

CH5: Bleached, Calcic, Red Chromosol

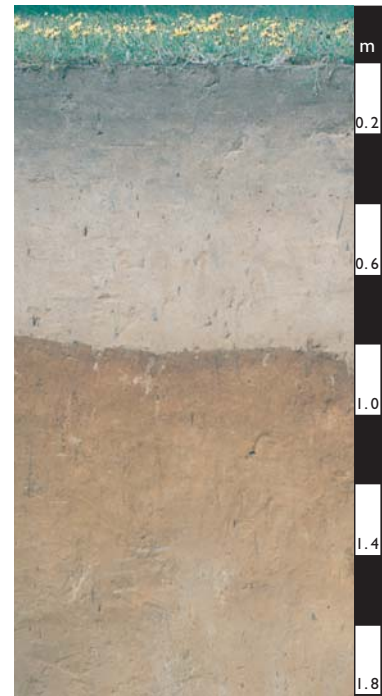
General description of the soil

A non-sodic, texture-contrast soil with a red clayey B2 horizon and a calcareous horizon in the deep subsoil. A conspicuously bleached A2 horizon is also a feature.

Distribution:	A common soil in southern and south-eastern Australia.
Typical land use:	Cereal cropping and improved pastures.
Common variants:	A1 and A2e horizons vary in thickness and texture. Amount and nature of carbonate is variable.
World Reference Base:	Arenic Luvisol.
Other names:	Red-Brown Earths and Red Duplex Soils.

Environment and location of the example profile

Landform:	Dunefield.
Parent material or substrate:	Sediments.
Drainage class:	Rapidly drained.
Surface condition:	Soft, water-repellent.
Site disturbance:	Cultivation.
Native vegetation:	Mallee.

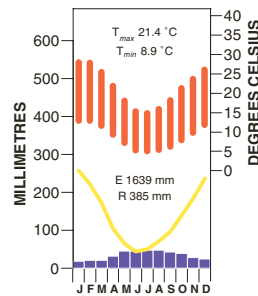


South-east of Murray Bridge, South Australia

Site location



Site climate



Soil morphology

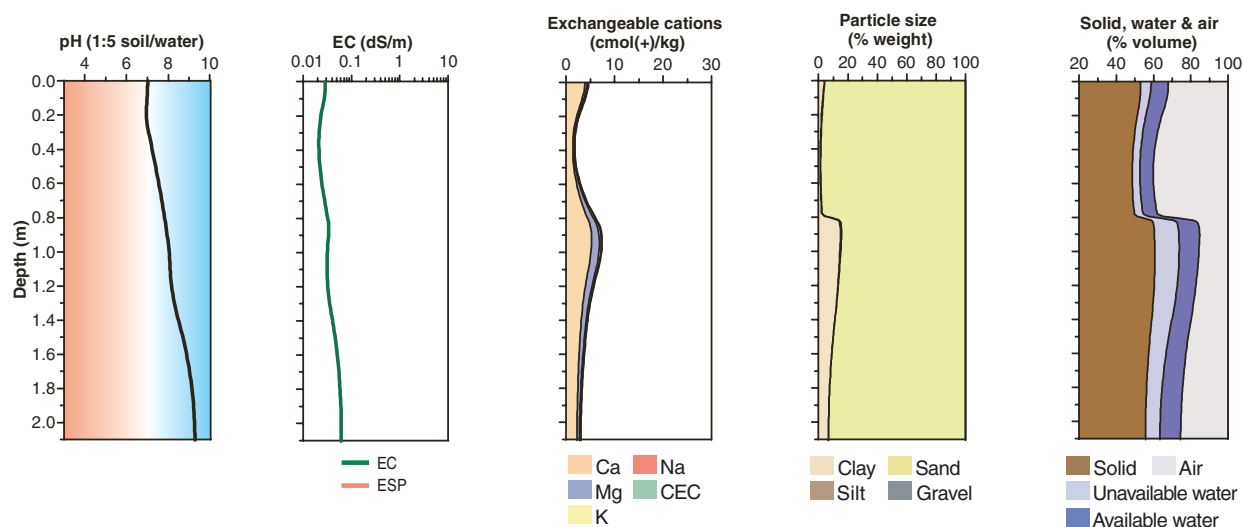
Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A1p	0.00–0.15	very dark grey (10YR 3/1)	–	loamy sand	single grain	–	–	very weak (dry)	–	–	clear
A21	0.15–0.30	brown (10YR 5/3)	–	sand	single grain	–	–	very weak (dry)	–	–	diffuse
A22e	0.30–0.80	light yellowish brown (10YR 6/4 d)	–	sand	single grain	–	–	very weak (dry)	–	–	sharp
B21t	0.80–0.90	yellowish red (5YR 4/6)	–	sandy clay loam	weak	columnar	100–200 mm	very firm (wet)	–	–	gradual
B22t	0.90–1.10	yellowish red (5YR 5/6)	–	light sandy clay loam	massive	–	–	weak (wet)	–	–	diffuse
B3t	1.10–1.40	yellowish brown (10YR 5/6)	–	light sandy loam	massive	–	–	weak (wet)	–	–	diffuse
BcK	1.40–2.10	very pale brown (10YR 7/4)	–	sandy loam	massive	–	–	weak (wet)	–	20–50% soft carbonate highly calcareous*	

* Fine earth fraction

Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H ₂ O ^A	pH CaCl ₂ ^B	Elect. Cond. dS/m ^A	CaCO ₃ % ^B	Org. C % ^D	Extr. P mg/kg ^A	Tot. P %	Tot. K %	Cation exchange properties ^C						ESP %	Bulk dens. Mg/m ³	Particle size % ^A			
										Ca	Mg	K	Na	H+Al	CEC			ECEC	CS	FS	Silt
A1p	0.00–0.15	7.0	6.6	0.03	<1	0.7	18			3.8 ^D	0.4 ^D	0.3 ^D	0.1 ^D		3 ^D		–	74	23	<1	3
A21	0.15–0.30	6.8	6.4	0.02	<1	0.2	9			1.2 ^D	0.2 ^D	0.1 ^D	0.1 ^D		2 ^D		–				
A22e	0.30–0.80	7.5	7.2	0.02	<1	<0.1	4			0.8	0.1	0.1	0.1		1		–	80	18	<1	1
B21t	0.80–0.90	7.9	7.2	0.04	<1	0.1	6			6.1	1.7	0.4	0.2		8		–	59	25	1	15
B22t	0.90–1.10	8.1	7.4	0.03	1	<0.1	<2			5.6	1.9	0.4	0.2		8		–	66	21	<1	14
B3t	1.10–1.40	8.1	7.4	0.03	<1	<0.1	<2			3.3	1.2	0.2	0.1		4		–				
BcK	1.40–2.10	9.2	8.0	0.06	5	<0.1	<2			2.3	0.6	0.1	0.2		2		–				

Key profile properties



General qualities of the soil

Infiltration:	Rapid, but water-repellence may reduce local infiltration.
Available water store:	Small to moderate due to sandy texture. Deeper variants will have a moderate store.
Permeability:	Highly permeable.
Physical root limitations:	None apparent.
Erosion hazard:	Wind erosion hazard is high when exposed by cultivation or overgrazing. Water-repellent in the surface horizons.
Nutrient availability:	Fertility may be low due to erosion. Organic matter is low and leaching occurs. Regular phosphorus fertiliser is essential. Nitrogen levels will depend on crop and pasture rotation; copper and zinc are marginal.
Toxicities:	None apparent.



Soil occurs on the flats of dunefields in the Murray Mallee, South Australia

Acknowledgements: Soil image, soil description and laboratory data: Department of Water, Land and Biodiversity Conservation, South Australia. Site MM074 from McCord (1995). Landscape image: Bill van Aken, CSIRO.