Department of Natural Resources Spatial Data Requirements

Spatial Data

- ❑ Vector data must be transferred as ARCGIS compatible files or ESRI shapefiles. Raster data are transferred as ARC/INFO export files (GRID coverages) or geo-referenced image files in an ARCGIS compatible format.. Note that BIL (Band Interleaved by Line) format with ARC/INFO header files is the preferred image format.
- ❑ The type of projection can be chosen by the Project. The only requirement is that the details of the projection used must be fully documented and the projection must be supported by ARCGIS. For ARCGIS format data (vector or raster), the projection type and its parameters must be defined with the data. This includes information about major and minor axes, standards of parallel, central meridian, false origin, datum and spheroid.
- ❑ All data must be provided in the AGD66 or GDA94 datum, or an accepted compatible datum/spheroid such as WGS84 (which is approximately equivalent).
- ❑ Vector data must contain no topological errors – no slivers, dangles, edit masks etc (see Appendix 5). Minimum linear resolution and areas must be appropriate to the scale of the data (see Appendix 6).
- ❑ Raster data must contain no artefacts derived from vector data such as text, or overlays such as State borders. These vector overlays should be provided as separate vector data layers.

Attributes

- ❑ 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. Databases containing multiple-scale data must record a scale class against each value (see Appendix 6).
- ❑ Where dates are part of the data, the full 4-digit year must be specified.
- ❑ All attributes must be labelled, and labelled correctly. Unique identifiers must be unique.
- ❑ If possible, avoid the use of codes to describe values. Where this is not possible (eg for some raster data), make sure look-up tables that clearly describe the codes accompany the data.

General

- ❑ Data must be scanned to ensure that there are no viruses in the data files.
- ❑ Data must be purchased or acquired using Department funds under a data agreement or licensing arrangement must be obtained in the name of the Department that allows normal Department usage of the data (especially passing of the data onto other Department projects), where feasible.
- ❑ All spatial data and relevant metadata funded by a Department project (including purchased data) must be forwarded to the Department Office upon completion of the project on CD-ROM and complying with the above requirements. All data obtained or developed through project funding are regarded as Department deliverables, including relevant license documents.
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Core Metadata Elements Required for Department Data

Category	Element	Comment
Data	Title	The ordinary name of the data.
	Custodian	The organisation responsible for the data.
	Jurisdiction	The country or State/Territory where the custodian is based.
Description	Abstract	A short description of the contents of the data. This must include details of scale or cell size. Scale is the ratio or fraction between the distance on a map chart or photograph and the corresponding distance in the real world. Cell size is the dimension of grid cells or pixels. The Department requires a list of the attributes included in the data, along with a brief description of each. This list is critical for assessing what information is actually contained within the data.
	Search word(s)	Words likely to be used by a non-expert to look for the data.
	Geographic extent name(s) **OR**	A list of pre defined geographic extents (such as map sheets, local government areas, catchments, States) that reasonably indicate the spatial coverage of the data.
	Geographic extent polygon(s)	An alternate way of describing geographic extent if no pre-defined area is satisfactory.
Data Currency	Beginning date	Earliest date of records in the data.
	Ending date	Last date of information in the data.
Data Status	Progress	The status of the process of creation of the data.
	Maintenance and Update frequency	Frequency of changes or additions made to the data.
Access	Access constraints	Any restrictions or legal prerequisites applying to the use of the data, eg. licence.
	Stored data format	A description of the format in which the data are stored
	Available format	A description of the format(s) in which the data are available
Data Quality	Lineage	A brief history of the source and processing steps used to produce the data. Lineage may also include details of scale or accuracy (see also under the Abstract Element).
	Positional accuracy	A brief assessment of the closeness of the location of spatial objects in the data in relation to their true position on the Earth.
	Attribute accuracy	A brief assessment of the reliability assigned to features in the data in relation to their real world values. **This element should include a list of attributes and information on the accuracy of each.**
	Logical consistency	A brief assessment of the logical relationships between items in the data.
	Completeness	A brief assessment of the completeness of coverage, classification and verification.
Contact Information	Contact organisation	Ordinary name of the organisation from which the data may be obtained.
	Contact position	The relevant position in the Contact Organisation.
	Mail address	Postal address of the Contact Position.
	Suburb or Place or Locality	Suburb of the Mail Address.
	State	State of Mail Address.
	Postcode	Postcode of the Mail Address.
	Telephone	Telephone of the Contact Position.
	Facsimile	Facsimile of the Contact Position.
	Electronic mail address	Electronic Mail Address of the Contact Position.
Additional Metadata	Additional metadata	Reference to other directories or systems containing further information about the data. This item should contain a data dictionary describing component data layers. For each data layer there should be recorded the layer name, layer description and attribute table. The attribute table should have at least three columns: attribute name, description and definition. Any relevant code or lookup tables should also be listed. The lookup table should specify the attributes and their values.
	Metadata date	The date that the metadata were created.
Extended	Type of feature	Text: the type of feature held in the data e.g. point locality records,

Description Details		grid cell, vector or polygon data. Picklist: one or more of the following: point data, polygon data, grid cell, digitised data.
	Attribute/ Field list	Alphanumeric: a list of all the attribute codes/names/numbers contained in the data. For example, from the Eden Planning Unit Layer (partial List only): Area, Perimeter, C1200-id, ALC, Coup_no, Log_yr
	Attribute/ Field description	Alphanumeric & text: A description of each attribute code/name/number contained in the data and which were listed in the previous field (Attribute/Field List). The object is to clarify the attribute codes and make the data useable and meaningful to others. Descriptions should be comprehensive enough to make the attribute categories meaningful to other users. For example, for the attribute codes listed above from the Eden Planning Unit Layer: Area = m2, Perimeter = meter, C1200-id = unique id from c1200 (sub-catchment layer), ALC = Aboriginal Land Claim, Coup_no = Sub Compartment number
	Attribute percentage completeness	Alphanumeric: a percentage figure that represents the level of completeness of each attribute. For example, the attribute Coup _no may only be 50% complete with 50% of this attribute containing blanks ,"no data" or –9999.
	Scale/ Resolution	Alphanumeric maximum 100 characters: the scale of the maps used in creating the data, or the resolution at which the data has been captured or derived. For example: 1:25 000, 1:50 000, 1:100 000, 1:250 000.

If more information is required, the full ANZLIC document, with examples, is available through the Internet at: http://www.anzlic.org.au/metaelem.htm.

Additional Metadata Elements Desirable but not Essential for Department Data

Category	Element	Comment
Data Environment	Software	Alphanumeric maximum 100 characters: the name of the software and, where applicable, an acronym enclosed in round brackets, followed by the version number of the software enclosed in round brackets For example: Arc/Info (version 7.1) Environmental Resource Mapping System (E-RMS) (Version 2.1).
	Computer Operating System	Alphanumeric maximum 100 characters: the name of the computer operating system in which the data have been created or developed, eg. DOS 6.2, UNIX.
	Dataset size	Alphanumeric maximum 50 characters: the approximate size of the data in megabytes. Up to 2 decimal places. For example: 18.3 MB

Metadata Elements for Describing Models

Category	Model metadata element	Comment
Model	Title	The ordinary name of the model.
	Custodian	The organisation responsible for the model.
	Jurisdiction	The state or country of the Custodian.
Description	Abstract	A short description of what the model does.
	Search Word(s)	Words likely to be used by a non-expert to look for the model.
Model Currency	Beginning date	Date of model development
	Ending date	Last date of model revision.
Model Status	Progress	The status of the model (eg complete, under-development., research status)
	Maintenance and Update Frequency	Frequency of changes or additions made to the model
Access	Access Constraint	Any restrictions or legal prerequisites applying to the use of the model, eg. licence.
Model verification ***Model Logic***	Lineage	A brief history of the source and processing steps used to verify the model performance.
	Data elements	A list of the basic data elements used as inputs to the model
	Constants	A list of key constants which have been used which in the model (eg. assumptions which are fixed)
	Logical Consistency	A brief assessment of the logical relationships between elements and constants used in the model.
	Critical data input	A brief statement about which of the input elements are most critical to the model
	Data Flow	In this section, a mathematical description or data flow diagram should be used.
	Interpretation	A brief description on how to interpret the model results
	Limits	A brief description about the limits or concerns you have when interpreting the results of the model. These could be spatial or temporal concerns or concerns about classification.
Contact Information	Contact Organisation	Ordinary name of the organisation from which the model may be obtained.
	Contact Position	The relevant position in the Contact Organisation.
	Mail Address 1	Postal address of the Contact Position.
	Mail Address 2	Optional extension of Mail Address 1.
	Suburb or Place or Locality	Suburb of the Mail Address.
	State or Locality 2	Aust: State of Mail Address.
	Country	Country of the Mail Address.
	Postcode	Postcode of the Mail Address.
	Telephone	Telephone of the Contact Position.
	Facsimile	Facsimile of the Contact Position.
	Electronic Mail Address	Electronic Mail Address of the Contact Position.