



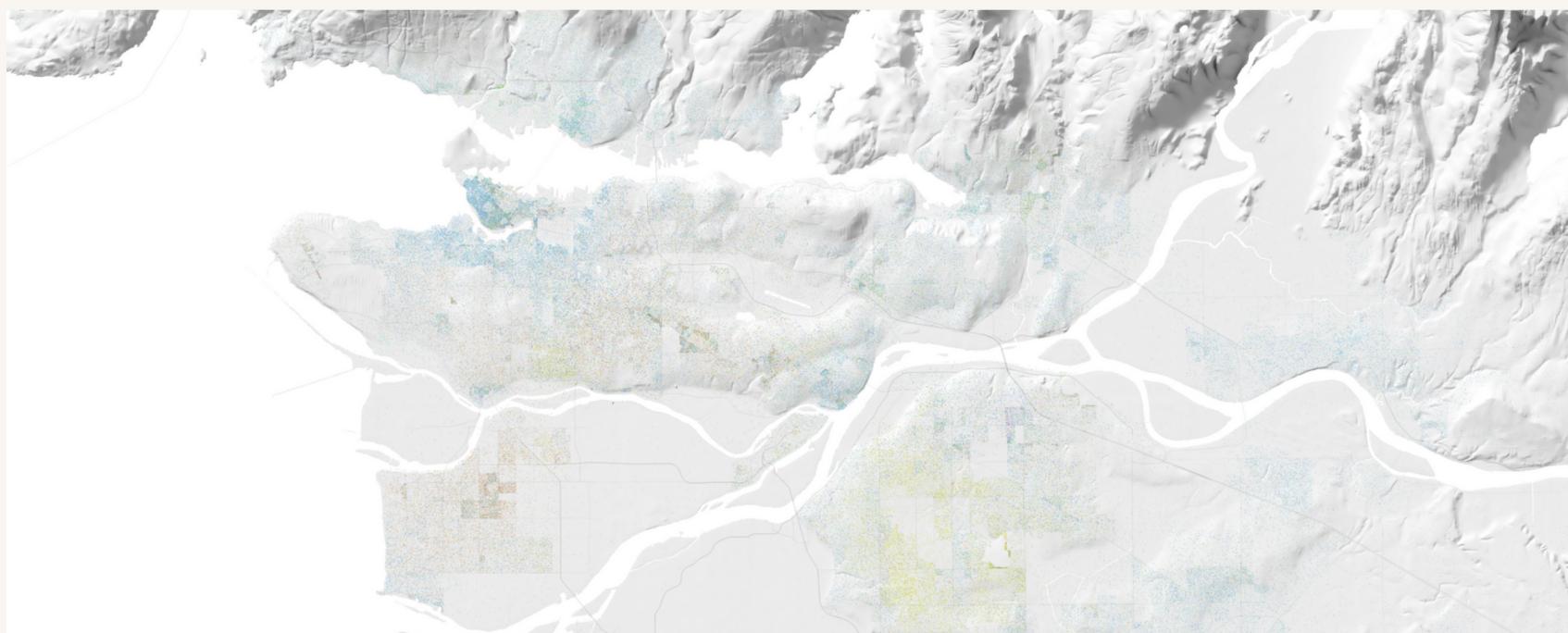
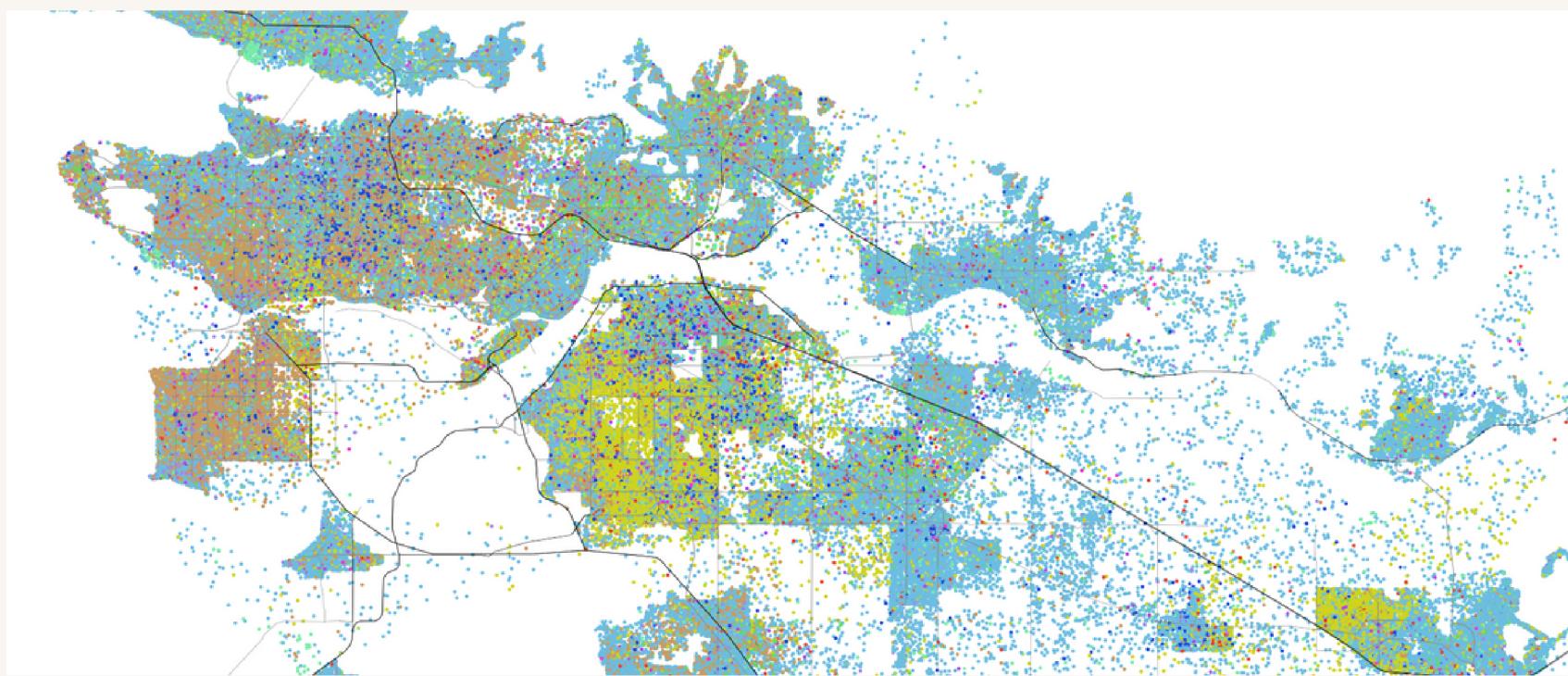
Nathan Hildebrand  
**portfolio**  
geospatial  
analysis

# About Me

I am a geospatial professional with over 5 years of experience across many sectors including environment, government, First Nations, and software development. I have a broad range of skills in geospatial analysis, data and application integration, automation, and project management. I love working with data and I'm passionate about helping people solve problems, make decisions, and understand the world through maps. You can view my résumé [here](#).



# Dot Distribution Maps

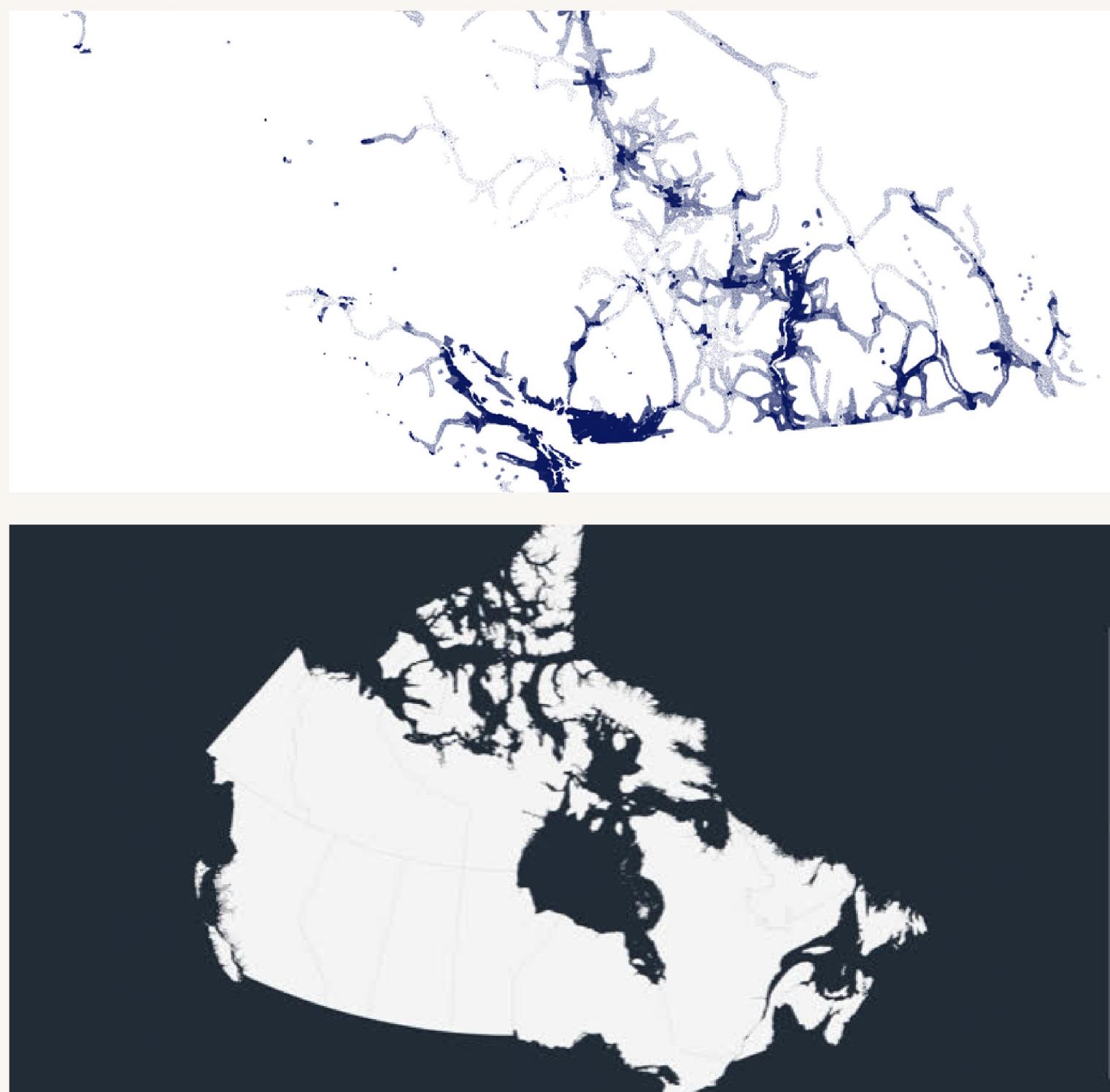


## Project Outline

This project is an exploration of Canadian Census Data through Dot Distribution maps, focusing on the demographics of Metro Vancouver and the province of British Columbia.

My goal is to represent and understand raw Canadian Census Data in a novel visual way that cuts through aggregates, averages, and statistics. This project also afforded me an opportunity to learn open source geospatial technology and prove its feasibility for data analysis and visualization.

# Dot Distribution Maps



## Results

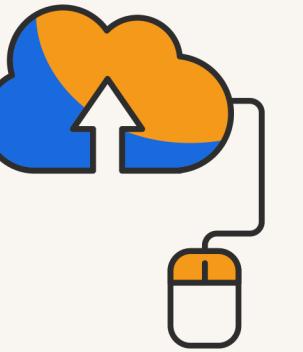
I produced new dot distribution datasets derived from census data and other open datasets, and documented the methodology for reproducibility. I also created various map products using this dataset, as I explored different ways of visualizing the results. I developed an [interactive web map of Canadian provinces](#) using D3.js, which I would like to expand on in the future to include the dot distribution data for all of Canada.





## Challenges

- Overcoming performance issues with Geopandas.
- Implementing custom and dynamic coordinate systems in D3.js.
- Learning Blender and the Blender GIS Extension.
- Producing an accurate ecumene for British Columbia, and mapping census data to it.



## Technologies

- QGIS
- PostGIS
- Python
- Jupyter Notebooks
- Blender
- D3



## Future

I'd like to spend more time on cartographic design, apply the methodology to other demographic census datasets such as education, income, age, and health, and expand the project to all of Canada.

# Tsilhqot'in Land Use Maps



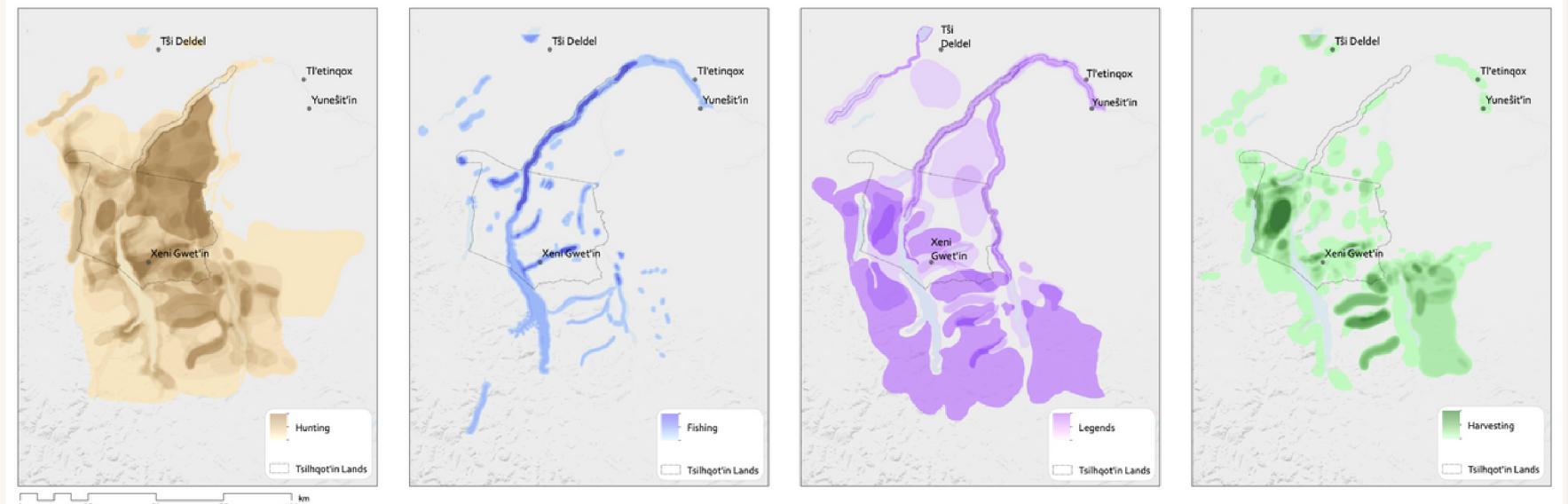
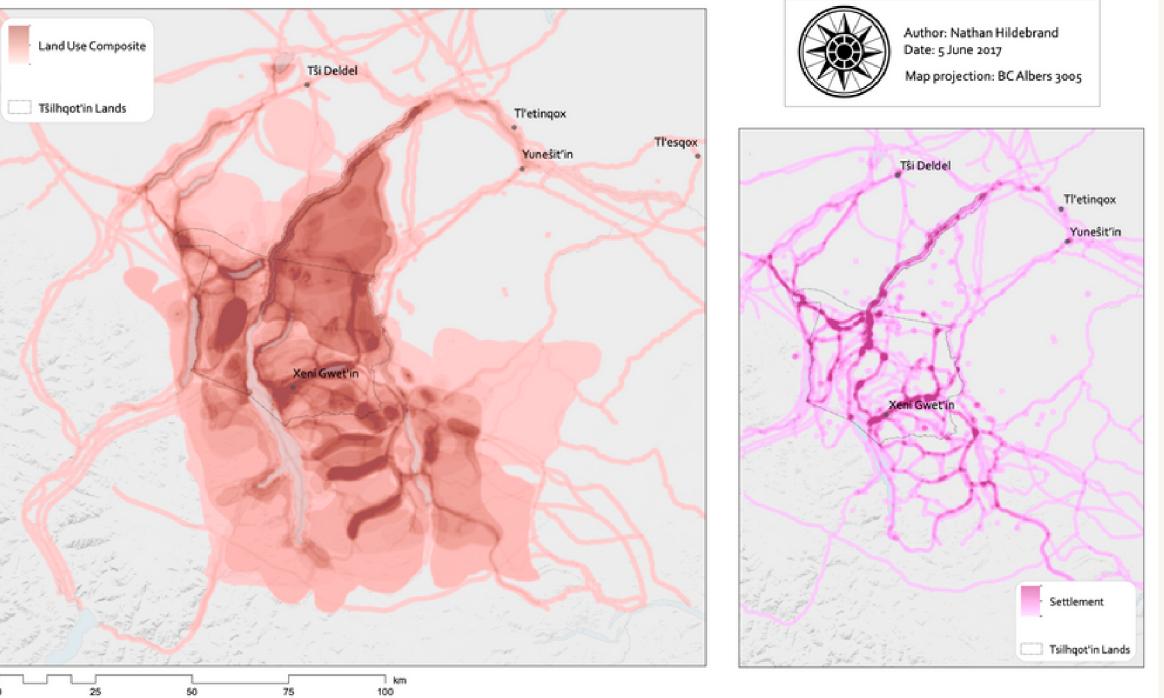
## Speaking Out On The Land: A Visualization Of Elder Testimony

These intensity heat maps display the consolidation of over 500 court case files and approximately 3500 records stemming from the Chief Roger v. HMTQ land claim court case -- all public information accessible through legal archives in Victoria. Such a large volume of clustered mapping data is difficult to view all at once on a single map. In an attempt to simplify it for viewing, this series of land use maps serves as a general visual overview of the underlying datasets.

Cartographic evidence was used extensively in the case: elders drew thousands of points, lines, and polygons directly on a map with marker, chalk, or a laser pointer. Since each shape drawn by an elder corresponds to a single record in our mapping data, these intensity maps represent the density of these records. Lighter colours indicate fewer overlapping records, while darker colours indicate many overlapping records. The darkest areas can be thought of as grooves etched deep into the land with each story told or statement given by a Tsilhqot'in elder.

The larger map at right and in red represents a composite of all data from the court case. The smaller maps represent components of the composite, each with a unique colour.

Brown shows hunting and trapping areas; blue shows fishing areas; purple shows the locations and settings for legends and stories; green shows berry-picking, gathering, and grazing areas; and pink shows transportation corridors, trails, and settlement areas.



## Project Outline

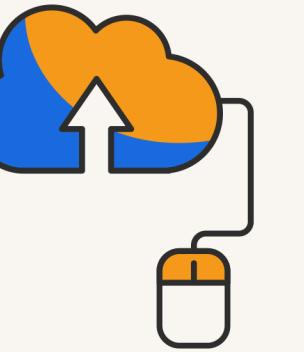
This project is a data conversion, analysis, and visualization project based on the 2014 supreme court case, Tsilhqot'in Nation v. British Columbia.

My goal was to translate extensive geospatial case evidence into modern and usable GIS datasets through cleaning, aggregation, and format conversion so that the data can be used for future reference and analysis. I also wanted to produce a visual representation of the court case data that demonstrates its scope and importance.



## Results

- A series of map heat maps depicting the spatial density of land use in six categories, including a composite.
- A plotted project poster.



## Technologies

- ArcGIS Desktop
- FME
- QGIS



## Challenges

- Understanding the complexities of the court evidence and finding methods for relating and aggregating disparate datasets.
- Combining different geospatial platforms to achieve the desired result.

# Get In Touch!

