

# Depth to hard rock

**Rock substrate can limit plant growth although tilted layers will provide better plant root access than horizontal on non-layered rocks**

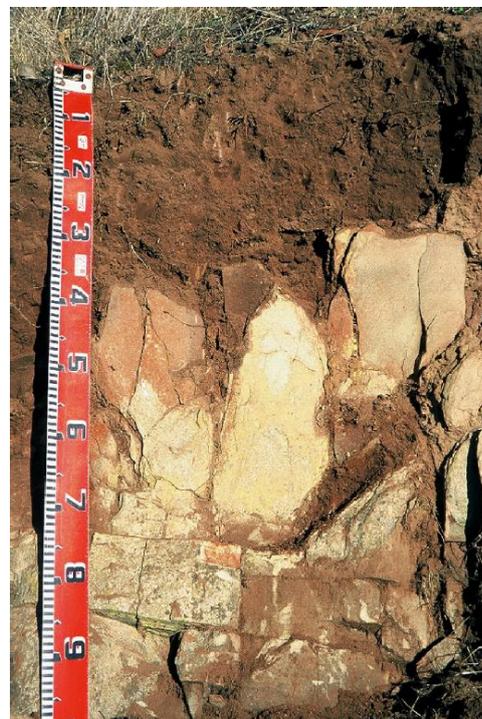
**Depth to hard rock** assessments provide an indication of landscapes where hard rock at shallow depth limits plant growth (reducing effective rootzone) or agricultural and other engineering uses of land. Hard rock is defined as material that is too hard to dig with hand tools. It is variously called basement rock, country rock or bedrock and is many millions of years old. Hard rock generally occurs at or near the surface in the hilly country of the Mount Lofty Ranges, Northern Agricultural Districts, Eastern and Lower Eyre Peninsula, Central Yorke Peninsula and Kangaroo Island.

## Land assessment in southern South Australia

*Depth to hard rock* is defined by the depth at which a crowbar can no longer be used to remove rock material. Depth to hard material is routinely measured during field survey where it occurs within a metre or so of the surface. Hard rock is distinguished from hardpan because it tends to become harder with depth, in contrast to hardpans which are generally hardest at the top, and become softer with depth.

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 *Depth to hard rock* class (e.g. XR1, XR2, etc.) have been estimated for each map unit.

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



Soil formed on basement rock

## Area statistics

Average depth to hard rock	Area	Cleared land	Class*
More than 150 cm	84.85%	87.29%	XR1
100–150 cm	6.20%	6.90%	XR2
50–100 cm	3.33%	2.71%	XR3
25–50 cm	1.31%	0.63%	XR4
10–25 cm	1.24%	0.42%	XR5
Less than 10 cm	1.66%	0.36%	XR6
Not applicable	1.41%	1.68%	XRX
TOTAL HECTARES	15,765,460	10,439,300	

\* The letters 'XR' denotes classes that are specific to *Depth to hard rock*

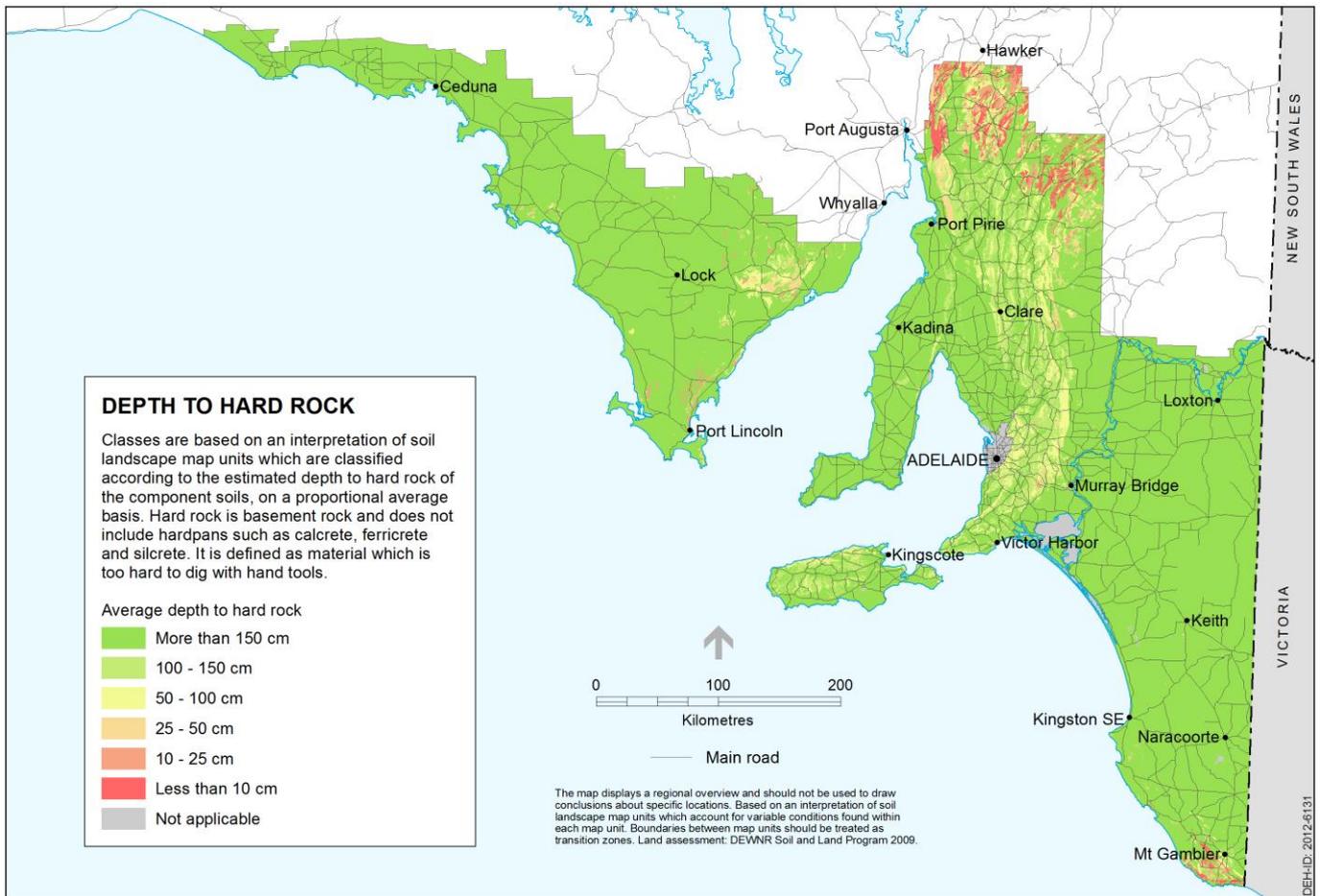


### Displaying data in soil maps

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 *Depth to hard rock* classes may be captured in each map unit. In this case, map units display a weighted average estimate of *Depth to hard rock*, based on the area proportions of different soils.



Rocky outcrops are a good indicator of shallow depth to hard rock in adjacent landscapes



### 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](#)



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