GYN Glynn North Land System

Area: 140.6 km^2

Landscape: Undulating plains and rises underlain by igneous and metamorphic rocks covered by highly calcareous silty sands (Woorinen Formation). The landscape is characterized by jumbled siliceous sandhills of Molineaux Sand which has been blown across the top of the Woorinen deposits. The underlying rocks outcrop sporadically.

Annual rainfall: 285 – 335 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.

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 (sandy) - **A4** (Regolithic, Lithocalcic / Supracalcic Calcarosol)
Calcareous loamy sand to sandy loam grading to carbonate rubble (Class III B or C).

Minor soils:

Mangalo - **D1** (Hypercalcic, Red Chromosol / 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.

Nobby - **D3** (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 loam grading to a highly calcareous clay loam over Class III A, B or C carbonate merging with weathering rock.

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, Regolithic, 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.

Skeletal loamy sand - **L1a** (Lithic, Leptic Tenosol / Rudosol)
Stony, gritty loamy sand over granite shallower than 50 cm.

Skeletal sandy loam - **L1b** (Paralithic, Leptic Tenosol)
Medium to thick gravelly sandy loam over basement schist or meta-sandstone usually shallower than 50 cm.

Summary: The landscape is dominated by jumbled siliceous sandhills which are infertile, water repellent and highly susceptible to wind erosion. Significant areas are non arable due to the risk of severe erosion. The swales are also mainly sandy, although often calcareous. Fertility is better than for the deep sands, but these areas, although arable, are nevertheless prone to wind erosion, and the non calcareous sands to water repellence. Heavier soils are commonly associated with rocky outcrops which restrict farming opportunities.

Soil Landscape Unit summary: 17 Soil Landscape Units (SLUs) mapped in the Glynn North Land System:

SLU	% of area	Component	Main soils	Prop#	Notes
A-g	5.6	Granite outcrops	Skeletal	D	Shallow soil and rock - non arable.
EFB	2.7	Very gentle slopes	Calcareous loam	D	Calcareous soils, slight erosion potential - arable.
ENB	1.4	Very gentle slopes	Mangalo	V	Slopes are potentially productive; sandhills are infertile and prone to wind erosion and water repellence.
		Low sandhills	Lowan	C	
ETB	3.4	Very gentle slopes	Mangalo	E	Soils are productive between the outcrops - semi arable. Slight water erosion potential.
		Rocky outcrops	Skeletal	E	
ETC	0.3	Gentle slopes	Mangalo	E	As for **ETB**, with moderate erosion potential.
		Rocky outcrops	Skeletal	E	
GGB	8.1	Very gentle sandy slopes	Heggaton	E	Variable soils with limitations mainly due to low fertility and wind erosion potential: Heggaton: low fertility, high erosion potential. Sandy Wiabuna: moderately low fertility, moderate erosion potential Lowan: very low fertility, very high erosion potential Nobby/Buckleboo: moderate fertility, low erosion potential. Heggaton and sandy Wiabuna soils prone to water repellence. Slight water erosion potential throughout.
			Sandy Wiabuna	C	
		Low - moderate sandhills	Lowan	C	
GOB	1.1	Very gentle sandy slopes	Heggaton	E	
		Very gentle slopes	Nobby/ Buckleboo	C	
			Sandy Wiabuna	L	
GzB	4.1	Very gentle sandy slopes	Heggaton	E	
		Very gentle slopes	Nobby/ Buckleboo	E	
		Moderate sandhills	Lowan	C	
HEA	1.7	Flats	Nobby/ Buckleboo	E	Nobby/Buckleboo soils potentially productive, Heggaton soils infertile and prone to wind erosion and water repellence.
		Sandy flats	Heggaton	E	
OGE	35.1	High sandhills	Lowan	E	Wind erosion potential is key feature of this land, with low fertility and susceptibility to water repellence. Heggaton: low fertility, moderate erosion potential. Sandy Wiabuna: moderately low fertility, moderate erosion potential Lowan: very low fertility, very high erosion potential High sandhills are extremely susceptible to wind erosion and are non arable. Moderate sandhills are semi arable Low sandhills are arable but at high risk.
		Swales	Heggaton / sandy Wiabuna	E	
OGH	0.9	Swales	Heggaton / sandy Wiabuna	E	
		High sandhills	Lowan	E	
OGI	24.5	Swales	Heggaton / sandy Wiabuna	E	
		Moderate sandhills	Lowan	E	
OGJ	5.0	Swales	Heggaton / sandy Wiabuna	E	

		Low sandhills	Lowan	E	
OGK	1.8	Sand spreads	Lowan	E	
		Swales	Heggaton / sandy Wiabuna	E	
SOB	1.2	Very gentle slopes	Sandy Wiabuna	D	Moderately low fertility soils with moderate wind erosion potential.
XEN	2.8	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.
			Saline alluvial	M	
XEs	0.3	Creek flats with 10-50% saline seepage patches	Gradational / uniform alluvial	V	
			Saline alluvial	E	

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