

## TE2: Melacic, Regolithic, Chernic Tenosol

### General description of the soil

The soil is characterised by organic or dark A1 horizons and a weakly developed (tenic) B horizon. The soil overlies unconsolidated mineral materials derived from granodiorite.

<b>Distribution:</b>	A widespread soil in the alpine and subalpine regions of south-eastern Australia.
<b>Typical land use:</b>	National park.
<b>Common variants:</b>	Deeper profiles with more organic matter occur at lower elevations in the subalpine zone.
<b>World Reference Base:</b>	Humic Umbrosol.
<b>Other names:</b>	Also known as Alpine Humus Soils.

### Environment and location of the example profile

<b>Landform:</b>	Drainage depression.
<b>Parent material or substrate:</b>	Granodiorite.
<b>Drainage class:</b>	Well-drained.
<b>Surface condition:</b>	Soft.
<b>Site disturbance:</b>	No effective disturbance.
<b>Native vegetation:</b>	Snow grass.

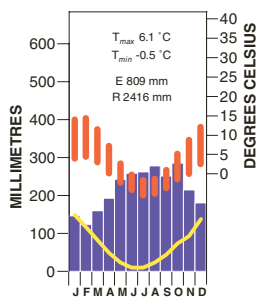


High elevation site (2150 m) below the summit of Mt Twynam, Kosciuszko National Park, New South Wales

### Site location



### Site climate



### Soil morphology

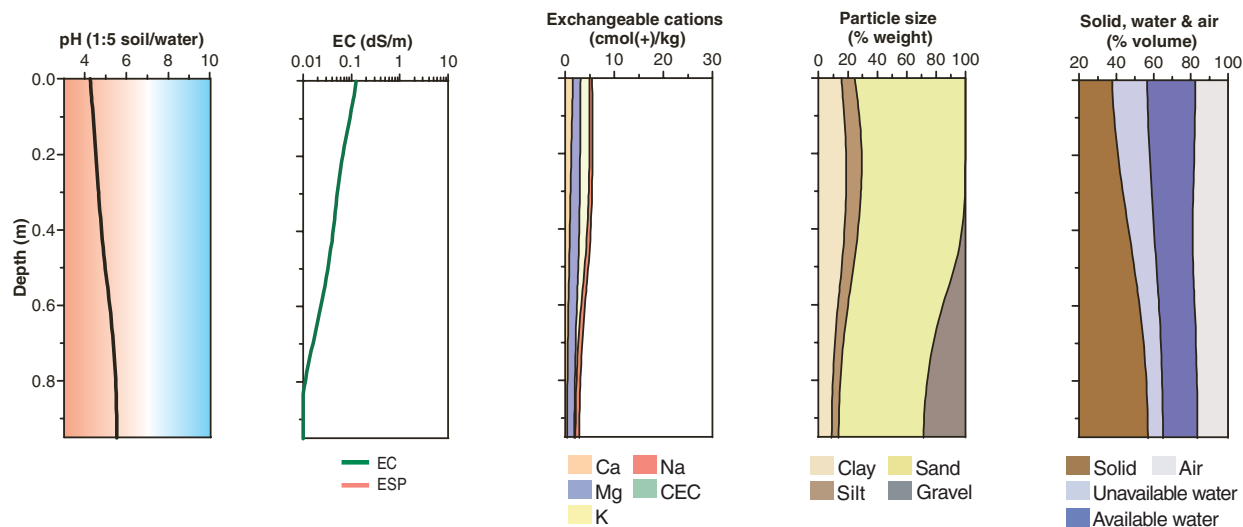
Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
AO	0.00–0.05	very dark greyish brown (10YR 3/2)	–	loamy fine sand	weak	granular	2–5 mm		–	–	diffuse smooth
A1	0.05–0.30	very dark greyish brown (10YR 3/2)	–	loamy fine sand	weak	granular	2–5 mm		–	–	diffuse smooth
A3	0.30–0.55	brown (7.5YR 4/4)	10–20% grey (7.5YR 5/1) faint (<5 mm)	sandy loam	massive	–	–		<2% subangular granodiorite (2–6 mm)	–	gradual smooth
BC	0.55–0.95	brown (7.5YR 4/4)	–	sandy loam	massive	–	–		10–20% subangular granodiorite (20–60 mm)	–	layer continues

### Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H <sub>2</sub> O <sup>A</sup>	pH CaCl <sub>2</sub>	Elect. Cond. dS/m <sup>A</sup>	CaCO <sub>3</sub> %	Org. C % <sup>C</sup>	Extr. P mg/kg <sup>A</sup>	Tot. P %	Tot. K %	Cation exchange properties <sup>H</sup> cmol(+)/kg							ESP %	Bulk dens. Mg/m <sup>3</sup>	Particle size % <sup>A</sup>			
										Ca	Mg	K	Na	H+Al	CEC	ECEC			CS	FS	Silt	Clay
AO	0.00–0.05	4.3		0.12		19.1	33			1.5	1.6	1.8	0.6				0.3	43	28	9	15	
A1	0.05–0.30	4.5		0.06		12.7	32			1.2	1.8	2.0	0.6				0.4	46	20	11	19	
A3	0.30–0.55	4.8		0.04		6.4	15			0.9	2.0	1.7	0.7				0.6	51	21	9	18	
BC	0.55–0.95	5.5		0.01		1.1	9			0.4	1.5	0.3	0.8				1.1	63	18	7	13	

Note: Laboratory data are an average of four profiles in the immediate vicinity of the illustrated profile. Particle size data are from the profile described.

Key profile properties



General qualities of the soil

<b>Infiltration:</b>	Rapid.
<b>Available water store:</b>	Very large per unit depth due to large organic matter content and particle size distribution. Total store is only large due to the restricted depth.
<b>Permeability:</b>	High to very high.
<b>Physical root limitations:</b>	None apparent.
<b>Erosion hazard:</b>	Severe if vegetation is disturbed due to slope and highly erosive rainfall. Wind erosion hazard is also severe in summer if vegetation is disturbed, due to granular surface and extreme winds (regularly in excess of 75 km/h and occasionally >160 km/h).
<b>Nutrient availability:</b>	Generally very low due to the strong acidity.
<b>Toxicities:</b>	Native vegetation well adapted to low pH and likely high aluminium levels.



Looking south in summer along the Main Range from Mt Twynam to Mt Kosciuszko, Australia's highest peak.

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