

PLB Palabie Land System

- Area:** 926.0 km²
- Landscape:** Very gently undulating plain formed on highly calcareous silty sands (Woorinen Formation) and massive calcretes (Ripon and Bakara Formations), partly overlain by parallel siliceous sand ridges of Molineaux Sand.
- Annual rainfall:** 305 – 350 mm average
- Main soils:**
- Wiabuna - 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.
- Moornaba - H2a (Regolithic, Supracalcic Calcarosol)
Medium thickness brown sand over yellowish sand with fine carbonate.
- Shallow Moornaba - H2b (Calcareous, Arenic, Red-Orthic / Yellow-Orthic Tenosol)
Calcareous loamy sand grading to a very highly calcareous sandy loam with variable rubble.
- 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:**
- Saline soil - N2 (Salic / Hypersalic Hydrosol)
Miscellaneous wet saline soil influenced by rising saline groundwater tables.
- Wudinna - B3/B6 (Petrocalcic, Red Kandosol / Chromosol)
Medium thickness non calcareous sandy loam to sandy clay loam over sheet calcrete, sometimes with a red clayey B horizon up to 20 cm thick above the calcrete.
- Bayley - A8 (Hypergyptic Calcarosol)
Calcareous loam grading to a highly calcareous sandy clay loam over powdery gypsum.
- 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.
- Rubbly Wiabuna - A4b (Regolithic, Lithocalcic / Supracalcic Calcarosol)
Calcareous sandy loam to sandy clay loam grading to carbonate rubble.
- Shallow Wiabuna - B2 (Petrocalcic, Supracalcic / Lithocalcic Calcarosol)
Calcareous sandy clay loam over carbonate rubble grading to sheet calcrete.
- Haslam - H1 (Supravescent, Hypercalcic Calcarosol)
Thick highly calcareous sand, becoming more calcareous with depth and continuing below 100 cm.
- Summary:** Most of the land is arable, with calcareous to highly calcareous sandy loams. These are marginally to moderately fertile, but have restricted water holding capacities and subsoil boron and salt. They have slight to moderate potential for wind erosion. Stony flats are semi arable, due to shallow soils, and surface stone and sheet rock. Sandhill soils have low fertility, and moderate to moderately high wind erosion potential.



Soil Landscape Unit summary: 24 Soil Landscape Units (SLUs) mapped in the Palabie Land System:

SLU	% of area	Component	Main soils	Prop#	Notes
QNA	0.9	Stony flats	Chintumba / Wudinna / shallow Wiabuna	E	Stony flats formed on Ripon / Bakara Calcrete, and flats underlain by soft to rubbly Woorinen Formation carbonates, with low sandhills of Molineaux Sand. Differences are due to variations in proportions of the main soils, which are: <u>Chintumba</u> : Very shallow calcareous sandy loam with restricted waterholding capacity, extensive surface stone, often semi arable. <u>Wudinna</u> : As for Chintumba, but soil is non calcareous. <u>Wiabuna</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.
		Flats	Wiabuna / Magarey	E	
		Low sandhills	Moornaba / shallow Moornaba	M	
QYA	4.6	Stony flats	Chintumba / Wudinna / shallow Wiabuna	E	
		Flats	Wiabuna / Magarey	E	
		Low sandhills	Moornaba / shallow Moornaba	C	
QbA	7.1	Stony flats	Chintumba / Wudinna / shallow Wiabuna	E	
		Low sandhills	Shallow Moornaba	C	
		Flats	Wiabuna / Magarey	L	
SMA	4.8	Flats	Wiabuna / Magarey	D	
		Low sandhills	Moornaba / shallow Moornaba	M	
STA	0.7	Flats	Wiabuna / Magarey	D	
SUA	7.3	Flats	Wiabuna / Magarey	V	
		Low sandhills	Moornaba / shallow Moornaba	C	
SUK	0.9	Flats with 2-10% saline patches	Wiabuna / Magarey	V	
		Low sandhills	Moornaba / shallow Moornaba	L	
SgA	2.2	Flats	Wiabuna / Magarey	E	
		Stony flats	Chintumba / Wudinna / shallow Wiabuna	C	
		Low sandhills	Moornaba / shallow Moornaba	C	
SyB	0.7	Very gentle slopes	Wiabuna / Magarey	V	
		Low sandhills	Moornaba / shallow Moornaba	L	
U-C	0.1	Moderate sandhills	Shallow Moornaba	D	
UHI	1.2	Flats	Wiabuna / Magarey	E	
		Moderate sandhills	Moornaba / shallow Moornaba	E	
		Stony flats	Chintumba / Wudinna / shallow Wiabuna	L	
UHI	1.9	Flats	Wiabuna / Magarey	E	
		Low sandhills	Moornaba / shallow Moornaba	E	



		Stony flats	Chintumba / Wudinna / shallow Wiabuna	L	<p>Magarey: Marginal fertility highly calcareous sandy loam with high subsoil born and salt. Slight wind erosion potential.</p> <p>Chintumba: Very shallow, restricted waterholding capacity, extensive surface stone, often semi arable.</p> <p>Wiabuna (shallow): Restricted waterholding capacity, extensive surface stone.</p> <p>Wudinna: As for Chintumba, but soil is non calcareous.</p> <p>Wind erosion potential of sandhills is moderate (low sandhills) to moderately high (moderate sandhills).</p>
UJI	5.0	Flats	Wiabuna / Magarey	V	
		Moderate sandhills	Moornaba / shallow Moornaba	E	
		Stony flats	Chintumba / Wudinna / shallow Wiabuna	L	
UJJ	42.5	Flats	Wiabuna / Magarey	V	
		Low sandhills	Moornaba / shallow Moornaba	E	
		Stony flats	Chintumba / Wudinna / shallow Wiabuna	L	
UMI	4.0	Flats	Wiabuna / Magarey	E	
		Stony flats	Chintumba / Wudinna / shallow Wiabuna	E	
		Moderate sandhills	Moornaba / shallow Moornaba	E	
UMJ	3.2	Flats	Wiabuna / Magarey	V	
		Low sandhills	Moornaba / shallow Moornaba	E	
VL-	0.5	Lunettes	Bayley	V	
		Saline flats	Saline soil	C	
YAI	0.8	Low rises	Magarey	V	
		Sandspreads	Haslam	L	
YBp	2.4	Low rises	Magarey	V	
		Low sandhills	Moornaba / shallow Moornaba	L	
		Sandspreads	Haslam	L	
Ypp	0.4	Low rises	Magarey	V	
		Stony flats	Chintumba / Wudinna / shallow Wiabuna	C	
		Sandspreads	Haslam	L	
ZH-	<0.1	Marginally saline flats	Saline soil	D	
ZI-	7.4	Salt lakes	-	V	
		Lunettes	Bayley	E	
ZJ-	1.4	Lunettes	Bayley	E	
		Salt flats	Saline soil	E	
ZM-	<0.1	Lunettes	Bayley	D	

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](#)

