

CALCAREOUS LOAM OVER ROCK (Scalded)

General Description: *Highly calcareous loam becoming more clayey and calcareous with depth overlying soft basement rock within a metre*

Landform: Low rises between steeper rocky hills and outwash plains

Substrate: Highly weathered fine grained basement rock (Tapley Hill siltstone)

Vegetation: Bluebush shrubland



Type Site:	Site No.:	CU046B	1:50,000 mapsheet:	6532-1 (Willowie)
	Hundred:	Pinda	Easting:	258910
	Section:	128	Northing:	6396350
	Sampling date:	02/11/1994	Annual rainfall:	325 mm average

Lower slope of a gently undulating rise. Firm surface with minor calcrete and siltstone fragments. 3% slope. CU046A: non scalded. CU046B: scalded

Soil Description: **CU046B (scalded site)**

<i>Depth (cm)</i>	<i>Description</i>
0-11	Reddish brown soft highly calcareous weakly structured loam. Abrupt to:
11-25	Reddish brown soft highly calcareous light clay with moderate prismatic structure and 2-10% carbonate nodules. Clear to:
25-45	Brown soft very highly calcareous weakly structured clay loam with 20-50% soft and 2-10% nodular carbonate. Clear to:
45-85	Brown soft very highly calcareous light clay with moderate polyhedral structure, 10-20% soft carbonate and 2-10% siltstone fragments. Abrupt to:
85-115	Soft weathering siltstone.



Classification: Hypercalcic, Effervescent, Red Sodosol; medium, non-gravelly, loamy / clayey, moderate.



Summary of Properties

- Drainage:** Well drained. The soil is never likely to remain wet for more than a day or so after rain.
- Fertility:** Natural fertility is moderate as indicated by the exchangeable cation data. Much of the inherent nutrient retention capacity is attributable to surface organic matter. High carbonate content reduces nutrient availability in subsurface layers.
- pH:** Alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** Good root growth to 90 cm in the natural soil. In scalded soil, the only roots are from a dead bluebush - there are few of these below 45 cm.
- Barriers to root growth:**
- Physical:** Basement rock - depth is variable in these soils.
 - Chemical:** In the natural soil, high pH, high sodicity and moderate salinity from 22 cm affect root growth. In the scalded soil, salinity is very high at the surface - this is the main apparent difference between the scalded and non scalded soil.
- Waterholding capacity:** Approximately 100 mm in rootzone of natural soil.
- Seedling emergence:** Good in natural soil. Very poor in scalded soil due to high surface salinity.
- Erosion Potential:**
- Water:** Moderate due to the slope and high erodibility of the calcareous and sodic soil.
 - Wind:** Moderate, due to the tendency of these soils to pulverize when overgrazed.

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 mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)			CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	SAR	Cl mg/kg
											Cu	Mn	Zn		Ca	Mg	Na	K			
0-11	7.9	7.8	-	8.16	35.3	1.3	-	-	302	<1	-	-	-	11.9	11.0	2.4	0.8	0.7	6.7	9.5	4691
11-25	8.8	8.2	-	1.74	15.1	0.7	-	-	163	1.4	-	-	-	19.1	14.7	3.8	3.1	0.5	16.2	12.5	1668
25-45	8.9	8.3	-	2.27	12.4	0.4	-	-	165	6.0	-	-	-	11.2	8.8	3.6	2.2	0.4	19.6	20.1	1780
45-85	9.0	8.3	-	2.21	12.2	0.2	-	-	177	17.0	-	-	-	11.3	7.5	4.0	2.4	0.5	21.2	23.8	1605
85-115	8.8	8.3	-	0.98	10.2	0.1	-	-	79	3.5	-	-	-	1.1	1.6	0.6	0.2	0.1	na	7.5	1443

Note: 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. SAR is sodium adsorption ratio measured on the saturation extract.

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

