NPS Metadata Tools and Editor Exercise: Parsing Metadata

GOAL: To parse and fix metadata with the NPS Metadata Tools and Editor.

The NPS Metadata Tools and Editor facilitates metadata editing and creation for both geospatial and non-geospatial data. Using the Metadata Tools and Editor with geospatial metadata within ArcCatalog requires a slightly different workflow than non-geospatial metadata in the stand-alone version. This exercise reviews the ArcCatalog-specific workflow required to generate, edit and parse a geospatial metadata record for a geodatabase feature class. Steps specific to the Metadata Tools and Editor within ArcCatalog are highlighted in **red font**.

For extensive detail on metadata parsing, see the Data Store Help documentation at http://science.nature.nps.gov/nrdata/docs/metahelp/metahelp.cfm.

REQUIRED MATERIALS

The following materials are needed to complete this exercise.

1. The NPS Metadata Tools and Editor application (http://science.nature.nps.gov/nrgis/tools/editor.cfm)

2. Sample data file with metadata from Editing Metadata exercise (*C:\CLASS\DATA\GIS*)

EXERCISE STEPS

Step 1: Parse and Fix Metadata

Metadata Parser (MP) is produced by USGS as a command-line tool for validating metadata records against the FGDC standard (http://geology.usgs.gov/tools/metadata/). Optionally, MP will export metadata in HTML, SGML, text or XML formats. When properly configured, Metadata Parser validates metadata against the BioProfile and ESRI standards as well. USGS also produces the err2html.exe command-line tool which generates HTML error pages to allow users to correct their metadata prior to posting it to clearinghouses like the NR-GIS Data Store. The NPS Metadata Tools and Editor packages MP and err2html.exe in a simple graphical user interface. <u>All metadata destined for the NR-GIS Data Store should be parsed with MP.</u>

The NPS Metadata Tools and Editor contains the Parse with MP tool in the ArcCatalog and stand-alone versions. A custom MP configuration file (NPS_Profile.cfg) is bundled with the Tools and Editor and should be used when parsing metadata that will be posted to the NR-GIS Data Store.

Like the Update with XML Template tool, care must be taken when selecting the metadata to be parsed. In the ArcCatalog version, the Parse with MP tool will operate on individual XML metadata files, metadata embedded in a geodatabase or coverage or all datasets and XML files in a folder or folders. In the stand-alone version, the tool parses individual XML metadata files. Individual XML metadata files containing spaces in their filenames will not parse correctly in MP. Therefore, it is good practice to not use spaces in filenames.

USGS continually updates MP and err2html.exe. Interim releases of the NPS Metadata Tools and Editor will bundle the latest concurrent versions of MP and err2html.

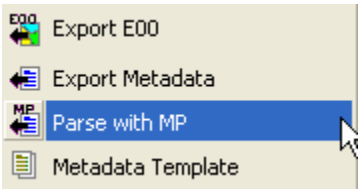
Known Issues with MP in NPS Metadata Tools and Editor

1. MP creates a temporary copy of the XML metadata to do any of the stripping or reordering of metadata. This means that line numbers in the syntax error output will not match those of the original file. In order for line numbers to match, you'll need to uncheck the strip ESRI tags and reordering options.

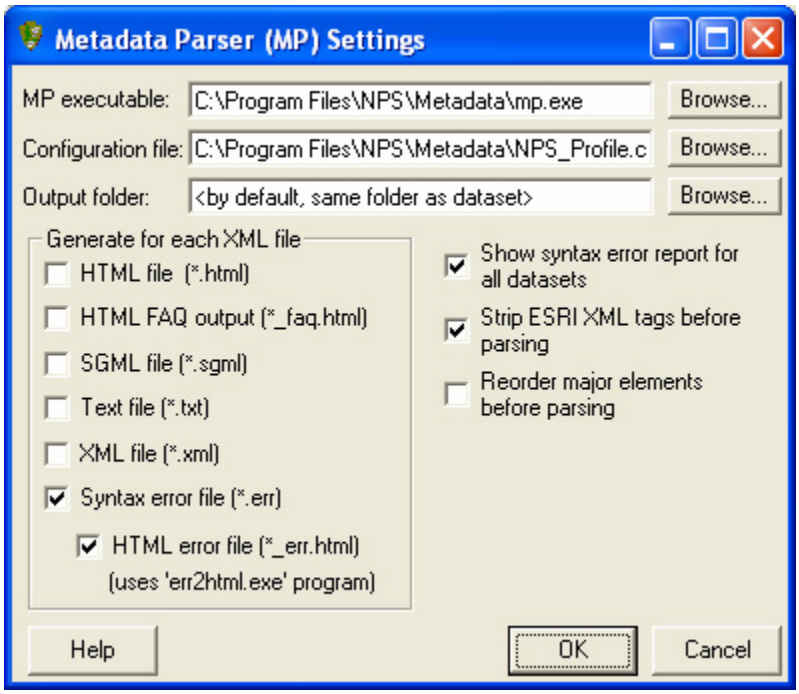
2. The reordering process uses an XML stylesheet that only rearranges the major sections of the metadata (all those that appear directly under the <metadata> element). It will not fix minor ordering issues in detailed sections of the metadata, e.g. keyword arrangement.

Parsing Metadata

Be sure the fc_Sites feature class is highlighted in the ArcCatalog table of contents. Select the **NPS Metadata → Parse with MP** tool.

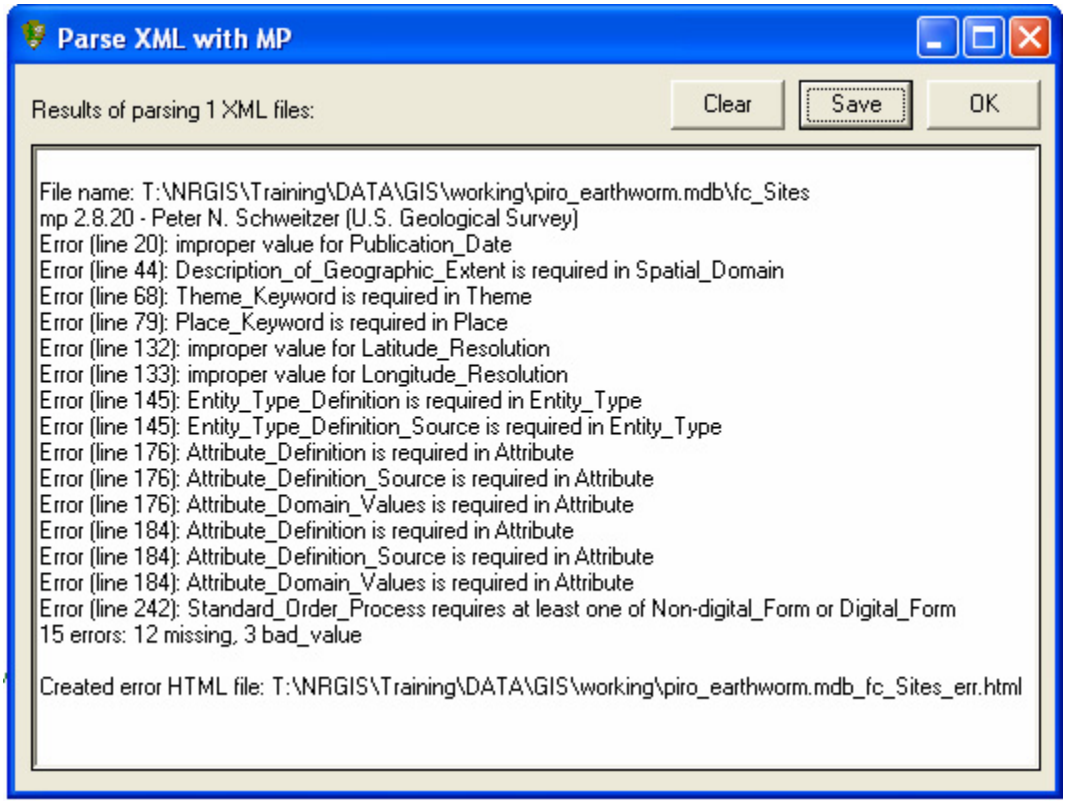


In the Metadata Parser Settings dialog, verify the path to the MP Configuration file points to C:\Program Files\NPS\Metadata\NPS_Profile.cfg. Enable the checkboxes as shown in the example below.



These settings will produce an error report and display an HTML error page for the fc_Sites metadata record. Extraneous tags added by ArcCatalog will be stripped from the error report. Click the 'OK' button.

Error reports will vary depending on how you populated the elements in Step 4 of the Editing Metadata exercise. Error reports can be extensive and detailed. Two error reports are produced. The text format error summary from MP appears in a pop-up window:



Err2html launches an Internet Explorer window containing the HTML error report. Errors are listed in descending order of severity.

mp 2.8.20 - Peter N. Schweitzer (U.S. Geological Survey)

15 errors: 12 missing, 3 bad_value

Type	Description or line numbers	Line(s) (or count)
Severity 3: Missing elements		
Error	Attribute_Definition (5.1.2.2) is required in Attribute (5.1.2)	176 184
Error	Attribute_Definition_Source (5.1.2.3) is required in Attribute (5.1.2)	176 184
Error	Attribute_Domain_Values (5.1.2.4) is required in Attribute (5.1.2)	176 184
Error	Description_of_Geographic_Extent (1.5.3) is required in Spatial_Domain (1.5)	44
Error	Entity_Type_Definition (5.1.1.2) is required in Entity_Type (5.1.1)	145
Error	Entity_Type_Definition_Source (5.1.1.3) is required in Entity_Type (5.1.1)	145
Error	Place_Keyword (1.6.2.2) is required in Place (1.6.2)	79
Error	Standard_Order_Process (6.4) requires at least one of Non-digital_Form (6.4.1) or Digital_Form (6.4.2)	242
Error	Theme_Keyword (1.6.1.2) is required in Theme (1.6.1)	68
Severity 1: Elements with improper values		
Error	improper value for Latitude_Resolution (4.1.1.1)	132
Error	improper value for Longitude_Resolution (4.1.1.2)	133
Error	improper value for Publication_Date (8.2)	20

Review the error report and determine which severe errors can be fixed. Use the **NPS_Basic_Edit** stylesheet to correct those errors you can.

Re-parse the metadata to verify your error corrections worked. Parsing and correcting is an iterative process that may need to be repeated several times. Some errors may not be correctable – you may not have the information, etc. At the least, try to correct errors in elements required for the NR-GIS Data Store.

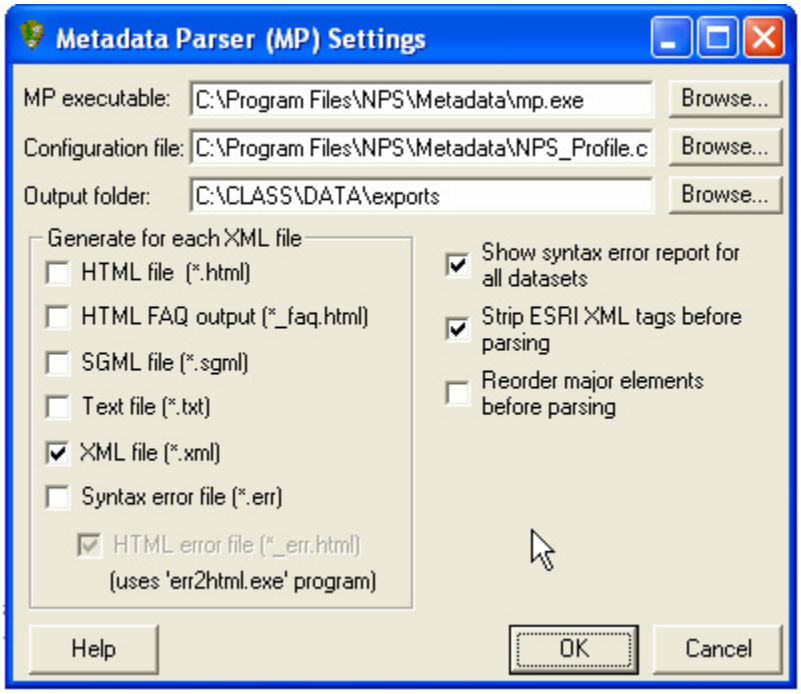
<u>When done, save your metadata record.</u>

Step 2: Export metadata (required only for geodatabase metadata)

For shapefiles and coverages, metadata is stored and operated on as a separate XML file. Obviously, stand-alone XML metadata files are separate files as well. However, geodatabase metadata is stored in an underlying database table as an OLE object (MSAccess) or a XML type or character large object (SDE). The NR-GIS Data Store cannot automatically harvest this metadata from a geodatabase. Therefore, geodatabase metadata must be exported to an individual XML file that can be uploaded to the Data Store. For coverages, metadata is stored in XML format in the coverage workspace folder with a default filename of 'metadata.xml'. This file can be posted to the NR-GIS Data Store, but since the filename is not unique, it is good practice to generate a separate XML file with a unique name for uploading to the Data Store.

The NPS Profile elements are retained in the export file if the NPS Metadata Tools and Editor Export Metadata tool is used to export XML metadata. However, the extra ESRI elements are retained as well. This shouldn't cause problems for the Data Store upload, but is a matter of data steward preference.

The Parse with MP tool 'export' capability generates an XML file and removes some of the extra ESRI elements from the XML output file if the 'Strip ESRI tags' checkbox is enabled.



Tips for Exporting

1. Export files to a separate folder to prevent accidentally overwriting existing individual metadata files. Do not use spaces in the filename!
2. When using Parse with MP to export XML, be sure to use the NPS_Profile.cfg configuration file.
3. By default, both the Export Metadata and Parse with MP tools apply the same naming convention to the exported file: <geodatabase file name>.mdb_<feature class or table name>.xml
4. ArcCatalog's Export Metadata tool can be used but only the plain XML output option will retain NPS-specific metadata elements.
5. Consider exporting coverage metadata to a separate XML file with a unique name.

Choose either the Export Metadata or Parse with MP tool to export the metadata for the fc_Sites feature class. Save the file in *C:\CLASS\DATA\GIS\EXPORTS*.

CONCLUSION

This exercise reviewed the metadata parsing functions of the NPS Metadata Tools and Editor.

REFERENCES

National Park Service Metadata Profile. http://science.nature.nps.gov/nrdata/docs/npsprofile.cfm

SOFTWARE REFERENCES

NPS Metadata Tools and Editor. http://science.nature.nps.gov/nrgis/tools/editor.cfm

NR-GIS Data Store. http://science.nature.nps.gov/nrdata

USGS Metadata Parser and err2html. http://geology.usgs.gov/tools/metadata/