DIGITALLY MAPPING INDIGENOUS KNOWLEDGE

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Summary

This fact sheet shows how to collect and digitally store Indigenous Knowledge (such as important community, cultural, or environmental locations) on computers and through online mapping software.

Keywords: mapping, Elders/knowledge keepers, managing/storing data, collecting data, community engagement

What Is Digital Mapping?

Digital mapping is a way of collecting, storing, and presenting information within a computer or online mapping program. Digital mapping can be used to collect local Indigenous Knowledge. People can use it to collect lots of information without the need to use larger paper maps.

Some people may like to use large printed maps to collect information, but digitally collecting and storing information makes it easier for First Nations to keep copies of the information in multiple locations as well as quickly share it over the internet if needed. Digital mapping also makes it easier to edit the information afterwards, and because the information is easily shareable, working with others outside of the First Nation (like planners or government officials) becomes easier.

Why Is Mapping Indigenous Knowledge Important?

Many communities are in danger of losing Indigenous Knowledge. Rapid changes in the way of life of local communities and hundreds of years of colonization have caused younger generations to under-value or have difficulty learning Traditional Knowledge from Elders.[1] Documenting oral history and Traditional Knowledge from Elders for future generations is now an urgent priority for many First Nations.

Mapping Indigenous Knowledge can also help First Nations defend the credibility of their land-use and claims to the land — within government or legal meetings.[2]
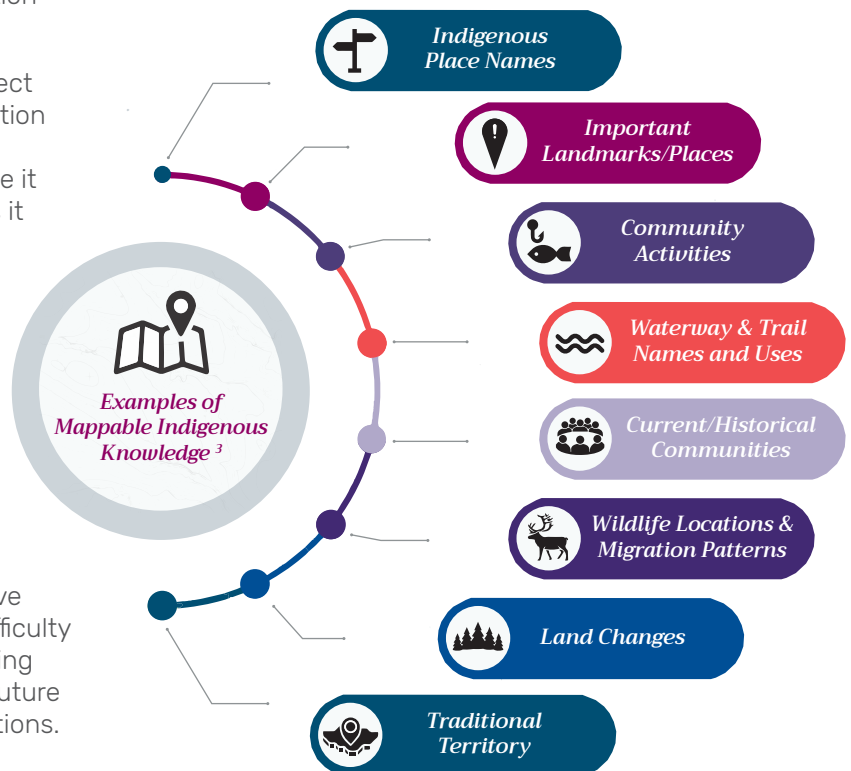

Examples of Mappable Indigenous Knowledge [3]

- Indigenous Place Names
- Important Landmarks/Places
- Community Activities
- Waterway & Trail Names and Uses
- Current/Historical Communities
- Wildlife Locations & Migration Patterns
- Land Changes
- Traditional Territory

Figure 1 | *Examples of mappable Indigenous Knowledge.*
Adapted from (Royal Canadian Geographical Society. *Indigenous Peoples Atlas of Canada = Atlas Des Peuples Autochtones Du Canada. First ed.*, (Royal Canadian Geographical Society), 2018; Icons from https://thenounproject.com)

For more information on mapping Traditional Knowledge, see the *Building a Community Atlas* fact sheet.

What Is Digital Mapping?

You can use many types of mapping programs. ArcMap, QGIS, and Google Earth Pro are three popular mapping programs.

ArcMap and QGIS are professional mapping programs. They need strong computers to run smoothly, and both offer a large number of tools to create accurate and detailed mapping information. The main difference between the two programs is the cost and which computer systems they work on. ArcMap needs to be purchased and typically can only work on computers with a Windows system.[4] QGIS is free to use and works on both Windows and Mac systems (as well as others).[5]

Google Earth Pro can be easy to learn and is commonly used by mapping professionals and the general public. The program is also free, works on limited internet connections, and can be used on many types of computers. The program can use and display ArcMap or QGIS files by simply dragging the file onto the map.

Because Google Earth Pro contains less tools than ArcMap or QGIS, the information created on it may not be as accurate or detailed as the other two programs. Google Earth Pro also creates different file types (KML/KMZ) with less information.[6] If you choose to use Google Earth, you'll likely be using the 'Pin' and 'Polygon' tool the most. Once information is added, the created layers in the program can be saved by clicking on the layer folder on the left side of the page and selecting 'Save As'.

For smaller communities or communities with limited internet connectivity, using Google Earth Pro may be the best option for mapping Indigenous Knowledge.

> For more information on how to use Google Earth Pro, please see the 'FURTHER READING' section at the end of this Fact Sheet.

How Do You Prepare for and Perform Mapping Interviews?

Ideal Location for the Interview

The interview location should be accessible to the participants. The ideal location for having a digital mapping interview session would be in a private room with a table and some source of internet connection. A table is needed for equipment, beverages, and additional paper documents. Quiet and private locations are good if the interviews are being recorded or if the information from the participants is confidential. If using a projector, try to get a darker room with a clear white wall or screen to project the map onto.[7]

> For more information, see the *Creating a Communication Plan* and *Selecting TLE Lands* fact sheets.

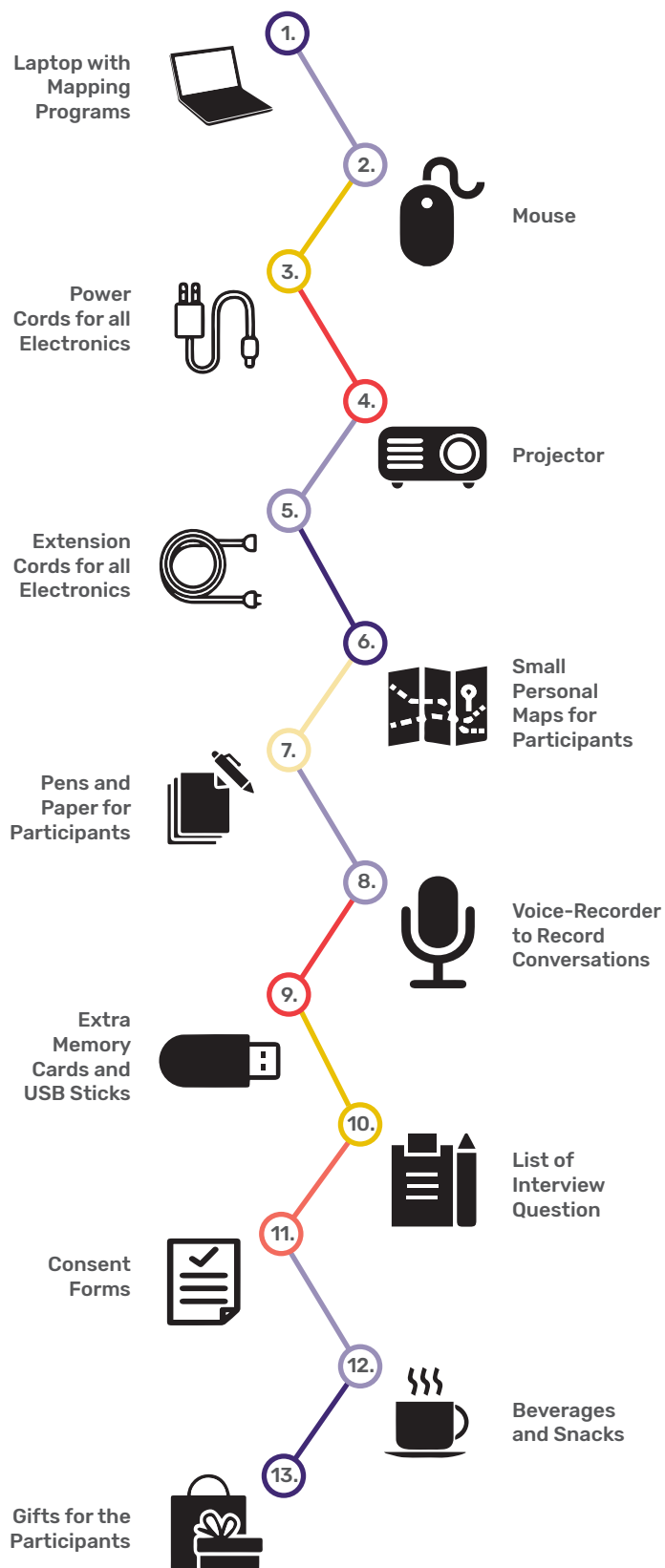## EQUIPMENT, DOCUMENTS, AND SUPPLIES TO CONSIDER BRINGING FOR MAPPING INTERVIEWS

1. Laptop with Mapping Programs
2. Mouse
3. Power Cords for all Electronics
4. Projector
5. Extension Cords for all Electronics
6. Small Personal Maps for Participants
7. Pens and Paper for Participants
8. Voice-Recorder to Record Conversations
9. Extra Memory Cards and USB Sticks
10. List of Interview Question
11. Consent Forms
12. Beverages and Snacks
13. Gifts for the Participants

Figure 2 | *What to bring to mapping interviews.*
Source (Icons from https://thenounproject.com)

People Involved in the Interview

If possible, it is good to have around two people collecting information, one community liaison, and up to four interview participants at a time. A community liaison would be somebody familiar with the community and the surrounding area, as well as someone the community trusts. If there are more than four interview participants, it may not allow each participant to fully participate in the interview.[8]

Performing Mapping Interviews

Mapping interviews can take up to one to three hours. If the interview is longer than an hour, try to take a break at some point to avoid overwhelming the participants.[9] Try to make the interviews feel casual, this can help the participants feel comfortable. Also, try to be flexible with interview times and how the interview questions are asked. Before starting, try to let the participants know about the project, what will happen during the interview, and what the jobs of the people in the room are.

Try to work on one clear mapping target at a time within the interview so it doesn't become confusing to the participants. Also try to make sure all of the interviews follow the same methods and procedures.[10]

If some information feels confidential, always err on the side of caution.[11] Difficult or unpleasant interviews can scare away future participants, so try to make them comfortable and friendly. When finished, if possible try to let the participants know about the next steps with the project and ask for their help to check the spelling of location names.

What Are Possible Interview and Mapping Challenges?

Sometimes you won't get mappable information during the interviews. Just make a note if someone participated in the interview but didn't give any mappable information.[12]

Sometimes information is given too quickly. Try to wait for the right moment to have them share the information again.

When collecting data, try to mark locations with points rather than circling or marking the location boundaries. In some situations, mapping the boundaries of an Indigenous location may create unnecessary limitations on the area because it can restrict the importance of the location within and around the marked boundary.[13]

Sometimes participants will not be familiar with how your map works, so be prepared for these challenges and leave time to share your knowledge about the mapping process with participants.[14]

Final Thoughts

Collecting and digitally storing Indigenous Knowledge can help preserve large amounts of traditional and cultural Indigenous Knowledge from Elders and community. Learning how to collect and map the knowledge helps educate youth and may also help defend the credibility of future land claims.

Further Reading

Building a Community Atlas by Bradley Muller

This fact sheet outlines the typical purpose, process, and management of community atlas'.

Creating a Communication Plan by Isaac Laapah

This fact sheet discusses what an engagement and communication plan is, its components, how to structure it and how to measure the success of the plan.

Selecting TLE Lands by Justin Loma

The fact sheet explains the five stages of selection for implementing Treaty Land Entitlement. This includes land use mapping skills; land selection; and accessing and finding the desired land.

ArcMap and ArcGIS

A pay-to-use mapping program for Windows computers.

To download or for more information, please visit https://www.esri.com/en-us/arcgis/about-arcgis/overview.

Further Reading (continued)

QGIS

A free mapping program. Can be downloaded on Windows, macOS, Linux and Android computers.

To download or for more information, please visit https://qgis.org/en/site/.

Google Earth

You can download Google Earth Pro using the link below. Within the website, it will give three download options. Please select the "Download Google Earth Pro on Desktop" option and follow their instructions to install the program.

https://www.google.com/earth/versions/

Google Earth Pro: A Tutorial by the University of Waterloo

Provides more information on how to use Google Earth Pro.

https://uwaterloo.ca/library/geospatial/sites/ca.library.geospatial/files/uploads/files/google_earth_2016.pdf

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Endnotes

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