

Metadata

ISTC Topic:

6.1

In this Chapter you will learn

- What metadata is, why we need it and what information you can find in metadata
- Where to read metadata in ArcGIS

1 Metadata is data about data



Think about metadata as you would think about a label on a can of food. The label will tell you what type of food can be found inside the can, what ingredients were used alongside the nutritional content and the expiration date of the food. This is important information since you do not want to accidentally eat dog food, or food that is past its expiration date that could make you sick.

Metadata is a label for GIS layers with information about its purpose, author as well as information about the publication data, the time period for which this data is valid and the scale at which the GIS data is meant to be viewed. Metadata is important: for example, if you are considering a new subdivision near the edge of a river you do not want to use a map that depicted the location of the river accurately in 1960 since the water may have shifted since. Similarly, you would not want to make such a local decision based on a map that is meant to be viewed on a nation-wide scale. Rather, you want to use a detailed map of the local area.

It is important to write metadata, especially if you plan to share this data with a larger group of people. It could also help you, as the author, in case you need to revisit your dataset sometime in the future when you may have forgotten some of the details about your own dataset.

A **metadata standard** describes the content and format of a GIS dataset. There are a couple of good reasons for using a metadata standard. First off, it ensures that a metadata document contains all the relevant information that is needed. Second, because the metadata in a standard is in a predictable format its users know where to find a specific piece of information. Computer software can be written to look for key words in a predictable location and format in the metadata and use those keywords in search engines that allow users to find relevant GIS datasets. Of the number of metadata standards that are available the most commonly used is the **FGDC metadata standard** where FGDC stands for Federal Geographic Data Committee. This FGDC metadata standard has seven main sections which are listed below because they give you a good sense of the type of information that you can find in metadata:

1. **Identification Information** includes the title of the dataset, keywords and a description of the data and its purpose. This section also includes the person or organization that created the data, the publication date, access constraints to this data and the time period for which the data is relevant.
2. **Data Quality Information.** This section describes the process that was used to generate the GIS dataset. For example, it includes the names of other datasets that were used and analyses that were performed to generate the current data.
3. **Spatial Data Organization Information.** This section states whether the data is in a raster or vector (i.e. point, line or polygon) format.
4. **Spatial Reference.** This section describes which coordinate system in which the dataset is projected.
5. **Entity and Attribute Information.** Here you will find a list of the attributes you can find in the attribute table along with (hopefully) an explanation about the meaning and possible values for each of the attributes.
6. **Distribution Information.** This section states where you can get this data. For example, can you download it or do you need to order it?
7. **Metadata Reference Information.** In short, this is metadata about metadata. It describes which metadata standard was used as well as the name and contact information for the person who wrote the metadata.

2. Viewing metadata in ArcGIS

ArcGIS 10 stores metadata for a GIS layer as an xml file. You can view this metadata file through different “filters”, each providing you with a unique combination of detail and content from the xml file. Some filters, such as the “Item Description” filter is very short and only summarizes key pieces of information about a dataset as illustrated in figure 8.1.

Other filters, such as the ISO19130 standard, include all the information found in the FGDC standard described earlier in this chapter.

Metadata can be viewed in either ArcMap or ArcCatalog. However, ArcCatalog provides a larger window and a better viewing environment as well as tools for creating and editing metadata.

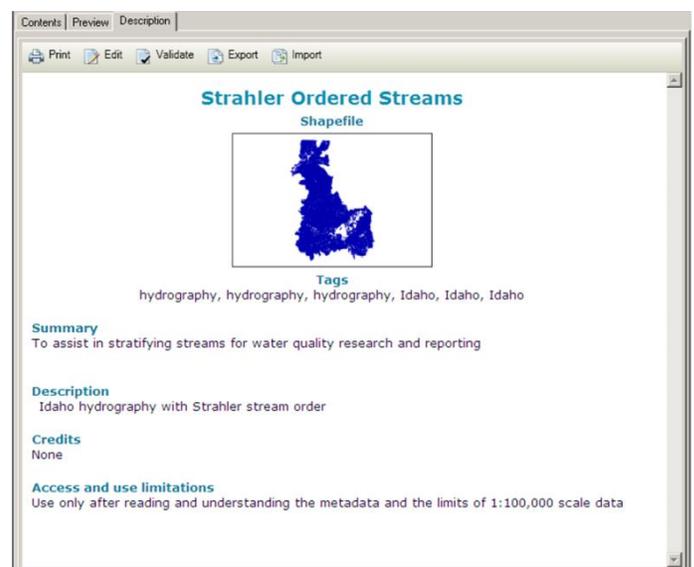


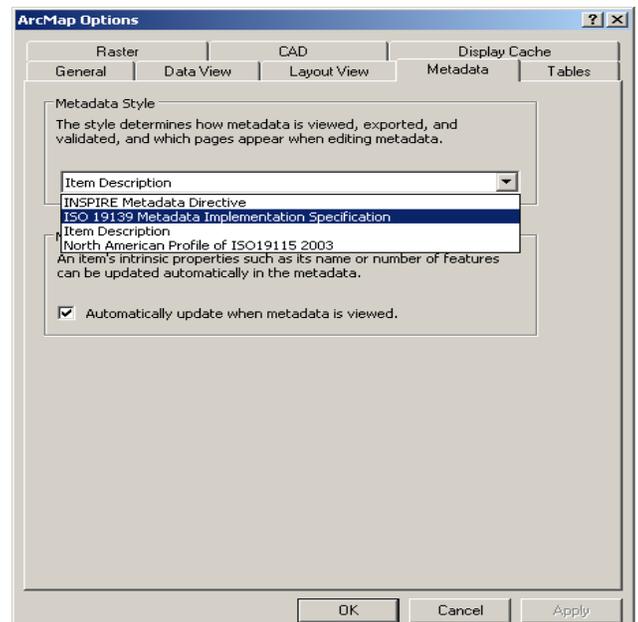
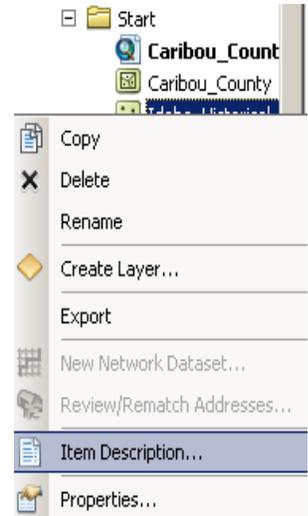
Figure 8.1. The “Item Description” filter in ArcGIS provides a limited amount of information.



6.1: Viewing Metadata in ArcGIS

Exercise 1: Viewing metadata in ArcGIS

1. Open the Caribou_County.mxd in the Start folder. This map displays earthquakes and water features in Caribou County.
2. There are two ways to view the metadata from ArcMap: from the table of contents, or by using the ArcCatalog window in ArcMap. Right-click on the Idaho_Historical_Earthquakes layer in the Table of Contents and click on Data > View Item Description as shown on the right. This should bring up
3. Open the ArcCatalog tab by clicking Windows > Catalog along the top of your screen. Within the ArcCatalog tab scroll to the Start folder, and right-click on the Idaho_Historical_Earthquakes > Item Description. A window will appear showing you the metadata for this layer.
4. Briefly scroll through the metadata and make a mental note of the length and detail of this document. You are viewing this information through the “Item Description” filter. Let’s change the filter and see how that impacts the amount of information in the metadata document.
5. Go to Customize > ArcMap Options as shown below.



6. Go to the metadata tab and change the metadata style to ISO19139 Metadata Implementation specification.
7. Click OK
8. Go back to the ArcCatalog tab and view the item description of the Idaho_Historical_Earthquakes shapefile. This time scroll all the way down in the Item Description Window. Click on FGDC Metadata and notice the main sections described earlier in this chapter. Click on each of the headings to view the metadata.
9. Close ArcMap and start ArcCatalog.
10. In the table of contents browse to the Data > Start folder.



11. Use the instructions on the right to view the metadata for the Waterpoints_Caribou layer and to change the metadata style.

12. Leave ArcCatalog open if you are moving on the next exercise. Otherwise close ArcCatalog.

