2021 – ArcGIS Pro

ArcGIS Pro Glossary

Warthog Information Services

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ArcGIS Pro Glossary

(General Terms - Data Terms - Tools)

See also ***ESRI's Dictionary*** *http://support.esri.com/other-resources/gis-dictionary/*

- **.aprx file** - See *Project File*
- **ArcGIS Desktop** - a *GIS* program created by *ESRI* for performing spatial analysis and *cartography*. See also *ArcGIS Online* and *ArcGIS Pro*. ArcGIS Desktop includes:
  - **ArcMap** - for spatial analysis and cartography
  - **ArcCatalog** - for spatial data management
    - **Catalog** - a slightly simplified version of ArcCatalog, available in ArcMap
  - **ArcToolbox** - for geoprocessing (available within ArcMap or ArcCatalog)
  - **ArcGIS PRO** - a newer *GIS* program created by *ESRI* (the successor to *ArcMap, ArcCatalog and ArcToolbox*), including *Catalog* and *Geoprocessing* panes
- **ArcGIS License Levels** - different levels of functionality that can be purchased for *ArcGIS Desktop*. As you pay more the number of geoprocessing tools increases.
  - **Basic**
  - **Standard**
  - **Advanced**
- **ArcGIS Online** - an online GIS platform for storing, viewing and geoprocessing spatial data. Includes many templates for creating and sharing web maps and "**Story Maps.**"
- **ArcMap** - the main viewing and mapping application of the older *ArcGIS Desktop*:
  - **.mxd** - an ArcMap project file (similar to an ArcGIS Pro .aprx project file)
- **Attributes / Attribute Table** (*Vector Data*) - Attributes are the (non-spatial) tabular data associated with *features* in a *Feature Class*. Each *feature* in the layer will have one **row** or record in the attribute table. Attributes are stored in Fields (or **columns**) in the table. See *Entities and Attributes*.
- **Basemap** - generically, the basemap refers to the spatial data layers that make up the base, or background data for the map, upon which

the Operational (or Thematic) data layers are shown. In ArcGIS Pro, a Basemap is an ESRI, pre-made, online basemap layer that can be turned on or off as part of a *map view*. Common ESRI Basemaps include Imagery (satellite and/or air photo imagery), Streets, Topographic, etc. ESRI Basemap can be used to quickly produce a cartographic product.

- **Buffer** - a *Vector GIS* tool used to create a polygon around the features of a *feature class* by a measured unit of distance. A buffer is useful for proximity analysis.
- **Clip** - a *Vector GIS* tool for extracting the features in one *feature class* (*vector data* layer) based upon their location within the boundary of the features in another *feature class* - like a cookie cutter. See also *Erase*.
- **Catalog View / Catalog Pane** – a window or pane for managing spatial data (i.e., operations such as copying, deleting, renaming, or browsing spatial data sets)
- **Cartography** - the art and science of making maps. Common cartographic terms:
    - **Map** – in ArcGIS Pro, a map (or data) view including the spatial data itself along with geographically located *Labels* and *Annotation*
    - **Layout** – in ArcGIS Pro, the page view for the cartographic product, including the map itself as well as a north arrow, scale indicator, title, map credits, etc.
    - **Scale Indicator** – a scale bar, text or representative fraction indicating the scale for a map. See *Scale*.
    - **North Arrow / Indicator** - an indicator of the cardinal directions (north, south, east, west) on a map, typically by a North Arrow, a Compass Rose or lines of Latitude and Longitude
    - **Locator Map** - an Inset Map illustrating the location of the main map (and little else)
    - **Detail Map** - an Inset Map allowing more detail for a specific location within the main map
    - **Neatline / Border** - a line around specific elements of a map or the entire map / page
    - **Map Credits** – information about the map, optionally including the cartographer's name, the date of the map, the data of the data, the source of the data, the projection and/or coordinate system used, etc.
- **Coordinate System** - an X-Y reference framework for spatial data, used to define the positions in space in either two or three dimensions. Most coordinate systems are Cartesian coordinate systems (with orthogonal

X and Y axis). Latitude-Longitude is a *Spherical* Coordinate System (non-orthogonal X and Y axis). *See also Datum, Projection.* Common Coordinate Systems:
    - Lat-Long (Latitude-Longitude) - Decimal Degrees
    - UTM (Universal Transverse Mercator - Meters
    - SPCS (State Plane Coordinate System) - Feet or Meters
- **Coverage** - a *vector data* model for storing geographic *features* (*feature classes*). The Coverage data model is an older, largely outdated format (ArcGIS Pro ***cannot*** use Coverage data). *See also Shapefile, Geodatabase, Feature Class.*
- **Data Layer** - a generic term for a spatial dataset. Data Layers can be either *Vector Data* or *Raster Data*. See also *Feature Class* and *Layer File*.
- **Datum** - a set of reference points tied to a model of the earth used for creating a map *Projection* and/or *Coordinate System* (see). Common Datums used in the USA:
    - **NAD-27** (North American Datum of 1927)
    - **NAD-83** (North American Datum of 1983)
    - **WGS-84** (World Geodetic Survey of 1984) (used for *GPS*)
- **Definition Query** (*Vector Data*) - a means of filtering or limiting the *features* in a *feature class* using *SQL* to query the attribute Fields for specific values. Only features that meet the specified query will be displayed in the map (or included in the *Attribute Table*). See also *Layer File*.
- **DEM** - a *Digital Elevation Model* is a *raster* dataset containing elevation values. Can be used for modeling the earth's surface and for analysis such as slope, watersheds, etc. See also *TIN*.
- **DRG** - a *Digital Raster Graphic* is a scanned USGS Topo Map, georeferenced for use in a GIS
- **Erase** - a *Vector GIS* tool that removes or deletes features from one *feature class* that overlap features in another *feature class*. The Erase tool is *not* included with the *Basic* license level of ArcGIS. See also *Clip*.
- **Entities and Attributes** (*Vector Data*) - spatial features and their corresponding tabular data. Each entity (feature) has a specific **row** in the *Feature Layer's Attribute Table* where the *Attributes* for that entity are stored (in **columns**).
- **ESRI** - Environmental Systems Research Institute, the company that makes *ArcGIS Desktop, ArcGIS Pro*, *ArcGIS Online, ArcMap,* etc... ESRI is based in Redlands, Ca.
- **Event Table / Event Layer** - see *X-Y Data Table / X-Y Data Layer*

- **Extensions** - additional tools and functionality that can be added to ArcGIS Desktop to extend the functionality of the software. Some extensions are free, others must be purchased; some are from ESRI, others are from third parties). Common ESRI extensions include:
    - **Spatial Analyst** - for performing Raster Data analysis (surface, hydrology, etc.)
    - **3D Analyst** - for performing 3D data analysis (viewsheds, terrains, etc.)
- **Feature** (*Vector Data*) - a single geographic entity, in the form of a *point, line or polygon*, in a collection of features making up a *Feature Class* (a data layer).
- **Feature Class** - a collection of *vector features* with the same geometry type (*point, line, or polygon*), the same *attribute* fields, and the same spatial reference (*coordinate system*). Feature classes can be stored in *Geodatabases, Shapefiles, Coverages*, or other data formats. Note that the term Feature Class is used by ESRI both as a generic term for any *Vector Data* and as a specific term for a *Geodatabase Feature Class* (as opposed to a shapefile feature class or as opposed to raster data that can also be stored in a *Geodatabase*).
- **Feature Dataset** - a collection of *Feature Classes* stored together within a *Geodatabase*. A Feature Dataset can be thought as a subset (or sub-folder) within a *Geodatabase*.
- **Field** - A column of an *attribute table* containing the values for each *feature* (or *entity*) in a *data layer*. *See also Attribute Table, Record.*
- **Geodatabase** - primarily a *vector* file format for storing *points, lines, polygons* which are stored as *Feature Classes* (see), optionally in *Feature Datasets* (see). Geodatabases can also include *raster data, tables*, *annotation*, *tools*, *models*, etc.
- **GIS** - A Geographic Information ***System*** is a tool for analyzing spatial data. More broadly, a GIS includes the data, hardware, software, people, and procedure making up a complete "system." Generally, however GIS is used to refer to the specific software used for spatial data (i.e., ArcGIS Desktop or ArcGIS Pro). QGIS is a free, open-source GIS software.
    - **GIS** – (sometimes GIScience) Geographic Information ***Science*** is the scientific discipline that studies data structures and computational techniques to capture, represent, process, and analyze spatial information.
- **Geoprocessing** - creating, editing, manipulating and/or managing spatial data sets, using *tools* (primarily via the Geoprocessing pane).
- **GPS** - Global Positioning System is a network of satellites transmitting location information that can be used to estimate location on the ground using a GPS receiver. GPS is a common source of *Vector Data*

for use in a GIS and is often stored as X-Y data tables. **GPX** is a common file format for exchanging GPS data. The GPS system uses the *WGS-84 Datum* and Latitude-Longitude (in decimal degrees) as the *Coordinate System*. GPS is maintained by the USA. There are similar GNSS (Global Navigation Satellite Systems) maintained by Russia (**Glonass**) and the EU (**Galileo**).

- **Grids** - a *raster data* format. Each uniform, square cell of a grid contains a numerical value which can represent elevation, rainfall, population, slope, etc. See *Raster Data*.
- **Hillshade** (data format) - A *raster data* layer derived from a *DEM* to create a three-dimensional effect that provides a sense of visual relief for cartography. See also *Hillshade* (tool). Bathymetric (underwater) hillshades are sometimes referred to as "*Floorshades*," depicting the surface of the ocean or a lake.
- **Hillshade** (tool) - a *raster* tool for creating a *Hillshade* data layer from a *DEM*
- **Hydrology Toolset** - a collection of *raster* geoprocessing tools for analyzing surface water, including Flow Direction, Flow Accumulation, Stream networks, Watershed delineation, etc.
- **Intersect** - a *vector* tool for overlaying two (or more) *feature classes*. The output feature class contains only those features (or portions of features) that are common to all of the input layers.
- **Join** - a *Tabular* Join is a means of appending the fields of one *table* to those of another through an attribute or field common to both tables. A join is usually used to attach more attributes to the attribute table of a geographic layer. See also *Spatial Join*.
- **Labels / Annotation** - in *ArcGIS Pro*, **Labels** are automatically created and placed map text (derived from feature attributes); **Annotation** is map text stored in a *Geodatabase* that can be manually placed, modified and/or created.
- **Layer** - a spatial data set, such as a *shapefile, geodatabase feature class, grid* or *raster*.
- **Layer File (.lyrx)** - a file format (with a .lyrx extension) that contains reference information (i.e. a pointer or shortcut) to a *data layer*. Layer Files can include symbology, *Labels*, *Definition Queries*, etc. and can be added to a project file similar to other data.
- **Layout View** - in ArcGIS Pro, the page *View* for a cartographic product. A Layout can include one or more Map Frames as well as a north arrow, scale indicator, title, map credits, etc. See also *Map View, Cartography*.
- **Lidar** (LIght Detection And Ranging) - elevation data collected from an airplane via bouncing laser points off of the earth's surface and measuring the time it takes for the laser pulse to bounce back to the

aircraft. Lidar data begins as a (massive) series of *point features* (*vector data*) but is often converted to *raster data,* a *TIN* or a *Terrain*. Lidar data is typically very high resolution and high accuracy. See also *DEM, Terrain, TIN*.

- **Lookup Table** - a *table* of terms and expanded information related to those terms that can be used by other tables to reduce the need to store the full information for each individual entity (via the use of a Tabular *Join*)
- **Map View / Map Frame** - in ArcGIS Pro, a map (or data) *View* including spatial data layers along with *Labels* and *Annotation*. Map views can be added to a Layout View as a *Map Frame*. See also *Layout View, Cartography*.
- **Metadata** - Information that describes the content, quality, condition, origin, and other characteristics of a data set or other piece of information. Metadata can be viewed, created or edited in the *Catalog View* or the *Catalog Pane*.
- **ModelBuilder / Models / Model View -** the ModelBuilder is a graphic application for combining multiple *tools* or **Processes** (each with an **Input** and an **Output**) into a workflow. Saved Models can be re-run, modified, shared, etc. Models can be built and edited in a Model *View*. See also *Tasks*.
- **Neatline / Border** - the border delineating and defining the extent of the data frame on a map and/or the outer border of a map containing all of the map elements (*data frame, north arrow, scale bar,* etc.). See *Cartography*.
- **Pane** - in ArcGIS Pro, a Pane is a dockable window with a specific set of commands or functions. For example, the *Geoprocessing* pane, the *Catalog* pane, a *Contents* pane.
- **Points, Lines, Polygons** - the three basic types of data types for *Vector data*
- **Project File (.aprx)** – an .aprx or Project file for ArcGIS Pro. An .aprx file contains information about the *Maps*, *Layouts*, data layers, *Models*, etc. used in the project. It stores the symbology, labels, cartography, etc. By default, the Project .aprx File has the same name as the *Project* itself. An .aprx file does not store any data. Rather, in includes pointers to spatial data sets stored elsewhere, with instructions as to how the data should be displayed.
- **Project Geodatabase** – the default storage location for data used in (or created by) a Project. By default, the Project Geodatabase has the same name as the Project itself.
- **Project / Project Folder** – an ArcGIS Project contains one or more *.aprx Project Files*, a *Project Geodatabase* and a *Project Toolbox*. By default,

the Project Folder has the same name as the Project File, the Project Geodatabase, and the Project Toolbox.

- **Project Toolbox** – the default storage location for *Models* or tools used in (or created by) a Project. By default, the Project Toolbox has the same name as the Project itself.
- **Projection** - a method by which the curved surface of the earth is portrayed on a flat surface. See also *Datum, Coordinate System*. Common Projections used in the USA include:
    - Mercator
    - Transverse Mercator
    - Lambert Conformal Conic
- **Python** - a scripting language used by *ESRI* for creating *geoprocessing* (or *cartographic* output) scripts within *ArcGIS Desktop*.
- **Raster Data** - a spatial data model that defines space as an array of equally sized cells arranged in rows and columns (i.e., a grid of cells like a checkerboard), with each cell having a value. Raster data can be Imagery (air photos, scanned maps, etc.) or Grids (numerical values, i.e., for elevation, rainfall, land cover, etc.). Raster data is best or mapping continuous datasets (is not as good for discrete features). See *Vector Data*.
- **Record** - a row of an *Attribute Table*. Each *feature* in a *feature class* has one row or record in the table containing the attributes for that *feature*. See also *Field*.
- **Ribbon** - in ArcGIS Pro, the *Ribbon* is the primary set of tools and commands, organized by tabs on the ribbon interface. *Core* ribbon tabs are always visible / available. *Contextual* tabs are only shown when appropriate based on the context of the current operation. The ribbon is customizable. See also *View* and *Pane*.
- **Scale** - the ratio or relationship between a distance on a map and the corresponding distance on the ground, commonly expressed as a fraction or ratio. A map scale of 1/100,000 or 1:100,000 means that one unit of measure on the map equals 100,000 of the same unit on the earth. Graphic scale bars are often used as a simpler way to illustrate scale on a map *Layout*.
- **Scene** - in ArcGIS Pro, a Scene is a 3-D *View* (like a map view, but for 3-D data. Scenes can be viewed in global view or local view.
- **Select by Attribute** - a means of selecting *features* by use of an attribute query using *SQL* (Structured Query Language) to query the *attribute fields* for specific values.
- **Select by Location** - a means of selecting *features* in one layer based on the location relative to the features in another layer.

- **Shapefile** - a *vector data* format for storing the location, shape, and attributes of geographic features. A "shapefile" is stored in a set of related files which make a single *Feature Class*. See also *Geodatabase, Coverage, Feature Class*.
- **Slope** - a *Raster* tool used to create a raster data set (referred to as a Slope layer) from a *DEM*. Each cell in the output Slope layer contains a value for the amount of slope between that cell's location and its neighboring cells. Slope values can be in either **Percent** or **Degrees**.
- **Spatial Join** - a GIS overlay *tool* used to append attribute data from one layer to the attribute table of another layer based on the relative location of the features in the two layers. See also *(Tabular) Join*.
- **SQL / Structured Query Language** - a syntax for querying, retrieving, and manipulating data from an attribute table. See also *Select by Attribute, Definition Query*.
- **Symbology** - colors and/or icons or other symbols applied to a dataset. Symbology is typically described as either **Qualitative** (also Categorical) or **Quantitative**.
- **Table** - see *Attribute Tables*
- **Task** - a set of preconfigured steps that capture a workflow. Tasks can be created, saved and re-used. Tasks can also be interactive (the user selects certain features or makes choices as part of the task operation. See also *ModelBuilder*.
- **Terrain** - a Terrain is a multi-resolution, surface data model derived from elevation features (points, lines, or polygons). Rather than being stored as a TIN or a Raster, a Terrain is stored as the original elevation features which can be displayed as a TIN (or as contour lines, etc.) on the fly. Terrains are stored in a *Geodatabase* and are technically a type of *Vector* data but are often classified as a unique type of data. See also *TIN*, *DEM, LIDAR*.
- **Tools** - specific processes that can be run to create or manipulate spatial data sets. Tools can be for either *raster* or *vector* data. See also *Geoprocessing* and *ArcGIS Desktop / Toolbox*
- **TIN** - a *Triangulated Irregular Network*. A *vector data* structure that partitions geographic space into contiguous, non-overlapping triangles. The vertices of each triangle are data points with x-, y-, and z-values. These points are connected by lines to form triangles. TINs are used to store and display surface models (similar to a *DEM*, but in a vector format). See also *Terrain, DEM*.
- **Union** - a *Vector* GIS overlay tool that combines two or more *polygon feature classes*, preserving both the attributes and the extend of all of the input layers.

- **Vector Data** - a spatial data model that represents geographic features as *points, lines, and polygons*. *Attributes* are associated with each vector *feature*. See also *Raster Data, TIN, Terrain*.
- **View** - in ArcGIS Pro, a *View* is the primary workspace / window. For example, a *Map* view, a *Layout* view, a *Model* view, the *Catalog* view, etc. See also *Ribbon* and *Pane*.
- **X-Y Data Table / X-Y Data Layer** - an X-Y Data file is a *table* that contains an X-coordinate field and a Y-coordinate field for a series of point locations. An X-Y Data Table can be used to display the locations of these *points* as an X-Y Data Layer (a very simple format for storing *point vector data*). Also referred to as Event Tables and Event Layers.

End of

ArcGIS Pro Glossary

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