Deep drainage potential

Low permeability clay layers impede deep drainage and limit potential irrigated land uses

Deep drainage potential refers to the capacity of the deep subsoil and the material immediately below the soil profile to allow excess water to move downwards into deep sediments or fractured rock. Poorly structured or heavy clays are the most common impediment to deep drainage, for example the Blanchetown Clay of the Murray Basin and the equivalent Hindmarsh Clay occurring west of the Mt Lofty Ranges. Adequate deep drainage is a critical requirement for irrigated land, to prevent the development of saline watertables in or below the soil.

Land assessment in southern South Australia

The assessment of *Deep drainage potential* is based on the depth to an impeding layer, i.e. the depth to a poorly structured or heavy clay layer (e.g. Blanchetown Clay or equivalent) below the ground surface. Such layers often underlie a carbonate layer, where there is an obvious colour change from off-white to red. The depth at which the characteristic poorly structured or heavy clay first appears is taken as the depth to the impeding layer. Unfractured rock and hardpan also impede deep drainage.

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 *Deep drainage potential* class (e.g. B1, B2, etc.) have been estimated for each map unit.

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

Poorly structured subsoil clay impedes deep drainage

Area statistics

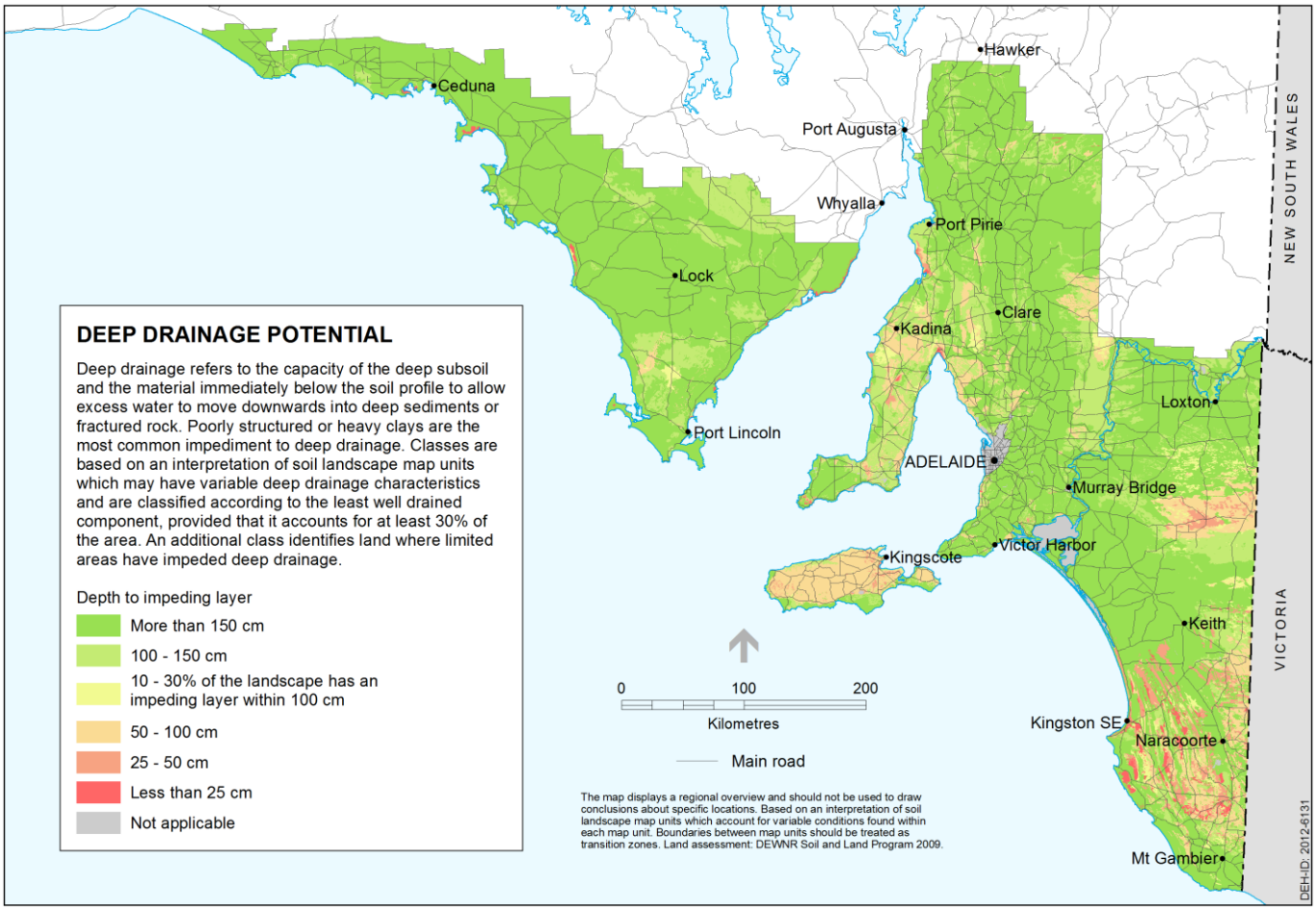
Depth to impeding layer	Area	Cleared land	Class*
More than 150 cm	74.79%	71.97%	B1
100–150 cm	14.39%	15.27%	B2
50–100 cm	6.79%	7.89%	B3
25–50 cm	1.95%	2.50%	B4
0–25 cm	0.64%	0.65%	B5
Not applicable	1.44%	1.72%	BX
TOTAL HECTARES	15,765,460	10,439,300	

* The letter 'B' denotes classes that are specific to *Deep drainage potential*

Displaying data in soil maps

Land and soil attribute maps display a simplified version of the underlying data. This is because, at the scale of mapping, a number of landscape elements and a range of *Deep drainage potential* classes may occur in each map unit. Map units are classified to show landscapes where deep drainage is a problem, provided that it accounts for at least 30% of the area. An additional legend category identifies land where limited areas have impeded deep drainage.

Deep sand with unrestricted deep drainage



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