

# LAW Lawloit Land System

(Based on the description by A. K. McCord in "A Description of Land in the Southern Mallee of South Australia")

Discontinuous chain of undulating rises extending from Hundred of Senior to north of Hundred of Fisk.

- Area:** 95.1 km<sup>2</sup>
- Annual rainfall:** 385 – 455 mm average
- Geology:** The System is formed on Tertiary clayey sands which have been partially reworked by wind into rises. The surface is commonly silicified and ferruginized to a hard cap. Recent Molineaux Sands overlie the rises. The lineation of the system suggests that it is the remnant of an ancient shore line.
- Topography:** The Lawloit Land System comprises undulating rises with extensive flats. The landscape is partly overlain by low to moderate jumbled sand dunes. Ferruginized and silicified sandstone is common on the surface of the rises. The distinctive feature of this land compared with surrounding sand dune / sand plain country is its red colour.
- Elevation:** 110 - 160 m
- Relief:** Up to 30 m
- Soils:** Deep sands, sandy texture contrast soils and ironstone gravelly sandy loams are predominant. Cracking clays are minor.

## Main soils

- H3** Deep bleached sand - Extensive on sand dunes.
- G2** Thick sand over red sandy clay loam - Extensive on flats, limited on rises.
- F1** Ironstone gravelly sandy loam over clay - Extensive on rises.

## Minor soils

- G4** Sand over dispersive brown clay - Minor on flats.
- E3** Hard cracking grey clay - Minor on flats.

- Main features:** The Lawloit Land System is characterized by generally well drained sandy and sometimes ironstone gravelly soils of moderately low fertility. Overlying sand dunes are susceptible to wind erosion, and have very low fertility.



**Soil Landscape Unit summary:**

8 Soil Landscape Units (SLUs) mapped in the Lawloit Land System:

SLU	% of area	Main features #
GiA	2.3	<p>Flats and swales formed over Tertiary sands to sandy clays. Main soils: <u>thick sand over red sandy clay loam</u> - <b>G2</b> (V) with <u>sand over dispersive brown clay</u> - <b>G4</b> (L) and <u>hard cracking grey clay</u> - <b>E3</b> (L).</p> <p>Key properties:</p> <p>Drainage: Well to moderately well drained. G4 soils tend to perch water on clay. Fertility: Moderately low to moderate. Physical condition: Good to fair (some dispersive subsoils). AWHC: Moderate to high. Salinity: Moderate. Erosion potential: Water: Low. Wind: Moderate to moderately low. Water repellence: Moderate. Rockiness: Minor ironstone gravel.</p> <p><u>Summary:</u> Marginal fertility and wind erosion potential are the main limitations.</p>
HiA HiB	0.7 15.5	<p>Flats and rises formed on Tertiary sands to sandy clays, indurated and ferruginized at the surface. Surface sandstone and ironstone are common. <b>HiA</b> Depressions. <b>HiB</b> Undulating rises with relief to 10 metres. Main soils: <u>ironstone gravelly sandy loam over clay</u> - <b>F1</b> (E) and <u>thick sand over red sandy clay loam</u> - <b>G2</b> (E).</p> <p>Key properties:</p> <p>Drainage: Well to moderately well. Fertility: Low to moderately low. Ironstone tends to tie up phosphorus. Physical condition: Good in surface. Fair in subsoils on lower ground. AWHC: Low to moderate. Salinity: Low. Erosion potential: Water: Moderately low. Wind: Moderately low to moderate. Water repellence: Slight. Rockiness: Up to 10% sandstone and ironstone gravel in places.</p> <p><u>Summary:</u> Marginal fertility and wind erosion potential are the main limitations.</p>
HjA HjB	25.1 13.9	<p>Flats and rises formed on Tertiary sands to sandy clays, indurated and ferruginized at the surface. Surface sandstone and ironstone are common. There are limited areas of jumbled Molineaux Sand ridges and minor depressions subject to waterlogging. <b>HjA</b> Gently undulating flats with 20% flat topped rises and 20% sand ridges. <b>HjB</b> Undulating rises overlain by 10-30% sand ridges. Main soils: <u>ironstone gravelly sandy loam over clay</u> - <b>F1</b> (E) and <u>thick sand over red sandy clay loam</u> - <b>G2</b> (E) with <u>deep bleached sand</u> - <b>H3</b> (C) on sand ridges. Key properties as for HiA / HiB on flats and non sandy rises, and as for OCc on sand ridges.</p>



9.4 17.3 15.8	<p>Jumbled sandhills overlying undulating rises formed on Tertiary sands to sandy clays, indurated in places.</p> <p><b>OCa</b> 60-90% high sand ridges.  <b>OCb</b> 60-90% moderate sand ridges.  <b>OCc</b> 60-90% low sand ridges.</p> <p>Main soils: <u>deep bleached sand</u> - <b>H3</b> (V) with <u>thick sand over red sandy clay loam</u> - <b>G2</b> (C) on lower slopes.</p> <p>Key properties:  Drainage: Rapid to well drained.  Fertility: Very low to moderately low.  Physical condition: Good.  AWHC: Low to moderately low.  Salinity: Low.  Erosion potential: Water: Moderately low.  Wind: Moderate to high.  Water repellence: High.  Rockiness: Up to 2% ironstone gravel.</p> <p><b>Summary:</b> High wind erosion potential and low fertility are the main limitations.</p>
---------------------	--

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

(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:

- E3** Hard cracking grey clay (Epipedal, Grey Vertosol)  
Hard coarse blocky seasonally cracking grey clay, calcareous and prismatic structure at depth.
- F1** Ironstone gravelly sandy loam over clay (Eutrophic, Subnatric, Brown Sodosol)  
Medium thickness loamy sand to sandy loam with a bleached and ironstone gravelly A2 layer, abruptly overlying a brown coarsely structured sandy clay to clay grading to indurated Tertiary sandstone within 100 cm.
- G2** Thick sand over red sandy clay loam (Mesotrophic, Red Chromosol)  
Very thick loamy sand to sand abruptly overlying a weakly structured red and yellow sandy clay loam grading to Tertiary clayey sand.
- G4** Sand over dispersive brown clay (Calcic, 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](#)

