SHALLOW CALCAREOUS LOAM

General Description: *Red brown calcareous loam to clay loam with abundant carbonate rubble from shallow depths, overlying weathering bedrock within a metre*

Landform: Low gently undulating rises

Substrate: Weathering basement rock (gneiss at this site), capped by rubbly Class III B or III C carbonate.

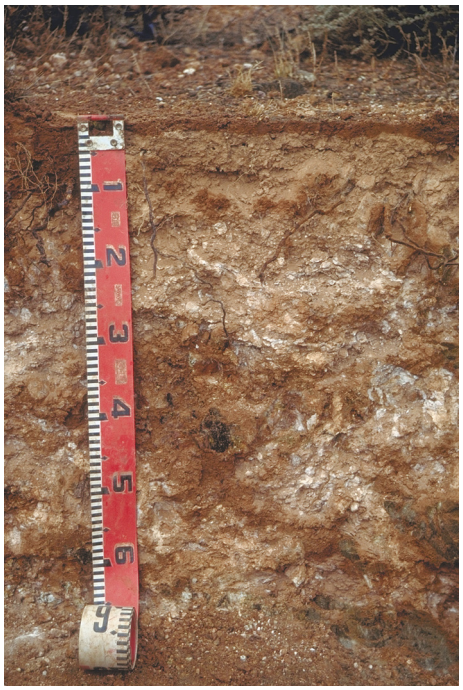
Vegetation: Bluebush - saltbush shrubland
Dominant species:
Maireana sedifolia
Atriplex vesicaria
Maireana pyrimadata

Type Site:

Site No.:	CU036	1: 50,000 mapsheet:	7033-4
Location:	Bulloo Creek Station	Easting:	457900
Sampling date:	08/02/94	Northing:	6438500
		Annual rainfall:	205 mm average

Slope of gently undulating rise, with a firm lichen crust surface and minor quartz and gneiss gravel. Slope is 2%.

Soil Description:



Depth (cm)	*Description*
0-12	Reddish brown very highly calcareous clay loam with weak granular structure and 10-20% gneiss fragments. Clear to:
12-30	Orange very highly calcareous clay loam with up to 50% hard carbonate nodules to 60 mm and 2-10% gneiss fragments. Gradual to:
30-50	Orange very highly calcareous sandy clay loam with up to 50% hard carbonate nodules to 60 mm and 20-50% gneiss fragments. Gradual to:
50-65	Orange very highly calcareous sandy clay loam with up to 20% hard carbonate nodules to 60 mm and more than 50% gneiss fragments. Clear to:
65-70	Hard gneissic bedrock.

Classification: Ceteric, Lithic, Supracalcic Calcarosol; medium, gravelly, clay loamy / clay loamy, moderate

Summary of Properties

Drainage: Very well drained soil.

Fertility: The exchangeable cation data indicate that the soil has a moderate capacity to store plant nutrients. The relatively high organic carbon content (typical of calcareous soils) improves surface fertility.

pH: Alkaline throughout.

Rooting depth: 65 cm in pit (ie. hard bedrock). Good root growth above.

Barriers to root growth:

Physical: Shallow depth to hard rock limits rooting depth.

Chemical: The high carbonate (lime) content affects species suitability. Salt and boron levels are low.

Waterholding capacity: Approximately 70 mm. The shallow depth and high stone content limit the moisture storage capacity of this profile.

Seedling emergence: Good.

Erosion Potential: The soil will readily absorb water, but calcareous surfaces are prone to powdering, so there is a moderate potential for wind erosion.

Laboratory Data

Depth cm	pH H_2O	pH $CaCl_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4 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	8.5	8.0	5.9	0.33	3.22	0.6	12	476	-	0.8	2.1	3	7.2	3.0	13.9	12.0	1.73	0.25	1.57	1.6
0-12	9.0	8.2	3.4	0.11	0.52	0.3	8	439	-	0.7	2.2	2	4.4	1.1	13.0	10.9	1.44	0.31	1.34	2.2
12-30	9.2	8.1	16.7	0.13	0.51	0.3	5	154	-	0.6	2.7	2	3.1	0.5	12.3	9.77	1.20	0.78	0.56	6.3
30-50	8.7	8.0	28.1	0.44	3.30	0.1	4	64	-	1.2	2.3	3	2.5	0.4	13.6	11.3	2.23	1.07	0.25	7.2
50-65	8.7	8.0	25.0	0.40	3.10	0.4	4	79	-	1.2	1.7	3	2.6	0.5	13.7	10.5	2.38	0.99	0.30	7.0

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.

Further information: DEWNR Soil and Land Program