

# Acidity

**Soil acidification needs to be managed to maintain the productive potential of our agricultural lands**

**Acidity** affects plant growth by impacting on nutrient availability and leaching, soil biology species diversity, and the release of toxic aluminium (when soils become strongly acidic). Soil pH is acidic when there is an excess of positively charged hydrogen ions in the soil solution. Soil acidification is caused by both natural and agricultural processes. Surface soil acidification can be readily controlled by the careful application of lime.

## Land assessment in southern South Australia

Land has been classed according to available pH measurements and extrapolation between similar environments. Trends from surface and subsoil are considered, as well as buffering capacity (i.e. capacity to resist acidification). All land which is inherently susceptible to acidification is classified accordingly, regardless of land use or management.

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 *Acidity* class (e.g. H1\_1, H1\_2, etc.; see table below) have been estimated for each map unit.

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



*Sorell infestation on acid soil*

## Area statistics

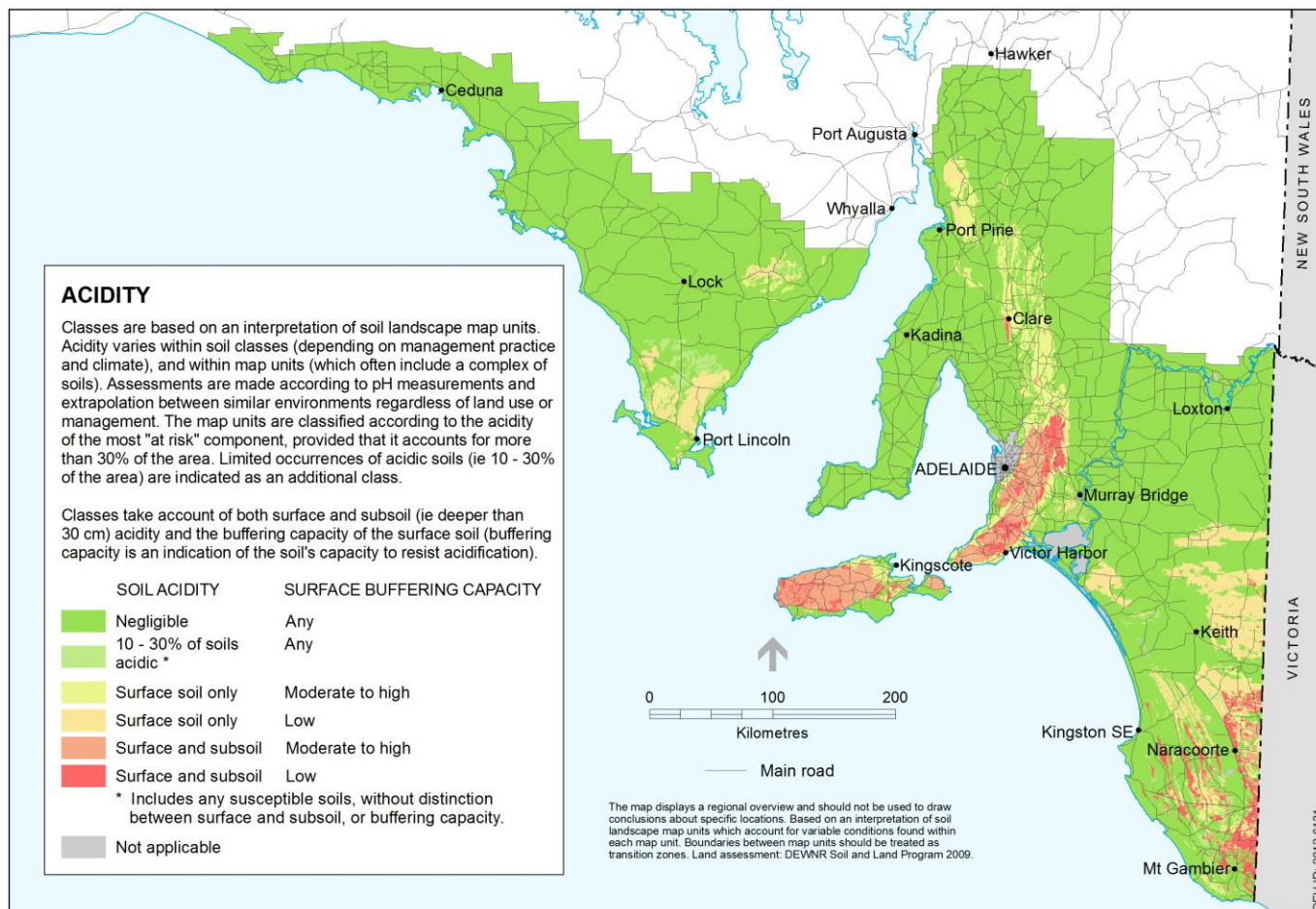
pH of topsoil <sup>#</sup> (0–10 cm)	Surface buffering capacity	pH of subsoil <sup>#</sup> (30–80 cm)	Area	Cleared land	Class *
Neutral or alkaline	–	Alkaline	73.68%	70.96%	H1_1
		Neutral	9.5%	9.49%	H1_2
		Acidic	0.19%	0.27%	H1_3
Acidic	Moderate to high	Alkaline	1.35%	1.86%	H2_1
		Neutral	3.12%	4.06%	H2_2
		Acidic	1.67%	1.99%	H2_3
	Low	Strongly acidic	0.02%	0.02%	H2_4
		Alkaline	0.63%	0.87%	H3_1
		Neutral	5.02%	5.21%	H3_2
		Acidic	1.72%	2.12%	H3_3
Strongly acidic	Moderate to high	Strongly acidic	0.09%	0.12%	H3_4
		Neutral	0.01%	0.02%	H4_2
		Acidic	0.34%	0.39%	H4_3
	Low	Strongly acidic	0.71%	0.43%	H4_4
		Acidic	0.07%	0.06%	H5_3
Strongly acidic		0.47%	0.45%	H5_4	
Not applicable			1.42%	1.7%	HX
TOTAL HECTARES			15,765,460	10,439,300	

\* The letter 'H' denotes classes that are specific to *Acidity*. <sup>#</sup> pH categories are defined overleaf.



### Displaying data in soil maps

Soil landscape map units are categorised into legend categories according to the most acidic component, provided that it accounts for more than 30% of the area of the map unit. Limited occurrences of acidic soils (i.e. 10–30% of the area of the map unit) are indicated as an additional category. Legend categories account for *Acidity* in the surface and subsoil, and surface buffering capacity.



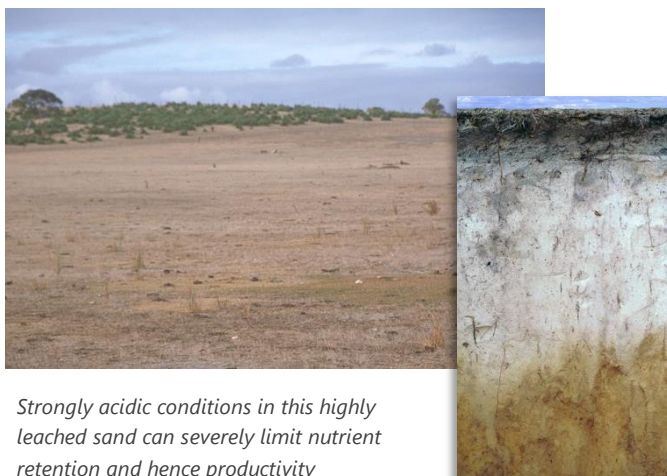
# pH categories	pH <sub>water</sub>	pH <sub>CaCl2</sub>
Strongly acidic	<5.5	<4.5
Acidic	5.5–6.4	4.5–5.4
Neutral	6.5–7.9	5.5–6.9
Alkaline	>8.0	>7.0

### Further information

- View data on [NatureMaps](#) (→ Soils)
- Read the [metadata](#) for this layer
- Read more about [soil attribute mapping](#)
- Contact [Mapland](#)
- Victoria Resources Online [animation](#)
- [Understanding soil acidity](#) fact sheet (Agricultural Bureau of South Australia)

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](#)



*Strongly acidic conditions in this highly leached sand can severely limit nutrient retention and hence productivity*



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