

Site code¹ CLRA44



Coastal flats of Swan Bay

Location Swan Bay Caravan Park (Swan Bay Road), Queenscliff district, Bellarine Peninsula

Landform Plain

Geology Quaternary coastal dune deposits: beach deposits, coastal and inland dunes, lunettes and swamps; *sand, silt, clay, calcarenite deposits*

Element Coastal flat

Slope 0%

Horizon	Depth (cm)	Description
A1	0–15	Black (10YR2/1); loamy sand; apedal single grain structure; pH 8.5; sharp boundary to:
A21	15–30	Brown (10YR5/3); sand; apedal single grain structure; pH 8.5; abrupt boundary to:
A22	30–55	Light olive brown (2.5Y5/6); sand; apedal single grain structure; pH 8.5; gradual boundary to:
A23	55–85	Yellowish brown (10YR5/8) with common medium faint to distinct yellowish brown mottles (10YR5/8); sand; many small to medium angular shell fragments; apedal single grain structure; pH 8.5; abrupt boundary to:
B1h	85–95	Dark grey (5Y4/1); sand; common small to medium angular shell fragments; apedal single grain structure; pH 8.5; abrupt boundary to:
B2	95–110	Olive (5Y4/3) with common medium faint dark yellowish brown (10YR4/6) mottles; medium clay; few distinct slickenside cutans; few medium manganiferous nodules; pH 8.5.



Bleached-sodic, Sodosolic, Redoxic Hydrosol

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	Sample	pH		EC	NaCl	Ex Ca	Ex Mg	Ex K	Ex Na	Ex Al	Ex	FC	PWP	KS	FS	Z	C
CLRA44	depth	H ₂ O	CaCl ₂	dS/m	%	cmol _c /kg	cmol _c /kg	cmol _c /kg	cmol _c /kg	mg/kg	Acidity	-10kPa	-1500kPa	%	%	%	%
Horizon	cm										cmol _c /kg	%	%	%	%	%	%
A23/B1h/B2	55-110	7.2	7.1	3.8	N/R	6.5	5.8	1.9	7.5	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Management considerations

This is a sandy, alkaline soil with clay at depth. The clay can have a major effect by reducing and/or redirecting the internal drainage and restricting root growth beyond the upper horizons. Salinity is an issue in these coastal locations. Soil salinity at depth will affect deeper rooting plants and may indicate water movement restrictions. It is important not to increase the groundwater level bringing the salinity closer to the surface; more efficient use of water by plants and/or deep drainage is suggested. This is also notes by the high sodium levels. Sodic subsoils are another key feature of many of the soils in the CMA, particularly in the drier areas. These 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 subsoils 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.

² Source: Government of Victoria State Chemistry Laboratory.