

# Structure of subsoil (degree of limitation)

**Poor subsoil structure restricts water and air movement, and root growth, and therefore reduces land capability for a range of potential uses**

**Structure of subsoil** refers to the degree of resistance offered by the subsoil to root penetration and to the free movement of air and water. Poor subsoil structure is commonly attributable to sodic or dispersive clay, although in soils where there is an abrupt break between the topsoil and subsoil, non-dispersive materials can have similar negative effects. Poorly structured subsoils at shallow depth present a greater limitation than those which are deeper in the profile.

## Land assessment in southern South Australia

The assessment of subsoil structure integrates the type of structural issue (primarily dispersive clays and high strength or low permeability clay layers) as well as depth. Poorly structured but non-dispersive subsoils have coarse blocky or prismatic aggregates, or are massive and hard. Columnar structures are typical in dispersive clay subsoils.

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 *Structure of subsoil (degree of limitation)* class (e.g. P1, P2, etc.) have been estimated for each map unit.

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



*Sandy loam over poorly structured heavy clay subsoil*

## Area statistics

Degree of limitation	Typical depth to dispersive clay	Typical depth to poorly structured non-dispersive clay #	Area	Cleared land	Class*
Low	More than 60 cm	More than 30 cm	70.27%	64.92%	P1
Moderately low	30–60 cm	20–30 cm	19.11%	21.65%	P2
Moderate	20–30 cm	10–20 cm	8.48%	10.78%	P3
High	10–20 cm	Less than 10 cm	0.64%	0.85%	P4
Very high	Less than 10 cm	-	0.05%	0.06%	P5
Not applicable			1.46%	1.74%	PX
TOTAL HECTARES			15,765,460	10,439,300	

# Poorly structured but non-dispersive subsoils have coarse blocky or prismatic aggregates, or are massive and hard

\* The letter 'P' denotes classes that are specific to *Subsoil structure (degree of limitation)*

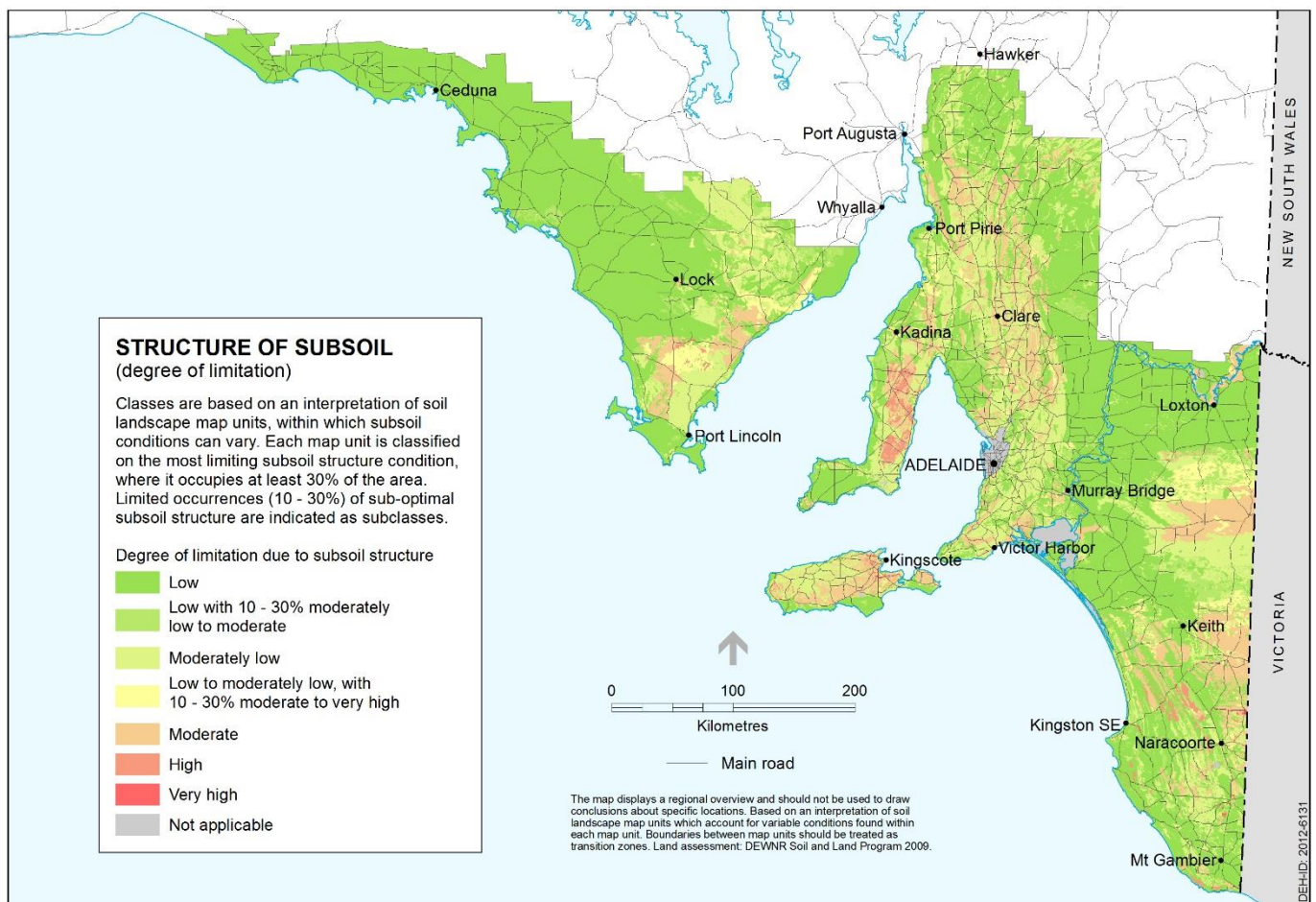


### Displaying data in soil maps

Soil and land attribute maps display a simplified version of the underlying data. Mapping classes are based on soil landscape map units, within which subsoil conditions can vary. Map units are classified into legend categories according to the most limiting subsoil structure condition, provided that it accounts for at least 30% of the area. Two additional legend categories identify land with limited occurrences (i.e. 10–30%) of subsoil structure limitation.



Dispersed clay particles (indicated by cloudy water) clog soil pores thereby impeding root growth, water movement and aeration



### 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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