

KRK Karkoo Land System

- Area:** 213.1 km²
- Landscape:** Very gently undulating plains formed on Ripon / Bakara calcrete, overlain by highly calcareous Woorinen Formation materials veneered by Molineaux Sand.
- Annual rainfall:** 395 – 445 mm average
- Main soils:**
- Wharminda - G4 (Hypercalcic, Brown Sodosol)
Medium to thick sand with a bleached A2 layer abruptly overlying a hard columnar structured dispersive brown mottled clay, highly calcareous with depth, grading to alluvial or Tertiary sediments.
 - Karkoo - G3 (Hypercalcic, Yellow Chromosol / Sodosol)
Thick loamy sand to sand, bleached at the base over a coarsely prismatic or columnar structured yellow and brown clay, calcareous with depth.
 - Wiabuna (rubbly) - A4 (Regolithic, Lithocalcic / Supracalcic Calcarosol)
Calcareous sandy loam to sandy clay loam grading to carbonate rubble.
 - Calcrete - B2 (Petrocalcic, Lithocalcic Calcarosol)
Thin calcareous sandy loam to clay loam over hard calcrete, associated with abundant surface calcrete and sheet rock.
- Minor soils:**
- Saline soil - N2 (Salic / Hypersalic Hydrosol)
Miscellaneous wet saline soil influenced by rising saline groundwater tables.
 - Moornaba - H2 (Calcareous, Arenic, Red-Orthic / Brown-Orthic Tenosol)
Very thick red to brown sand, becoming weakly calcareous and often grading to an orange clayey sand with depth, overlying variable carbonate.
 - Lowan - H3 (Basic, Argic, Bleached-Orthic Tenosol)
Thick bleached sand organically darkened at the surface, over a yellow sand.
- Summary:** Gently undulating rises with mainly sand over clay soils which are infertile and prone to wind erosion and water repellence. Dispersive clay subsoils impede water movement and root growth. Calcareous sandy loams are common. These are more fertile but often have rubble or hard calcrete at relatively shallow depth, restricting waterholding capacity. Surface stone and sheet rock prevent cultivation in places. Low sandhills (minor overall) are highly infertile and wind erosion prone. Salt affected land is minor overall.



Soil Landscape Unit summary: 4 Soil Landscape Units (SLUs) mapped in the Karkoo Land System:

SLU	% of area	Component	Main soils	Prop#	Notes
GSB	3.7	Sandy rises	Wharminda / Karkoo	E	Gently undulating rises on Woorinen deposits mantled by Molineaux Sand, with significant calcrete outcrop. Soils are mainly sand over clay, with limited calcareous sandy loams and minor shallow stony soils. Minor salinity in depressions: <u>Wharminda / Karkoo:</u> Sandy surface (infertile, water repellent, moderate wind erosion potential). Acidic in places. Dispersive clay subsoil (waterlogging, poor root growth). <u>Calcrete:</u> Very shallow and stony with abundant surface stone and sheet calcrete - non arable <u>Wiabuna:</u> Calcareous sandy loam, moderately fertile, some boron toxicity, slight wind erosion potential.
		Sandy loam rises	Wiabuna	E	
		Acidic sandy rises	Wharminda / Karkoo (acid)	L	
GVA	87.5	Sandy flats	Wharminda / Karkoo	V	
		Stony flats	Wiabuna/ Calcrete	C	
OrJ	4.7	Sandy swales	Wharm / Karkoo	E	30-60% low sandhills with sand over clay and limited shallow stony soils in swales: <u>Wharminda / Karkoo:</u> As above. <u>Calcrete:</u> As above. <u>Moornaba-Lowan:</u> Very low fertility, moderate to high wind erosion potential, water repellent.
		Low sandhills	Moornaba / Lowan	E	
		Stony swales	Calcrete	L	
ZHF	4.1	Variable salinity flats	Saline soil	E	Some scope for establishment of salt tolerant pasture and forage plants, but much of the land is too saline for any agricultural use.
		Highly saline flats	Saline soil	E	

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](#)

