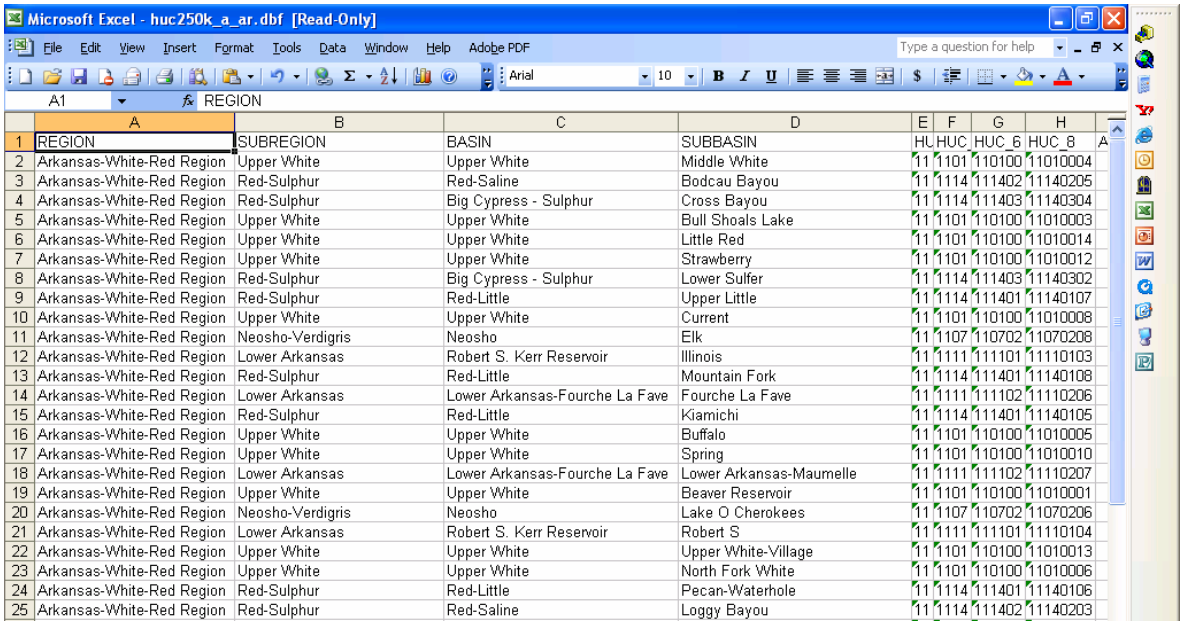
Glossary

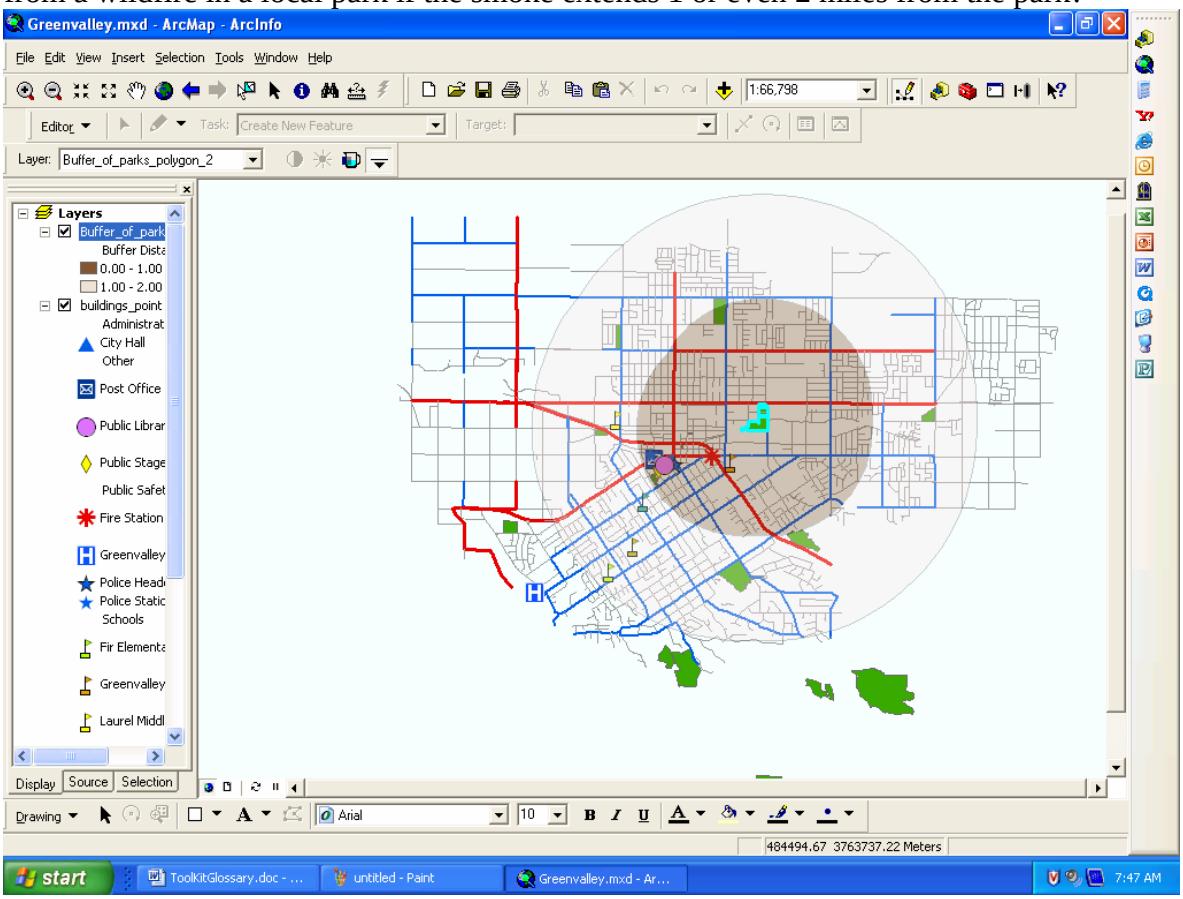
The **ArcGIS** suite:
ArcMap is just a part of the ArcGIS software package. ArcMap allows you to visualize, create, solve, and present your data in an inspiring format. ArcGIS is part of a suite of applications that includes ArcMap, ArcCatalog, and ArcToolbox. ArcView is the first of the functional levels of ArcGIS desktop. Toolkit operates on the second functional level, called ArcEditor which includes ArcView plus additional editing tools. ArcInfo is the third and most functional level and includes ArcView, ArcEditor, plus advanced tools. Extensions can be added to ArcGIS Desktop and include ArcGIS 3D Analyst, ArcGIS Spatial Analyst, ArcGIS Tracking Analyst. Most GIS users need to use only a few of the pieces to accomplish their goals. ArcPad is an additional software used for working with Geographic Information Systems (GIS) in the field and ArcIMS is used to deliver map services on the internet.

Attribute:
Information about a geographic feature. The information is usually stored in a table. For example, attributes of a river might include its name, length, average depth, region, and basin.



REGION	SUBREGION	BASIN	SUBBASIN	HU	HUC_	HUC_6	HUC_8
Arkansas-White-Red Region	Upper White	Upper White	Middle White	11	1101	110100	11010004
Arkansas-White-Red Region	Red-Sulphur	Red-Saline	Bodcau Bayou	11	1114	111402	11140205
Arkansas-White-Red Region	Red-Sulphur	Big Cypress - Sulphur	Cross Bayou	11	1114	111403	11140304
Arkansas-White-Red Region	Upper White	Upper White	Bull Shoals Lake	11	1101	110100	11010003
Arkansas-White-Red Region	Upper White	Upper White	Little Red	11	1101	110100	11010014
Arkansas-White-Red Region	Upper White	Upper White	Strawberry	11	1101	110100	11010012
Arkansas-White-Red Region	Red-Sulphur	Big Cypress - Sulphur	Lower Sulfer	11	1114	111403	11140302
Arkansas-White-Red Region	Red-Sulphur	Red-Little	Upper Little	11	1114	111401	11140107
Arkansas-White-Red Region	Upper White	Upper White	Current	11	1101	110100	11010008
Arkansas-White-Red Region	Neosho-Verdigris	Neosho	Elk	11	1107	110702	11070208
Arkansas-White-Red Region	Lower Arkansas	Robert S. Kerr Reservoir	Illinois	11	1111	111101	11110103
Arkansas-White-Red Region	Red-Sulphur	Red-Little	Mountain Fork	11	1114	111401	11140108
Arkansas-White-Red Region	Lower Arkansas	Lower Arkansas-Fourche La Fave	Fourche La Fave	11	1111	111102	11110206
Arkansas-White-Red Region	Red-Sulphur	Red-Little	Kiamichi	11	1114	111401	11140105
Arkansas-White-Red Region	Upper White	Upper White	Buffalo	11	1101	110100	11010005
Arkansas-White-Red Region	Upper White	Upper White	Spring	11	1101	110100	11010010
Arkansas-White-Red Region	Lower Arkansas	Lower Arkansas-Fourche La Fave	Lower Arkansas-Maumelle	11	1111	111102	11110207
Arkansas-White-Red Region	Upper White	Upper White	Beaver Reservoir	11	1101	110100	11010001
Arkansas-White-Red Region	Neosho-Verdigris	Neosho	Lake O Cherokees	11	1107	110702	11070206
Arkansas-White-Red Region	Lower Arkansas	Robert S. Kerr Reservoir	Robert S	11	1111	111101	11110104
Arkansas-White-Red Region	Upper White	Upper White	Upper White-Village	11	1101	110100	11010013
Arkansas-White-Red Region	Upper White	Upper White	North Fork White	11	1101	110100	11010006
Arkansas-White-Red Region	Red-Sulphur	Red-Little	Pecan-Waterhole	11	1114	111401	11140106
Arkansas-White-Red Region	Red-Sulphur	Red-Saline	Loggy Bayou	11	1114	111402	11140203

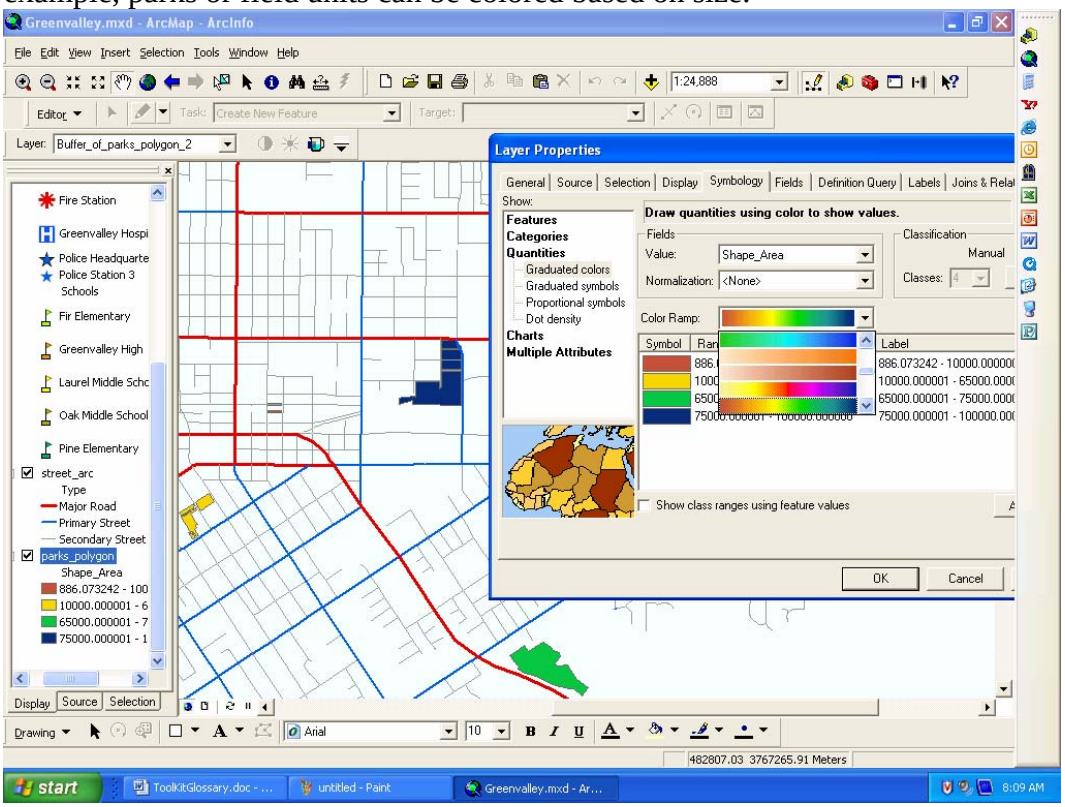
Buffer:
A measured zone around a map feature. For example, what areas might be affected by smoke from a wildfire in a local park if the smoke extends 1 or even 2 miles from the park?



Check-in:
The procedure that transfers a copy of data into a master geodatabase, overwriting the original copy of that data and re-enabling it so it can be accessed and saved from that location.

Check-out:
A procedure that records the duplication of data from one geodatabase to another and disables the original data so that both versions cannot be accessed or saved at the same time.

Color ramp:
A range of graduated colors used to show ranking or order among classes on a map. For example, parks or field units can be colored based on size.



County mosaic:
A dataset that is composed of two or more merged raster datasets. For example, one image created by merging the individual background images or photographs for an entire county. You will typically use a county mosaic of aerial photographs (orthophotograph) or of topographic maps.

Coordinate:
One of a set of values (north, south, and elevation) represented by x, y, and optionally z or m (measure), that define a position on the earth.

Data:
Any collection of facts. Data can include photographs, videos, sound files, text files, spreadsheets and tables, charts and graphs, maps, or any number of things. Often this information is produced, stored, or processed by a computer.

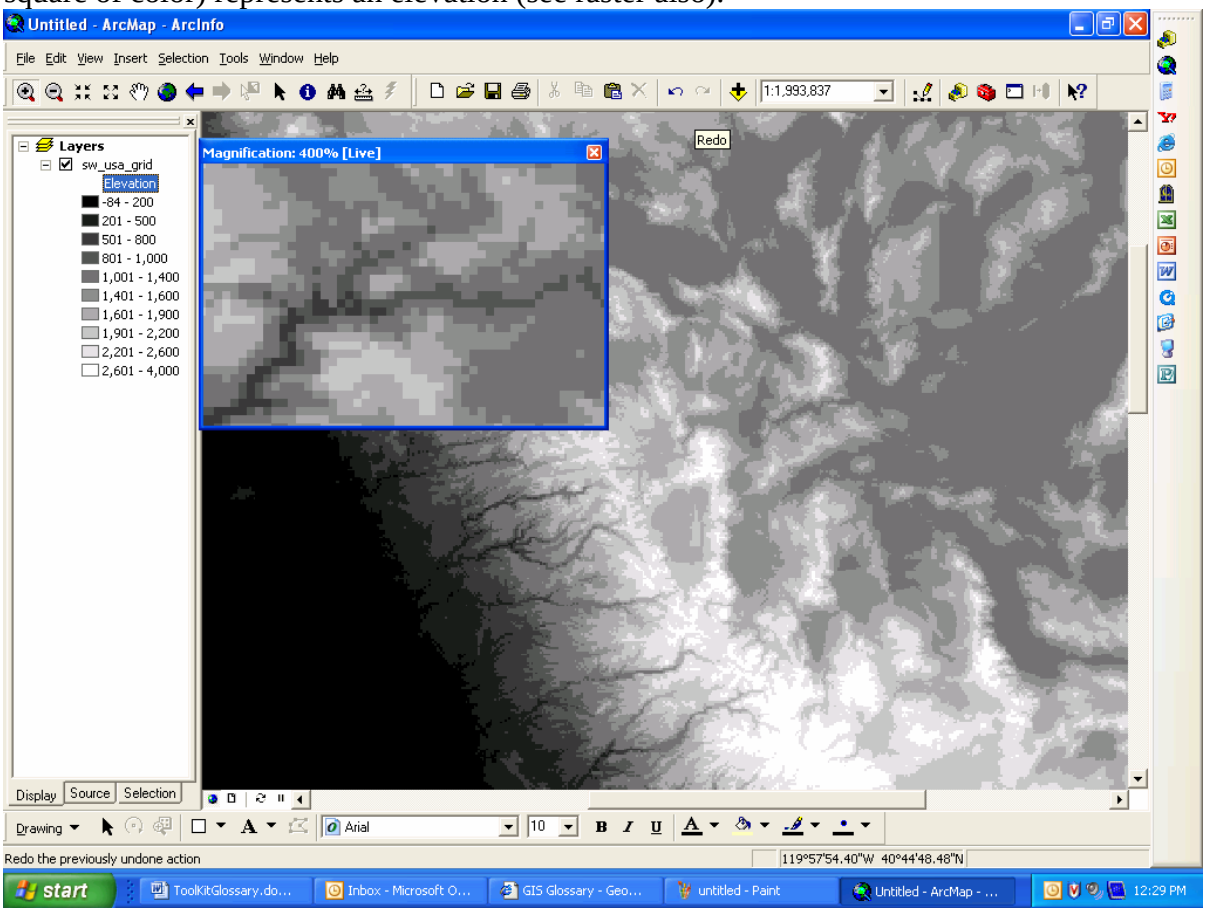
Database management system (DBMS):
A set of software applications used to create and maintain databases. Database management systems provide tools for adding, storing, changing, deleting, and retrieving data.

Dataset:
Any collection of related data, usually grouped or stored together. A dataset usually takes the form of fields and tables where data are located. For example a soil dataset may include the actual attributes of the soil like color and particle size but also may include:

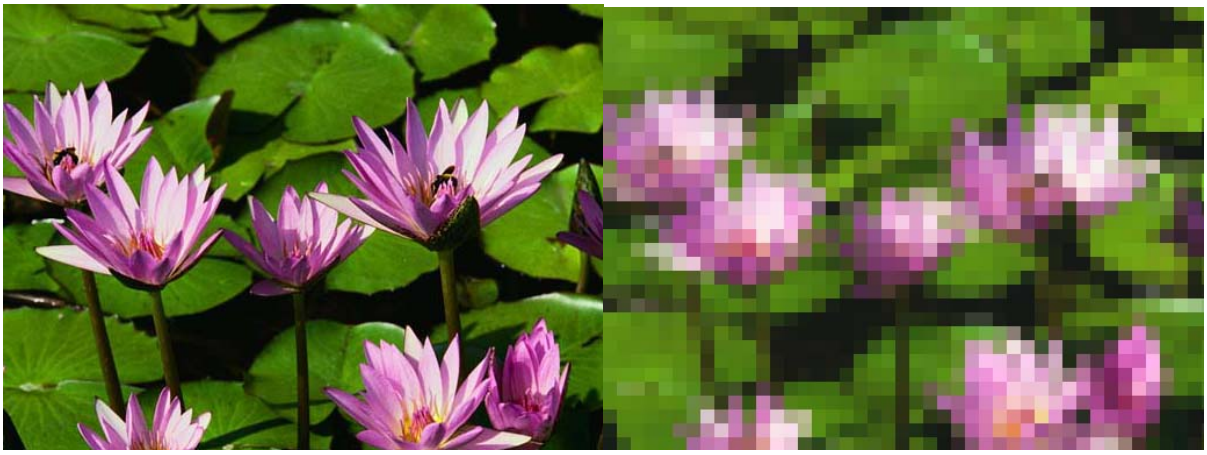
- the reliability of the sources
- the landscape, slope, and topography
- the geology
- the vegetation,
- the effective soil depth
- the suitability for irrigation

A hydrology dataset might include information on creeks (both perennial and seasonal) and rivers, streambeds, flow direction, dams, fish ladders, snags or stumps, wetlands, elevations, groundwater, springs, and wells.

Digital elevation model (DEM):
The representation of continuous elevation values over a topographic surface by a regular array of z-values (elevation). DEMs represent terrain relief. For example, each pixel (tiny square of color) represents an elevation (see raster also).



Digital image:
An image stored in a form that divides the image into a matrix of pixels (tiny squares), each of which consists of one or more bits of information that represent either the brightness, or the brightness and color, of the image at that point.



DOQ:
Acronym for digital orthophoto quadrangle. A computer-generated, uniform-scale image created from an aerial photograph. Digital orthophoto quadrangles are true photographic maps in which the effects of tilt and relief are removed by a mathematical process called transformation or rectification. The uniform scale of a DOQ allows accurate measurement of distances. A standard DOQ is distributed in a quarter section of a standard 7.5-minute quadrangle (see quad definition).

DOQQ:
Acronym for digital orthophoto quarter quadrangle. A digital orthophoto quadrangle (DOQ) divided into four quadrants.

DRG:
Acronym for digital raster graphic. A digital topo map.

Extension:
An optional software module that adds specialized tools and functionality to ArcGIS Desktop. ArcGIS 3D Analyst, ArcGIS StreetMap, and ArcGIS Survey Analyst are examples of ArcGIS extensions.

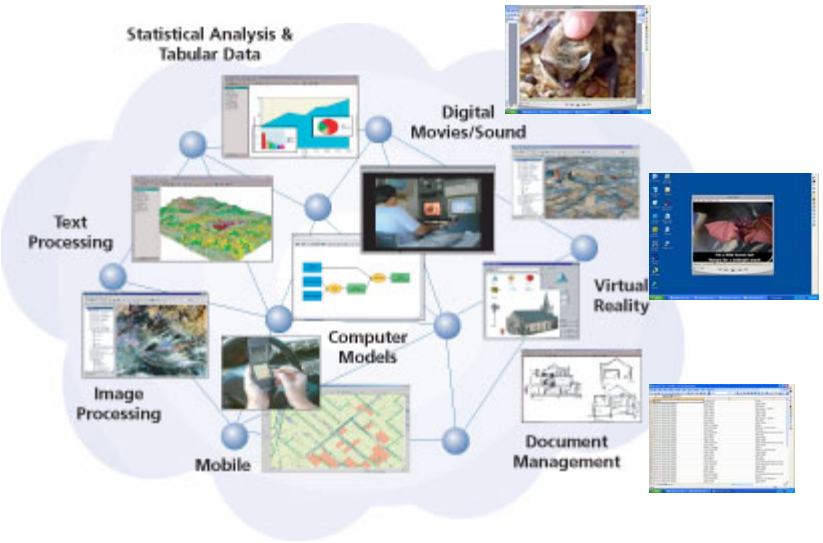
Feature class:
A collection of geographic features with the same geometry type (such as point, line, or polygon), the same attributes, and the same spatial reference. Feature classes can be stored in geodatabases, shapefiles, coverages, or other data formats. Feature classes allow homogeneous features to be grouped into a single unit for data storage purposes. For example, highways, primary roads, and secondary roads can be grouped together in a line feature class named "roads."

Geodata on F:\ drive:
Geographic data that is stored on your local server (not stored on the machine on your desktop). The data is put there and updated by your data manager (Pam in this case).

Geodata on your hard drive:
Geographic data on the machine that sits on your desk (usually C:\). This is data that you have saved to your computer.

Geographic data:
Information about real-world features, including their shapes, locations, and descriptions. Geographic data is spatial data and attribute data combined.

Geographic information system (GIS):
An integrated collection of computer software, hardware, and data that people use to view and manage information about geographic places, analyze spatial relationships, and model spatial processes. A GIS provides a framework for gathering and organizing spatial data and related information into layers of data that can be displayed and analyzed. A database with intelligent maps.



Geometry:
The measures and properties of points, lines and surfaces. In a GIS, geometry is used to represent the spatial component of geographic features.

Georeferencing:
Aligning geographic data to a known coordinate system so it can be viewed, queried, and analyzed with other geographic data. Georeferencing may involve shifting, rotating, scaling, skewing, and in some cases warping or rubber sheeting the data.

Grid:
In cartography, any network of parallel and perpendicular lines superimposed on a map and used for reference.

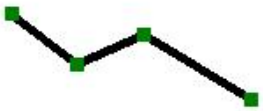
Infrastructure:
The system of roads, bridges, canals, cables, wires, pipes, reservoirs, and sewers that provide public services to an area.

Land use:
The classification of land according to the activities that take place there or how humans occupy it; for example, agricultural, industrial, residential, urban, rural, or commercial.

Layer:
The visual representation of a geographic dataset in a digital map. A layer is a slice of the geographic reality in a particular area, and is comparable to a legend item on a paper map. For example; roads, national parks, county boundaries, and rivers are examples of different layers.

Layout:
The arrangement of elements on a map. Elements could include a title, legend, north arrow, scale bar, maps, charts, tables, text, and images, and geographic data.

Line:
On a map, a shape defined by a connected series of unique x,y coordinate pairs. A line may be straight or curved. A line will usually be measured in feet or meters.



Merge:
Combining features from multiple data sources of the same data type (point, line, polygon) into a single, new, feature class. For example; you might merge two joining fields that used to have different land practices but now use the same practice.

Metadata:
Data about the data. Metadata for spatial data describes its subject matter; how, when, where, and by whom the data was collected; who can access and use the data; its projection, scale, resolution, and accuracy. Some properties are automatically derived from the data source (for example, the coordinate system and projection of the data), while other documentation is entered by a person (for example, keywords used to describe the data).

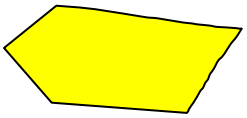
NCPDB:
National Conservation Plan Database

Orthophotograph or orthophoto:
Perspective aerial photographs from which distortions from to camera tilt and ground relief have been removed. An orthophotograph has the same scale throughout and can be used as a map.

Output format:
There are several ways to store and share your map outside of ArcMap. Maps can be "exported" to a number of formats that are easy to share through print or e-mail. Favorite formats are .jpg, .tiff, and .pdf. A jpg (Joint Photographic experts Group) is a file that can be shared easily because it is compressed to a smaller size but it may not always have the detail that is needed. A tiff (Tag Image File Format) is often a very large file but will have good detail. A pdf (Portable Document Format) is often a good choice for saving a map at a reasonable size and with good visual detail.

Point:
A geometric element defined by a pair of x,y (north, south) coordinates.

Polygon:
A closed shape on a map defined by a connected sequence of x,y (north, south) coordinate pairs, where the first and last coordinate pair are the same and all other pairs are unique. The outside edge (perimeter) of a polygon can be measured in meters or feet and the interior area in square feet or acres.

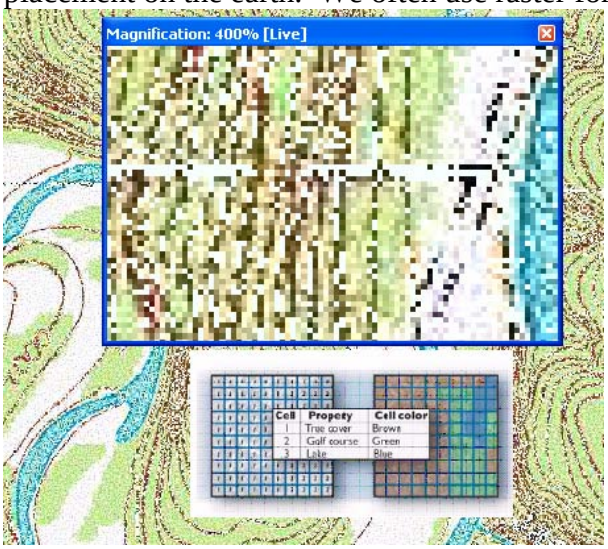


Preferences:
User-specified settings that determine how an application will act or appear when it is used.

Quadrangle/Quad/Quad map
The geographic area covered by a map. One kind of map quadrangle is the 7.5' x 7.5' area that is covered by a standard USGS 7.5' topographic paper map or the area covered by electronically stored materials.

Query:
A request that selects attributes of features or records from a database. A query is often written as a statement or logical expression. A question…let me see all land units in my county that are larger than 6 acres and less than 50 and in Bermuda grass pasture.

Raster vs. vector = photograph vs. drawing: A spatial data model that defines space as an array of equally sized cells arranged in rows and columns. Each cell contains an attribute value and location coordinates. Unlike a vector structure, which stores coordinates explicitly, raster coordinates are contained in the ordering of the matrix. Groups of cells that share the same value represent the same type of geographic feature. The individual cells may represent an attribute such as vegetative land cover, elevation, or just represent color and brightness on an image. Think of a raster as a photograph and a vector as a line, point, or polygon that you might draw on the photograph. An actual photograph or drawing will not have spatial coordinates but the GIS version of photograph and drawing have a specific placement on the earth. We often use raster formats like .sid, .tiff, jpg.

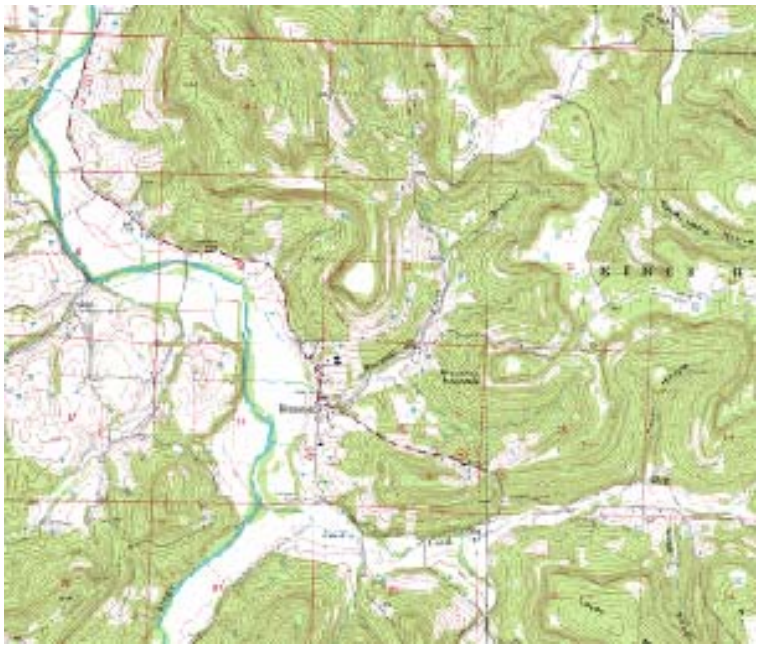


Shapefile: One of a group of files required to create a visual representation on a digital map of a point, line, or polygon. Three files are required for the shapefile to function properly; a shapefile (.shp), a database file (.dbf), and an index file (.shx). Other files that may be associated with the shapefile are projection file (.prj), metadata file (often .xml), .sbn, .sbx, .aih, and .ain files. All **must** be stored together in the same directory and **must** have the same name. For example, Bob2.shp, Bob2.dbf, Bob2.shx, Bob2.xml.

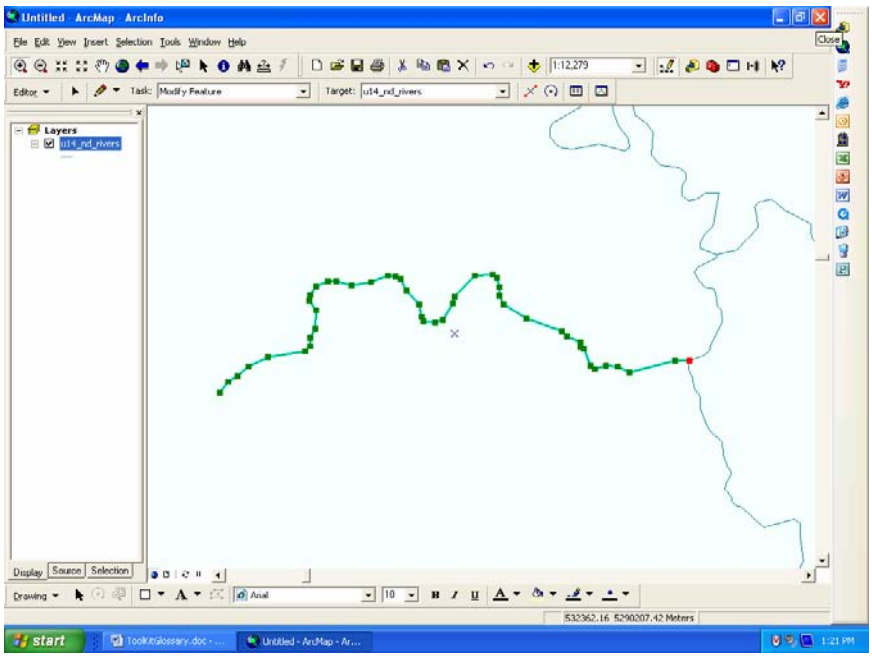
Spatial data: Information that can be displayed visually in terms of location and attributes.

Table: a database component that contains a series of rows and columns, where each row , or record, represents a geographic feature—such as a land unit, power pole, highway, or lake—and each column, or field, describes a particular attribute of the feature—such as length, acreage, or land use practice.

Topographic map/Topo map: A map that uses colors and symbolic patterns to represent the surface features of the earth, such as forest, marsh, agricultural, lakes and rivers, and elevation.



Vector vs. raster = photograph vs. drawing: (see raster vs. vector)
A data model that represents geographic features as points, lines, and polygons. Each point feature is represented as a single coordinate pair, while line and polygon features are represented as ordered lists of vertices (line segments). Attributes are associated with each feature, as opposed to a raster data model, which associates attributes with grid cells. Think of a raster as a photograph and a vector as a line, point, or polygon that you might draw on the photograph. An actual photograph or drawing will not have spatial coordinates but the GIS version of photograph and drawing have a specific placement on the earth. We often use vector in the form of a shapefile (.shp).



Version: ArcGIS family has gone through many upgrades for each of the Arc pieces. Each new release has additional functions. Most of the field offices currently run ArcGIS 8.3 with toolkit.