Where am I? : Exploring GIS Data Collection Tools

Introduction

A Geographic Information System (GIS) is a system that creates, manages, analyses, and maps all types of data. GIS connects data to a map and provides a foundation for mapping and analysis used in science and almost every industry. (ESRI, 2023). One essential task in GIS fieldwork is recording data using Global Positioning System (GPS) in some instruments such as sophisticated total stations, hand GPS receivers, and even in our smartphones. These data is recorded based on a Geographic Coordinate System (GCS) that is a system of **latitude** and **longitude** coordinates that defines the position of a point on the Earth's surface (GIS Lounge, 2023). We will record and discuss some of latitude/longitude data in the field.

Aims
- To explore how to locate points in the field.
- To use and evaluate 2 types of GIS tools.
- To reflect on precision and accuracy concepts.

Exercise
Drive to Newlands Hause (free parking), then, in groups of 3-4, follow the three parts of this exercise:

1. Observe and select

Explore the place at first glance and think about:
- What point might be more relevant?
- Is the potential point variable in time and space?
- How many point should I record?

2. Data collection

Having selected at least **five points**, use the GPS receiver and **My GPS Coordinates** app to read and record the latitude and longitude on either two formats: rational numbers (i.e. 10.123456) or sexagesimal system (i.e. 10º 10' 10'').

3. Discusss and reflect

After collecting data of geographic coordinates (latitude and longitud), we'll reconvene for a chat about what you found to discuss and reflect on:
- What point did you select and why?
- How different the data is?
- Which might be the reasons of the differences?
- How can we improve data quality?

Equipment
- Mobile phone with waterproof case x 1 (one each group)
- Pencil/pen x 1 (one each)
- A4 Clip board x 1 (one each group)
- GPS receiver x 4 (one each group)
- Student Handout x 1