

About SoilMapp

What is SoilMapp?

SoilMapp for iPad is a free app that provides soil information at any location in Australia. You can use SoilMapp to:

- learn about the soil on your property
- view maps, photographs, satellite images and data about local soils
- uncover your soil's physical and chemical characteristics, including acidity (pH), soil carbon, water storage capacity, salinity and erodibility
- help manage non-irrigated crops and develop input data for yield prediction

Is SoilMapp for me?

SoilMapp makes soil information accessible anywhere to help Australian farmers, consultants, planners, natural resource managers, researchers and soil enthusiasts.

What data does SoilMapp use?

SoilMapp provides direct access to the best national soil data and information from the Australian Soil Resource Information System (ASRIS) (www.asris.csiro.au) and APSoil, the database behind the Agricultural Production Systems Simulator (APSIM).

ASRIS includes the descriptions from reference sites, CSIRO National Soil Archive (www.clw.csiro.au/aclep/archive) sites and the Australian Soil Classification map.

APSoil (www.apsim.info) is a database of soil water characteristics to help estimate Plant Available Water Capacity for individual soils and crops. It covers many cropping regions of Australia and is regularly updated. It is designed for crop simulation modelling and agronomic practice.

How does it work?

Simply tap on the map and select a data source to view information on Australian soils. Search for your area of interest by zooming in or using the GPS to find your current location.

Users can choose from four data sources: ASRIS Map Discovery, ASRIS Site, CSIRO Soil Archive Site and APSoil Discovery.

How accurate is SoilMapp?

Information provided through SoilMapp represents the best available, nationally consistent data collated and delivered through ASRIS and APSoil. This data may not be current or complete but is the most accurate information available.

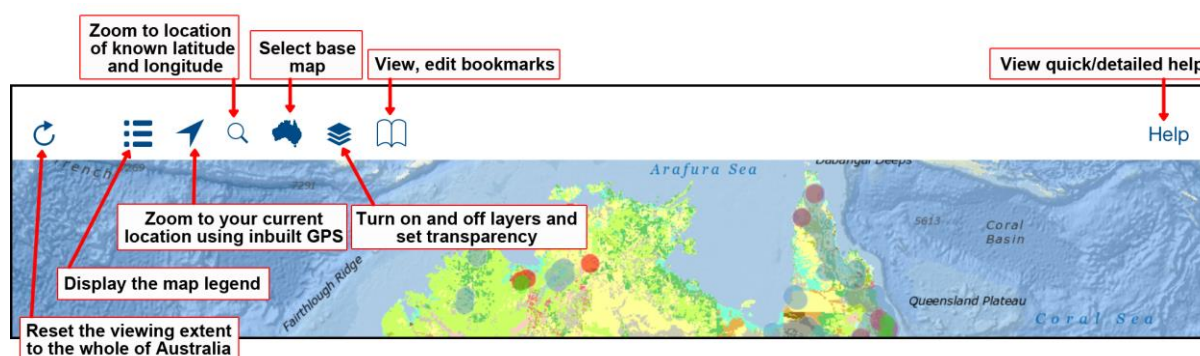
Permissions

Any user details, data or statistics collected through use of this app can be used by CSIRO for assisting the delivery of Australian soil data and information to the community.

Contact Us

Please email asris@csiro.au with all inquiries and comments.

How to use SoilMapp



Helpful Hints

- SoilMapp relies on a network connection (WiFi or 3G) to obtain soil maps and information
- Some information can be saved via bookmarks and accessed offline
- SoilMapp will open to the last location you searched for, with the layers that you set turned on.

How to view your current location:

- Ensure your GPS is switched on in your iPad location settings
- Zoom to your current location with a single tap to the navigation bar
- The 'select data source' pop-up will appear and indicate the available information sources for your current location.

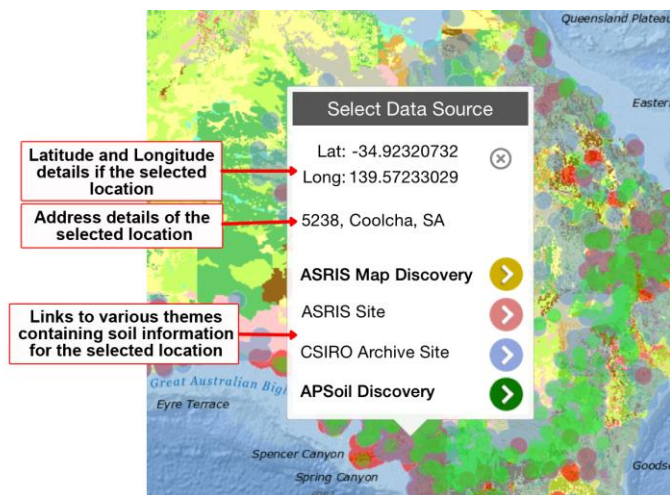
How to view a location of interest:

Navigate to a location of interest using one of the following methods:

- Zoom in with a double tap or pinch open
- Zoom out with a pinch close
- Drag your finger across the display to move the map
- Single tap on and enter the latitude and longitude (GDA94) of your location of interest in the 'find location' pop-up and tap 'find'.

How to view soil information

- To find details about soils at a particular location, apply a single tap to the map. You will then be asked to select a data source.
- The data sources are:
 1. ASRIS Map Discovery
 2. ASRIS Site
 3. CSIRO Archive Site
 4. APSoil Discovery
- The available data sources are indicated by an illuminated arrow
- The areas of Australia that do not have intensive land uses (i.e. rangelands and dry interior) have limited soil information.



ASRIS Map Discovery

The screenshot shows the ASRIS Map Discovery interface. At the top, there are navigation and information tabs: "Return to Map", "General information on Australian Soil Classification soil order for the selected candidate", "Reference profile (from the originating survey) for the selected candidate", "Summary data of the typical profile for the selected candidate", and "Bookmark details". The main content area is divided into three sections: "Soil Type", "Reference Profile", and "Summary Data". The "Soil Type" section is currently active, displaying information for "CALCAROSOLS: Soils with calcium carbonate". This includes a list of soil candidates with their likelihood indicators (High, Medium, Low), a map showing the selected location, and a list of soil types: Supracalcic Calcarosol Hillslope, Brown-Orthic Tenosol Dune, Supracalcic Calcarosol Hillslope, Bleached-Orthic Tenosol Hillslope, and Red Kandosol Hillslope. The "Reference Profile" section shows four soil profile photographs. The "Summary Data" section provides detailed information about the soil type, including a description and a map of Australia. A legend at the bottom indicates the likelihood indicators: High (green), Medium (yellow), and Low (red).

The Australian Soil Resource Information System (ASRIS) Map Discovery is available for all locations in Australia.

The most detailed data is only available in intensively used agricultural areas (ASRIS level 5, ~1:100 000 scale). Intermediate data is available for most of Australia, with complete coverage for South Australia, Western Australia, Queensland and Victoria (ASRIS level 4, ~1:250 000 scale). The Atlas of Australian Soils is used when no other data is available (1:2 000 000 scale).

The ASRIS map discovery screen contains:

- a list of likely soils at the location of interest (bottom left)
- a location map pinned with the location of interest (top left)
- a set of information tabs (right).

The **soil list** reflects the soils that are associated with the soil map unit identified by the location of interest. The soil list is not exhaustive. It represents the dominant soil types

identified at the time of the survey. The likelihood of the soil occurring at the location of interest is colour coded (high, medium and low).

The **information tabs** provide general information on the Australian Soil Classification at the level of Soil Order (soil type tab), a description of the reference profile (from the originating survey), and summary data of the idealized soil

You can bookmark the current ASRIS Map Discovery screen (saving all soils and all tabs), by tapping and following the prompts. Bookmarks can be accessed via the main map screen even when offline.

You can help SoilMapp for iPad by confirming that the selected soil (or close variant) occurs at the pinned location. Tap the plus icon on the navigation bar and follow the prompts. The information will be returned to ASRIS and will assist with map validation.

ASRIS Site

Return to map

Return to Map

ASRIS Site

Australian soils and landscapes

KA7: Haplic, Eutrophic, Red Kandosol

General description of the soil

A loamy-surfaced Red Kandosol with a moderately high base status (i.e. Eutrophic) in the B2 horizon.

Distribution:	The major known area is from the slopes west of the Divide in New South Wales and parts of central southern Queensland.
Typical land use:	Widely used for cereal and oilseed cropping.
Common variants:	Slight differences in texture and colour may occur.
World Reference Base:	Profondic Lixisol.
Other names:	Commonly known as Red Earths.

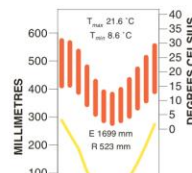
Environment and location of the example profile

Landform:	Rolling low hills.
Parent material or substrate:	Granite and aeolian dust (parna).
Drainage class:	Well-drained.
Surface condition:	Firm.
Site disturbance:	Cultivation.
Native vegetation:	Eucalypt woodland and open forest.

Site location



Site climate



Wagga Wagga district, New South Wales

The locations of ASRIS sites are indicated by red dots on the map. These sites are sourced from the State and Territory agencies and are often the reference profiles for the soil survey in which they were collected. The soil description that accompanies these sites usually includes soil morphology and chemistry, and may include soil and landscape photographs.

To view ASRIS site descriptions:

1. Turn on the layer with a single tap and drag the ASRIS Site layer slider to on
2. Zoom in to an area of interest where an ASRIS site is present
3. Tap on the screen to see the 'select data source' pop-up
4. Tap the illuminated red ASRIS site arrow. If the red arrow is dull you will need to repeat the process and more accurately tap on the desired ASRIS site. Zooming in close to the location of interest will help SoilMapp for iPad's accuracy

CSIRO Soil Archive Site

Return to map

Return to Map

CSIRO Soil Archive Site

Soil profile data and soil sample holdings of the CSIRO National Soil Archive

Project Name: National Soil Fertility
Project Code: NSF **Site ID:** SW42 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (SA)

Site Information

Desc. By: Coppi, John	Locality:	
Date Desc.: 14/04/70	Elevation:	No Data
Map Ref.: Sheet No. : 6029 1:100000	Rainfall:	0
Northing/Long.: 135.916666666667	Runoff:	No Data
Easting/Lat.: -34.1833333333334	Drainage:	No Data

Geology

Exposure Type: No Data	Conf. Sub. is Parent. Mat.: No Data
Geol. Ref.: No Data	Substrate Material: No Data

Land Form

Rel/Slope Class: No Data	Pattern Type: No Data
Morph. Type: No Data	Relief: No Data
Elem. Type: No Data	Slope Category: No Data
Slope: %	Aspect: No Data

Surface Soil Condition (dry):

Erosion:

Soil Classification

Australian Soil Classification:
N/A

ASC Confidence:
Confidence level not specified

Site Disturbance:

Vegetation:

Surface Coarse Fragments:

Profile Morphology

0 - 0.1 m	Dark red (2.5YR3/6-Moist); ; Sandy clay loam; Weak grade of structure, 2-5 mm, Granular; Firm consistency; Few (2 - 10 %), Ferruginous, , Nodules;
0.1 - 0.2 m	Red (2.5YR5/8-Moist); ; Light clay; Weak grade of structure, 2-5 mm, Granular; Firm consistency; Very few (0 - 2 %), Ferruginous, , Nodules;

Mapping Unit:	N/A
Principal Profile Form:	N/A
Great Soil Group:	Lateritic podzolic soil

The CSIRO Soil Archive Sites are indicated by blue dots on the map. These sites represent the soil profile data and soil samples holdings of the CSIRO National Soil Archive. To find out more about the Soil Archive visit - www.clw.csiro.au/aclep/archive

To view CSIRO Soil Archive site descriptions:

1. Turn on the layer with a single tap and drag the CSIRO Archive Site layer slider to on
2. Zoom to an area of interest where a CSIRO archive site is present
3. Tap on the location of interest to see the 'select data source' pop-up
4. Tap the illuminated blue CSIRO Archive Site arrow. If the blue arrow is dull you will need to repeat the process and more accurately tap on the desired CSIRO archive site. Zooming in close to the location of interest will help SoilMapp for iPad's accuracy

APSoil Discovery

The screenshot shows the APSoil Discovery interface. At the top, there are navigation buttons: "Return to Map", "Soil and crop attributes of the selected soil candidate", "Physical and chemical attributes of the selected soil candidate", and "Bookmark APSoil details". The main content area includes a map on the left showing "Selected APSoil candidate" and "Likely soil candidates based on the APSoil information". The central part displays soil data for "Loamy Sand over Silty Clay Loam (Bute No277-YP)" with a table of attributes and a "Volumetric water (mm/mm)" graph. The right side features a "Crop selection tool" with options for wheat, barley, and oats, and a "Tap to view the updated graph and plant available water capacity" button. A "Total: 57.4" value is also shown.

Depth (cm)	BD (g/cc)	Airdry (mm/mm)	LL15 (mm/mm)	DUL (mm/mm)	SAT (mm/mm)	wheat LL (mm/mm)	wheat PAWC (mm)	wheat KL (/day)	wheat XF (0-1)
0 - 20	1.55	0.03	0.06	0.12	0.38	0.06	12.0	0.06	1.0
20 - 40	1.74	0.07	0.09	0.18	0.31	0.09	18.0	0.06	1.0
40 - 60	1.55	0.05	0.05	0.10	0.39	0.05	10.0	0.06	1.0
60 - 80	1.61	0.04	0.04	0.09	0.36	0.04	8.6	0.04	1.0
80 - 100	1.73	0.04	0.04	0.09	0.32	0.04	8.8	0.04	1.0

APSoil (www.apsim.info/wiki/APSoil.ashx) Discovery provides information on a particular soil's Plant Available Water Capacity (PAWC) and on the soil physical and chemical attributes, which may impact on a plant's capacity to extract moisture from the soil.

These data are used by crop and farming systems modellers, and consultants and farmers requiring information on the capacity of a particular soil to hold water for crop use.

All of the data in APSoil Discovery has been collected at individual points in the landscape and should not necessarily be used to infer soil type or PAWC in surrounding areas. Local expert knowledge and the information provided in ASRIS Map Discovery can provide additional information on landscape and the soils likely to be present in the district.

Whilst there is information on over 900 soils from across the broad acre agricultural areas of Australia in APSoil discovery, the numbers in particular districts will vary, with additional soils being included as they become available. Additional information is available by downloading the APSoil database, which is linked to Google Earth (www.apsim.info).

Viewing APSoil Discovery

To view the APSoil map discovery, tap the green arrow on the 'select data' pop-up after navigating to the location you wish to investigate.

The APSoil discovery screen displays:

1. a small map with the selected geographic position indicated by the blue pin
2. the green dots on the map are sites characterised for PAWC within a 30 kilometre radius of the location
3. the soil selected (highlighted) from the list is displayed on the map as a purple dot. This dot changes location as different soils are selected from the list, allowing the user to gain an understanding of the distance of particular sites from the present location
4. soils that have been described in terms of the Australian Soil Classification are listed in bold with textural information provided in the second line. Where Australian Soil Classification information is not available, only textural information is provided
5. data relating to the selected soil are displayed on the screen as two sheets, Water and Analysis

Water sheet

This sheet provides tables and graphs of soil and crop attributes that are relevant for the soil selected.

Information on individual crop types (when available) may be selected using the crop selection tool. The soil information can be saved for future reference by selecting the bookmark from the toolbar.

Columns with blue writing can be edited by tapping on the particular cell. Tapping the 'Update Graph PAWC' button once you've finished editing will update data in both the table and graph. The edited version of the soil may be bookmarked or exported to the APSoil database for use by the Yield Prophet simulator (www.yieldprophet.com.au). Editing does not impact on the integrity of the soils within the main APSoil database.

To ensure that the edited soil is appropriately identified within the APSoil database, it is important that the following file naming structure is used: Yield Prophet Login Name_personal identifier for the particular soil e.g. JoeBloggs_Darribee-Grey Sand (the login name is the critical component, the remainder of the name is at the discretion of the user).

Analysis sheet

This sheet provides information on the soil's physical and chemical characteristics. General comments about the provenance of the data, the methodology used in sampling, or issues related to particular measurements are provided in the 'Comments' section below the table. The editing option is currently not available on this page.