - Technical Report - Video

- Used data satellite imagery and field data to study and map the extent and response of aspen forests in response to wildfires in Colorado
- Developed a random forest regression model using R to model and map aspen extent and identify areas most suitable for future growth, used Q and ArcGIS to present findings
- Lead project team throughout term – lead meetings, delegated tasks, served as primary point-of-contact with project partners

Fisher's Peak Ecological Forecasting - Summary - Technical Report

- Paired satellite data and on-site field measurements to model and map above-ground biomass over the extent of a future state park in Southern Colorado
- Utilized Google Earth Engine, R, and ArcGIS to obtain, analyze, and visualize data (Landsat 8, Sentinel-1, SRTM) - derived a suite of topographic and vegetation indices for model input
- Partnered with The Nature Conservancy and the Colorado State Forest Service to improve the state of Colorado's ability to conserve biomass-rich areas, and enter the carbon market

Ellicott City Disasters II - Summary - Technical Report

- Utilized satellite remote sensed (NLDAS, MODIS) and on-site weather gauge data to study extreme flood events in Ellicott City, Maryland
- Acquired and formatted years of data for input into predictive flood-risk model
- Engaged with local government to improve flood forecasting and aid their decision-making

UNITED STATES DEPARTMENT OF ENERGY

Intern | Germantown, MD | September 2015 – May 2016

- Co-authored a Department-sponsored technical report describing and analyzing a radioactive release at a nuclear waste disposal facility

SOFTWARE

- **ArcGIS Pro** (Intermediate-Advanced)
- **ArcGIS Online** (Advanced)
- **QGIS** (Intermediate)
- **Google Earth Engine**, JavaScript API (Intermediate-Advanced)
- **R** (Intermediate)
- **Python** (Intermediate)

SKILLS

- Cartography and data visualization
- Big data acquisition and clean-up
- Modeling with random forest, Maxent
- Skilled in technical writing
- Excellent written and oral communicator
- Backcountry navigation with map, GPS
- Operating Terrestrial LIDAR System

PRESENTATIONS

Cunningham, S., Buczek, C., Andrews, C., Courtney, K., Shahin, D., Tian, A., Vorster, A., Woodward, B. **'Mapping Russian Olive: Using Remote Sensing to Detect an Invasive Shrub along the Powder River in Montana and Wyoming'.** Virtual poster presented at: AGU Fall Meeting 2021; December 2021.

Cunningham, S., Beveridge, D., Swayze, N., Choi, C.T.H., Knowlton, G., Klisauskaite. J. **'Understanding the Impact of Forest Management on the Cameron Peak and CalWood Fires'.** Flash-talk presented at: USGS National Imagery Summit; September 2021.

OTHER EXPERIENCE

PACIFIC CREST TRAIL THRU HIKE

Northbound | Summer 2022

- Backpacked over 2,650 miles over 5 months through California, Oregon, and Washington
- Researched and planned successful thru hike over the course of 2 months