

CRD Canal Road Land System

Flats with occasional sand dunes in the Sherwood - Lowan Vale - Bordertown area

Area: 84.2 km²

Annual rainfall: 470 - 495 mm average

Geology: The Land System is formed on Tertiary age clays and sandy clays, overlain in the south by Molineaux Sand. The area represents the western extremity of surficial Tertiary sediments, before they disappear below the extensive ancient coastal dune - lagoon systems.

Topography: The Canal Road Land System is a plain lying between the undulating rises of the Lowan Vale Land System to the east and the limestone ridges and flats to the west. The only distinctive topographic features are the small dunefield in the south (which is atypical of the system, but included for convenience) and the depression in the north west, lying adjacent to a calcarenite ridge of the Pendleton Land System. This depression is subject to flooding.

Elevation: 65 - 80 m

Relief: Less than 5 m

Soils: The landscape is dominated by texture contrast soils with sandy to sandy loam surfaces and brown clayey subsoils with moderately good to poor structure. Cracking clays and deep sands are minor in extent.

Main soils

Soils of lighter flats

G4 Sand over dispersive brown clay

F1 Sandy loam over brown clay

Minor soils

Soils of heavier flats

F2 Hard sandy loam over brown dispersive clay

E3 Hard cracking grey clay

Soils of sandy rises

H3 Deep bleached sand

G3 Thick sand over friable clay

Vegetation:

- Mallee heath, mallee, mallee broom, blue gum, pink gum on flats
- Mallee and stringybark on rises

Main features: The Canal Road Land System is predominantly flat plains with imperfectly to poorly drained sandy to loamy texture contrast soils, or clayey soils. Fertility is moderately low to moderate, and subsoil structure is generally poor. Seasonal flooding is common in heavier soil depressions. Soils of the minor sand hills are very infertile and water repellent.



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

SLU	% of area	Main features #
GaA	63.4	<p>Flat to very gently undulating plains, with minor (less than 5% sandy rises) formed on calcified clays of late Tertiary / early Quaternary age.</p> <p>Main soils: <u>sand over dispersive brown clay</u> - G4 (E); <u>hard sandy loam over brown clay</u> - F1 (E).</p> <p>Key properties:</p> <p>Drainage: Imperfect (G4) to moderate (F1). Clayey subsoils perch water.</p> <p>Fertility: Moderately low to moderate, due to low clay content surface soils.</p> <p>Physical condition: Surface soils are loose to soft with no limitations. Root growth in subsoils is slightly restricted in F1 soils, and significantly limited in G4 soils.</p> <p>AWHC: Moderate.</p> <p>Salinity: Moderately low.</p> <p>Erosion potential: Water: Low. Wind: Moderately low to moderate.</p> <p>Water repellence: Moderately low.</p> <p>Rockiness: Nil.</p> <p>Other: Acidification potential.</p> <p>Summary: Sand to sandy loam over clay soils with moderately low fertility and impeded drainage.</p>
O-C	0.6	<p>Isolated sand hills, remote from the main areas of deep sand deposits. Main soil is <u>deep bleached sand</u> - H3 (D). These are infertile, water repellent and prone to wind erosion.</p>
OBP	15.9	<p>Complex of low parallel sand ridges and swales, in approximately equal proportions formed on calcified clays of late Tertiary / early Quaternary age, overlain by Molineaux Sand. The characteristic feature is the closeness of the sand ridges, which in places are only 50 m apart. There are some swampy depressions in the swales.</p> <p>Main soils: <u>sand over dispersive brown clay</u> - G4 (E) and <u>sandy loam over brown dispersive clay</u> - F2 (C) in swales, and <u>deep bleached sand</u> - H3 (C) and <u>thick sand over friable clay</u> - G3 (L) on rises.</p> <p>Key properties:</p> <p>Drainage: Imperfect in swales due to dispersive clay subsoils. Rapidly to well drained on rises.</p> <p>Fertility: Moderately low to moderate in swales. Very low on rises.</p> <p>Physical condition: Good to fair in surface - F2 soils may set hard. Fair to poor in swale subsoils - dispersive clays.</p> <p>AWHC: Moderate to moderately low.</p> <p>Salinity: Moderately low to moderate in swales. Low on rises.</p> <p>Erosion potential: Water: Low. Wind: Low to moderate in swales. High on rises.</p> <p>Water repellence: Moderately low to moderate in swales. High on rises.</p> <p>Rockiness: Nil.</p> <p>Other: Flooding in depressions.</p> <p>Summary: Dune - swale complex with deep sandy, highly infertile, water repellent soils on ridges, and sand to sandy loam over clay soils prone to waterlogging in swales.</p>
TTA	20.1	<p>Flats characterized by areas of gilgai, adjacent to the eastern side of a calcarenite ridge. Underlying materials are weakly to moderately calcified heavy clays.</p> <p>Main soils: <u>hard cracking grey clay</u> - E3 (E), <u>sand over dispersive brown clay</u> - G4 (E) and <u>sandy loam over brown dispersive clay</u> - F2 (E).</p> <p>Key properties:</p> <p>Drainage: Imperfectly to poorly drained due to dispersive clays at or near the surface.</p> <p>Fertility: Moderate (clayey soils) to moderately low (sandy soils).</p> <p>Physical condition: Surface soil varies from sandy (no limitations to root growth) to hard setting (causing patchy emergence and impeded root growth). Subsoil structure is poor - all soils are dispersive, restricting root growth.</p> <p>AWHC: Moderate to high.</p> <p>Salinity: Moderate in subsoils.</p> <p>Erosion potential: Water: Low. Wind: Low.</p> <p>Water repellence: Low to moderate.</p> <p>Rockiness: Up to 2% surface calcrete stone.</p> <p>Other: Land is subject to extensive flooding. Gilgai hollows are especially susceptible.</p> <p>Summary: Poorly structured and imperfectly to poorly drained clay and sand over clay soils with moderate fertility. Marginal salinity.</p>



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

- (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)

Detailed soil profile descriptions:

Soils of lighter flats

- G4** Sand over dispersive brown clay (Hypercalcic, Brown Sodosol)
Thin to medium thickness sand sharply overlying a brown and yellow or grey mottled dispersive clay with strong columnar structure, calcareous with depth.
- F1** Sandy loam over brown clay (Hypercalcic, Brown Chromosol)
Medium thickness loamy sand to sandy loam abruptly overlying a brown and yellow friable clay grading to Class III A or B carbonate.

Soils of heavier flats

- F2** Hard sandy loam over brown dispersive clay (Hypercalcic, Brown Sodosol)
Medium thickness hard setting loamy sand to loam abruptly overlying a coarsely structured grey brown, yellow and red clay grading to soft carbonate.
- E3** Hard cracking grey clay (Epipedal, Grey Vertosol)
Hard, coarse blocky seasonally cracking grey clay, calcareous and prismatic structured at depth.

Soils of sandy rises

- H3** Deep bleached sand (Basic, Arenic, Bleached-Orthic Tenosol)
Thick to very thick bleached sand, organically darkened at the surface over yellow sand continuing below 100 cm.
- G3** Thick sand over friable clay (Eutrophic / Calcic, Brown Chromosol)
Thick to very thick bleached sand to loamy sand with an organically darkened surface abruptly overlying a friable yellowish brown and red sandy clay, with or without fine carbonate accumulations at depth.

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

