

# KGW Koongawa Land System

**Area:** 330.9 km<sup>2</sup>

**Landscape:** Gently undulating flats and rises underlain by gneissic basement rock, almost completely overlain by clayey sediments (Blanchetown Clay equivalent). The clays are usually veneered by highly calcareous silty sand (Woorinen Formation) which has blown across the landscape and been leached into the soil. In places, these calcareous materials are over a metre thick. More recently, windblown Molineaux Sands have been deposited and reworked into parallel sand ridges which overlie the main land surface.

**Annual rainfall:** 320 – 380 mm average

**Main soils:**

Wiabuna - A5 (Regolithic, Lithocalcic / Hypercalcic Calcarosol)  
Thick calcareous sandy loam to sandy clay loam grading Class III C, B or A carbonate (in a sandy clay loam matrix), over Tertiary clay.

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).

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.

**Minor soils:**

Buckleboo - D2 (Sodic, Lithocalcic, Red Chromosol)  
Medium thickness sandy loam to sandy clay loam over a coarsely structured red clay with Class III carbonate rubble within 50 cm, grading to very highly calcareous sandy clay.

Wiabuna - A4 (Regolithic, Lithocalcic / Supracalcic Calcarosol)  
Calcareous sandy loam to sandy clay loam grading to carbonate rubble.

Wookata - A1 (Supravescent, Regolithic, 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.

Skeletal soil - L1 (Lithic / Petroferric, Leptic Tenosol / Rudosol)  
Variable gravelly loamy sand to sandy clay loam over basement rock or massive ironstone at depths usually less than 50 cm.

**Summary:** The landscape comprises gently undulating rises partly overlain by parallel sandhills. Typical soils of the rises are sandy clay loams over red clays and calcareous sandy clay loams. These are moderately fertile, but can have elevated subsoil boron and salt levels. They have moderately low wind erosion potential, and slight water erosion potential on slopes. The low to moderate sandhills are infertile and prone to wind erosion, although most are arable with appropriate management.



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

SLU	% of area	Component	Main soils	Prop#	Notes
A-g	0.1	Rocky outcrops	Skeletal	D	Rocky outcrop and shallow soils - non arable.
IeA	2.9	Flats	Wiabuna	D	Calcareous sandy loams are moderately fertile but can have high subsoil salt and/or boron. Slight wind erosion potential.
		Low sandhills	Moornaba	M	
IkB	29.3	Rises	Wiabuna	V	Calcareous sandy loams are moderately fertile but can have high subsoil salt and/or boron. Slight wind erosion potential. Sandhills are infertile and prone to wind erosion.
		Low sandhills	Moornaba	L	
IrA	1.9	Flats	Wiabuna	E	Calcareous sandy loams and sandy clay loam over clay soils. Fertile although boron toxicity and subsoil salinity may occur. Low erosion potential.
			Kimba	E	
			Buckleboo	C	
IsA	14.3	Flats	Wiabuna	E	Flats as for <b>IrA</b> , sandhills as for <b>U-C</b> , with moderate wind erosion potential.
			Kimba	C	
		Low sandhills	Buckleboo	L	
			Moornaba	C	
SyB	0.5	Rises	Wiabuna	E	Similar to <b>IkB</b> , but very highly calcareous Wookata soils are less fertile.
		Low sandhills	Wookata	E	
			Moornaba	L	
U-C	1.0	Moderate sandhills	Moornaba	D	Low fertility and moderately high wind erosion potential.
UjI	33.3	Moderate sandhills	Moornaba	E	Sandhills: Low fertility and moderate to moderately high wind erosion potential. Swales: Complex of calcareous sandy loams and sandy clay loam over clay soils. Fertile although boron toxicity and subsoil salinity may occur. Low erosion potential.
			Swales	Wiabuna	
		Kimba		C	
		Buckleboo		L	
UjJ	16.6	Low sandhills	Moornaba	E	
		Swales	Wiabuna	C	
			Kimba	C	
			Buckleboo	L	
VJ-	0.1	Old lake bed	-	-	-

# 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](#)

