

## DE4: Acidic, Eutrophic, Red Dermosol

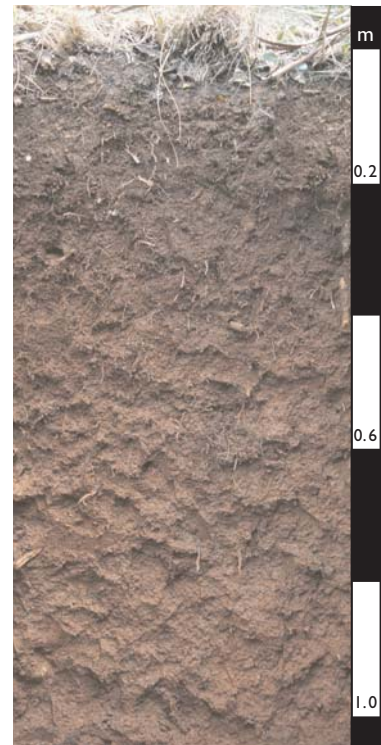
### General description of the soil

A structured, strongly acid red soil in which the major part of the B2 horizon has a moderately high base status (i.e. Eutrophic).

<b>Distribution:</b>	A common profile in the high rainfall wet sclerophyll forests in southern New South Wales and north-east Victoria.
<b>Typical land use:</b>	Hardwood forestry and nature conservation.
<b>Common variants:</b>	Drier sites have profiles that are shallower, less gradational, lighter red and with less organic matter. These grade to Red Kandosols.
<b>World Reference Base:</b>	Humic Lixisol.
<b>Other names:</b>	Red Podzolic Soils and Krasnozems.

### Environment and location of the example profile

<b>Landform:</b>	Undulating hills.
<b>Parent material or substrate:</b>	Granodiorite.
<b>Drainage class:</b>	Well-drained.
<b>Surface condition:</b>	Soft.
<b>Site disturbance:</b>	Selective logging.
<b>Native vegetation:</b>	Alpine Ash ( <i>Eucalyptus delegatensis</i> ) forest.

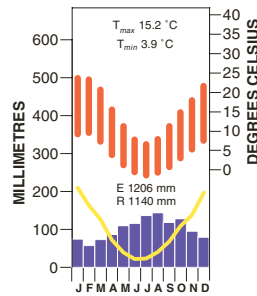


Abundant organic matter and faunal activity dominate the profile, Marag State Forest, east of Tumberumba, New South Wales

### Site location



### Site climate



### Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
O1	0.00–0.02	organic layer	–								
A11	0.02–0.14	dark reddish brown (5YR 3/2)	–	clay loam	moderate	granular	2–5 mm	weak (moderately moist)	10–20% subangular granodiorite (20–200 mm)	–	gradual smooth
A12	0.14–0.28	dark reddish brown (5YR 3/3)	–	clay loam	moderate	granular	2–5 mm	weak (moderately moist)	10–20% subangular granodiorite (20–200 mm)	–	diffuse smooth
B1	0.28–0.52	dark reddish brown (2.5YR 3/4)	–	light clay	moderate	polyhedral and granular	2–5 mm and 10–20 mm	weak (moderately moist)	10–20% subangular granodiorite (20–200 mm)	–	diffuse smooth
B21	0.52–0.82	dark red (2.5YR 3/5)	–	light medium clay	moderate	polyhedral	20–50 mm parting to 10–20 mm	firm (moderately moist)	20–50% subangular granodiorite (20–200 mm)	–	diffuse smooth
B22	0.82–1.42	dark red (2.5YR 3/5)	–	medium clay	weak	polyhedral	20–50 mm	firm (moderately moist)	10–20% subangular granodiorite (20–200 mm)	–	gradual smooth
B31	1.42–2.12	red (2.5YR 4/6)	20–50% yellowish red (7.5YR 6/6)	medium clay	weak	polyhedral	10–20 mm	firm (moderately moist)	10–20% subangular granodiorite (20–200 mm)	–	gradual smooth
B32	2.12–3.02	yellowish red (5YR 5/6)	20–50% light brownish grey (10YR 6/2)	medium clay	weak	polyhedral	10–20 mm	firm (dry)	10–20% subangular granodiorite (20–200 mm)	–	

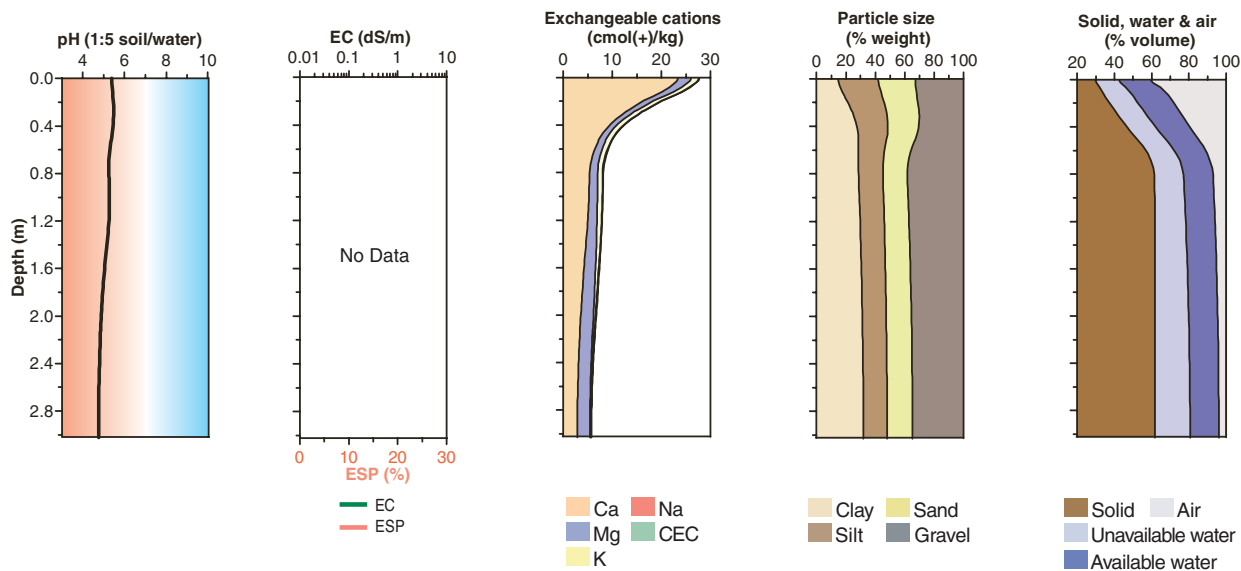
### Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	Elect. Cond. dS/m	CaCO <sub>3</sub> %	Org. C % <sup>c</sup>	Extr. P mg/kg	Tot. P % <sup>b</sup>	Tot. K %	Cation exchange properties <sup>d</sup> cmol(+)/kg						ESP %	Bulk dens. Mg/m <sup>3</sup>	Particle size %				
										Ca	Mg	K	Na	H+Al	CEC			ECEC <sup>A</sup>	CS	FS	Silt	Clay
A11	0.02–0.14		5.4			8.1		0.141		23.8	2.7	1.6	0.1	0.3		28	–	0.7				
A12	0.14–0.28		5.5			3.6		0.117		14.3	1.9	1.8	0.1	0.1		18	–	0.9				
B1	0.28–0.52		5.5			1.6		0.081		7.8	1.2	1.4	<0.1	<0.1		10	–	0.9				

Horizon	Sample Depth (m)	pH H <sub>2</sub> O	pH CaCl <sub>2</sub> <sup>C</sup>	Elect. Cond. dS/m	CaCO <sub>3</sub> %	Org. C % <sup>C</sup>	Extr. P mg/kg	Tot. P % <sup>B</sup>	Tot. K %	Cation exchange properties <sup>1</sup> cmol(+)/kg							ESP %	Bulk dens. Mg/m <sup>3</sup>	Particle size %			
										Ca	Mg	K	Na	H+Al	CEC	ECEC <sup>A</sup>			CS	FS	Silt	Clay
B21	0.52–0.82		5.2			1.2		0.058		5.0	1.6	0.9	<0.1	0.2		8	–	1.3				
B22	0.82–1.42		5.3			0.7		0.046		5.2	1.8	1.0	<0.1	<0.1		8	–					
B31	1.42–2.12		4.9			0.2		0.035		3.9	2.5	0.5	0.1	0.1		7	–					
B32	2.12–3.02		4.8			0.2		0.032		2.9	2.6	0.1	0.1	0.1		6	–					

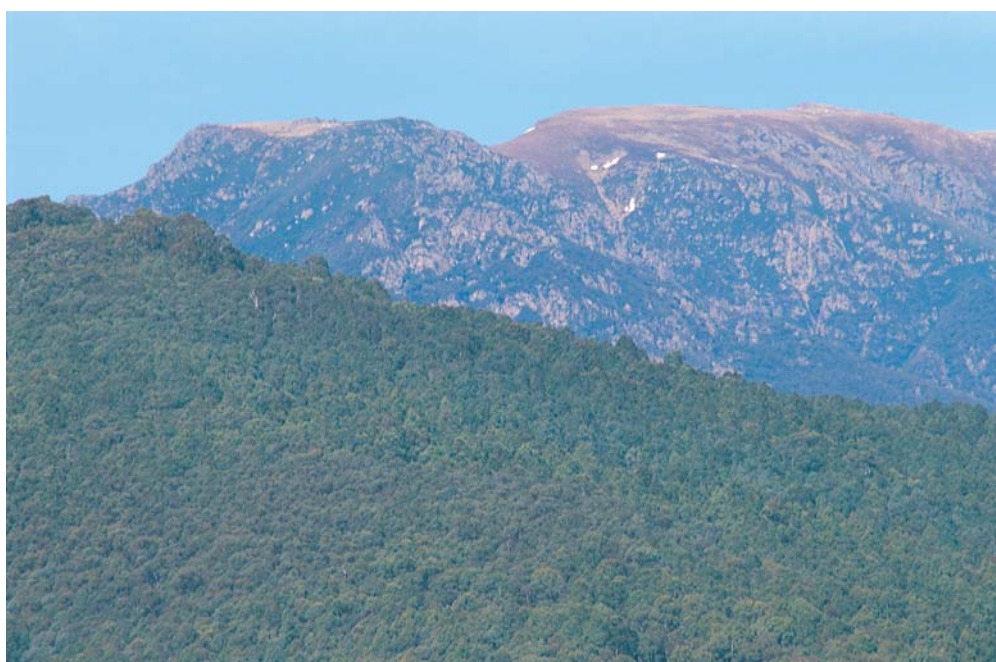
\* The data for H+Al are for aluminium determined by compulsive exchange (Gillman 1979). These data are also used to calculate ECEC.

Key profile properties



General qualities of the soil

<b>Infiltration:</b>	Rapid.
<b>Available water store:</b>	Very large.
<b>Permeability:</b>	Very high in the upper 0.5 m and high in the deeper layers.
<b>Physical root limitations:</b>	None apparent.
<b>Erosion hazard:</b>	Low, unless organic matter levels are greatly depleted.
<b>Nutrient availability:</b>	A fertile soil. Large organic matter reserves and only moderate acidity ensure good nutrient supplies.
<b>Toxicities:</b>	None apparent.



Tall alpine ash forests to the west of the Snowy Mountains are associated with deep red soils, many of which have received significant additions of dust.

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