

HEG

Heggaton Land System

Area: 187.3 km²

Landscape: Undulating rises and low hills formed on basement schists, granitic gneisses and quartzites which outcrop sporadically. The rocks are extensively covered by unconsolidated clayey, sandy and gravelly alluvial / colluvial sediments resulting from their erosion and re-deposition. The sediments are partly overlain by highly calcareous silty sands (Woorinen Formation) of aeolian origin. More recently, siliceous Molineaux Sand has blown across the landscape. Most occurs as thin sandspreads, but some has been worked into jumbled sandhills. Alluvial sediments have been deposited in modern creek flats. These are generally marginally saline.

Annual rainfall: 345 – 415 mm average

Main 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.

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.

Cleve - D3a (Hypercalcic, Red Sodosol)
Thin to medium thickness hard loamy sand to sandy clay loam over a red clay with coarse prismatic structure, highly calcareous from about 25 cm, grading to alluvial clay.

Minor soils: Wiabuna (rubby) - A5 (Regolithic, Lithocalcic / Supracalcic Calcarosol)
Calcareous sandy loam to sandy clay loam grading to carbonate rubble.
Nobby - D3b (Calcic, Red Chromosol / Sodosol)
Medium thickness coarse sandy loam to sandy clay loam over a coarsely structured red clay, moderately calcareous with depth grading to alluvial sediments derived from eroded granitic rocks.
Buckleboo - D2 (Hypercalcic / Lithocalcic, Red Chromosol)
Firm sandy loam to sandy clay loam over well structured red clay, calcareous with depth, grading to deeply weathered rock, rock derived outwash or Tertiary age clayey sediments.
Calcareous loam (shallow) - A2 (Paralithic, Hypercalcic / Lithocalcic Calcarosol)
Calcareous sandy loam to loam grading to a highly calcareous clay loam over Class III A, B or C carbonate merging with weathering rock.
Cleve (shallow) - D1 (Calcic, Red Chromosol)
Thin to medium thickness gravelly sandy loam to clay loam over a red well structured clay, calcareous with depth, grading to weathering metamorphic rock within 50 cm.
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.
Saline alluvial soil - N2 (Salic / Hypersalic Hydrosol)
Miscellaneous wet saline soil influenced by rising saline groundwater tables.



Summary:

The land system is dominated by sandy soils, on slopes and sometimes on low, moderate or high jumbled sandhills. The more common types have clayey subsoils which have better nutrient and water storage capacities than associated deep sands. However, all are infertile and often acidic, water repellent and prone to wind erosion, potential for which is extreme on the larger sandhills. Other soils include sandy loams over clay and calcareous sandy loams, both of which have moderate fertility and are less susceptible to wind erosion. Minor rocky outcrops have little productive value. Minor saline seepage occurs throughout, and there are more extensive saline areas in some drainage depressions.

Soil Landscape Unit summary: 16 Soil Landscape Units (SLUs) mapped in the Heggaton Land System:

SLU	% of area	Component	Main soils	Prop #	Notes
A-g	0.9	Rocky outcrops	Skeletal	D	Non arable.
ENB	0.8	Very gentle slopes	Calc loam	V	Slopes are potentially productive although prone to water erosion. Sandhills are infertile and prone to wind erosion and water repellence.
		Low sandhills	Lowan	C	
ETC	0.4	Gentle slopes	Shallow Cleve	E	Moderately shallow but relatively fertile soils between rocky outcrops - semi arable.
		Rocky outcrop	Skeletal	E	
GFE	4.3	Drainage depressions	Heggaton	D	Low fertility, moderate wind erosion potential, water repellence, sporadic waterlogging and salinity. Acidity is an increasing problem.
GGB	21.4	Very gentle slopes	Heggaton	V	Low to very low fertility, moderate to high wind erosion potential, water repellence. Minor salinity and increasing acidity.
		Low sandhills	Lowan	C	
GGC	3.8	Gentle slopes	Heggaton	V	GGB Slight water erosion potential. GGC Moderate water erosion potential.
		Low sandhills	Lowan	C	
GOA	3.6	Sandy flats	Heggaton	V	<u>Heggaton</u> : Low fertility, moderate wind erosion potential, water repellence and acidity. <u>Cleve/Wiabuna</u> : Moderate fertility, slight wind erosion potential
		Sandy loam flats	Cleve/ Wiabuna	E	
GOB	3.3	Very gentle sandy slopes	Heggaton	E	<u>Lowan</u> : Very low fertility, high wind erosion potential, water repellence and acidity.
		Very gentle sandy loam slopes	Cleve/ Wiabuna	E	
		Low sandhills	Lowan	M	
GOC	33.4	Gentle sandy slopes	Heggaton	E	GOA Low water erosion potential GOB Slight water erosion potential GOC Moderate water erosion potential. Minor saline seepage throughout.
		Gentle sandy loam slopes	Cleve/ Wiabuna	E	
		Low sandhills	Lowan	M	
GOj	0.6	Drainage depression with 10-50% saline seepage	Heggaton	E	Infertile sandy soils prone to waterlogging, wind and water erosion and water repellence, with saline soils suitable only for salt tolerant species. Subdominant soils more fertile.
			Saline alluvial	C	
			Cleve	L	
			Wiabuna	L	
GSB	2.2	Very gentle slopes	Heggaton	E	Mixture of infertile, wind erosion prone, water repellent, acidic sands; and calcareous sandy loams with moderate fertility and slight wind erosion potential. Minor salinity throughout. Slight water erosion potential.
			Wiabuna	E	
GzB	11.3	Very gentle sandy slopes	Heggaton	E	Mixture of infertile, wind erosion prone, water repellent and acidic sands; and sandy loam over clay soils with moderate fertility and slight wind erosion potential. Minor salinity throughout. Slight water erosion potential.
		Very gentle sandy loam slopes	Nobby/ Buckleboo	C	
		Low sandhills	Lowan	C	



OyE	0.4	High sandhills Swales	Lowan Heggaton	V E	Sandy soils throughout. Deep sands are highly infertile and have moderately high to extreme wind erosion potential (depending on dune height and shape). Sand over clay soils have similar but less severe limitations. All are water repellent and susceptible to acidification.
OyJ	2.1	Swales	Heggaton	V	
		Moderate sandhills	Lowan	E	
Oye	10.8	Undulating swales Moderate sandhills	Heggaton Lowan	E E	
ZA-	0.7	M marginally to highly saline flats	Saline alluvial	D	Too saline for cropping, but most suitable for revegetation with salt tolerant species for grazing, fodder or amenity.

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](#)

