

DEEP CALCAREOUS SAND

General Description: *Deep highly calcareous sand to loamy sand comprising mainly crushed shells*

Landform: Gently undulating rises.

Substrate: Shell sand.

Vegetation:



Type Site: Site No.: CY020

1:50,000 sheet: 6327-4 (Hillock)

Hundred: Coonarie

Annual rainfall: 470 mm

Sampling date: 24/03/93

Landform: Midslope of rise, 2-3% slope

Surface: Soft with no stones

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-7	Brown soft highly calcareous sandy loam. Abrupt to:
7-44	Very pale brown soft highly calcareous loamy sand. Gradual to:
44-110	Light yellowish brown soft very highly calcareous loamy coarse sand. Diffuse to:
110-158	Yellowish brown soft very highly calcareous loamy coarse sand. Clear to:
158-175	Yellowish brown cemented very highly calcareous loamy coarse sand.



Classification: Shelly Calcarosol; thin, non-gravelly, loamy / sandy, very deep

Summary of Properties

Drainage	Rapidly to well drained. The soil never remains wet for more than a day.
Fertility	The soil's natural capacity to retain nutrients is moderate in the topsoil and low in the subsoil as indicated by the exchangeable cation data. Nutrient availability problems (in particular manganese, phosphorus and zinc) due to the very high free lime content and high pH are characteristic of this soil. Surface fertility relies largely on organic matter levels which are adequate at this site for this soil type.
pH	Alkaline throughout.
Rooting depth	100 cm in pit.
Barriers to root growth	
Physical	There are no physical barriers.
Chemical	There are no chemical barriers of a toxic nature. Sub-optimal root growth is more likely to be a symptom of poor nutritional status, in the subsoil, if not the topsoil.
Water holding capacity	Approximately 95 mm in the rootzone, but about a third is effectively unavailable due to low root density in the subsoil.
Seedling emergence	Good to fair. Organic matter levels need to be maintained to preserve soil stability.
Workability	Good.
Erosion Potential	
Water	Low.
Wind	Moderate to moderately high.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ -S 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	
Paddock	8.0	7.6	86	0.28	1.05	3.0	64	291	-	2.2	0.7	14	2.1	0.8	10.8	11.19	0.87	0.17	0.34	12.6
0-7	8.0	7.6	85	0.30	1.23	1.1	60	398	-	2.3	0.7	14	2.5	0.5	11.4	11.23	0.97	0.11	0.28	12.6
7-44	8.4	7.8	92	0.12	0.42	1.7	5	157	-	1.2	0.1	3	0.3	<0.1	3.5	4.94	0.47	0.09	0.05	5.6
44-110	8.7	7.9	89	0.08	0.27	0.3	<4	176	-	0.4	0.1	1	0.1	<0.1	1.0	2.34	0.31	0.08	0.03	2.8
110-158	8.8	8.0	91	0.08	0.34	0.3	4	257	-	0.3	0.1	1	0.1	<0.1	0.9	1.87	0.31	0.12	0.02	2.3
158-175	9.1	8.1	82	0.22	1.29	0.3	4	274	-	2.2	0.1	1	0.3	<0.1	2.2	1.45	1.53	0.59	0.08	3.7

Note: Paddock sample bulked from 20 cores (0-10 cm) taken around the pit.

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