

CALCAREOUS SAND

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

Landform: Gently undulating dunefield.

Substrate: Calcareous (shell) sand over calcrete.

Vegetation:



Type Site: Site No.: CY019

1:50,000 sheet:	6227-1 (Pondalowie)	Hundred:	Warrenben
Annual rainfall:	500 mm	Sampling date:	24/03/93
Landform:	Rise in gently sloping swale		
Surface:	Loose with no stones		

Soil Description:

Depth (cm)	Description
0-6	Dark brown loose highly calcareous loamy sand. Abrupt to:
6-22	Brown soft highly calcareous loamy sand. Gradual to:
22-45	Pale brown soft very highly calcareous loamy sand. Diffuse to:
45-102	Pink soft very highly calcareous sand. Diffuse to:
102-162	Pink firm massive very highly calcareous coarse sand. Clear to:
162-178	Yellow friable massive very highly calcareous loamy sand. Abrupt to:
178-	Massive calcrete (consolidated sand).



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

Summary of Properties

Drainage	Rapidly to well drained. The soil rarely remains wet for more than few hours following heavy or prolonged rainfall.
Fertility	The soil's natural capacity to retain nutrients is moderate in the surface layers and low in the deeper layers as indicated by the exchangeable cation data. Nutrient availability problems (in particular manganese, phosphorus, and zinc) due to the very high carbonate content are characteristic of this soil. Surface fertility relies largely on organic matter levels which are high for this soil type.
pH	Alkaline throughout.
Rooting depth	50 cm in pit.
Barriers to root growth	
Physical	There are no physical barriers.
Chemical	There are no chemical barriers, but low nutrient availability below the topsoil probably accounts for lack of root growth below 50 cm.
Water holding capacity	Approximately 55 mm in rootzone.
Seedling emergence	Good. Organic matter levels need to be maintained to preserve surface 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	7.9	7.6	77	0.34	1.53	3.1	50	326	-	3.0	0.4	14	2.9	0.8	14.5	13.60	1.04	0.18	0.34	15.2
0-6	7.9	7.6	74	0.45	2.21	4.6	64	371	-	2.7	0.5	14	3.8	1.3	15.2	14.32	1.04	0.19	0.39	15.9
6-22	8.1	7.7	72	0.18	0.62	3.0	18	326	-	3.3	0.2	18	0.7	0.1	12.5	12.67	1.05	0.18	0.21	14.1
22-45	8.3	7.8	86	0.22	0.78	1.6	5	1142	-	2.7	0.1	4	0.3	<0.1	6.2	6.78	1.52	0.42	0.08	8.8
45-102	8.6	7.9	81	0.27	1.47	0.8	<4	108	-	1.3	0.1	1	0.1	<0.1	1.8	2.71	0.97	0.57	0.05	na
102-162	9.0	8.1	80	0.13	1.00	0.2	<4	517	-	0.6	0.1	<1	<0.1	<0.1	0.8	0.28	0.27	0.26	0.04	na
162-178	8.8	8.1	95	0.13	0.84	0.4	5	978	-	1.1	0.1	1	0.1	<0.1	1.6	2.16	0.63	0.27	0.07	na
178+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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