

CERF Metadata Editor

THE CERF Metadata Editor

The CERF Metadata Editor has been developed in Microsoft Access 2003 and is intended to provide support for data created by CERF projects funded by the Australian Government Department of the Environment and Water Resources. It allows a data creator to create and edit ISO19115 compliant metadata. The editor uses the Australian Government ISO metadata profile that is the standard for managing and publishing metadata across Australian Government agencies. The tool will allow you to import existing metadata if it is compliant to the ISO standard using ISO ShortName. It also allows you to export metadata contained with the database to XML files enabling you to distribute/store metadata with datasets as well as enabling you to integrate metadata into other systems.

You can create and edit metadata for any spatially related data and documents.

Getting started

Start the database by double-clicking on the cerf_metadata.mdb file. The database will start with a menu page which has 4 options:

1. **Open Metadata Editor** – Click this to view metadata records. This view can be used to create new metadata records by clicking **New Metadata Statement** or by using the record navigation buttons at the bottom of the page. This view can also be used to edit existing metadata record by navigating to the record you are after and editing directly within the form.

The screenshot shows the Microsoft Access Metadata Entry form. The form has a title bar 'Microsoft Access - [Metadata Entry]'. The menu bar includes File, Edit, View, Insert, Format, Records, Tools, Window, and Help. The toolbar contains various icons for navigation and editing. The form fields include: Title (text box), Alternate Title (Data source name) (text box), Spatial Representation (text box), Abstract (text area), Data Creation Date (Day, Month, Year dropdowns), and Data Revision Date (Day, Month, Year dropdowns). At the bottom, there are buttons for Close, Export (XML), and New Metadata Statement. A navigation bar at the very bottom shows 'Records: 14 of 2' and navigation icons. Two arrows point from text labels to the 'New Metadata Statement' button and the navigation buttons.

1. New Metadata Statement
2. Record navigation buttons

2. **Search Existing Metadata** – This opens a form that allows you to search metadata statements within the database. Enter one or multiple search criteria (Title, Abstract and Dataset Name) and click **Search**. The search is based on a wildcard search of the criteria that have been entered. For example if you enter 'Vege' for a title search statements that contain 'Vegetation' in the title would also be returned.

Any statement matching your search criteria will be returned in the **Search Results** located on the right hand pane of the **Metadata Search** window. You can look at basic criteria of the metadata statements here and view the full statement by clicking **View/Edit Full Metadata**. This will open a form that looks the same the Metadata Editor and will allow you to view and edit metadata elements.

3. **Edit Custodians** – This will open a form that will allow you to manage your custodian contact details. It is intended that both external and internal custodian information to be placed in this table. You have a number of options within this form including: Add Record, Delete Record and Edit Record.
4. **Import XML** – Allows you to navigate to an ISO 19115 XML metadata statement and import it into the MSTRF Metadata Editor. This has been designed to import metadata XML files based on the ISO 19115 short name and will only import metadata using this format.

Creating a valid Metadata Statement

To create a metadata statement 'Open the Metadata Editor' form from the main page of the CERF Metadata Editor and click the 'New Metadata Statement' button on the bottom right of the form.

Reserved Characters

As metadata statements are designed to eventually be stored in systems as XML it is good practice when creating metadata using this editor to observe the rules of XML including avoiding the use of reserved characters. If you do need to use them it is possible to use their 'entity reference' instead, which when used allows the system to display the reserved character without affecting the XML. Reserved characters and their corresponding 'entity reference' are listed in the table below.

Reserved Character	Entity Reference
<	<
>	>
&	&
'	'
"	"e;

Mandatory Elements

Based on the Australian Government metadata profile which is designed using the ISO 19115 standard, the following elements should be the minimum to be completed for metadata to be considered a complete statement:

1. Metadata Point of Contact – person/organisation/position (located on the **Custodian** tab) and responsible party (located on the **Contact** tab)
2. Dataset Abstract (located on the **Description** tab)
3. Dataset Title (located on the **Description** tab)
4. Dataset Topic Category ('Data Category' located on the **Data Class** tab).
5. Dataset Creation Date and/or Dataset Revision Date (located on the **Description** tab).
6. Dataset Extent-Geographic (Geographic Bounding Box located on the **Spatial Reference** tab). Geographic Description has not been included in this editor as the Department of the Environment and Water Resource's metadata style sheet does not recognise this element.

The mandatory list is strictly longer than described above, however the metadata editor makes certain assumptions about language and character sets and assigns this information automatically.

Describing the Metadata Editor

The CERF Metadata Editor is designed to generate metadata that will ultimately be integrated into the Department of the Environment and Water Resource's metadata and displayed on its website via Discover Information Geographically (DIG) located at <http://www.environment.gov.au/metadataexplorer/explorer.jsp>.

The metadata is generated via a series of tabs located on the Metadata Editor form. In order to explain each metadata element each tab are described in the subsequent pages. It is intended that these pages can be used as a step-by-step guide to completing a metadata statement.

Description Tab

The screenshot shows the 'Metadata Editor' application window. The 'Description' tab is active, displaying a form for entering metadata. The form includes a 'Title' field, an 'Alternate Title (or Data source name):' field, a 'Spatial Representation:' field with a checked checkbox, and a large 'Abstract:' text area. Below these are date selection fields for 'Data Creation Date' and 'Data Revision Date', each with 'Day', 'Month', and 'Year' sub-fields. At the bottom right, there are buttons for 'Close', 'Export XML', and 'New Metadata Statement'. A record navigation bar at the bottom left shows 'Record: 1 of 1'.

Title (mandatory element)

This element should contain the title of your metadata entry which should be a descriptive title for the metadata entry.

If your metadata record refers to a dataset that is part of a series, you should incorporate the series name in the title, followed by an indicator of the theme, eg for: Australia, Topographic Data 1:2,500,000 (roads, drainage and waterbodies themes), use:

Australia, Topographic Data 1:2,500,000 – roads
Australia, Topographic Data 1:2,500,000 – drainage
Australia, Topographic Data 1:2,500,000 – waterbodies

Alternate Title

This element is the name of the dataset (i.e. roads.shp or observations.xls). This could also include the file path of the data to assist with locating the data source

Spatial Representation

This element details the spatial type of dataset. There are three options including: raster, tabular or vector.

Abstract (mandatory element)

The abstract should contain a short description of the contents of the data: such as the purpose of the data, what it depicts and whether the data are part of a series.

Data Creation Date (mandatory element if Data Revision Dates doesn't exist)

Enter the date that the data were created. This can be entered as day, month and year, month and year, or year only. You should try to be as specific as possible with the date.

Data Revision Date (mandatory element if Data Creation Date doesn't exist)

Enter the date when the data was last revised. This can be entered as day, month and year, month and year, or year only. You should try to be as specific as possible with the date.

Custodian Tab

The screenshot shows the 'Custodian' tab in the Metadata Editor. The window title is 'Metadata Editor - [Metadata Editor]'. The menu bar includes 'File', 'Edit', 'Insert', 'Records', 'Window', and 'Help'. The toolbar contains 'Type a question for help'. The main area has several tabs: 'Description', 'Custodian', 'Data Class', 'Lineage', 'Scale', 'Update', 'Restrictions', 'Quality', 'Formats', 'Source Data', 'Contact', 'Keywords', and 'Spatial Reference'. The 'Custodian' tab is active, showing a form with the following fields: 'Organisation:', 'Position:', 'email:', 'URL:', and an 'Address' section with 'Delivery Point:', 'City:', 'State:', 'Postcode:', 'Voice:', and 'Fax:'. There are two buttons: 'Get Custodians' and 'Edit Custodian'. At the bottom right, there are buttons for 'Close', 'Export XML', and 'New Metadata Statement'. The status bar at the bottom left shows 'Records: 14 of 1'.

The custodian is the party who owns the data. You cannot enter information directly into the textboxes in this tab. Click the **Get Custodians** button to retrieve valid entries and select one of these to enter into the main form. If the custodian you would like to enter does not exist close the Custodian form and select **Edit Custodian** from the main editor or on the **Custodian** tab. Enter or edit your custodian and then it will be available the next time you enter the Custodian form.

Data Class Tab

Metadata Editor - Metadata Editor

File Edit Insert Records Window Help

Type a question for help

Description Custodian **Data Class** Lineage Scale Update Restrictions Quality Formats Source Data Contact Keywords Spatial Reference

Data category:

Data availability - these options are not mutually exclusive:

Users have access via file system

Path or Location of the data:

Downloadable data (can be obtained from a Web location)

Download URL:

Other material (e.g., map, book)

Type:

Close Export XML New Metadata Statement

Record: 14 of 1

Data Category (mandatory element)

Choose an appropriate data category from the pick list. These ISO data category options are explained in Appendix A.

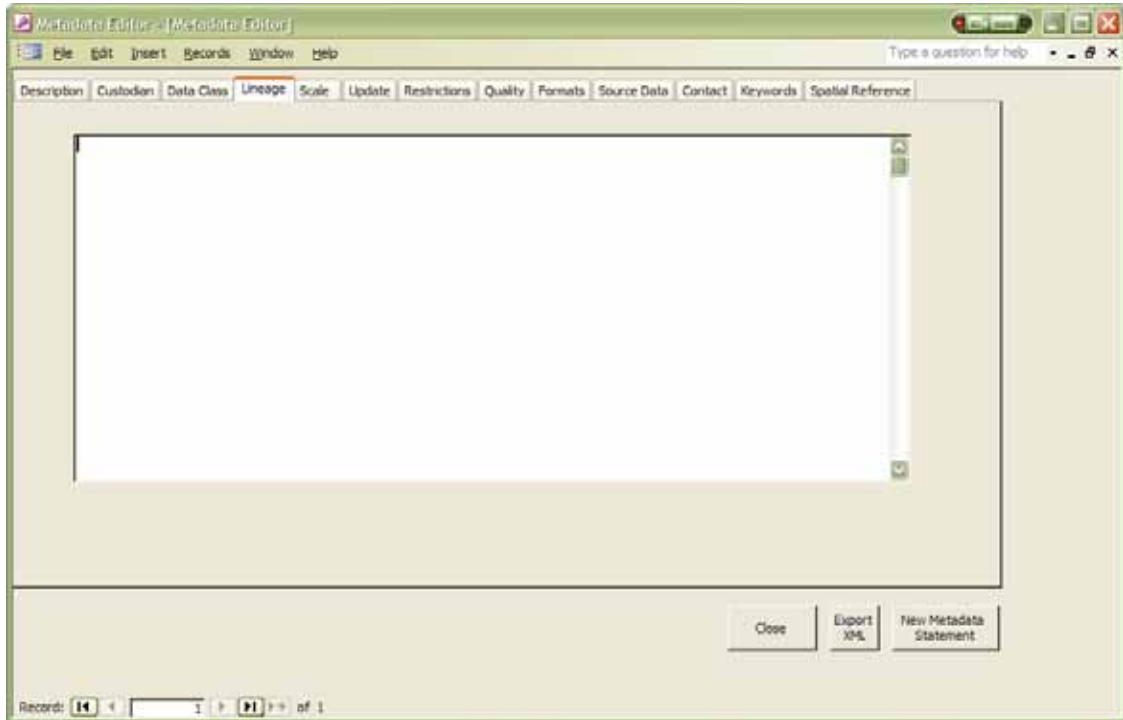
Data Availability

If the data your metadata refers to is a GIS dataset, database table, or a file on the filesystem, ensure the **Users have access file system** box is checked and the path to the data is complete. This will assist users of the Metadata Editor to find where the data you are referencing is located.

If the data is downloadable over the Internet, you need to also check the **Downloadable data (can be obtained from a web location)** box. This is important because it will allow you to link your metadata to the data download facility.

If the object is not available digitally (is perhaps a book or map), check the **Other material** box and describe the type of material that the metadata is referencing.

Lineage Tab



The Lineage element should contain a brief history of where the data originally came from and a description of the process steps used to develop the data to its current form. If the Lineage is unknown this should also be described here.

Scale Tab

The screenshot shows the 'Scale' tab in the Metadata Editor. The window title is 'Metadata Editor - Metadata Editor'. The menu bar includes 'File', 'Edit', 'Insert', 'Records', 'Window', and 'Help'. The toolbar contains 'Description', 'Custodian', 'Data Class', 'Lineage', 'Scale', 'Update', 'Restrictions', 'Quality', 'Formats', 'Source Data', 'Contact', 'Keywords', and 'Spatial Reference'. The main area has two radio buttons: 'Scale' (selected) and 'Resolution'. Below 'Scale' is a text input field labeled '1:'. Below 'Resolution' is a text input field labeled 'Distance:' followed by 'metres'. At the bottom right are buttons for 'Close', 'Export XML', and 'New Metadata Statement'. At the bottom left is a record navigation bar showing 'Record: 14 of 1'.

If the data is vector, turn on the **scale** radio button, and enter the denominator of the data's scale, e.g. 250,000 for 1:250,000 scale data. If the scale of the data is variable or cannot be determined, enter 0 for the denominator.

If the data is raster, turn on the **resolution** radio button, and enter the resolution (grid cell size) in metres. If your data's cell size is specified in units other than metres, eg degrees, use the converter in Appendix B to obtain the nominal equivalent in metres.

Update Tab

Metadata Editor - Metadata Editor

File Edit Insert Records Window Help Type a question for help

Description Custodian Data Class Lineage Scale Update Restrictions Quality Formats Source Data Contact Keywords Spatial Reference

How often is the dataset updated?

What is its current status?

Close Export XML New Metadata Statement

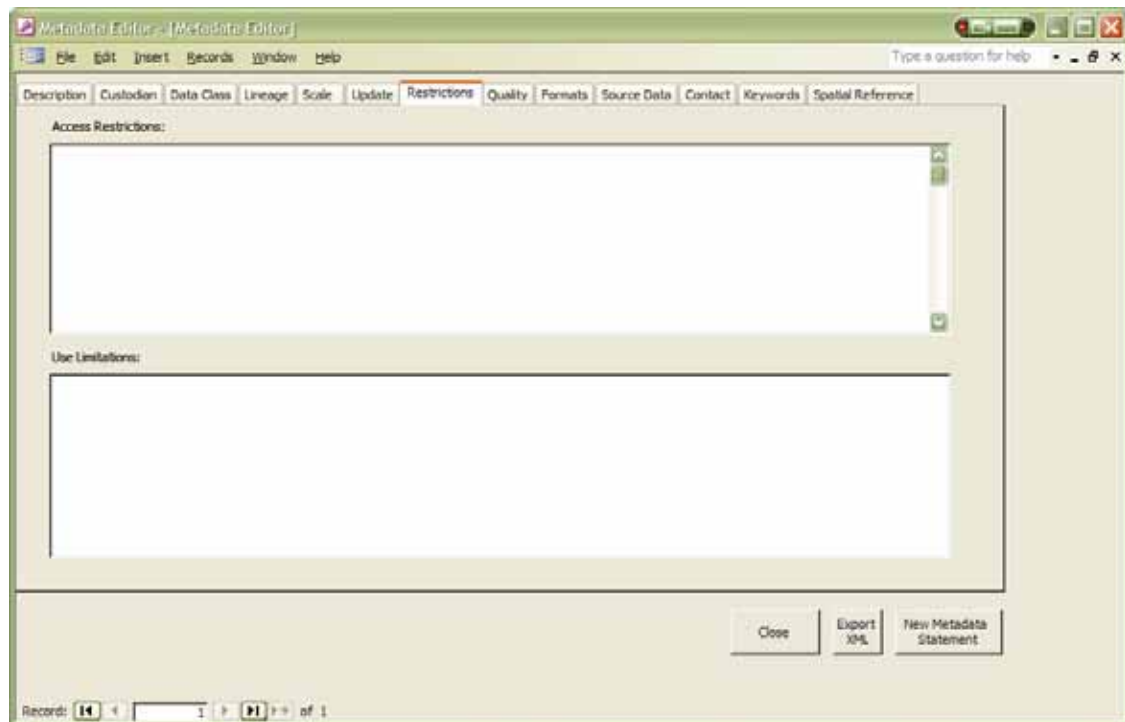
Record: 14 of 1

Select the appropriate option from the **How often is the dataset updated?** picklist.

Select the appropriate option from the **What is its current status?** picklist.

If you are creating metadata for archived data, you must select the **historicalArchive** option from the status picklist. This will flag your data as archived for future metadata searches.

Restrictions Tab



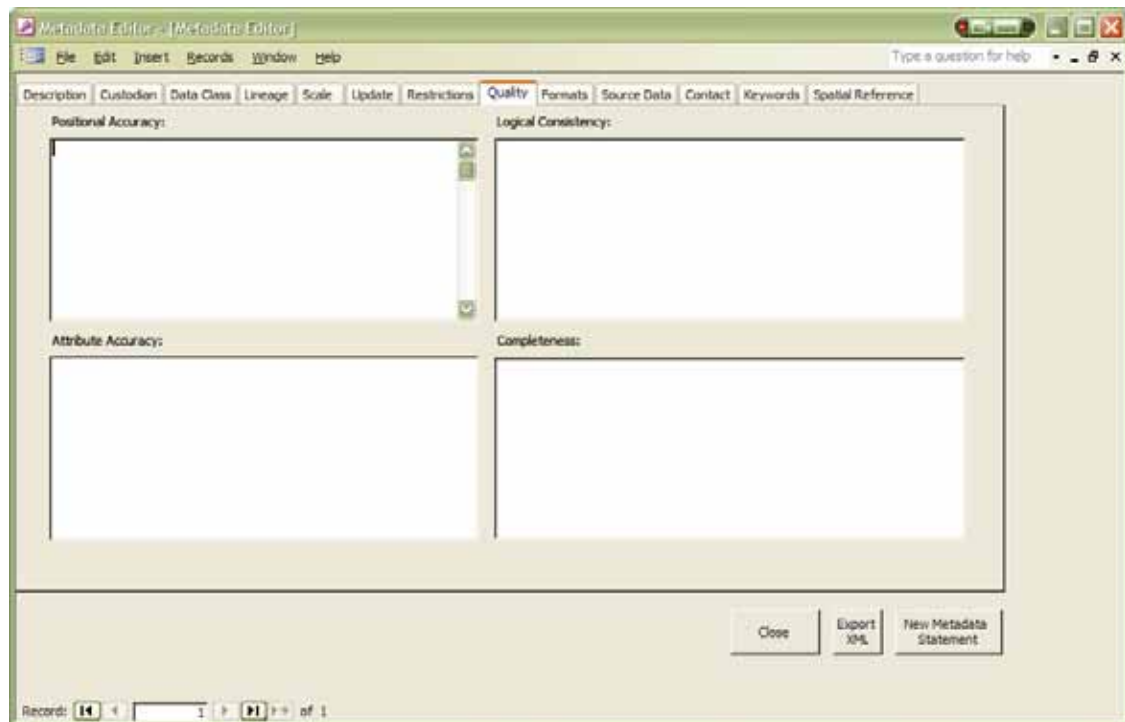
Access Restrictions

This element should contain a description of the access restrictions imposed on the data by the custodian or any other contributing parties. Information provided should describe any access constraints on the data that assure the protection of privacy or intellectual property. Any special restrictions or limitations on the data should also be listed here. The access restrictions should state clearly whether the data must be restricted for use only within the organisation holding the data, or if it can be provided to other organisations, or the public as a whole.

Use Limitations

Use limitations should contain information on any caveats that limit the use of the data such as known errors or inadequacies, or for whether the data is not suited for a particular purpose.

Quality Tab



Positional Accuracy

This element should contain a brief assessment of the positional accuracy of your data, i.e. an assessment of how close the spatial coordinates of the data are to the coordinates of what they are representing on the ground.

For data representing well-defined features on the ground (such as topographic data), a numerical description of the standard error is suitable. For example, 'It is expected that most data features have a positional error of less than +/- 50 metres'. This information is usually provided in the product specifications of such data. Remember also to include measurements for vertical as well as horizontal positional accuracy if the data has a height dimension.

For data not representing well-defined features (eg species or climate modeling, and vegetation communities), a numerical estimate of positional accuracy is not appropriate. Instead you should make an intuitive estimate of positional accuracy, and note the scale/resolution of the data product, and the methodology used to create it (eg by interpolation, modelling, etc).

Attribute Accuracy

This element should contain a brief assessment of the attribute accuracy of your data, i.e. description of how reliable the attribute values of the data are compared to what they represent in the real world. This could mean an estimate of the number of attribute values that are correct, or if the values have been simplified by classification, what methodology was used.

If possible, you should list the data's attributes and give a brief accuracy description of each.

Logical Consistency

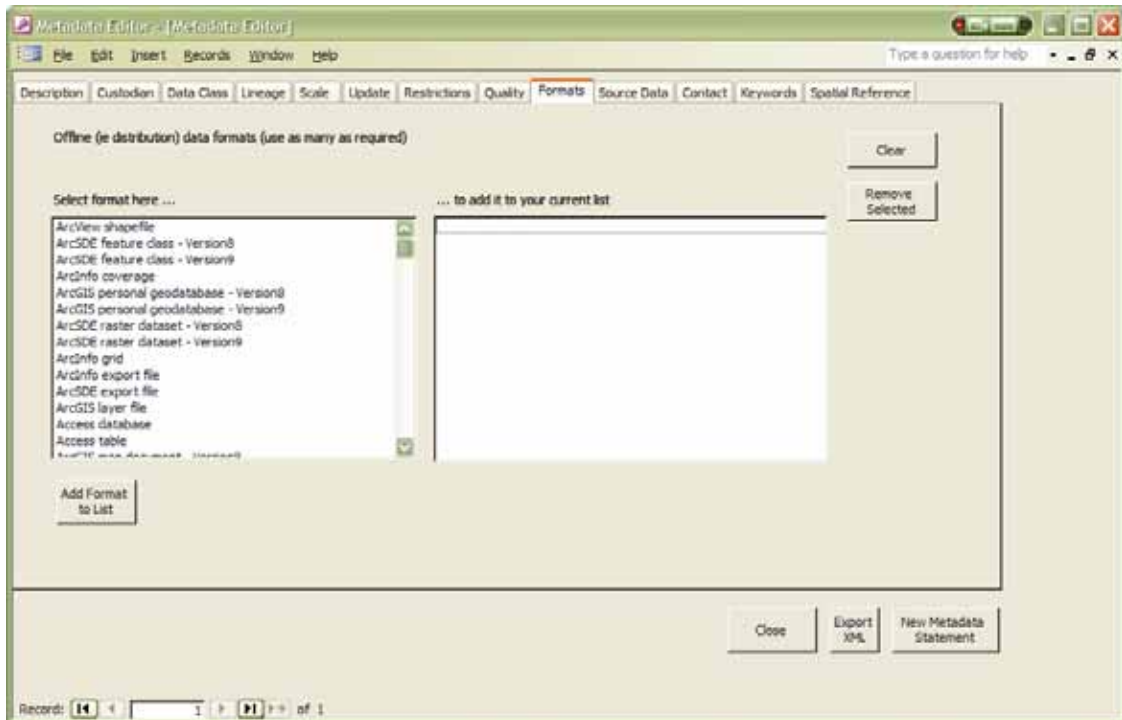
Logical consistency is an assessment of how well the logical relationships between items in the dataset, or spatial objects in the dataset, are maintained. As features are recorded as spatial objects into a dataset a number of inconsistencies can occur which need to be recorded. Performing an assessment for logical consistency is a way of documenting for these inconsistencies. As an example, tests to assess logical consistency can be developed with the following provided as examples:

- Are all features labelled?
- Are there any data errors (ie topological errors)?
- Are all features represented?
- Do lines intersect at nodes?
- Do lines cross unintentionally?
- Do all lines exist?
- Are lines duplicated?
- Do lines overshoot or undershoot?

Completeness

This element should contain a brief assessment of the completeness of the data. This should cover completeness in terms of the data's coverage, classification and verification. For example, the data in its current form may only cover three-quarters of its intended spatial coverage, of which only one half has full attribution, and the dataset overall still requires further testing to be considered complete.

Format Tab

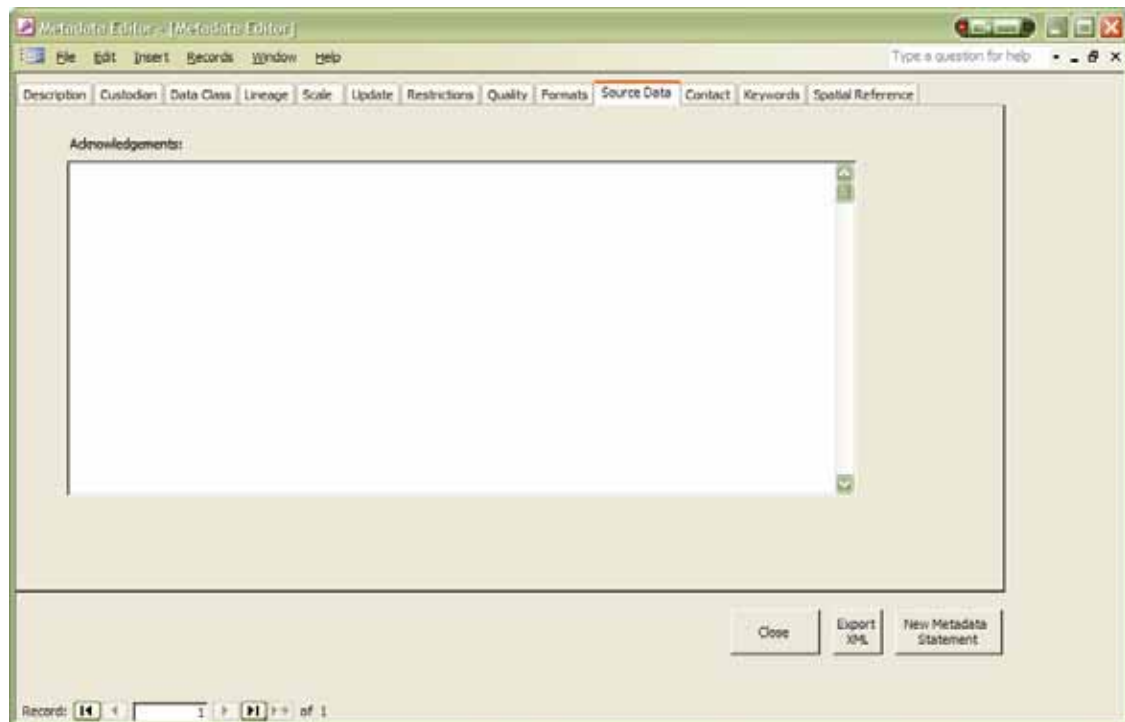


You should select the format(s) of your data from the pick list. You can select more than one format but ensure that the format refers to how the data can be supplied.

You can clear the list of selected formats by selecting **Clear**, or remove individual entries by selecting one and clicking **Remove Selected**.

If your data has a format different to any of those in the pick list you add additional ones by using the **Add Format to List** button.

Source Data Tab



Acknowledgements

This element should contain the acknowledgement of the data custodian and contributors who need to be included with maps and other products produced from the data.

For example, data owned by the Department of the Environment and Water Resources should use an acknowledgement of the type:

[dataset name] © Commonwealth of Australia, Australian Government Department of the Environment and Water Resources, *[year of publication]*.

Contact Tab

Metadata Editor - Metadata Editor

File Edit Insert Records Window Help

Type a question for help

Description Custodian Data Class Lineage Scale Update Restrictions Quality Formats Source Data Contact Keywords Spatial Reference

Position:

email:

URL:

Pick a contact:

Client Services	client_services@abs.gov.au
Communication Contact	anne.towill@csiro.au
Coordinator of Information Systems	Chris.Dorman@dia.wa.gov.au
CRES Office	office@cres.anu.edu.au
Data Manager	dataman@birs.gov.au
Data Manager	dataman@birs.gov.au
Enquiries	australia@mapinfo.com
Enquiries	enquiries@pma.com.au
Enquiries	enquiries@agric.wa.gov.au
Enquiries	info@disa.asn.au

Edit Custodian

Close Export XML New Metadata Statement

Record: 14 of 1

Select a contact in the list. The metadata contact is the point of contact for the data and metadata within the organisation in which the metadata is held (i.e. your organisation). The intention for this information is to provide contact details for the person within the organisation who knows the most about the data the metadata is describing.

If your contact does not exist in the list select **Edit Custodian** button to update this list.

Keywords Tab

Metadata Editor - [Metadata Editor]

File Edit Insert Records Window Help

Type a question for help

Description Custodian Data Class Lineage Scale Update Restrictions Quality Formats Source Data Contact **Keywords** Spatial Reference

Keywords are NOT necessary for ISO. But, if you intend to publish your metadata within the ASDD, you should set some Select ANZLIC Keywords here...

ANZLIC Keyword: Qualifier:

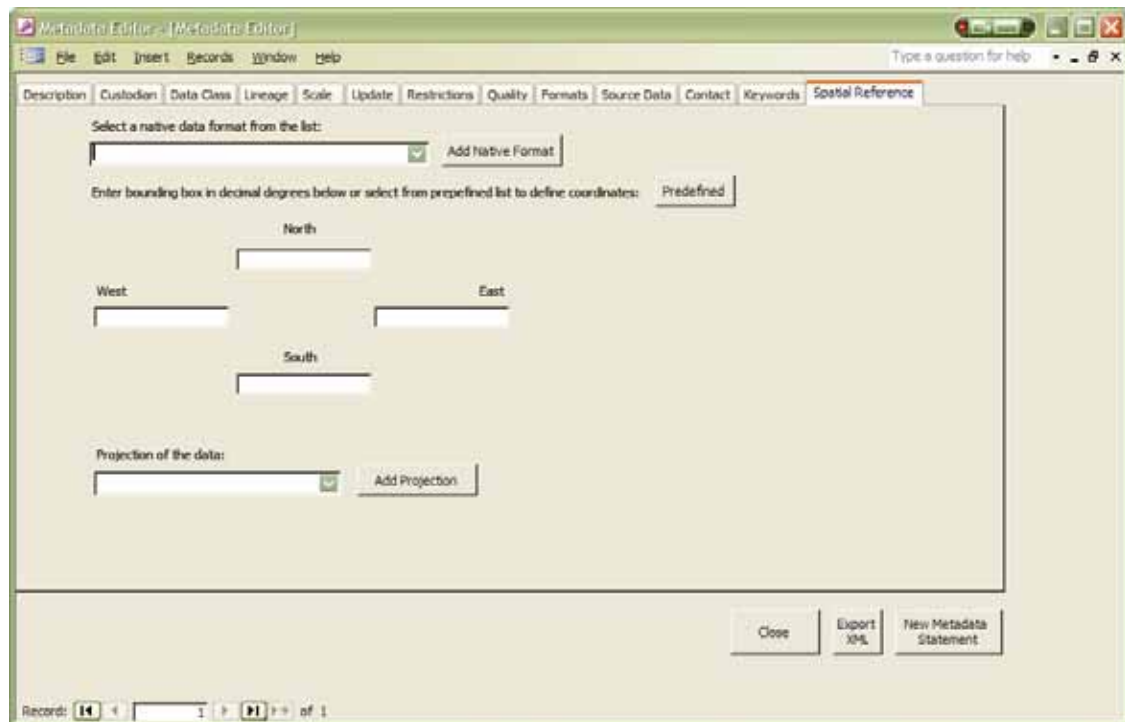
... to add them to your current list

Record: 14 of 1

You can add Keyword and (optionally blank) Qualifier pairs to a keyword list describing your data using the **Select ANZLIC Keyword here...** and **Select Qualifier here...** lists. When you have selected a pair, the **Add** button will move it to the current list. These keywords are not mandatory in ISO, however, if you are publishing your data to the ASDD (<http://asdd.ga.gov.au/>), you will need to select at least one.

You can clear the list of selected keywords by selecting **Clear**, or remove individual keywords by selecting one and clicking **Remove Selected**.

Spatial Reference Tab



The screenshot shows the 'Spatial Reference' tab in the Metadata Editor. The interface includes a menu bar (File, Edit, Insert, Records, Window, Help) and a toolbar with buttons for 'Add Native Format', 'Add Projection', 'Close', 'Export XML', and 'New Metadata Statement'. The main area contains a dropdown menu for 'Select a native data format from the list:' with an 'Add Native Format' button. Below this is a section for 'Enter bounding box in decimal degrees below or select from predefined list to define coordinates:' with a 'Predefined' button and four text input fields labeled 'North', 'South', 'West', and 'East'. At the bottom, there is a 'Projection of the data:' dropdown menu with an 'Add Projection' button. A status bar at the very bottom shows 'Record: 14 of 1'.

Native data format

Select the format of the data that the metadata is describing. If the format is not in the pick list add a new format using the **Add Native Format** button.

Bounding Box (mandatory element)

A bounding box to describe the extent of the data is needed. If you know the bounding box coordinates of your data, enter these directly into the North, South, East and West text boxes. If you don't know the coordinates you can use one of the predefined extents using the **Predefined** button. You can enter additional predefined areas to the Metadata Editor using the **Predefined** button.

Projection

Enter the projection information for your coordinates. This is important to be able to align your data's bounding box to other datasets. If the projection you would like to use does not exist in the list you can add one using **Add Projection** button

Appendix A

Explanation of ISO Data Categories:

ISO CATEGORY	EXPLANATION
farming	Rearing of animals and/or cultivation of plants. Examples: agriculture, irrigation, aquaculture, plantations, herding, pests and diseases affecting crops or livestock
biota	Flora and/or fauna in natural environment. Examples: wildlife, vegetation, biological sciences, ecology, wilderness, sealife, wetlands, habitat
boundaries	Legal land descriptions. Examples: political and administrative boundaries
climatologyMeteorologyAtmosphere	Processes and phenomena of the atmosphere. Examples: cloud cover, weather, climate, atmospheric conditions, climate change, precipitation
economy	Economic activities, conditions and employment. Examples: production, labour, revenue, commerce, industry, forestry, fisheries, commercial hunting
elevation	Height above or below sea level. Examples: altitude, bathymetry, digital elevation models, slope, derived products
environment	Environmental resources, protection and conservation. Examples: environmental pollution, waste storage and treatment, environmental impact assessment, monitoring environmental risk, nature reserves
geoscientificInformation	Information pertaining to earth sciences. Examples: geophysics, geology, minerals, rocks, earthquakes, volcanic activity, landslides, gravity, soils, permafrost, hydrogeology, erosion
health	Health, health services, human ecology, and safety. Examples: disease and illness, factors affecting health, hygiene, substance abuse, mental and physical health, services
imageryBaseMapsEarthCover	Base maps. Examples: land cover, topographic maps, imagery, unclassified

	images, annotations
intelligenceMilitary	<p>Military bases, structure, activities.</p> <p>Examples: barracks, training grounds, military transportation, information collection</p>
inlandWaters	<p>Inland water features, drainage systems and their characteristics.</p> <p>Examples: rivers and glaciers, salt lakes, water utilisation plans, dams, currents, floods, water quality, hydrographic charts</p>
location	<p>Positional information and services.</p> <p>Examples: addresses, geodetic networks, control points, postal zones, and services, place names</p>
oceans	<p>Features and characteristics of salt water bodies (excluding inland waters).</p> <p>Examples: tides, tidal waves, coastal information, reefs</p>
planningCadastre	<p>Information used for appropriate action for future use of land.</p> <p>Examples: land use maps, zoning maps, cadastral surveys, land ownership</p>
society	<p>Characteristics of society and cultures.</p> <p>Examples: settlements, anthropology, archaeology, education, traditional beliefs, manners and customs, demography, recreation, social impact assessments, crime and justice, census</p>
structure	<p>Man-made construction.</p> <p>Examples: buildings, museums, churches, factories, housing, monuments, shops, towers</p>
transportation	<p>Means and aids for conveying persons and/or goods.</p> <p>Examples: roads, airports/airstrips, shipping routes, tunnels, nautical charts, vehicle or vessel location, aeronautical charts, railways</p>
utilitiesCommunication	<p>Energy, water and waste systems and communications infrastructure and services.</p> <p>Examples: hydro, geothermal, solar and nuclear sources of energy, water purification and distribution, sewage, electricity and gas distribution, data and telecommunication networks, radio</p>

Appendix B

Resolution - Conversion of degrees and seconds to metres
(note: these are approximate only).

Degrees	Metres
1.0	100,000
0.1	10,000
0.01	1,000
0.001	100

Seconds	Metres
10.0	300
1.0	30