

NLB Narlaby Land System

(Equivalent to GVD6-Narlaby Land Type of Rangelands)

Area: 26.4 km²

Landscape: Complex of salinas, moderately to highly saline flats and jumbled sand dunes. The system is a small part of a large depression extending into the rangelands to the northwest. Tertiary and Pleistocene sediments underlie the depression, but they have been covered by more recent windblown Woorinen Formation calcareous silty sands, some of which have hardened to calcrete. These deposits in turn are overlain by siliceous Molineaux Sand which has been reworked into jumbled sand dunes and irregular spreads. However, the principal feature of the system is the network of salinas which have formed where the land surface is low enough to intersect the highly saline groundwater table.

Annual rainfall: 260 – 285 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.

Moornaba - H2 (Calcareous, Arenic, 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).

Sandy Wiabuna - A4a (Regolithic, Lithocalcic / Supracalcic Calcarosol)
Calcareous loamy sand to sandy loam grading to carbonate rubble (Class III B or C).

Minor 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.

Shallow Wiabuna - B2 (Petrocalcic / Lithocalcic Calcarosol)
Calcareous sandy clay loam over carbonate rubble grading to sheet calcrete.

Chintumba - B1 (Hypervescent, Petrocalcic, Lithocalcic Calcarosol)
Medium thickness highly calcareous sandy loam to sandy clay loam containing increasing amounts of rubble with depth, over sheet calcrete at less than 50 cm.

Rubbly Wiabuna - A4b (Regolithic, Supracalcic Calcarosol)
Calcareous sandy loam grading to a rubbly very highly calcareous sandy clay loam over light clay from about 100 cm.

Bayley - A8 (Hypergyptic Calcarosol)
Calcareous loam grading to a highly calcareous sandy clay loam over powdery gypsum.

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

Summary: The landscape is dominated by saline and sandy soils in a complex of salinas, salt flats, and jumbled dunes and swales. Virtually all of the land is non-arable due to one or more of excessive salinity and wetness, shallow stony profiles, low fertility or wind erosion potential. Marginal rainfall is an additional limitation.



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

SLU	% of area	Component	Main soils	Prop#	Notes
OxM	56.5	Moderate sand dunes	Lowan/ Moornaba	E	Mainly sandy soils with moderate to very high wind erosion potential and low fertility. Dunes Very low fertility and water repellence. Wind erosion potential varies from moderate (low sand dunes), to very high (high sand dunes). Swales Sandy Wiabuna and Lowan, with some Heggaton soils. Low fertility, limited water holding capacity, and some water repellence (Lowan and Heggaton). Moderate wind erosion potential and sporadic saline seepage.
		Swales	Sandy Wiabuna	C	
		Swales	Lowan/ Moornaba	L	
		Swales	Heggaton	M	
		Saline swales	Saline soil	M	
OxR	8.6	Sand spreads	Lowan/ Moornaba	E	
		Swales	Sandy Wiabuna	C	
		Swales	Lowan	L	
		Swales	Heggaton	M	
		Saline swales	Saline soil	M	
QOP	3.2	Stony flats	Shallow Wiabuna/ Chintumba	E	
			Rubbly Wiabuna	E	
		Low sand dunes	Lowan/ Moornaba	C	
ZD-	31.7	Salinas and salt flats	Wet saline soil	D	Restricted grazing.
		Gypseous mounds	Bayley	M	

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](#)

