Learning Objectives in this chapter:

* Develop a familiarity with ArcCatalog, its purpose, and data management
* Be able to connect to drives, and navigate to data
* Learn what metadata is, why it’s important, and how to add metadata from ArcCatalog

# ArcCatalog

**3.1 Overview**

ArcCatalog is the ArcView application you use to find, explore, and manage your data. With ArcCatalog, you can browse and preview data stored on your local computer, network, or even on the internet. You can directly access maps and data. You can launch ArcMap and ArcToolbox from within ArcCatalog to begin working with your data any time.

**3.2 The Catalog Tree**

The first time you open ArcCatalog, you will see your computer’s hard disks plus database connections, geocoding services, and internet server entries on the left side of the application window. To access data stored on a CD-Rom, flash drive or another computer on the network, you will need to establish a connection to them. The collection of connections you set up to geographic data is called the Catalog. After you connect to a folder or database, your connection appears in the Catalog Tree.

You use the Catalog Tree, which is similar to Microsoft’s Windows Explorer, to browse your data. Once you’ve found the data that you want to work with, you can preview it in ArcCatalog. You can also drag the dataset from the catalog tree and drop it directly into ArcMap for enhanced display, mapping and analysis. You can even drag and drop files from ArcCatalog into ArcToolbox wizards and tools.

*ArcCatalog Application*



C:\Program Files\ArcGIS\DeveloperKit10.0\Icons\FolderConnectionAdd32.png

To connect to a folder, click on the Connect to Folder icon on the main toolbar.

Or, you can click on the **File > Connect To Folder** option on the main menu.

*Connect to Folder From Main Menu*



The Connect Folder dialog box will appear. Select a location to add to the ArcCatalog Tree View. You can select an existing mapped folder, or search the network.

*Connect to Folder Dialog Box* 

You can rename folder connections in ArcCatalog once they are connected. This makes it easier and more convenient to access data with both ArcCatalog and ArcMap. You can give a connection a shorter more useful name instead of the server name. In order to rename a folder connection, simply right-click on the connection and choose ‘Rename’. You may also select the connection and press F2. You can rename any folder connection, including connections to read-only folder on network drives. A folder connection works like a shortcut on your desktop, so renaming a connection doesn’t change the name of the folder it is connected to. To see the target folder of a connection you have renamed, select it and look in the status bar. The status bar will show you the full path of the folder that the connection points to.

*Renaming a folder connection*



Even though I’ve renamed my Folder to ‘Randalls J Drive’….I can look at the status bar and see that the location and name of the real folder is J:\hoskir.

**Database Connections**

Connecting to an ArcSDE geodatabase is fairly simple. You will want to create a connection to TMSPROD which is where most of MoDOT’s GIS data is housed. You can do this by clicking on the Database Connections within the Catalog Tree.

The folder will expand and you will see that you can add 2 types of database connections. The connection we are concerned with is a Database Connection. Double-click on this option.

*Adding a Spatial Database Connection in the Catalog Tree*



A Spatial Database Connection dialog box will open. This is where you will fill information out about the database you would like to connect to. The following needs to be filled out, in order for the connection to establish itself:

*Spatial Database Connection Properties*



**Database Platform:** Oracle

**Instance:** sde:oracle11g:TMSPROD

**Auth. Type:** Database authentication

**Username:** tms\_user

**Password:** tms\_user

Make sure that Save username and password has a checkmark in the box before you select OK.

You can see from the image below that we have established a connection to TMSPROD. The information that this database holds will appear in the right hand window. You can add data either from the add data button in ArcMap or by drag and drop method from ArcCatalog to ArcMap. I can also rename my connection to this geodatabase similar to how I renamed the folder connection.

*Database Connection in ArcCatalog*



**3.3 Data Contents View**

Shapefiles, coverages, tables, geodatabases, etc will be listed in the Catalog Tree view. Selecting a feature from the tree view will give information about that feature in the data contents window on the right. Different icons are used to represent each data type. In ArcCatalog these icons are located in front of the file name and a corresponding type column follows the name.

C:\Program Files\ArcGIS\DeveloperKit10.0\Icons\ShapefilePoint32.pngC:\Program Files\ArcGIS\DeveloperKit10.0\Icons\CoveragePolygon32.png

C:\Program Files\ArcGIS\DeveloperKit10.0\Icons\TableExcel32.pngC:\Program Files\ArcGIS\DeveloperKit10.0\Icons\ExcelXLSFile32.pngC:\Program Files\ArcGIS\DeveloperKit10.0\Icons\Layer_LYR_File16.pngC:\Program Files\ArcGIS\DeveloperKit10.0\Icons\FileRasterGrid32.pngC:\Program Files\ArcGIS\DeveloperKit10.0\Icons\Geodatabase32.pngCoverages Shapefiles Layer Files Tables Geodatabases Images Excel

There are three tabs full of information about that feature. These are named: Contents, Preview, and Metadata.

**Contents Tab**

Data content shows the name and type of the item selected in the tree view. It also will display a thumbnail sketch if one is available for the data type. The example below displays a polygon shapefile called county.shp.

*Contents Tab* 

**Preview Tab**

C:\Users\hoskir\Desktop\Capture copy.gifThe preview tab enables you to see the geometry and the attribute information associated with the selected file. By using the tools in the main toolbar that is docked at the top of the page, one can zoom in or out on the geometry view of the shapefile, pan around, bring up the information call box, or create a thumbnail from the image.

*Preview Tab (Geography)*



If you would like to see the attribute information, simple click on the drop down box at the bottom of the data contents view and select table instead of geometry. This will give you the table view of the shapefile and will allow you to see what fields and information the shapefile contains.

*Preview Geography drop down box*



**Table Options Button**

*Preview Attribute Table*



If you are looking for a specific feature in the attribute table, you can click on the table options button that is located at the lower left hand corner of the data contents view. If you click on this icon, you will get a couple of options, including the Find tool.

*Table Options*



You also have the option to add a field to the attribute table, print or export information from the table.

**Description Tab**

View, create, or edit documentation for each data layer. This documentation, also known as Metadata, is extremely important to review, as it tells who created the data, when the data was created, and what, if any, use restrictions may be on the data. You should check the documentation of a layer before you use it. Always develop documentation for files you create so that others who use the data know its origins.

*Description Tab*



Most ArcGIS items can have metadata, including tools, folders, geodatabases, text files, and file types such as Word documents. Once created, metadata is copied, moved, and deleted along with the item when it is managed with ArcGIS.



The Description Tool Bar contains features that allow you to print, edit, and import a metadata record.

C:\Users\hoskir\Desktop\Capture copy.gif

There are also icons located just above the catalog tree view that allow you to Validate, Export and View Metadata properties.

If you want to change the way your metadata is presented, you can customize the view to your preference by selecting Customize on the main menu and selecting ArcCatalog Options.

*ArcCatalog Customize Options*



The ArcCatalog Options dialog box shows up and you may choose whatever style you want to view your metadata in.

*ArcCatalog Metadata Tab*



**3.4 ArcCatalog Window/ArcMap**

With the introduction of ArcGIS 10, ESRI has developed an easy way to access ArcCatalog via a window within ArcMap. Data can be accessed conveniently from the ArcCatalog window and can be added to your map project by simply using the drag and drop method.

C:\Program Files\ArcGIS\DeveloperKit10.0\Icons\CatalogWindowShow32.pngTo open the ArcCatalog window, locate the icon on the main menu that looks like a filing cabinet. Click on this and the ArcCatalog will open up on the right hand side of the screen.

**Catalog Window**

*ArcCatalog Window in ArcMap*



***The exercise for Chapter 3 will cover adding these connections and giving you a feel for navigating within ArcCatalog.***

Overview:

In this exercise you will add additional connections in ArcCatalog. You will navigate to GIS data folders and view some of the information about GIS datasets that are available to you through ArcCatalog.

**Step 1**

Open **ArcCatalog**. If the icon doesn’t appear as a shortcut on your desktop, access ArcCatalog throught the **Start menu > All Programs > ArcGIS > ArcCatalog**.

**Step 2**

One of the first things you will need to do is set up connections to your drives and your data.

C:\Program Files\ArcGIS\DeveloperKit10.0\Icons\FolderConnectionAdd32.png

*Left click* on the **‘Connect to Folder’** icon located on the Standard toolbar. You can also *select* **File > Connect Folder**. This will bring up the Connect to Folder Dialog box.



**Step 3**

Connect to **J:\gis\_proj** by *selecting* **Computer > J: > gis\_proj** and *select* **OK**.



*Repeat* the process and connect to **J:\gis\_proj\class\_data** folder.

You will be working in these folders for most of the class.

You should now have 2 folders connected, as illustrated below.



ArcCatalog will remember these connections throughout this course.

*The first time you run ArcGIS at your office you will need to repeat these steps to connect to the drives or folders you keep your data in*.

**Step 4**

Next you need to create a project folder in ArcCatalog to store your project data.

In the Catalog Tree *right click* on **J:\gis\_proj** and *select* **New > Folder**. Name it **J5p0347.**



Your Catalog Tree should now look similar to the image below.



**Step 5**

You will also be using data located in MoDOT’s TMSPROD database, so you will need to make a connection to this database.

In the Catalog Tree *click* on **+** to the left of **Database Connections to** expand the connections list. *Double-click* the **Add Spatial Database Connection**. The Spatial Database Connection dialog box will pop up and you will need to enter the information shown.

**Database Platform:** Oracle

**Instance:** sde:oracle11g:TMSPROD

**Authentication. Type:** Database authentication

**Username:** tms\_user

**Password:** tms\_user

Make sure the **Save username and password** is checked on.



*Select* **OK** to create the spatial database connection.

Your Database Connection should look similar to this.



**Step 6**

It is good practice to rename the database to something more practical in case you have more than one connection to that database. I usually use the (username)@(Server), so I know how I am logging on, and to what server.

*Right click* on the connection you just created and *select* **Rename**. Using the information from Step 5 to rename your connection to: **tms\_user@tmsprod**.

Your connection should now look similar to the one below.



**Step 7**

In the Catalog Tree, *select* the **+** to the left of the **J:\gis\_proj\class\_data** connection to expand it. **Select** the **+** to the left of the **chapter 03 exercise** folder and view the contents.



**Step 8**

*Select* the **Contents** tab. Take a few minutes to explore each of the folders and the data contained within each folder.

What 4 types of data are in the District 3 exercise folder?

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Don’t forget to look inside the file geodatabase.

**Step 9**

Next you will be using the Zoom In tool and the Identify tool.

In the Catalog Tree *select* the **county.shp** file in the chapter 03 exercise folder.

*Select* the **Preview Tab** in ArcCatalog.

C:\Program Files\ArcGIS\DeveloperKit10.0\Icons\ZoomInTool32.pngUsing the “**Zoom In**” tool on the Geography Toolbar, zoom in on the St. Louis Region.

C:\Program Files\ArcGIS\DeveloperKit10.0\Icons\IdentifyTool32.pngUsing the “**Identify**” tool on the Geography Toolbar, select St. Louis City. Using the Identify Results, what is the POP2000 value of St Louis City? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Close* the **Identify Results** box.

**Step 10**

In the Catalog Tree *find* the **District** feature class in the chapter3geodatabase and select it.

C:\Program Files\ArcGIS\DeveloperKit10.0\Icons\ZoomFullExtent32.png

Use the “**Zoom Full Extent**” tool to zoom back out to the entire state.

You will see a preview of the geographic data.



**Step 11**

In the Catalog Tree now *select* the **District.Lyr** file in the Chapter 03 exercise folder. Now you see the same data with the symbology applied, this symbology has been saved in the layer file.



**Step 12**

Use the drop-down menu at the bottom of the ArcCatalog screen to change the Preview type to **Table**.





Take a look at the data associated with the layer file. From the data shown, consider which fields may have been used to create the Symbology you previewed above.

Which fields do you think could be used to Symbolize the District Layers?

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**Step 13**

Before we get started in ArcMap, *create* a **File Geodatabase** to use as a default database for our map project.

In the catalog tree *right click* on the **j5p0347** folder and *select* **New > File Geodatabase** and name the database **j5p0347\_projectdata**.



In your j:\gis\_proj folder you should now have a project folder and a file geodatabase within that folder. **This will be where we store most of the data for our project**.

You should also have a Database Connection to TMSPROD in your Catalog Tree.



j5p0347

j5p0347

*Close* **ArcCatalog**.

***End of Chapter 3 Exercise***