

Salinity – non-watertable

Maintaining groundcover on dry saline land can minimise capillary rise of moisture and salt to help alleviate salinity impacts in the rootzone



Low productivity on dry saline land

Non-watertable salinity (also known as dry saline land) is land where soils contain elevated levels of soluble salts which are not associated with a watertable. The salts have presumably accumulated in the soil either from wind-blown deposition (of marine aerosols) and subsequent leaching, or via ancient saline groundwater influences that are no longer manifest at the land surface. Salts generally occur as subsoil 'bulges', which reflect either the extent of leaching (i.e. salt cannot be leached any further than the depth of the seasonal wetting front), or an impermeable deep subsoil layer which prevents flushing of the salts into substrate materials. Land areas where high salt concentrations extend to the soil surface and visibly affect plant growth are commonly called magnesia ground or [magnesia patches](#). Most soils of lower rainfall districts have elevated salt levels in their subsoils, but magnesia ground mostly occurs on Eyre Peninsula.

Land assessment in southern South Australia

Soils are assessed for dry saline land using soil test results and extrapolation over similar soils and subsoil materials. Total soluble salt content is estimated from the electrical conductivity (EC) of the soil solution. A rapid method involves shaking a 1:5 soil:water mixture and using a conductivity meter to obtain an EC (1:5) reading. However, when the EC (1:5) results are higher than 0.15 dS/m[#] (sands), 0.2 dS/m (loams) or 0.3 dS/m (clays), the saturation extract method should be used.

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 *Salinity – non-watertable* class (e.g. V1, V2, etc.) have been estimated for each map unit.

For further information refer to [Assessing Agricultural Land](#) (Maschmedt 2002).

Area statistics

Non-watertable salinity	Indicative ECe (dS/m) [#]		Area	Cleared land	Class*
	Surface	Subsoil			
Low	Less than 2	Less than 4	47.60%	48.71%	V1
Moderately low	2–4	4–8	36.38%	35.71%	V2
Moderate	4–8	8–16	13.64%	13.33%	V3
Moderately high	8–16	More than 16	0.84%	0.44%	V4
High	Any (> 50% bare ground). This class is equivalent to 'magnesia ground'		0.14%	0.13%	V7
Not applicable			1.40%	1.68%	VX
TOTAL HECTARES			15,765,460	10,439,300	

[#] ECe is electrical conductivity of a saturation paste of water and soil. Values are based on estimates from EC (1:5) measurements

* The letter 'V' denotes classes that are specific to *Salinity – non-watertable*

Dry saline land classes are based on the most saline part of the soil (usually the lower subsoil)

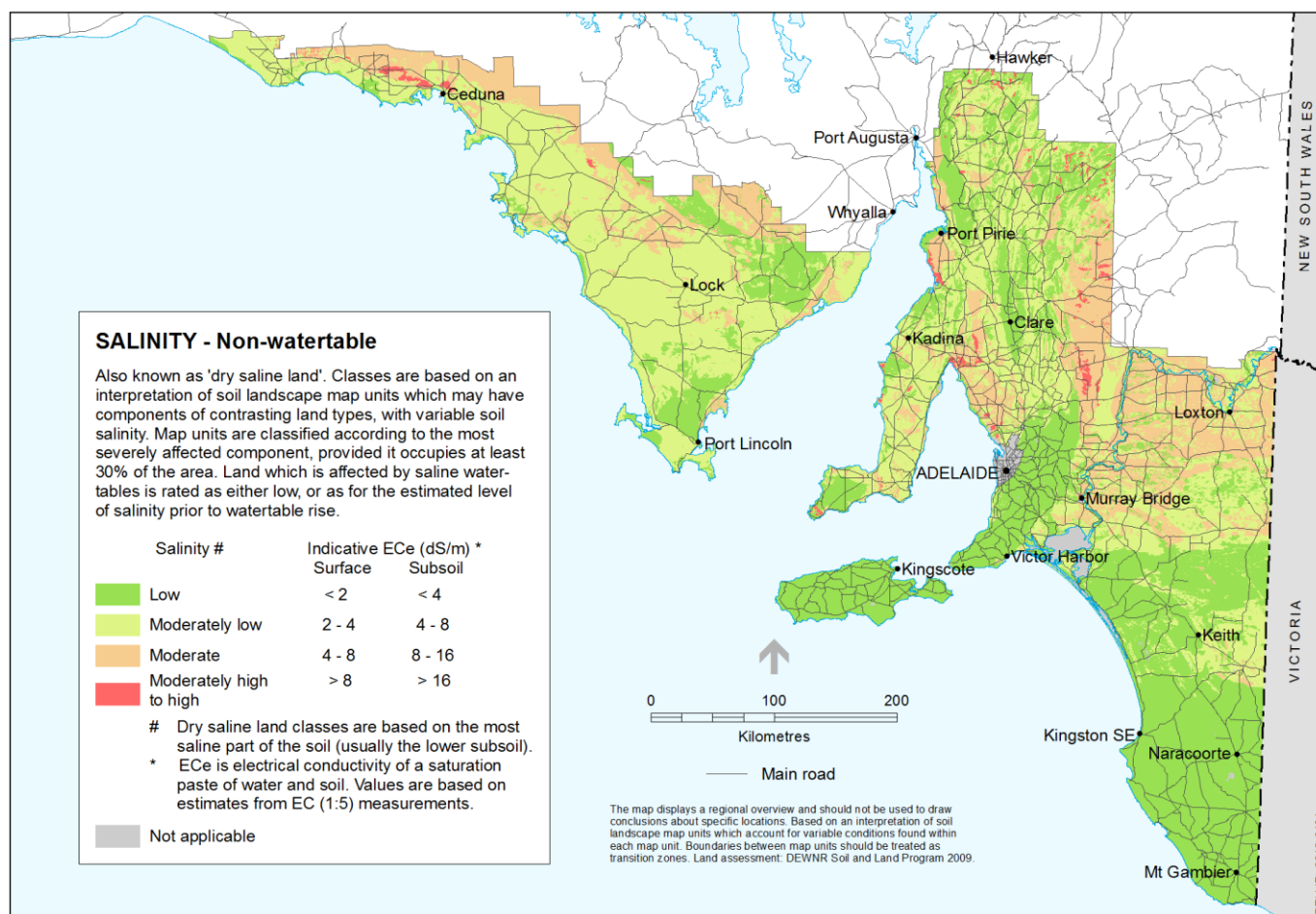


Displaying data in soil maps

Soil and land attribute maps display a simplified version of the underlying data. Mapping classes are based on soil landscape map units, which may have variable soil salinity concentrations across different landscape elements. Map units are categorised according to the most severely affected proportion, provided it occupies at least 30% of the area of the map unit. Land which is affected by saline watertables is rated as either low, or given an estimated level of salinity assumed to exist prior to the watertable rise.



Low productivity land due to non-watertable salinity



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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