

Using ArcCatalog to Preview Data and Examine Metadata

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Overview

This tutorial shows you how to use ArcCatalog. ArcCatalog is a module of ArcGIS Desktop that allows you to manage GIS and related data sets. Using ArcCatalog, you can view available GIS data sets in a catalog tree similar to Windows Explorer, see what the data looks like (Preview tab), and read any available documentation that comes with the data (Metadata tab). You can also use ArcCatalog for copying, renaming, moving, and deleting GIS data sets. Because all GIS data layers actually consist of several files, using ArcCatalog is a better, easier, and more certain way to manage GIS data than the normal Windows file management tools.

This tutorial only shows the most basic functioning of ArcCatalog. For further information about ArcCatalog, go to **Help - ArcGIS Desktop Help - Contents tab - ArcCatalog**.

Downloading the tutorial data set

Download the *GIS_tutorial_data.zip* file that accompanies this tutorial and uncompress it in a location of your choice. To uncompress the zip file in the lab using PowerArchiver, right-click on the zip file and choose “extract here”. The tutorial data comes from MassGIS (the Massachusetts GIS Repository) and the City of Somerville, MA. However, you can do this tutorial with any GIS data.

Using ArcCatalog

Starting ArcCatalog

Start ArcCatalog by going to **Start-Programs –ArcGIS 9.2-ArcCatalog**

What you see in the catalog tree

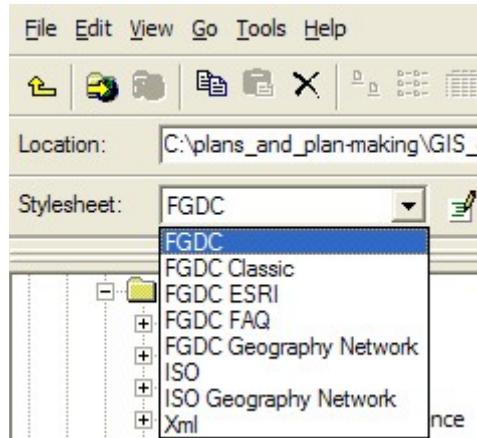
The catalog tree on the left of the ArcCatalog window looks similar to a standard Windows file manager view, but the ArcCatalog tree only shows data that can be read by ArcGIS.

- Navigate to the location of the GIS data
- On the left side of the window, click to open the MassGIS/Physical_Resources folder
- Click the cursor on the *landuse_poly_clip.shp* file. This is a data set from the state of Massachusetts showing land use polygons (e.g., residential, commercial, agriculture).

A file ending in .shp is called *shape file*. This is a very common GIS data format, created by ESRI, the makers of ArcGIS. A shape file actually consists of several files (you will see this if you look at the same folder in a Windows file manager program - for *landuse_poly_clip*, you would see *landuse_poly_clip.shp*, *landuse_poly_clip.shx*, *landuse_poly_clip.dbf*, *landuse_poly_clip.sbn*, *landuse_poly_clip.prj*, *landuse_poly_clip.sbx*, and *landuse_poly_clip.shp.xml*), all of which are necessary for this GIS data set to be readable in a GIS software program). That's one reason why ArcCatalog is a better program than Windows File Manager for managing GIS data. If you copy *landuse_poly_clip.shp* in ArcCatalog to another folder, the ArcCatalog program knows to copy all the associated data files with it.

Reading metadata




- **Metadata** is data about data, that is, information about the data set. Click on the metadata tab for the landuse_poly_clip.shp file. When the metadata appears, you should see three more tabs - *Description*, *Spatial*, and *Attributes*. The first tab, *Description*, has general information - click on any of the bold text to see more information (e.g., scroll down and click on *Status of the Data* and *Time Period for which Data is Relevant*).
- While still in the metadata area, click on the *Spatial* tab - this gives you information about the coordinate system.
- Click on the attributes tab to see the list of attributes. Again, you can click on any of the bold text to see more information - if it exists! Many agencies and data creators do not document their data well or at all. The data developer should document each data set, but sometimes he/she does not do this, or it may not be documented very well. Metadata is critical to data users - without it, you may not know what a particular data layer represents, when it was created, if it is complete, what the attributes mean, or what format it is in. We will discuss the importance of metadata more in class. How well do you understand this landuse data set from reading the metadata? What are the categories of landuse and how are they coded? What time period does the data set cover?
- Towards the top left portion of the ArcCatalog screen, you should see a form item for Stylesheet: FGDC ESRI. Click on this form and select FGDC.

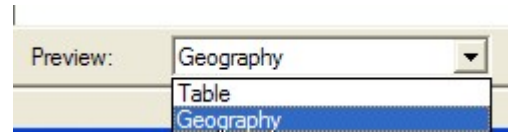


- You see the same information in a different format. *FGDC* stands for *Federal Geographic Data Committee*. This organization issues standards for metadata documentation for all Federal agencies producing GIS data. These standards have been widely adopted by states and local governments as well as many foreign countries. Because the metadata you are looking at is kept in a web-based database format (.xml format), it can be viewed in a number of ways. Experiment with looking at the same landuse_poly_clip metadata in different stylesheets.
- When you are done, please return to the FGDC ESRI stylesheet for the next person who uses the machine you are on.
- Look at some of the other data sets in the GIS Data folders – you will notice that most of them are not documented. Instead, you will see gray text saying something like (under *Abstract*) “Required: A brief narrative summary of the data set” – this is telling you what is required in that section by the Federal government’s metadata standards, but it has not been filled in by the author of the data set.

To sum up, metadata is extremely important and is required on all GIS data sets produced by the US government. As you see, state and local governments may or may not document their GIS data to the same standards, at least within the data set itself. In the case of MassGIS, the many of the data sets are documented online at <http://www.mass.gov/mgis/database.htm>.

Previewing geography

- With *landuse_poly_clip.shp* still highlighted (click on it with the cursor if necessary), click on the *Preview* tab above the right screen pane. You should see what the landuse data layer actually looks like. At the bottom of the Preview pane, you should see a form item that says *Preview: Geography:*
- If it says *Preview: Table*, change it to *Geography*.
- Click on the Information tool () and then click on one of the landuse features. You will see the information stored in the attribute table about that polygon.
- Use the zoom and pan tools () to zoom in and out and pan around in the preview map. With the zoom in tool (magnifying glass with a plus sign), you should use the mouse to draw a box around the area you want to zoom in to (click on one corner, keep the mouse button held down, and drag it to the opposite corner of the box before releasing). With the zoom-out tool, you also create a box - the current view will then be "zoomed out" to fit inside the box you created. With the pan tool, you hold down the mouse button while you pan any direction to move the map.
- To get back to the first (default) view, you can click on the world icon () - this takes you to the full extent of that particular data layer.



Previewing attribute tables

- You can preview the attribute table (table of associated tabular information for a GIS data layer) by going down the *Preview* form and choosing *Table*. This shows all the records in the GIS layer. Scroll down and across to see the entire table.

Getting to know your data

Now use what you have learned to look at other data sets in the GIS tutorial data set, including data for the City of Somerville. Preview the maps and tables, and look at the metadata.

For many of the data sets, you will see that there is no metadata. What questions do you have about the data sets that you cannot answer? How confident would you be using this data in an analysis report or a public meeting? What further information would you like to have?

When you are done with your exploration, proceed to the next tutorial, **Creating a Map with ArcMap**.