

# SALINE CALCAREOUS SANDY CLAY LOAM

**General Description:** *Calcareous sandy clay loam over rubbly carbonate, highly saline throughout with a saline water table shallower than 100 cm*

**Landform:** Gently undulating plain with frequent sandhills and occasional saline swampy depressions.

**Substrate:** Calcreted Bungunnia Limestone.

**Vegetation:** Samphire.



**Type Site:** Site No.: MM119

1:50,000 sheet:	6827-3 (Moorlands)	Hundred:	Roby
Annual rainfall:	410 mm	Sampling date:	01/04/93
Landform:	Flat		
Surface:	Firm with 2-10% calcrete stones (20-60 mm)		

## Soil Description:

Depth (cm)	Description
0-4	Dark brown soft (wet) massive highly calcareous fine sandy clay loam. Abrupt to:
4-11	Dark grey soft (wet) massive very highly calcareous fine sandy clay loam with 2-10% carbonate nodules. Abrupt to:
11-30	Brown soft (wet) massive very highly calcareous sandy clay loam with more than 50% carbonate nodules. Clear to:
30-80	Very pale brown soft (wet) massive very highly calcareous light sandy clay with 10-20% carbonate nodules.
80-	Water table with salinity of 76,400 dS/m.



**Classification:** Calcarosolic, Salic Hydrosol; thin, slightly gravelly, clay loamy / clayey, moderate

## Summary of Properties

<b>Drainage</b>	Poorly to very poorly drained. Soil may remain wet for months. Some areas are permanently submerged as a result of rising water tables.
<b>Fertility</b>	Inherent fertility is moderately low. Only salt tolerant species will survive. Regular phosphorus and nitrogen fertilizers are required for halophytic pasture species. Copper and zinc levels can be marginal. Organic carbon levels are high.
<b>pH</b>	Alkaline to strongly alkaline throughout.
<b>Rooting depth</b>	80 cm in pit (samphire).
<b>Barriers to root growth</b>	
<b>Physical:</b>	Heavy rubble layers restrict root growth.
<b>Chemical:</b>	Extreme salinity and boron, high pH and sodicity prevent root growth of any but the most salt tolerant species.
<b>Water holding capacity</b>	95 mm in root zone (of samphire).
<b>Seedling emergence:</b>	Poor for any but salt tolerant plants.
<b>Workability:</b>	Often too wet to access with equipment.
<b>Erosion Potential</b>	
<b>Water:</b>	Low.
<b>Wind:</b>	Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
										Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-4	9.3	9.2	12	20.60	136.0	2.2	10	2000	620	0.37	3.6	5.6	0.35	11.7	2.69	9.74	0.47	1.54	4.0
4-11	9.5	9.0	15	7.64	77.7	1.1	6	1300	170	0.28	6.2	5.6	0.18	12.0	2.31	3.58	2.00	2.69	16.7
11-30	9.4	8.9	49	5.69	47.8	0.7	5	910	93	0.51	7.5	3.8	0.17	12.0	2.39	2.80	2.93	2.05	24.4
30-80	9.0	8.6	60	5.64	44.6	0.3	6	610	42	0.51	5.9	1.2	0.10	11.0	5.33	2.22	2.50	1.21	22.7

**Note:** CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC.