Report of U3A Geography Group meeting 21st January 2021

Twenty-eight attended the virtual meeting of the Geography Group on the 21st January at which Les Knight, a member of the group, gave a demonstration of a Geographic Information System (GIS). A GIS is a computer program designed to display digital maps and associated spatial data. Today, everyone has used one, perhaps unknowingly. Each time you ask Google for the nearest Indian restaurant or ask how many COVID cases are in your area, you are interacting with a GIS, often showing the results as a map. Until recently they were the prerogative of large organisations who could afford powerful computers, expensive software and pay for digital mapping. All this has changed now and one of the aims of the talk was to demonstrate that anyone with a modern computer and with a modicum of computer knowledge can make use of them at home for free.

The democratisation of GISs has come about for three reasons. Firstly, the massive increase in computer power available in modern home computers. Secondly, the release of Quantum GIS (QGIS) a completely free, fully functional program, maintained by a consortium of over 200 programmers worldwide. Lastly, the availability of a wide range of free digital mapping and satellite images that can be used as a backcloth for your data.

When we think of maps in Great Britain, we tend to think of the Ordnance Survey (OS) and their excellent mapping. Unfortunately, the Government has taken a very short-sighted approach and has required the OS to make a profit, which it can only do by selling their most popular mapping including their Explorer and Landranger series. This led to campaign in the Guardian to 'Free our Data'; after all, as taxpayers we have already paid for the mapping through our taxes, why should we have to pay twice. In typical British style the Government has acted 'too little to late' and allowed the OS to release digital mapping for free but not for their most popular products mentioned above. This, plus the availability of accurate hand-held Global Positioning System (GPS) receivers, set in motion a trend for individuals to collectively create and share their own maps. These Open Street Maps are now available for free and cover large parts of the world. They are used by organisations such as Apple, Facebook Uber etc., and are undermining the values of the OS mapping.

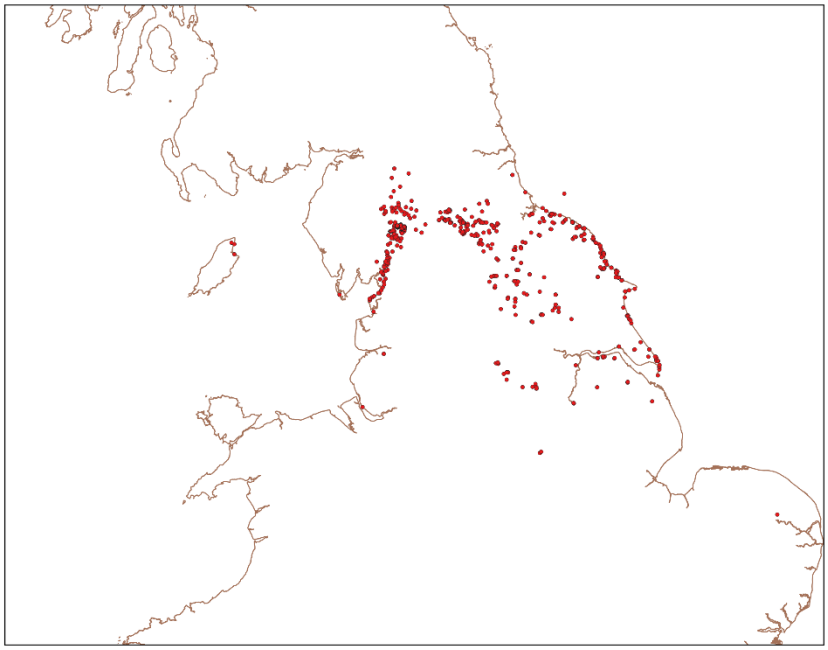
After demonstrating a range of types of free digital mapping available for Britain, data on the distribution of more than 20,000 lichens recorded in North West Yorkshire was shown against various mapping backgrounds. The flexibility to change how these can be shown, including colour coding the results by characteristics of the data, e.g., year recorded was demonstrated. By using the mouse to select a point it is possible to interrogate directly the underlying data, emphasising that a GIS is not just a map but a display of spatially distributed data. An example of a map, ready to be printed is shown below. In this case it is the distribution of glacial erratics derived from the Shap Granite that comes to the surface north of Tebay, Cumberland.

After coffee, Les showed how to incorporate historical maps available only as pictures and how to create your own maps by drawing lines and polygons using other mapping as a background. This can be used for example to show ancient trackways and perhaps varying land use within individual fields etc, etc.

In summary, today, the main limitation of what can be shown with spatial data using a GIS is only limited by the imagination of the user.

A beginners guide to QGIS can be found at: Celebrating Our Woodland Heritage QGIS 3.4.6 Manual (celebrate-our-woodland.co.uk)

Distribution of Shap Granite Glacial Erratics



LEGEND

Erratic boulders
- Shap Granite Erratics

Outcrops
- Shap Granite outcrop

Background
- coastline

0 50 100 km

Coastline from Ordnance Survey. Data correct to January 2021