

LMA

Lake Malata Land System

Area: 225.1 km²

Landscape: Depressions underlain by lake floor sediments, and older alluvial or Tertiary sediments. The depressions are saline to highly saline and include numerous salt lakes, including Lake Malata itself. "Islands" of Ripon / Bakara Calcrete, often mantled by highly calcareous Woorinen Formation deposits, and occasionally by Lowan Sands, are scattered throughout. These are sometimes crescent-shaped, indicating that they were once lunettes adjacent to the eastern banks of former lakes.

Annual rainfall: 405 – 470 mm average

Main soils:

<u>Saline soil - N2</u>	<u>(Salic / Hypersalic Hydrosol)</u>
Miscellaneous wet saline soil influenced by rising saline groundwater tables.	
<u>Calcrete - B2a</u>	<u>(Petrocalcic, Lithocalcic Calcarosol)</u>
Thin calcareous sandy loam to clay loam over hard calcrete, associated with abundant surface calcrete and sheet rock.	
<u>Terre - B3</u>	<u>(Petrocalcic, Leptic Tenosol)</u>
Thin to medium thickness red sandy loam to clay loam over sheet calcrete.	

Minor soils:

<u>Wharminda - G4</u>	<u>(Hypercalcic, Brown Sodosol)</u>
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.	
<u>Wiabuna (shallow) - B2b</u>	<u>(Petrocalcic, Supracalcic / Lithocalcic Calcarosol)</u>
Calcareous sandy clay loam over carbonate rubble grading to sheet calcrete.	
<u>Wiabuna (rubby) - A4</u>	<u>(Regolithic, Lithocalcic / Supracalcic Calcarosol)</u>
Calcareous sandy loam to sandy clay loam grading to carbonate rubble.	
<u>Lowan - H3</u>	<u>(Basic, Arenic, Bleached-Orthic Tenosol)</u>
Thick bleached sand with a thin organically darkened surface layer, grading to a yellowish sand (often with darker lamellae), continuing below 150 cm.	

Summary: Complex of saline to highly saline flats, salt lakes and "islands" or rises of stony or sandy soils. The flats are non arable, and often too salty for any reclamation. The rises are mostly stony with shallow soils and extensive sheet calcrete, sometimes non arable. Sandy rises are infertile and prone to wind erosion and water repellence, but soils are usually moderately deep to deep.



Soil Landscape Unit summary: 12 Soil Landscape Units (SLUs) mapped in the Lake Malata Land System:

SLU	% of area	Component	Main soils	Prop#	Notes
GVA	3.0	Sandy rises	Wharminda	V	Rises dominated by sandy soils, with shallow stony soils subdominant. The Wharminda soils comprise sand over poorly structured clay and are infertile, prone to wind erosion, waterlogging, water repellence and have limited waterholding capacity (impeded root growth). The stony Terre and shallow Wiabuna soils are more fertile, but have limited waterholding capacity. Surface stone interferes with cultivation.
		Stony rises	Terre / shallow Wiabuna	C	
GcA	1.0	Sandy / stony rises	Wharminda / Terre	D	
QAB	1.1	Sandy loam rises	Wiabuna	V	Rises dominated by shallow stony soils on Ripon / Bakara Calcrete remnants protruding through the lake floor sediment. The land is semi arable.
		Stony rises	Terre	L	
QCB	0.4	Very stony rises	Calcrete	D	
QCL	2.6	Stony rises	Calcrete	V	Main soils: <u>Calcrete</u> Very shallow stony sandy loam associated with more than 50% sheet calcrete. <u>Terre</u> Shallow stony sandy loam to sandy clay loam, semi arable due to low waterholding capacity and surface stone / calcrete.
		Saline depressions	Saline soil	L	
QVA	3.1	Stony rises	Terre / shallow Wiabuna	V	<u>Wiabuna</u> Moderately fertile calcareous sandy loam with slight wind erosion potential. <u>Shallow Wiabuna</u> As for Wiabuna, but with limited waterholding capacity and stony surface. <u>Lowan</u> Very low fertility, moderate to high wind erosion potential, water repellent.
		Very stony rises	Calcrete	C	
RBA	4.3	Stony rises	Terre	V	<u>Wharminda</u> As above (GVA/GcA).
		Sandy rises	Lowan	C	
RYA	1.5	Low rise	Terre-Wharminda	D	
ZD-	18.3	Salt lakes	-	D	Depressions dominated by saline land and salt lakes. The saline land is mostly non arable, and much is too saline for amelioration or establishment of useful pasture / fodder plants. The rises protruding through the lake floor sediments are mostly stony with extensive sheet calcrete. They are semi arable at best.
ZHC	23.1	Very stony rises	Calcrete	E	
		Saline flats	Saline soil	E	
ZHF	0.3	Saline flats	Saline soil	E	
		Salt lakes	-	E	
ZHJ	41.3	Highly saline flats	Saline soil	V	
		Stony rises	Terre	C	

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](#)

