

Site code¹ CLRA47



Low slope of rises near Winchelsea

Location Winchelsea (Ingleby Road), Winchelsea district, south-west Victoria

Landform Rises

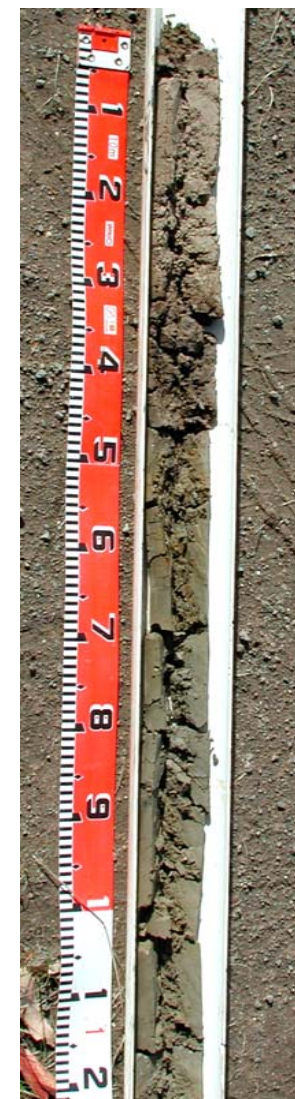
Geology Neogene Newer Volcanics:
*extrusive tholeiitic to alkaline
basalts, minor scoria and ash*

Element Lower slope

Slope 3%

Aspect North-north-east

Horizon	Depth (cm)	Description
A1	0–5	Dark greyish brown (10YR4/2); loam fine sandy; weak consistence (moderately moist); non-calcareous, pH 6.5; sharp boundary to:
A2	5–25	Brown (10YR5/3); sporadically bleached (10YR7/3; dry); silty clay loam; weak medium prismatic, parting to fine prismatic structure; rough ped fabric; weak consistence (moderately moist); non-calcareous, pH 6.5; clear boundary to:
B21	25–45	Dark brown (10YR4/3) with few medium faint yellowish brown and grey (10YR5/6, 10YR5/1) mottles; medium clay; strong medium prismatic, parting to medium and fine angular blocky structure; smooth ped fabric; strong consistence (moderately moist); non-calcareous, pH 6.7; gradual boundary to:
B22	45–65	Olive (5Y4/3) with common medium faint yellowish brown (10YR5/6) mottles; medium heavy clay; strong medium prismatic, parting to fine angular blocky structure; smooth ped fabric; very firm consistence (moist); non-calcareous, pH 7.5; gradual boundary to:
B23	65–115	Olive (5Y5/3); heavy clay; strong medium prismatic, parting to fine to very fine angular blocky structure; smooth ped fabric; very firm consistence (moist); very few fine manganiferous concretions; non-calcareous, pH 8.5; clear boundary to:
C	115–130+	Very dark grey and olive yellow (2.5Y3/1, 2.5Y6/6); clay loam; weak consistence (moderately moist); non-calcareous, pH 9.5.



Eutrophic, Mesonatric, Brown Sodosol

¹ Source: Robinson et al (2003) A land resource assessment of the Corangamite region. Department of Primary Industries, Centre for Land Protection Research Report No. 19

Analytical data²

Site CLRA47 Horizon	Sample depth cm	pH		EC dS/m	NaCl %	Ex Ca cmol _c /kg	Ex Mg cmol _c /kg	Ex K cmol _c /kg	Ex Na cmol _c /kg	Ex Al mg/kg	Ex Acidity cmol _c /kg	FC -10kPa %	PWP -1500kPa %	KS %	FS %	Z %	C %
		H ₂ O	CaCl ₂														
A2	5–25	5.7	4.8	0.07	N/R	1.2	1.9	0.24	0.48	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
B21	25–40	5.8	4.9	0.23	N/R	3.4	6.7	0.4	2.7	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
B23	65–115	8.5	7.9	0.86	N/R	7.8	16	0.5	8.4	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Management considerations

This soil has a strong texture contrast between the surface, subsurface soil and the heavy subsoil. This can have a major effect by reducing and/or redirecting the internal drainage and restricting root growth beyond the upper horizons, influenced by the soil structure. Options include reduced tillage, improving organic matter content and altering the subsoil through artificial drainage (ripping, mole drainage) and/or chemical amelioration (gypsum) to improve structure. The subsurface soil is sporadically bleached and hardsetting, indicating restricted drainage into the subsoil. The subsoil is mottled, sodic and alkaline at depth. These 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 as evidenced by mottling. These soils are hardsetting and have limited opportunity for cultivation without further damage to soil structure. The application of gypsum is used to counter the effect of the sodicity. Penetration by deep-rooted crops is also useful as is minimum tillage practices which avoids bring the sodic, dispersive material to the surface. Salinity of the subsoil is also an issue, increasing stress on root systems.

² Source: Government of Victoria State Chemistry Laboratory.