



## LOCAL TAB: Western Australia

Building capacity to implement natural resources information management systems.

[www.nlwra.gov.au](http://www.nlwra.gov.au)

WESTERN AUSTRALIA

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## Guide to symbols

The following symbols are used throughout the Toolkit as a guide to users, and draw attention to important issues and information.



Information which readers should take particular note of



Best practice information



Tips for readers—based on experience and aimed at saving time and resources



Caution—readers are advised that particular care should be taken or that the subject issue may be complex



Additional information



Capability raising—used to show a signpost to a higher capability level

**Bold  
Text**

Used to highlight a particular issue

Boxed  
Text

Highlighting of issues specifically related to ANZLIC or the Audit

## Local Tab: Western Australia

Spatial information management in Western Australia is currently undergoing significant changes in response to a series of drivers. Demand for spatial information for natural resource management (NRM) in particular has increased significantly since the signing of bilateral agreements between the Australian and Western Australian governments for the regional delivery of NRM programs. In Western Australia, a number of state agencies act as custodians for the key natural resource databases that, together, provide a comprehensive information base.

The Western Australian Land Information System (WALIS) is a partnership of government agencies working with business, education and the general community to manage and promote the state's geographic information. Established by the WA Government in 1981, WALIS is responsible for coordinating across-government access and delivery of the geographic information held by WA government agencies. WALIS achieves this through committees and the WALIS office.

The mission of WALIS is to build networks of people and technology to share land and geographic information, and to continually improve the data's usefulness and accessibility. In 2005 work commenced on building a Shared Land Information Platform (SLIP) for sharing spatial information held by WALIS members. The SLIP is now operational and provides access to spatial information through specialised web portals (providing ready-made views of data), and web services that can be accessed directly from desktop GIS software.

Formal membership of WALIS currently comprises state government agencies with representation from the Commonwealth and local government, and an increasing number of private sector organisations, industry advisory bodies and community organisations.

### 1 Material on Western Australia NRM programs

WA NRM Program: <http://www.nrm.wa.gov.au/>

Rangelands NRM Co-ordinating Group: <http://www.rangelandswa.info/>

Northern Agricultural Catchment Council: <http://www.nacc.com.au/default.asp?documentid=2>

Avon Catchment Council: [http://www.avonnm.org.au/nrm\\_information](http://www.avonnm.org.au/nrm_information)

South Coast Regional Initiative Planning Team: <http://www.script.asn.au/>

South West Catchments Council: <http://www.swcatchmentscouncil.com/>

Swan Catchment Council: <http://www.wrc.wa.gov.au/swanavon/>

NRM Program: <http://www.nrm.gov.au/>

National Action Plan for Salinity and Water Quality: <http://www.napswq.gov.au/napswq/index.html>

National Land & Water Resource Audit: <http://www.nlwra.gov.au/>

## 2 Spatial data Infrastructures and policies

### *General resource material*

Shared Land Information Platform (Landgate): <http://www.walis.wa.gov.au/SLIP>

Western Australian Land Information System: <http://www.walis.wa.gov.au/>

Australian Spatial Data Infrastructure (ASDI): [http://www.anzlic.org.au/infrastructure\\_ASDI.html](http://www.anzlic.org.au/infrastructure_ASDI.html)

ANZLIC policies: <http://www.anzlic.org.au/policies.html>

Australian Spatial Data Infrastructure (ASDI): <http://www.ga.gov.au/nmd/asdi>

Office of Spatial Data Management (OSDM): <http://www.osdm.gov.au/>

'Snapshot of SDI Development in Australia':

[http://www.geom.unimelb.edu.au/research/publications/IPW/024\\_Warner%20REF.pdf](http://www.geom.unimelb.edu.au/research/publications/IPW/024_Warner%20REF.pdf)

## 3 Copyright and Intellectual property

**Copyright:** The Australian Copyright Council produces a number of information sheets and a range of detailed practical guides that provide additional information about copyright law and how it applies in practice.

The information sheets and additional resource material are available at

<http://www.copyright.org.au/information/introductory.htm>.

**Intellectual Property or IP:** IP represents the property of the mind or intellect. In business terms this also means proprietary knowledge. Types of IP include patents, trade marks, designs, copyright, circuit layout rights, plant breeder's rights, and confidentiality/trade secrets. IP Australia maintains a website providing background information on IP in Australia and guidelines on how to develop a strategy to protect IP rights. See: <http://www.ipaustralia.gov.au/ip/introduction.shtml>.

## 4 Data Access and Licensing Policies

### **Western Australian Land Information System (WALIS)**

All WALIS policies and standards have been developed in partnership with WALIS participants and represent a whole-of-community perspective on the issues that affect the effective use and management of the state's geographic information. The policies are still in development in some regions. The collaboration has resulted in guidelines for use, collection and maintenance, ownership, custodianship, management, metadata, access, pricing, distribution and licensing of spatial data. See: <http://www.walis.wa.gov.au/policies>.

### **The National Land & Water Resources Audit (the Audit) and ANZLIC – the Spatial Information Council**

The Audit and ANZLIC have collectively developed a Data Access and Management Agreement signed by all jurisdictions in September 2001. The agreement provides for consistent access

arrangements to the datasets held by the Audit and its jurisdictional partners. See: <http://www.anzlic.org.au/get/2375374673>.

In addition, ANZLIC and the Audit have collaborated in developing a model agreement for use in any natural resource management program. The Model Data Access and Management Agreement (<http://www.anzlic.org.au/get/2375374755>) incorporates guidelines for custodianship, metadata, archiving, accessing, data licensing and pricing and puts them into an operational context.

## **5 Data discovery, visualisation and reporting**

### **NRM Information**

<http://spatial.agric.wa.gov.au/slip/>

This website is the single point of access for viewing and querying a wide range of NRM data from across WA. It is built on the Shared Land Information Platform and provides online reporting, querying and basic map making functionality. It includes NRM spatial data, databases, aerial photography and Landsat imagery.

### **WA Atlas**

<https://www2.landgate.wa.gov.au/waatlas>

This WALIS initiative provides access to view a wide range of spatial information across WA plus tools to search for locations and localities. It provides viewing access to SLIP, WMS and WFS data services and has basic map making facilities.

### **Native Vegetation Map Viewer**

[http://portal.environment.wa.gov.au/portal/page?\\_pageid=119,50334&\\_dad=portal&\\_schema=PORTAL](http://portal.environment.wa.gov.au/portal/page?_pageid=119,50334&_dad=portal&_schema=PORTAL)

This portal helps to identify the location of environmentally sensitive areas, mining tenements plus status of clearing permits. You can add the ESA, clearing permits and mining tenements layers. There is also a search tool for these layers. Metadata is listed for all available datasets. The tool is designed to search the Department of Environment and Conservation databases.

### **Geographic Data Atlas**

[http://portal.environment.wa.gov.au/portal/page?\\_pageid=119,50334&\\_dad=portal&\\_schema=PORTAL](http://portal.environment.wa.gov.au/portal/page?_pageid=119,50334&_dad=portal&_schema=PORTAL)

A collaborative effort between the Department of Environment and Conservation and the Department of Water provides an interactive web mapping tool that allows you to freely view and download DoE and DoW geographic data. The map viewer is similar to the Native Vegetation map viewer, and has got limited environmental and administrative data.

### **Naturemap—due for release in 2008**

This cooperative initiative between the Department of Environment and Conservation and the WA Museum will provide spatial data about species distributions and will be able to be queried and downloaded in future, depending on user privileges. Users will be able to produce species lists for

arbitrary areas (both user-defined and standard layers such as conservation estate), reports on endemism, etc. Near-publication quality maps of query results will be available.

### **Hydrogeological Atlas**

<http://portal.water.wa.gov.au/portal/page/portal/MapsDataAtlases/HydrogeologicalAtlas>

The Department of Water's map viewer provides access to spatial information across the state. A 'drill down' function is available that lists all attributes for the different datasets available. Maps can be printed off the web page which contains a text description of each aquifer used for groundwater management.

### **Perth Groundwater Atlas**

<http://portal.water.wa.gov.au/portal/page/portal/MapsDataAtlases/PerthGroundwaterAtlas>

The Perth Groundwater Atlas allows users to query and view groundwater information of any parcel of land in the metropolitan area as well being able to calculate depth to groundwater where data is available. Maps and easy-to-read forms can be produced and printed off the web page.

### **FloraBase**

<http://florabase.calm.wa.gov.au/>

FloraBase provides botanical information from the Department of Environment and Conservation on all Western Australian vascular plant families, genera and species, as well as identification tools, photos, maps, a database of [botanical literature](#) and, (for [registered](#) users) the collection details of over 658,871 vouchered [herbarium specimens](#) from across the state.

### **Wetlandbase**

<http://florabase.calm.wa.gov.au/>

The Department of Environment and Conservation provides a single point of access for viewing and querying a wide range of data from across WA. Reporting and basic map making functionality is also available. This portal also provides a large variety of aquatic related information including environmental and administrative data. The portal is also linked to the SLIP via NRM Info.

### **Landgate map viewers**

<http://www.landgate.wa.gov.au/corporate.nsf>

Landgate provides a variety of map viewers, including a number of channel or theme-based map viewers. Access to some channels is through a subscription and basic searching and map making facilities are available. The various map viewers provide information specific to the needs of government, surveyors, planning and farmers.

### **GeoVIEW**

<http://www.doir.wa.gov.au/3992.aspx>

GeoVIEW is an online browser-based visual tool provided by the Department of Industry and Resources. Data layers can be queried and simple maps can be produced. Information includes geology, petroleum maps and mineral information.

### **Other sources of spatial data**

Some datasets from these websites are available for download:

- [Geographic Data Atlas](#) – Department of Environment and Conservation
- [Geographic Data Atlas](#) – Department of Water
- [Data and Software Centre](#) – Department of Industry and Resources
- [Department of Indigenous Affairs](#)
- [Australian Agriculture and Natural Resources Online database](#)
- [Australian Bureau of Agricultural and Resource Economics Data](#)
- [Australian Bureau of Statistics](#)
- [Australian Soil Resource Information System](#)
- [Australian Spatial Data Infrastructure](#)
- [Australian Spatial Data Directory](#)—online searches of all connected nodes for Australian spatial data maintained by GeoScience Australia.
- [Bureau of Meteorology](#)
- [Discover Information Geographically](#)
- [Geoscience Australia](#)
- [Murray Darling Basin Commission](#)
- [Office of Spatial Data Management](#)

## **6 NRM monitoring and evaluation**

The West Australian NRM Resource Condition Monitoring Plan coordinates current resource condition monitoring programs and the new monitoring programs required to meet NAP, NHT and other program requirements. As part of this, West Australian data collection standards are being reviewed and considered. New Western Australian standards will comply with the Audit's national standards (protocols) and provide guidance on how these national standards should be applied in the Western Australian context.

Lead state agencies have been allocated to each of the NRM themes and have clear mandated responsibilities for particular NRM issues. Regional project proponents are encouraged to contact these lead agencies when determining what Western Australian standards for data collection apply in their particular field.

The Natural Resource Management Ministerial Council, which includes representatives of the Australian Government and all states and territory governments, was established to develop a coordinated approach to issues affecting NRM in Australia. The Council endorsed two national level documents to help set targets, monitor, evaluate and report on NRM. These documents are the:



[National Framework for Natural Resource Management Standards and Targets](#)

[National Natural Resource Management Monitoring and Evaluation Framework](#)

A [users' guide](#) to these documents provides background information and helps interpret the national framework.

These documents are currently being reviewed in preparation for implementation of Caring for our country programs.

A set of [Resource Condition Indicators](#) are being refined to provide more detail on how to monitor each 'matter for target' set out in the National Framework for Natural Resource Management Standards and Targets. The Audit is responsible for coordinating the collation of data and information against the national matters for targets and the relevant resource indicators. It uses national coordination committees or technical advisory groups to test and refine these indicators and to provide guidance on the most practical and effective set of measures to be used. More details of progress with further development of the resource condition indicators can be found on the Audit's website:

[http://www.nlwra.gov.au/About\\_Us/Monitoring\\_and\\_Evaluation/index.aspx](http://www.nlwra.gov.au/About_Us/Monitoring_and_Evaluation/index.aspx)

The initial set of indicators developed by the Australian Government Monitoring and Evaluation Working Group has been used as the starting point for further development by the Audit. Information on the initial indicator set can be found at:

<http://www.nrm.gov.au/me/index.html>.

**Note:** This site may not have the most up-to-date information on indicators as further developed through Audit processes. Check the Audit website for the link to the latest information.

**Western Australian Government contacts for further information relating to the Matters for Target and associated issues**

Theme	Custodian Agency/s	Contact	Website
<b>Soils</b>	<b>DAFWA</b>	Department of Agriculture and Food WA Contact: Noel Schoknecht Manager, Land Resource Assessment and Monitoring Tel: 08 9368 3707 Email: <a href="mailto:nschoknecht@agric.wa.gov.au">nschoknecht@agric.wa.gov.au</a>	<b>Australian Soil Resource Information System (ASRIS):</b> <a href="http://www.asris.csiro.au/index_ie.html">http://www.asris.csiro.au/index_ie.html</a> <b>Digital Atlas of Australian Soils:</b> <a href="http://www.daffa.gov.au/brs/data-tools/daas-lut-metadata">http://www.daffa.gov.au/brs/data-tools/daas-lut-metadata</a> <b>DAFF Healthy Soils for Australian Farms:</b> <a href="http://www.daff.gov.au/natural-resources/land-salinity/soils">http://www.daff.gov.au/natural-resources/land-salinity/soils</a>
<b>Vegetation</b>	<b>DEC</b>          <b>DAFWA</b>	Department of Environment and Conservation Contact: Ken Wallace Manager, Natural Resources Branch Tel: 08 9334 0333  Email: <a href="mailto:Ken.Wallace@dec.wa.gov.au">Ken.Wallace@dec.wa.gov.au</a>  Department of Agriculture and Food WA Contact: Damian Shepherd	<b>National Vegetation Information System:</b> <a href="http://www.environment.gov.au/erin/nvis/index.html">http://www.environment.gov.au/erin/nvis/index.html</a>  <b>Vegetation Mapping and Monitoring Links:</b> <a href="http://www.environment.gov.au/erin/nvis/links.html">http://www.environment.gov.au/erin/nvis/links.html</a>  <b>Integrated Vegetation Information for NAP and NRM Regions:</b> <a href="http://data.brs.gov.au/mapserv/intveg/index.html">http://data.brs.gov.au/mapserv/intveg/index.html</a>  <b>DAFF Vegetation:</b> <a href="http://www.daff.gov.au/natural-resources/vegetation">http://www.daff.gov.au/natural-resources/vegetation</a>

Theme	Custodian Agency/s	Contact	Website
		Manager Geographic Information Services Tel: 08 9368 3853 Email: <a href="mailto:dshepherd@agric.wa.gov.au">dshepherd@agric.wa.gov.au</a>	
<b>Significant native species and ecological communities</b>	<b>DEC</b>	Department of Environment and Conservation Contact: Ken Atkins Tel: 08 9334 0333 Email: <a href="mailto:Ken.Atkins@dec.wa.gov.au">Ken.Atkins@dec.wa.gov.au</a>	
<b>Estuarine monitoring / Inland Aquatic</b>	<b>DoW</b>	Department of Water Contact: Malcom Robb Tel: 08 6364 7600 Email: <a href="mailto:Malcom.Robb@water.wa.gov.au">Malcom.Robb@water.wa.gov.au</a>	<b>Australian Water Resources Information System (AWRIS):</b> <a href="http://www.water.gov.au">http://www.water.gov.au</a> – Search on AWRIS  <b>OzCoasts and OzEstuaries Home Page:</b> <a href="http://www.ozcoasts.org.au/">http://www.ozcoasts.org.au/</a>
<b>Coastal &amp; Marine</b>	<b>DoF</b>	Department of Fisheries Contact: Fred Wells Tel: 08 9482 7342 Email:	<b>Coasts and Oceans Home Page</b> <a href="http://www.environment.gov.au/coasts/index.html">http://www.environment.gov.au/coasts/index.html</a>  <b>Coastal CRC:</b> <a href="http://www.coastal.crc.org.au/">http://www.coastal.crc.org.au/</a>

Theme	Custodian Agency/s	Contact	Website
		<a href="mailto:fwells@fish.wa.gov.au">fwells@fish.wa.gov.au</a>	<b>National Land &amp; Water Resources Audit:</b> <a href="http://www.nlwra.gov.au/Natural_Resource_Topics/Estuarine_Coastal_and_Marine/index.aspx">http://www.nlwra.gov.au/Natural_Resource_Topics/Estuarine_Coastal_and_Marine/index.aspx</a>
<b>Land Use</b>	<b>DAFWA</b>	Department of Agriculture and Food WA Contact: Damian Shepherd Manager Geographic Information Services Tel: 08 9368 3853 Email: <a href="mailto:dshepherd@agric.wa.gov.au">dshepherd@agric.wa.gov.au</a>	<b>Bureau of Rural Sciences:</b> <a href="http://www.daff.gov.au/brs/land/use-management">http://www.daff.gov.au/brs/land/use-management</a>
<b>Invasive Species</b>	<b>DAFWA</b>	Department of Agriculture and Food WA Contact: Damian Collopy Manager, Invasive Species Program Tel: 08 9780 6218	<b>Weeds:</b> <b>Australian Government Weeds</b> <a href="http://www.weeds.gov.au/">http://www.weeds.gov.au/</a> <b>Australian Weeds Committee – Weeds Australia website:</b> <a href="http://www.weeds.org.au/">http://www.weeds.org.au/</a>  <b>DAFF Weeds</b> <a href="http://www.daff.gov.au/natural-resources/invasive/weeds">http://www.daff.gov.au/natural-resources/invasive/weeds</a>  <b>CRC for Australian Weed Management</b> <a href="http://www.weeds.crc.org.au/index_flash.html">http://www.weeds.crc.org.au/index_flash.html</a>  <b>Invasive Animals:</b> <b>Invasive Animals CRC:</b> <a href="http://www.invasiveanimals.com/">http://www.invasiveanimals.com/</a>  <b>Australian Government / BRS Feral Animals:</b> <a href="http://www.feral.org.au">http://www.feral.org.au</a>

Theme	Custodian Agency/s	Contact	Website
			<b>National Land &amp; Water Resources Audit:</b> <a href="http://www.nlwra.gov.au/Natural_Resource_Topics/Invasive_Species/index.aspx">http://www.nlwra.gov.au/Natural_Resource_Topics/Invasive_Species/index.aspx</a>
<b>Land Salinity</b>	<b>DAFWA</b>	Department of Agriculture and Food WA Contact: Neil Coles Projects Director, Ecohydrology Tel: 08 9368 3617  Email: <a href="mailto:ncoles@agric.wa.gov.au">ncoles@agric.wa.gov.au</a>	<b>National Dryland Salinity Program:</b> <a href="http://www.ndsp.gov.au/">http://www.ndsp.gov.au/</a>  <b>CRC for Plant-based Management of Dryland Salinity:</b> <a href="http://www.crcsalinity.com/index.php">http://www.crcsalinity.com/index.php</a> <b>DAFF Dryland Salinity:</b> <a href="http://www.daff.gov.au/natural-resources/land-salinity/salinity">http://www.daff.gov.au/natural-resources/land-salinity/salinity</a>  <b>National Land &amp; Water Resources Audit:</b> <a href="http://www.nlwra.gov.au/Natural_Resource_Topics/Land_Salinity/index.aspx">http://www.nlwra.gov.au/Natural_Resource_Topics/Land_Salinity/index.aspx</a>
<b>Wetlands</b>		Department of Environment and Conservation Contact: Michael Coote Tel: 08 334 0333 Email: <a href="mailto:michael.coote@dec.wa.gov.au">michael.coote@dec.wa.gov.au</a>	<b>Wetlands Database (WetlandBase):</b> <a href="http://www.naturebase.net/content/view/981/987/">http://www.naturebase.net/content/view/981/987/</a>
<b>Socio-economic</b>		Department of Agriculture and Food WA Contact: Juana Roe Tel: 08 9690 2195 Email: <a href="mailto:jroe@agric.wa.gov.au">jroe@agric.wa.gov.au</a>	
<b>Species and Communities</b>		Department of Environment and	

Theme	Custodian Agency/s	Contact	Website
		<p>Conservation                      Contact:                      Ken Atkins                      Tel: 08 9334 0333                      Email:  <a href="mailto:Ken.Atkins@dec.wa.gov.au">Ken.Atkins@dec.wa.gov.au</a></p>	