

Rootzone depth potential –

Horticultural crop type **CC** – hardy crops

Most soils have some form of chemical or physical barrier that restricts root growth. Understanding these limitations is particularly important in irrigated soils

Rootzone depth potential of irrigated crops is affected by a range of soil parameters, including soil physical condition, hard rock or hardpan, soluble salts (including boron), alkalinity, acidity and sodicity. Some crops are more sensitive than others to at least some of these factors.

Five horticultural crop type groups are considered:

- CA** [sensitive crops](#) (e.g. citrus, avocado)
- CB** [intermediate sensitivity crops](#) (e.g. stone fruits, almond, pome fruits)
- CC** **hardy crops (e.g. grapes, olives)**
- CD** [root crops](#) (e.g. potatoes, carrots, onions)
- CE** [above ground annual crops](#) (e.g. brassicas)

Land assessment in southern South Australia

Rootzone depth potential is assessed as follows:

- The main soils occurring in each map unit component are defined.
- For each soil, criteria are used to estimate the rootzone depth potential for each crop type. These consider limitations due to poor subsoil structure, basement rock or calcrete, soil salinity, boron, pH, and sodicity.
- Average rootzone depths are then calculated for each component.

Soil properties can vary across the landscape in a subtle or dramatic fashion. [Mapping at a regional scale](#) is not able to display this level of variability, however proportions of each *Rootzone depth potential* class (e.g. DCC1, DCC2, etc.) have been estimated for each map unit.

Further information can be found in [Assessing Agricultural Land](#) (Maschmedt 2002).



Shallow loam on limestone — restrictive for most crops but ideal for grape vines

Area statistics

Average potential rootzone depth – hardy crops	Area	Cleared land	Class*
More than 100 cm	20.29%	18.80%	DCC1
80–100 cm	11.40%	12.95%	DCC2
60–80 cm	23.42%	26.61%	DCC3
50–60 cm	15.61%	17.87%	DCC4
40–50 cm	9.17%	10.30%	DCC5
30–40 cm	5.48%	4.65%	DCC6
20–30 cm	6.01%	3.38%	DCC7
Less than 20 cm	7.13%	3.65%	DCC8
Not applicable	1.50%	1.77%	DCCX
TOTAL HECTARES	15,765,460	10,439,300	

* The letters 'DCC' denotes classes that are specific to *Rootzone depth potential - Horticultural crop type CC*

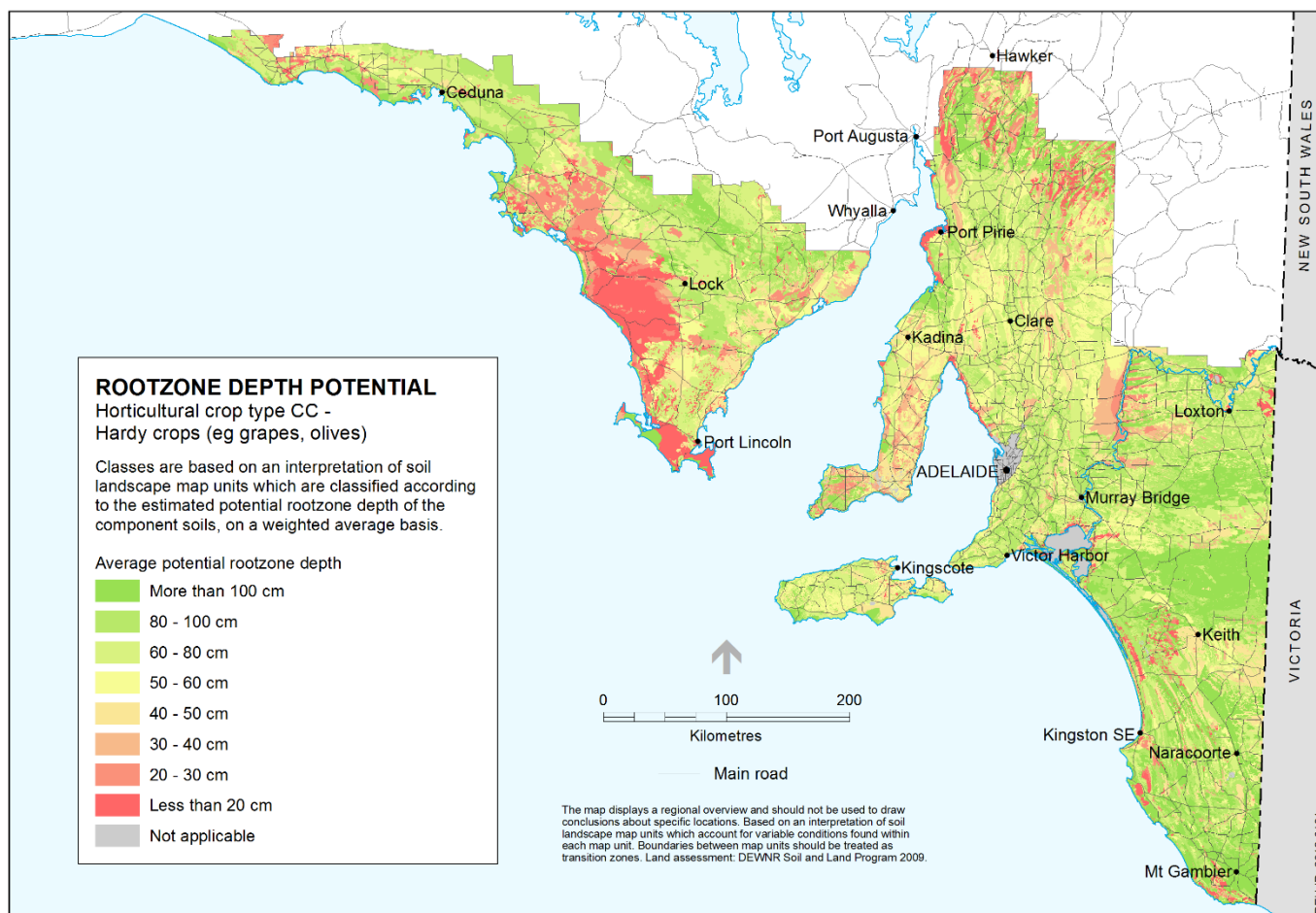


Displaying data in soil maps

Soil and land attribute maps display a simplified version of the underlying data. Mapping classes are based on soil landscape map units, within which rootzone depth potential can vary. Map units are classified according to the estimated potential rootzone depth of the component soils, on a weighted average basis. Variations from the mean can be significant, so legend categories should be considered as indicative only.



Calcrete often overlies sodic and highly calcareous materials, or tight heavy clays, all of which limit potential rootzone depth



Further information

- View data on [NatureMaps](#) (→ Soils)
- Read the [metadata](#) for this layer
- Read more about [soil attribute mapping](#)
- Contact [Mapland](#)

Download from Enviro Data SA:

- [Statewide map](#) and [spatial dataset](#)
- [Assessing Agricultural Lands](#) (Maschmedt 2002)
- Soils of Southern SA book [Part 1](#) and [Part 2](#)



This work is licensed under the Creative Commons Attribution 4.0 International License.

To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>

© Crown in right of the State of South Australia, through the Department of Environment, Water and Natural Resources 2016. Last updated June 2016.

