



Metadata Requirements for SanGIS Data Layers

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1. What is Metadata?

Metadata is “data about data”. It is information in addition to the spatial and tabular data that is required to make the data useful. Metadata is information you need to know in order to correctly use the data (www.gis.com). Metadata may describe the content of an item, the item’s datum, or a list of descriptions for codes used in the data. “Metadata (sometimes written ‘meta data’) is used to facilitate the understanding, use and management of data” (<http://en.wikipedia.org/wiki/Metadata>). At a minimum, the metadata should include the source and projection of the data, the definitions of every attribute and any disclaimers for the data.

2. SanGIS Metadata Requirements

All data submitted to SanGIS must contain the minimum metadata elements described below. SanGIS requires not only that these elements be completed but that they contain substantive, quality information.

SanGIS requires metadata to be edited and provided within ArcGIS directly (requires ArcGIS v.10 and above).

SanGIS requires metadata to be edited using ESRI’s Metadata Stylesheet “ISO 19139 Metadata Implementation Specification”.

The required SanGIS metadata fields are summarized below. This summary is organized by metadata group, section, and item (aka element) as seen when using the ESRI Metadata Stylesheet “ISO 19139 Metadata Implementation Specification” while editing metadata using ESRI’s ArcCatalog software. Only the metadata elements required by SanGIS are covered here. All metadata items not required by SanGIS are optional. Users are encouraged to use all metadata elements needed to fully describe the data set whether that metadata element is required by SanGIS or not.

A detailed step by step guide is provided starting in Section 3 below.

2.1 Overview

It is important to adequately complete the Item Description fields in the Overview Group as these elements are published to ArcGIS Online and other output products. The Item Description elements provide the basic information for all users to understand what the data covers, how it should be used, and what limitations apply.

Item Description

- Title – Feature Class or Layer name (auto-completed by ArcGIS)
- Tags –These are keywords not linked to a thesaurus used by search engines to locate relevant data
- Summary (Purpose) – The purpose of the dataset, not to be confused with description. The Summary may be a short version of the Description but should indicate, in a brief sentence or two, what the data set is and what its intended purpose (use) is.
- Description (Abstract) – This should be detailed enough to allow the user to understand the content and nature of the dataset. The Description is frequently an expanded explanation of the Summary (Purpose) and will include more detail about how the data is expected to be used, created, etc.
- Credits – A recognition of those who created or contributed to the dataset

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- Use Limitation – Key limitations to the use of the dataset. What the data should not be used for, cautions on the use of the data, legal limitations, etc.
- Bounding Box – This is automatically populated by ArcGIS but can be edited if desired

Topics & Keywords

- Topic Categories (check boxes) – Check all that apply to this dataset
- Theme Keywords – Searchable keywords that describe what the data covers
- Place Keywords – Searchable keywords that describe the area covered by the data

Citation

- Title – Feature Class or Layer name (auto-completed by ArcGIS)
- Published Date – This is the date when the dataset is published or otherwise made available for release from source

2.2 Metadata

In the Metadata Group only the Date Stamp, under the Details section, is required by SanGIS. However, users are encouraged to add as much information as they have under the Contacts, Maintenance, and Constraints sections.

Details

- Date Stamp – Automatically populated by ArcGIS but can be manually edited if desired.

2.3 Resource

The minimum required elements for SanGIS in this Resource Group are described below. Users are encouraged to add metadata to all sections in this group if needed to accurately describe the dataset.

Details

- Status – State of completeness of dataset, select from drop-down list.
- Spatial Representation Type – Auto-completed by ArcGIS but can be manually edited if desired.

Extents

- Description – Extents relate to the time period of the data itself. That is, what is the time period covered by the data?
- Temporal Period Extent (insert dates) – This equates to the ‘Date of the Data’ or time at which the data is accurate on the ground

Points of Contact

SanGIS requires a contact here with the role of Point of Contact. The following details must be included

- Contact Name
- Organization
- Position, Role
- Email, Address Type
- Address, City, State, Postal Code, Country
- Phone Number

Maintenance

- Update Frequency – The expected frequency of update of data
- Next Update – Scheduled date for next update of dataset

Constraints

- General Constraints – Restrictions and legal prerequisites to use of dataset. This is replicated from Overview > Use Limitation

Spatial Reference

This is autocompleted by ArcGIS

Distribution

Distributor:

- Contact – A contact with the role of ‘Distributor’, this may replicate the Point of Contact.
- New Ordering Instructions – Complete ordering instructions and available date period if appropriate

Digital Transfer Options:

- Select New Online Resource and complete the Description field with where data is available, e.g. SanGIS Downloadable Data

Fields

Attribute Details: The following fields are *mostly* autocompleted by ArcGIS. The Definition should be manually edited to comprehensively explain the attributes in this field.

- Label – Autocompleted by ArcGIS
- Definition – It is essential to complete this field with details about the attribute. Any codeset domain values and descriptions should be included here.
- Definition Source – The authority that provided the description of the field’s data
- Type – Autocompleted by ArcGIS
- Width – Autocompleted by ArcGIS
- Precision – Autocompleted by ArcGIS
- Scale – Autocompleted by ArcGIS
- Indexed – Autocompleted by ArcGIS

Overview:

- Summary – A detailed summary of the information provided by the resource’s data.
- Citation – Reference document that provides a description of the features, fields, and values

3. Step by Step Guide to Creation & Editing of Metadata

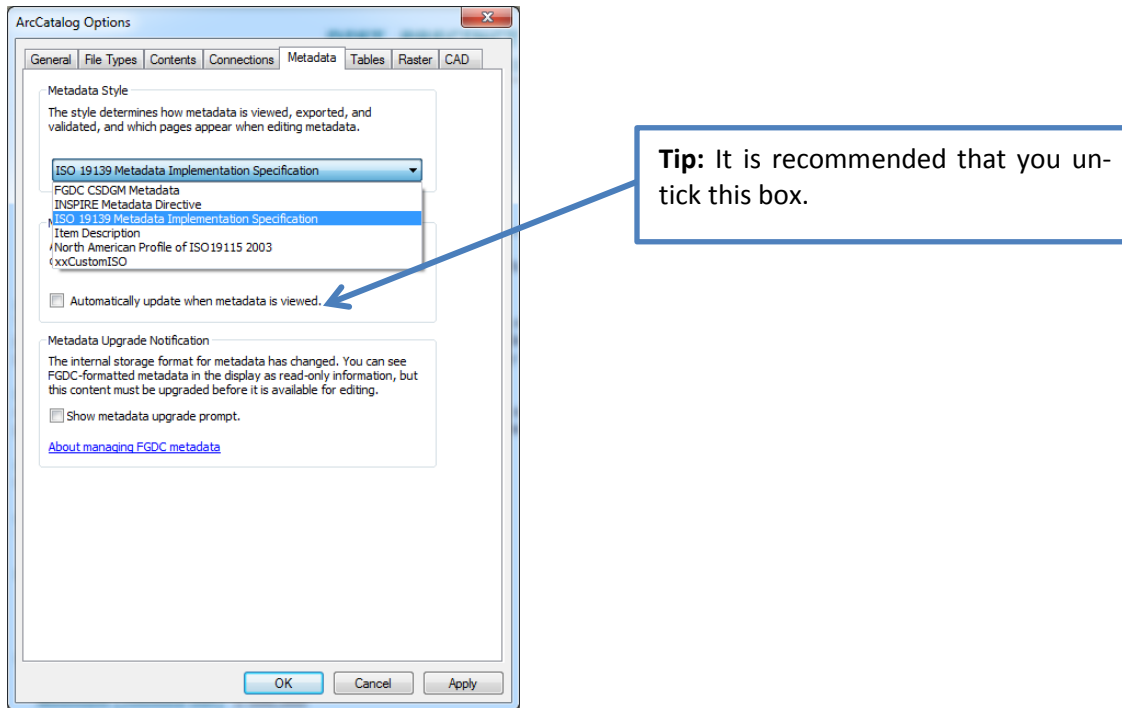
To comply with SanGIS Metadata Requirements you need to:

1. Use ArcGIS v10.1 or above (refer to Appendix B for further information on upgrade tools)
2. The ArcCatalog Metadata Style be set to ISO 19139 Metadata Implementation Specification (under the *Customize-ArcCatalog Options-Metadadata* tab in ArcCatalog)
3. Be edited and updated to comply with the SanGIS Metadata Requirements below.


3.1 Setting up Metadata Style

Editing and maintaining metadata through ArcGIS Editor can be configured for different standards and is valid for both ISO and FGDC CSDGM standards.

SanGIS now requires metadata to be submitted in accordance with the **ISO 19139 Metadata Implementation Specification**. Therefore it is recommended that ArcCatalog be configured to use the ISO 19139 metadata style as follows:



3.2 Metadata Template

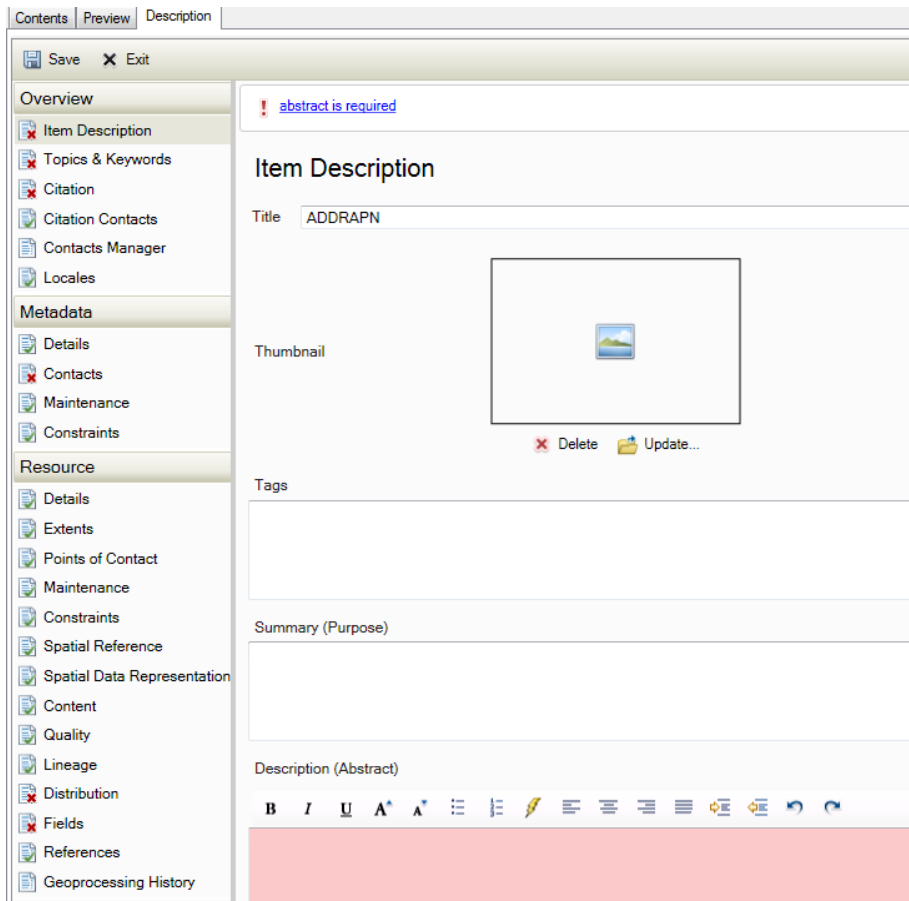
It is recommended to use a Metadata Template that will contain key information that is common to all your organizations datasets. This stand-alone metadata XML file can be shared with GIS staff responsible for creating and maintaining metadata. This template can then be imported into datasets using the Import button () in the Description tab and using the FROM_ARCGIS import type before commencing editing. This will reduce the workload involved in creating metadata for new datasets. A link to ESRI documents on creating metadata templates is included in Appendix D.

3.3 Editing & Required Fields

Metadata is edited and managed through ArcCatalog in the Description tab for each Feature Class or Layer. Metadata in the edit environment looks different to that in the 'view' environment. The 'view' will only show populated elements and includes ArcGIS autocompleted elements whereas the edit environment shows all editable fields.

The edit environment looks broadly similar regardless of which Metadata Style you use but there are additional tabs under the ISO Style (Locales & Spatial Reference only in ISO).

ArcGIS will clearly highlight (with red x and highlighted red background) missing, invalid or required elements in accordance with the Metadata Style chosen, while valid ones are marked with a green tick (see below). Below is a screenshot showing how the editor highlights missing required fields.

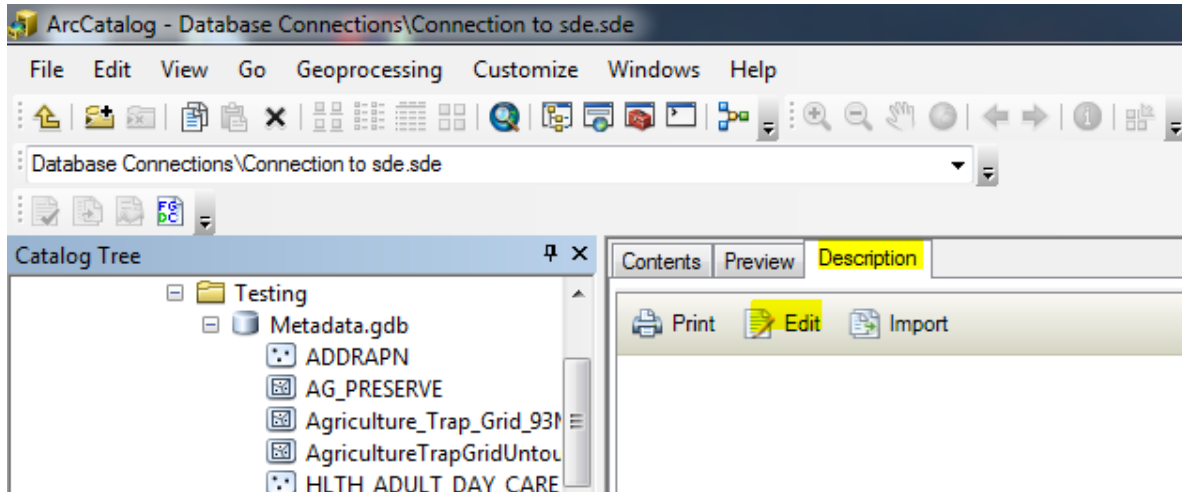


SanGIS does not require full compliance with the ISO 19139 Metadata Implementation Specification. The screenshots below provide a guide to the SanGIS required metadata fields.

SanGIS required elements are highlighted in yellow, with a description of the required information included in associated text boxes.

4. Detailed Instructions for SanGIS Required Metadata

To start editing your metadata, locate your dataset in ArcCatalog, and on the Description tab select Edit (see screenshot below) then edit the required elements using the screenshots that follow as a guide.



4.1 OVERVIEW- Item Description

The screenshot shows the ArcGIS metadata editor interface. On the left is a navigation pane with sections like Overview, Metadata, and Resource. The main area is titled 'Item Description' and contains several text input fields: Title, Thumbnail, Tags, Summary (Purpose), Description (Abstract), Credits, and Use Limitation. Each field is highlighted with a yellow box, and a callout box with an arrow points to it, providing a definition and example for that field. At the bottom, there is a 'Bounding Box' section with a globe icon and coordinate values for West, East, South, and North.

The Layer Name, e.g. HLTH_ADULT_DAY_CARE. This is automatically populated by ArcGIS.

Image of dataset. See Appendix D for instructions on how to create the thumbnail.

A set of terms that can be used by ArcGIS to search for the resource. Terms should be provided as a comma-separated list. These are terms that are not derived from a thesaurus, e.g. *Adult Care, County of San Diego, San Diego County, Adult Day Care*

A summary of the intentions with which the dataset was developed. Not to be confused with the Description (Abstract), e.g. The Department of Homeland security has mandated that certain spatial data layers be available for disaster preparedness. This shape file depicts Adult Day Care Centers, which in the case of an emergency may require special attention from relief and rescue teams

A narrative summary of the resource’s content. This should adequately explain what the dataset is about, e.g. The California Department of Social Services, Child Care Licensing Division, maintains licensing information for every Adult Day Care Center in the State. The following data set depicts California state licensed adult day care centers for the County of San Diego. The State defines these as: Adult Day Program means any community-based facility or program that provides care to persons 18 years of age or older in need of personal services, supervision, or assistance essential for sustaining the activities of daily living or for the protection of these individuals on less than a 24-hour basis.

Recognition of those who created or contributed to the resource, e.g. County of San Diego using data provided by State of California Department of Social Services

Restrictions and legal prerequisites to using the dataset after access is granted, e.g. See the Conditions of Use policy developed and maintained by the California Department of Social Services, Child Care Licensing Division regarding use constraints of this data. These policies have been developed to protect the privacy of individuals who may be with the information provided. <http://ccl.dss.cahwnet.gov/conditions.htm>

Note: Use limitation is the same as General Constraints included under Resource > Constraints > General Constraints. When you complete either one, the other is automatically updated.

4.2 OVERVIEW- Topics & Keywords

The screenshot shows a metadata editor window with a sidebar on the left containing sections like Overview, Metadata, Resource, and Spatial Data Representation. The main area is titled 'Topics and Keywords' and includes a list of 'Topic Categories' with checkboxes, a 'Content Type' dropdown set to 'Downloadable Data', and several keyword lists: Theme Keywords, Place Keywords, Temporal Keywords, Discipline Keywords, Stratum Keywords, and Other Keywords. A list of requirements is shown at the top right of the main area.

Requirements:

- topic category is required
- theme keywords are required
- place keywords are required
- identifier code is required
- title is required
- at least one date is required
- linkage URL is required

Callouts:

- Topics covered by the dataset; Check all that apply.** (Points to the Topic Categories list)
- Tip: This relates to how you can access a shared copy of the resource. It defaults to "Downloadable Data" so it is recommended that you select "Empty" if none of the other options are applicable.** (Points to the Content Type dropdown)
- Subjects covered by the dataset; Keywords that associate the resource with a particular subject or topic, e.g. Municipal Boundary, City Limits, Jurisdiction Limits** (Points to the Theme Keywords list)
- Geographic locations characterized by the data set; Keywords that associate the resource with a location, e.g. County of San Diego, California** (Points to the Place Keywords list)

4.3 OVERVIEW- Citation

Contents | Preview | Description

Save X Exit

Overview

- Item Description
- Topics & Keywords
- Citation
- Citation Contacts
- Contacts Manager
- Locales

Metadata

- Details
- Contacts
- Maintenance
- Constraints

Resource

- Details
- Extents
- Points of Contact
- Maintenance
- Constraints
- Spatial Reference
- Spatial Data Representation
- Content
- Quality
- Lineage
- Distribution
- Fields
- References
- Geoprocessing History

! at least one date is required

Resource Citation

Titles: ADDRAPN

Title ADDRAPN

Alternate Title

Collective Title

Presentation Form **Digital Map**

FGDC Geospatial Data Presentation Form [View](#)

+ New Identifier

ISBN

ISSN

Dates

Created 15

Published 15

Revised 15

Edition

Series

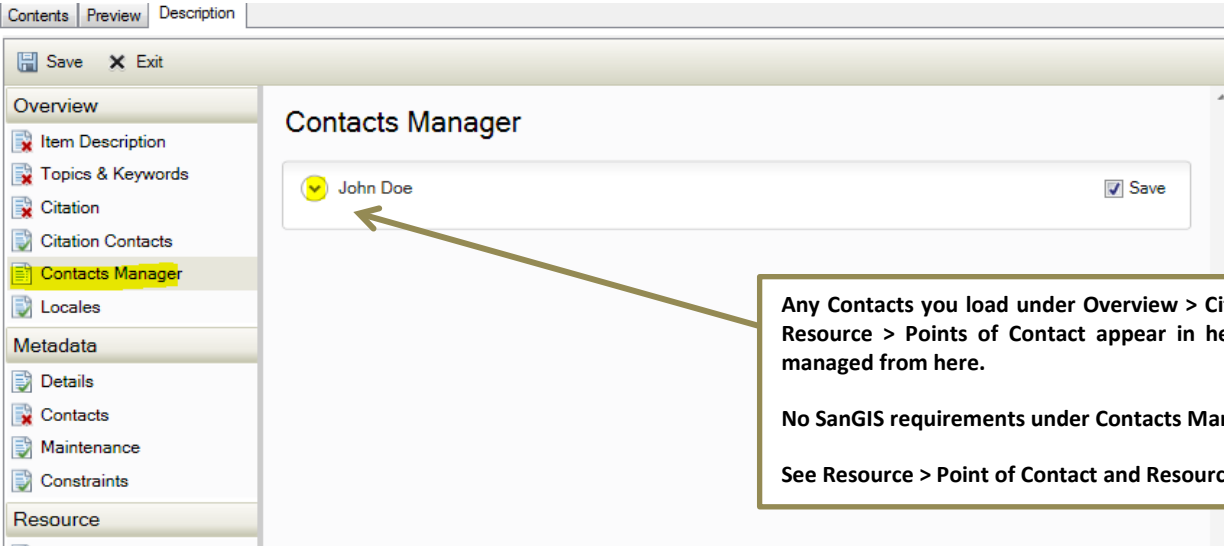
Other Details

The name by which the dataset is known (layer / file name). This is automatically populated by ArcGIS, e.g. ADDRAPN

Note: Title is the same as Title under Overview > Citation > Resource Citation

The date when the dataset is published or otherwise made available for release from the source or owner such as SANDAG, City, or County. This is not the date that SanGIS publishes datasets to the Regional Data Warehouse. It is the date the data owner made it available for use to others.

4.4 OVERVIEW- Contacts Manager

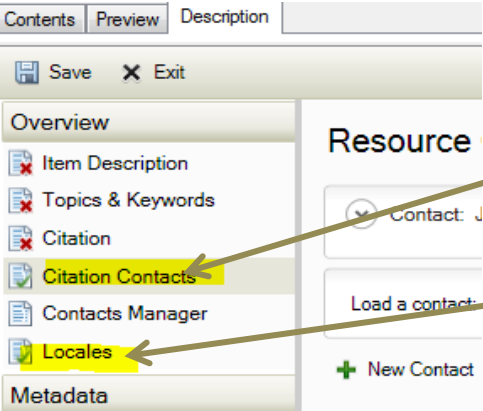


Any Contacts you load under Overview > Citation Contacts OR Metadata > Contacts OR Resource > Points of Contact appear in here. They are not created here but can be managed from here.

No SanGIS requirements under Contacts Manager.

See Resource > Point of Contact and Resource > Distribution > Distributor

4.5 OVERVIEW- Other Sections



There are no SanGIS requirements for Citation Contacts.

Locales are specific to ISO 19139. There are no SanGIS requirements under Locales.

4.6 METADATA- Details

The screenshot shows the 'Metadata Details' form in a web application. The left sidebar contains a tree view with sections: Overview, Metadata, and Resource. Under 'Metadata', 'Details' is selected. The main form area has the following fields:

- File Identifier:
- Parent Identifier:
- Dataset URI:
- Date Stamp: 2014-03-24 15 (highlighted in yellow)
- Language: English (dropdown)
- Character Set: utf8 (dropdown)
- Hierarchy Level: Dataset (dropdown)
- Hierarchy Level Name: dataset

A callout box with a yellow border and black text points to the 'Date Stamp' field. The text inside the box reads: "This date represents the currentness of the metadata or 'last update date' for metadata. This is automatically populated by ArcGIS but can be manually adjusted."

4.7 METADATA- Other Sections

The screenshot shows the left sidebar of the application. The 'Metadata' section is expanded, showing the following items:

- Details
- Contacts (highlighted in yellow)
- Maintenance (highlighted in yellow)
- Constraints (highlighted in yellow)

A callout box with a yellow border and black text points to the 'Contacts', 'Maintenance', and 'Constraints' items. The text inside the box reads: "Not Required by SanGIS".

4.8 RESOURCE - Details

The screenshot shows the 'Resource Details' form in a web application. The left sidebar contains a navigation menu with sections: Overview, Metadata, and Resource. The 'Resource' section is expanded, showing 'Details' as the active sub-section. The main content area is titled 'Resource Details' and contains several fields and sections:

- Status:** A dropdown menu currently set to 'On Going'. A callout box points to this field with the text: "The state of the dataset. Select from dropdown list as follows: Completed, Historical Archive, Obsolete, On Going, Planned, Required, Under Development."
- Languages:** A section with a '+ New Credit' button. It contains a 'Language' dropdown set to 'English' and a 'Character Set' dropdown set to 'utf8'. A callout box points to the 'Character Set' field with the text: "This is to replace FGDC Geospatial Data Presentation Form. Autocompleted by ArcGIS but can be selected from coded list: Empty, Vector, Grid, Text Table, Tin, Stereo Model, Video."
- Spatial Representation Type:** A dropdown menu set to 'Vector'. It has 'x' and '+' icons to its right.
- Scale Resolution:** An empty text input field with 'x' and '+' icons to its right.
- Distance Resolution:** A text input field with a dropdown menu set to 'Empty'. It has 'x' and '+' icons to its right.
- Processing environment:** A text input field containing 'Microsoft Windows 7 Version 6.1 (Build 7601) Service Pack 1; Esri ArcGIS 10.1.1.3143'.
- Supplemental Information:** A large empty text area with a scroll bar.

4.9 RESOURCE - Extents

The screenshot shows a metadata editor window with a sidebar on the left containing sections for Overview, Metadata, and Resource. The main area is titled 'Resource Extents' and contains three expandable sections: 'Extent', 'Temporal Period Extent', and 'Temporal Instant Extent'. Callout boxes with arrows point to each section, providing definitions and instructions.

Extent
Description

Describes the spatial or temporal extent of the resource, e.g. San Diego County for spatial extent. A description of the temporal extent is the basis on which the time period of content information is determined. That is, the date at which the data is considered updated, *i.e.* Ground condition or Publication Date

Temporal Period Extent
Begin Date/Time: [15]
End Date/Time: [15]

This is the "Date of the Data" or time at which the data is accurate on the ground. This can be a single date or a date range.
For date range, select begin date and end date for the date at which the data is accurate on the ground.

Temporal Instant Extent
Instant Date [15]

4.10 RESOURCE – Point of Contact

The screenshot shows a web-based form for creating a 'Point of Contact' under the 'Resource' section. The interface includes a left-hand navigation menu with categories like 'Overview', 'Metadata', and 'Resource'. The main form area is titled 'Contacts' and contains several fields: Name, Organization, Position, Role (a dropdown menu), Contact Information (Email), Address Type (a dropdown menu), Address, City, State, Postal Code, Country, Phone, Fax, Instructions, and Hours. Several callout boxes with arrows point to specific fields, providing detailed requirements. A warning message at the top states: 'name, organization or position is required for the responsible role is required'. The 'Role' dropdown is currently set to 'Empty'. The 'Address Type' dropdown is also set to 'Empty'. The 'Country' dropdown is set to 'Empty'.

SanGIS requires a Point of Contact for the data source. Contacts are created by selecting New Contact and then completing the Contact Details. Each Contact is defined by Role. Once Contacts have been created they can be used via the Load a Contact tool at any location requiring a Contact

The name of the organization or individual that developed the dataset. Names are for inclusion on SanGIS metadata only and will not be published on the public Regional Data Warehouse. e.g. Assessor – Mapping Division, ARCC - GIS

The name of the role or position associated with the resource. – e.g. GIS Analyst

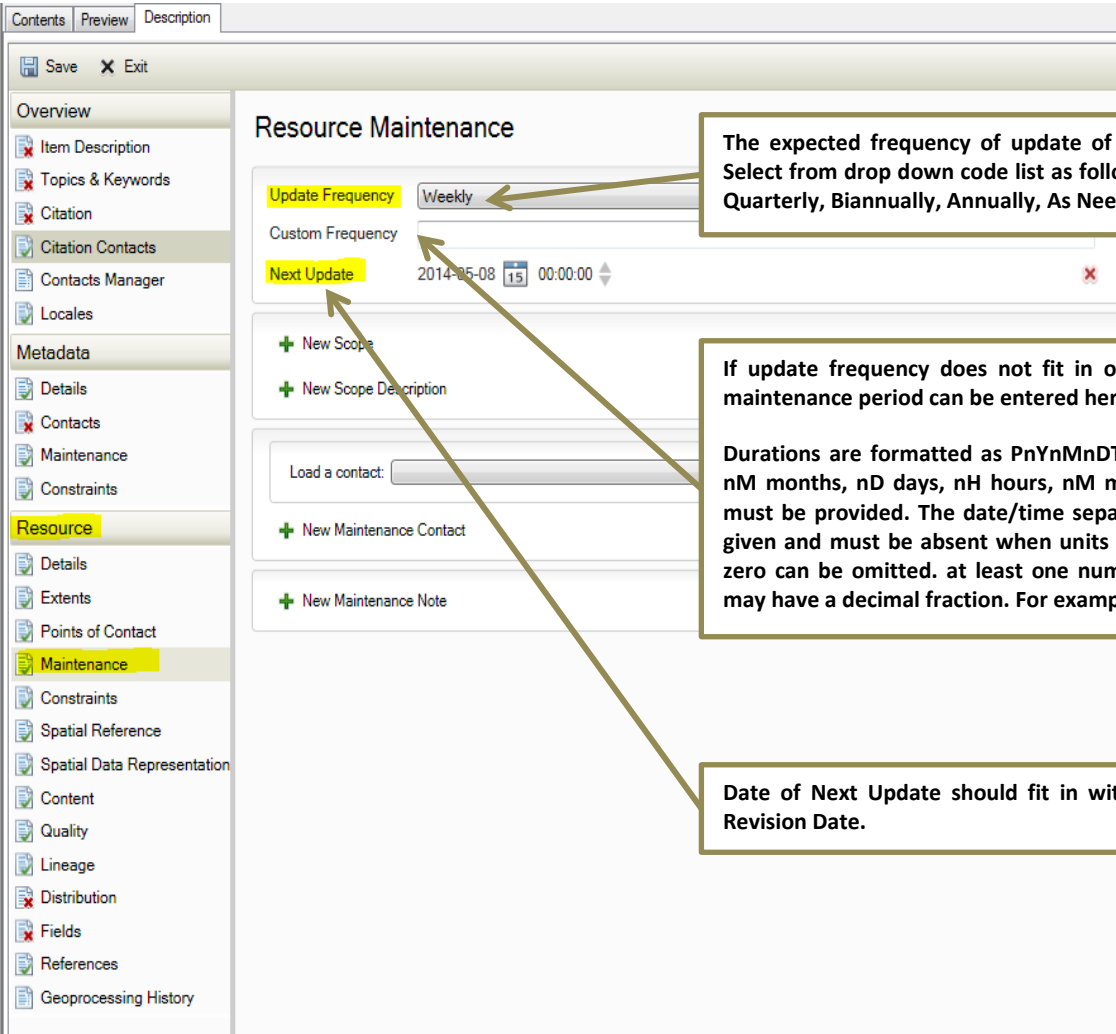
Identifies the association between the responsible party and the resource. Select from codelist as follows: Resource Provider, Custodian, Owner, User, Distributor, Originator, Point of Contact, Principal Investigator, Processor, Publisher, Author.

SanGIS requires the provision of a Contact for Point of Contact (Originator) and Distributor as a minimum.

Select from dropdown list as follows: Postal, Physical or Both.

Email, Address, City, State, Postal Code, Country and Phone must all be completed for each Contact provided.

4.11 RESOURCE - Maintenance



The expected frequency of update of data. Is associated with the 'Next Update Date'. Select from drop down code list as follows: Continual, Daily, Weekly, Fortnightly, Monthly, Quarterly, Biannually, Annually, As Needed, Irregular, Not Planned, Unknown.

If update frequency does not fit in one of the Update Frequency selections, a custom maintenance period can be entered here as the duration of time between updates.

Durations are formatted as PnYnMnDTnHnMnS, where the length of time is in nY years, nM months, nD days, nH hours, nM minutes and nS seconds. The period designator "P" must be provided. The date/time separator "T", must be present when units of time are given and must be absent when units of time are omitted. Units in the duration that are zero can be omitted. at least one number and its designator must be provided. Seconds may have a decimal fraction. For example, a period of 45 days would be P45D.

Date of Next Update should fit in with Update Frequency above. This is the scheduled Revision Date.

4.13 RESOURCE – Spatial Reference

The screenshot displays the ArcGIS metadata editor interface. On the left sidebar, the 'Resource' section is expanded, and 'Spatial Reference' is highlighted. A callout box points to this entry with the text: **Spatial Reference automatically populated by ArcGIS.**

The main content area shows the 'Reference Systems' section. It includes a 'Reference System' subsection with the following fields:

- Code: 2230
- Code Space: EPSG
- Version: 7.11.2

Below this is an 'Authority Citation' subsection with a 'Titles' group containing:

- Title: (highlighted in red)
- Alternate Title: (empty)
- Collective Title: (empty)

There are also buttons for '+ New Online Resource', '+ New Presentation Form', and '+ New Identifier'. At the bottom, there are dropdown menus for 'Dates', 'Edition', and 'Series'.

4.14 RESOURCE - Distribution

The screenshot shows a metadata form with a left-hand navigation menu and a main content area. The 'Distribution Information' section is expanded, showing sub-sections for 'Distributor', 'Ordering Process (Available Time Period)', and 'Digital Transfer Options'. Three callout boxes with arrows point to specific fields in the form:

- Callout 1 (Distributor):** Points to the 'Distributor' sub-section. Text: "SanGIS requires a contact with the role of Distributor. This may be the same as the Point of Contact completed above." The 'Distributor' sub-section includes a 'Load a contact' field and a '+ New Contact' button.
- Callout 2 (Ordering Process):** Points to the 'Ordering Instructions' field within the 'Ordering Process (Available Time Period)' sub-section. Text: "This describes instructions, terms, and services provided by the distributor. It is recommended to include text here for public metadata pointing to SanGIS website services, e.g. Refer to SanGIS website (<http://www.sangis.org/services/index.html>) to obtain further information on mapping and data extraction services available from SanGIS." The 'Ordering Process' sub-section includes fields for 'Fees', 'Available Date', 'Available Date Period', 'Begin Date/Time', and 'End Date/Time', along with a '+ New Ordering Process' button.
- Callout 3 (Digital Transfer Options):** Points to the 'Description' field within the 'Online Resource' sub-section of 'Digital Transfer Options'. Text: "Required by SanGIS if dataset is to be included on Public Data Warehouse. This field describes what the online resource is or does. This equates to the old FGDC Resource Description. E.g. Downloadable as shapefile from <http://www.sangis.org/download/index.html>. This layer is also included the SanGIS / SANDAG interactive webmap." The 'Digital Transfer Options' sub-section includes fields for 'Units of Distribution', 'Transfer Size', and 'Online Resource'. The 'Online Resource' sub-section includes fields for 'Linkage', 'Protocol', 'Profile', 'Name', 'Description', and 'Function'.

4.15 RESOURCE – Fields

Contents Preview Description

Save Exit

Overview

- Item Description
- Topics & Keywords
- Citation
- Citation Contacts
- Contacts Manager
- Locales

Metadata

- Details
- Contacts
- Maintenance
- Constraints

Resource

- Details
- Extents
- Points of Contact
- Maintenance
- Constraints
- Spatial Reference
- Spatial Data Representation
- Content
- Quality
- Lineage
- Distribution
- Fields

Entity and Attribute Information

Details: ADDRAPN

Label: ADDRAPN

Entity Type

Object: Feature Class

Count: 1134467

Definition: [Redacted]

Definition Source: [Redacted]

Attribute: OBJECTID

Attribute: Shape

Attribute: ADDRNMBR

Overview Description Summary

Citation

The Label is the Dataset Name and it is automatically populated by ArcGIS.

The Object is the name of the entity type and is also automatically populated by ArcGIS. These are required fields by SanGIS.

Required fields for individual attributes are detailed on the next page.

The Overview Description Summary is a detailed summary of the information provided by the resource’s data. This should summarize the key fields in the dataset but should not include domain values. These should instead be detailed within the specific attribute fields (see below).

E.g. This dataset shows the vegetation communities throughout San Diego County. The Legend field provides a description of the terrestrial vegetation communities in San Diego County. The field HOLLAND95 provides the Code representing Terrestrial Vegetation Communities in San Diego County. Other important fields include Historical (vegetation type pre-disturbance) – see individual attributes for domain values.

This references a document that provides a complete description of the features, fields, and values that are provided by the resource.

E.g. Classification based on Sproul, F., et al., 2011. Vegetation Manual for Western San Diego County.

4.16 RESOURCE – Fields (continued)

Entity and Attribute Information

Entity Type: ADDRAPN

Attribute: ADDRJUR

Label: ADDRJUR

Alias: JURISDICTION

Definition: Jurisdiction Code Description
 CB Carlsbad
 CN County of San Diego
 CO Coronado
 CV Chula Vista
 DM Del Mar
 EC El Cajon
 EN Encinitas
 ES Escondido
 IB Imperial Beach
 LG Lemon Grove
 LM La Mesa
 NC National City
 OC Oceanside
 PW Poway
 SD San Diego
 SM San Marcos
 SO Solana Beach
 ST Santee
 VS Vista

Definition Source: SanGIS

Type: String

Width: 2

Precision: 0

Scale: 0

Indexed: []

Value Explanation

Callouts:

- This attribute name (field name) automatically completed by ArcGIS
- A description of the data contained by the field. This field must be completed for ALL attributes in a dataset. This should include domain values and codes, or contain a link to a reference document containing domain fields, if there are too many to include (e.g. soils or geology). It is recommended that codes be delimited with a semi-colon or comma rather than a tab, for ease of translation between formats. Domain values can be copied and pasted from other documents (e.g. .xls or .doc)
- E.g. Jurisdiction
Code Description
CB Carlsbad
CN County of San Diego
CO Coronado
CV Chula Vista
DM Del Mar
EC El Cajon
EN Encinitas
ES Escondido
IB Imperial Beach
LG Lemon Grove
LM La Mesa
NC National City
OC Oceanside
PW Poway
SD San Diego
SM San Marcos
SO Solana Beach
- The authority that provided the description of the field's data, e.g. SanGIS
- These fields are automatically completed by ArcGIS.

4.17 Resource - Other

The screenshot shows a metadata editor window with three tabs: 'Contents', 'Preview', and 'Description'. The 'Contents' tab is active. The interface is divided into a left sidebar and a main content area. The sidebar has three main sections: 'Overview', 'Metadata', and 'Resource'. The 'Overview' section includes 'Item Description', 'Topics & Keywords', 'Citation', 'Citation Contacts', 'Contacts Manager', and 'Locales'. The 'Metadata' section includes 'Details', 'Contacts', 'Maintenance', and 'Constraints'. The 'Resource' section includes 'Details', 'Extents', 'Points of Contact', 'Maintenance', 'Constraints', 'Spatial Reference', 'Spatial Data Representation', 'Content', 'Quality', 'Lineage', 'Distribution', 'Fields', 'References', and 'Geoprocessing History'. The 'References' section in the main content area includes 'New Aggregate Information', 'New Portrayal Citation', and 'New Application Schema Information'. A box labeled 'Not required by SanGIS' has arrows pointing to 'Spatial Data Representation', 'Content', 'Quality', 'Lineage', 'References', and 'Geoprocessing History' in the 'Resource' section of the sidebar.

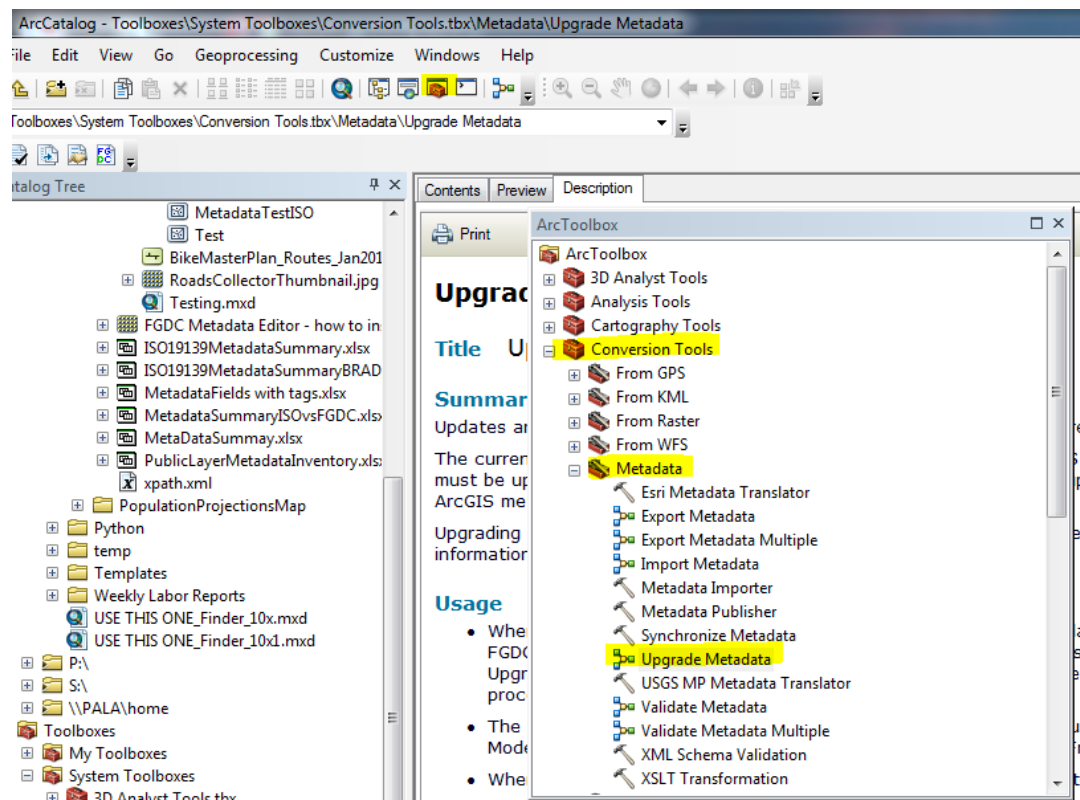
Appendix A - Upgrade of Metadata from FGDC Editor (ArcGIS v9.3.1)

Metadata created prior to ArcGIS v10 can be upgraded using the **Upgrade Metadata (Conversion) tool** available within the Metadata Toolset (see screenshot below).

IMPORTANT NOTE:

At the time this document was published it is known that this tool may not work correctly with Microsoft SQL Server and may result in the deletion of metadata. It is highly recommended that this conversion be tested on a subset of metadata first and that all metadata be backed up before conversion.

You can run this tool as a batch process to upgrade all your metadata at once (by right clicking the tool and selecting Batch...). It is recommended that you test this and other metadata tools on sample datasets in your SDE before completing batch jobs.



This upgrade takes your metadata from the FGDC Add-in Editor and puts into ArcGIS Metadata tables directly. It converts the older metadata to the form that is visible in the 'ArcGIS Metadata' on the Description tab of ArcCatalog. You will only need to perform this process once for your dataset. Once it is in ArcGIS Metadata tables you will do all future edits through ArcGIS directly. Do not use the FGDC Editor for any future editing of metadata.

Issues with Upgrading Metadata

IMPORTANT NOTE:

At the time this document was published it is known that the upgrade tool may not work correctly with Microsoft SQL Server and may result in the deletion of metadata. It is highly recommended that this conversion be tested on a subset of metadata first and that all metadata be backed up before conversion.

While upgrading your metadata from ArcGIS v9.1.3 will reduce the work required to update your metadata to the new SanGIS standard, it will still be necessary for you to carefully review all required metadata fields within ArcGIS following the instructions below. The metadata upgrade does not upgrade all data elements successfully. Also, SanGIS metadata requirements have changed since ArcGIS v9.3. A summary of upgrade issues listed below for further information.

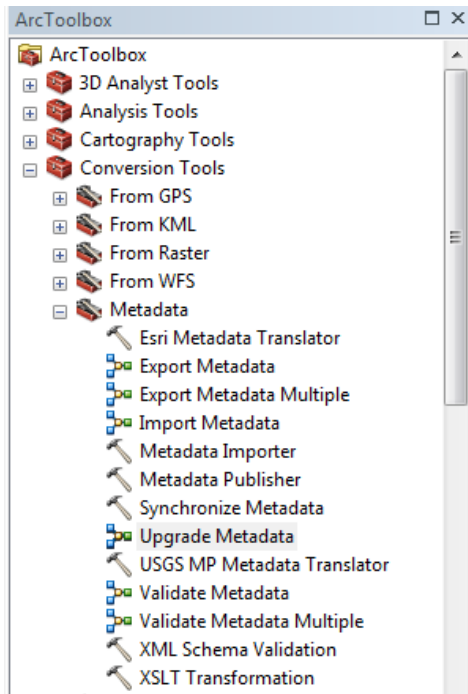
Note that after upgrade, 9.3.1 content still remains in the “read only” portion of the ArcGIS metadata (so you still have it available as a reference) and can only be removed using a geoprocessing model and provided XSLT style sheet. The Upgrade updates the ArcGIS metadata elements, which you can then edit in ArcGIS v10.x. The old FGDC 9.3 metadata still appears as ‘read only’

- While most elements should successfully be upgraded using the ArcGIS tools. However, it is essential to check upgraded metadata as certain elements are lost in the upgrade and will have to be input manually. Note: SanGIS has only reviewed the upgrade of elements that are required by SanGIS.
- Invalid dates may not import or upgrade properly. They must adhere to the FGDC yyyyymmdd format, although if only a year is provided, this will be imported as the 1st January of that year and certain text such as unknown, unpublished material will be converted. Therefore, all date related information will need to be checked for upgraded metadata.
- The text “None” is used to complete ‘mandatory’ elements where the field cannot be populated.
- Certain FGDC metadata elements are represented by a code list where free text is not supported. In this case the upgraded metadata will need to be checked, i.e. Resource Maintenance and Update Frequency (code list), Citation Contacts Role; and also Date/Time elements as noted above. All Contact information (publisher, distributor, contact) should be checked and corrected as required for upgraded metadata.
- In the Distribution Information section, the information in the Online Computer and Operating System element and the information provided in the Dialup Instructions section are not transferred to ArcGIS metadata in the upgrade. It is considered that this is not likely to be a concern for most SanGIS datasets as these are not required elements.
- Larger Work Citations are upgraded and imported for the item's primary citation. However, larger work information for secondary citations describing related resources will not be transferred to ArcGIS metadata in the upgrade process. It is considered that this is not likely to be issues for most SanGIS datasets as these are not required elements.
- Certain elements from the FGDC Editor are re-organized within ArcGIS metadata, e.g. Identification > Status > Progress is coded as part of the upgrade and placed under Resource > Details > Status. This element may not upgrade successfully and needs to be checked after upgrading.

Metadata Requirements for SanGIS Data Layers

- Certain elements within the FGDC Editor do not appear to be within the new ArcGIS edit **environment at all**; ArcGIS automatically synchronizes the item's spatial reference in its metadata if this information has been set in the item itself. Full details of the spatial reference are recorded in an ArcGIS-specific format. This information can't be edited. Detailed spatial reference properties as defined in the FGDC *CSDGM* can't be provided manually with the current version of ArcGIS. Note that Spatial Reference > General > Horizontal Datum Name, Ellipsoid Name, Semi-major Axis and Denominator of Flattening Ratio do not appear in ArcGIS v10+ metadata. Other elements from the FGDC Editor that are not apparent within ArcGIS v10.1 are: Distribution > General Technical Prerequisites and Metadata Reference > General > Metadata Standard Name and Metadata Standard Version.

Appendix B – Summary of Metadata Tools in ArcGIS



There are a number of tools available in the Metadata toolbox (some of which are also available as buttons within the Description tab). These tools are summarized below, and the ones most likely to be used by SanGIS are noted with an *.

- **Esri Metadata Translator:** Use this tool or an XSLT transformation to export metadata content from ArcGIS to a stand-alone metadata XML file. The exported metadata will be formatted to satisfy the metadata standard associated with the specified translation
- **Export Metadata/Export Metadata Multiple:** Updates metadata to contain the most current properties of the ArcGIS item before processing the metadata and finally exporting it to an XML file that conforms to a standard metadata format.
- **Import Metadata*:** Imports metadata to the target item after converting the source item's metadata to ArcGIS metadata, if appropriate (e.g. if metadata needed upgrading from FGDC add-in). The source and target maybe ArcGIS items or stand-alone metadata XML files. This tool is also available as a button at the top of the Description tab in ArcCatalog.
- **Metadata Importer*:** Copies metadata from the source item to the target item. Metadata is retrieved from the source item and transferred to the target item without changing it. The source and target may be ArcGIS items or stand-alone metadata XML files. *This is the appropriate tool if importing metadata in v.9.3.1 FGDC format if you want to keep it in this format.*
- **Metadata Publisher:** Publishes metadata to a metadata catalog such as an ArcIMS Metadata Service.
- **Synchronize Metadata:** Automatically updates an ArcGIS item's metadata with the current properties of the item. See details under the Upgrade Metadata section above.
- **Upgrade Metadata*:** Updates an ArcGIS item's metadata or a stand-alone XML file to the current ArcGIS metadata format. Detailed further under Upgrading of Metadata section above.
- **USGS MP Metadata Translator:** This tool only uses metadata elements in an item's metadata or a stand-alone metadata XML file that follow the FGDC CSDGM metadata format. FGDC content may exist in an ArcGIS item's metadata. For example, if the metadata was created in ArcGIS Desktop 9.3.1 or earlier using the FGDC metadata editor or created in the current version of ArcGIS for Desktop using the [FGDC metadata editor add-in](#), the item's metadata will include elements that follow the FGDC XML format. This tool only exports these FGDC XML metadata elements—the information displayed in the *FGDC Metadata (read-only)* section in the *Description* tab if you are using a metadata style that provides access to an item's complete metadata. This is the key tool to use for validating FGDC metadata for export.
- **Validate Metadata/ Validate Metadata Multiple:** Exports metadata to a standard metadata format then validates the exported file. You can also validate metadata by editing in Description tab.

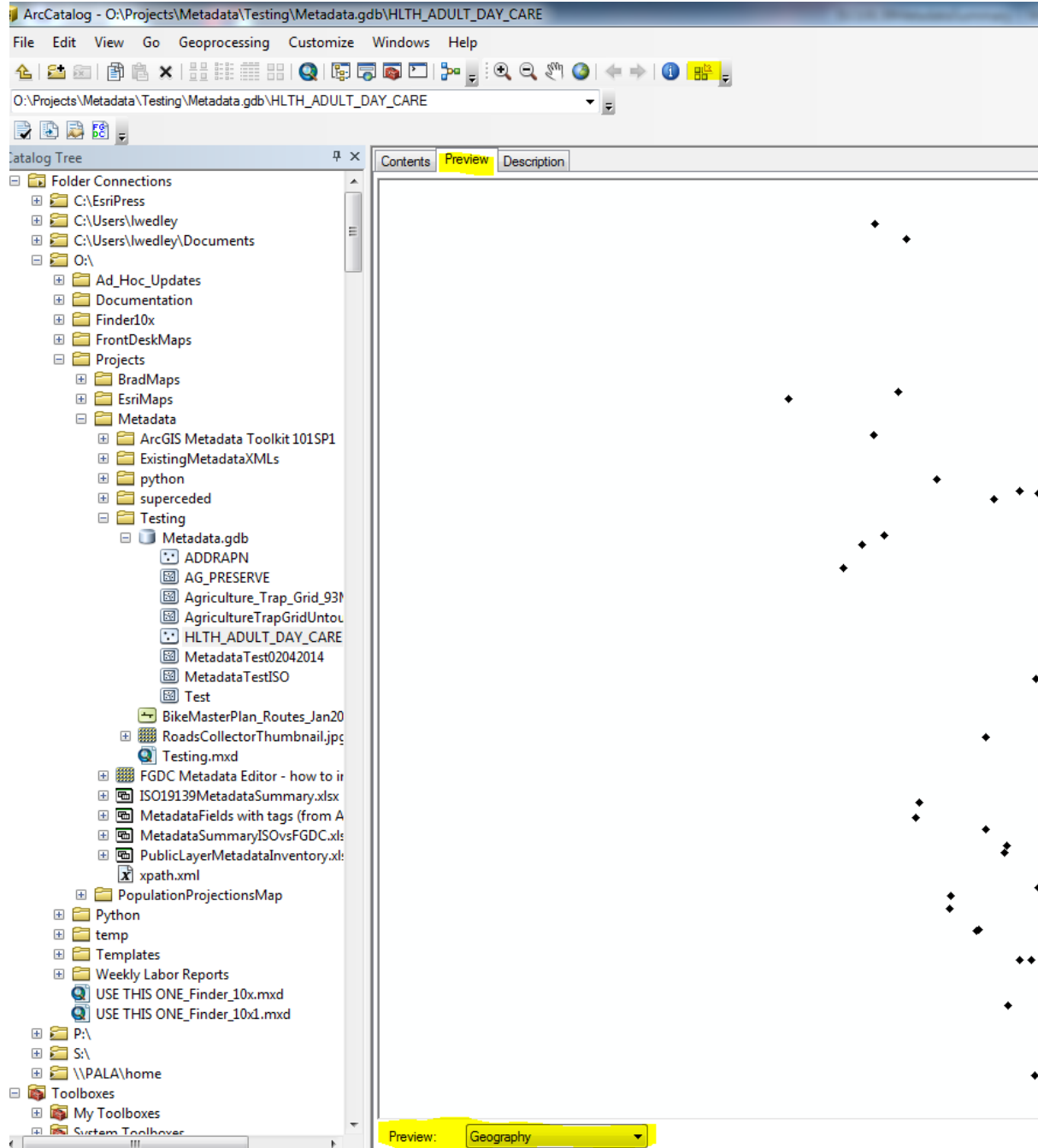
Metadata Requirements for SanGIS Data Layers

- **XML Schema Validation:** Uses the .NET 3.5 Framework's XML software to validate an ArcGIS item's metadata or any XML file. The XML is checked to see if it follows the structure and content rules outlined by an XML schema. Schemas written using the DTD or W3C XML Schema languages may be used with this tool.
- **XSLT Transformation:** Uses the .NET 3.5 XML software to transform an ArcGIS item's metadata or any XML file using an XSLT 1.0 stylesheet and save the result to an XML file.

Note that in ArcGIS, exporting metadata refers to exporting xml metadata to specific format/standard (e.g. FGDC or ISO), whereas saving as an xml (using XSLT Transformation tool) just means saving the ArcGIS metadata as an xml or html file.

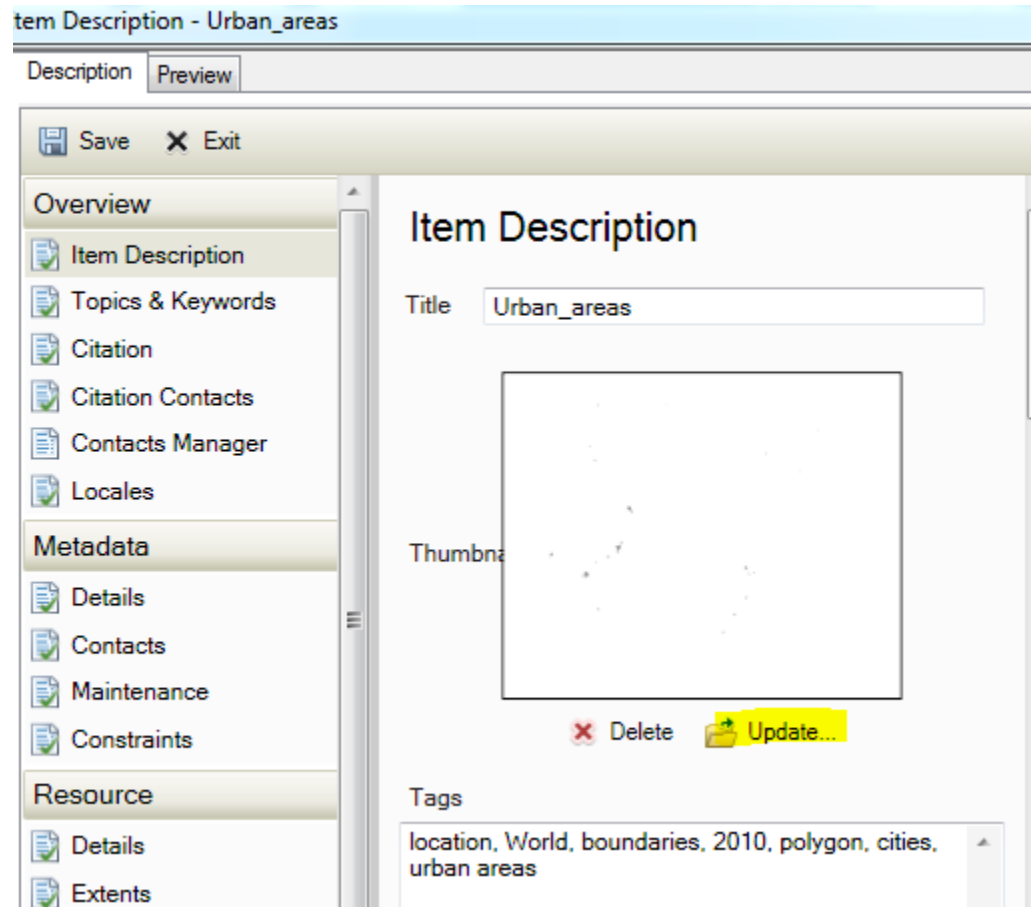
Appendix C – Creation of Thumbnail

In ArcCatalog, go to the Preview tab for your dataset, and set the Preview to Geography, then click on the Create Thumbnail toolbar, and this will create a thumbnail for your dataset (see screenshot below):



Metadata Requirements for SanGIS Data Layers

Alternatively in the Metadata Editor, you can update the thumbnail by selecting “Update” and selecting a saved image that you have for use as the thumbnail.



Appendix D – References / Further information

1. ArcGIS v10.1 Metadata Help:
<http://resources.arcgis.com/en/help/main/10.1/>
(Go to Geodata > Data types > Metadata for full resources on metadata in ArcGIS)
2. Creating a Metadata Template:
<http://resources.arcgis.com/en/help/main/10.1/>
(Go to Geodata > Data types > Metadata>Editing Metadata>Metadata Workflows)
3. ArcGIS Metadata Toolkit:
<http://support.esri.com/en/downloads/samples-and-utilities/view/productid/17/metaid/1937>
4. FGDC Metadata Standard:
https://www.fgdc.gov/standards/projects/FGDC-standards-projects/metadata/base-metadata/v2_0698.pdf