



Spatial Data Requirements for Murray-Darling Basin Authority Projects

In order to maintain a high quality of spatial data and its associated metadata, the MDBA has a minimum set of data requirements for any data captured as part of a contractual arrangement.

Before project outputs are provided to the Authority, all spatial data produced by the project must be checked to ensure that it meets the MDBA requirements. The key requirements for spatial data are shown in this annexure.

Any queries in regard to the MDBA’s requirements for spatial data should be directed to:

Natural Resource Information Coordinator
Murray-Darling Basin Authority
GPO Box 1801
Canberra ACT 2601

Tel: (02) 6279 0100
Fax: (02) 6273 7579
E-mail: gis@mdba.gov.au
Web: www.mdba.gov.au

1. MDBA Spatial Data Requirements

Minimum Data Requirements for MDBA data:

Component of spatial data	Format / standard																
Metadata	<ul style="list-style-type: none"> Metadata describing the dataset that is ANZLIC metadata compliant and is captured in accordance with the MDBA metadata guidelines at Attachment A. 																
Data dictionary	<ul style="list-style-type: none"> A table defining the attributes within the spatial data. At a minimum this should include the attributes, their definition, and associated fixed values (or look-up tables). 																
Vector data (i.e. points, lines and polygons)	<ul style="list-style-type: none"> Provide as ESRI Shapefile or Personal Geodatabase. Must not contain topological errors – slivers, dangles, edit masks etc. 																
Raster data	<ul style="list-style-type: none"> Provide as a geo-referenced file in an ESRI-compatible format. 																
Maps	<ul style="list-style-type: none"> Provide as per agreed requirements, or at a minimum the MDBA map production specifications at Attachment B. 																
Projection	<ul style="list-style-type: none"> Geocentric Datum of Australia (GDA94). The Universal Transverse Mercator (UTM) can be used for projects where a smaller area within the MDB (e.g. catchment or sub-catchment) is being mapped. 																
Attributes	<ul style="list-style-type: none"> All attributes must be labelled clearly and logically. Unique identifiers must be unique. 																
Quality attributes	<ul style="list-style-type: none"> If data quality, accuracy, reliability and/or resolution vary markedly across the data, then data must contain a field that records that variation either explicitly or by a documented code. e.g. <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>ID</th> <th>Scale</th> <th>Accuracy</th> <th>Reliability</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1:25,000</td> <td>10</td> <td>90</td> </tr> <tr> <td>2</td> <td>1:250,000</td> <td>20</td> <td>100</td> </tr> <tr> <td>3</td> <td>1:50,000</td> <td>15</td> <td>50</td> </tr> </tbody> </table>	ID	Scale	Accuracy	Reliability	1	1:25,000	10	90	2	1:250,000	20	100	3	1:50,000	15	50
ID	Scale	Accuracy	Reliability														
1	1:25,000	10	90														
2	1:250,000	20	100														
3	1:50,000	15	50														



	<p>DOCUMENTED CODES: <u>Scale:</u> maximum scale that data can be used for. <u>Accuracy:</u> positional accuracy of data (m). <u>Reliability:</u> Degree of confidence in data (%).</p> <ul style="list-style-type: none"> Databases containing multiple-scale data must record a scale class against each value (e.g. '1:25,000'; '1:100,000').
Specifications	<ul style="list-style-type: none"> If a specification has been agreed to for project data over and above these minimum data requirements, then the data supplied to the MDBA must conform with that specification also.
Quality assurance	<ul style="list-style-type: none"> Data should be scanned for completeness, accuracy, and any errors before delivery.
Delivery	<ul style="list-style-type: none"> All final datasets to be delivered on CD/DVD and labelled with title, data, project number and an index of contents. Contractor details should be on the media cover. All spatial data and relevant metadata funded by a MDBA project (including purchased data) must be forwarded to the MDBA upon completion of the project, according to the above requirements. All data obtained or developed through project funding are regarded as MDBA deliverables, including relevant license documents.

2. Externally acquired spatial data

Data either purchased or acquired through a MDBA funded project under a licence agreement from an external organisation;

- Must have the 'Murray-Darling Basin Authority' as the Licensee;
- Should allow the MDBA to use it internally for other program work where feasible; and
- Should not have a duration period where feasible.

Such data should conform, where possible, with the specifications in this document.



Attachment A – MDBA Metadata Guidelines

These guidelines are a modified version of the ‘ANZLIC Metadata Guidelines Version 2’ (at <http://www.anzlic.org.au/download.html?oid=2358011755>). They have been developed to provide guidance to MDBA staff and external consultants on the required level of metadata documentation for all spatial datasets.

This document should be used in association with the ‘ANZLIC Metadata Guidelines Version 2’ for the following purposes:

- For using the pre-defined terms for the relevant metadata elements; and
- For gaining a greater understanding of the definition of each of the elements where required.

Metadata element	Definition and allowable values
Dataset	
ANZLIC Identifier:	Unique identifier assigned by MDBA ASDD node. This is not assigned by the metadata author.
Title:	The ordinary name of the dataset. This should clearly and concisely indicate the content of the dataset.
Custodian	
Custodian:	This business name of the custodian agency or responsible party associated with the dataset. For MDBA datasets this should be ‘Murray Darling Basin Authority (MDBA)’
Jurisdiction:	State or country in which the custodian of the dataset is domiciled. For MDBA datasets this should be ‘Australia’
Description	
Abstract:	A brief narrative of the purpose and content of the dataset. Where possible, you should aim to organise and complete it with the following subheadings: <ul style="list-style-type: none"> • PURPOSE: Purpose for which the dataset was created, including the project it was created for. • RECOMMENDED USE: Recommended use of the dataset and any limitations associated with the data to assist the user determine fitness for use. • DATASET FILE CONTENT (only if applicable): If the dataset is made up of one or more files or components, then list them here. This should also include the geometry of the data (i.e. point, line, polygon, raster) • DATA CONTENT: General listing of main attributes. • PROJECTION: Projection and datum of the data. This can be in terms of Projection, Zone (if applicable), Datum, Units, and Spheroid.
Search word:	Words likely to be used by a non-expert to find the dataset. This is to support dataset searching in the Australian Spatial Data Directory (ASDD). The search terms are from a pre-defined list.
Geographic	Ordinary name of one or more pre-defined, known geographic objects that



Extent Name (GEN):	<p>reasonably show the extent of geographic coverage of the dataset. This element is implemented as GEN Category and GEN Name.</p> <p>Most MDBA datasets will probably most likely be to the extent of the Murray Darling Basin, therefore:</p> <ul style="list-style-type: none"> • GEN Category = 'Drainage Divisions and Major River Basins'; and • GEN Name = 'MURRAY-DARLING'
Geographic Extent Polygon (GEP):	<p>Boundary enclosing the dataset expressed as a closed set of geographic coordinates (latitude, longitude in decimal degrees) of the polygon referenced to GDA94. This is an alternative way of describing geographic extent of the dataset if no-predefined area is satisfactory.</p>
Geographic Bounding Box:	<p>Box defining the minimum and maximum geographic coordinates (in decimal degrees) of the entire data. This data is implemented as four discrete elements as listed below:</p> <ul style="list-style-type: none"> • North Bounding Latitude: Northern-most latitude coordinate. • South Bounding Latitude: Southern-most latitude coordinate. • East Bounding Longitude: Eastern-most longitude coordinate. • West Bounding Longitude: Western-most longitude coordinate.
Description	
Beginning Date:	Date that the dataset was first created or the date of the first record.
Ending Date:	Latest date in which the dataset was revised or verified. This date represents the reliability date of the dataset.
Dataset Status	
Progress:	<p>Status of the process of creation of the dataset.</p> <p>The search terms are from a pre-defined list.</p>
Maintenance and update frequency:	<p>Frequency of changes or additions that are made to the dataset after its initial completion.</p> <p>The search terms are from a pre-defined list.</p>
Access	
Stored data format:	Native format of the dataset. This is generally the format in which the dataset is stored by the custodian.
Available data format:	Format in which the dataset is being supplied to producers.
Access constraint:	<p>Any restrictions or legal prerequisites that may apply to the access and use of the dataset including licensing, liability and copyright.</p> <p>Where possible, you should aim to organise and complete it with the following subheadings:</p> <ul style="list-style-type: none"> • TYPE OF LICENCE: The type of MDBA licence that the dataset is available under. • DOWNLOAD (only if applicable): This will be link to download the data.
Data quality	
Lineage:	Brief history of the source and processing steps used to produce the dataset.
Positional accuracy:	<p>Brief assessment of the closeness of the location of spatial objects in the dataset in relation to their true position of the Earth.</p> <p>Where possible, you should aim to organise and complete it with the following subheadings:</p>



	<ul style="list-style-type: none"> • SCALE/RESOLUTION: Scale or resolution of the dataset. This can also include the scale/resolution of the source data used to create the dataset. • PLANITMETRIC ACCURACY: Horizontal accuracy assessment against their real world features (e.g. +/- 100m). • VERTICAL ACCURACY (only if applicable): Vertical accuracy assessment.
Attribute accuracy:	Brief assessment of the reliability assigned to features in the dataset in relation to their real world values. This can include an assessment of how well the significant attributes have been populated, and any limitation on the data's use as a source for attribution.
Logical consistency:	Brief assessment of the degree of adherence of logical rules of data structure, attribution and relationships.
Completeness:	<p>Brief assessment of the extent and range in regard to the completeness of coverage, classification and verification.</p> <p>Where possible, you should aim to organise and complete it with the following subheadings:</p> <ul style="list-style-type: none"> • SPATIAL COMPLETENESS: Assessment of the spatial coverage of the dataset. • ATTRIBUTE COMPLETENESS: Assessment of the completeness of significant attributes fields.
Contact information	
Contact organisation:	This should be 'Murray Darling Basin Authority (MDBA)'
Contact Person:	This should be 'Natural Resource Information Coordinator'
Mail address:	This should be 'GPO Box 1801 Canberra City ACT 2601'
Telephone:	This should be '(02) 6279 0100'
Facsimile:	This should be '(02) 6230 7579'
Electronic Mail Address:	This should be 'gis@mdba.gov.au'
Metadata date	
Metadata date:	Date in which the metadata record was created or last updated.
Additional metadata	
Additional metadata:	<p>Any additional metadata that supports documentation of the dataset including a reference to another directory report.</p> <p>Where possible, you should aim to organise and complete it with the following subheadings:</p> <ul style="list-style-type: none"> • ASSOCIATED REPORTS: Listing (including links) of report(s) associated with the dataset. • DATA DICTIONARY (only if applicable): This is for datasets that have attribution. The data dictionary at a minimum should include the following for each field: <ul style="list-style-type: none"> • Definition: A general description of the field • Allowable values: Values that are allowed in the field, including the definitions values in a pick-list.



Attachment B – Map Production Specifications

The following specifications have been prepared by the MDBA to provide guidance to MDBA staff and consultants on the minimum required level of mapping detail for production of MDBA Maps, both hardcopy and digital.

Map Element	Instruction
Title	Descriptive and meaningful title.
Location map	Where appropriate, insert a map showing the context of the mapped area.
Colours	As a general rule: <ul style="list-style-type: none"> • for large areas, use light colours • for small areas, use dark colours. Ensure colours contrast sufficiently that the user can discriminate between them easily.
Fonts	The number of different fonts and sizes should be minimised. Fonts that are sans serifs (e.g. Helvetica) are preferred.
Data source statement	Data source includes the original and nature of the information on the map, including derived or interpreted data. The statement should also show the currency and limitations of the data.
North arrow	Include on map.
Logos	Logos should not be overly prominent. Multiple logos should be grouped together.
Projection and data statement	Include on map.
Scale bar	Include scale bar, with optional statement of scale (Scale 1: xxx xxx)
Legend	Legend should clearly depict accurate colouring and labelling relevant to the information shown on the map.
Copyright information	Copyright information consists of a statement of who holds copyright for the map, and year of publication.
Publication information	Include name of publisher, and place and date of publication.
Map number	Map number should be included if the map is part of a numbered series. Group with Title.
Embedding into document	When producing maps to be embedded in a document, ensure that they are presented in a consistent style (e.g. same colours for the same attributes; borders; backgrounds etc).