GIS Glossary

ArcCatalog Part of the *ArcGIS* package, primarily used for managing spatial files such as *shapefiles*

ArcGIS A commercial GIS software created by ESRI, consisting of *ArcMap*, *ArcCatalog* and *ArcScene*

ArcMap Part of *ArcGIS*, the main program for creating and editing spatial data and maps

ArcScene Part of *ArcGIS*, used for 3D data

Attribute table The table of additional information associated with each *shapefile* (e.g. country names); access by right-clicking on the layer and selecting Open Attribute Table

BNG (British National Grid) A *coordinate system* used to represent locations in Great Britain, consisting of *eastings* and *northings*, e.g. 603125, 112589 (see also *UTM* and *WGS1984*)

Categorical A variable that has a series of values with no inherent order, e.g. country names, also known as *nominal* (see also *variable type*, *quantitative*)

Choropleth A type of mapping where different colours are used to represent difference values; can use *categorical* and *ordinal* data

Classes The groups data are put into for a *choropleth* map

Classification How the data are classified into different *classes* for a choropleth map (see also *jenks*, *equal count*, *equal interval* and *standard deviation*

Coordinates The numbers representing a specific location, usually presented in pairs (see also *latitude*, *longitude*, *WGS1984*, *BNG* and *UTM*)

Coordinate system The type of coordinates that are used to represent a specific location (see also *WGS1984*, *BNG* and *projection*)

Correlation A measure of how much two variables are related, measured using a R^2 value

CSV (Comma separated values) A standard format of *tabular data*, can be opened in Excel

CSVT An optional file for use with *CSV* files which specifies the *variable type* of each column

Data frame (ArcMap) A section of the map in Layout View containing specific layers of spatial data

Data type How data is stored within the *Attribute table*, can be *integer* (whole numbers), *real* (decimal numbers) and *string* (text)

DEM Digital Elevation Model, a *raster* representation of the height of the earth's surface

Eastings A *coordinate* that specifies the distance east, in meters, from the coordinates 0,0 south-west of the Isles of Scilly (see also *BNG* and *northings*)

Equal count (Quantile) *Classification* method where data are split into a number of groups by putting the same number of data items into each group, also known as *quantile*, see also *classification*

Equal interval *Classification* method where data are split into *classes* that are evenly distributed, e.g. 0-20%, 20-40%, etc., see also *classification*

Feature class One layer within a *personal geodatabase*; can contain one of *points, lines* and *polygons*

Field calculator Used to calculate new values (e.g. differences) from existing values for all rows in a vector layer, accessed from the *Attribute table*

Geodatabase See *personal geodatabase*

Geographic Information Science (GIS) The development of the tools, software and processes used in *Geographic Information Systems*

Geographic Information Systems (GIS) Using spatial data to answer questions about our world (see also *Geographic Information Science*)

GeoJSON Vector spatial data file, consisting of *points*, *lines* and *polygons*; all saved in one file

GPS (Global Positioning System) a series of 24 satellites in orbit around the earth which allow a GPS device to locate itself, with an accuracy of 1m to 10m

Inset Map A small map included on the main map to aid orientation, e.g. a map of Ghana might include an *inset map* of Africa to show where Ghana is

Integer A whole number used to represent data, can be used in a *choropleth* map (see also *data type*)

Jenks (natural breaks) *Classification* method based on the Jenks algorithm which groups similar data values together, also known as *natural breaks*, see also *classification*

Joining The process of linking attribute information to spatial data, often used so the information can be shown on a *choropleth* map

Latitude A *coordinate* that specifies the distance north or south, ranging from 0° at the Equator to 90° (North or South) at the poles (see also *WGS1984* and *longitude*)

Layers When you add data into a GIS each different file appears as a different *layer*; this allows different datasets to be overlaid on one another (see also *Table of contents* and *Layers window*)

Layers window (QGIS) Panel on the left hand side of QGIS, showing the different GIS layers in your map; the order of the layers can be changed (known as the *Table of contents* in *ArcMap*)

Legend An important part of any map, showing what the symbols or colours used on the map represent

Lines Used in *vector* data sets to indicate a linear feature, such as rivers, roads or railways; is a series of *points* joined together with lines

Longitude A *coordinate* that specifies the distance east or west, ranging from 0° at the Prime Meridian to 180° (East or West) (see also *WGS1984* and *latitude*)

MapInfo A commercial GIS software, created by Pitney Bowes

MXD project file (.mxd) (ArcMap) A project file

for *ArcMap* which contains links to all the data files e.g. *shapefiles* or *geodatabases*) and information on how they are symbolised; the *MXD* file does not contain the data itself (see also *QGIS project file*)

Nominal A variable that has a series of values with no inherent order, e.g. country names, also known as *categorical* (see also *variable type*, *ordinal* and *quantitative*)

North arrow Used to show the direction of North on a map, used to aid orientation (see also *inset map*)

Northings A coordinate that specifies the distance north, in meters, from the *coordinates* 0,0 south-west of the Isles of Scilly (see also *BNG* and *eastings*)

Ordinal Similar to a categorical variable, but with a clear order, e.g. high priority, medium priority, and low priority (see also *variable type*, *quantitative*)

Personal geodatabase A type vector of spatial data file, consisting of one or more *feature classes*; can only be used in *ArcGIS* (see also *feature class*)

Pixel An individual unit in a *raster* data set, the size of the *resolution* squared (i.e. for a 100m resolution *raster* data set, each *pixel* would be 100m x 100m, covering 10,000 square meters (or 1 hectare) of land)

Points A *vector* data type used to indicate a specific location, such as sample collection points, bird nest sites, towns or cities

Polygons A *vector* data type used to indicate areas, e.g. land parcels, counties and fields; is a series of *points* joined with *lines* and closed to indicate an area

Print composer The tool in QGIS used to design maps and add a *legend*, *scale bar*, *north arrow* and any required acknowledgements or copyright

Projection The way the sphere shaped earth is distorted to fit on a flat piece of paper (see also *WGS1984*, *BNG* and *coordinate system*)

QGIS *(previously Quantum GIS)* An open source GIS created as broadly similar to *ArcMap* which is free for anyone to download, use and improve

QGIS project file (.qgs) (QGIS) A project file for *QGIS* which contains links to all the data files (such as *shapefiles* and/or *GeoJSON* files) and information on how they are symbolised; the *project file* does not contain the data itself (see also *MXD file*)

Quantile (equal count) *Classification* method where data are split into a number of groups by putting the same number of data items into each group, also known as *equal count*, see also *classification*

Quantitative A numeric variable with an inherent order, e.g. GDP per capita, (see also *variable type*)

R^2 The *correlation* coefficient of two different data sets, a value of 1 is a strong positive *correlation*, -1 is a strong negative *correlation*

Raster A type of spatial data used with GIS, consisting of a regular grid of points spaced at a set distance (the *resolution*); often used to represent heights (DEM) or temperature data (see also *vector*)

Raster calculator Used with *raster* data to calculate differences (subtract) or calculate other indices (e.g. NDVI)

Real A decimal number used to represent data, can be used in a *choropleth* map (see also *data type*)

Resolution The size of each *pixel* in a *raster* data set (e.g. 100 meters, 1km, 100km) (see also *pixel*)

Sat-nav A navigation system in cars, which uses *GPS* to direct the driver to their destination

Scale The ratio of units of distance on the map to units of distance in the real world; for example 1:25,000 means that 1cm on the map represents 25,000cm (or 250m) in the real world; usually shown on a *scale bar*

Scale bar Used to show the *scale* of a map

Shapefile A type vector of spatial data file, consisting of one of *points*, *lines* or *polygons*; represented in *GIS* as one file but in fact consisting of multiple files (between 4 and 6 files, with extensions of .shp, .dbf, .shx and .prj)

Standard deviation *Classification* method based on standard deviation and mean of the data set

String A piece of text (e.g. a name) used to represent data, cannot be used in a *choropleth* map (see also *data type*, *real* and *integer*

Style (QGIS) / **Symbology** (ArcMap) The options to choose the colours and/or symbols to represent data on the map; accessed through right-clicking on the layer and selecting properties and navigating to the Style tab)

Table of contents (ArcMap) Panel on the left hand side of *ArcMap*, showing the different *GIS layers* in your map; the order of the layers can be changed (known as the *Layers window* in QGIS)

Tabular data Data laid out in rows and columns, as used in Excel (see also *CSV*)

UTM (Universal Transverse Mercator) A type of *coordinate system* used to represent any location in the world, consisting of a series of zones and a set of *coordinates* for each zone, in meters (see also *BNG* and *WGS1984*)

Variable type Information on the type of information within a variable, can be *categorical*, *ordinal* or *nominal*

Vector A type of spatial data used with *GIS*, consisting of *points*, *lines* and *polygons* (see also *raster*)

Vertex (vertices) Name for each of the points that connect the *line* segments of a *line* or *polygon shapefile*

WGS1984 A *coordinate system* used to represent any location in the world, consisting of *latitude* and *longitude* e.g. 51.0426 N, 1.3772 E or 51° 2' 33.53" N, 1° 22' 38.23" E (see also *BNG* and *UTM*)