

# Contributing to the Australian Soil Resource Information System (ASRIS)

Guidelines for the inclusion of your soil data and information

NATIONAL SOIL INFORMATION / LAND & WATER / SUSTAINABLE AGRICULTURE FLAGSHIP  
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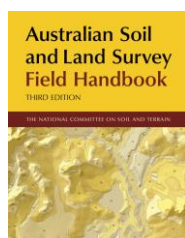


ASRIS provides the national soil information infrastructure for the collation, management, access and distribution of the best available, consistent soil data and information for Australia. It is developed and maintained through the Australian Collaborative Land Evaluation Program (ACLEP).

## Soil data and information

Soil data and information products (maps, data sets etc.) are created by many organisations, mostly through state and territory government agencies, but increasingly by research, academia, industry, resource management and private organisations.

Soil data and information collected to agreed Australian guidelines, such as the *Australian Soil and Land Survey Field Handbook* third edition (NCST 2009) and the *Australian Soil Classification* revised edition (Isbell 2002), form a valuable national information asset.



Your soil data and information can contribute to Australia's soil information infrastructure to support land management and policy decisions, research and innovation, and a sustainable future.

## Data management and coordination

Data and information submissions to ASRIS should be coordinated through the appropriate state or territory government agency, or through CSIRO Land and Water for national projects. See the ACLEP website [www.clw.csiro.au/aclep/contacts](http://www.clw.csiro.au/aclep/contacts) for a list of representatives on the National Committee on Soil and Terrain (NCST) that will be able to assist.

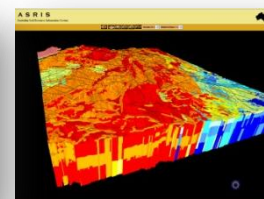
## Types of soil data

ASRIS is an integrated system for managing all types of soil data and information.

Traditionally soil data has been collected at specific locations (sites) primarily for identification and classification of soil types. Soil from these sites has been sampled for laboratory analyses (physical and chemical attributes) and in some cases sent to the CSIRO National Soil Archive for future research. Site specific data is used to develop soil type descriptions (classes), the distribution of which is shown on maps at various scales. Data from sites, soil samples and map legends form the basis of the majority of information within ASRIS.

Soil data from specific research activities, such as soil carbon or acidity investigations, or from farmer soil testing or soil condition monitoring programs can also provide a valuable source of data for ASRIS.

More recently, soil data and information is being modelled using digital soil mapping (DSM) techniques. This has the potential to create continuous estimates of the change in soil properties across the landscape, with depth, and through time.



## ASRIS databases

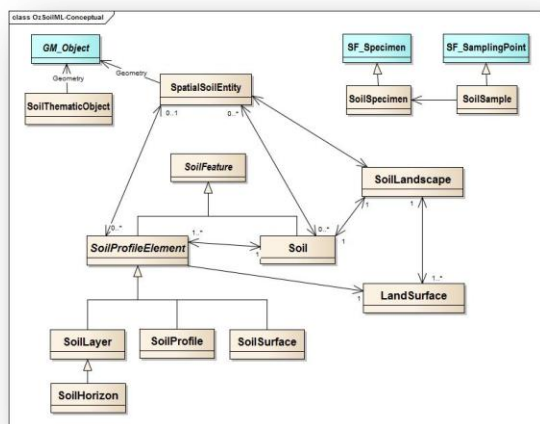
ASRIS data is managed within a number of spatial and attribute databases.

Mapped soil data must comply with the current ASRIS Technical Specifications (version 1.6 2012) and meet mandatory data schema requirements. Non-compliant data will not be accepted and attribution quality assurance is the responsibility of data providers.

Attribute data, associated with spatially mapped sites and soil samples must comply with the NatSoil database schema requirements as per the SITES protocols (version 2.0 2012).

ASRIS database specification documents, data entry templates and a blank NatSoil database (MS Access) are available for download from the ASRIS website [www.asris.csiro.au/methods](http://www.asris.csiro.au/methods)

Soil data and information should be captured and managed through the appropriate state/territory government agency and supplied to ASRIS through established data transfer mechanisms.



The OzSoilML feature model currently being developed through ACLEP, will assist future standardised data transfers and the provision of web based services for improved user access.

## Data management plan

All data within ASRIS must be covered by a data management plan. This provides documentation of specific requirements including :

- Intellectual property and ownership
- Accessibility and use restrictions
- Licensing and attribution
- Metadata (ANZLIC compliant)
- Data standards and formats
- Data management, updates and versioning

An ASRIS data management plan must accompany all proposals for submission of data to ASRIS. Submissions will be assessed by the National Soil Information Team and endorsed for inclusion within ASRIS by the National Committee on Soil and Terrain (NCST).

New data types or special interest information may be promoted as an ASRIS Theme [www.asris.csiro.au/themes](http://www.asris.csiro.au/themes). Additional documentation and links to further information required to construct and maintain theme pages must be provided along with the datasets.

## National Soil Archive

CSIRO, through ACLEP, also maintains the National Soil Archive, a collection of physical soil samples from around the country. These samples, along with associated field and laboratory data, are a valuable resource supporting future research. Submission and use of soil samples is managed through a series of protocols available on the Archive website [www.clw.csiro.au/aclep/archive](http://www.clw.csiro.au/aclep/archive).

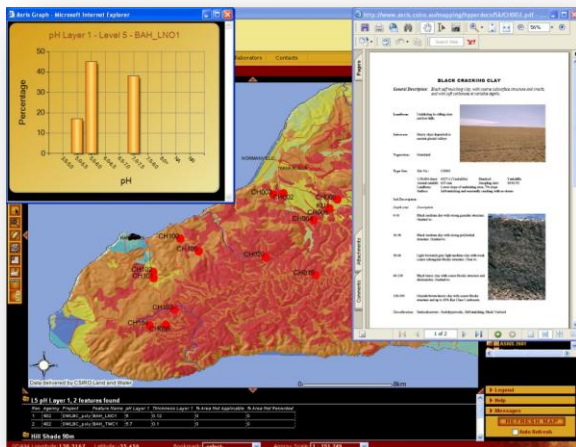
## ASRIS discovery tools

ASRIS data and information is made discoverable and viewable through a web mapping interface [www.asris.csiro.au/mapping](http://www.asris.csiro.au/mapping).

Users can view soil maps, photographs, descriptions, tables and graphs, along with satellite images and other contextual data. Maps can be composed by users and printed.

Metadata associated with the ASRIS datasets is available through the hyperlinked map legend and provides information on the original source of the data as well as contact details for accessing specific datasets.

A limited number of national soil datasets including Atlas of Australian Soils, Physiographic Regions of Australia and National Soil Grids for specific attributes, are directly downloadable from the ASRIS Themes page [www.asris.csiro.au/themes](http://www.asris.csiro.au/themes). More datasets will be made available in the future as new interpreted national products are developed and data licensing is improved.



ASRIS data is also made available through a number of Open Geospatial Consortium (OGC) compliant web map and web feature services, allowing online access via user developed applications.

ACLEP has recently facilitated the development of an iPad app, called *SoilMapp*, which uses a direct connection to ASRIS data services for the display and query of soil map and site specific data across Australia (release late 2012).



*SoilMapp* demonstrates the benefits of collecting and collating data to agreed national standards and providing it through standardised and technologically advanced mechanisms. Through *SoilMapp*, ASRIS data will be readily accessible and useable to a wide range of users across agriculture, infrastructure, conservation, policy, research, education and community sectors. Such exposure of soil data and information will greatly increase the impact of national soil data, improve the understanding of soils and promote the importance of their proper management for future generations.

## ASRIS data use

ASRIS is developed and maintained to provide open, public access to the best available, nationally consistent soil data and information for Australia.

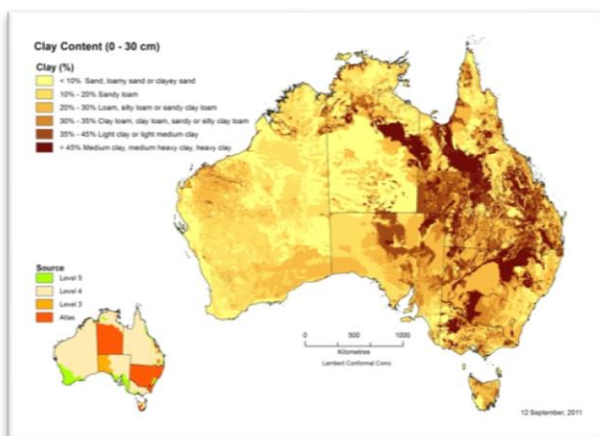
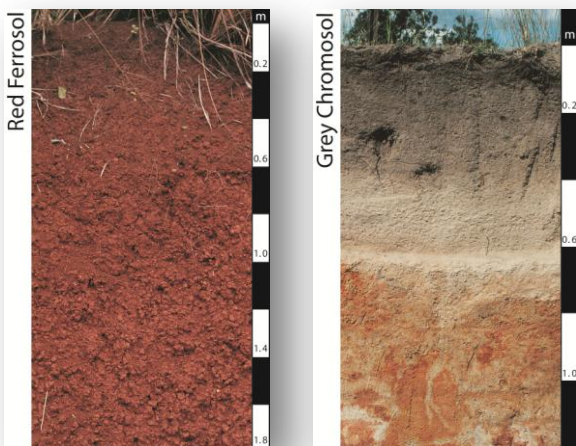
This underlying principle asserts that data submitted to ASRIS is generally expected to be able to be made discoverable, visible and accessible to a wide range of users.

Where possible, ASRIS data and information products will be made available under Creative Commons (By) Attribution 3.0 licensing.

## Contributing your data

Data suitable for ASRIS is collected by many individuals, agencies and other organisations. To contribute your soil data and information to ASRIS you need to –

1. Consider ASRIS requirements at the earliest stage possible in project planning to ensure that data and information assets can be incorporated within the national soil information infrastructure
2. Discuss particular jurisdictional requirements with the appropriate representative of the National Committee on Soil and Terrain (NCST)
3. Ensure project contracts and other implementation documents explicitly detail data ownership and custodianship roles and provide rights and responsibilities for future data access and use
4. Develop a data management plan, detailing ongoing management requirements and submit a proposal to ASRIS for inclusion of your soil data and information products
5. Collect soil data according to agreed standards and procedures and ensure analyses are conducted by accredited laboratories using recognised methods
6. Retained soil samples where possible and submit to jurisdictional or national soil archives along with accurate location information and associated metadata
7. Provide soil data and information in appropriate digital formats complying with agreed data specifications and vocabularies.



## REFERENCES

- Isbell, R.F. (2002) *The Australian Soil Classification* Revised Edition. CSIRO Publishing. Collingwood, Victoria.
- NCST (2009) *Australian Soil and Land Survey Field Handbook* Third Edition. The National Committee on Soil and Terrain. CSIRO Publishing. Collingwood, Victoria.

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