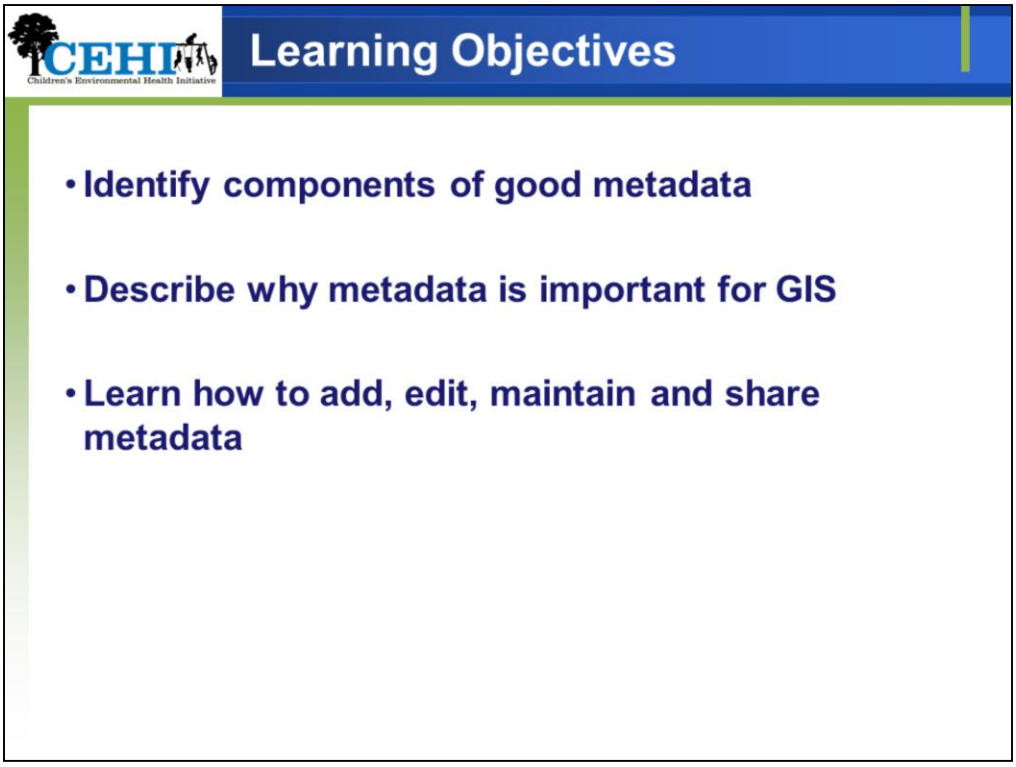
Getting Started with Metadata

GIS II Data Management



In the first training, we focused on you as CONSUMERS of data (downloading, using, displaying).

As we move forward with more editing, geoprocessing, and data management, you transition into a PRODUCER of data.

We want you to be both informed consumers and informed producers, but there are some additional things to consider when you are a producer.

Metadata is one of those important things.

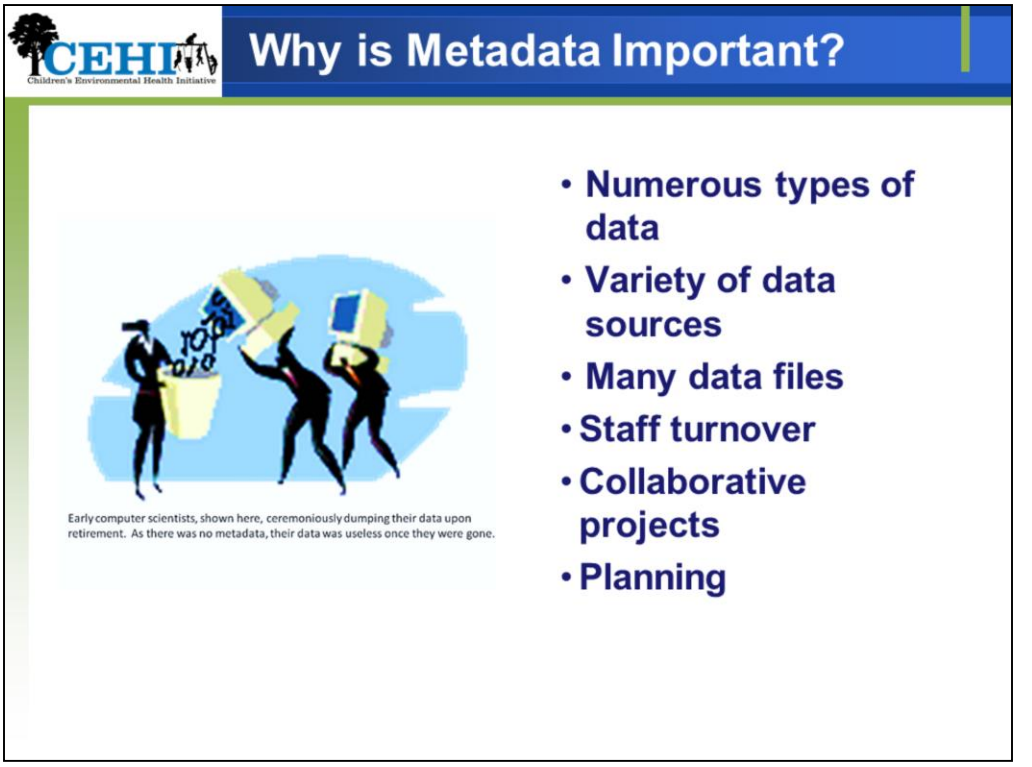
What is Metadata?

- Information about data
- Describes the content, quality, condition, origin, and other characteristics of data
- When evaluating, consider the 5 W's

- Who made it? Does it include contact information?
- What does it represent – what is the spatial extent, scale, feature type?
- Where does it come from? Are sources sited? Are there restrictions on who can use it?
- When was it created? What is the time period of the data itself? When are/were updates done?
- Why was it made – what is its use?

- How was it created (processing steps)?

- Good metadata can protect your investment in the resources you have created or purchased. For example, without knowledge of data accuracy, provenance, and age, you can't have a high level of confidence in decisions based on that data.



- Consider the types of data present in projects: these may include physical, administrative, socio-demographic, or epidemiological information.
- These datasets come from a variety of sources.
- You can also produce a large volume of data during a single GIS session.
- Staff turnover is inevitable – we don't want metadata to walk out the door when someone leaves.
- Keeping metadata current and consistent within a group eases the interoperability of people, programs, and data.
- Think about who other users might be and what information they will need.
- Organization and evaluation of data is key – this is where metadata comes in. Organized metadata acts as a **filing system** making the search for needed information easier.

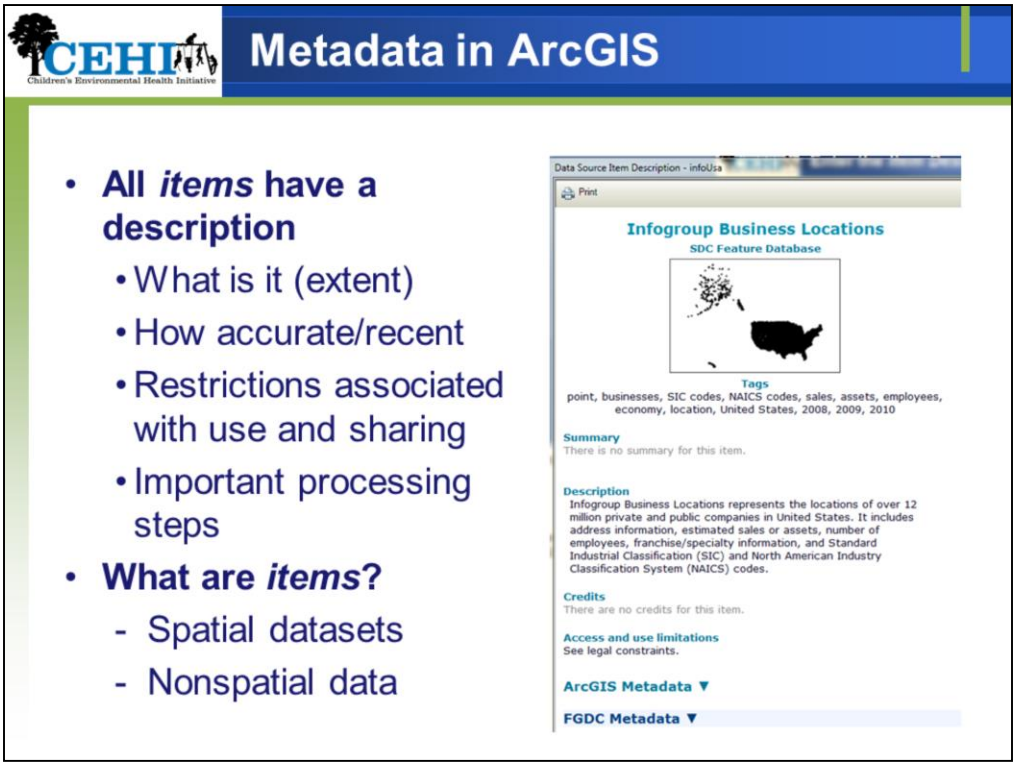
Where to Find Metadata

- **Digital or hard-copy forms of metadata**
  - Spreadsheets
  - Databases
  - Models
  - Communication
  - Documentation from legal department
- **Other forms**
  - Oral tradition
  - Institutional knowledge

Start by thinking about internal sources.

You probably have a lot of data sources that already exist that can be used to populate your GIS metadata. They might not be organized or written down.

This is also the time to consider metadata standards. Is there an adopted standard that already exists in your organization?



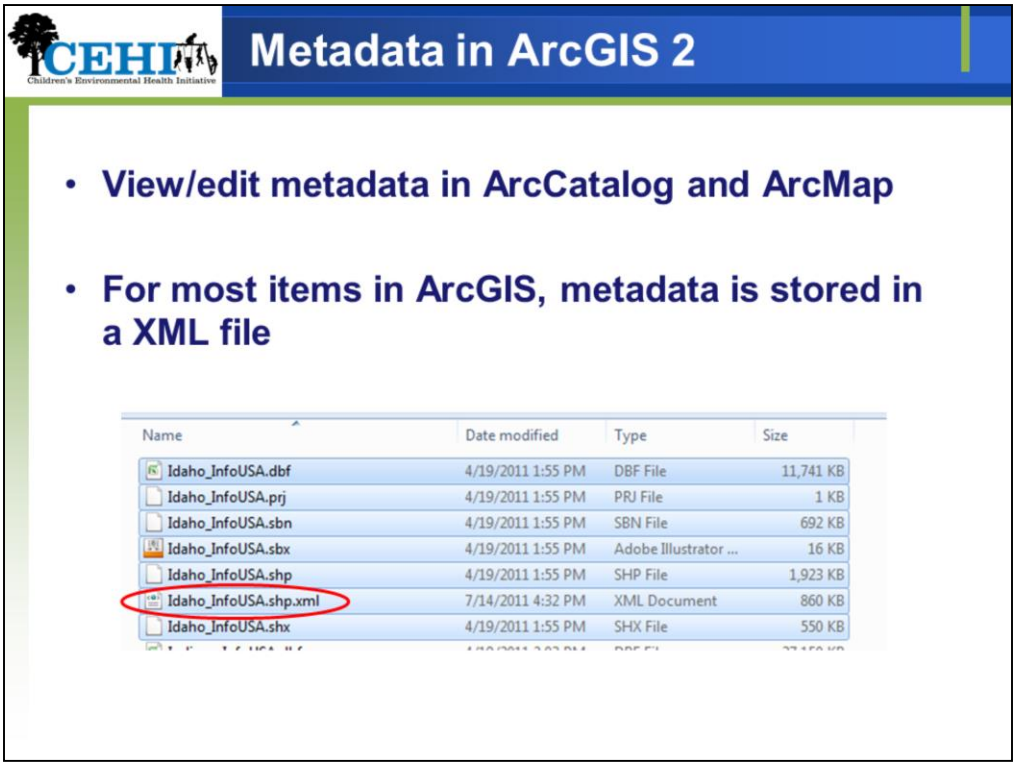
Item Description is a very basic description – do this if nothing else.

For different items, you will likely have different metadata.

For spatial datasets (feature classes, shapefiles, rasters), you need to provide enough information for users to display and work with those datasets: the date created and last updated, the coordinate system, scale and accuracy of the data, and the name of the author(s) who created/processed the data.

For a geoprocessing model, metadata may additionally include a description of how the model works, who created it, and what input a geoprocessing tool requires.

For other nonspatial items such as folders, tables, data dictionaries, etc, it can be useful to create a short description to guide the use of those files.



You view and edit an item's metadata in the **Description** tab, either in ***ArcCatalog*** or by opening the ***Item Description*** window from other ArcGIS Desktop applications.

To import/export metadata you need to use ArcCatalog or catalog.

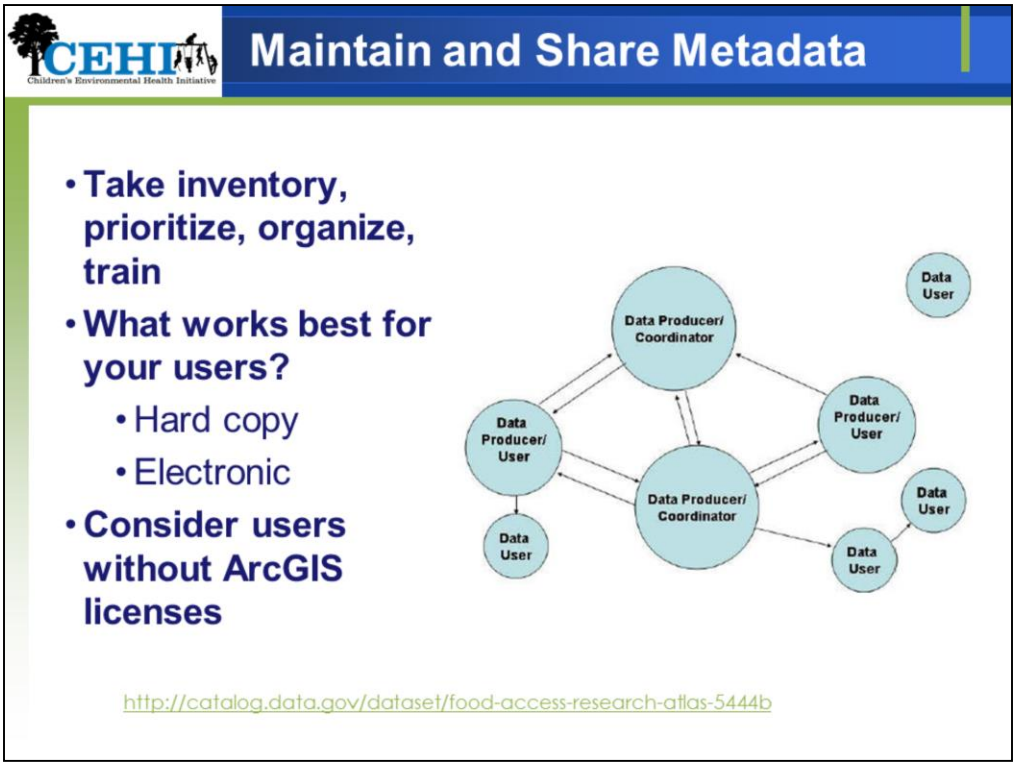
In ArcGIS, metadata is stored in a standalone XML file. You can view this XML file in a file manager like Windows Explorer.

If you want to provide more information than is available on the **Item Description** page or if you must create metadata that complies with a metadata standard, choose a different metadata style. Choosing a metadata style is like applying a filter to an item's metadata. The style controls how you view the metadata and also the pages that appear for editing metadata in the **Description** tab.

Standards determine what information you need to document in order to minimally comply with that standard. The standard acts as a dictionary that defines terminology and the expected values. In a way, standards ensure that everyone in the GIS community speaks the same language and therefore can understand each other.

There are predefined metadata standards. Which metadata standard you choose depends on how you intend to use the data.

- The Federal Geographic Data Committee's (FGDC) Content Standard for Digital Geospatial Metadata (CSDGM) – U.S. standard developed in the 1990's. Being replaced by international standards, so you CANNOT EDIT this. It only exists if it was already part of the file.
- The North American Profile of ISO 19115:2003 (NAP). (International Organization for Standardization). - This has been adopted in Canada and the U.S. as an extended version of ISO 19115. Best practice standard. – CAN EDIT.



Take inventory:

Spatial data seem to multiply so it's important to periodically take stock of your spatial and related data.

Prioritize:

Which datasets are the most important/useful for your group? Which data do you use most frequently currently? The answers to these questions affect the timing of collecting metadata.

Organize:

Use a metadata standard or template to ensure important information is captured consistently.

Train:

Develop a core group of metadata managers to help implement your system and spread the word.