

WORKBOOK

ACCESSIBLE
MAPPING TOOLS
FOR ALL



2024

A Guide To Meaningful Mapping

written by
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ABOUT THIS WORKBOOK

This workbook can be used as a reference tool for anyone interested in exploring the concept of place through map making. Readers can use this book to begin a meaningful map project, to experimenting with creative data representation, and to learn more about free and open source mapping software (FOSS). This workbook is largely inspired by Indigenous counter-mapping projects, such as the Violation and Restoration folding map of Turtle Island from the 2017 Mapping Back Workshop. Counter-mapping is a technique that deconstructs colonial framework using both conventional and unconventional methods through mapping, un-mapping, and re-mapping.

There are awesome FOSS communities out there that have designed free tools for anyone to use - which means you can add your ideas too! By mapping the world around you, you are capturing a unique layer of information about the world that provides specific insights to a place in time. This workbook will help to connect some ideas and build a foundation for your own projects, so you can start putting what you want to see onto the map!

ACKNOWLEDGMENTS

This workbook, all research, and all human activity would not be possible without our incredible planet Earth. We must continue the generational traditions of care and knowledge sharing to connect with the world and the people around us,

I have gained so much knowledge and inspiration from my professors at the University of Guelph. But my love of storytelling comes from my mother. Thank you for sharing your stories with us, mom!

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KEY TERMS

Database

Mental Map

Ethical Data Use

OpenStreetMap (OSM)

Free and Open
Source Software
(FOSS)

Physical Geography

Google Earth Engine

Spatial Data

Geographic
Information System
(GIS)

Spatial Analysis

Human Geography

Technical and Cost
Barriers to Access

Indigenous Mapping

Web-Based GIS



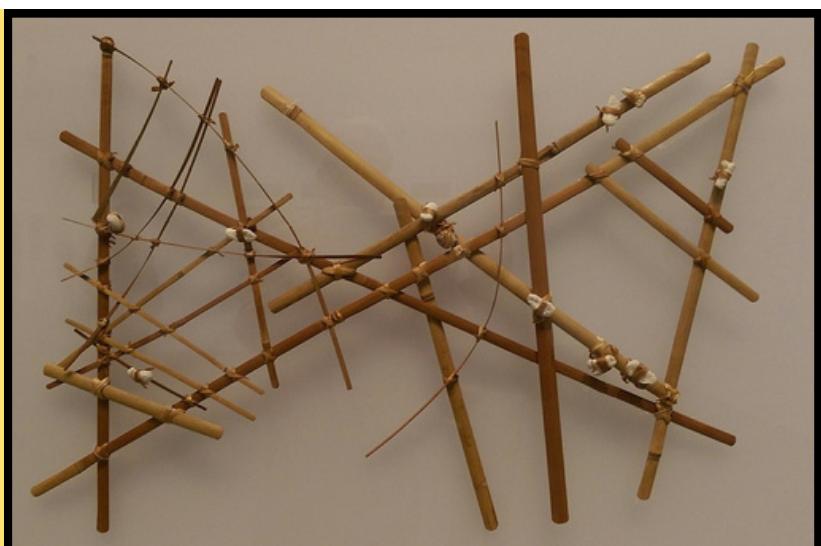
A NOTE ABOUT MAP MAKING

Maps are an incredibly useful tool for understanding the world and to share information in a visual format. With that in mind, it's important for us to understand that **maps are an abstract representation of reality and never 100% accurate in all its aspects.** Maps are a visual representation of time and space compressed together, sort of like a photo snap shot.

Maps are a simplified version of reality. But that simplification comes with a price: map makers must decide what details to sacrifice to most effectively share information in the space available. Meaningful maps attempt to capture the impact of the human experience through space and time - beyond the conventional labels. Meaningful maps help map creators express culture, inspiration, feeling, and local understanding. The abstract nature of maps allows artistic interpretation and invites opportunity to deliver meaning in a new way.

CONSIDER THIS

A Micronesian navigation chart from the Marshall Islands - used for ocean travel. The shells represent islands, and the curved threads represent the wave crests.



WIKIPEDIA COMMONS, "MICRONESIAN NAVIGATIONAL CHART"

FIND INSPIRATION

The best way to learn more about maps is to explore many, many different kinds! Each map is a new story, and there are many ways to tell a good story.

What information is the map trying to share? What did you learn from the map? What or who do you think is missing from the map?

MACIEJ CABAJ, "LEGO 3D MAP OF POLAND"



VIRGINIA RICHARDS, "MADAME JUMEL'S GARDEN (1936)"



ACTIVITY

Visit the Native Land website at: www.native-land.ca

Explore the map, consider its story and how it shares information. Use the space below to write down the local Indigenous territories for the place where you live:

GEO-SECTORS

Consider these two broad sectors of geography: human geography and physical geography. Human geography focuses on the movement and activities of humans. While physical geography covers the natural environment.

Think about what areas of geography interest you, and use resources from the internet or library to find map inspiration!

HUMAN GEOGRAPHY

- Bus routes
- Recycling centers
- Libraries
- Tourist destinations
- Music venues
- Historic landmarks
- Cultural spaces
- Health services

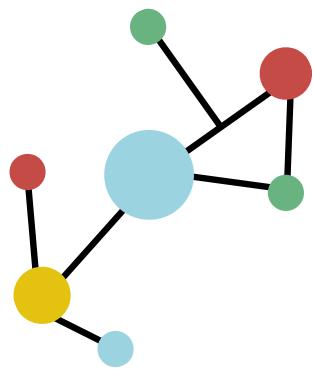
ACTIVITY

Add a project idea where human geography and physical geography would overlap:

PHYSICAL GEOGRAPHY

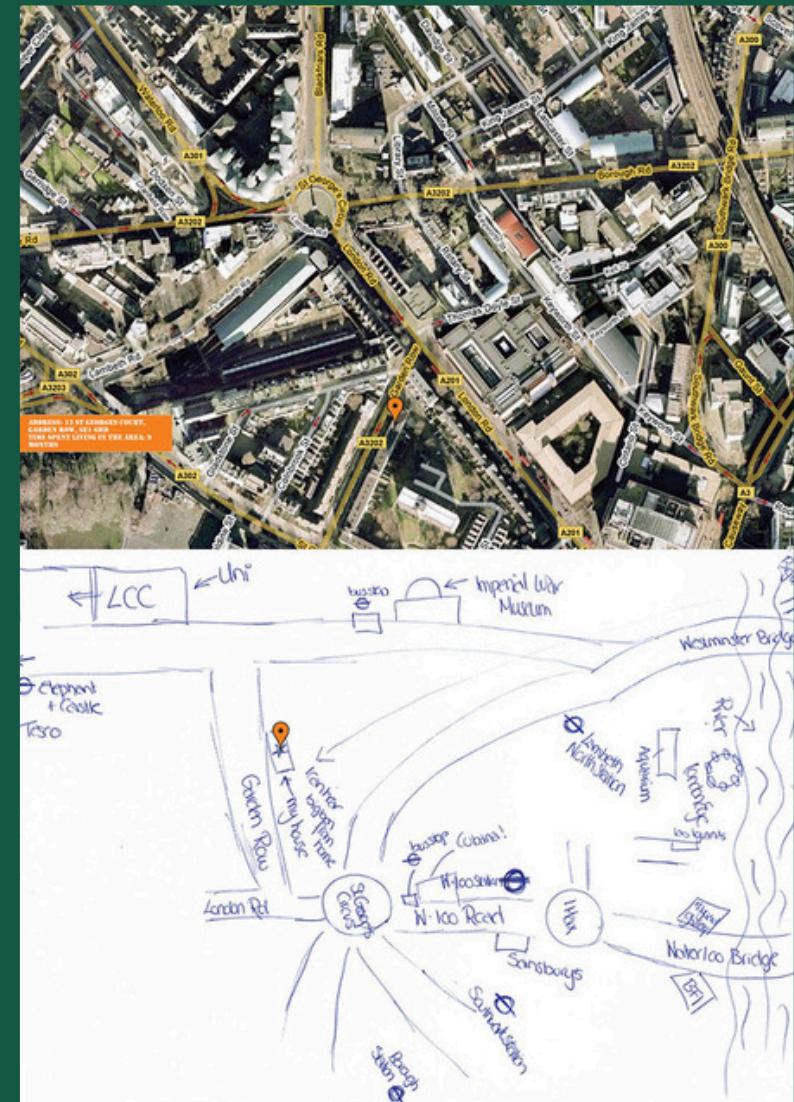
- Plant species
- Conservation areas
- Bodies of water
- Animal sightings
- Beach locations
- Climate patterns
- Soil science
- Land use designations

CREATE A COMMUNITY NETWORK



Thinking about **project possibilities in your own community**, write down any ideas for environmental or human geography topics that you think could be useful for other community members to see on a map:

Do you know of any **people, resources or organizations** in your community that would carry knowledge about the topics you named above. List them here:

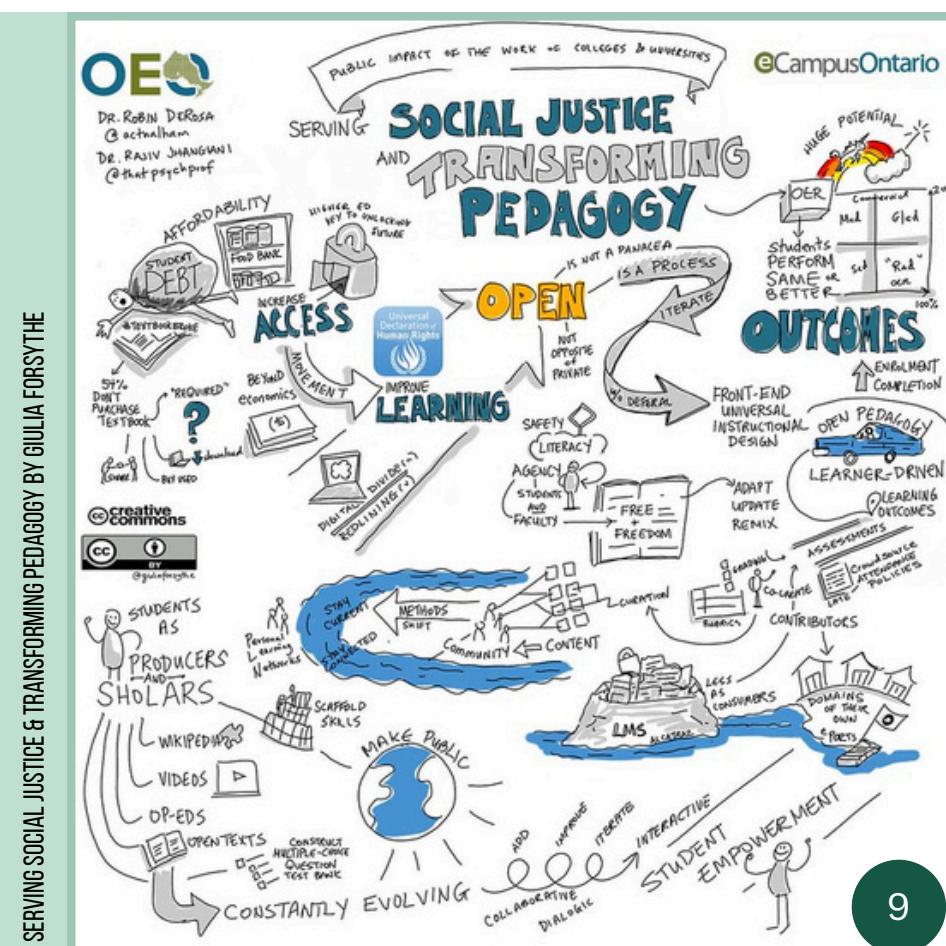


LEGO 3D MAP OF POLAND BY MACIE CABAJ

Mental maps are especially useful during the planning process. It helps to bring the pieces together and build a network of interest to explore further. When creating a mental map, think about how your ideas could connect with real people, community groups, and accessible resources.

MENTAL MAPS

Mind mapping is (usually) a pen to paper visual technique that connects **places**, **concepts**, **ideas**, and **intuitions** around a central topic. It is a way to document the brains' thought in a natural rhythm, and to lay out the knowledge without limits. This is a great way to start your project!



BUILD YOUR OWN MENTAL MAP

Let's try to put all the pieces together and create a mental map. Create a mental map of one topic you wrote down earlier

- connect together ideas, people, and place.

Remember, mental maps are a great way to brainstorm and they are meant to be unpolished. A mental map is a place where you can highlight ideas that may be important to explore further.



CONSIDER THIS



- What is the main topic for your map?
- What do you want the audience to consider most when they view your map?
- What are some resources you can connect to?



ACCESSIBLE MAPPING TECHNIQUES

PAPER MAP

Paper maps are a great way to explore the world around you, these maps are portable (and erasable) so it is an excellent technique for map brainstorming and data collection.

DIGITAL MAPS

Digital maps are created using specialized software, the software can require technical skills but once you learn the ropes, many systems are similar. Try exploring free map software like QGIS, Google Earth, and OpenStreetMaps.

3D MODELS

3D maps involve creating a physical model to interact with. Models are easy to modify, but require physical space to be observed. Think about how you could create a 3D model with play dough, cardboard, or Lego.

OPEN ACCESS MAPPING SOFTWARE



There are two types of geographic information software (GIS); commercial mapping software (paid products) or there are also free & open source software (FOSS). **There can be pros and cons to using any type of geospatial software**, and it is valuable to experiment and find what works well for your project.

Free and open source software is incredibly important because, in many cases, it has a low-to-no financial barrier. This means more people can access the tools, and add details to the software data library (aka a database).

INTRO: OPENSTREETMAPS

OPENSTREETMAPS LOGO



OpenStreetMaps (OSM) is a **free and open source, web based GIS** with an open geodatabase and free mapping software available for public use.

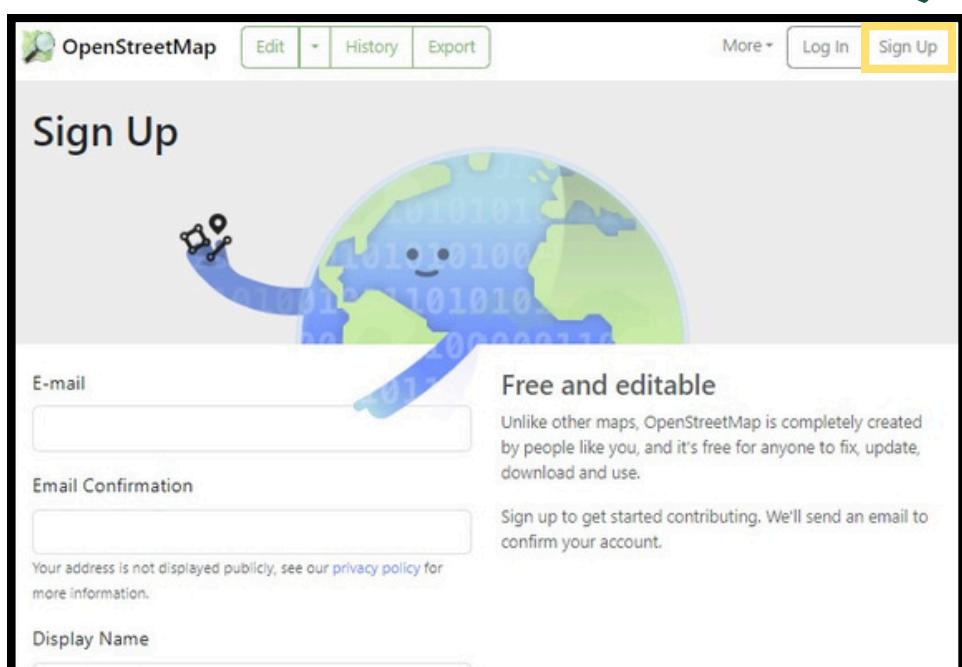
The OSM database is built off a foundation of geospatial information added by a large and diverse collective of OSM users - **anyone who creates an account can contribute, and everyone's input can be used by others.**

OSM holds an Open Database License, which means that **users can access the data without restrictions, download the data, modify the data, and share the data freely** - the license also applies to any map data that you create. This community sourcing and collaboration is the reason that **OSM geospatial data is free for all to use.**

Near the beginning of the workbook, you explored a map on **Native-Land.ca** - this map is created with, and hosted by, OpenStreetMaps. It is an excellent example of **an impactful mapping project that is used to discover land-based relationships between people and Indigenous territories**, and this educational map also connects directly to Indigenous resources for further learning.

HOW TO: OPENSTREETMAPS

STEP 1



OpenStreetMap

Edit History Export More Log In Sign Up

Sign Up



E-mail

Email Confirmation

Your address is not displayed publicly, see our [privacy policy](#) for more information.

Display Name

Free and editable

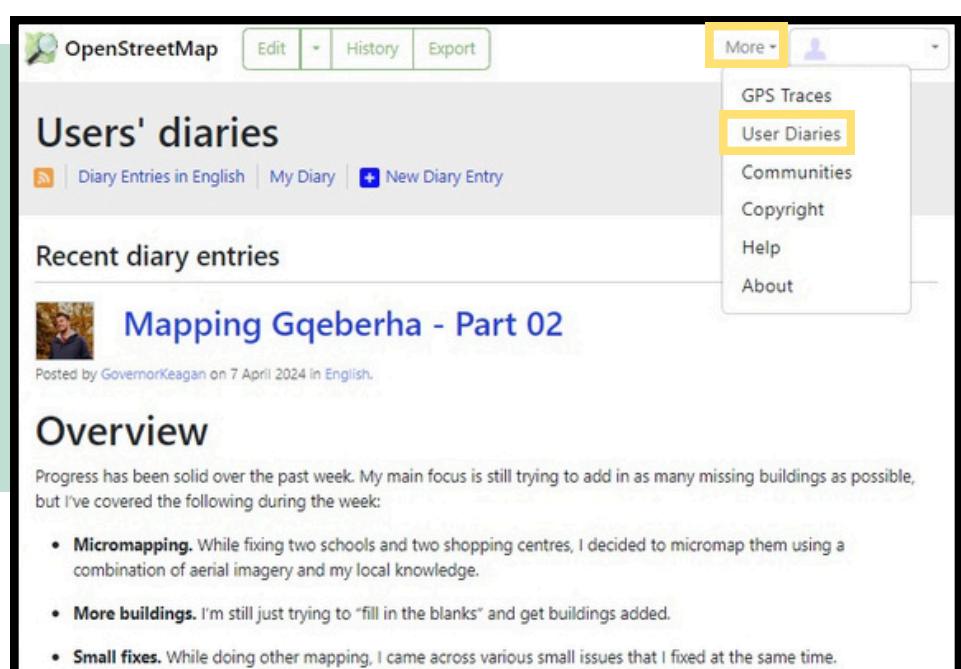
Unlike other maps, OpenStreetMap is completely created by people like you, and it's free for anyone to fix, update, download and use.

Sign up to get started contributing. We'll send an email to confirm your account.

Create an account by visiting the OSM website: openstreetmap.org

Explore the community!

Visit the User's Diaries section to see contributions from other users.



OpenStreetMap Edit History Export More GPS Traces User Diaries Communities Copyright Help About

Users' diaries

Diary Entries in English | My Diary | New Diary Entry

Recent diary entries

 [Mapping Gqeberha - Part 02](#)
Posted by GovernorKeagan on 7 April 2024 in English.

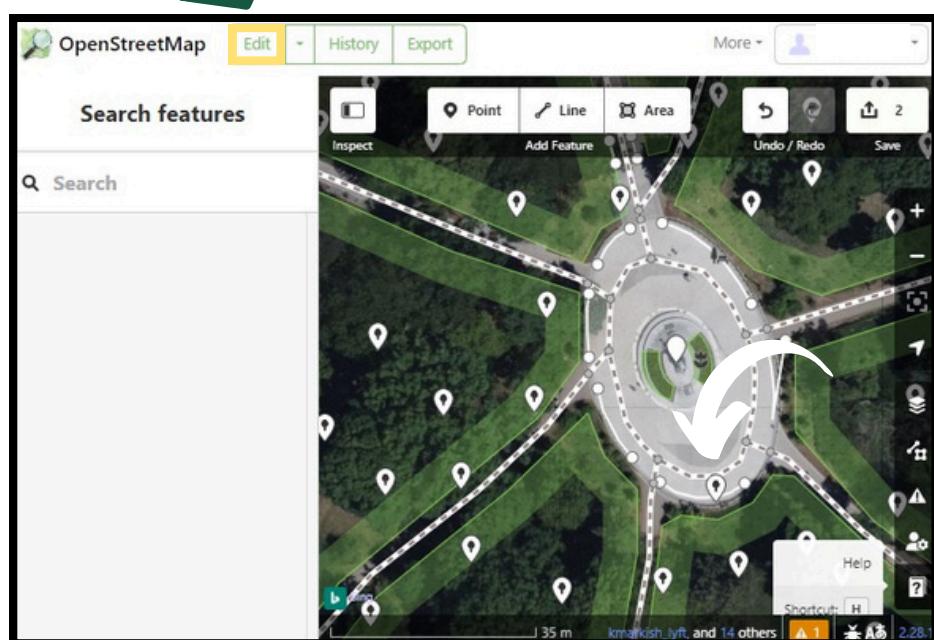
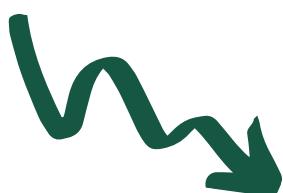
Overview

Progress has been solid over the past week. My main focus is still trying to add in as many missing buildings as possible, but I've covered the following during the week:

- **Micromapping.** While fixing two schools and two shopping centres, I decided to micromap them using a combination of aerial imagery and my local knowledge.
- **More buildings.** I'm still just trying to "fill in the blanks" and get buildings added.
- **Small fixes.** While doing other mapping, I came across various small issues that I fixed at the same time.

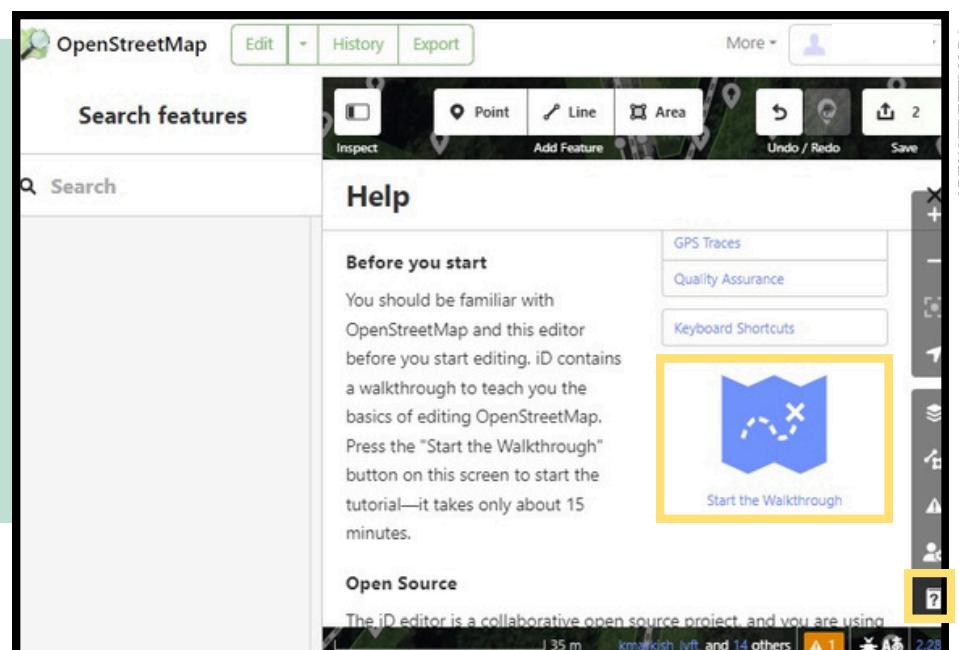
HOW TO: OPENSTREETMAPS

STEP 2



To start editing, you have to zoom into a specific location. The Edit tab will fill in, and become “clickable”. Once you click Edit, it should prompt a tutorial.

By selecting the HELP box on the right hand side of the map, you'll find that same tutorial and many other great resources to get started.



HOW TO: OPENSTREETMAPS

STEP 3

MAPPING WORKSHOP BY CIFOR-ICRAF



To plan your field work, focus on areas that are convenient for you to visit. You can also look at the OSM map to plan your walking route for data collection. Write out the data points you want to collect, like Business Name, Hours Open, Accessibility Info, etc.

Now you can head outside! You can start by using a pencil and paper to write down data points, observations and to mark down correct spelling.

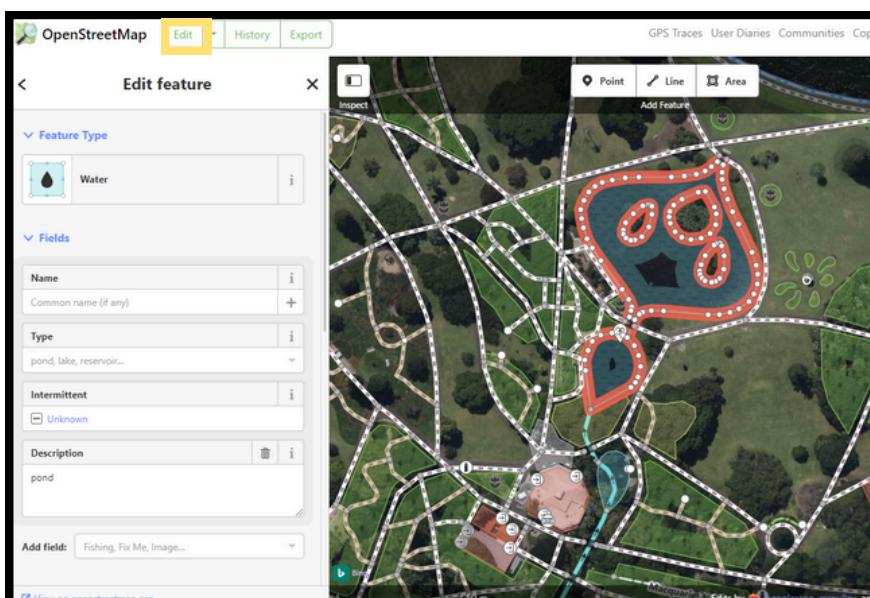


FIELD RESEARCH (POLAND BY SZKOŁA PODSTAWOWA)

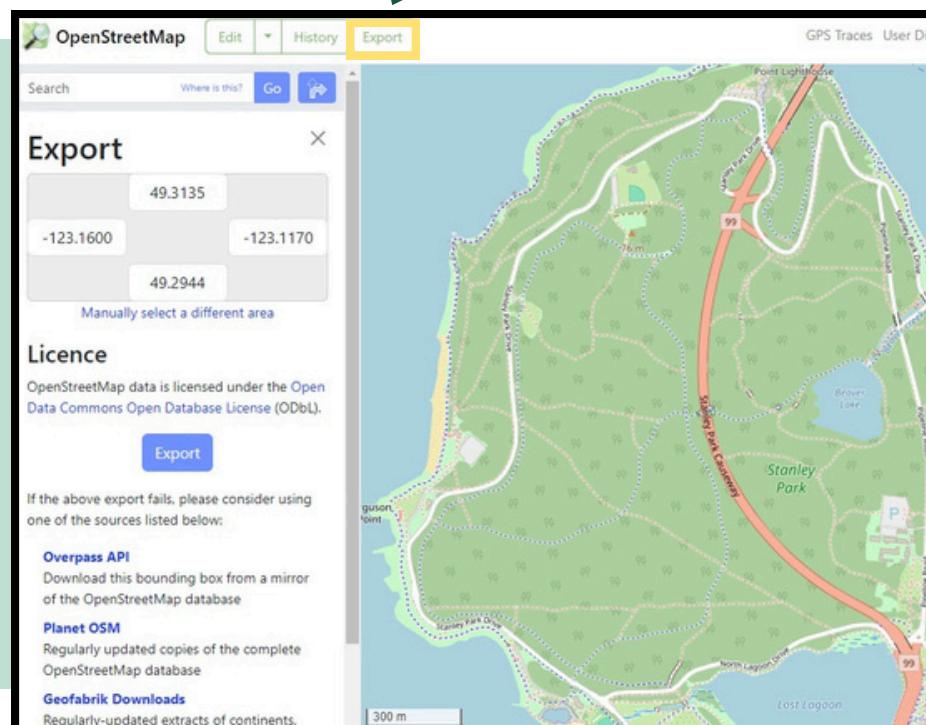
HOW TO: OPENSTREETMAPS

STEP 4

OPENSTREETMAPS



Go back into OSM to add in your new data. Create points, lines or polygons to visualize your data on the map. And then add in all the details you documented about the feature.



OPENSTREETMAPS

You can export the data from OSM. This might be useful if you need to do any in-depth geospatial analysis. For example, if you wanted to advocate for more bathrooms in an urban park or to analyze networks of accessible trails.

FURTHER LEARNING

Data Feminism

- data-feminism.mitpress.mit.edu/

GIS Chat Podcast

- gischatpodcast.buzzsprout.com/

AI Maps: Is This Our Future?

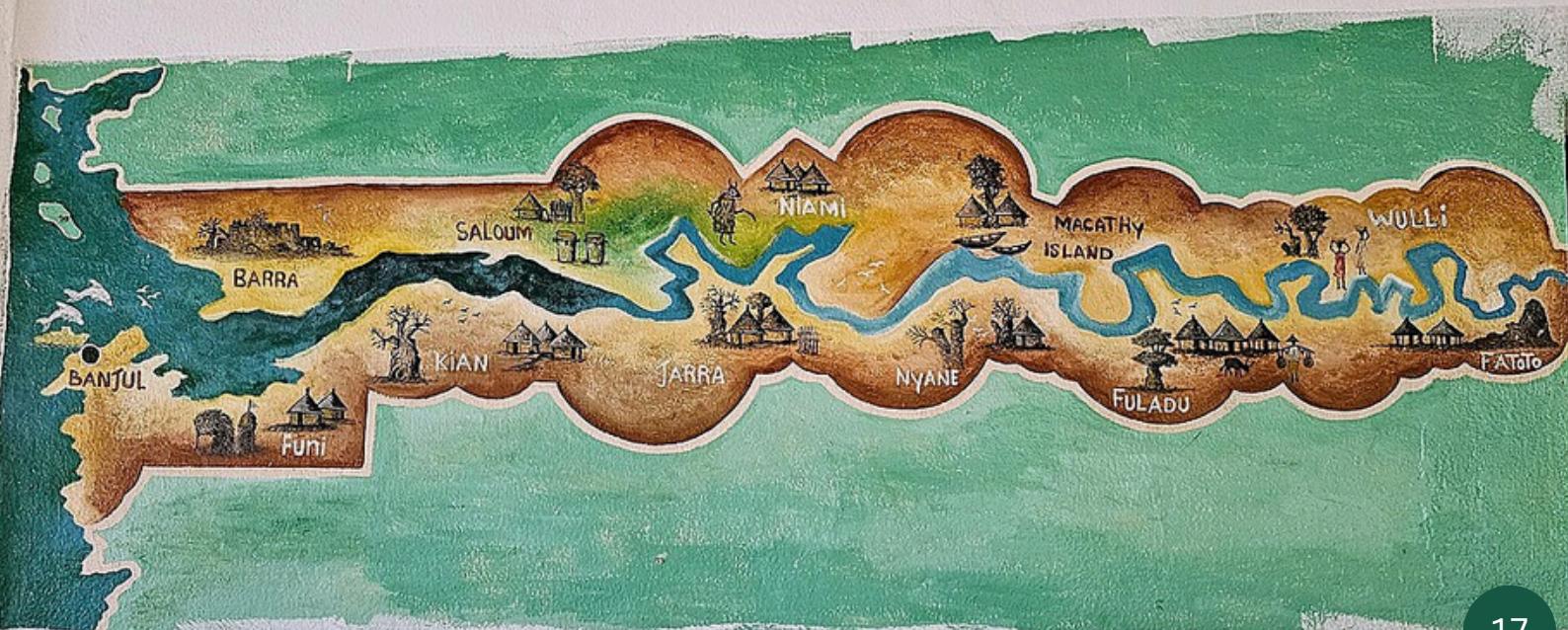
- gisgeography.com/ai-maps

Community Mapping 101

- rootsandshoots.org/resources/community-mapping-101-2

Putting Indigenous Perspectives on the Map: Indigenous Mapping and Place Names

- hillnotes.ca/2021/06/21/putting-indigenous-perspectives-on-the-map-indigenous-mapping-and-place-names



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