MDG Murdinga Land System

Area: 531.9 km²

Landscape: Plain covered by a thick mantle of highly calcareous silty sands of the Woorinen Formation or

hard calcrete in approximately equal proportions. Overlying the plain are dunefields of Molineaux Sand, forming parallel low sand ridges which cover about 15% of the land.

Annual rainfall: 365 – 390 mm average

Main soils: Wiabuna (shallow) - B2a (Petrocalcic, Supracalcic / Lithocalcic Calcarosol)

Calcareous sandy clay loam over carbonate rubble grading to sheet calcrete.

<u>Wiabuna (rubbly)</u> - **A4a** (Regolithic, Lithocalcic / Supracalcic Calcarosol)

Calcareous sandy loam to sandy clay loam grading to carbonate rubble.

<u>Wiabuna</u> - **A5** <u>(Regolithic, Lithocalcic Calcarosol)</u>

Calcareous sandy loam becoming more clayey and calcareous with depth over rubbly

carbonate within 50 cm, grading to clayey substrate within 100 cm.

<u>Calcrete</u> - **B2b** (Petrocalcic, Lithocalcic Calcarosol)

Thin calcareous sandy loam to clay loam over hard calcrete, associated with abundant surface

calcrete and sheet rock.

Minor soils: Moornaba - H2 (Calcareous, Arenic, Brown-Orthic / Bleached-Orthic Tenosol)

Very thick brown sand, often with a bleached A2 layer over a yellow or red clayey sand to

sandy clay, overlying variable carbonate (fine to rubbly, occasionally sheet). 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.

<u>Shallow Lowan</u> - **G2** (Bleached, Eutrophic / Calcic, Brown Chromosol)

Thick to very thick sand with a bleached A2 layer over a yellow to orange sandy clay loam to

sandy clay.

<u>Heggaton</u> - **G3** (Bleached, 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.

Wharminda - **G4** (Hypercalcic, Brown Sodosol)

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>Terre</u> - **B3** (Petrocalcic, Red Kandosol / Petrocalcic, Red-Orthic Tenosol)

Medium thickness sandy loam grading (in deeper profiles) to red massive sandy clay loam

over calcrete at depths of up to 70 cm.

<u>Sandy Wiabuna</u> - **A4b** <u>(Regolithic, Lithocalcic / Hypercalcic Calcarosol)</u>

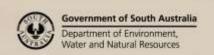
Calcareous sandy loam to loamy sand, becoming more calcareous with depth and with

variable rubble, but without significant clay increase.

Summary: Calcareous sandy loams dominate the plains of this System. These vary from deeper types

with marginally limited water holding capacity, through to very shallow types with severely restricted storage capacity. All are moderately fertile and have moderately low wind erosion potential. There are significant rocky areas which are non arable due to sheet calcrete at the surface. The limited occurrences of low parallel sandhills are infertile and moderately

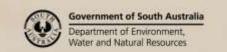
susceptible to wind erosion. Some are water repellent.





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

SLU	% of area	Component	Main soils	Prop#	Notes
О-С	0.2	Moderate sandhills	Moornaba	D	Sandhill - swale complexes with 30-60% low to moderate sandhills, and calcareous sandy loams,
OuJ	0.2	Flats	Wiabuna	V	sometimes stony, in swales.
		Low sandhills	Moornaba	E	<u>Wiabuna</u> Moderately fertile calcareous sandy
OvI	7.9	Flats	Wiabuna	E	loam with slight wind erosion potential.
		Moderate sandhills	Moornaba	E	Shallow Wiabuna As for Wiabuna, but with limited water holding capacity and
		Stony flats	Shallow Wiabuna	L	stony surface.
OvJ	1.9	Stony flats	Shallow Wiabuna	V	Moornaba Low fertility, moderate to high wind
0,10	2.5	Low sandhills	Moornaba	E	erosion potential, often water repellent.
Q-A	4.9	Very stony flats	Calcrete	D	Calcrete plains with shallow to very shallow soils,
QUA	7.9	Very stony flats	Calcrete	E	extensive surface stone and sheet calcrete. There
QUII	7.15	Stony flats	Shallow Wiabuna	C	are limited areas of low sandhills. Soils are:
		Low sandhills	Shallow Moornaba	L	Shallow Wiabuna As for Wiabuna, but with limited water holding capacity and
		Flats	SL over calcrete	М	stony surface.
QUE	1.5	Stony	Calcrete	D	<u>Calcrete</u> Very shallow and stony with abundant
C -	1.5	depressions with some salinity	Sandy loam over calcrete	M	surface stone and sheet calcrete – non arable
QaA	11.1	Stony flats	Shallow Wiabuna	E	Shallow Moornaba Moderately deep to
Qu/ 1		Very stony flats	Calcrete	C	moderately shallow sand of low fertility
		Low sandhills	Shallow	L	and moderately susceptible to wind
		Low sandrins	Moornaba	-	erosion.
		Flats	SL over calcrete	М	Sandy loam (SL) over calcrete Moderately
QdA	8.4	Stony flats	Shallow Wiabuna	V	shallow but with more depth and
2011	0	Very stony flats	Calcrete	C	fertility than calcareous calcrete soils.
		Flats	Sandy loam over calcrete	M	
QpA	17.0	Stony flats	Shallow Wiabuna	V	
Cr		Low sandhills	Shallow Moornaba	L	
		Very stony flats	Calcrete	М	
		Flats	Sandy loam over calcrete	М	
SJA	1.3	Flats	Wiabuna	V	Flats dominated by calcareous sandy loams, with
		Sandy flats	Sandy Wiabuna	L	limited low sandhills, sand over clay soils, and
SUA	26.2	Flats	Wiabuna	Е	stony soils:
		Sandy flats	Wharminda / sandy Wiabuna	E	<u>Wiabuna</u> Calcareous sandy loam, deep, moderately fertile with high subsoil boron and salinity. Slight wind erosion potential.
		Low sandhills	Shallow Moornaba	С	
SYA	3.5	Flats	Wiabuna	V	Shallow Wiabuna As for Wiabuna, but shallow
		Stony flats	Shallow Wiabuna	L	(reduced water holding capacity) and with surface stone sufficient to interfere
		Sandy flats	Sandy Wiabuna	М	
SZA	2.6	Stony flats	Shallow Wiabuna	V	with tillage.
		_	Sandy Wiabuna	L	Shallow Moornaba Moderately deep to
ShA	5.3	Stony flats	Shallow Wiabuna	V	moderately shallow sand of low fertility





		Very stony flats	Calcrete	ı	and moderately susceptible to wind
		very storry nats	Carcrete	-	erosion. Wharminda Low fertility sandy soil with poorly structured subsoil (waterlogging, poor root growth), moderate wind erosion potential, water repellent. Sandy Wiabuna Low fertility, variable water holding capacity, prone to wind erosion. Calcrete Very shallow and stony with abundant surface stone and sheet calcrete - non arable
VJA	0.1	Old lake	-	D	-
ZD-	< 0.1	Salt flats	Saline soils	D	-

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: <u>DEWNR Soil and Land Program</u>

