



Quality Metadata

Lynda Wayne
Federal Geographic Data Committee
GeoMaxim

2004 ESRI Federal User Conference

Presented by Lynda Wayne
ESRI Federal User Conference
January 22, 2004
Washington Convention Center, DC



Quality Metadata is...

- Complete
- Accurate
- Comprehensible
- Discoverable





Complete Metadata

Metadata must be complete in both:

- Extent
the number of elements used to describe the data
- Content
the robustness of the information provided within those elements

Quality metadata has both breadth and depth



Complete Metadata: Extent

Start with...

all mandatory metadata elements

Select...

additional metadata elements pertinent
to your organization and/or data type

*Requires familiarity with the scope of the standard
but knowledge of only a core set of elements*

2004 ESRI Federal User Conference

As the users familiarity with the metadata standard increases, the ability to streamline the process is greatly enhanced



Complete Metadata: Extent

Use Templates to:

- Specify a set of elements for consideration
- Specify content for fixed elements, e.g.:
 - Contact Information
 - Liability and Constraint Statements
 - Distribution Methods

Consider templates for the organization, specific data types, and individual projects

2004 ESRI Federal User Conference

Templates provide an outline of pertinent elements but may also contain specific content for those elements that

are relatively fixed including standardized/legal language, contact information, distribution methods and websites.

Organizations with standardized data processing methods, accuracy assessments, and a single projection system, can further populate their template with content.



Complete Metadata: Extent

Utilize extensions and profiles:

- Existing (FGDC)
 - Biological Profile
 - Shoreline Profile
 - Remote Sensing Extension
- Custom

Profiles (vs. extensions) include specific guidance on content for non-extended fields

2004 ESRI Federal User Conference

If using the FGDC Content Standard for Digital Geospatial Data, consider using an existing extension or creating, and publishing, a custom extension.



Complete Metadata: Content

Provide Robust Information, especially for:

- **Titles**
where, what, when (why, who, and how)
- **Abstracts**
data set format and content (attributes)
- **Supplemental_Information**
 - record special information
 - 'front' information

*See handout 'Metadata Cliff Notes' posted at
<http://www.fgdc.gov/metadata/education.html>*

2004 ESRI Federal User Conference

Supplemental Information

The field can be used to record information not captured elsewhere in the standard or to 'front' important information that may be somewhat buried elsewhere in the record.



Complete Metadata: Content

- **Theme_Keyword**
use ISO Topic Categories
- **Use_Constraints**
note data set is not a survey data product
- **Accuracy**
include quantitative measures when able
- **Process_Step**
record during data development

2004 ESRI Federal User Conference

ISO Topic Categories listed in ‘Metadata Cliff Notes’ handout

<http://www.fgdc.gov/metadata/education.html>

Use_Constraints

due to Survey Practice law references to GIS and photogrammetry, it is best to label non-survey data products as such and state that they are not intended for use as a survey data product

Accuracy

possible

include quantitative measures, such as the digitizing Root Mean Square (RMS) error, when

Process_Step

subject to

metadata recorded during data development is more thorough, more accurate, and less

staff turn-over and failing memories



Complete Metadata: Content

- Abscissa/Ordinate Resolution
 - vector = fuzzy tolerance
 - raster = cell size
- Entity and Attribute Description
 - **Overview** if documented elsewhere
 - **Detailed** as opportunity to document

Time spent providing robust information is time saved fielding inquiries

2004 ESRI Federal User Conference

Entity and Attribute Description

Overview Description:

If the attributes are described in a document such as a specification manual, data dictionary, or online resource

you do not need to redefine the attributes in the metadata but should provide as clear a reference as possible

to the attribute documentation (file, author, online link, etc)

Detailed Description

If the attributes are not described elsewhere, consider the metadata record as an 'opportunity' to document

the attribute definitions



Accurate Metadata

Correct Information:

- Include all data contributors (*sans* sources)
- If you don't know – say so

Current Information

- Create metadata during data development
- Review and update regularly

ArcCatalog support accuracy via synchronicity

2004 ESRI Federal User Conference

Correct Information

Those that contributed toward the data set should review and update the metadata record

It is not, typically, necessary to include source data producers in your metadata review



Comprehensible Metadata

Use Good Writing Skills

- spelling
- grammar
- capitalization
- spell out acronyms

**DLG
GIS
LIDAR
FIPS**

Write plainly for Abstracts and Titles and save the technical jargon for the Processing Information



Discoverable Metadata

Use a Metadata Standard

- CSDGM
geospatial digital data
- Dublin Core (DC)
web documents
- Government Info Locator System (GILS)
government documents

Most data ARE geospatial !



Discoverable Metadata

Use Thesauri

- Library of Congress Subject Headings
- Professional
 - e.g., Cowardin Wetland Classification
- GOS / ISO
 - Topic Categories – Data Categories

Use both broad and narrow keywords

2004 ESRI Federal User Conference

See Metadata Online Resources at:

<http://www.fgdc.gov/metadata/links/metalinks.html>

for examples of 'thesauri', e.g., standardized vocabularies



Geospatial One-Stop Metadata

The basic requirement for GOS metadata is the production of quality metadata as outlined in this presentation



Geospatial One-Stop Metadata

- Additional elements provided to document geospatial data acquisition projects valued over \$1 million

funding type

projected cost

budget cost

partnered funds

These metadata elements map to CSDGM element 'Supplemental_Information'



Geospatial One-Stop Metadata

- GOS Metadata creation/publication tools available at Geodata.gov to:
 - upload and revise existing metadata
 - create metadata for:
 - digital geospatial data
 - planned data acquisition / development
 - online geospatial webservice



Additional Metadata Resources

FGDC Metadata Website

[http://fgdc.gov/metadata/
education.html](http://fgdc.gov/metadata/education.html)

tutorials, trainers, training calendar

Writing Quality Metadata handout

[community.html](http://fgdc.gov/metadata/community.html)

metadata listserver, what's new, working group

[metalinks.html](http://fgdc.gov/metadata/metalinks.html)

tools, thesauri, and other online resources



Additional Metadata Resources

Sharon Shin

FGDC Metadata Coordinator

Sharon_Shin@usgs.gov

Lynda Wayne

NSDI Implementation Liaison

Lwayne@GeoMaxim.com