

Organizing Principles: An Introduction to GIS

Exercise 2: Considering Spatial Data

*** Files needed for exercise: *2009_census_cty_selected_states.zip*, *landsat_5tm_la_lsu_2005.zip*

Goals: After completing this exercise, you will be able to move and organize spatial data effectively and safely. You will also be able to use ArcCatalog to explore your data.

Skills: After completing this exercise, you will have a basic understanding of how spatial data works in ArcCatalog and Windows Explorer. You will also be able to work with shapefiles.

Exploring Spatial Data in Windows Explorer

1. Open Windows Explorer by going to the **Start** menu and choosing **My Computer**.
2. Browse to the Exercise_02_data folder.
3. You should see two zip files

 2009_census_cty_selected_states.zip	Compressed (zipped)...	14,067 KB
 landsat5tm_la_lsu_2005.zip	Compressed (zipped)...	45,015 KB

4. Zip files can be extracted by right clicking on them and choosing **Extract All...** Keep the default folder and choose **Extract**. Unzip the *2009_census_cty_selected_states.zip* file first.
5. You should see lots of files with the same name but different extensions.

 2009_census_cty_selected_states.dbf	DBF File
 2009_census_cty_selected_states.prj	PRJ File
 2009_census_cty_selected_states.sbn	SBN File
 2009_census_cty_selected_states.sbx	Adobe Illustrator ...
 2009_census_cty_selected_states.shp	SHP File
 2009_census_cty_selected_states.shp.xml	XML Document
 2009_census_cty_selected_states.shx	SHX File

6. This is one shapefile. We can manage and move this data in Windows Explorer but if we forget just one of these files, it will make the data unusable.
7. Now **unzip** the *landsat_5tm_la_lsu_2005.zip*. This folder contains landsat imagery for Louisiana. This is a raster file.

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 landsat5tm_la_lsu_2005.gif	GIF image
 landsat5tm_la_lsu_2005.html	Firefox Document
 landsat5tm_la_lsu_2005.sdw	SDW File
 landsat5tm_la_lsu_2005.sgml	SGML File
 landsat5tm_la_lsu_2005.sid	SID File
 landsat5tm_la_lsu_2005.sid.aux	AUX File
 landsat5tm_la_lsu_2005.sid.xml	XML Document
 landsat5tm_la_lsu_2005.text	TEXT File
 landsat5tm_la_lsu_2005.xml	XML Document
 landsat5tm_la_lsu_2005_faq.html	Firefox Document

- Again, all of these files are related to the raster dataset. Now let's look at the same data using ArcCatalog.

Exploring Spatial Data in ArcCatalog

- Open ArcCatalog.
- Use the menu on the left side of ArcCatalog to browse to the Exercise_02_data folder.
- Notice that the original zip files are not visible in ArcCatalog. Open up the two folders containing your data. The same data now appears as many fewer files.

 2009_census_cty_selected_state...	Shapefile
 landsat5tm_la_lsu_2005.gif	Raster Dataset
 landsat5tm_la_lsu_2005.sid	Raster Dataset
 landsat5tm_la_lsu_2005.xml	XML Document

- These files are much easier to manage. They can be moved by dragging and dropping or copy and paste. Performing these actions in ArcCatalog will move ALL of the associated files in Windows Explorer.
- You can also make the zip files visible in ArcCatalog. Go to **Customize > ArcCatalog Options**. Click on the **File Types** tabs. Click on **New Type** and then enter **Zip** in both boxes. When you return to ArcCatalog, the zip files are now visible. This is an example of how ArcCatalog is great for exploring spatial data, but not typical computer file types.

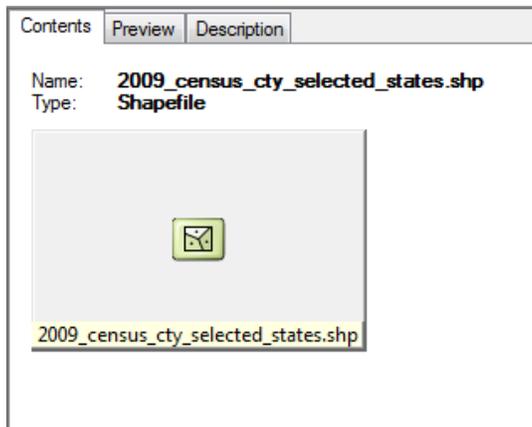
Viewing data attributes

- In the table of contents on the left side of ArcCatalog, click once on *2009_census_cty_slected_states.shp*.

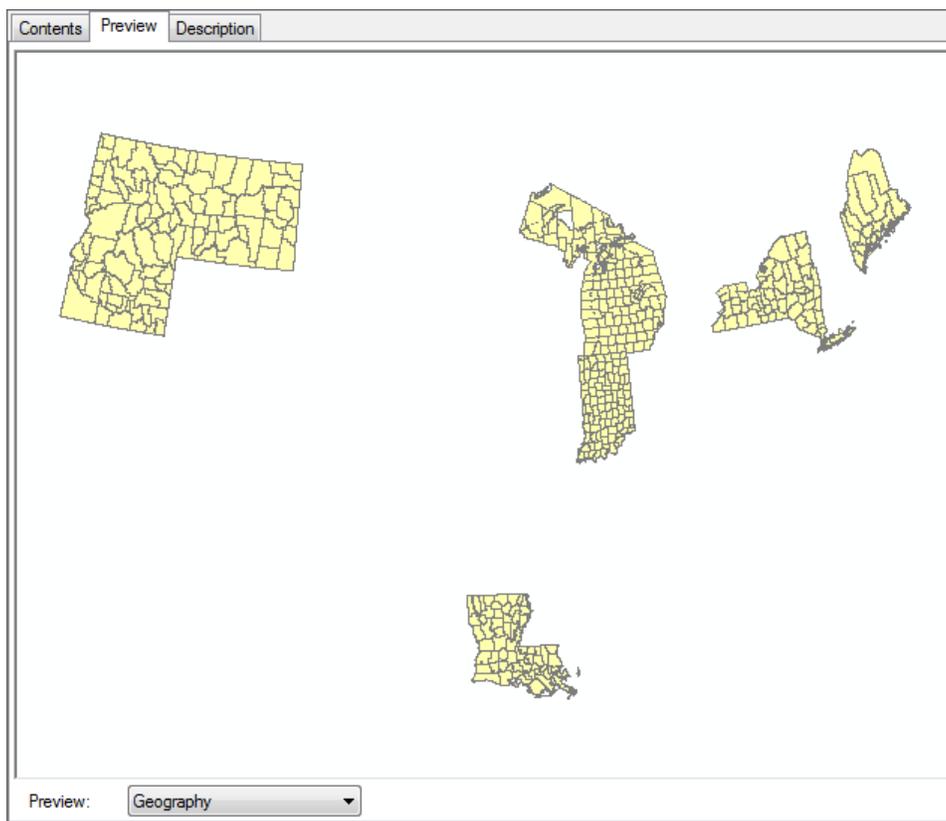
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2. On the right side of ArcCatalog, the **Contents** window should appear. In the Contents window you can view the name of the file and the type of file.



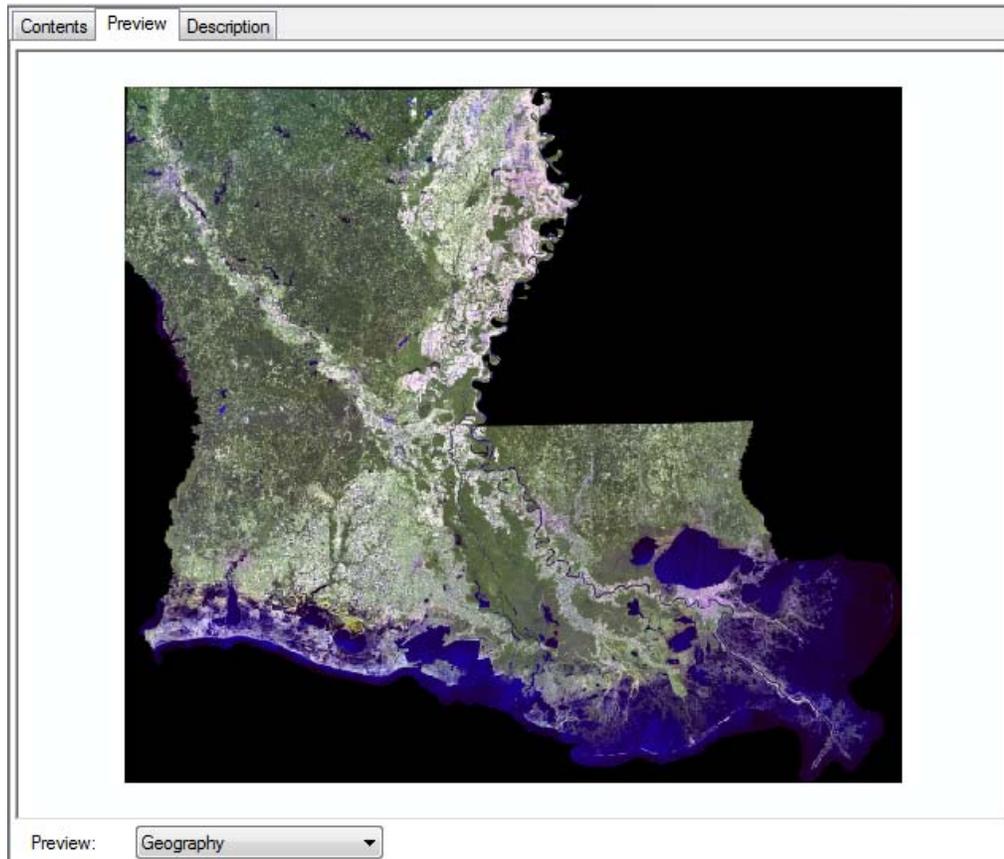
3. Click on the **Preview** tab. In the Preview tab, you can see what the data will actually look like in ArcMap.
4. You can also view your data attributes by using the preview pull down menu at the bottom of the screen and choosing **Table**.



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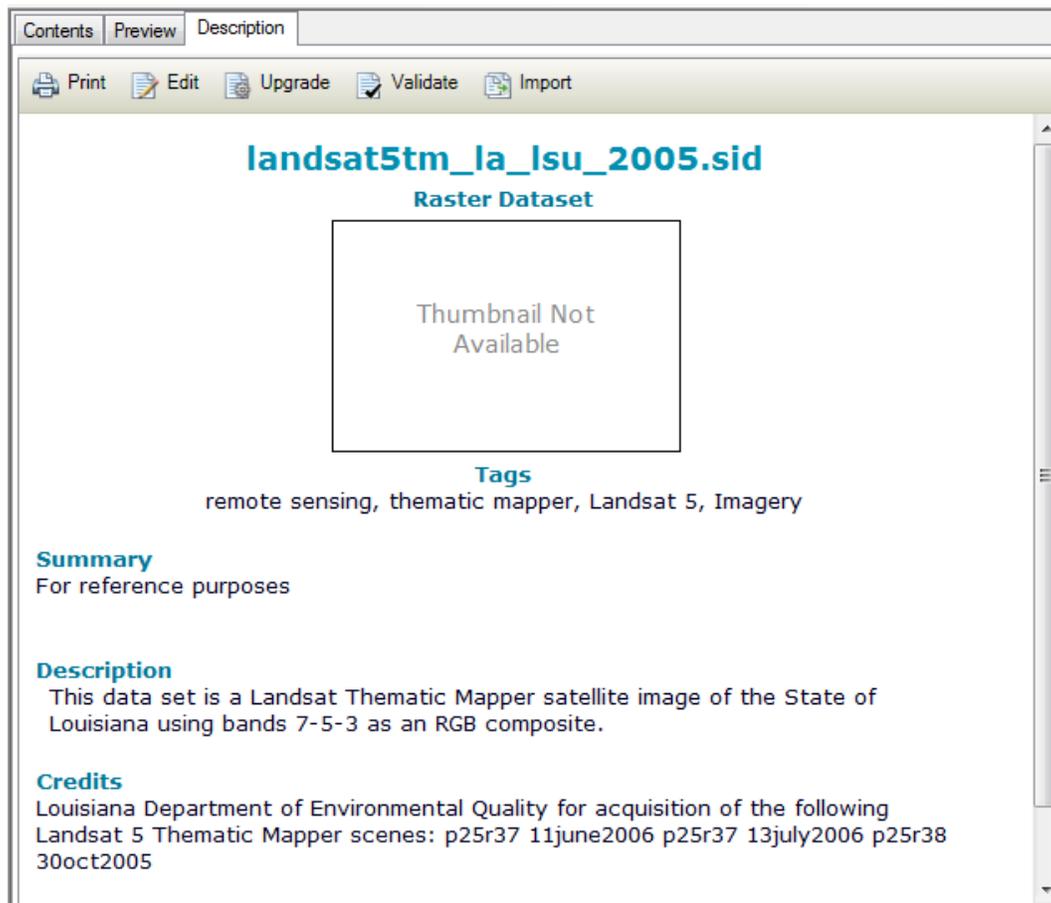
5. Finally, you can view the metadata about the file by clicking on the **Description** tab. Metadata is information about your data. It can help you determine what your data represents, what the spatial reference information is, and what attributes are contained in the dataset. In this case, there is no metadata for this file.
6. View the *landsat5th_la_lsu_2005.sid* raster file in ArcCatalog as well.



7. Also make sure to view the **Description** tab on this file. This file does have attached metadata.

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If you have time...

Visit one of the various state GIS sites or GIS clearinghouses on the web and download a file that is interesting and relevant to your work. Note what format this file comes in. It may be a zipped shapefile, or it may be in a conversion format that you will need a tool to work with. Open this file in ArcCatalog and view its attributes. Does the file have any metadata? Is it spatially referenced?