

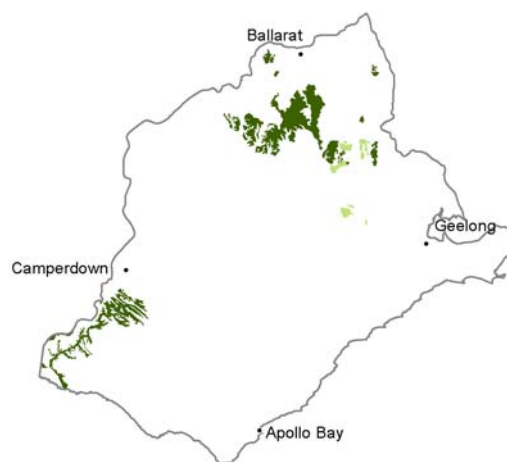
## 15. Yellow and brown strongly acidic mottled texture contrast soils on Neogene sediments

These soils are found on the gently undulating plains, rises or low level plateaux in higher rainfall areas underlain by Neogene sediments (generally sands) which are generally unconsolidated but often have an indurated pan or layer on which the soils have developed.

These strongly acidic mottled yellow and brown texture contrast soils are not as prevalent as the other texture contrast soils, however, despite the acidity some of these soils are sodic at depth.

Characteristics are similar to other soils on Neogene sediments with pale mottled but strongly structured subsoils and buckshot in the often bleached subsurface horizon sitting on the subsoil. There may be more organic matter and deeper in the surface horizon in the wetter areas.

Notable characteristics are texture contrast and strongly acidic mottled subsoil, limiting nutrient availability.



### Soil sites

Site code	Soil-landform unit	Component	ASC	FK	1:100 000 mapsheet
MM5109	89	Upper slope	Melacic-Mottled, Natric, Yellow Kurosol	Dy5.41	T7721 - GEELONG
MM5308	20	Mid slope	Bleached-Mottled, ?, Brown Kurosol	Dy3.41	T7722 - BACCHUS MARSH
OTR499	89	Mid slope	Bleached-sodic, Eutrophic, Black Kurosol	Db4.31	T7721 - GEELONG
SW63	159	Flat	Humose, Dystrophic, Brown Kurosol (thick sandy surface)	Gn2.81	T7520 - PRINCETOWN
SW64	181	Mid slope	Humose-acidic, Kandosolic, Redoxic, Hydrosol	Uc5.32	T7521 - CORANGAMITE

Site code<sup>1</sup> OTR499



Remnant vegetation north-east of Anglesea

**Location** Anglesea  
**Landform** Hills  
**Geology** Palaeogene Demons Bluff Formation  
**Element** Hillslope - mid slope  
**Slope** 0%  
**Aspect** -

Bleached-Sodic, Eutrophic, Black Kurosol

Horizon	Depth (cm)	Description
A1	0–10	Black (10YR2/1); loamy fine sand; apedal single grain structure; gradual boundary to:
A2	10–30	Grey (10YR5/1); loamy fine sand; apedal single grain structure; clear wavy boundary to:
B21	30–50	Very dark greyish brown (10YR3/2); sandy clay loam; weak coarse (40 mm) subangular blocky structure; organic stains on ped faces; diffuse boundary to:
B22	50–120	Dark yellowish brown (10YR4/4); sandy clay loam; coarse (40 mm) subangular blocky structure; clay skin cutans; diffuse boundary to:
C	120+	Yellowish brown (10YR5/6); sandy clay; apedal massive structure.

<sup>1</sup> Source: Pitt AJ (1981) A study of the land in the catchments of the Otway Range and adjacent plains. TC-14. Soil Conservation Authority. Kew, Victoria

## Analytical data<sup>2</sup>

Site OTR499 Horizon	Sample depth cm	pH		EC dS/m	NaCl %	Ex Ca cmol <sub>c</sub> /kg	Ex Mg cmol <sub>c</sub> /kg	Ex K cmol <sub>c</sub> /kg	Ex Na cmol <sub>c</sub> /kg	Ex Al mg/kg	Ex Acidity cmol <sub>c</sub> /kg	FC -10kPa %	PWP -1500kPa %	KS %	FS %	Z %	C %
		H <sub>2</sub> O	CaCl <sub>2</sub>														
A1	0-10	4.7	N/R	0.052	N/R	2.5	0.9	0.1	0.04	N/R	N/R	N/R	N/R	1	83	6	7
A2	10-20	4.6	N/R	0.037	N/R	0.9	0.2	0.07	0.01	N/R	N/R	N/R	N/R	1	84	10	6
A2	20-30	4.9	N/R	0.021	N/R	0.5	0.3	0.03	0.01	N/R	N/R	N/R	N/R	<1	90	3	7
B21	40-50	5.3	N/R	0.060	N/R	1.2	2.5	0.2	0.2	N/R	N/R	N/R	N/R	1	69	5	22
B22	110-120	5.2	N/R	0.258	N/R	0.9	3.3	0.1	0.8	N/R	N/R	N/R	N/R	<1	65	4	29

## Management considerations

The sandy topsoil generally has poor plant water and nutrient holding capacities and due to the low level of bonding between soil particles are particularly prone to wind erosion where land is cleared. Sheet and rill erosion (depending on organic matter content and vegetative cover) may also be an issue. The soils are possibly hydrophobic (in conjunction with organic coatings) when dry, taking time to reabsorb moisture. Sandy topsoils do however drain rapidly and maintenance of a vegetative cover is important. The acidic soils restrict the uptake of certain nutrients as well as intolerance for some plant species (due in part to the increasing mobilisation of aluminium and manganese). Sodic subsoils usually have poor structure (generally as coarse domed columns). The poor structure results in dispersion (and subsequent clogging of pores), restricting water and gas movement through the subsoil. These soils are hardsetting and have limited opportunity for cultivation without further damage to soil structure. Deficiencies of calcium, potassium and molybdenum are likely.

<sup>2</sup> Source: Government of Victoria State Chemistry Laboratory.