

LEH Le Hunte Land System

- Area:** 1,682.6 km²
- Landscape:** Plains formed on highly calcareous silty sands (Woorinen Formation) and massive calcretes (Ripon and Bakara Formations), with underlying Hindmarsh Clay near the surface in some lower lying areas. The landscape is partly overlain by parallel siliceous sand ridges of Molineaux Sand. There are minor very small granitic outcrops protruding through the sedimentary cover.
- Annual rainfall:** 290 – 360 mm average
- Main soils:**
- Shallow Moornaba - **H2a** (Calcareous, Arenic, Brown-Orthic Tenosol)
Medium thickness brown sand over yellowish sand with fine carbonate.
- 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 within 50 cm.
- Bookabie (shallow) - **B2** (Petrocalcic, Supracalcic / Lithocalcic Calcarosol)
Calcareous soft sandy loam to sandy clay loam grading to Class III B or C rubbly carbonate in a sandy clay loam to light clay matrix, over hard calcrete within 50 cm.
- Bookabie (non rubbly) - **A4a** (Regolithic, Hypercalcic Calcarosol)
Calcareous soft sandy loam to sandy clay loam, becoming more clayey and calcareous with depth, over Class III A fine carbonate in a sandy clay loam to light clay matrix, from about 40 cm.
- Bookabie (rubbly) - **A4b** (Regolithic, Supracalcic / Lithocalcic Calcarosol)
Calcareous soft sandy loam to sandy clay loam, becoming more clayey and calcareous with depth, over Class III B or C rubbly carbonate in a sandy clay loam to light clay matrix, from about 40 cm.
- Magarey - **A1** (Supravescent, Hypercalcic / Lithocalcic Calcarosol)
Very 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.
- Minor soils:**
- Sandy rise - **A4c** (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.
- Moornaba - **H2b** (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).
- Buckleboo - **D2/D3** (Sodic, Lithocalcic, Red Chromosol)
Medium thickness sandy loam to sandy clay loam over a well structured red clay with rubbly carbonate within 50 cm, becoming less rubbly with depth over clay.
- 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.
- Skeletal soil - **L1** (Lithic, Leptic Tenosol / Rudosol)
Gravelly loamy sand to sandy clay loam over basement rock at depths usually < 50 cm.



Summary:

Most of the land is arable, with calcareous to highly calcareous sandy loams. These are marginally to moderately fertile, but have restricted waterholding capacities and subsoil boron and salt. They are slightly to moderately susceptible to wind erosion. Stony flats are semi arable, due to shallow soils and surface stone and sheet rock. Rises have sandy to sandy loam soils of low to marginal fertility, and moderate to high wind erosion potential.

Soil Landscape Unit summary: 26 Soil Landscape Units (SLUs) mapped in the Le Hunte Land System:

SLU	% of area	Component	Main soils	Prop #	Notes
A-g	<0.1	Rocky outcrops	Skeletal	D	Shallow stony soil, rock outcrop - non arable.
QMA	0.6	Stony flats	Chintumba	E	Stony flats formed on Ripon / Bakara Calcrete, with variable sandy rises on Woorinen Formation carbonates, and low sandhills of Molineaux Sand. Differences are due to variations in proportions of the main soils, which are: <u>Chintumba</u> Very shallow, restricted water holding capacity, low fertility, extensive surface stone, often semi arable. <u>Shallow Bookabie</u> As for Chintumba, but more fertile. <u>Sandy rise</u> Sandy soil with moderate wind erosion potential and marginal fertility. <u>Shallow Moornaba</u> Moderately deep, low fertility sand with moderate to high wind erosion potential.
			Shallow Bookabie	E	
QNA	1.4	Stony flats	Chintumba	E	
		Stony flats	Shallow Bookabie	E	
		Low sandhills	Shallow Moornaba	C	
		Sandy rises	Sandy rise	L	
QOA	3.9	Stony flats	Chintumba	E	
		Stony flats	Shallow Bookabie	E	
		Low sandhills	Shallow Moornaba	C	
QPA	1.1	Stony flats	Chintumba	E	
		Stony flats	Shallow Bookabie	E	
		Sandy rises	Sandy rise	L	
		Low sandhills	Shallow Moornaba	L	
QaA	8.8	Stony flats	Chintumba	C	
		Stony flats	Shallow Bookabie	C	
		Low sandhills	Shallow Moornaba	C	
		Sandy rises	Sandy rise	C	
QbA	16.5	Stony flats	Chintumba	E	
		Stony flats	Shallow Bookabie	E	
		Sandy rises	Sandy rise	C	
SMA	0.4	Flats	Bookabie / Magarey	D	Flats and very gentle slopes formed on Woorinen Formation carbonates with very highly calcareous sandy loam soils (Bookabie and Magarey in a 3:2 ratio). Up to 30% of the area is overlain by low sandhills. Soils are: <u>Bookabie</u> Moderate fertility calcareous sandy loam with moderate subsoil boron and salt. Slight wind erosion potential. <u>Magarey</u> Marginal fertility highly calcareous sandy loam with high subsoil boron and salt. Slight wind erosion potential. <u>Shallow Moornaba</u> Moderately deep, low fertility sand with moderate to high wind erosion potential.
SMB	1.2	Very gentle slopes	Bookabie / Magarey	D	
SUA	4.5	Flats	Bookabie / Magarey	V	
		Low sandhills	Shallow Moornaba	C	
SXB	3.4	Very gentle slopes	Bookabie / Magarey	V	
		Low sandhills	Shallow Moornaba	C	
SyB	1.2	Very gentle slopes	Bookabie / Magarey	V	
		Low sandhills	Shallow Moornaba	L	
UHI	21.6	Swales	Bookabie / Magarey	E	
		Moderate sandhills	Moornaba	E	
		Stony swales	Shallow Bookabie / Chintumba	L	
UIJ	6.0	Swales	Bookabie / Magarey	E	
		Low sandhills	Moornaba	E	
UJJ	0.9	Stony swales	Bookabie / Chintumba	V	
		Low sandhills	Shallow Moornaba	E	



UMH	7.1	Swales	Bookabie / Magarey	V	<p>sandy loam with moderate subsoil boron and salt. Slight wind erosion potential.</p> <p><u>Magarey</u> Marginal fertility highly calcareous sandy loam with high subsoil boron and salt. Slight wind erosion potential.</p> <p><u>Chintumba</u> Very shallow, restricted water holding capacity, low fertility, extensive surface stone, often semi arable.</p> <p><u>Shallow Bookabie</u> As for Chintumba, but more fertile.</p> <p><u>Buckleboo</u> Loam over clay soil, fertile with good water holding capacity.</p> <p>Wind erosion potential of sandhills is moderate (low sandhills) to moderately high (moderate to high sandhills). There is sporadic salinity and magnesia ground.</p>
		High sandhills	Moornaba	E	
		Swales	Buckleboo	M	
UMI	15.9	Swales	Bookabie / Magarey	E	
		Stony swales	Shallow Bookabie / Chintumba	E	
		Moderate sandhills	Moornaba	E	
		Swales	Buckleboo	M	
UMP	0.3	Swales with 2-10% saline patches	Bookabie / Magarey	E	
		Moderate sandhills	Moornaba	E	
		Swales	Buckleboo	M	
UMW	0.1	Swales with 2-10% magnesia patches	Bookabie / Magarey	V	
		Moderate sandhills	Moornaba	E	
		Swales	Buckleboo	M	
UUI	1.7	Stony swales	Shallow Bookabie / Chintumba	V	
		Moderate sandhills	Shallow Moornaba	E	
UUJ	0.3	Stony swales	Shallow Bookabie / Chintumba	V	
		Low sandhills	Shallow Moornaba	E	
VLA	0.2	Old lake	-	-	-
YAI	0.6	Low rises	Magarey	D	Highly calcareous sandy loam, marginal fertility, high subsoil boron and salt, slight wind erosion potential.
ZD-	<0.1	Salt lakes	-	-	-
ZI-	2.1	Salt lakes	-	E	Lunettes are prone to wind erosion, have marginal fertility and variable salinity.
		Lunettes	Bayley	E	
ZJ-	0.2	Lunettes	Bayley	V	Lunettes as for ZI-, flats are non arable, but have potential for establishment of salt tolerant forage plants.
		Marginally saline flats	Saline soil	C	

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

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

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

