

## CALCAREOUS LOAM (Bluebush soil)

**General Description:** *Very highly calcareous loam grading to a very highly calcareous clay loam over a clayey substrate*

**Landform:** Flats and low rises

**Substrate:** Sedimentary clay or deeply weathered rock, mantled by soft carbonates

**Vegetation:** Pearl bluebush and cassia shrubland



**Type Site:** Site No.: CM071

1:50,000 sheet: 6831-3

Hundred:

Out of Hundreds

Annual rainfall: 215 mm

Sampling date:

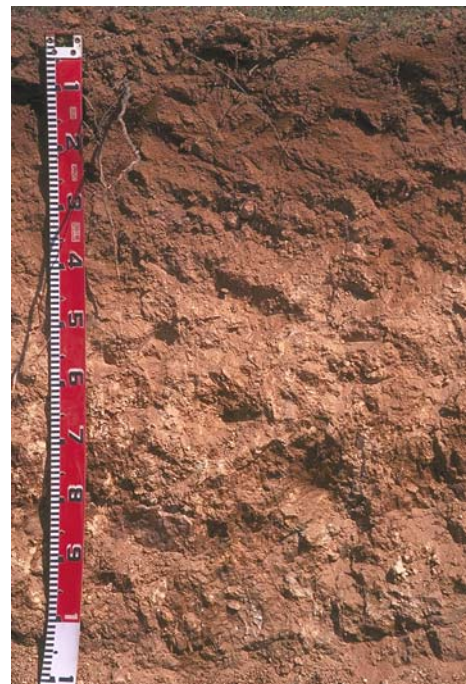
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Landform: Level plain, 0% slope

Surface: Firm with minor calcrete stone

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-18	Dark reddish brown very highly calcareous soft loam. Gradual to:
18-30	Reddish brown very highly calcareous loam. Abrupt to:
30-55	Brown very highly calcareous clay loam with 20-50% soft and 2-10% rubbly carbonate. Gradual to:
55-85	Yellowish red highly calcareous hard medium clay with moderate subangular blocky structure and 20-50% soft carbonate. Clear to:
85-110	Brown moderately calcareous very hard medium heavy clay with strong coarse prismatic structure, 20-50% soft carbonate, and 10-20% travertine and silcrete fragments.



**Classification:** Hypervescent, Regolithic, Hypercalcic Calcarosol; thick, non-gravelly, loamy/clayey, deep

## Summary of Properties

**Drainage** Well drained. The soil is unlikely to remain wet for more than a few hours after heavy rain.

**Fertility** The natural fertility as indicated by the exchangeable cations is moderate, but the high surface carbonate content restricts nutrient availability.

**pH** Alkaline at the surface, strongly alkaline with depth.

**Rooting depth** 110 cm in pit, but few roots below 55 cm.

### Barriers to root growth

**Physical:** None.

**Chemical:** High pH and sodicity from 30 cm, and high salinity and boron from 55 cm affect root development of some plants.

**Water holding capacity** Approximately 75 mm in main root zone, with an additional 20 mm below.

**Seedling emergence:** Good.

### Erosion Potential

**Water:** Low (flat ground).

**Wind:** Moderate, due to the vulnerability of the surface soil to pulverizing by livestock.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -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	
0-18	8.6	8.0	12.4	0.11	0.40	0.7	8	480	5	1.2	-	-	-	-	13.6	11.89	2.63	0.17	1.50	1.3
18-30	9.2	8.2	19.8	0.17	0.52	0.5	4	294	5	1.6	-	-	-	-	12.9	8.77	4.42	1.48	0.74	11.5
30-55	9.5	8.4	34.4	0.56	3.24	0.7	<4	200	28	5.4	-	-	-	-	12.0	4.78	5.96	4.17	0.46	34.8
55-85	9.1	8.7	36.1	2.31	12.54	0.3	<4	269	378	35.7	-	-	-	-	18.4	6.33	10.24	4.91	0.80	26.7
85-110	9.2	8.7	42.2	2.34	12.87	0.7	<4	280	423	37.5	-	-	-	-	17.0	5.34	9.58	4.77	0.73	28.1

**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.