GIS Glossary

Terms in *Italics* are defined in the glossary

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

ArcGIS A commercial package of GIS software created by ESRI, consists of *ArcMap*, *ArcCatalog*, *ArcScene* and ArcGlobe

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

ArcScene Part of the *ArcGIS* package, primarily used for 3D spatial 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

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

Categorical A type of data that has different values but no particular order, for example country names (see also *ordinal*)

Choropleth A type of mapping where different colours are used to represent difference values; can either be *categorical* or *ordinal*

Coordinates The numbers representing a specific location, usually presented in pairs (see also *latitude, longitude, WGS1984, British National Grid*)

Coordinate System The type of coordinates that are used to represent a specific location (see also *WGS1984, British National Grid*)

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

DEM Digital Elevation Model, a *raster* representation of the height of the Earths 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 *British National Grid* and *northings*)

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

Geodatabase See *personal geodatabase*

Geographic Information Science The development of the tools, software and processes used in Geographic Information Systems. These can both be shortened to GIS

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

GPS Global Positioning System, a series of 24 satellites in orbit around the Earth which allow a GPS device to locate itself, typically with an accuracy of 1m – 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

Joining The process of linking attribute information to spatial data so the information can be shown on a *choropleth* map (practical 4)

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 (ArcGIS) and Layers window (QGIS)*)

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 A key part of any map, showing what the symbols or colours 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*)

MXD file (.mxd) (ArcMap) A project file for *ArcMap* which contains links to all the data files (such as *shapefiles* and/or *geodatabases*) and information on

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how they are symbolised; the project file does not contain the data itself (see also *QGIS Project file*)

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 *British National Grid* and *eastings*)

Ordinal A type of data that has different values which have an order, for example population (see also *categorical*)

Personal Geodatabase A type vector of spatial data file, consisting of one or more *feature classes*; can only be opened and used in *ArcGIS* although can be read is some versions of *QGIS* (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 of land)

Points Used in *vector* data sets to indicate a specific location, such as sample collection points, bird nest sites, towns or cities

Polygons Used in *vector* data sets to indicate areas, such as land parcels, counties and fields; is essentially a series of points joined with lines and closed to indicate an area

Projection The way the sphere shaped Earth is distorted to fit on a flat piece of paper (see also *WGS1984, British National Grid, coordinate system*)

QGIS (previously Quantum GIS) An open source *GIS* created as broadly similar to *ArcMap* (although it has fewer features) 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 *geodatabases*) and information on how they are symbolised; the project file does not contain the data itself (see also *MXD file*)

R^2 value The correlation coefficient of two different data sets, a value of 1 means they have a strong positive correlation, a value of -1 means they have 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*)

Resolution The space between each *pixel* in a *raster* data set (e.g. 100 meters, 1km, 100km)

Sat-nav A navigation system, usually 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 *ArcMap* and *ArcCatalog* as one file but in fact consisting of multiple files (between 4 and 6 files, with extensions of .shp, .dbf, .shx, .prj)

Style (QGIS) 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 (see also *symbology (ArcMap)*)

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 Symbology tab (see also *style (QGIS)*)

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*)

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

Vertex (verticies) Technical name for each of the points that connect the line segments of a *line* or *polygon shapefile*

WGS1984 A type of coordinate system used to represent any location in the world, consisting of *latitude* and *longitude* e.g.
51.042649, 1.377288 or
51° 2’ 33.5358’’, 1° 22’ 38.2368’’

Version 2 for ArcGIS, QGIS and GeoDa by Nick Bearman (08/03/2016)

You may also find this GIS Glossary online useful (http://wiki.gis.com/wiki/index.php/GIS_Glossary) as well as these for ESRI ArcGIS (http://support.esri.com/en/knowledgebase/Gisdictionary/browse) and QGIS (http://hub.qgis.org/wiki/17/Glossary_of_GIS)