Depth to hardpan

Hardpans such as calcrete represent a common subsoil constraint across a significant area of southern South Australia

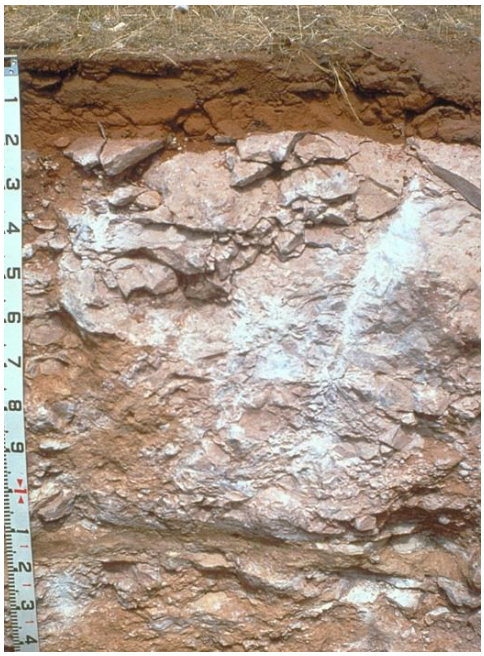
Depth to hardpan assessments provide an indication of landscape areas where the hardness of subsoil material effectively limits plant growth and some land uses. Hardpan is material that is too hard to dig with hand tools, and at shallow depth influences the effective rootzone of plants and impacts on engineering uses of land. Hardpans (including calcrete, ferricrete and silcrete) are generally relatively young materials, cemented or indurated in or below the soil, that are developed through natural soil forming processes. Calcrete is by far the most common in South Australia, being widespread on Eyre and Yorke Peninsulas, Murraylands, the South East and Gulf Plains.

Land assessment in southern South Australia

Depth to hardpan is defined by the depth at which a crowbar can no longer be used to remove hard soil materials. Depth to hard material is routinely measured during field survey where it occurs within a metre or so of the surface. Hard rock (bedrock or country rock) is distinguished from hardpan as 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 hardpan* class (e.g. XP1, XP2, etc.) have been estimated for each map unit.

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



Shallow calcrete pans limit the potential rootzone and constrain the growth of native and agricultural plants

Area statistics

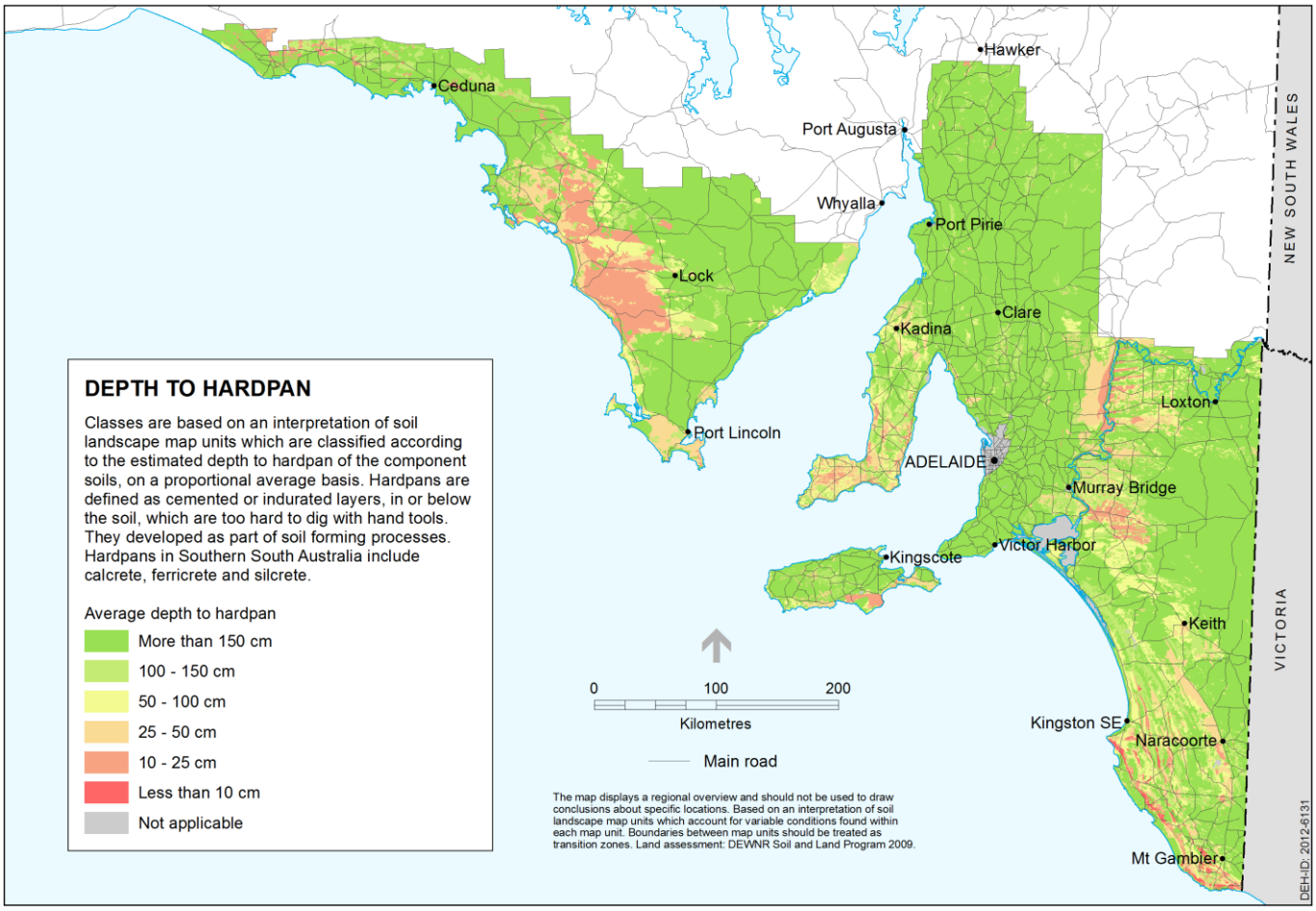
Average depth to hardpan	Area	Cleared land	Class*
More than 150 cm	73.10%	74.02%	XP1
100–150 cm	2.66%	2.93%	XP2
50–100 cm	4.99%	6.10%	XP3
25–50 cm	8.83%	8.99%	XP4
10–25 cm	7.92%	5.19%	XP5
Less than 10 cm	1.10%	1.07%	XP6
Not applicable	1.41%	1.69%	XPX
TOTAL HECTARES	15,765,460	10,439,300	

* The letters 'XP' denotes classes that are specific to *Depth to hardpan*

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

Ferricrete hardpans occur in iron-rich soils that have undergone prolonged chemical weathering under ancient climates



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