

## CALCAREOUS SAND TO SANDY LOAM ON CALCAREOUS RUBBLE

**General Description:** *Variable thickness loamy sand over calcareous firm sandy loam on medium to fine grained wind-blown deposits with abundant soft and nodular carbonate*

**Landform:** Gently undulating dunefield.

**Substrate:** Fine grained highly calcareous windblown material (Woorinen Formation).

**Vegetation:**



<b>Type Site:</b>	Site No.:	CM108	1:50,000 mapsheet:	6530-3 (Lochiel)
	Hundred:	Kulpara	Easting:	227300
	Section:	114	Northing:	6234355
	Sampling date:	15/02/2013	Annual rainfall:	405 mm average

Crest of low sand dune, with slope of 5%. Soft surface with no stones.

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-5	Dark reddish brown soft loamy sand. Abrupt to:
5-35	Strong brown firm (compact) massive moderately calcareous loamy sand. Gradual to:
35-70	Reddish yellow firm massive very highly calcareous sandy loam. Gradual to:
70-130	Pinkish grey firm massive very highly calcareous coarse sandy clay loam to coarse sandy light clay with 20-50% carbonate nodules to 6 mm.



**Classification:** Epibasic, Regolithic, Supracalcic Calcarosol; thick, non-gravelly, sandy / clay loamy, deep



## Summary of Properties

- Drainage:** Well to rapidly drained. No part of the soil is likely to be saturated for more than a few hours, or a day at most.
- Fertility:** Inherent fertility is moderately low, as indicated by the exchangeable cation data. This is mainly due to the low clay content of the surface layers. The data indicate copper deficiency, and marginally low phosphorus concentration. Organic carbon levels are satisfactory for this rainfall / soil type.
- pH:** Alkaline throughout.
- Rooting depth:** Moderate root growth in the upper 90 cm, with no roots observed below this depth.
- Barriers to root growth:**
- Physical:** There are no apparent physical barriers.
  - Chemical:** Very highly calcareous medium to fine textured material from 70 cm severely restricts root growth, partly due to very low nutrient availability.
- Waterholding capacity:** Approximately 90 mm in potential rootzone.
- Seedling emergence:** Satisfactory. Surface soil is not water repellent, nor does it set hard.
- Workability:** Sandy soil is easily worked, but predisposes surface to wind erosion.
- Erosion Potential**
- Water:** Low due to high water infiltration rate of surface.
  - Wind:** High due to weakly coherent surface soil and exposed position in the landscape.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC 1:5 dS/m	ECe dS/m	Org.C %	NO <sub>3</sub> mg/kg	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	8.5	7.9	0.3	0.126	1.22	1.04	18	23	282	20.2	0.7	0.17	3	6.48	1.91	8.81	7.47	0.77	0.08	0.49	0.9
0-5	8.0	7.4	0.4	0.196	1.85	0.93	14	17	246	63.9	0.6	0.19	4	6.6	1.79	9.36	7.90	0.79	0.06	0.61	0.6
5-35	8.8	7.9	2.5	0.076	0.36	0.30	< 1	< 2	186	3.7	0.4	0.22	3	0.82	0.16	10.6	9.35	0.73	0.04	0.48	0.4
35-70	8.8	7.8	8.5	0.081	0.40	0.36	< 1	< 2	131	7.4	0.5	0.32	4	0.57	0.12	11.8	10.6	0.89	0.04	0.29	0.3
70-130	9.1	8.1	26.5	0.113	0.44	0.40	1	< 2	104	6.6	1.7	0.78	4	0.71	0.19	15.6	10.3	4.85	0.18	0.27	1.2

**Note:** Paddock sample bulked from cores (0-10 cm) taken around the pit.

Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), 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, in this case estimated by the sum of cations.

**Further information:** [DEWNR Soil and Land Program](#)

