

CHL Chilcobbie Land System

(Equivalent to EYB5-Narlaby Land Type of Rangelands)

Area: 56.0 km²

Landscape: Saline and stony flats overlain by jumbled siliceous sand dunes and sand spreads. The landscape is probably underlain by Tertiary age clays (including Blanchetown Clay equivalent) which are extensively buried by highly calcareous windblown Woorinen Formation silty sands. These in turn are overlain by siliceous Molineaux Sand which has been reworked into jumbled sand dunes and irregular spreads which occupy about 25% of the land surface.

Annual rainfall: 280 – 295 mm average

Main soils:

- Lowan - H3 (Basic, Arenic, Bleached-Orthic Tenosol)
Thick bleached sand with a thin organically darkened surface layer, grading to a yellowish sand (often with darker lamellae), continuing below 150 cm.
- Wiabuna (sandy) - A4 (Regolithic, Lithocalcic / Supracalcic Calcarosol)
Calcareous loamy sand to sandy loam grading to carbonate rubble (Class III B or C).
- Moornaba - H2 (Calcareous, Arenic, Red-Orthic / Yellow-Orthic Tenosol)
Very thick red to brown sand, becoming weakly calcareous and often grading to an orange clayey sand with depth, overlying variable carbonate (fine to rubbly, occasionally sheet).

Minor soils:

- Heggaton - G3 (Calcic, Brown Chromosol)
Thick sand to loamy sand with a bleached A2 layer, abruptly overlying a weakly structured brown sandy clay to clay, calcareous with depth, grading to Tertiary sediments.
- Wiabuna (shallow) - B2/A4 (Petrocalcic / Lithocalcic Calcarosol)
Calcareous sandy clay loam over carbonate rubble grading to sheet calcrete.
- 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.
- Bayley - A8 (Hypergyptic Calcarosol)
Calcareous loam grading to a highly calcareous sandy clay loam over powdery gypsum.
- Saline soil - N2 (Salic / Hypersalic Hydrosol)
Miscellaneous wet saline soil influenced by rising saline groundwater tables.

Summary: The landscape is dominated by saline and stony land partly overlain by a complex of jumbled dunes and swales. The saline flats and associated gypseous lunettes are non arable, and have very limited grazing potential. The stony flats have shallow soils which, in low rainfall situations, have insufficient moisture storage capacity to sustain crops or productive pastures. The deep siliceous sands on sandhills and in swales are very infertile, water repellent and moderately to very highly susceptible to wind erosion.



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

SLU	% of area	Component	Main soils	Prop#	Notes
OxM	25.1	Moderate sand dunes	Lowan	E	Mainly sandy soils with moderate to very high wind erosion potential and low fertility. <u>Dunes:</u> Very low fertility and water repellence. Wind erosion potential varies from moderate (sand spreads), to high (moderate sand dunes). <u>Swales:</u> Sandy Wiabuna and Lowan, with some Heggaton soils. Low fertility, limited water holding capacity, and some water repellence (Lowan and Heggaton). Sporadic salinity and moderate wind erosion potential.
		Moderate sand dunes	Moornaba	L	
		Swales	Sandy Wiabuna	C	
		Swales	Lowan	L	
		Swales	Heggaton	M	
		Saline swales	Saline soil	M	
OxR	7.6	Sand spreads	Lowan	E	
		Sand spreads	Moornaba	L	
		Swales	Sandy Wiabuna	C	
		Swales	Lowan	L	
		Swales	Heggaton	M	
		Saline swales	Saline soil	M	
QOP	21.9	Stony flats	Shallow Wiabuna	E	Low water holding capacity and low fertility on flats. Very low fertility, water repellence and moderate wind erosion potential on sandhills.
		Stony flats	Chintumba	L	
		Low sand dunes	Moornaba	L	
		Low sand dunes	Lowan	L	
ZD-	32.9	Salt flat	Wet saline soil	D	Restricted grazing.
ZL-	12.5	Gypseous rises	Bayley	D	Wind erosion potential, low fertility, mild salinity

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](#)

