

ROO Roopena Land System

Area: 13.6 km²

Landscape: Very gently undulating plain formed on calcreted Wiabuna Formation (highly calcareous aeolian deposits), and overlain by low to moderate parallel siliceous sandhills. Well defined fault escarpments separate the system from the higher Moonabie Range Land System to the west, and the lower lying Mitchellville Land System to the east.

Annual rainfall: 250 - 275 mm average

Main soils:

Mitchellville - B2a (Petrocalcic Calcarosol)
Calcareous light sandy loam to light sandy clay loam with variable nodular calcrete, over rubbly or sheet calcrete.

Sandy Wiabuna - A4a (Regolithic, Hypercalcic Calcarosol)
Thick calcareous loamy sand, slightly more clayey with depth, grading to carbonate rubble.

Moornaba - H2 (Calcareous, Arenic, Brown-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).

Shallow Wiabuna - B2b (Petrocalcic, Lithocalcic Calcarosol)
Calcareous sandy loam to sandy clay loam over carbonate rubble grading to sheet calcrete.

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

Summary: The landscape is characterized by stony flats and low parallel sandhills. The predominant soils of the flats are calcareous loamy sands to sandy loams, shallow over rubbly or sheet calcrete. Low waterholding capacity is the main limitation, although in places calcrete reefs prevent cultivation altogether. These soils are generally light textured and susceptible to wind erosion. Moderate to deep sands characterize the sandhills. These have low fertility and are highly susceptible to wind erosion, given the low rainfall. Water repellence is sometimes a problem.

Soil Landscape Unit summary: 2 Soil Landscape Units (SLUs) mapped in the Roopena Land System

| SLU | % of area | Component | Main soils | Prop# | Notes |
|-----|-----------|--------------|--------------------------|-------|--|
| QBA | 32.0 | Stony flat | Mitchellville | D | Very gently sloping plains. Shallow stony soil, very limited waterholding capacity. Short steep slopes bounding the eastern edge are prone to water erosion. |
| SgA | 68.0 | Flat | Shallow / rubbly Wiabuna | E | Very gently sloping plains with light textured and often very shallow calcareous soils. Limited waterholding capacity and moderately low fertility. 20-30% low sandhills of low fertility and prone to wind erosion. Occasional water courses have dissected the landscape as they flow towards the eastern escarpment. Short steep slopes bounding the eastern edge are prone to water erosion. |
| | | Gentle rise | Sandy Wiabuna | E | |
| | | Low sandhill | Moornaba | 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](#)

