

SHD Sherwood Land System

Very gently undulating plains with low dunefields in the Sherwood area

Area: 181.7 km²

Annual rainfall: 450 – 475 mm average

Geology: The land system is formed on Tertiary age clays which are calcified by fine carbonates, leached into the soil from aeolian deposition over a considerable time. The clays in turn are partially overlain by windblown Molineaux Sand deposits.

Topography: The Sherwood Land System comprises a tract of low sand dune country. The landscape is very gently undulating, consisting of a very gently inclined plain overlain by low sand dunes which are rounded and of irregular shape, but which show a distinct east - west orientation. The flats and swales between the sand hills have sandy or sandy loam surfaces - clayey soils are uncommon.

Elevation: 70 m in the west to 110 in the east

Relief: Up to 10 m

Soils: Sandy and sandy loam texture contrast soils are predominant. Cracking clays are limited in extent.

Main soils

Soils of flats

G4 Sand over dispersive brown clay - flats and higher swales

F1 Sandy loam over red brown clay - broader flats

Soils of sandy rises

H3 Deep bleached sand - dunes

G3 Thick sand over brown clay - dune slopes and higher level swales

Minor soils

Soils of flats

F2 Hard loam over dispersive brown clay - broader flats

E3 Hard grey cracking clay - flats and lower elevation swales

E1 Black cracking clay - flats and lower elevation swales

Vegetation: Mallee, heath and stringybark on dunes
Mallee and broombush on flats and swales

Main features: The Sherwood Land System is typical sand dune - swale country with significant changes in soil type over short distances. The dunes are characterized by deep, infertile water repellent sands, sometimes with saline seepages where they contact the intervening flats and swales. The flats between the larger dunes have sandy texture contrast soils with moderately low to moderate fertility and impeded drainage. The broader flats have a wider variety of soils, with sand or sandy loam over clayey subsoils (usually dispersive) and minor areas of poorly drained but fertile clay soils. Moderate salinity and boron toxicity are likely in clayey soils.



Soil Landscape Unit summary: 8 Soil Landscape Units (SLUs) mapped in the Sherwood Land System

SLU	% of area	Main features #
GbA	11.1	<p>Very gently undulating flats formed on Tertiary clays to sandy clays, overlain by 10-30% low (up to 5 m) dunes of Molineaux Sand.</p> <p>Main soils: <u>sand over dispersive brown clay</u> - G4 (E) and <u>thick sand over brown clay</u> - G3 (C) with <u>hard grey cracking clay</u> - E3 (L) on flats, and <u>deep bleached sand</u> - H3 (C) on dunes.</p> <p>Key properties:</p> <p>Drainage: Moderately well to imperfect on flats. Rapid on sandhills.</p> <p>Fertility: Moderately low on flats. Very low on sandhills.</p> <p>Physical condition: Good in surface (except clay soils). Fair to poor in subsoil of flats (dispersive clays).</p> <p>AWHC: Moderate to moderately high on flats. Moderately low on sandhills.</p> <p>Salinity: Moderate on flats. Low on sandhills.</p> <p>Erosion potential: Water: Low. Wind: Moderately low on flats. Moderately high on sandhills.</p> <p>Water repellence: Moderately low to nil on flats. High on sandhills.</p> <p>Rockiness: Nil.</p> <p><u>Summary:</u> The flats are moderately well to imperfectly drained due to dispersive clay subsoils. Sandy surfaces are physically favourable, but low in fertility. Soils on rises are infertile, water repellent and prone to wind erosion.</p>
GcA	42.6	<p>Flat plains formed on Tertiary clays and sandy clays with minor (less than 5%) low sand dunes. Main soils: <u>sand over dispersive brown clay</u> - G4 (E) and <u>sandy loam over red brown clay</u> - F1 (E).</p> <p>Key properties:</p> <p>Drainage: Imperfectly to moderately well drained. The dispersive subsoil of the G4 soil causes water to perch.</p> <p>Fertility: Moderately low to moderate.</p> <p>Physical condition: Good in surface. Fair to poor in subsoil (dispersive clays).</p> <p>AWHC: Moderate.</p> <p>Salinity: Moderately low to moderate.</p> <p>Erosion potential: Water: Low. Wind: Moderately low.</p> <p>Water repellence: Slight to moderate.</p> <p>Rockiness: Nil.</p> <p><u>Summary:</u> Imperfectly drained flats with sand to sandy loam soils with variable subsoils (some dispersive and restrictive, others well structured). Fertility is moderately low to moderate depending on clay content.</p>
OBF OBI OBJ OBM OBP	11.2 15.1 12.9 1.7 4.6	<p>Gently undulating plains comprising flats formed on Tertiary clays and sandy clays, and low to moderate sand dunes up to 10 metres high formed on Molineaux Sand.</p> <p>OBF 60-90% coverage of moderate dunes.</p> <p>OBI 30-60% coverage of moderate dunes.</p> <p>OBJ 30-60% coverage of low dunes.</p> <p>OBM 60-90% coverage of moderate dunes with up to 20% swampy swales.</p> <p>OBP 30-60% coverage of moderate dunes with up to 10% swampy swales.</p> <p>Main soils: <u>deep bleached sand</u> - H3 (V-E) on dunes, <u>thick sand over brown clay</u> - G3 (L-C) in swales and on dunes, and <u>sand over dispersive brown clay</u> - G4 (L) with <u>hard grey cracking clay</u> - E3 (M-L) in swales.</p> <p>Key properties:</p> <p>Drainage: Rapid (sand dunes). Imperfect to well drained in swales, depending on the nature and depth of the subsoil. Dispersive G4 subsoils cause water to perch, and clay soils, once wet, have low permeability throughout. The swampy swales in OBM and OBP are poorly drained.</p> <p>Fertility: Very low (sand hills). Moderately low (swales).</p> <p>Physical condition: Good in surface soils. Dispersive subsoils restrict root growth; other subsoils are not limiting.</p>



		<p>AWHC: Moderately low (sandhills) to moderate in G4 soils, moderately high in G3 soils and high in E3 soils.</p> <p>Salinity: Low (sand hills). Moderate (swales).</p> <p>Erosion potential: Water: Low. Wind: Moderate to high (sand hills). Moderately low (swales).</p> <p>Water repellence: High (sandhills), moderate (swales).</p> <p>Rockiness: Nil.</p> <p>Other: Saline seepage at base of some sand hills.</p> <p><u>Summary:</u> Deep very infertile water repellent sands on dunes. Marginal fertility sandy soils with dispersive subsoils causing impeded drainage and root growth in some swales, and deeper well drained sand over clay soils in others.</p>
TTA	0.8	<p>Low lying flats and swales, with extensive gilgai formed on clayey sediments of Tertiary age.</p> <p>Main soils: <u>hard grey cracking clay - E3</u> (E) and <u>hard loam over dispersive brown clay - F2</u> (C), with <u>black cracking clay - E1</u> (L) in gilgai areas, and <u>sand over dispersive brown clay - G4</u> (C) elsewhere.</p> <p>Key properties:</p> <p>Drainage: Imperfect to poor due to heavy poorly structured clays and / or dispersive clay subsoils.</p> <p>Fertility: Moderate to high (heavier textured soils) to moderately low (sandy soils).</p> <p>Physical condition: The loams over dispersive clay and grey clays have hard surfaces which restrict emergence and root growth. Sandy surface soils and black clays have loose sandy or friable surfaces which do not impede root growth. All subsoil clays restrict root growth.</p> <p>AWHC: Moderate to high.</p> <p>Salinity: Moderately high in subsoils.</p> <p>Erosion potential: Water: Low. Wind: Moderately low.</p> <p>Water repellence: Nil (clays soils) to moderate (sandy soils)</p> <p>Rockiness: Nil.</p> <p>Other: Boron toxicity may be expected in clay soils. Inundation likely in wet years.</p> <p><u>Summary:</u> The flats are generally imperfectly to poorly drained due to heavy and / or dispersive clay soils at or near the surface. Fertility varies from moderate to high for the heavier soils to moderately low on sand over clay soils. Poor surface structure is widespread. Subsoil salinity and boron toxicity may be expected.</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:

- E1** Black cracking clay (Self-mulching, Black Vertisol)
Black self-mulching seasonally cracking clay, becoming coarser structured, greyer and calcareous with depth.
- E3** Hard grey cracking clay (Epipedal, Grey Vertisol)
Hard coarse blocky seasonally cracking grey clay, calcareous and prismatic structured at depth.
- F1** Sandy loam over red brown clay (Hypercalcic, Brown / Red Chromosol)
Thin to medium brown loamy sand to sandy loam with a bleached A2 layer abruptly overlying a brown to red clay, calcareous from 30 cm.
- F2** Hard loam over dispersive brown 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.
- G3** Thick sand over brown 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 soft carbonate accumulations.
- 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.
- 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.

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

