

# GYS Glynn South Land System

**Area:** 126.0 km<sup>2</sup>

**Landscape:** Very gently undulating low hills formed on basement granitic gneisses and schists which outcrop sporadically. The rocks are largely covered by unconsolidated clayey, sandy and gravelly alluvial / colluvial sediments resulting from their erosion and re-deposition. The sediments are overlain by highly calcareous silty sands (Woorinen Formation) of aeolian origin. More recently, parallel sandhills have formed over the land surface following the accession of windblown Molineaux Sands. Alluvial sediments have been deposited in modern creek flats. These are generally marginally saline.

**Annual rainfall:** 285 – 355 mm average

**Main soils:** Moornaba (shallow) - G1 (Calcic, Red Chromosol)  
Thick sand to loamy sand over orange clayey sand to sandy clay.

Cleve - D3 (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.

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.

Wiabuna (rubbly) - A5 (Lithocalcic / Supracalcic Calcarosol)  
Calcareous sandy loam to sandy clay loam grading to carbonate rubble.

**Minor soils:** 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.

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).

Lowan - H3 (Basic, Argic, Bleached-Orthic Tenosol)  
Thick bleached sand, organically darkened at the surface, over a yellow sand, often with clayey lamellae.

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.

Gradational alluvial soil - M4 (Eutrophic, Red Kandosol)  
Medium to thick sandy loam grading to a red sandy clay loam to clay, sandier with depth.

Uniform alluvial soil - M1 (Calcareous, Regolith, Red-Orthic Tenosol)  
Very thick brown loamy sand to sandy loam, continuing below 100 cm.

Saline alluvial soil - M4/N2 (Calcic, Red Dermosol / Kandosol)  
Thick sandy loam over a red clay, calcareous with depth. Saline throughout.

Wet saline alluvial soil - N2 (Salic / Hypersalic Hydrosol)  
Miscellaneous wet saline soil influenced by rising saline groundwater tables.



**Summary:**

Most of the land comprises very gentle slopes. Low to moderate parallel sandhills cover 15 - 20% of the area. The soils of the slopes include moderately fertile sandy loams (some with clayey subsoils, some calcareous) which are potentially productive, and sand over clay soils which have low fertility and are prone to wind erosion and water repellence. All soils on slopes are at some risk of water erosion. The sandhills are highly susceptible to wind erosion, are very infertile and are water repellent. Basement rock rises with sandy loam soils occupy about 10% of the area, but rocky outcrop and shallow soils limit productive potential. There is sporadic salinity, but most is confined to creek flats.

**Soil Landscape Unit summary:** 9 Soil Landscape Units (SLUs) mapped in the Glynn South Land System:

SLU	% of area	Component	Main soils	Prop#	Notes
AKB	2.4	Rocky slopes	Skeletal	D	Shallow soils with outcrop and high water erosion potential - non arable
AKC	5.4	Moderately steep rocky slopes	Skeletal	D	Shallow soils with outcrop and very high water erosion potential - non arable
ETB	3.5	Very gentle slopes	Shallow Cleve	E	Moderately shallow but relatively fertile soils between rocky outcrops - semi arable.
		Rocky outcrop	Skeletal	E	
GGB	34.8	Very gentle sandy slopes	Shallow Moornaba	V	Mostly sandy soils with low fertility and high susceptibility to wind erosion and water repellence. There are minor saline seepages.
		Low - moderate sandhills	Moornaba / Lowan	C	
		Rocky outcrops	Skeletal	M	
HEB	32.0	Very gentle slopes	Cleve / Wiabuna	E	The loamier soils are moderately fertile and potentially productive, although prone to water erosion. The sandy soils are low in fertility and susceptible to wind and water erosion, and water repellence.
		Very gentle sandy slopes	Heggaton	E	
HTB	15.7	Very gentle slopes	Cleve / Wiabuna	V	Most of the land is moderately fertile and potentially productive, although prone to water erosion. Wind erosion potential on the sandhills is moderately high. Soils are infertile and prone to water repellence.
		Moderate - low sandhills	Moornaba	C	
XEN	4.0	Creek flats with 2-10% saline seepage patches	Gradational / uniform alluvial	D	Alluvial soils deep and fertile with high productive potential. Salinity risk throughout, but variable distribution as indicated. Salt affected areas suitable for revegetation with salt tolerant species. Most water courses eroded or at risk. Flats subject to flooding.
XEs	0.9	Creek flats with 10-50% saline seepage patches	Saline alluvial	M	
			Gradational / uniform alluvial	V	
ZA-	1.3	Saline creek flats	Saline alluvial	E	
			Wet saline soil	C	
			Alluvial	L	

# 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](#)

