

# LIC Line Country Land System

- Area:** 1,076.4 km<sup>2</sup>
- Landscape:** Gently undulating plains underlain by Ripon / Bakara Calcrete, extensively overlain by highly calcareous silty sands of the Woorinen Formation. There are distinctive longitudinal ridges (relict sand dunes) with calcrete at shallow depth.
- Annual rainfall:** 280 – 310 mm average
- Main soils:**
- Wookata - A1a (Supravescent, Hypercalcic / Lithocalcic Calcarosol)  
Very highly calcareous (more than 40% CaCO<sub>3</sub>) soft loamy sand to sandy loam grading to very highly calcareous sandy loam with variable rubble content.
- Magarey - A1b (Supravescent, Hypercalcic / Lithocalcic Calcarosol)  
Very highly calcareous (more than 40% CaCO<sub>3</sub>) soft sandy loam to light sandy clay loam grading to very highly calcareous light sandy clay loam with variable rubble content.
- Wookata (shallow) - A1/B1 (Supravescent, Petrocalcic, Hypercalcic / Lithocalcic Calcarosol)  
Very highly calcareous (more than 40% CaCO<sub>3</sub>) soft loamy sand to sandy loam grading to very highly calcareous sandy loam with variable rubble content, over calcrete at about 40 cm.
- Minor soils:**
- Bookabie - A4a (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.
- Sandy rise - A4b (Regolithic, Hypercalcic / Lithocalcic Calcarosol)  
Slightly to highly calcareous soft loamy sand to sandy loam becoming more clayey and calcareous with depth over Class III A, B or C carbonate in a sandy loam to light sandy clay loam matrix.
- Penong - A1c (Hypervescent, 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.
- Magnesia soil - A1d (Hypervescent, Regolithic, Hypercalcic Calcarosol)  
Calcareous loam becoming more clayey and calcareous at depth with variable rubble, continuing below 120 cm, and saline throughout.
- Shallow Moornaba - H2 (Calcareous, Arenic, Red-Orthic / Yellow-Orthic Tenosol)  
Medium thickness brown sand over yellowish sand with fine carbonate and rubble at depth.
- 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.
- Summary:** Gently undulating plains characterized by highly calcareous sandy loams with marginal fertility, slight to moderate wind erosion potential and subsoil salinity. In places, salinity is high throughout the profile, resulting in magnesia patches. These are common across the landscape. High subsoil boron is also characteristic. Shallow stony soils occur to a limited extent. These are generally semi arable due to low waterholding capacity and extent of rock and stone.



**Soil Landscape Unit summary:** 10 Soil Landscape Units (SLUs) mapped in the Line Country Land System:

SLU	% of area	Component	Main soils	Prop#	Notes	
QEA	0.6	Sandy loam flats	Bookabie	V	Stony flats and rises with calcrete at shallow depth. Much of the land is only semi arable due to shallow soils and calcrete reefs or heavy rubble (Chintumba and shallow Wookata soils). Deeper calcareous sandy loams (Bookabie) are moderately fertile and have reasonable moisture storage, but are prone to wind erosion and may have high boron and salt in the subsoil. There are sporadic magnesia patches throughout.	
		Stony flats	Shallow Wookata	E		
QEB	1.1	Stony rises	Shallow Wookata	E		
		Sandy loam rises	Bookabie/ sandy rise	E		
QHA	1.3	Stony flats with magnesia patches	Chintumba / Magnesia	D		
QHB	1.1	Stony rises with magnesia patches	Chintumba / Magnesia	D		
QNB	1.9	Sandy loam rises	Bookabie/ sandy rise	D		
		Stony rises	Shallow Wookata	M		
UJJ	1.5	Sandy loam swales	Bookabie	E		Sandhill - swale complex. Sandhills have low fertility soils with moderate wind erosion potential. Bookabie and Chintumba soils of the swales are as above.
		Low sandhills	Shallow Moornaba / sandy rise	E		
		Stony swales	Chintumba	L		
YAp	2.6	Sandy loam rises	Wookata	D	Rises formed on Wooriner Formation deposits with mainly highly calcareous sandy loams. The main factors affecting productivity are marginal soil fertility, wind erosion potential, subsoil salinity and associated magnesia patches, and high soil boron levels in some soils. Main soils are: <u>Wookata</u> Highly calcareous sandy loam with slightly limited water holding capacity, low fertility, subsoil boron and salt, and slight to moderate wind erosion potential. <u>Magarey</u> Marginal fertility highly calcareous sandy loam with high subsoil boron and salt. Slight wind erosion potential. <u>Shallow Wookata</u> As for Wookata, except that waterholding capacity is reduced, and surface stone is increased to the point where it interferes with tillage. <u>Bookabie</u> Moderate fertility calcareous sandy loam with moderate subsoil boron and salt. Slight wind erosion potential. <u>Penong</u> Marginal fertility highly calcareous loam with moderate to high levels of salt and boron throughout. <u>Sandy rise</u> Low fertility calcareous loamy sand, moderately deep, subject to wind erosion.	
YGp	88.6	Sandy loam rises	Wookata / Magarey	V		
		Sandy loam rises with magnesia patches	Bookabie / Penong / sandy rise	C		
		Stony rises	Shallow Wookata	L		
YGy	0.5	Rises with >10% magnesia patches	Penong / Magnesia	E		
		Sandy loam rises	Magarey / Bookabie	E		
YPp	0.8	Sandy loam rises	Wookata	V		
		Stony rises	Shallow Wookata	C		

# 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](#)