

## CH9: Bleached-Mottled, Eutrophic, Brown Chromosol

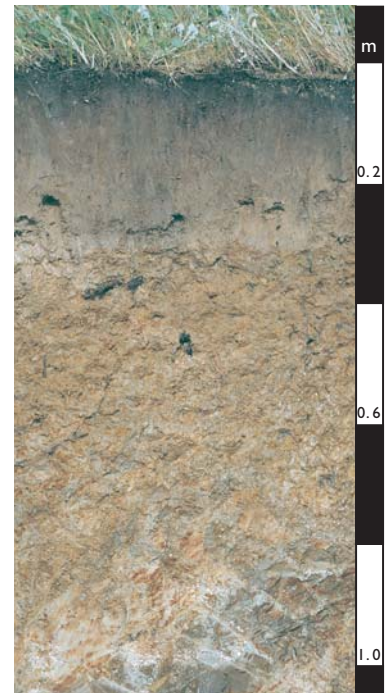
### General description of the soil

A non-sodic, texture-contrast soil with a mottled brown and red heavy clay B2 horizon of high base status (i.e. Eutrophic). A bleached A2e horizon is also present.

<b>Distribution:</b>	A common soil in the wetter, hilly regions of South Australia.
<b>Typical land use:</b>	Grazing of improved perennial pastures.
<b>Common variants:</b>	Similar soils with lesser red mottling are also common.
<b>World Reference Base:</b>	Abruptic Luvisol.
<b>Other names:</b>	Brown Podzolic Soils and Brown Duplex Soils.

### Environment and location of the example profile

<b>Landform:</b>	Slopes of undulating low hills.
<b>Parent material or substrate:</b>	Metasandstone or schist.
<b>Drainage class:</b>	Imperfectly drained.
<b>Surface condition:</b>	Soft.
<b>Site disturbance:</b>	Cleared.
<b>Native vegetation:</b>	<i>Eucalyptus camaldulensis</i> and <i>Eucalyptus leucoxyton</i> woodland.

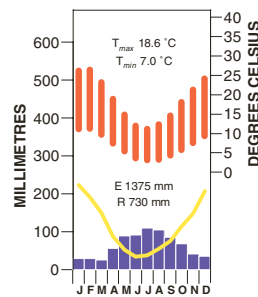


Adelaide Hills, South Australia

### Site location



### Site climate



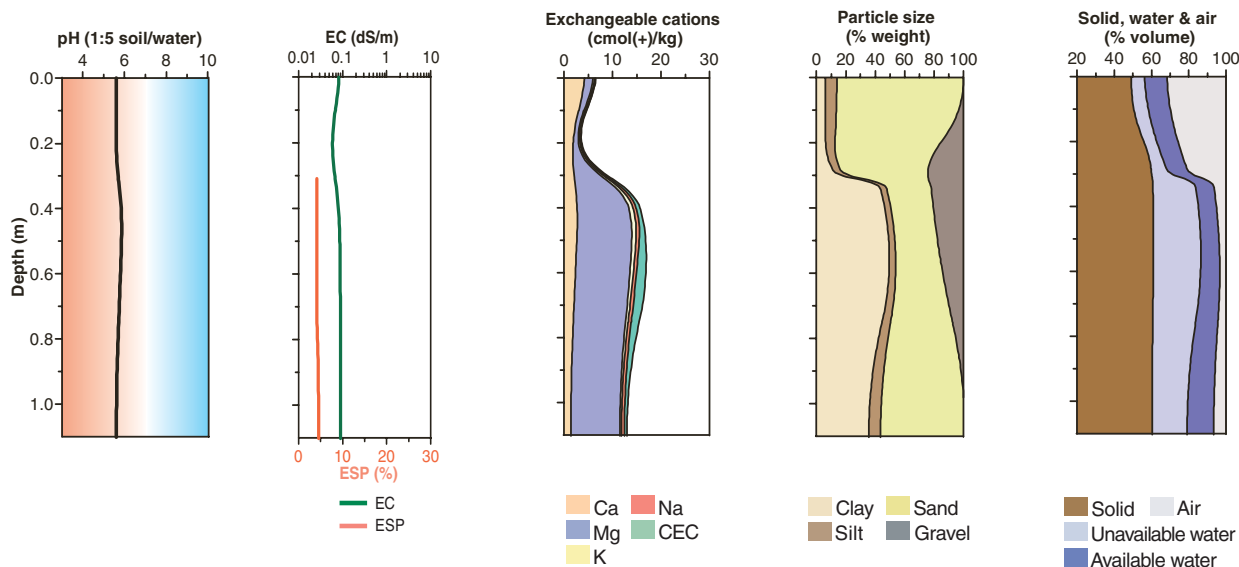
### Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A1	0.00–0.10	dark brown (7.5YR 3/2)	–	sandy loam	single grain	–	–	very weak (moist)	–	–	clear
A21	0.10–0.20	greyish brown (10YR 5/2)	–	heavy loamy sand	single grain	–	–	very weak (moist)	–	–	clear
A22e	0.20–0.31	light brownish grey (10YR 6/2 d)	–	loamy sand	single grain	–	–	very weak (wet)	15% sandstone (6–20 mm)	–	sharp
B21	0.31–0.50	yellowish brown (10YR 5/6)	light olive brown (2.5Y 5/4) and red (2.5YR 4/8)	medium heavy clay	strong	prismatic parting to polyhedral	10–20 mm parting to 2–5 mm	weak (wet)	10% sandstone (6–20 mm)	–	gradual
B22	0.50–0.75	yellowish brown (10YR 5/8)	light brown (2.5Y 6/4) and red (2.5YR 5/8)	medium heavy clay	strong	prismatic parting to polyhedral	10–20 mm parting to 2–5 mm	weak (wet)	–	–	diffuse
B3	0.75–1.10	pale yellow (2.5Y 7/4)	yellowish brown (10YR 5/8) and red (2.5YR 4/6)	light medium clay	moderate	prismatic	10–20 mm	weak (moderately moist)	–	–	diffuse
Cr	1.10–1.20	weathering metasandstone	–	–	–	–	–	–	–	–	–

### Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H <sub>2</sub> O <sup>A</sup>	pH CaCl <sub>2</sub> <sup>B</sup>	Elect. Cond. dS/m <sup>A</sup>	CaCO <sub>3</sub> %	Org. C % <sup>D</sup>	Extr. P mg/kg <sup>A</sup>	Tot. P %	Tot. K %	Cation exchange properties <sup>E</sup>						ESP % <sup>A</sup>	Bulk dens. Mg/m <sup>3</sup>	Particle size % <sup>A</sup>			
										Ca	Mg	K	Na	H+Al	CEC			ECEC	CS	FS	Silt
A1	0.00–0.10	5.6	5.0	0.08	–	2.8	14	–	–	4.1	1.4	0.3	0.2	–	5	–	45	41	8	6	
A21	0.10–0.20	5.6	5.0	0.05	–	0.5	14	–	–	1.2	0.6	0.2	0.2	–	2	–	–	–	–	–	
A22e	0.20–0.31	5.5	4.8	0.05	–	0.3	6	–	–	0.8	0.7	0.2	0.2	–	2	–	42	45	7	6	
B21	0.31–0.50	6.0	5.5	0.09	–	0.5	< 4	–	–	3.1	11.5	1.0	0.7	–	17	4	14	20	5	61	
B22	0.50–0.75	5.8	5.4	0.09	–	0.3	< 4	–	–	2.3	11.3	0.7	0.7	–	17	4	–	–	–	–	
B3	0.75–1.10	5.6	5.2	0.09	–	0.1	< 4	–	–	1.3	10.3	0.4	0.6	–	13	5	8	47	8	37	

Key profile properties



General qualities of the soil

<b>Infiltration:</b>	Rapid under pasture and native vegetation.
<b>Available water store:</b>	Moderate.
<b>Permeability:</b>	The clay subsoil may be a throttle to water movement.
<b>Physical root limitations:</b>	Water-logging in the layer immediately above the clay retards root development and may restrict root exploitation of subsoil moisture on drying.
<b>Erosion hazard:</b>	The water erosion potential of the sandy surface increases with slope. Wind erosion potential is low.
<b>Nutrient availability:</b>	This soil is inherently fertile although phosphorus availability may be marginal. Fertility of the sandy surface relies on high organic matter.
<b>Toxicities:</b>	None recorded.



Soil type occurs on the slopes – northern Mount Lofty Ranges, South Australia

Acknowledgements: Soil image, soil description and laboratory data: Department of Water, Land and Biodiversity Conservation, South Australia. Site CH027. Landscape image: Bill van Aken, CSIRO.