Australian Hydrological Geospatial Fabric (Geofabric)

Data Product Specification

Groundwater Cartography

Version 2.1 – November 2012

Australian Government
Bureau of Meteorology

Water Information
DATA · INFORMATION · INSIGHT

Contact details

Geospatial Data Unit

Bureau of Meteorology
GPO Box 2334 CANBERRA ACT 2601

Phone: 02 6232 3502
Email: ahgf@bom.gov.au

Contents

Preface 6
1 Overview 7
1.1 Data product specification title 7
1.2 Reference date 7
1.3 Responsible party 7
1.4 Data product specification language 7
1.5 Terms and definitions 7
1.6 Abbreviations and acronyms 8
1.7 Informal description of data product 9
2 Specification scope 10
2.1 Scope identification 10
2.2 Level 10
2.3 Level name 10
2.4 Level description 10
2.5 Extent 10
2.5.1 Description 10
2.5.2 Geographic extent 10
2.5.3 Temporal extent 11
3 Data product identification 12
3.1 Title 12
3.2 Alternate title 12
3.3 Product ID 12
3.4 Abstract 12
3.5 Purpose 12
3.5.1 Use case 13
3.6 Topic category 13
3.7 Spatial representation 13
3.8 Spatial resolution 13
3.8.1 Spatial denominator 13
3.8.2 Resolution distance 13
3.9 Geographic bounding box 14
3.9.1 West bound longitude 14
3.9.2 East bound longitude 14
3.9.3 South bound latitude 14
3.9.4 North bound latitude 14
3.10 Geographic identifier 14
3.10.1 Identifier authority 14
3.10.2 Identifier code 14
3.10.3 Code space (register URL) 14
3.11 Reference to specification scope 14
4 Data content and structure 15
4.1 Description 15
4.2 Feature information 17

4.2.1 Application schema 17
4.2.2 Feature catalogue 17
4.3 Reference to specification scope 17
5 Reference systems 18
5.1 Spatial reference system 18
5.1.1 Name 18
5.1.2 Code 18
5.1.3 Code space 18
5.2 Temporal reference system 18
5.3 Vertical reference system 18
5.4 Reference system scope 18
6 Data quality 19
6.1 Data quality scope 19
6.1.1 Scope code 19
6.1.2 Extent 19
6.1.3 Scope description 19
6.2 Data quality lineage 19
6.2.1 Lineage Statement 19
6.3 Quality scope 25
7 Data capture 26
7.1 Data capture Statement 26
7.2 Data capture scope 26
8 Data maintenance 27
8.1 Maintenance and update frequency 27
8.2 Other maintenance information 27
8.3 Maintenance scope 27
9 Portrayal information 28
9.1 Portrayal information 28
9.2 Portrayal scope 28
10 Data Product Delivery 29
10.1 Delivery format 29
10.1.1 Format name 29
10.1.2 Format version 29
10.1.3 Language used within the dataset 29
10.1.4 Character set coding 29
10.2 Delivery medium 29
10.2.1 Units of delivery 29
10.2.2 Estimated size of a unit in the specified format 29
10.2.3 Medium name 29
10.2.4 Online delivery URL 29
10.3 Other delivery information 29
10.4 Delivery scope 29
11 Additional information 30

11.1 Additional information 30
11.2 Additional information scope 30
12 Metadata 31

List of tables

Table 1 - Product Feature Type Registry for Geofabric Groundwater Cartography 17

Preface

This document is based upon the AS/NZS ISO 19131:2008 Geographic information - Data product specifications standard[1]. The document provides a framework for the completion of a Data Product Specification (DPS) for geographic data product produced as part of the Geofabric project.

[1] AS/NZS, "AS/NZS ISO 19131:2008 Geographic information - Data product specifications" (AS/NZS, July 21, 2008), www.saiglobal.com/online/.

1 Overview

1.1 Data product specification title

Geofabric Groundwater Cartography

1.2 Reference date

2012-08

1.3 Responsible party

Contact organisation: Bureau of Meteorology

Contact position: Geospatial Data Unit

Mail address: GPO Box 2334

Locality: Canberra

State: ACT

Country: Australia

Postcode: 2601

Electronic mail address: ahgf@bom.gov.au

1.4 Data product specification language

English

1.5 Terms and definitions

Interim Aquifer Framework (IAF)

In the absence of a formal National Aquifer Framework, a unified national aquifer definition has been developed for this project to allow a consistent approach to the classification of spatial groundwater datasets and resolve cross-jurisdictional boundary issues. The Interim Aquifer Framework (IAF) used in this project is a two tiered system of Geological Units aggregated to Aquifers (and sometimes aquitards) of similar hydrogeological characteristics. The Geological Units used are those mapped in the 1:1,000,000 scale surface geology dataset produced by Geoscience Australia with the addition of non-outcropping units. The IAF attempts to preserve, as much as possible, the main characteristics of the aquifer classifications developed by various State and Territory and federal jurisdictions. Some of the jurisdictions classify aquifers primarily on age (e.g. Victoria) while others on lithology (e.g. Northern Territory). Aquifers are named and classified using a combination of age or provenance, hydraulic features (porous media, fractured rock or karstic) and grain compaction (consolidated or unconsolidated). The aquifer classification attempts to preserve, as much as possible,

aquifer definitions used by various jurisdictions. Regional aquifer mapping units are retained in the attributes of the various spatial layers produced for this project (AqSrcName).

Surficial Hydrogeology Unit

The hydrogeological unit (aquifer or aquitard) at the land surface, whether saturated or unsaturated, based on geological mapping.

Watertable Aquifer

The uppermost and unconfined aquifer hosting the watertable based largely on geological based on geological mapping.

Aquifer Boundaries

The boundaries of unconfined and confined aquifers based on jurisdictional hydrogeological mapping.

1.6 Abbreviations and acronyms

AHD	Australian Height Datum
AHGF	Australian Hydrological Geospatial Fabric
ANZLIC	Australian and New Zealand Land Information Council
Bureau	Bureau of Meteorology
BRS	Bureau of Rural Sciences
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DfW	Department for Water, SA
DIER	Department of Infrastructure, Energy and Resources, TAS
DNRETAS	Department of Natural Resources, Environment, the Arts and Sport, NT
DOW	Department of Water, WA
DPIPWE	Department of Primary Industry, Parks, Water and Environment, TAS
DPS	Data Product Specification
DSE	Department of Sustainability and Environment, VIC
ESRI	Environmental Systems Research Institute Inc.
GA	Geoscience Australia
GAB	Great Artesian Basin
GDA94	Geodetic Datum of Australia 1994
GW	Groundwater

ISO	International Organization for Standardization
IAF	Interim Aquifer Framework
IGW	Interim Groundwater
IGWD	Interim Groundwater Data
IGWGD	Interim Groundwater Geodatabase
MDBA	Murray–Darling Basin Authority
NGIS	National Groundwater Information System
NOW	NSW Office of Water, NSW
SDE	Spatial Database Engine
SKM	Sinclair Knight Merz
SRW	Southern Rural Water, VIC

1.7 Informal description of data product

Geofabric Groundwater Cartography is a first pass national groundwater dataset bringing together existing groundwater mapping. The generation of the data was through a collaborative project between the Bureau of Meteorology (the Bureau) and Sinclair Knight Merz (SKM) called the Interim Groundwater Database (IGWGD). The aim of the project was to collect the best available groundwater information from jurisdictional agencies and integrate it into a single dataset according to a specified data model. This project was a one-off exercise to provide an interim set of national groundwater features. Future improvements to groundwater data will be realised through the Bureau's National Groundwater Information System (NGIS) project.

The data product extent is Geographic Australia (as defined by *Acts Interpretation Act 1901*). The product will be updated periodically to reflect changed attribution and new data sources.

2 Specification scope

2.1 Scope identification

Global

2.2 Level

Dataset

2.3 Level name

Global scope

2.4 Level description

This is the default root level global scope used by this data product and relates to all data within the product.

2.5 Extent

2.5.1 Description

Data for this scope relates to Australia, excluding external territories - Geographic Australia (as defined by *Acts Interpretation Act 1901*).

2.5.2 Geographic extent

West bound longitude

112.8 °

East bound longitude

154.1 °

South bound latitude

-44.0 °

North bound latitude

-8.9 °

2.5.3 Temporal extent

Start date

1991-01-01

End date

Now

3 Data product identification

3.1 Title

Geofabric Groundwater Cartography

3.2 Alternate title

Geofabric Groundwater Hydrology Cartography 2012

3.3 Product ID

ANZCW0503900106

3.4 Abstract

Geofabric Groundwater Cartography product is a national groundwater dataset bringing together existing groundwater mapping by collating and integrating the best available, Commonwealth, State and Territory, and regional groundwater mapping datasets across Australia. Although there are gaps in the information every effort has been made to reduce or minimise inconsistencies and conflicts in overlapping and abutting datasets, and in attribution and definitions of the input datasets.

In generating the various national aquifer datasets an interim national groundwater framework has been developed to relate geological units and regional and State and Territory groundwater aquifer mapping units to a nationally consistent set of aquifers and aquitards. The purpose of this framework is to provide a transparent mapping of aquifers from geological units, State and Territory, or regional groundwater aquifer mapping (where available), and the interim national product. Such an approach was necessary to resolve inconsistencies in aquifer naming and definition across State and Territory borders.

This product contains five Geofabric feature types, including: Aquifer Boundary, Aquifer Outcrop, Contour, Water Table Aquifer and Surficial Hydrogeology Unit.

It also contains five Interim Groundwater (IGW) feature types, including: IGW Aquifer Salinity, IGW Aquifer Yield, IGW Water Table Salinity, IGW Water Table Yield, and Water Table Hydraulic Conductivity.

3.5 Purpose

Geofabric Groundwater Cartography has been developed to collate and integrate State and Territory and regional groundwater mapping datasets across Australia. Although there are gaps in information every effort has been made to reduce or minimise inconsistencies and conflicts in overlapping and abutting datasets, and in attribution and definitions of the input datasets.

The dataset is intended to be used at the regional to national scale and does not support local scale groundwater conceptualisation and modelling, and has not incorporated local and regional groundwater modelling data.

Geofabric Groundwater Cartography was generated from available groundwater mapping data from the various jurisdictions. Given its interim nature, no groundwater borehole data was collated or reviewed in its generation.

In generating the various national aquifer datasets an interim national groundwater framework was developed to relate geological units and regional and State and Territory groundwater aquifer mapping units to a nationally consistent set of aquifers and aquitards. The purpose of this framework is to provide a transparent mapping of aquifers from geological units, State and Territory, or regional groundwater aquifer mapping (where available), and the interim national product. Such an approach was necessary to resolve inconsistencies in aquifer naming and definition across State and Territory borders

3.5.1 Use case

Cartographic map production, groundwater hydrologic analysis and visualisation.

3.6 Topic category

003 – boundaries

006 – elevation

007 – environment

008 – geoscientific information

012 – inland water

3.7 Spatial representation

vector

3.8 Spatial resolution

3.8.1 Spatial denominator

25,000 – 250,000

3.8.2 Resolution distance

1,000 – 10,000 metres

3.9 Geographic bounding box

3.9.1 West bound longitude

112.8 °

3.9.2 East bound longitude

154.1 °

3.9.3 South bound latitude

-44 °

3.9.4 North bound latitude

-8.9 °

3.10 Geographic identifier

3.10.1 Identifier authority

ANZLIC – the Spatial Information Council

3.10.2 Identifier code

AUS

3.10.3 Code space (register URL)

ANZLIC Australia

asdd.ga.gov.au/asdd/profileinfo/anzlic-allgens.xml

3.11 Reference to specification scope

Global

4 Data content and structure

4.1 Description

Geofabric Groundwater Cartography includes the following feature classes:

Surficial Hydrogeology Unit
The hydrogeological unit (aquifer or aquitard), at the land surface whether saturated or unsaturated. This involved aggregation of the Geoscience Australia (GA) national surface geology dataset to aquifers or aquitards of similar hydrogeological characteristics. Attribution of the features has been derived from the GA national geology dataset, State and Territory and regional groundwater mapping (WA, NT, Great Artesian and Murray–Darling Basins), the Victorian Aquifer Framework, and liaison with State and Territory agency groundwater teams.

Watertable Aquifer
Interpretation of the Surficial Hydrogeology Unit dataset (above), to identify the uppermost unconfined aquifer. Attribution of the features has been derived from the GA national geology dataset, State and Territory and regional groundwater mapping (WA, NT, Great Artesian and Murray–Darling Basins), the Victorian Aquifer Framework, and liaison with State and Territory agency groundwater teams.

Watertable HydraulicConductivity
This dataset depicts hydraulic conductivity and specific yield for various Groundwater Flow Systems defined as part of the CSIRO Commercial Environmental Forestry program. In some cases, the Groundwater Flow System contains a number of different component geologies which have different hydraulic characteristics. Therefore, the stated aquifer hydraulic conductivity and specific yield are indicative only and should be considered to be representative of the dominant geology contained within each Groundwater Flow System.

Watertable Salinity
Collation of watertable salinity mapping (where available), at State and Territory and regional scale. The watertable aquifer has been defined by the source datasets. Units are mg/L.

Watertable Yield
Collation of watertable yield mapping (where available), at State and Territory and regional scale. The watertable aquifer has been defined by the source datasets. Units are L/s.

Aquifer Boundaries
Collation of available aquifer extent boundaries (where available), at State and Territory and regional scale. The extent of the dataset relates to the availability of data. The aquifers defined in the source groundwater mapping have been retained and have been related to the IAF.

Aquifer Salinity
Collation of aquifer salinity mapping (where available) at State and Territory and regional scale for confined and unconfined aquifers in the Aquifer Boundary dataset. The aquifers defined in the source groundwater mapping have been retained and related to the IAF aquifers. Units are mg/L.

Aquifer Yield
Collation of underlying aquifer yield mapping (where available) at a regional scale. The aquifers defined in the source groundwater mapping have been retained and have been related to the IAF. Units are L/s.

Aquifer Structure Contours
Collation of available elevation contours for the top and bottom of aquifers (where available), mapped at regional scale. The presence and absence of contours relates to the availability of data. Units are elevation in metres Australian Height Datum (mAHD). The aquifers defined in the source groundwater mapping have been retained and have been related to the IAF aquifers.

Aquifer Outcrop
Outcropping portion of aquifers which are confined for at least some of their extent. The outcrop can be considered to be the intake areas for rainfall recharge to the otherwise confined aquifers. The Aquifer Outcrop and the Watertable Aquifer polygons are co-incident where the aquifer is unconfined.

Vector data

The data is available as an ESRI File Geodatabase: Geofabric Groundwater Cartography. The ESRI File Geodatabase reflects the stored environment of the data in a spatial database engine (SDE) export format. In its native File Geodatabase format, Geofabric Groundwater Cartography consists of one dataset/theme – GW_Cartography – containing ten feature classes. The geodatabase structure provides greater efficiencies in the management and revision of source topographic data which are now reflected in a more sophisticated data product suitable for a range of hydrological applications.

Geofabric Product Guide

This Geofabric Product Guide describes the Geofabric Groundwater Cartography product, particularly the geodatabase format, with the aim of describing:

- important and common geospatial data characteristics
- geodatabase components and data concepts
- hierarchy of feature structure and attributes
- accuracy of the data.

Licence agreement Creative Commons

The licence agreement details the conditions of use for the data including any referencing requirements.

4.2 Feature information

4.2.1 Application schema

Refer to Geofabric Groundwater Cartography – Geodatabase Product Schema V2.1 2012 available from www.bom.gov.au/water/geofabric/documentation.shtml

4.2.2 Feature catalogue

The following table lists the feature classes, their geometry and AHGF feature type number for Geofabric Groundwater Cartography.

Table 1 - Product Feature Type Registry for Geofabric Groundwater Cartography

GW_Cartography - Feature Class/TableName.Subtype(Type)	Feature Class Geometry	AHGF Feature Type Number
AHGFAquiferBoundary	polygon	66
AHGFAquiferOutcrop	polygon	67
AHGFAquiferContour.AHGFAquiferContourTop	line	68
AHGFAquiferContour.AquiferContourBottom	line	69
AHGFAquiferContour.BedrockContourTop	line	73
AHGFSurficialHydrogeologicUnit	polygon	70
AHGFWaterTableAquifer	polygon	71
IGWAquiferSalinity	polygon	na
IGWAquiferYield	polygon	na
IGWWaterTableSalinity	polygon	na
IGWWaterTableYield	polygon	na
IGWWaterTableHydraulicConductivity	polygon	na

Highlighted text indicates a Bureau created feature.

4.3 Reference to specification scope

Global

5 Reference systems

5.1 Spatial reference system

5.1.1 Name

GDA94

5.1.2 Code

4283

5.1.3 Code space

EPSG_v65

5.2 Temporal reference system

Gregorian calendar

5.3 Vertical reference system

Metres AHD

5.4 Reference system scope

Global

6 Data quality

6.1 Data quality scope

6.1.1 Scope code

Dataset

6.1.2 Extent

Australia (excluding external Territories)

6.1.3 Scope description

The data quality metadata relates to the entire dataset comprising this data product.

6.2 Data quality lineage

6.2.1 Lineage Statement

Geofabric Groundwater Cartography is part of a suite of Geofabric products produced by the Bureau of Meteorology. The geometry of this product is derived from the Interim Groundwater Data (IGWD) V1.0 built from multiple sources derived from Commonwealth, State and Territory jurisdictions. It consists of Aquifer Boundaries, and associated Outcrop, Contour, Salinity and Yield as well as Surficial Hydrogeology Units and Water Table Aquifers, and associated Water Table Salinity, Yield and Hydraulic Conductivity. The feature class terminology for Geofabric Groundwater Cartography components has been modified to distinguish it in terms of the product's underlying data model.

Data sources and processing of the IGWGD

AHGFAquiferBoundary

Data sources

- Basin in a Box (MDBA)
- Groundwater Status Report (MDBA)
- Southern Victorian Groundwater mapping (SRW)
- Daly Basin groundwater mapping (DNRETAS)
- GAB hydrogeological mapping (BRS)
- Divertible Water Allocation Information Database aquifers (DOW)

- coastline from Geodata v3 framework dataset (GA).

Processing steps

Grid to polygon conversion for Southern Victoria and where defined aquifer boundaries did not generate closed polygons, addition arcs have been generated using the extent of corresponding structure contours. Datasets were combined into a single ArcInfo coverage and adjusted to align with the national coastline, and then converted to a single file geodatabase feature class.

Generated single multipart features using the dissolve function. Perth – Yarragadee North and Perth – Yarragadee South have been merged to Perth Yarragadee. Yarragadee, Leederville and Birdrong have been created by dissolving salinity features for these aquifers. Features which were merged have been indicated with FeatureSource = 'Sinclair Knight Merz' and the TextNote = 'Generated by SKM from inputs sourced for the IGWGD'. Lower and Upper Renmark boundaries have been aligned to the extent of salinity mapping for these aquifers. The Calivil and Parilla aquifer boundaries have been merged and related to salinity mapping for the combined area.

AHGFAquiferContour

Data sources

- GAB Hydrogeological mapping (BRS): Structure contours of aquifers, confining beds and equivalents. Compiled by B.R. Senior & Associates Pty Ltd (1996).
- Basin in a Box (MDBA); with the following notes:
  - Edge matching - there are significant discrepancies at some mapsheets boundaries
  - Contour intervals - not all contours are closed, and the intervals between contours are not consistent across the whole theme
  - Contour values - in areas of steep gradients some contour values change through the length of the line
  - Contour branching – in areas of steep gradient some contours fork:
    - Alice Springs Groundwater (DNRETAS)
    - Daly Basin Groundwater (DNRETAS)
    - Southern Victoria Groundwater mapping (SRW).

Processing steps

Grid to contour conversion for southern Victoria. Correction of attribute for some contours sourced from the Basin in a Box datasets. Datasets were combined into a single ArcInfo coverage and adjusted to align with the national coastline and then converted to a single file geodatabase feature class. Overlapping contours were clipped to their respective aquifer boundary polygon.

AHGFSurficialHydrogeologyUnit

Data sources

- National geology (statewide datasets), 090609 (GA)
- NT_Aquifers_r.shp (DNRETAS)
- TasKarstv3 (DPIPWE)
- gw_pros.shp (DIER)
- Hydrogeology_WA_statewide-DOW_HGU.shp (DOW)
- Victorian Aquifer Framework (SKM 2009).

Processing steps

State and Territory shapefiles were collated into a single national surface geology ArcInfo coverage. Tasmanian karst areas were intersected with this dataset. The IAF was developed to relate geological units mapped in this dataset to a set of aggregated aquifers/aquitards. The main sources of information for the aquifer classification in the various jurisdictions are:

- Victoria: based on the Victorian Aquifer Framework (Sinclair Knight Merz, 2009)
- New South Wales, Queensland and South Australia: based on classifications of the surface and underlying geology undertaken in this project guided by local aquifer classifications in the Great Artesian Basin (GAB) and State and Territory jurisdictions (especially the Murray–Darling Basin 1:250,000 hydrogeological map series)
- Western Australia: Based on State aquifer mapping undertaken by Department of Water (WA)
- Northern Territory: Based on the Northern Territory Groundwater Map produced by DNRETAS
- Tasmania: Based on the Tasmania Groundwater Map developed by DIER.

IGWAquiferSalinity

Data sources

- Basin in a Box (MDBA)
- Southern Victoria Groundwater mapping (SRW)
- Geodata v3 framework dataset (GA)
- Groundwater salinity, Superficial and Confined Aquifers (DOW).

Processing steps

Grid to polygon conversion for Southern Victoria. Datasets were combined into a single ArcInfo coverage and adjusted to align with the national coastline and then converted to a single file geodatabase feature class. Overlapping salinity polygons were clipped to their respective aquifer boundary, typically slivers resulting from digitising errors. Where underlap slivers existed, the polygons were extended to match the aquifer boundary.

IGWAquiferYield

Data sources

- Basin in a Box (MDBA)
- Southern Victoria Groundwater mapping (SRW)
- Geodata v3 framework dataset (GA).

Processing steps

Grid to polygon conversion for Southern Victoria. Datasets were combined into a single ArcInfo coverage and adjusted to align with the national coastline, and then converted to a single file geodatabase feature class. Overlapping yield polygons were clipped to their respective aquifer boundary, typically slivers resulting from digitising errors. Where underlap slivers existed, the polygons were extended to match the aquifer boundary.

AHGFAquiferOutcrop

Data sources

- WaterTableAquifer
- AquiferBoundary
- 1:1,000,000 scale National surface geology.

Processing steps

For significant confined aquifers the AquiferBoundary layer was intersected with either the corresponding surface geology from the 1:1,000,000 scale national surface geology layer or the corresponding aquifer with the same Interim Aquifer Classification as the WaterTable Aquifer layer. The portions of the aquifer which are co-incident in this intersection were then defined as the outcropping portions of the aquifer. Where the aquifer name was explicitly defined in the surface geology layer, the intersection with the surface geology was used, otherwise the WaterTable Aquifer was used.

AHGFWaterTableAquifer

Data sources

- National geology (statewide datasets), 090609 (GA)
- NT_Aquifers_r.shp (DNRETAS)
- TasKarstv3 (DPIPWE)
- gw_pros.shp (DIER)
- Hydrogeology_WA_statewide-DOW_HGU.shp (DOW)
- Victorian Aquifer Framework (SKM 2009).

Processing steps

State and Territory geology shapefiles were collated into a single national surface geology ArcInfo coverage. State and Territory-wide hydrogeological mapping datasets (TAS, WA, NT), have been intersected with the geology and the source aquifer names retained (SrcAqName), and related to the IAF entities. Tasmanian karst areas were integrated with the dataset. For remaining areas, geological units have been assigned to IAF entities according to regional mapping (GAB, MDB, Southern Victoria), and liaison with State and Territory groundwater management agencies.

IGWWaterTableSalinity

Data sources

- Basin in a Box (MDBA)
- Southern Victoria Groundwater mapping (SRW)
- GAB Hydrogeological mapping (BRS)
- NSW Groundwater Vulnerability mapping inputs (NOW)
- Geodata v3 framework dataset (GA)
- NT Groundwater Salinity mapping (DNRETAS)
- Tasmanian Groundwater Prospectivity map (DIER)
- Victorian Beneficial Use mapping (DSE)
- Groundwater Salinity, statewide (DOW)
- Irrigat_suit_1_02,shp and Salinity_less_3000.shp (DfW).

Processing steps

Grid to polygon conversion for Southern Victoria. In some parts of NSW where the source data mapped salinity classes as 1,500 – 5,000, the 3,000 line was interpolated and included to enable the above and below 3,000 classification to be complete. Datasets were combined into a single ArcInfo coverage and adjusted to align with the national coastline and State boundaries, where applicable, and then converted to a single file geodatabase feature class.

IGWWaterTableYield

Data sources

- Basin in a Box (MDBA)
- Southern Victoria Groundwater mapping (SRW)
- NSW Groundwater Vulnerability mapping inputs (NOW)
- Geodata v3 framework dataset (GA)
- NT_Aquifers_r.shp (DNRETAS).

Processing steps

Grid to polygon conversion for Southern Victoria. Datasets were combined into a single ArcInfo coverage and adjusted to align with the national coastline, and then converted to a single file geodatabase feature class.

IGWWaterTableHydraulicConductivity

Data sources

Groundwater flow systems (MDBA) defined as part of the CSIRO Commercial Environmental Forestry program.

Processing steps

Shapefiles were imported into a single Geodatabase feature class and attribution completed.

Geofabric processing steps:

1. IGWGD dataset is received and loaded into the Geofabric development GIS environment.
2. Feature classes from IGWGD are recomposed into composited Geofabric Groundwater dataset feature classes in the Geofabric Maintenance Geodatabase.
3. Re-composited feature classes in the Geofabric Maintenance Geodatabase Groundwater Dataset are assigned unique Hydro-IDs using ESRI ArcHydro for Surface Water (ArcHydro: 1.4.0.180 and ApFramework: 3.1.0.84).
4. Feature classes from the Geofabric Maintenance Geodatabase Groundwater dataset are extracted and reassigned to the Geofabric Groundwater Cartography Feature Dataset within the Geofabric Groundwater Cartography Geodatabase.

A complete set of data mappings, from input source data to Geofabric Products, is included in the Geofabric Product Guide, Appendices, which is available at www.bom.gov.au/water/geofabric/documentation.shtml

6.3 Quality scope

Global

7 Data capture

7.1 Data capture Statement

All features are derived from the IGWGD.

7.2 Data capture scope

Global

8 Data maintenance

8.1 Maintenance and update frequency

Irregular

8.2 Other maintenance information

The product will be updated periodically, as deemed necessary, to reflect changed attribution and new data sources.

8.3 Maintenance scope

Global

9 Portrayal information

9.1 Portrayal information

Not applicable.

9.2 Portrayal scope

Global

10 Data Product Delivery

10.1 Delivery format

10.1.1 Format name

ESRI ArcGIS File Geodatabase

10.1.2 Format version

ArcGIS v9.3

10.1.3 Language used within the dataset

English

10.1.4 Character set coding

Utf8

10.2 Delivery medium

10.2.1 Units of delivery

National dataset

10.2.2 Estimated size of a unit in the specified format

GW_Cartography.gdb = 793 MB

10.2.3 Medium name

onLine

10.2.4 Online delivery URL

www.bom.gov.au/water/geofabric/download.shtml

10.3 Other delivery information

Also supplied as ESRI Shapefiles (requires written request to ahgf@bom.gov.au).

10.4 Delivery scope

Global

11 Additional information

11.1 Additional information

Licensing and access constraints

Licensed for use under Creative Commons Australia Attribution.

We request attribution as © Commonwealth of Australia (Bureau of Meteorology) 2012.

Special features of the supplied data product or its component parts

Spatial data in the ESRI File Geodatabase, Geofabric Product Guide, and Geofabric Data Product Specifications.

Limitation or constraints on product use

As per Creative Commons Australia Attribution licence.

Layer files or queries that operate on the data product

Geofabric Groundwater Cartography V2.1.lyr

Related data products:

- Geofabric Surface Cartography
- Geofabric Surface Network
- Geofabric Surface Catchments
- Geofabric Hydrology Reporting Catchments
- Geofabric Hydrology Reporting Regions.

11.2 Additional information scope

Global

12 Metadata

Metadata format requirements

Metadata compliant with ANZLIC Metadata Profile Version 1.1 of AS/NZS ISO 19115 was produced for this data product. The metadata profile is available at dataset level. Feature level metadata is provided within the ArcGIS ArcCatalog's FGDC Stylesheet for all feature types included within this product and describes the lineage of feature.

Metadata encoding requirements:

ArcGIS FGDC and ANZLIC compliant feature Metadata.

References to Metadata for data product and component parts:

An ISO 19115 compliant XML file of the Geofabric Groundwater Cartography metadata statement accompanies the Product (GW_Cartography.xml), and is viewable using either the ArcGIS ISO 19139 ArcCatalog metadata style sheet or the ANZMet Lite version 1.0.1 metadata creation tool available from

http://www.spatial.gov.au

Water Information
DATA › INFORMATION › INSIGHT

Through the *Water Act 2007*, the Australian Government has given the Bureau of Meteorology responsibility for compiling and delivering comprehensive water information across Australia.

For more information
Visit our website at www.bom.gov.au/water
Send an email request to waterinfo@bom.gov.au

Australian Government
Bureau of Meteorology