Joshua Green

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EDUCATION

PhD – Ocean and Earth Sciences, **October 2022 – Present**
University of Southampton, Southampton, UK

- Research Focus: Compound Flood Modelling, Natural Hazards, Disasters, Risk, Vulnerability

Bachelor of Science – Geographical Sciences, **Graduated: May 2021**
Co-operative Placement Program
University of British Columbia, Vancouver, BC

- Discipline Focus: Geospatial Sciences, Geomorphology, Environmental Sciences & Policy
- Minor: Geographic Information Science and Geographical Computation

WORK EXPERIENCE

Flood Model Developer **September 2021 – Present**
Fathom Global Ltd, Bristol, UK

- Development of large-scale coastal compound flood inundation risk models
- Numerical hydraulic modelling and data analysis with Python, Matlab, and R

NASA DEVELOP Research Analyst & Team Lead **June – August 2021**
NOAA National Centers for Environmental Information, Asheville, NC

- Coordinated project tasks for Illinois agricultural drought monitoring and capacity development
- Designed a Python toolset to evaluate the suitability of remotely sensed, modeled, and in-situ soil moisture data products for assessing drought conditions
- Produced soil moisture anomaly and percentile time-series datasets, multidimensional rasters, and statistical products to support decision-makers including the Illinois State Water Survey

NASA DEVELOP Research Analyst **June – August 2020**
NASA Jet Propulsion Laboratory, Pasadena, CA

- Created permafrost-subsidence maps for use in identifying road and infrastructure risk and vulnerability in Fairbanks, AK to support transportation and resource management
- Processed and analyzed LiDAR and L & C-band SAR (UAVSAR and Sentinel-1) data, and utilized ArcGis-Pro, QGIS, and Python to assess and map permafrost-induced surface deformation
- Presented findings at NASA Applied Science Week 2020 - *https://youtu.be/4npjdqDdJ4M?t=805*

Transport Canada Environmental Officer **January – June 2020**
Transport Canada, Pacific Environmental Team, Vancouver, BC

- Contributed to Environmental Impact Assessment (EIA), contaminated site remediation, and environmental protection projects in British Columbia
- Developed a Project-Approval-Document (PAD) report used for long term planning
- Authored Environmental Assessment project reports guiding high-level policy meetings
- Drafted annual budgets and processed invoices for contaminated site remediation projects

Environmental Assessment Project Officer **September – December 2019**
BC Environmental Assessment Office, Metal Mining Operations Team, Victoria, BC

- Contributed to coordination and management of operational projects with Assessment Officers
- Analyzed adverse socio-economic and environmental effects of development projects
- Provided technical assistance on consultations with proponents, stakeholders, officials from federal, provincial, and local governments, Indigenous Nations, and the public on the EA process
- Drafted correspondence to inform consultation requirements and participation strategies

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Soil Science Research Assistant **May – August 2019**
BC Ministry of Forests, Lands and Natural Resource Operations, Prince George, BC

- Analyzed pre-glacial lake reconstruction in northern BC by integrating LiDAR data and digitization in assessments of the paleo-shoreline landform using Global Mapper
- Generated and formatted stereo LiDAR imagery from point cloud data for 3D vector terrain analysis using DAT/EM Summit Evolution and Global Mapper

NASA Research Intern in the Hydrology Laboratory/USRA **July – September 2018**
NASA Goddard Space Flight Center, Greenbelt, MD

- Advanced a citizen science-based landslide monitoring project by adding verified content to the Cooperative Open Online Landslide Repository (COOLR) and Global Landslide Catalogue (GLC)
- Designed satellite-based GIS maps to generate landslide susceptibility for trend and change analysis
- Standardized landslide databases using comparative analysis to create a data flow diagram

Forestry Research Assistant (Field and Laboratory) **May – August 2017, May-June 2018**
UBC Faculty of Forestry, Vancouver, BC

- Conducted fieldwork according to standards of the Canadian National Forest Inventory
- Surveyed and photographed field sites and plot boundaries using GPS units and Avenza software
- Evaluated bulk-mass density of soil, wood, and plant samples, and prepared for carbon analysis

RESEARCH PROJECTS

Earth Observations to Enhance Drought Monitoring in Illinois
- *https://develop.larc.nasa.gov/2021/summer/IllinoisDisasters.html*
- *https://www.ncei.noaa.gov/news/nasa-develop-ncei-summer-2021-term*
- *https://appliedsciences.nasa.gov/our-impact/news/nasa-interns-develop-disaster-products-midwest*

Earth Observations to Identify Permafrost Subsidence and Infrastructure Vulnerability in Alaska
- *https://develop.larc.nasa.gov/2020/summer/AlaskaTI.html*

Landslide Susceptibility: Comparison of Global and Regional Models
- *https://jagubc.wixsite.com/mkd-landslide*

Geomorphology in Haida Gwaii: Hillslope-Landslide Area Coupling
- *https://jagubc.wixsite.com/370haidagwaii*

Geographically Weighted Regression Analysis of Wildfires in British Columbia
- *https://jagubc.wixsite.com/bc-wildfire-gwr*

HIGHLIGHTS & QUALIFICATIONS

- Technical
  - Programming with Python, Matlab, R, JavaScript, and HTML; plus high performance computing
  - GIS and geospatial analysis using ArcGIS/QGIS/Google Earth Engine/Global Mapper
  - Map and web map design using Adobe Illustrator/Mapbox/Leaflet
  - Relational database applications using SQL/MS Access/Excel
  - Processing and analysis of LiDAR point cloud and SAR data
- Policy & Planning:
  - Environmental Assessment policy and application in project management operations
  - First Nation Consultation practices, regulation and Indigenous land/water policy
- Project Management
  - Strong service orientation and effective communicator, technical writer and public speaker
  - Highly successful in coalition building, team collaboration, and fieldwork