BNY Bunyung Land System

Calcrete plain north of the River Murray east of Morgan

Area: 23.9 km^2

Annual rainfall: 240 – 250 mm average

Geology: The landscape is dominated by calcrete, which forms a more or less continuous sheet over Blanchetown Clay, Bungunnia Limestone and Norwest Bend Formation. There are minor deposits of windblown Molineaux Sands scattered across the land surface.

Topography: The landscape is very gently undulating. Broad flat plains grade to very low gentle rises, and there are sporadic shallow depressions, which appear to be solution features. Sand deposits occur as very low irregular rises.

Elevation: 20 - 40 m

Relief: Up to 5 m

Soils: The vast majority of soils are shallow sandy loams over sheet calcrete. Deeper sands are minor.

Main soils
Soils of calcrete plains, rises and depressions
B2a Shallow calcareous sandy loam on sheet calcrete
B2b Shallow calcareous sandy loam on rubbly calcrete

Minor soils
Soils of sandy rises
G1 Moderately deep sand

Main features: The Bunyung Land System is characterized by a very gently undulating calcrete plain with shallow to moderately shallow calcareous sandy loams. The shallowness of the soils and the low rainfall prevent cropping or improved pastures, and most of the land is used for sparse grazing of bluebush and saltbush.

Soil Landscape Unit summary: 1 Soil Landscape Unit (SLU) mapped in the Bunyung Land System:

SLU	% of area	Main features #
QMA	100.0	Flat to very gently undulating calcrete plain, with extensive surface stone and outcropping sheet rock. Low rounded sand spreads and sand rises cover up to 10% of the area. Main soils: shallow calcareous sandy loam on sheet calcrete - **B2a** (V), with shallow calcareous sandy loam on rubbly calcrete - **B2b** (C) and moderately deep sand - **G1** (M) on sandy rises. These flats are very stony with shallow soils. Much of the land is uncleared, or has been allowed to regenerate. The sandy soils are commonly at risk of wind erosion. The combination of low and unreliable rainfall, with shallow or sandy soils precludes cropping - the land is used for extensive grazing.

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:

Soils of calcrete plains and low rises

B2a Shallow calcareous sandy loam on sheet calcrete (Petrocalcic, Lithocalcic Calcarosol)
Thin highly calcareous reddish brown sandy loam over a very highly calcareous sandy loam with more than 20% and usually more than 50% calcrete rubble, sharply overlying sheet calcrete at depths between 20 cm and 35 cm.

B2b Shallow calcareous sandy loam on rubbly calcrete (Petrocalcic, Lithocalcic Calcarosol)
Thin to medium thickness highly calcareous reddish brown sandy loam over a very highly calcareous sandy loam with more than 20% and usually more than 50% calcrete rubble, overlying rubbly or boulder calcrete at about 30 cm, grading to very highly calcareous light brown sandy loam to sandy clay loam.

Sandhills

G1 Moderately deep sand (Calcic / Lithocalcic, Red Kandosol OR Calcic / Lithocalcic Calcarosol)
Thick non to moderately calcareous sand to loamy sand grading to a reddish calcareous clayey sand to sandy clay loam over variable fine to rubbly carbonate at about 100 cm, commonly overlying calcrete at depth.

Further information: DEWNR Soil and Land Program