

SHALLOW HIGHLY CALCAREOUS SANDY LOAM

General Description: *Very highly calcareous sandy loam to sandy clay loam with variable rubble, over calcrete at shallow depth*

Landform: Flat to gently undulating plain.

Substrate: Calcreted lagoonal limestone (Bungunnia Limestone equivalent).

Vegetation: *Eucalyptus socialis* mallee.



Type Site: Site No.: MM069

1:50,000 sheet:	6827-2 (Buccleuch)	Hundred:	Sherlock
Annual rainfall:	380 mm	Sampling date:	1992
Landform:	Flat		
Surface:	Firm with 2-10% calcrete stone (20-60 mm)		

Soil Description:

Depth (cm)	Description
0-8	Brown very highly calcareous soft massive light sandy clay loam with 2-10% calcrete fragments (20-60 mm). Abrupt to:
8-19	Paler brown very highly calcareous soft massive light sandy clay loam with 2-10% calcrete fragments (20-60 mm). Abrupt to:
19-37	Brown very highly calcareous soft massive light sandy clay loam with 20-50% calcrete fragments (60-200 mm). Diffuse to:
37-60	Light reddish brown very hard massive very highly calcareous coarse sand to light sandy clay loam with 20-50% calcrete fragments (60-200 mm). Sharp to:
60-130	Massive calcrete pan. Clear to:
130-145	Very pale brown semi hard calcreted limestone.



Classification: Hypervescent, Petrocalcic, Supracalcic Calcarosol; medium, slightly gravelly, clay loamy / clay loamy, moderate

Summary of Properties

Drainage	Well drained. Soil never remains saturated for more than a few days.
Fertility	Inherent fertility is low, despite the healthy exchangeable cation data. Very high levels of carbonate fix some nutrients including phosphorus, copper, zinc and manganese. Nitrogen is usually deficient. Organic carbon levels are satisfactory.
pH	Alkaline throughout.
Rooting depth	100 cm in pit, but few roots below 60 cm.
Barriers to root growth	
Physical:	The calcrete prevents significant deep penetration by roots.
Chemical:	There are no chemical barriers to root growth, other than the high levels of carbonate.
Water holding capacity	75 mm in the root zone.
Seedling emergence:	Satisfactory.
Workability:	Soft to firm surface is easily worked.
Erosion Potential	
Water:	Low.
Wind:	Low to moderately low.

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	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	8.4	7.9	27	0.16	0.31	1.4	29	330	2.9	-	-	-	-	14.3	13.1	3.81	0.24	0.84	1.7	
0-8	8.4	7.8	25	0.15	0.48	1.6	50	270	2.3	-	-	-	-	14.4	13.2	3.36	0.20	0.64	1.4	
8-19	8.6	8.0	36	0.16	0.39	1.3	5	190	2.9	-	-	-	-	15.3	12.7	5.07	0.38	0.44	2.5	
19-37	8.6	8.1	49	0.20	0.38	1.1	3	110	3.1	-	-	-	-	10.9	8.0	6.19	0.42	0.27	3.9	
37-60	8.8	8.4	55	0.20	0.47	0.79	3	100	2.5	-	-	-	-	8.0	4.85	6.77	0.48	0.22	6.0	
60-130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
130-145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Paddock sample bulked from 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.