

CH12: Bleached-Mottled, Mesotrophic, Grey Chromosol

General description of the soil

A non-sodic texture-contrast soil with a mottled, grey sandy clay B2 horizon which has a moderate base status (i.e. Mesotrophic) in its major part. A conspicuously bleached A2e horizon is present.

Distribution:	Presently identified from subhumid south-east Queensland, but likely to occur on deeply weathered acidic rocks elsewhere in eastern and south-western Australia.
Typical land use:	Beef cattle grazing of native pastures.
Common variants:	A horizon thickness and degree of bleaching, and B2 horizon texture and degree of mottling are likely to vary both locally and regionally.
World Reference Base:	Abruptic Lixisol.
Other names:	May have been called Gleyed Podzolic Soils.

Environment and location of the example profile

Landform:	Undulating rise.
Parent material or substrate:	Strongly weathered granite.
Drainage class:	Moderately well-drained.
Surface condition:	Firm.
Site disturbance:	Sparse grazing of native pastures.
Native vegetation:	<i>Eucalyptus crebra</i> , <i>Eucalyptus tereticornis</i> and <i>Corymbia tessellaris</i> open woodland.

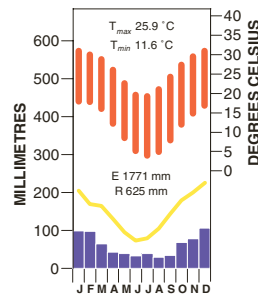


Kingaroy district, south Queensland

Site location



Site climate



Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A11	0.00–0.05	very dark grey (10YR 3/1)	–	loamy coarse sand	weak	subangular blocky	5–10 mm		–	–	gradual
A12	0.05–0.35	greyish brown (10YR 5/2)	–	loamy coarse sand	massive	–	–		–	–	clear
A2e	0.35–0.60	light grey (10YR 7/2 d) light brownish grey (10YR 6/2)	–	loamy coarse sand	massive	–	–		–	<2% manganiferous nodules (2–6 mm)	abrupt
B2	0.60–1.00	very pale brown (10YR 7/3)	20–50% orange prominent (15–30 mm)	coarse sandy light clay	massive	–	–		–	<2% manganiferous nodules (6–20 mm)	clear
B3	1.00–1.30	white (5Y 8/1)	20–50% red prominent (>30 mm) and <2% orange prominent (>30 mm)	coarse sandy light medium clay	massive	–	–		–	–	gradual
C	1.30–1.50	white (5YR 8/1)	<2% orange prominent (>30 mm)	medium heavy clay	massive	–	–		–	–	

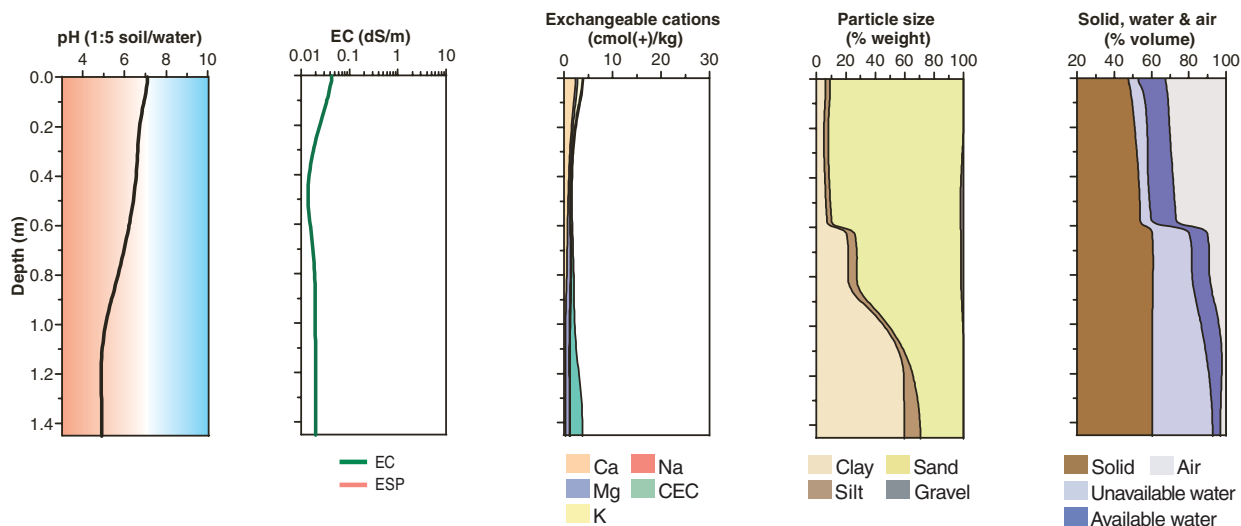
Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H ₂ O ^A	pH CaCl ₂ ^C	Elect. Cond. dS/m ^A	CaCO ₃ %	Org. C % ^{G+}	Extr. P mg/kg ^{A+}	Tot. P % ^A	Tot. K % ^A	Cation exchange properties ^A cmol(+)/kg						ESP %	Bulk dens. Mg/m ³	Particle size % ^I			
										Ca	Mg	K	Na	H+Al	CEC			ECEC	CS	FS	Silt
A11	0.00–0.10	7.1	5.1	0.04		1.0	7	0.022	0.113	2.3	0.4	1.0	<0.1					72	17	3	6
A12	0.20–0.30	6.6	5.2	0.02				0.120	0.050	1.3	0.3	0.1	<0.1					72	20	3	5

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										Ca	Mg	K	Na	H+Al	CEC			ECEC	CS	FS	Silt
A2e	0.50–0.60	6.6	5.3	0.01				0.100	0.034	0.8	0.3	<0.1	<0.1					71	20	3	6
B2	0.80–0.90	5.9	4.8	0.02				0.013	0.061	0.6	0.8	0.2	<0.1					55	17	6	22
B3	1.10–1.20	4.8	4.0	0.02				0.016	0.044	0.1	0.8	0.1	0.1					38	6	3	52
C	1.35–1.45	4.9	3.9	0.02				0.019	0.095	0.3	0.8	0.1	0.1					21	9	10	59

* Bulk sample

Key profile properties



General qualities of the soil

Infiltration:	Rapid.
Available water store:	Moderate.
Permeability:	Moderate to high in upper profile but decreasing to moderate at depth.
Physical root limitations:	Irregular short term saturation likely in A2e but pale colours may be due to wetter conditions in the past.
Erosion hazard:	Possible wind erosion problem if cleared and cultivated.
Nutrient availability:	Very low.
Toxicities:	Unlikely to be a problem except at depth due to acidity.



Isolated trees and open woodland, south-east Queensland

Acknowledgements: Soil image, soil description and laboratory data: Department of Natural Resources and Mines, Queensland. Project SPFD, Site 73. Landscape image: Australian National Botanic Gardens.