Understanding and Using Metadata in ArcGIS

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Understanding and Using Metadata in ArcGIS

- Introduction - Adam
- Metadata across ArcGIS - Marten
- What’s Next? - Aleta
Introduction
Adam Martin
Why Metadata Matters?

[Box]
Discoverability

[Box]
Accountability
Metadata Enables Documentation and Discovery
Effectively and freely sharing your derivative work with any machine or person
Esri Supports Building Open Data Catalogs

ArcGIS Hub

Geoportal Server (Open Source)
Enabling Search, Discovery and Use
Powering Search

Harvesters
Crawlers
Bots

Catalog Feed
DCAT
CSW

Hub Sites
JSON-LD

Public Web Services
WFS, WMTS

Exploratory Apps
GeoServices REST API

Big Data Stores
on an Open Cloud

Metadata
ArcGIS
> 2,500 governments and organizations

> 234,000 curated datasets
HIFLD

Open Data

This site provides National foundation-level geospatial data within the open public domain that can be useful to support community preparedness, resiliency, research, and more. The data is available for download as CSV, KML, Shapefile, and accessible via web services to support application development and data visualization.

For updates about HIFLD data, guidance on metadata, and known shapefile conversion issues, please access the HIFLD notifications page located here.

Find Data

Search HIFLD Open

Explore All Data
How users find your data in your Hub Sites?

- **33% Search Google**
  - Click on a trustworthy looking source
  - 33% of search-based users land on the home page; the rest on an actual dataset!

- **25% Referrals from a trusted source**
  - From an already trusted .gov website

Source: Hub Google Analytics, Jan-Jun 2019

“Authoritative” data vs. source discovery
How Hub Sites Help SEO your Data

- **Links**: More links to your dataset pages
- **Mobile Design**: All new features go through mobile-specific designs, e.g., increasing text size within a search box.
- **Enforce HTTPS**: To automatically redirect any requests over HTTP to HTTPS
- **A Sitemap**: That shows web crawlers the way through your site
- **Dataset page html inserts**: That web crawlers love to read <tags>
- **Optimized Media Content**: Improved image and multimedia embed capabilities and improved accessibility
Metadata Matters at Each Step

- Feature Creation
  - What were the sensors specs?

- Derived Map
  - Which who created the information in this map?

- Analysis
  - What models were used to process the data?
  - When was this data last updated?

- Derived App
  - Whose model are we using?

- Decision

- Outcomes
Metadata Across ArcGIS

Marten Hogeweg
Metadata is the Fuel for Open Data Sharing
Metadata documents geospatial content for search, discovery, evaluation, and archiving. ArcGIS platform should facilitate these efforts.

Goal: improve the experience.
Metadata Lifecycle in ArcGIS

- All items have metadata
- Metadata in ArcGIS is stored in ArcGIS XML
- Metadata styles determine how you display, edit, validate, export metadata
Metadata Styles

- FGDC CSDGM Metadata
  - Content Standard for Digital Geospatial Metadata (CSDGM)
- ISO 19139 Metadata Implementation Specification
- North American Profile of ISO 19115:2003 (NAP)
- INSPIRE Metadata Directive
<table>
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<tr>
<th>Feature</th>
<th>ArcMap 10.x</th>
<th>PRO 2.2</th>
<th>PRO 2.3</th>
<th>PRO 2.4</th>
<th>Portal/Online</th>
<th>Hub</th>
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</thead>
<tbody>
<tr>
<td>Metadata styles for geospatial metadata standards</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>Display and edit full metadata</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>Map layers have metadata</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>-</td>
</tr>
<tr>
<td>Import and export metadata</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>No¹</td>
<td>No/Yes²</td>
</tr>
<tr>
<td>Manage metadata programmatically</td>
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<td>✓</td>
<td>✓</td>
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<td>✓</td>
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<tr>
<td>Manage metadata with geoprocessing tools</td>
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<td>Publish map with full metadata</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>N/A</td>
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<td>Customize the metadata editor</td>
<td>✓</td>
<td>✓⁵</td>
<td>✓</td>
<td>✓</td>
<td>???³</td>
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<td>ISO 19115-1/-2/-3</td>
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<td>-</td>
<td>-</td>
<td>???⁴</td>
<td>???⁴</td>
</tr>
</tbody>
</table>
Metadata Support in ArcGIS Pro

- Metadata styles for geospatial metadata standards
- Display and edit full metadata
- Metadata for map layers
- Import and export metadata
- Save and filter content to files
- Copy ArcGIS metadata
- Upgrade CSDGM metadata
- Integration via Pro SDK
Metadata Support in ArcGIS Online and ArcGIS Enterprise

- Metadata styles for geospatial metadata standards
- Display and edit full metadata
- Scores quality of content
- Metadata for item layers
- Export metadata
- Copy ArcGIS metadata
- Save content to file
Metadata Support in ArcGIS for Open Data

• Leverage existing metadata for public items
• Display and edit full metadata
• Scores quality of metadata content
• Search metadata
• Export metadata
• Leverage metadata for additional access options
What’s Next?

Aleta Vienneau
Flow of Metadata Publishing to ArcGIS Online

- Create metadata for data
- Add data to an ArcGIS Pro map
  - Layer reference’s data’s metadata
- Publish map to ArcGIS Online as a hosted feature layer
  - Data with metadata is copied
- Individual layers in the feature layer reference the copied data’s metadata
- Update metadata locally, overwrite item to make updates available online
Flow of Metadata Publishing to ArcGIS Enterprise

• Create metadata for data in registered enterprise geodatabase
• Add data to an ArcGIS Pro map
  - Layer reference’s data’s metadata
• Publish map to ArcGIS Enterprise as a feature layer
  - Data with metadata is referenced
• Individual layers in the feature layer reference the data’s metadata
• Update metadata in the enterprise geodatabase, immediately available online
Road Ahead – Near Term

- Support importing and exporting ISO 19115-1/-3 formatted metadata content
- Metadata equivalency between ArcMap and ArcGIS Pro
- Import standard metadata in ArcGIS Online and ArcGIS Enterprise
- Hold another Esri Metadata Summit?
Road Ahead – Mid Term

- Update the ArcGIS metadata editor to support ISO 19115-1/-3 content
- Metadata editor usability improvements
- Leverage organizational metadata settings
- Develop a plan for supporting ISO 19115-2 content
Road Ahead - Long Term

- Common metadata editing experience for the ArcGIS platform
- Controlled vocabularies
Metadata in the ArcGIS Platform

• Improve metadata support throughout the platform
• Create metadata that complies with standards
• Goals
  • Improve flow of metadata through the platform
  • Make it easier to produce high quality metadata content
Please Share Your Feedback in the App

Download the Esri Events app and find your event

Select the session you attended

Scroll down to “Survey”

Log in to access the survey

Complete the survey and select “Submit”