

CHA Charra Land System

Area: 374.4 km²

Landscape: Very gently undulating plains and rises formed on Ripon / Bakara Calcrete, extensively covered by highly calcareous silty sands of the Woorinen Formation.

Annual rainfall: 290 – 320 mm average

Main soils:

Penong - A1a (Hypervescent, Regolithic, Hypercalcic / Supracalcic Calcarosol)
Highly calcareous loam becoming more clayey and calcareous with depth, grading to more than 50% fine or rubbly carbonate in a sandy clay loam matrix.

Bookabie - A4 (Regolithic, Hypercalcic / Lithocalcic Calcarosol)
Calcareous soft sandy loam to sandy clay loam, becoming more clayey and calcareous with depth, over Class III A, B or C fine to rubbly carbonate in a sandy clay loam to light clay matrix, from about 40 cm.

Magnesia soil - A1b (Hypervescent, Regolithic, Hypercalcic Calcarosol)
Calcareous loam becoming more clayey and calcareous at depth with variable rubble, continuing below 120 cm, and saline throughout

Chintumba - B1 (Hypervescent, Petrocalcic, Lithocalcic Calcarosol)
Medium thickness highly calcareous sandy loam to sandy clay loam containing increasing amounts of rubble with depth, over sheet calcrete at less than 50 cm.

Minor soils:

Magarey - A1c (Supravescent, Regolithic, Hypercalcic / Lithocalcic Calcarosol)
Highly calcareous (more than 40% CaCO₃) soft sandy loam to light sandy clay loam grading to very highly calcareous light sandy clay loam with variable rubble content.

Summary: Very gently undulating flats and rises with calcareous and highly calcareous sandy loams. These have moderate to marginal fertility and are commonly affected by high subsoil boron and salt. Magnesia patches are common throughout. Wind erosion potential is moderate. 10-15% of the area is sufficiently stony that cropping potential is marginal. Soils are shallow and sheet calcrete is common.



Soil Landscape Unit summary: 5 Soil Landscape Units (SLUs) mapped in the Charra Land System:

SLU	% of area	Component	Main soils	Prop#	Notes
QHA	0.7	Stony flats	Chintumba	D	Semi arable flats with shallow stony soils and significant sheet calcrete (Ripon). Minor magnesia patches.
SMA	48.5	Flats with magnesia	Penong / Magnesia	E	Flats and rises formed on Woorinen Formation, with underlying Ripon / Bakara Calcrete at the surface over 10-15% of the area. Soils are mainly calcareous sandy loams, including some shallow stony types. Soils are: <u>Penong</u> : Marginal fertility highly calcareous loam with moderate to high levels of salt and boron throughout. <u>Bookabie</u> : Moderate fertility calcareous sandy loam with moderate subsoil boron and salt. Slight wind erosion potential.
		Flats	Bookabie	E	
SMU	6.8	Flats with >10% magnesia	Penong / Magnesia	D	<u>Magarey</u> : Marginal fertility highly calcareous sandy loam with high subsoil boron and salt. Slight wind erosion potential. <u>Chintumba</u> : Very shallow, restricted water holding capacity, extensive surface stone, often semi arable.
SVB	29.9	Rises	Bookabie	E	
		Rises with magnesia	Penong / Magnesia	E	
SzU	14.1	Stony rises	Chintumba	E	
		Flats with magnesia	Penong / Magnesia	E	
		Flats	Magarey / Bookabie	E	

PROPORTION codes assigned to Soil Landscape Unit (SLU) components:

- D Dominant in extent (>90% of SLU)
- V Very extensive in extent (60–90% of SLU)
- E Extensive in extent (30–60% of SLU)
- C Common in extent (20–30% of SLU)
- L Limited in extent (10–20% of SLU)
- M Minor in extent (<10% of SLU)

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

