

PEE Peella Land System

(Equivalent to EYB5-Corrobinnie Land Type of Rangelands)

Area: 1,340.9 km²

Landscape: Gently undulating plains and low hills overlain by jumbled siliceous sand dunes. The landscape is underlain by granitic gneisses which outcrop sporadically. They are partly capped by Tertiary age clays (including Blanchetown Clay equivalent) which in turn are almost completely 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 40% of the land surface.

Annual rainfall: 280 – 400 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) - A4a (Regolithic, Lithocalcic / Supracalcic Calcarosol)
Calcareous loamy sand to sandy loam grading to carbonate rubble (Class III B or C).

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.
Kimba - D3 (Hypercalcic, Red Sodosol)
Medium thickness hard loamy sand to loam overlying a strongly subangular blocky red clay, highly calcareous (Class I carbonate) from about 30 cm, grading to Blanchetown Clay equivalent.
Wiabuna - A6 (Hypercalcic Calcarosol)
Calcareous loam becoming more clayey and calcareous with depth, grading to a very highly calcareous clay (Class I carbonate) over Tertiary clay.
Shallow Wiabuna - B2 (Petrocalcic, Supracalcic / Lithocalcic Calcarosol)
Calcareous sandy clay loam over carbonate rubble grading to sheet calcrete.
Rubbly Wiabuna - A4b (Regolithic, Supracalcic Calcarosol)
Calcareous sandy loam grading to a rubbly very highly calcareous sandy clay loam over light clay from about 100 cm.
Skeletal soil - L1 (Lithic, Leptic Tenosol / Rudosol)
Variable gravelly loamy sand to sandy clay loam over basement rock at depths usually less than 50 cm.
Mangalo - D1 (Hypercalcic, Red Chromosol OR Calcareous, Inceptic, Red-Orthic Tenosol)
Thin to medium thickness coarse loamy sand to sandy loam over a red well structured clay forming in weathering rock with abundant fine carbonate in fissures.
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 sandy soils in a complex of jumbled dunes and swales. Deep siliceous sands on sandhills and in swales are the main soils. They are very infertile, water repellent and moderately to very highly susceptible to wind erosion. Calcareous loamy sands in swales are somewhat more fertile and are less prone to wind erosion, although still with slight to moderate potential. There are sporadic saline areas, very minor overall. Stony sandy loams associated with rocky outcrops have moderate fertility but are only semi arable.

Soil Landscape Unit summary: 27 Soil Landscape Units (SLUs) mapped in the Peella Land System:

SLU	% of area	Component	Main soils	Prop#	Notes
A-g	0.7	Rock outcrops	Skeletal	V	Shallow soils and rocky outcrop, or infertile wind erosion prone sand - non arable.
		Sand spreads	Lowan	L	
AgB	0.4	Stony slopes	Skeletal	E	Moderate slopes, shallow soils and patchy outcrop, or infertile wind erosion prone sand - non arable.
		Sand spreads	Lowan	E	
ENB	<0.1	Very gentle slopes	Mangalo	V	Slopes potentially productive, sand dunes infertile and prone to wind erosion and water repellence.
		Low sand dunes	Lowan	C	
ETB	0.1	Very gentle slopes	Mangalo	E	Soils are productive between the outcrops - semi arable. Slight water erosion potential.
		Rocky outcrops	Skeletal	E	
GCA	2.0	Flats	Heggaton	V	Low to very low fertility, water repellent soils with moderate (Heggaton) to high (Lowan) wind erosion potential.
		Moderate sand dunes	Lowan	C	
GCB	0.1	Very gentle slopes	Heggaton	V	GCA Moderate to high wind erosion potential on sand dunes. GCB Moderate wind erosion potential on sand dunes, slight water erosion potential on slopes.
		Low sand dunes	Lowan	E	
GDA	0.1	Sandy flats	Heggaton	E	Low fertility, water repellent, moderately susceptible to wind erosion.
			Sandy Wiabuna	E	
HEE	1.6	Loamy flats	Kimba / Wiabuna	D	Moderately fertile sandy loam soils, with subsoil boron and salt accumulations. Moderately low wind erosion potential.
OwK	1.4	Flats	Sandy Wiabuna	E	Flats: Low fertility, moderate wind erosion potential, limited water holding capacity Sand spreads: Very low fertility, moderately high wind erosion potential, water repellence.
		Sand spreads	Lowan	E	
OxE	60.8	High sand dunes	Lowan	V	Mainly sandy soils with moderate to very high wind erosion potential and low fertility. Dunes: Very low fertility and water repellence. Wind erosion potential varies from moderate (low sand dunes), to very high (high sand dunes). Swales: Sandy Wiabuna and Lowan, with some Heggaton soils. Low fertility, limited water holding capacity, and some water repellence (Lowan & Heggaton). Moderate wind erosion potential. Slight water erosion potential in Oxe and Oxf.
		Swales	Sandy Wiabuna	C	
		Swales	Lowan	L	
		Swales	Heggaton	M	
OxF	0.8	Moderate sand dunes	Lowan	E	
		Swales	Sandy Wiabuna	C	
		Swales	Lowan	L	
		Swales	Heggaton	M	
OxG	0.8	Low sand dunes	Lowan	E	
		Swales	Sandy Wiabuna	C	
		Swales	Lowan	L	
		Swales	Heggaton	M	



OxH	1.1	Swales	Sandy Wiabuna	E	
		High sand dunes	Lowan	E	
		Swales	Lowan	L	
		Swales	Heggaton	L	
OxI	9.6	Swales	Sandy Wiabuna	E	
		Moderate sand dunes	Lowan	E	
		Swales	Lowan	L	
		Swales	Heggaton	L	
OxJ	10.3	Swales	Sandy Wiabuna	E	
		Low sand dunes	Lowan	E	
		Swales	Lowan	L	
		Swales	Heggaton	L	
OxK	1.0	Sand spreads	Lowan	C	
		Swales	Sandy Wiabuna	C	
		Swales	Lowan	L	
		Swales	Heggaton	M	
Oxe	2.9	Gentle slopes	Sandy Wiabuna	E	
		Moderate sand dunes	Lowan	E	
		Swales	Lowan	L	
		Swales	Heggaton	L	
Oxf	0.2	Gentle slopes	Sandy Wiabuna	E	
		Low sand dunes	Lowan	E	
		Swales	Lowan	L	
		Swales	Heggaton	L	
QOP	<0.1	Stony flats	Shallow Wiabuna	V	Low waterholding capacity and low fertility on flats. Very low fertility, water repellence and moderate wind erosion potential on sandhills.
		Low sand dunes	Lowan	C	
SMA	2.2	Flats	Sandy Wiabuna	D	Low fertility, limited waterholding capacity, slight wind erosion potential and minor salinity (in SMK).
SMB	1.7	Very gentle slopes	Sandy Wiabuna	D	
SMK	<0.1	Flats with minor saline seepage	Sandy Wiabuna	D	
			Saline soil	M	
SZA	1.2	Flats	Sandy Wiabuna	V	Low fertility, moderate wind erosion potential, limited waterholding capacity and slight water erosion potential (in SZB).
		Low sand dunes	Lowan	C	
SZB	0.7	Very gentle slopes	Sandy Wiabuna	V	Very low fertility, moderate wind erosion potential and water repellence on sandhills.
		Low sand dunes	Lowan	C	
VJ-	0.1	Old lake bed	-	-	-
ZD-	<0.1	Salt flat	Wet saline soil	D	Restricted grazing.
ZJ-	0.2	Lunettes	Bayley	V	Lunettes Wind erosion potential, low fertility, mild salinity Flats Limited productivity
		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](#)

