

YAL Yallamurray Land System

Plains abutting the western edge of the West Naracoorte Range from Hundred of Willalooka to Hundred of Glen Roy

Area: 109.7 km²

Annual rainfall: 500 - 550 mm average

Geology: Lagoonal sediments of the Padthaway Formation, comprising limestones and sandy clays. The sediments are typically calcreted at the surface. Isolated ancient coastal dune remnants of calcreted calcarenite protrude through the sedimentary cover.

Topography: Plains with an imperceptible grade to the west, abutting the western side of the Naracoorte Range. Low rises, less than 5 m high occur sporadically across the land surface.

Elevation: 30 - 40 m

Relief: Maximum relief is less than 5 m

Soils: Most soils are shallow to moderately shallow over calcreted lagoonal sediments

Main soils

Stony soils (rises and plains)

- B5** Shallow dark clay loam on calcrete
- B7** Shallow sand over clay on calcrete
- B2** Shallow calcareous loam on calcrete

Minor soils

Stony soils (rises and plains)

- B3** Shallow sandy loam on calcrete
- B4/B6** Shallow red loam on calcrete
- B6** Shallow loam over red-brown clay on calcrete

Sandy soils (rises and plains)

- G3** Thick sand over clay

Loamy soils (plains)

- F2** Sandy loam over poorly structured brown or dark clay
- M2** Deep friable gradational clay loam
- N3** Wet soil - non to moderately saline

Main features: The Yallamurray Land System is characterised by flat plains with shallow stony soils. These vary from sandy to clay loamy, with corresponding variations in inherent fertility. Waterholding capacity is moderately low and drainage is moderate to imperfect. Salinity levels are low, but continued increases in regional water tables will place parts of the landscape at risk. Low rises on the plains have generally shallow, moderately well drained soils with moderately low to moderate fertility.



Soil Landscape Unit summary: 5 Soil Landscape Units (SLUs) mapped in the Yallamurray Land System

| SLU | % of area | Main features # |
|------------|------------|---|
| MVB MVH | 0.3 0.1 | <p>Low isolated undulating rises (outliers of the West Naracoorte Range) formed on calcreted calcarenite. There is up to 5 m relief and slopes are less than 3%. There is variable surface calcrete.</p> <p>MVB Gently undulating rises</p> <p>MVB Gently undulating rises with up to 10% non-saline non-swampy depressions.</p> <p>Main soils: <u>shallow calcareous loam on calcrete</u> - B2 (E), <u>shallow red loam on calcrete</u> - B4/B6 (C), <u>shallow sand over clay on calcrete</u> - B7 (L), <u>shallow loam over red-brown clay on calcrete</u> - B6 (L), <u>thick sand over clay</u> - G3 (M) and <u>shallow sandy loam on calcrete</u> - B3 (M). The shallow stony soils are semi-arable with moderately low fertility and waterholding capacity. Drainage is rapid. The shallow to moderately deep loamy soils have high fertility, moderate waterholding capacity and are well drained. The minor deeper sandy soils have moderate fertility, waterholding capacity and are well drained.</p> |
| NAA | 3.2 | <p>Level plain with up to 10% swamps.</p> <p>Main soils: <u>shallow sandy loam on calcrete</u> - B3 (E), <u>shallow sand over clay on calcrete</u> - B7 (E) and <u>shallow dark clay loam on calcrete</u> - B5 (C). These soils are fully arable, although some soils are shallow. They are moderately to highly fertile, have moderately low waterholding capacity and are imperfectly drained.</p> |
| NIB | 96.3 | <p>Level stony plains with less than 10% low stony rises.</p> <p>Main soils: <u>shallow dark clay loam on calcrete</u> - B5 (E), <u>shallow sand over clay on calcrete</u> - B7 (E), <u>shallow calcareous loam on calcrete</u> - B2 (C), and <u>shallow red loam on calcrete</u> - B4/B6 (M). The soils are shallow, with high fertility, moderately low waterholding capacity and are imperfectly drained. Surface stone may be a limitation in places. The stony rise soils are very shallow, have moderately low fertility, moderately low to low waterholding capacity and are well drained. Rockiness is a limitation.</p> |
| XaK | 0.1 | <p>Morambro Creek. The soils within the creek system vary but the main soils are <u>sandy loam over poorly structured brown or dark clay</u> - F2 (E), <u>gradational dark clay loam</u> - M2 (C) and <u>wet soil</u> - N3 (M). These soils are moderately deep to deep with moderate fertility, have high waterholding capacity and are imperfectly to poorly drained. There is a moderate to high limitation for root growth due to dispersive subsoil clays. This landscape unit is not used for agricultural production.</p> |

PROPORTION codes assigned to soils within Soil Landscape Units (SLU):

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|--|---------------------------------------|
| (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) |



Detailed soil profile descriptions:

- B2** Shallow calcareous loam on calcrete (Calcic, Petrocalcic Calcarosol)
Thin calcareous loam to clay loam directly overlying calcarenite within 30 cm.
- B3** Shallow sandy loam on calcrete (Petrocalcic, Leptic Tenosol)
Loamy sand to loam with variable rubble and slight clay increase with depth overlying calcareted calcarenite shallower than 50 cm.
- B4/B6** Shallow red loam on limestone (Haplic, Petrocalcic, Red Dermosol)
Reddish sandy loam to clay loam over a red well structured clay overlying calcrete within 50 cm.
- B5** Shallow dark clay loam on limestone (Haplic, Calcic / Petrocalcic, Black / Grey Dermosol)
Medium thickness black or grey clay loam over a well structured black or grey clay with limestone segregations or clay directly overlying calcrete within 50 cm.
- B6** Shallow loam over red-brown clay on calcrete (Hypocalcic, Petrocalcic, Red Dermosol)
Medium thickness loam to clay loam over a red to red-brown clay overlying calcarenite within 50 cm.
- B7** Shallow sand over clay on calcrete (Sodic, Petrocalcic, Brown / Grey Chromosol)
Medium thickness organically darkened sand over a brown or greyish clay overlying calcrete within 50 cm.
- F2** Sandy loam over poorly structured brown or dark clay (Calcic, Mesonatric, Brown Sodosol)
Thin organically darkened sandy loam with a thin light coloured loamy sand A2 layer, overlying a brown poorly structured clay with carbonate segregations at depth.
- G3** Thick sand over clay (Eutrophic, Mottled, Brown Chromosol / Sodosol)
Thick to very thick sand with a pale sand A2 layer overlying a brownish clay
- M2** Deep friable gradational clay loam (Calcic, Mottled-Sodic, Grey Dermosol)
Thin to medium thickness clay loam over a well structured brown or grey clay grading to brown mottled clay with depth. Calcareous segregations occur within 100 cm overlying calcarenite within 150 cm.
- N3** Wet soil - non to moderately saline (Sodosolic, Oxyaquic Hydrosol)
Organically stained sandy surface over a pale brown sand overlying brown clay on calcrete.

Further information: [DEWNR Soil and Land Program](#)

