

KU7: Bleached-Mottled, Magnesian-Natric, Grey Kurosol

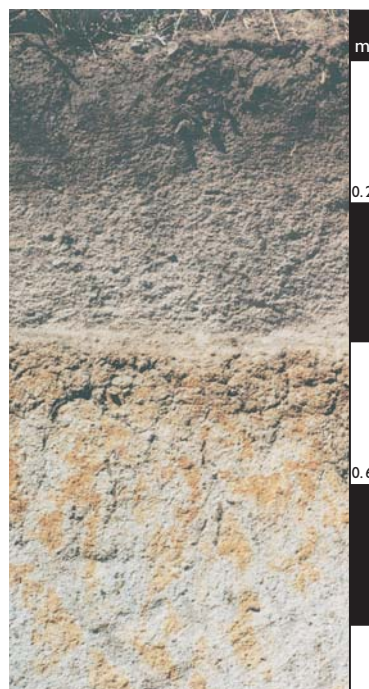
General description of the soil

A strongly acid, texture-contrast soil with a mottled grey clay B2 horizon which is sodic and has a very low Ca/Mg ratio. The A2 horizon is conspicuously bleached.

Distribution:	Widespread but only limited areas in the subhumid, subcoastal areas of eastern, southern and south-western Australia.
Typical land use:	Grazing of native pastures after clearing.
Common variants:	Variable thickness of A horizons is a feature.
World Reference Base:	Abruptic Lixisol.
Other names:	These soils have been called Soloths.

Environment and location of the example profile

Landform:	Gently undulating plains and rises.
Parent material or substrate:	Granite.
Drainage class:	Poorly drained.
Surface condition:	Hardsetting.
Site disturbance:	Cultivation.
Native vegetation:	Open eucalypt forest.

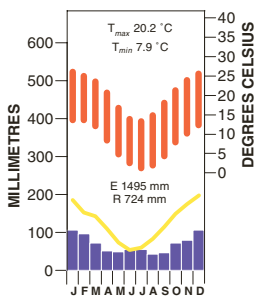


Stanthorpe district, south Queensland

Site location



Site climate



Soil morphology

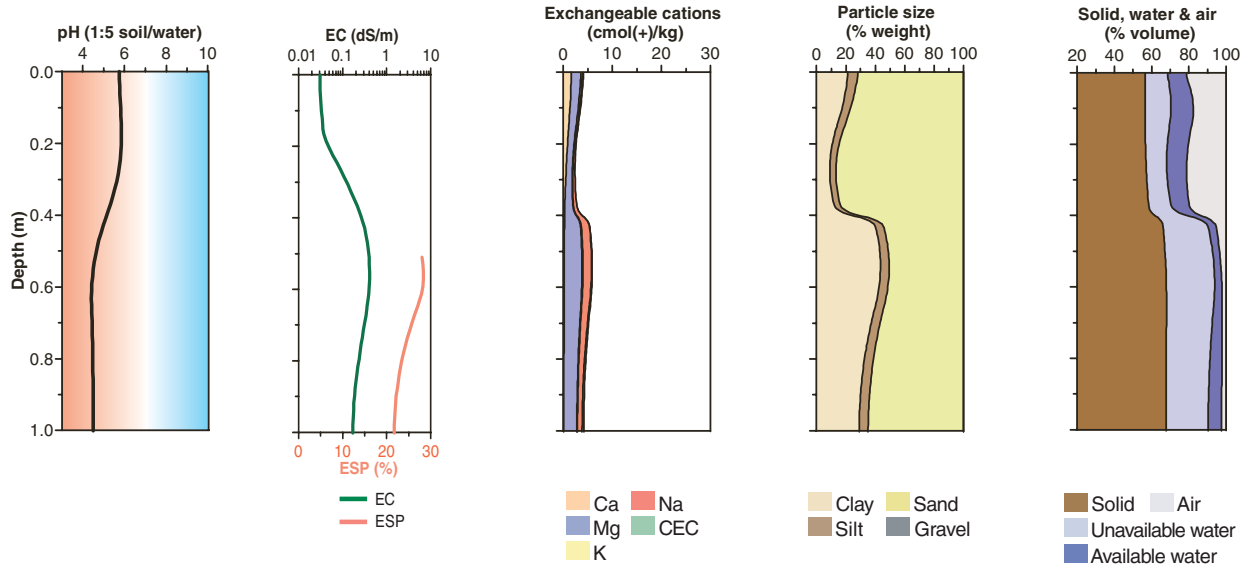
Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A1	0.00–0.15	dark brown (7.5YR 3/2)	–	coarse sandy clay loam	moderate	granular	–	–	–	gradual	
A2e	0.15–0.40	pale yellow (2.5Y 7/4 d) light yellowish brown (2.5YR 6/3)	–	coarse sandy loam	moderate	granular	2–5 mm	–	–	abrupt	
B21	0.40–0.65	grey (7.5YR 6/1)	20–50% orange prominent (>30 mm)	coarse sandy light medium clay	moderate	angular blocky	20–50 mm	–	–	gradual	
B22	0.65–1.00	grey (7.5YR 6/1)	20–50% orange prominent (>30 mm)	coarse sandy light clay	massive	–	–	–	–	–	

Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H ₂ O ^A	pH CaCl ₂	Elect. Cond. dS/m ^A	CaCO ₃ %	Org. C % ^{C*}	Extr. P mg/kg ^{B*}	Tot. P % ^A	Tot. K % ^A	Cation exchange properties ^C cmol(±)/kg						ESP % ^A	Bulk dens. Mg/m ³	Particle size %				
										Ca	Mg	K	Na	H+Al	CEC			ECEC	CS	FS	Silt	Clay
A1	0.00–0.10	5.8		0.03		2.1	11	0.019	3.42	1.7	1.8	0.3	0.1		4		–		50	23	6	19
A2e	0.20–0.30	6.0		0.03				0.007	3.67	0.3	0.7	0.1	0.2		1		–		75	19	4	6
B21	0.50–0.60	4.3		0.52				0.010	2.16	0.2	4.3	0.2	2.2		7		31		36	12	6	47
B22	0.80–0.90	4.5		0.18				0.007	2.91	0.1	2.6	0.1	0.9		4		22		43	19	6	30

* Bulk sample

Key profile properties



General qualities of the soil

Infiltration:	Rapid unless degraded through excessive cultivation and compaction.
Available water store:	Low but dependent on A horizon thickness.
Permeability:	Low in the dense subsoil.
Physical root limitations:	The bleached A2 horizon is seasonally saturated and the dense clay subsoil may inhibit root penetration.
Erosion hazard:	Subsoils are strongly sodic and erodible when exposed.
Nutrient availability:	Medium to low fertility.
Toxicities:	Medium salinity at 0.50 to 0.60 m depth.



Strongly acid Grey Kurosols occur in these undulating granitic landscapes north of Stanthorpe, Queensland.

Acknowledgements: Soil image, soil description and laboratory data: Department of Natural Resources and Mines, Queensland. Cottonvale soil, Site 17. Landscape image: Alan Fox.