



EPA Metadata Editor for ArcGIS Pro

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Welcome

- Introducing EME for ArcGIS Pro!
- Purpose of the EME for ArcGIS Pro is to make metadata editing easier and improve the quality of metadata records – as you create new metadata and edit old metadata using ArcGIS Pro
- Feedback welcome!

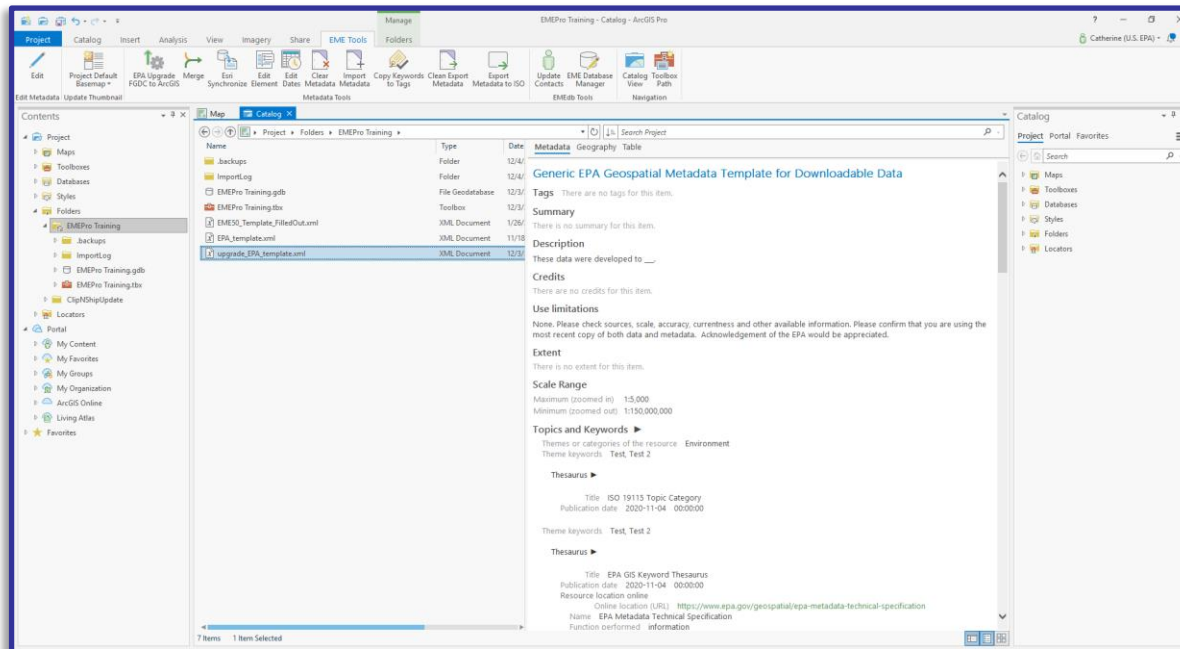


Introduction to EME for Pro

- EME for ArcGIS Pro – What's new?
- Getting Started with EME for ArcGIS Pro
- ArcGIS Metadata, EDG & Data.gov
- EME for ArcGIS Pro - Demo
- EME for ArcGIS Pro - Important URLs

EME Pro New Features:

- Compiled as an ArcGIS Pro add-in for easy installation.
- Integrated Ribbon for centralized access to metadata tools.
- New metadata tools to make editing metadata easier
- New “Hints” provided for help
- Mandatory fields highlighted





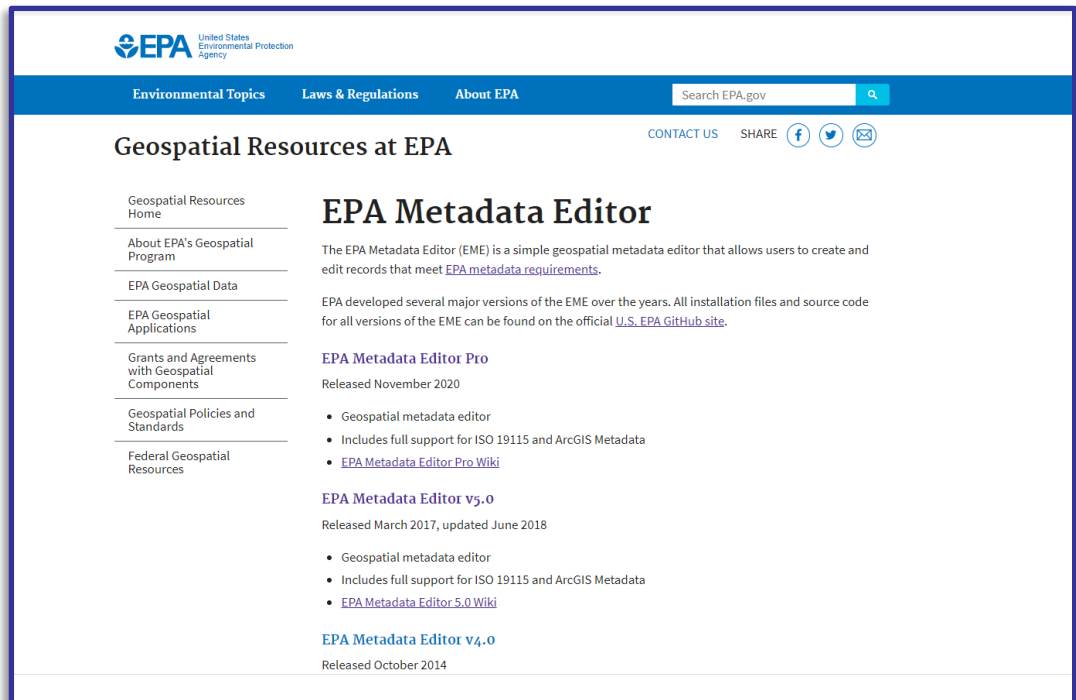
EME Pro: What's new?

Benefits of using EME Pro:

1. Integration of metadata with geospatial datasets
 - Bounding box coordinates
 - Spatial reference
 - Spatial data representation
 - Attributes
 - Geoprocessing history
2. Real-time validation
3. Best practice guidance included in tool
4. Can edit your EPA GeoPlatform content items directly in ArcGIS Pro using EME Pro

Download EME Pro:

1. [Visit the Updated EME Website!](#)
2. [Download Installation package](#)



The screenshot shows the EPA website's "Geospatial Resources at EPA" page. The header includes the EPA logo, navigation links for "Environmental Topics", "Laws & Regulations", and "About EPA", and a search bar. The main content area is titled "EPA Metadata Editor" and provides information about the tool, including its purpose, development history, and version details. A left sidebar lists various geospatial resources.

Geospatial Resources at EPA

EPA Metadata Editor

The EPA Metadata Editor (EME) is a simple geospatial metadata editor that allows users to create and edit records that meet [EPA metadata requirements](#).

EPA developed several major versions of the EME over the years. All installation files and source code for all versions of the EME can be found on the official [U.S. EPA GitHub site](#).

EPA Metadata Editor Pro
Released November 2020

- Geospatial metadata editor
- Includes full support for ISO 19115 and ArcGIS Metadata
- [EPA Metadata Editor Pro Wiki](#)

EPA Metadata Editor v5.0
Released March 2017, updated June 2018

- Geospatial metadata editor
- Includes full support for ISO 19115 and ArcGIS Metadata
- [EPA Metadata Editor 5.0 Wiki](#)

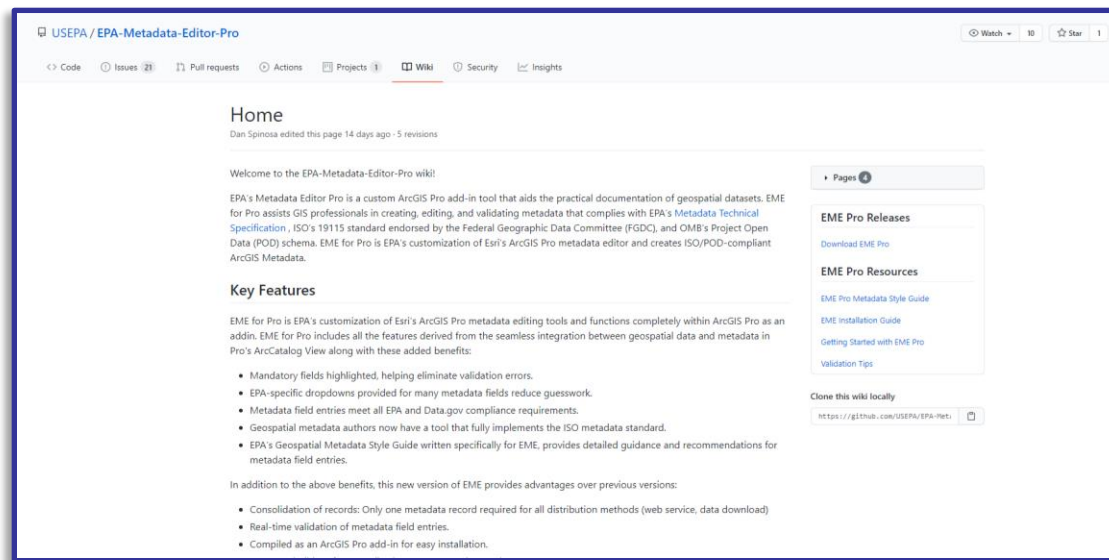
EPA Metadata Editor v4.0
Released October 2014

Geospatial Resources at EPA

- Geospatial Resources Home
- About EPA's Geospatial Program
- EPA Geospatial Data
- EPA Geospatial Applications
- Grants and Agreements with Geospatial Components
- Geospatial Policies and Standards
- Federal Geospatial Resources

Installing EME Pro:

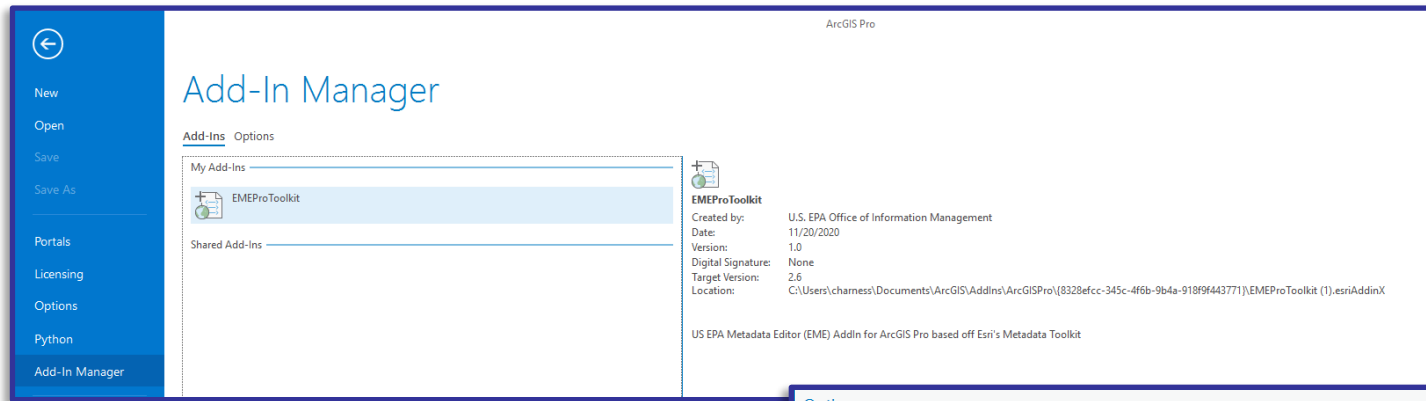
1. Must have ArcGIS Pro 2.6 (or higher)
2. EME Pro is compiled as an ArcGIS Pro add-in and managed through Pro's Add-In Manager
3. Double click on the install file EMEProToolkit.esriAddinX



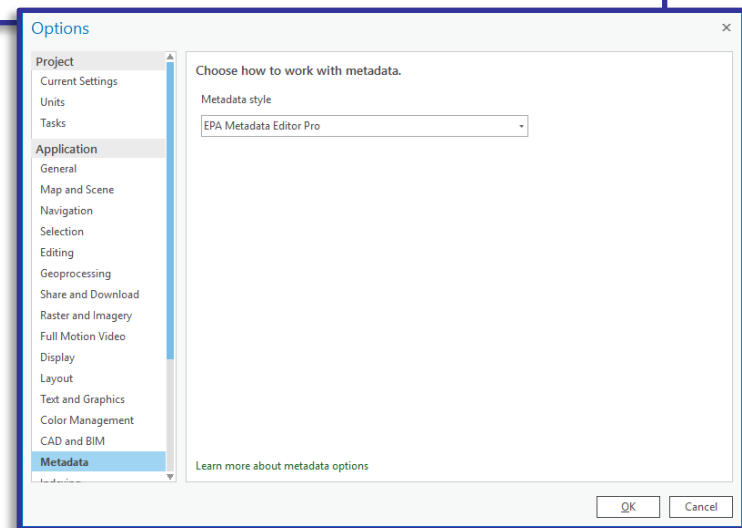
Note: You may receive a security notice when installing EME Pro, this can be ignored. The install package was scanned, and no risks were identified.

Verify the Add-In was installed:

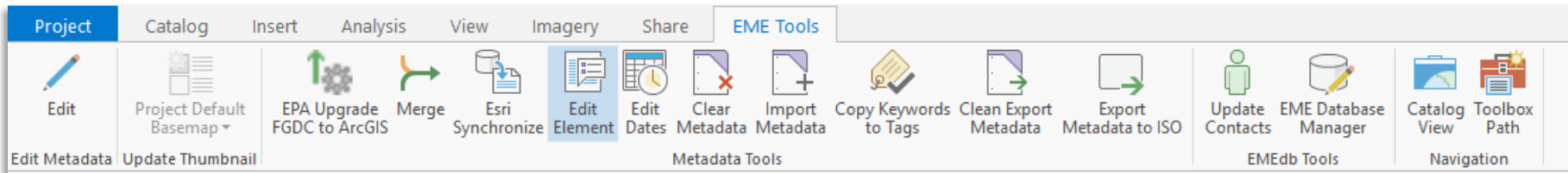
Open ArcGIS Pro → Settings → Add-In Manager → EMEProToolkit



Click Options → Metadata →
Choose **EPA Metadata Editor Pro**
as your Metadata Style



EME Pro's Integrated Ribbon:

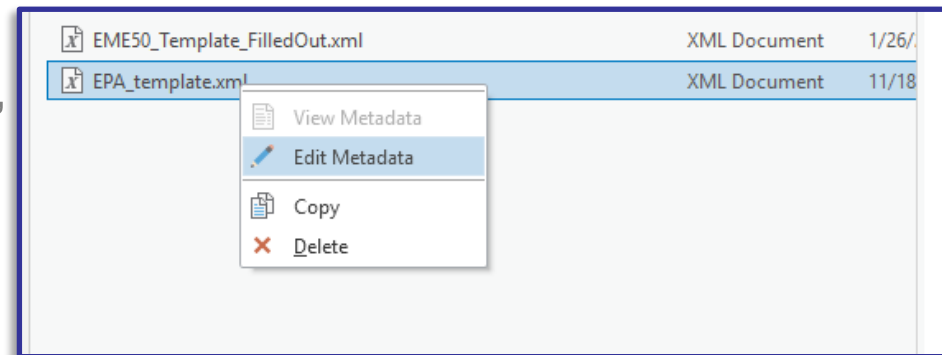


- Edit Metadata button
- Update Thumbnail
- Ten Metadata Tools:
 - EPA Upgrade FGDC to ArcGIS
 - Merge
 - Esri Synchronize
 - Edit Element
 - Edit Dates
 - Clear Metadata
 - Import Metadata
 - Copy Keywords to Tags
 - Clean Export
 - Export Metadata to ISO
- EME Database tools
- Navigation Tools

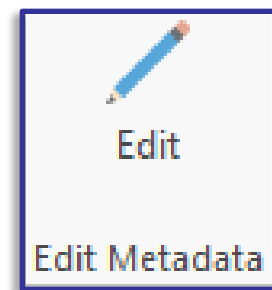
EME Pro Ribbon: *Edit Metadata*

Two ways to access the Metadata Editor:

1 – Select an object to Edit,
right click and select “Edit Metadata”



2 – Select an object to Edit,
Click the “Edit” button in the Pro Ribbon.





EME Pro: Getting Started

EME Pro Ribbon: *Update Thumbnail*

- Used to update the metadata thumbnail.

The screenshot shows the EME Pro software interface. A callout box highlights the 'Update Thumbnail' button on the 'Project Default Basemap' ribbon. Another callout box shows a dialog titled 'Updated Metadata Thumbnail' with a refresh icon and the following file path:

```
C:\Projects\EDG2020  
\ClipNShipUpdate\FRSMetadata  
\FRS_Interests_Download  
\FRS_INTERESTS.gdb\ACRES
```

The main interface displays a table of metadata entries:

| Name | Type | Date |
|--------------------|--------------------|------|
| ACRES | File Geodatabase F | |
| AIR | File Geodatabase F | |
| AIR_AQS | File Geodatabase F | |
| AIR_MAJOR | File Geodatabase F | |
| BIA | File Geodatabase F | |
| BRAC | File Geodatabase F | |
| CAMDBS | File Geodatabase F | |
| EIS | File Geodatabase F | |
| FACILITY_INTERESTS | File Geodatabase F | |
| ICIS | File Geodatabase F | |
| NCDB | File Geodatabase F | |
| NPDES | File Geodatabase F | |
| NPDES_MAJOR | File Geodatabase F | |
| RADINFO | File Geodatabase F | |
| RBLC | File Geodatabase F | |
| RCRA | File Geodatabase F | |
| RCRA_ACTIVE | File Geodatabase F | |

The 'ACRES' entry is selected, and its metadata details are shown in the right pane. A thumbnail image of a map of the United States with brownfield sites highlighted in red is circled in red. The metadata details include:

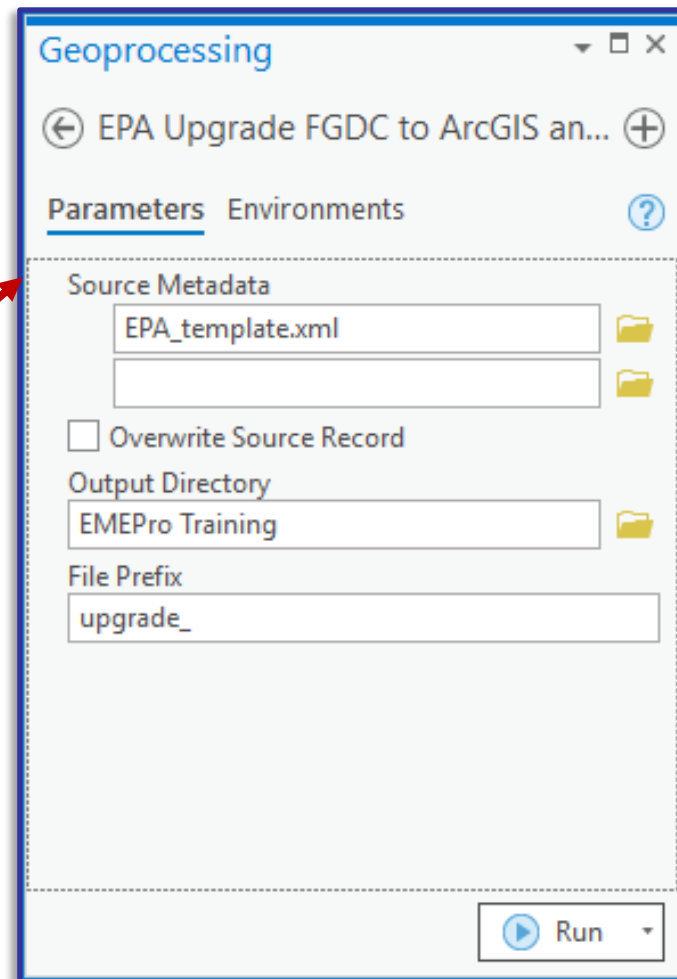
ACRES
Type File Geodatabase Feature Class

Tags South Carolina, Oregon, District of Columbia, North Dakota, Connecticut, American Samoa, Arkansas, Facilities, West Virginia, environment, Indiana, Kansas, New Jersey, Colorado, North Carolina, Michigan, Wyoming, Nevada, Illinois, Oklahoma, Ohio, location, Environmental Management, Vermont, Arizona, Washington DC, Remediation, Contaminant, Sites, Virginia, South Dakota, Montana, Emergency Response, Pennsylvania, structure, Maryland, Maine, Georgia, California, Hawaii, New Hampshire, Idaho, Waste, Texas, Wisconsin, Alaska, Kentucky, Resources, conterminous United States (CONUS), Massachusetts, Toxics, Mississippi, United States (US) (USA), Cleanup, Iowa, Regulatory, Compliance, Florida, Puerto Rico, Louisiana, Nebraska, New Mexico, Utah, New York, Washington, Rhode Island, Delaware, Missouri, Tennessee, Minnesota, Alabama, Virgin Islands

Summary
The purpose of this web feature service is to provide users with access to integrated facility information from FRS, limited to the subset of brownfields sites that link to the Assessment Cleanup and Redevelopment Exchange System (ACRES).

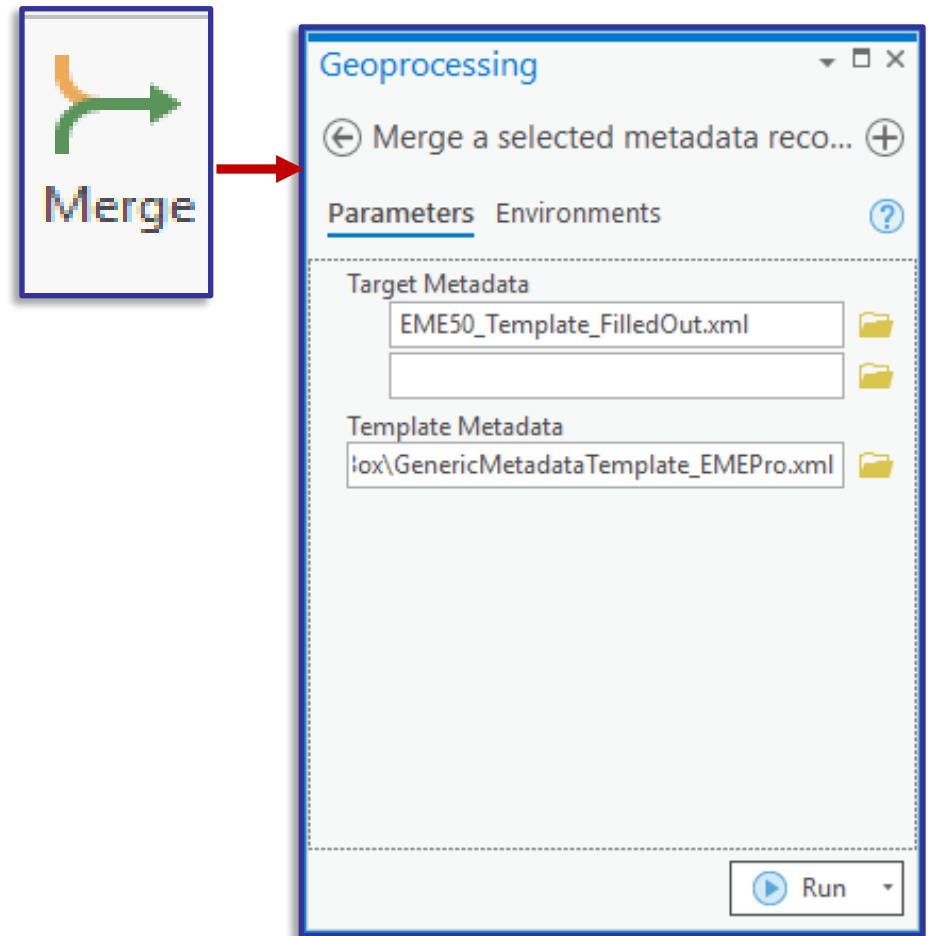
EME Pro Ribbon: *EPA Upgrade FGDC to ArcGIS*

- Upgrade FGDC CSDGM records to ArcGIS ISO/POD format for editing in EME Pro
- Clean Up records that have been partially upgraded and contain legacy elements.



EME Pro Ribbon: *Merge*

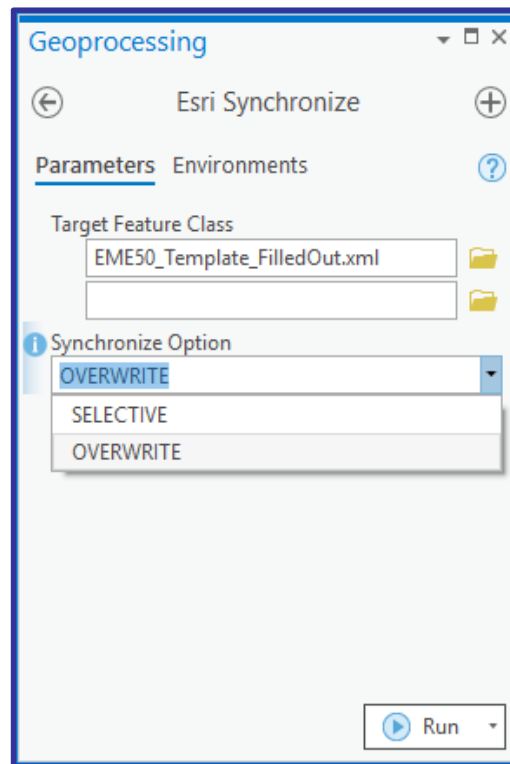
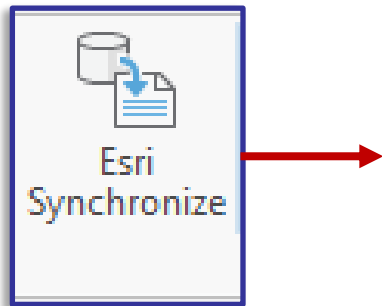
- Merges a selected metadata record with elements from a saved template
- Elements from the template record will overwrite their equivalents in the selected record
- Replacement of Elements is based on the xpath rules provided in GenericTemplateXpathSettings.xml
- A Generic Template (GenericMetadataTemplate_EMEPro.xml) can be used as a custom Set-To-Default tool and contains many EPA defaults



Note: caution is urged when using this tool

EME Pro Ribbon: *Esri Synchronize*

- Uses Esri's Metadata Synchronizer
- Elements derived from the item's properties



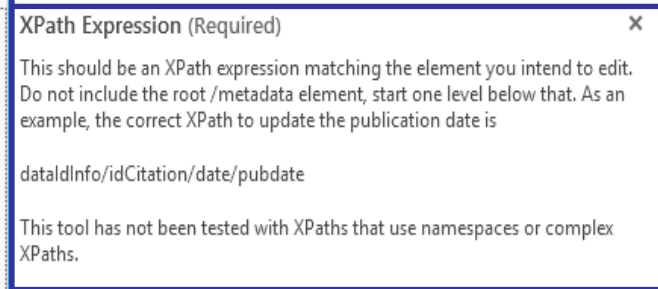
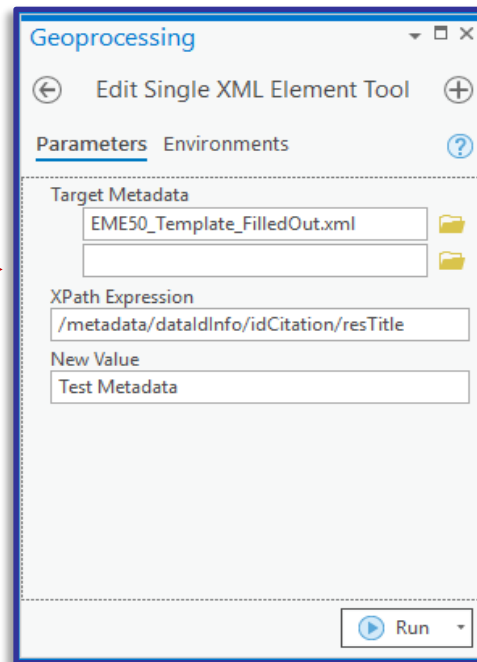
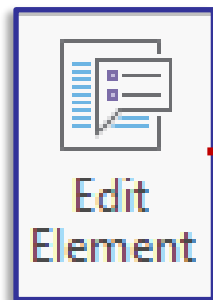
Synchronize Option (Required)

SELECTIVE—Generally the same as the OVERWRITE option. However, the values of the Title and Content Type metadata elements are not updated. For example, if you import a standard-format metadata document to the item that describes the item's data, the title in the imported document does apply to the item, and it will not be overwritten. All other properties in the item's metadata will be initialized in a manner appropriate for the item. Metadata content will be updated appropriately at the time the function is used; a time specified by the interval parameter is not used, if one has been provided. Metadata is created if it doesn't already exist.

OVERWRITE—All property values that can be synchronized are updated in the item's metadata, regardless of the value or presence of the Sync attribute on these metadata elements. After this function is used, all metadata elements that have been updated will have a Sync attribute with the value True. For example, after copying metadata from one item to another, use this option to initialize all properties in a manner that is appropriate for the item, including the title, which should be changed to match the new item's name instead of using a title that describes the old item. Metadata content will be updated appropriately at the time the function is used; a time specified by the interval parameter is not used, if one has been provided. Metadata is created if it doesn't already exist.

EME Pro Ribbon: *Edit Element*

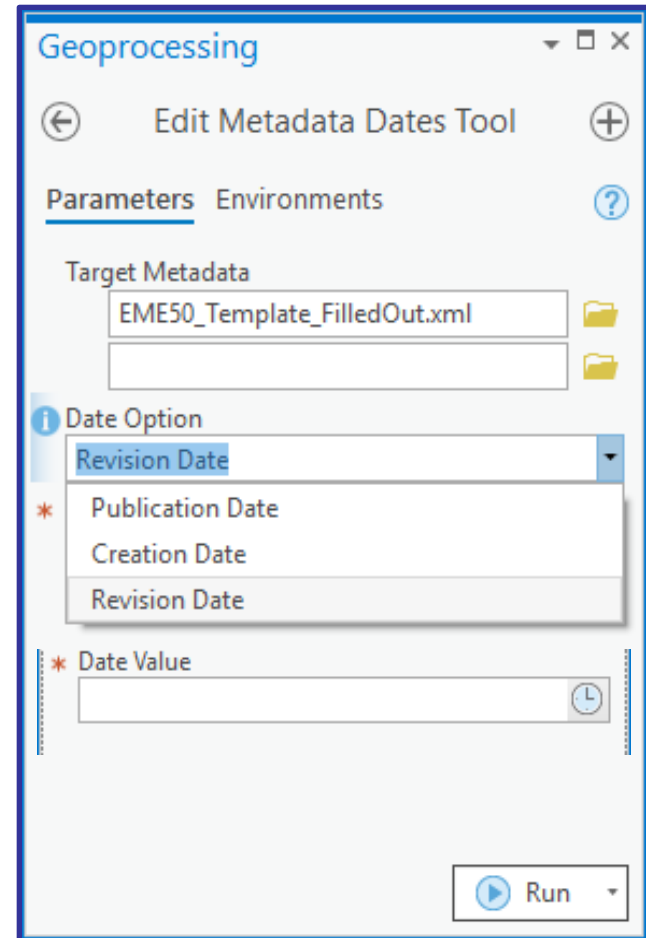
- Uses an XML Xpath expression and text value to update a single element
- If the element does not exist, it is added



Note: The source metadata will be changed. It is recommended to make a backup copy of your record.

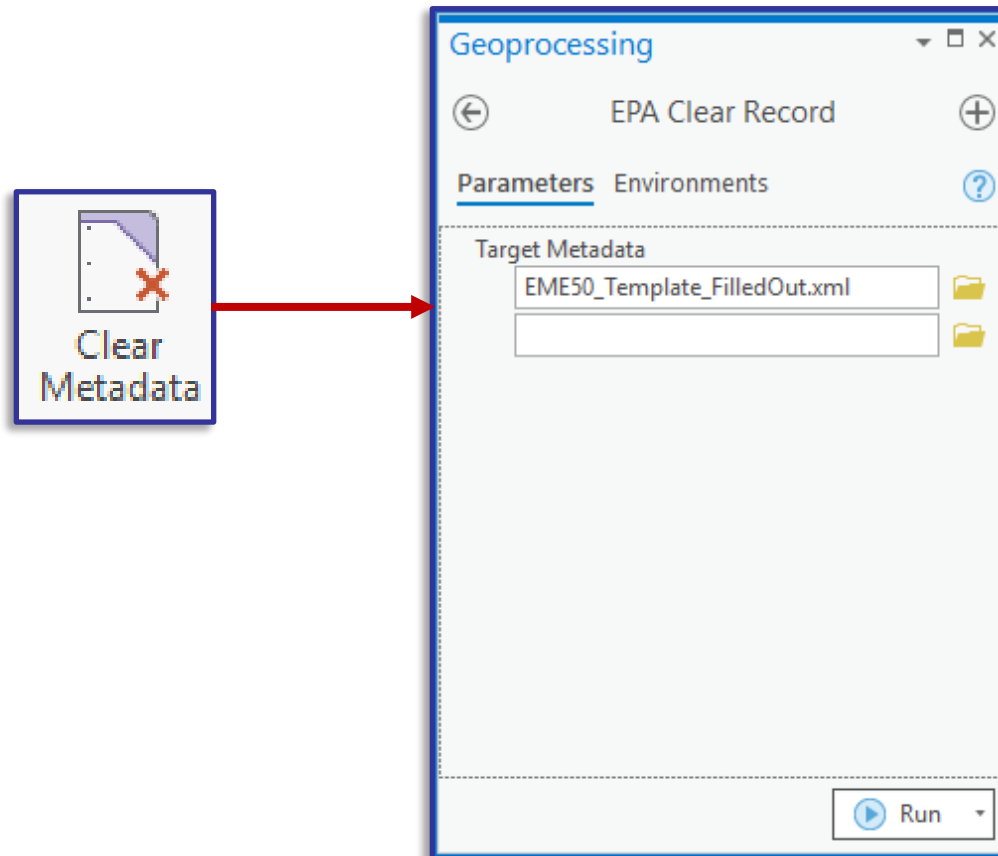
EME Pro Ribbon: *Edit Dates*

- Assists in editing citation date values
- Helpful when data is automatically refreshed
- Supports multi-select for batch processing



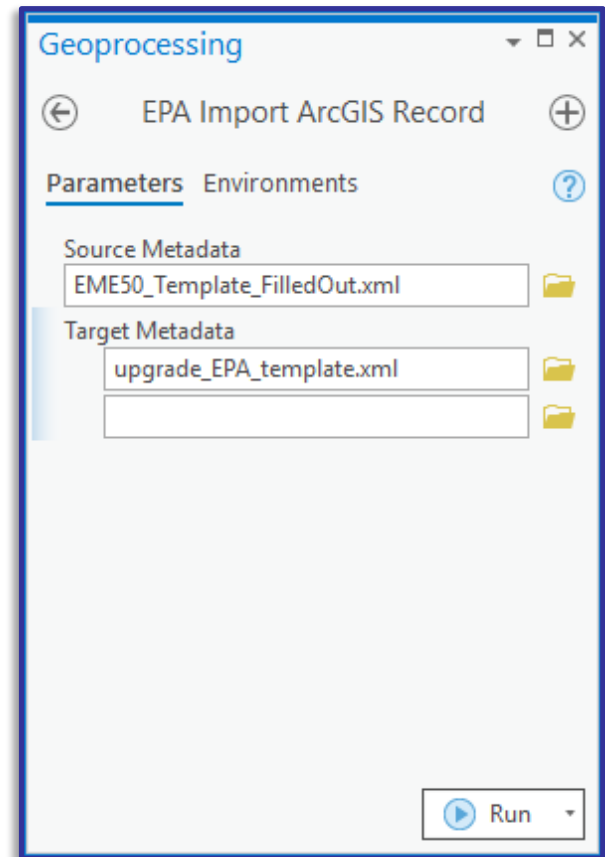
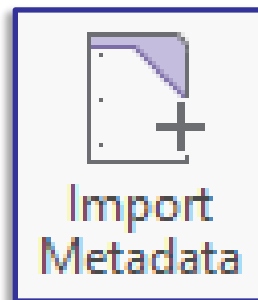
EME Pro Ribbon: *Clear Metadata*

- Purges all metadata from the target metadata record



EME Pro Ribbon: *Import Metadata*

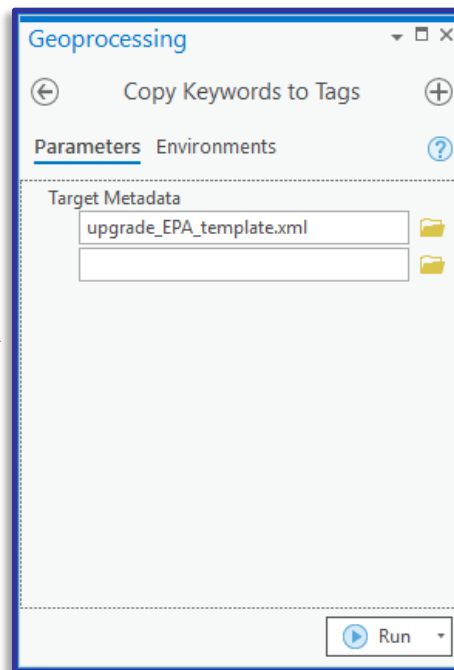
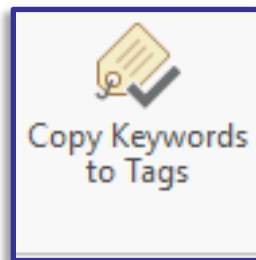
- Purges all metadata from the target metadata record and then performs a clean import of the source metadata
- Supports multi-select for batch processing



Note: Import does not perform an EPA Upgrade or Cleanup and is intended as a supplement to these processes

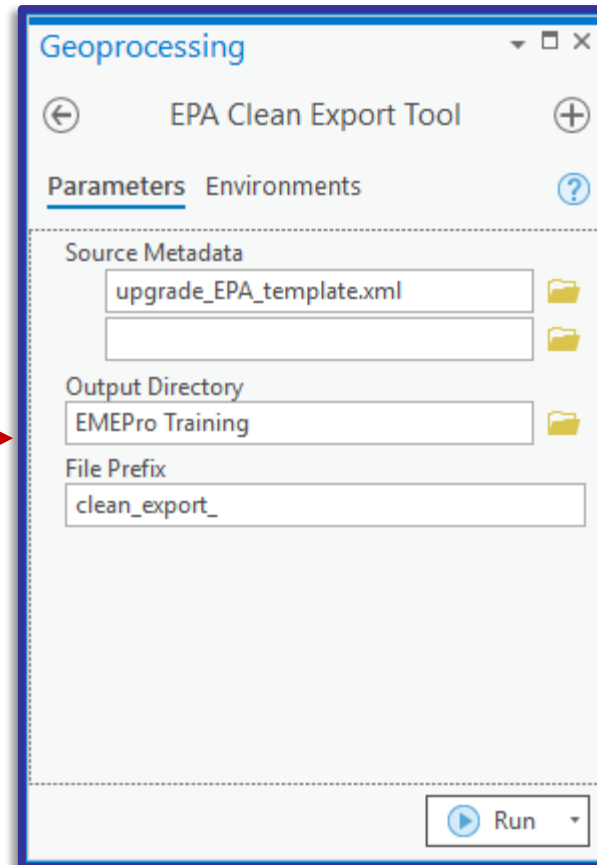
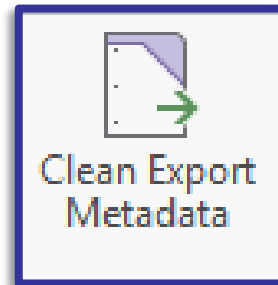
EME Pro Ribbon: *Copy Keywords to Tags*

- Copies ALL keywords present in the metadata to the Tags section
- Does not alter the keywords, and any existing 'tags' will be preserved but not duplicated



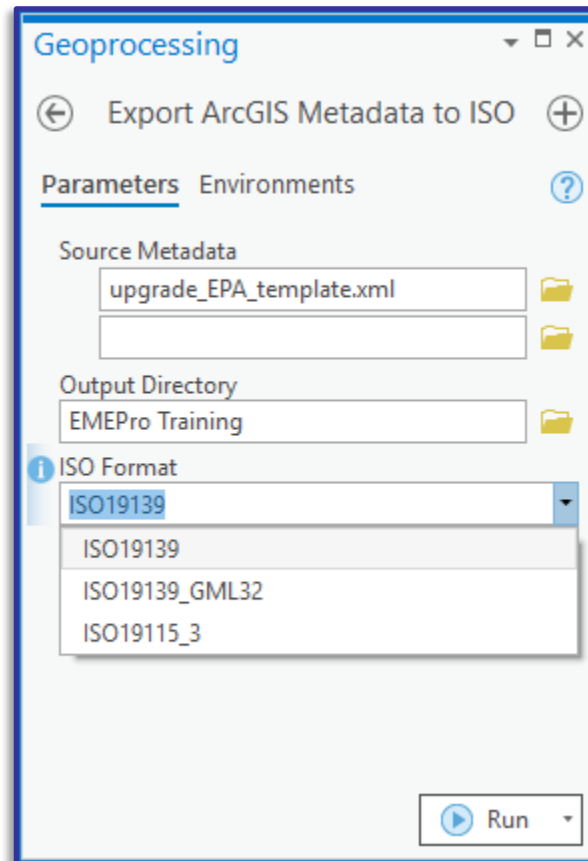
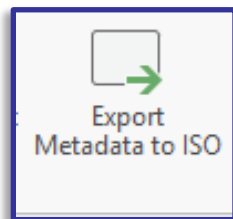
EME Pro Ribbon: *Clean Export Metadata*

- Exports the target metadata to a standalone XML document
- No transformations when exporting



EME Pro Ribbon: *Export Metadata to ISO*

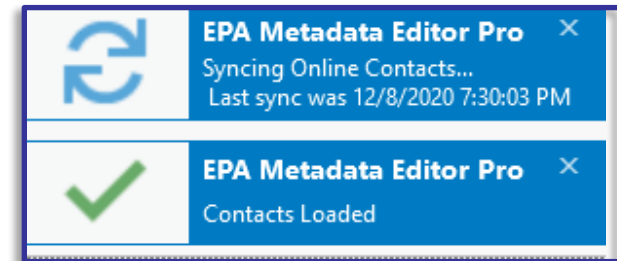
- Streamlines exporting ArcGIS ISO/POD metadata to compliant ISO standards



EME Pro Ribbon: Database Tools

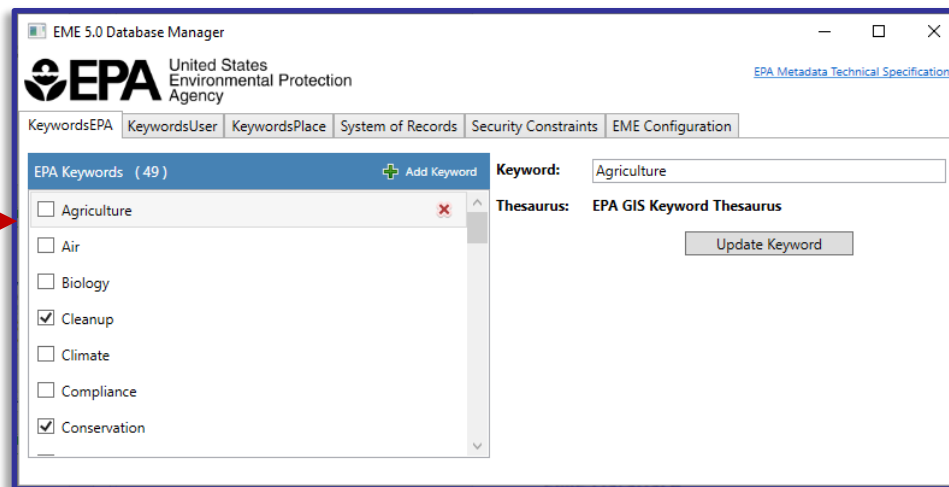
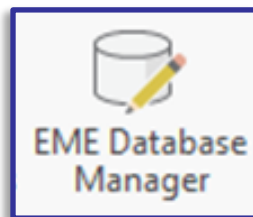
Update Contacts:

- manually sync the metadata contacts



EME Database Manager:

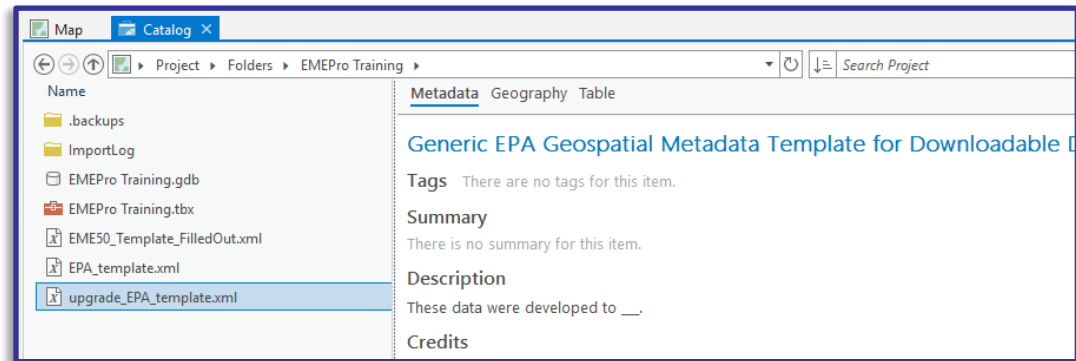
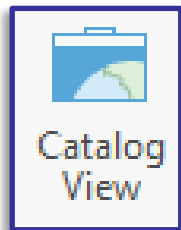
- launches the EME Database Manager that was previously accessible only from the windows start menu.



EME Pro Ribbon: Navigation Tools

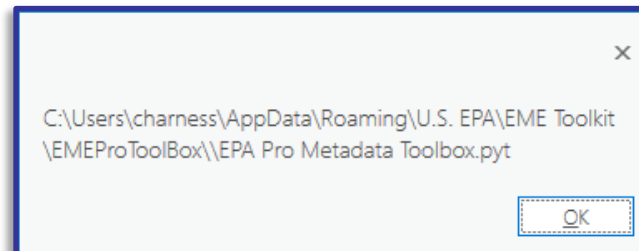
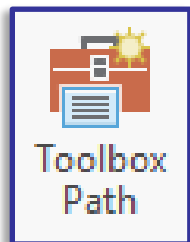
Catalog View:

- Opens and activates a Catalog Pane



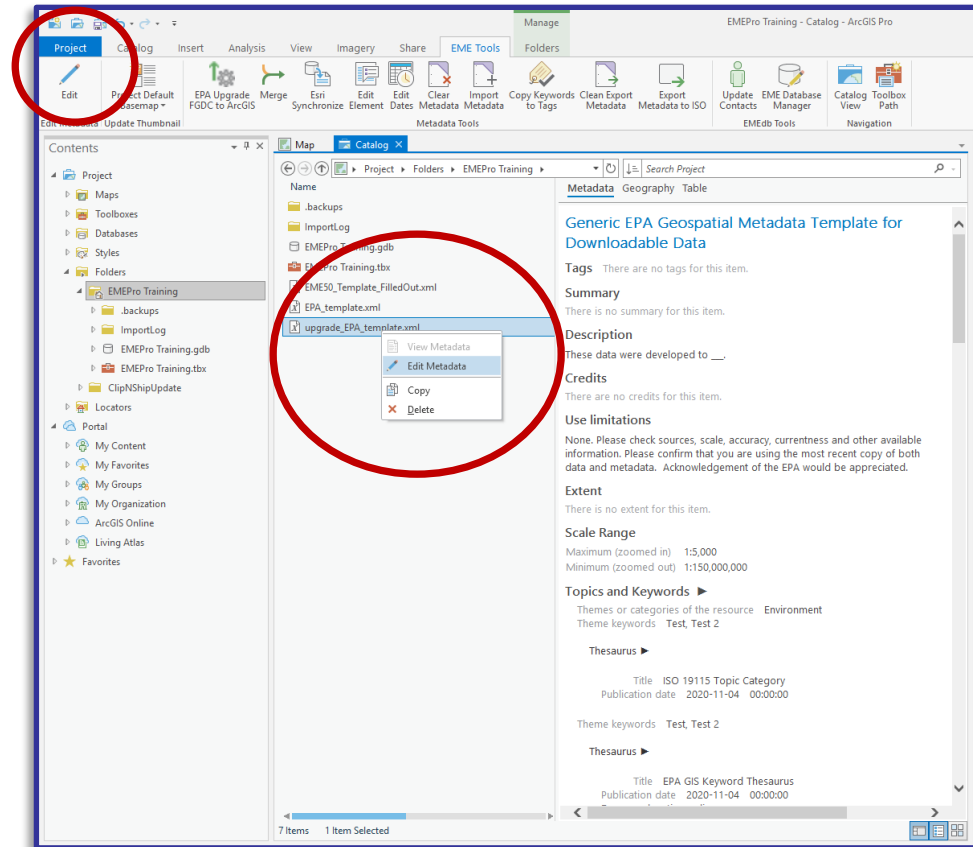
Toolbox Path:

- Displays the file path to the python toolbox referenced by the EME Tools.



EME Pro Interface :

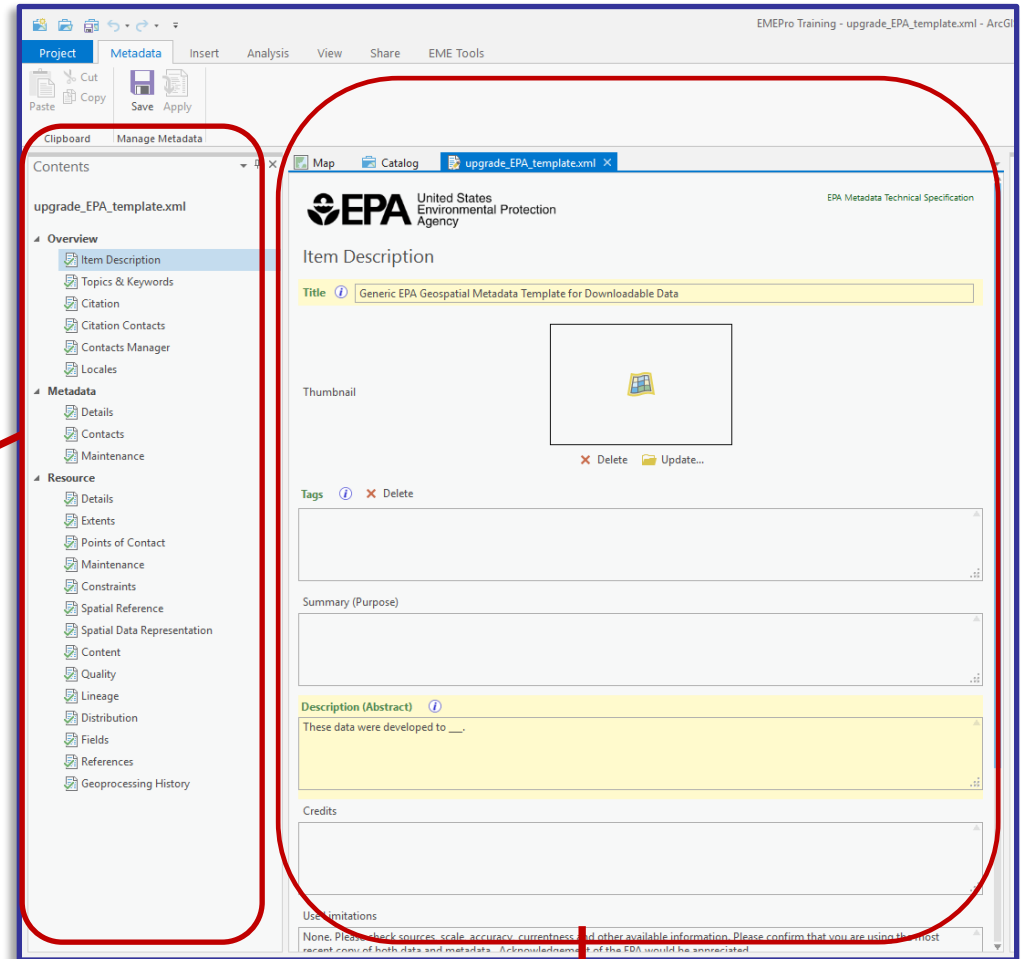
- To Edit Metadata using EME Pro:
 - Open a Catalog View
 - Select an Item in the Catalog Pane to edit
 - Either Click the “Edit Metadata button” or right-click the item and select “Edit Metadata”



EME Pro Interface :

- Organized within ArcCatalog in a Table of Contents
- Clicking on a page in the table of contents displays a set of metadata fields in the *Editing pane*

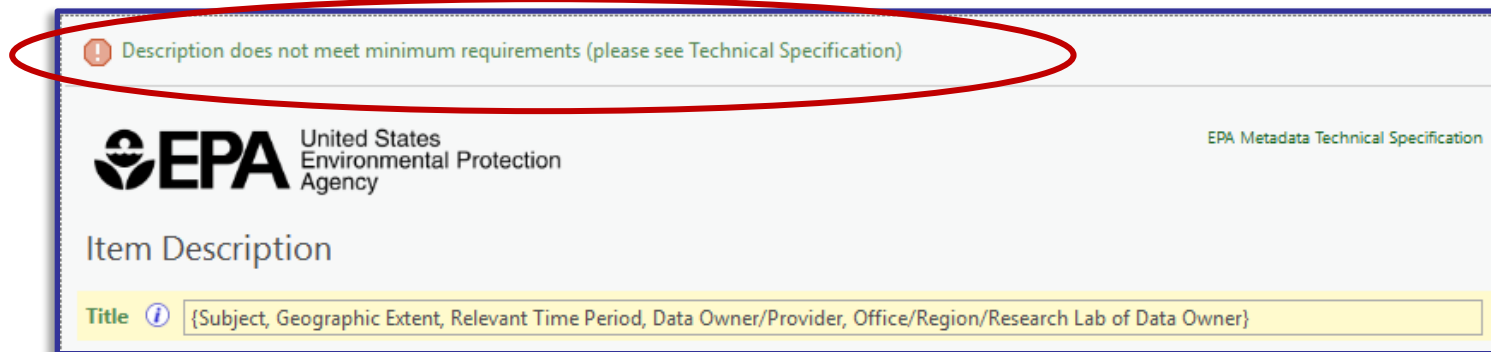
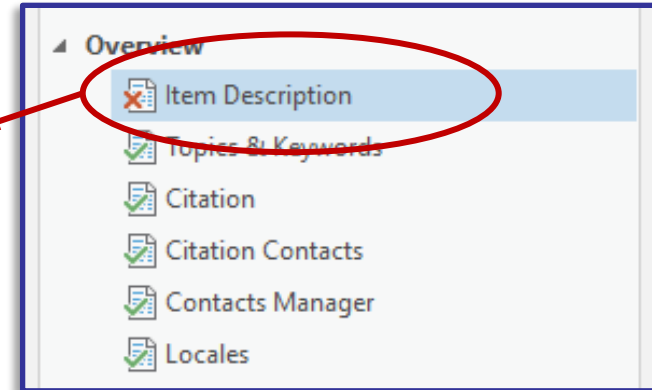
Table of Contents containing pages to be edited



Editing Pane

EME Pro Interface :

- Pages in the Table of Contents, symbolized with a Red X illustrate an error in the corresponding metadata fields
- Help text is found at the top of the *Editing pane* indicating the fields in the selected page that do not meet minimum metadata requirements





EME Pro: Getting Started

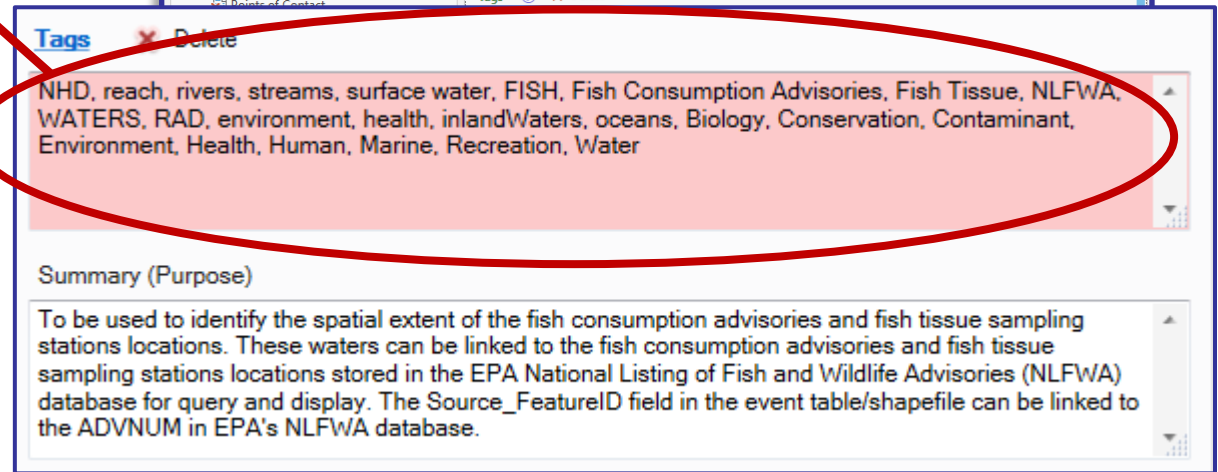
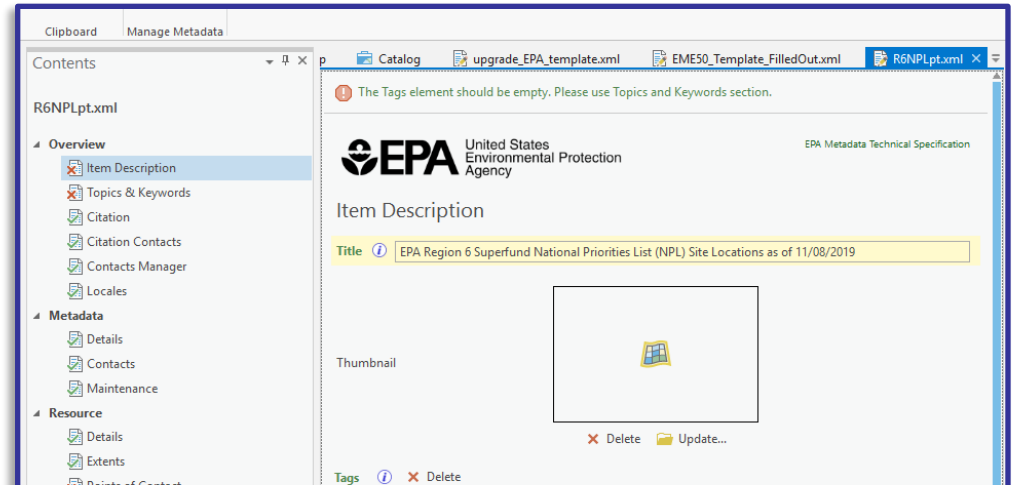
EME Pro Interface :

- Errors may not be immediately visible and instead a section needs to be expanded to find the element error.

Dropdown arrow opens an expandable section

EME Pro Interface :

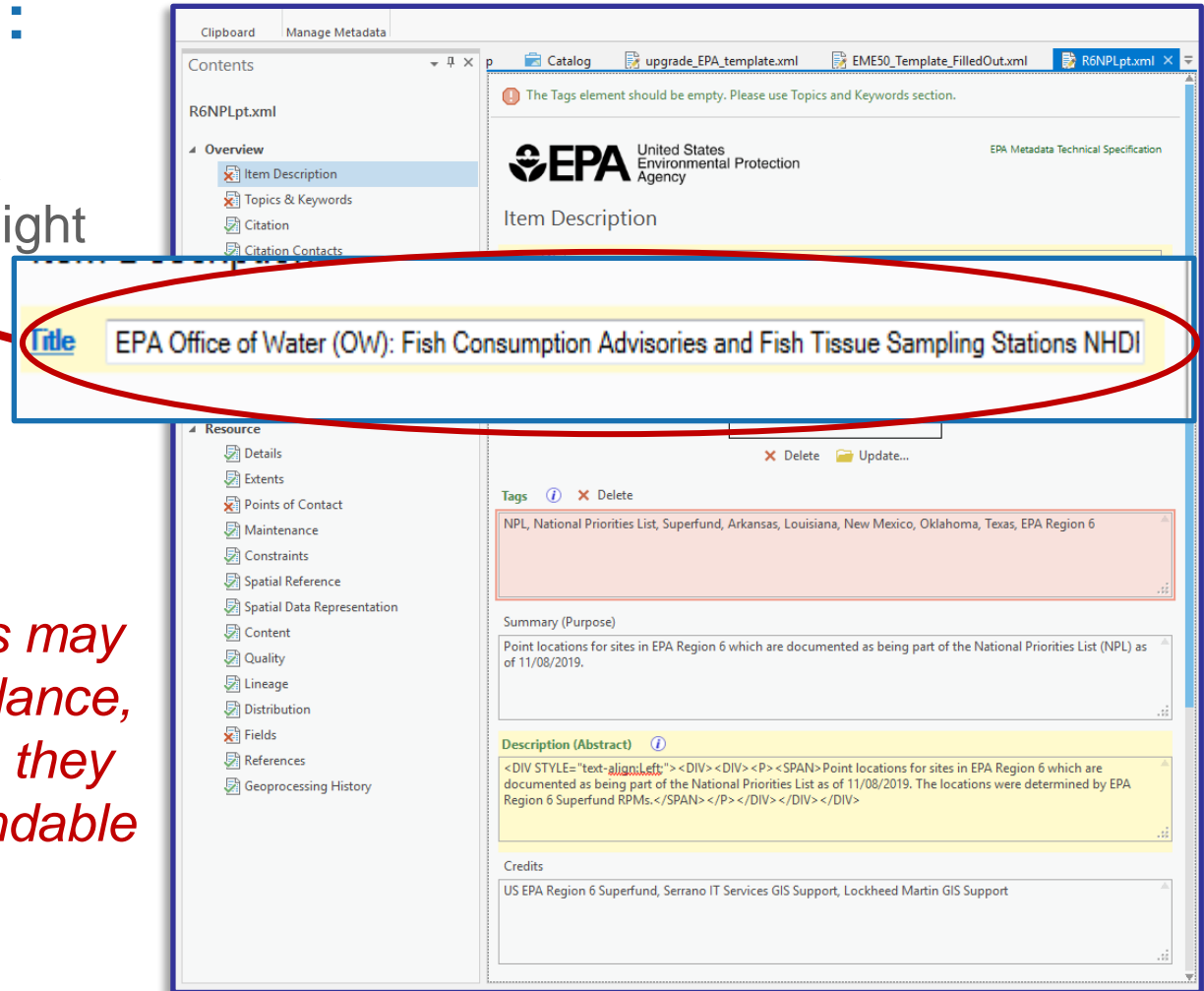
- Invalid text fields needing correction are shaded in pink or peach within the *Editing pane*



Note: dropdown and date fields do not support this coloring

EME Pro Interface :

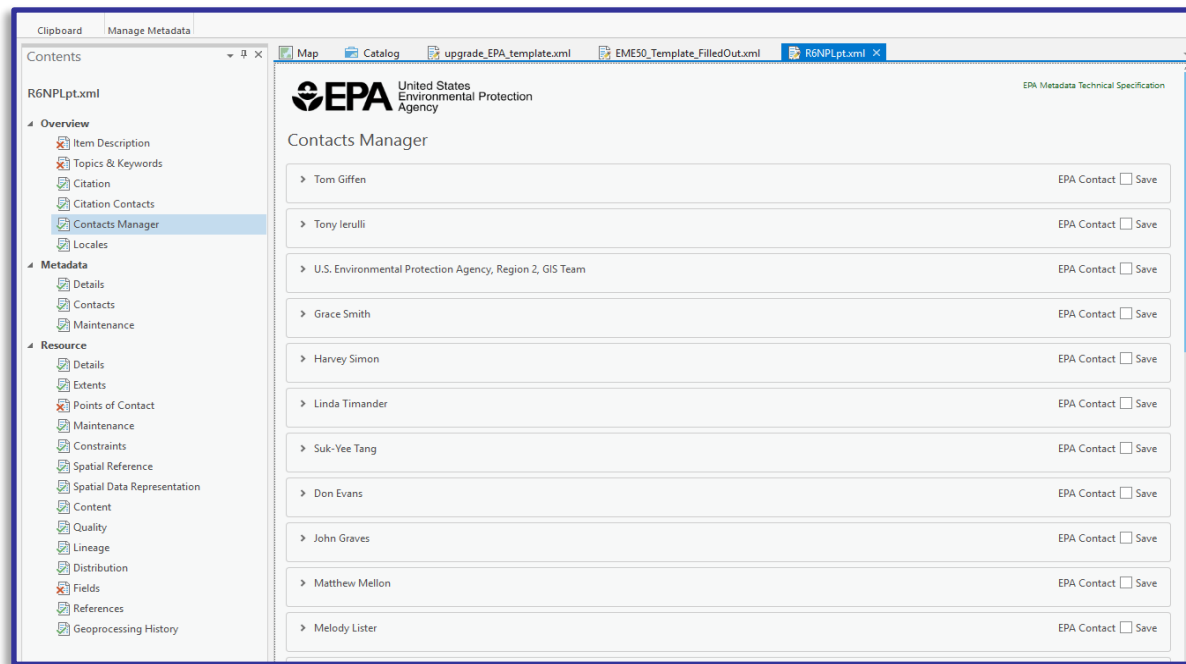
- Mandatory metadata fields are shaded in light yellow.



Note: mandatory fields may not be visible at first glance, because it is possible, they are found in an expandable section

Contacts Manager:

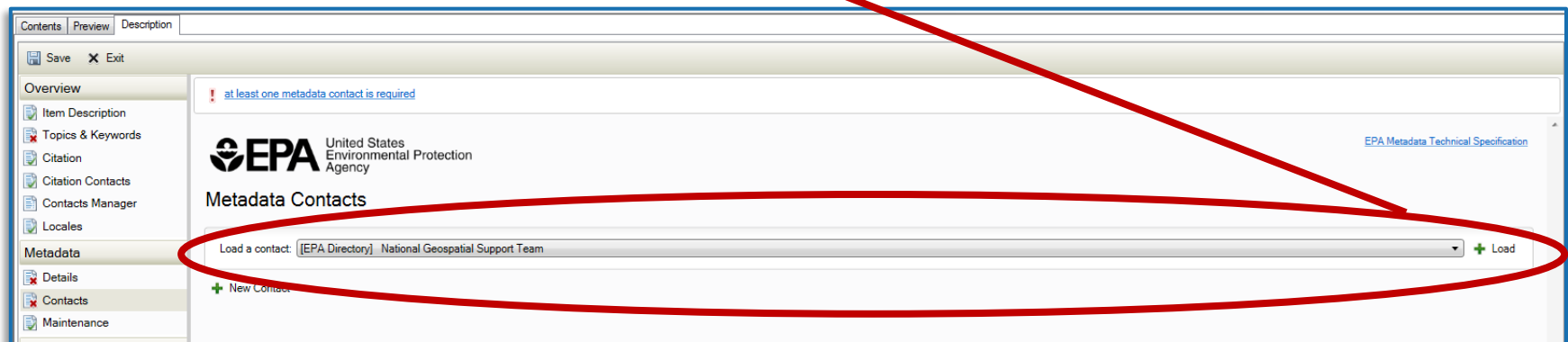
- Provides a list of pre-populated EPA Contacts
- Lists any contacts that are included in the current metadata document
- Local Contacts file can be shared with Colleagues



Note: Contact Details cannot be edited in the Contacts Manager page

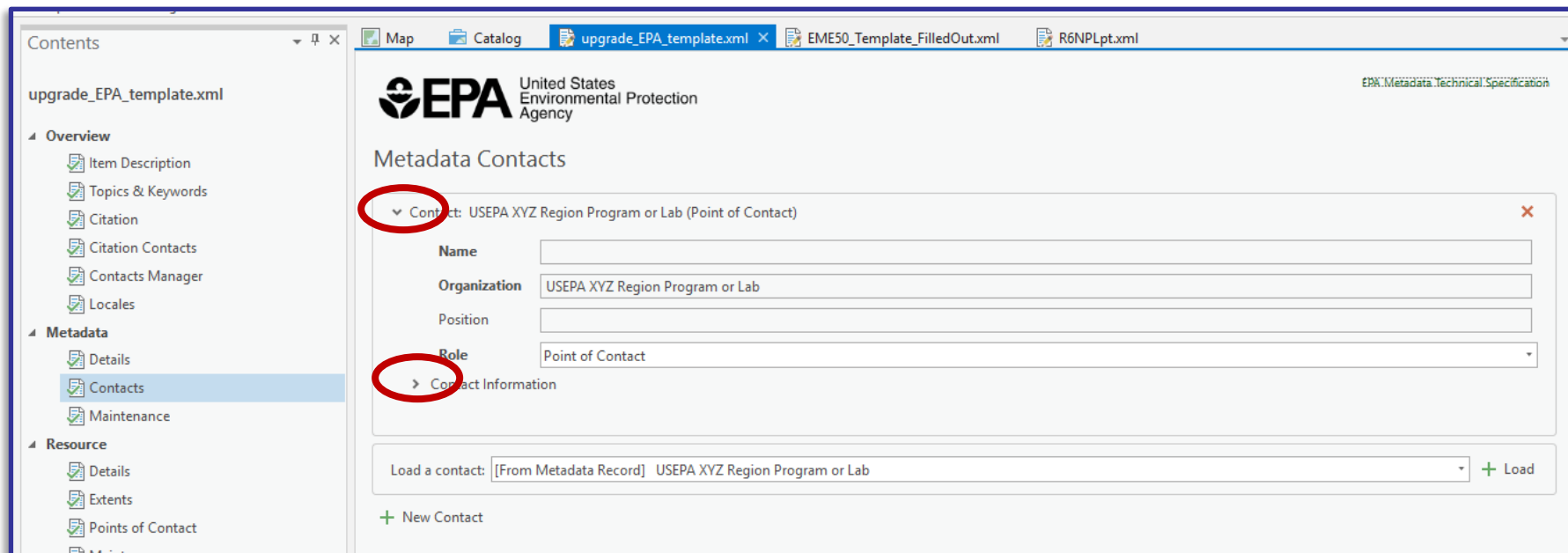
Contacts Manager – Editing Contacts:

1. Add contact to the metadata document in one of the following locations:
 - Citation Contacts
 - Metadata Contacts
 - Resource Points of Contact
2. Select the name of the metadata contact from the dropdown list and click Load.



Contacts Manager – Editing Contacts:

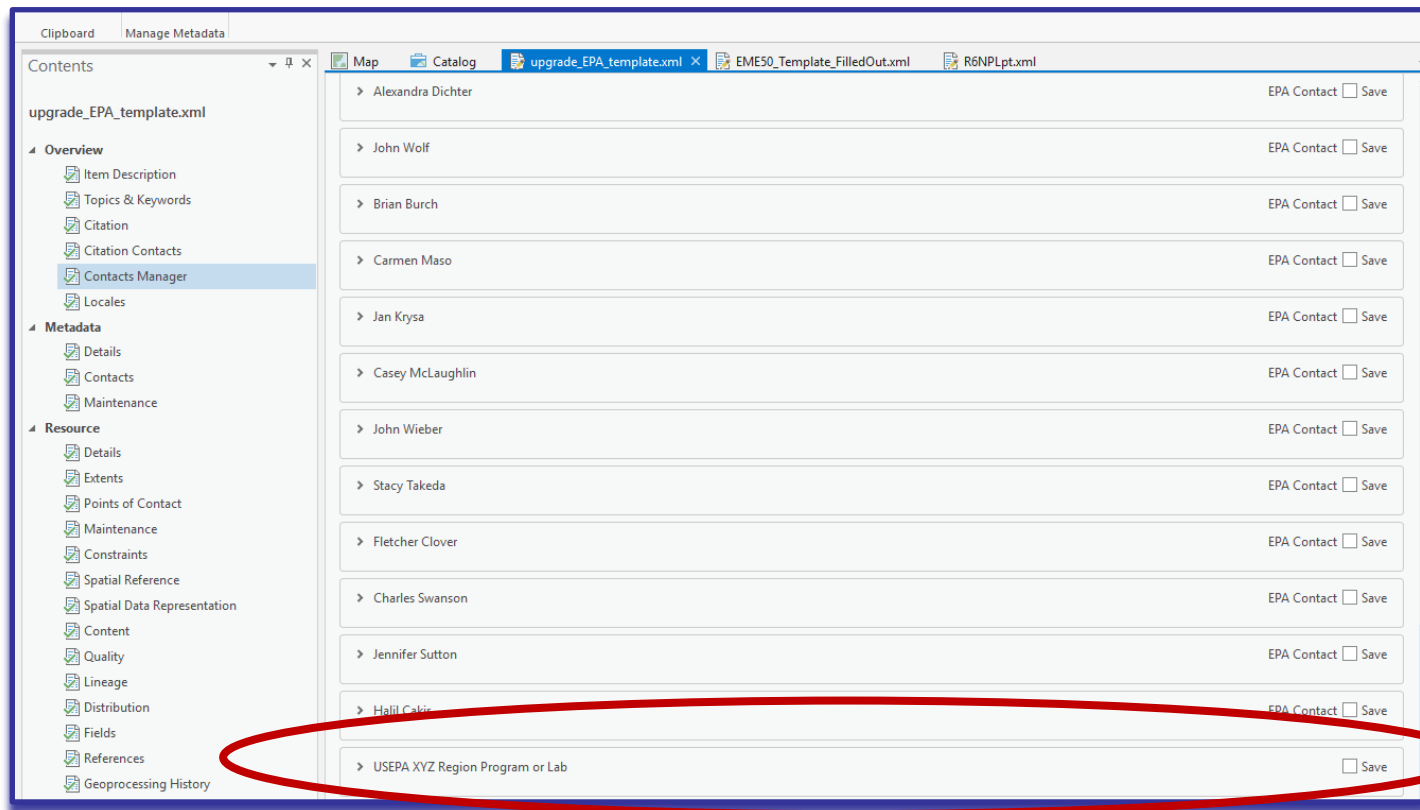
- When a contact is loaded, you can expand the section by clicking each down arrow



The screenshot displays the EPA EME Pro interface. On the left, a sidebar shows a tree view with 'Contacts' selected under the 'Metadata' section. The main content area is titled 'Metadata Contacts' and features a form for editing a contact. The contact name is 'USEPA XYZ Region Program or Lab (Point of Contact)'. The 'Organization' field is filled with 'USEPA XYZ Region Program or Lab', and the 'Role' dropdown is set to 'Point of Contact'. A red circle highlights the down arrow next to the contact name, and another red circle highlights the right-pointing arrow next to the 'Contact Information' section. Below the form, there is a 'Load a contact:' dropdown menu with the selected value '[From Metadata Record] USEPA XYZ Region Program or Lab' and a '+ Load' button. A '+ New Contact' button is also visible at the bottom left of the main area.

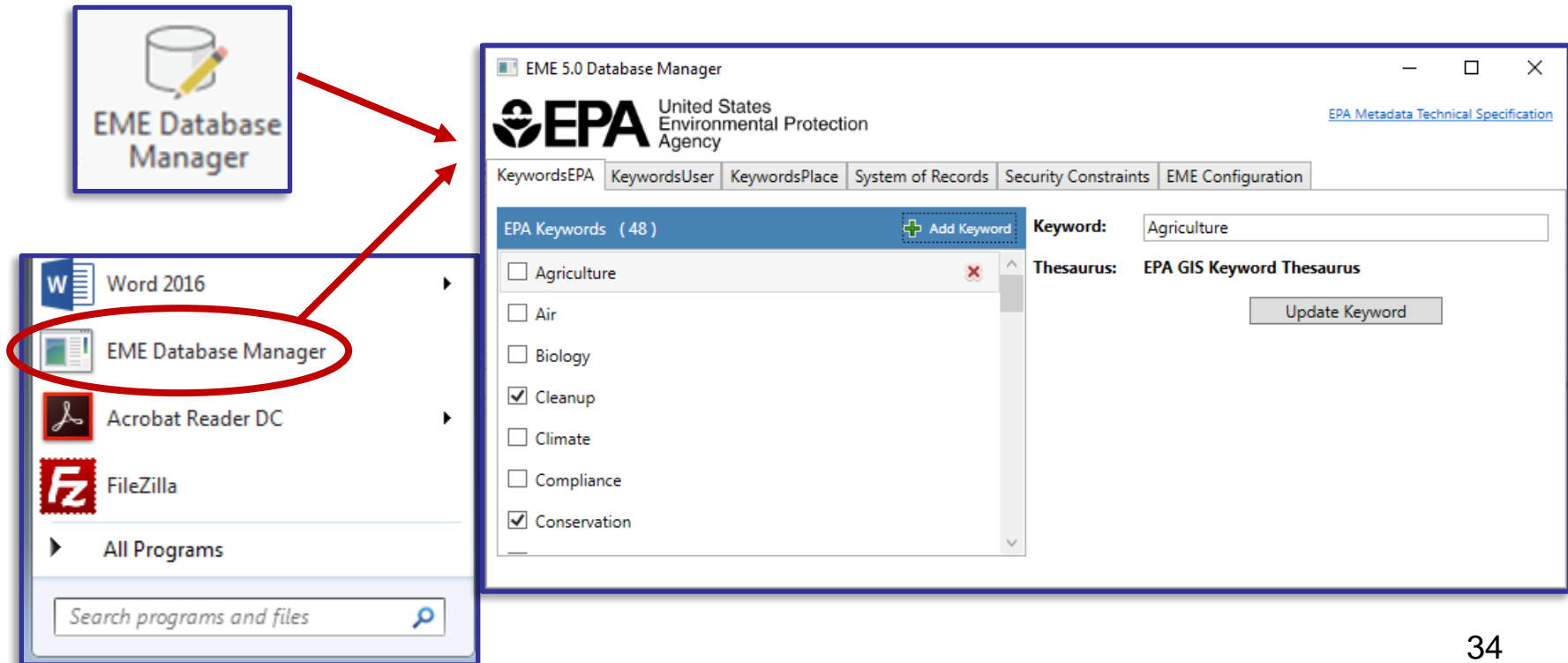
Contacts Manager – Editing Contacts:

4. New version of contact will appear at the bottom of the Contacts Manager Page



Database Manager

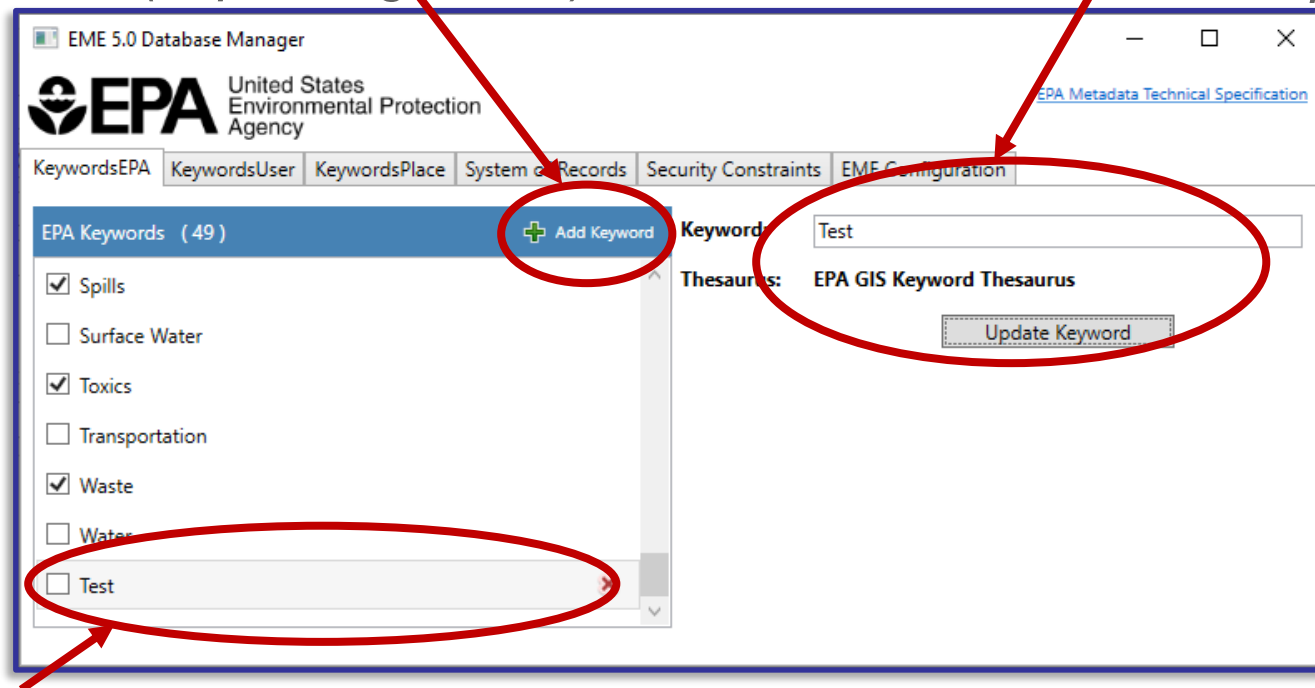
- Standalone Application found in Start Menu or Button on Pro Ribbon
- Used to manage Keywords, System of Records, and Security Constraints fields



The image illustrates the EME Database Manager application. On the left, a Windows Start menu is shown with the 'EME Database Manager' icon circled in red. A red arrow points from this icon to a larger screenshot of the application window. The application window, titled 'EME 5.0 Database Manager', features the EPA logo and the text 'United States Environmental Protection Agency'. It has a tabbed interface with tabs for 'KeywordsEPA', 'KeywordsUser', 'KeywordsPlace', 'System of Records', 'Security Constraints', and 'EME Configuration'. The 'KeywordsEPA' tab is active, displaying a list of keywords with checkboxes: Agriculture, Air, Biology, Cleanup (checked), Climate, Compliance, and Conservation (checked). An 'Add Keyword' button is visible. To the right of the list, there is a 'Keyword:' field containing 'Agriculture', a 'Thesaurus:' dropdown set to 'EPA GIS Keyword Thesaurus', and an 'Update Keyword' button. A link for 'EPA Metadata Technical Specification' is also present in the top right corner.

Database Manager – Editing Defaults

1. Click *Add Keyword* or *Add Constraint* (depending on tab)
2. Add Keyword or Constraint in text box and click *Update*



3. New entry appears at the bottom of the defaults list

EME Pro Help: Metadata Elements

- Mandatory fields link directly to their detailed guidance in the [EPA Metadata Technical Specification](#).

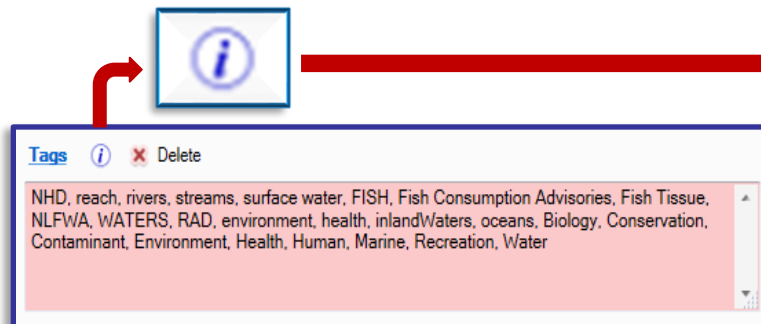
| Field | Title |
|----------------------------|--|
| Required? | Always |
| Guidance | <p>Titles should be succinct yet descriptive including the topic, and, where relevant, temporal info, geography and related programs in a way that distinguishes from other, similar resources. To this end, EPA recommends the following template:</p> <p>{Subject, Geographic Extent, Relevant Time Period, Data Owner/Provider, Office/Region/Research Lab of Data Owner}</p> <p>Any individual component of this title template may be omitted if not applicable. For example, there is no need to include a date if data are frequently or continuously updated. Similarly, if the geographic extent is implicit in the subject, i.e. National Hydrography Dataset, it may be omitted provided that the actual extent of the data matches the extent implied in the title (an example of a dataset whose actual extent does not match the implicitly titled extent would be National Hydrography Dataset clipped to a given state). Geographic Extent should always refer to a place name, not a bounding box or coordinates. Spell out any acronyms.</p> |
| Accepted Values | Plain Text |
| Example | "Toxics Release Inventory (TRI) Locations, Oklahoma, 2012, EPA OIAA, EPA REG 66 WQPD" |
| ArcCatalog Editor Location | Overview > Item Description > Title and Overview > Citation > Titles > Title |
| ArcGIS Metadata XPath | /metadata/dataIdInfo/idCitation/resTitle |

The screenshot shows the EPA logo and the text "United States Environmental Protection Agency". Below this is the "Item Description" section. In the top right corner, there is a link labeled "EPA Metadata Technical Specification". In the "Title" field, the text "EPA Office of Water (OW): Fish Consumption Advisories and Fish Tissue Sampling St" is visible.

- A link to the complete EPA Metadata Technical Specification can be found in the top right corner of the Editing pane.

EME Pro Help: Metadata Elements

- The  icon next to a field name links directly to that field's detailed guidance in the [EPA Geospatial Metadata Style Guide using EME 5](#).



Tags [special instructions MUST be followed]

Tags ⓘ ✕ Delete

Special instructions: Tags are required in EPA metadata. However, EME has disabled editing on this field as tags should NOT be added here. Instead, tags should be added in the "Topics and Keywords" page. See instructions for each of the individual topic/keyword sections in this Style Guide to add tags by type:

- [ISO 19115 Topic Categories](#)
- [Place Keywords](#)
- [EPA Keywords](#)
- [Program Code Keywords](#)
- [EPA Organization](#) (pending addition in future EME release)

If any tags exist in this field (i.e. from a previous version of the metadata) follow this process:

1. Determine if you want to keep any of the existing tags.
2. To keep tags, they must be added to your local EME database in User Keywords.
3. Once you have duplicated the desired tags from the Tags field to your User Keywords section, or if you determine that you do not want any existing tags, the tags must be removed from the Tags field by clicking "Delete."

NOTE: leaving any text in the Tags field renders the metadata invalid.

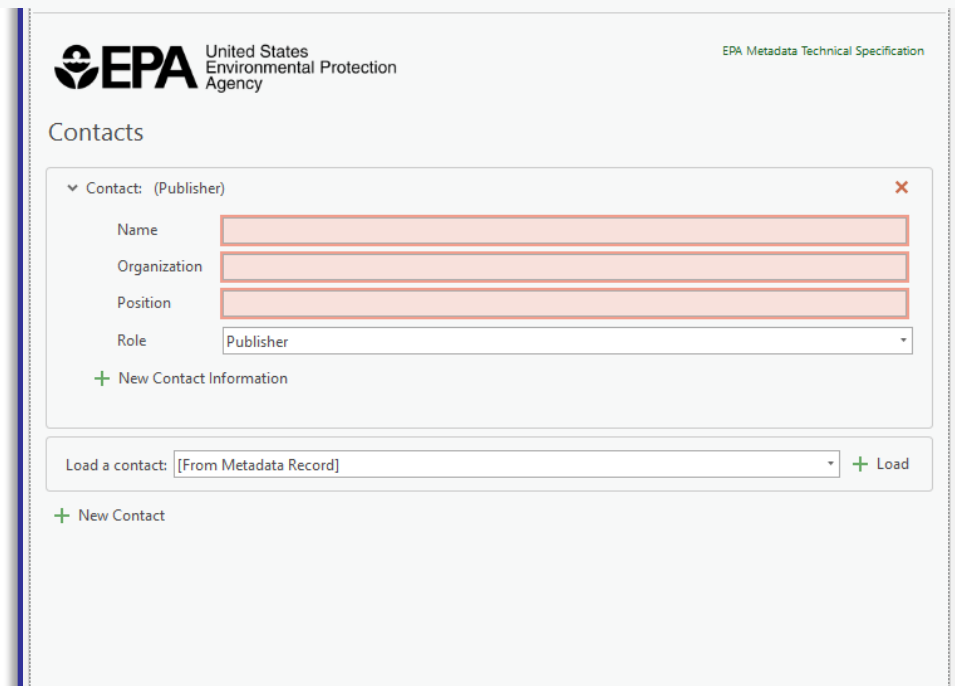
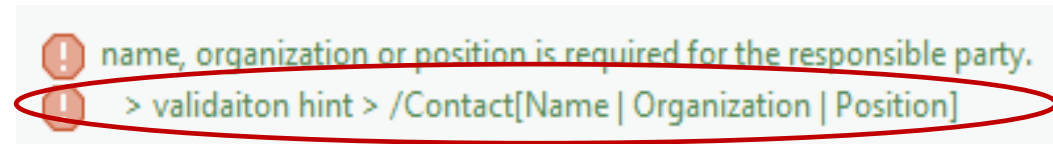
Guidance: Follow the special instructions above. If tags exist in this field they must be deleted or the metadata will be invalid.

[Metadata Technical Specification: Tags \(General\)](#)

[↑ Top of Page](#)


EME Pro Help: Metadata Elements

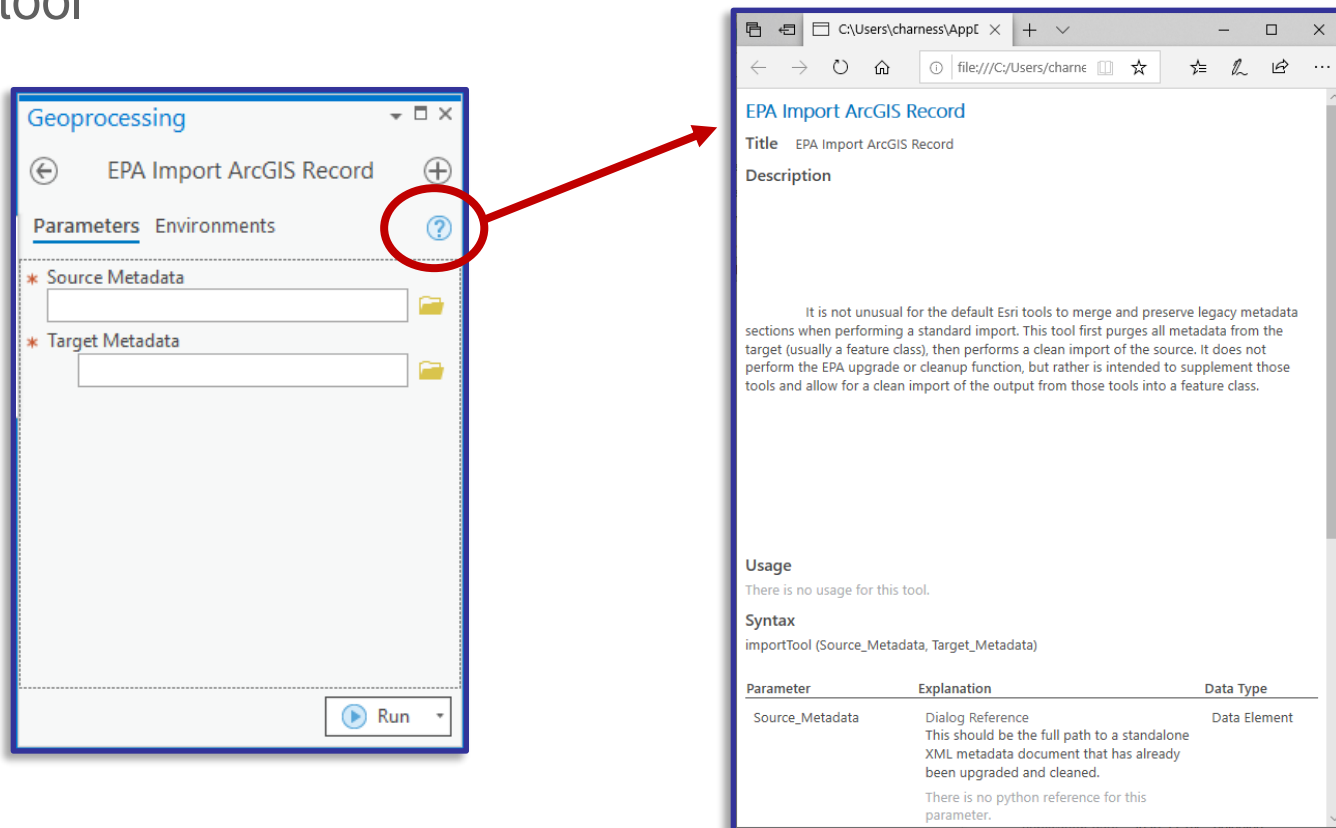
- Validation hints are provided as additional messages for most validation errors that occur in nested components to help you find where the error is occurring.



The screenshot shows the EPA Metadata Technical Specification interface. At the top left is the EPA logo and the text "United States Environmental Protection Agency". At the top right is "EPA Metadata Technical Specification". The main heading is "Contacts". Below it is a form for a "Contact: (Publisher)" with a close button (X). The form has four fields: "Name", "Organization", "Position", and "Role". The "Name", "Organization", and "Position" fields are highlighted in red, indicating they are required. The "Role" field is a dropdown menu with "Publisher" selected. Below the form is a "+ New Contact Information" link. At the bottom of the form is a "Load a contact:" dropdown menu with "[From Metadata Record]" selected and a "+ Load" button. Below the form is a "+ New Contact" link.

EME Pro Help: Metadata Tools

- The  icon next to the Parameters and Environments in the Geoprocessing window of the metadata tools, opens the EME help for that tool



The screenshot shows the Geoprocessing window for the 'EPA Import ArcGIS Record' tool. The 'Parameters' tab is active, showing fields for 'Source Metadata' and 'Target Metadata'. A red circle highlights the help icon (a question mark) next to the 'Parameters' tab. A red arrow points from this icon to a separate help window titled 'EPA Import ArcGIS Record'.

The help window displays the following information:

EPA Import ArcGIS Record
Title EPA Import ArcGIS Record
Description

It is not unusual for the default Esri tools to merge and preserve legacy metadata sections when performing a standard import. This tool first purges all metadata from the target (usually a feature class), then performs a clean import of the source. It does not perform the EPA upgrade or cleanup function, but rather is intended to supplement those tools and allow for a clean import of the output from those tools into a feature class.

Usage
There is no usage for this tool.

Syntax
importTool (Source_Metadata, Target_Metadata)

| Parameter | Explanation | Data Type |
|-----------------|--|--------------|
| Source_Metadata | Dialog Reference This should be the full path to a standalone XML metadata document that has already been upgraded and cleaned. There is no python reference for this parameter. | Data Element |

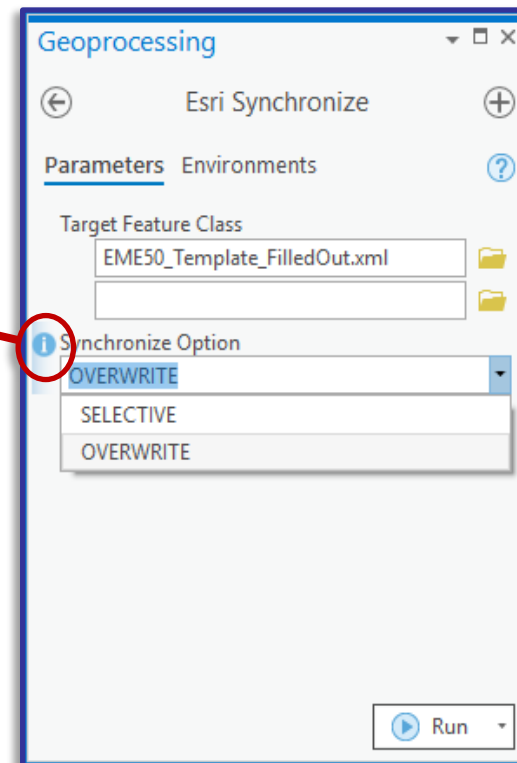
EME Pro Help: Metadata Tools

- Hovering your mouse over the  icon of a parameter within a metadata tool brings up the help for that parameter.

Synchronize Option (Required) ✕

SELECTIVE—Generally the same as the OVERWRITE option. However, the values of the Title and Content Type metadata elements are not updated. For example, if you import a standard-format metadata document to the item that describes the item's data, the title in the imported document does apply to the item, and it will not be overwritten. All other properties in the item's metadata will be initialized in a manner appropriate for the item. Metadata content will be updated appropriately at the time the function is used; a time specified by the interval parameter is not used, if one has been provided. Metadata is created if it doesn't already exist.

OVERWRITE—All property values that can be synchronized are updated in the item's metadata, regardless of the value or presence of the Sync attribute on these metadata elements. After this function is used, all metadata elements that have been updated will have a Sync attribute with the value True. For example, after copying metadata from one item to another, use this option to initialize all properties in a manner that is appropriate for the item, including the title, which should be changed to match the new item's name instead of using a title that describes the old item. Metadata content will be updated appropriately at the time the function is used; a time specified by the interval parameter is not used, if one has been provided. Metadata is created if it doesn't already exist.



Geoprocessing ▾ □ ✕

← Esri Synchronize →

Parameters Environments ?

Target Feature Class

EME50_Template_FilledOut.xml 📁

? Synchronize Option

OVERWRITE ▾

SELECTIVE

OVERWRITE

▶ Run ▾



EME Pro: Validation Tips

Validation Tips:

- When edits are made EME Pro automatically updates the “Date Stamp” field of the metadata
- “Tags” can be included in the Item Description page
- On request, we can send an example of data quality report
- The Entity/Attribute section is still based on FGDC CSDGM, and the entire section is ignored by ArcGIS Online and Data.gov.
- More Validation Tips can be found on the [EME Pro wiki](#)



EME Pro: ArcGIS Metadata, EDG & Data.gov

ArcGIS Metadata, EDG and Data.gov

- EDG Handles ArcGIS Metadata records the same as FGDC CSDGM records
 - Can be harvested to the EDG from the same Web Accessible Folders
 - Appearance within EDG will be similar to old records
- EDG performs a transformation on records to put them in ISO 19115 for data.gov harvests
 - Will improve behavior and appearance at data.gov

DEMO



EME Pro: *Important URLs*

Download EME Pro –

- <https://github.com/USEPA/EPA-Metadata-Editor-Pro/releases>

EME Pro Installation Guide –

- <https://github.com/USEPA/EPA-Metadata-Editor-Pro/wiki>

EME Metadata Style Guide -

- <https://www.epa.gov/geospatial/epa-geospatial-metadata-style-guide-using-eme-5>

Questions/Help, email: edg@epa.gov



Questions?

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