

BAM Bambrick Land System

Rolling low hills formed on calcareous rocks south of Orroroo

Total Area: 50.9 km²

Annual rainfall: 320 – 405 mm average

Geology: Calcareous siltstones and limestones of the Tapley Hill, Tarcowie and Brighton Formations.

Topography: Rolling, strongly dissected low hills with steep sharp rocky crests having a characteristic "fluted" appearance caused by watercourses incising channels almost to the ridges. Gully erosion and scalding are prevalent. Slopes are generally in the range 10-30% but there are some undulating areas and occasional steeper slopes.

Elevation: 640 m at the highest point near Mucra Hill to 450 m at the northern edge near Orroroo.

Relief: Typically between 20 and 70 m, but up to 100 m in places

Soils: The soils are predominantly shallow and stony over weathering rock. Most are calcareous throughout. On lower slopes there are some deeper non calcareous loam over clay soils.

Main soils

A2 Shallow calcareous loam - rises

L1 Shallow stony loam - steeper rocky slopes

Minor soils

C2 Gradational loam - gentler rises

A4 Deep calcareous loam- lower slopes and valleys

D3 Hard loam over dispersive clay - lower slopes

Main features: The Bambrick Land System is characterized by low hills and rises with highly calcareous soils. The land appears to have suffered substantial erosion in the past. Principal limitations include (apart from erosion potential), restricted waterholding capacity, poor structure (caused by previous erosion) and marginal fertility (lime induced deficiencies). Semi to non arable slopes are particularly vulnerable to erosion because of the difficulty in maintaining surface cover.

Soil Landscape Unit summary: 7 Soil Landscape Units (SLUs) mapped in the Bambrick Land System:

SLU	% of area	Main features #
ADB	11.1	Rocky low hills with up to 20% rock outcrop and abundant surface stone.
ADN	20.3	ADB Low hills with slopes of 5-20%.
ADi	31.0	ADN Low hills with slopes of 5-20% and some scalding. ADi Low hills with slopes of 10-35%, scalding and eroded watercourses.
Main soils: <u>shallow calcareous loam</u> - A2 (E) and <u>shallow stony loam</u> - L1 (E). The hills are moderately steep with shallow soils and rocky outcrops, and have apparently suffered substantial erosion in the past, as evidenced by the prevalence of scalding and eroded watercourses. The main limitations to pasture productivity are difficulty of access and low moisture holding capacity and fertility (caused by high carbonate contents of soils).		



EHH	16.2	Undulating rises and slopes of 5-15% with up to 20% rock outcrop and surface stone, formed on calcareous siltstones and dolomites. Most watercourses are eroded. EHH Rises with no scalding. EHm Undulating rises (slopes to 10%) characterized by areas of scalding. EHn Moderately steep rises (slopes up to 15%) characterized by areas of scalding. Main soils: <u>shallow calcareous loam - A2 (V)</u> , with <u>gradational loam - C2 (L)</u> and <u>shallow stony loam - L1 (L)</u> . This land is moderately steep with soils that are naturally erodible, shallow and prone to nutrient deficiencies. Rocky outcrops, scalding and eroded watercourses further reduce the practicality and advisability of regular cropping.
EHm	2.6	
EHn	9.7	
KNJ	8.8	Lower slopes and drainage depressions underlain by locally derived alluvium interspersed with bedrock highs. Eroded watercourses are common. Main soils: <u>deep calcareous loam - A4 (E)</u> and <u>hard loam over dispersive clay - D3 (E)</u> . The valleys have deeper soils than the slopes, but the main types are prone to erosion and the loam over clay soils (D3) have severe structural problems. Runoff from the surrounding rises and hills has contributed to scalding and erosion of watercourses; these deep unstable gullies hamper accessibility.
-R-	0.3	Pekina Reservoir.

PROPORTION codes assigned to soils within Soil Landscape Units (SLU):

- (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)

Detailed soil profile descriptions:

- A2** Shallow calcareous loam (Paralithic, Calcic / Lithocalcic Calcarosol)
Calcareous stony loam with abundant fine (Class III A) or rubbly (Class III B or III C) carbonate at shallow depth, grading to weathering fine grained rock within 100 cm.
- A4** Deep calcareous loam (Regolithic, Calcic / Supracalcic Calcarosol)
Calcareous loam to clay loam grading to fine (Class III A) or rubbly (Class III B) carbonate over silty to clayey alluvium below 100 cm.
- C2** Gradational loam (Calcic / Lithocalcic, Red Dermosol)
Medium thickness loam grading to a well structured red clayey subsoil with fine (Class III A) or rubbly (Class III B or III C) carbonate at shallow depth over weathering rock within 100 cm.
- D3** Hard loam over dispersive clay (Calcic, Red Sodosol)
Hard sandy loam to clay loam over a poorly structured dispersive red clay, grading to fine Class I carbonate with depth.
- L1** Shallow stony loam (Calcareous, Paralithic, Leptic Tenosol)
Stony non calcareous loam grading to calcareous clay loam over weathering rock at shallow depth.

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

