

FIE Field Land System

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

Sandplain

Area: 119.3 km²

Annual rainfall: 470 – 505 mm average

Geology: The system is underlain by a sandy phase of the Padthaway Formation, calcreted at the surface in places (occasionally outcropping), and largely covered by a veneer of Molineaux Sand which has been reworked into dunes over 15% of the area.

Topography: The system is characterized by flats with limited areas of low sandy rises and minor areas of low stony rises.

Elevation: 10 - 20 m

Relief: Less than 5 m

Soils: Sandy soils predominate. Most have clayey subsoils, but depth varies considerably. Deep sands are confined to sandhills.

Main soils

B7a Sand over rubbly sandy clay. Common on flats

G3 Thick sand over clay. Extensive on flats

H3 Deep siliceous sand. Limited on sandhills

Minor soils

B7b Stony sand over thin clay on limestone. Minor on stony rises

Main features: The Field Land System is dominated by sandy soils with low fertility and prone to wind erosion and water repellence. The 15% of land comprising low sand rises is especially vulnerable to erosion. Only the shallow sand over clay soils have potential for regular cropping. The other soils are better suited to perennial pastures.

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

SLU	% of area	Main features #
NGD	97.8	<p>Flats with 10-20% low sandy rises and about 5% low stony rises. Main soils are <u>thick sand over clay</u> - G3 (V) and <u>sand over rubbly sandy clay</u> - B7a (L), with <u>deep siliceous sand</u> - H3 (L) on sandy rises and <u>stony sand over thin clay on limestone</u> - B7b (M) on stony rises.</p> <p>Key properties:</p> <p>Drainage: Rapidly to well drained.</p> <p>Fertility: Moderately low to low. Very low on sandy rises.</p> <p>Physical condition: No surface restrictions. Slight root impedance by clayey subsoils where present.</p> <p>AWHC: Moderate (flats), moderately low (sand rises), to low (stony rises).</p> <p>Salinity: Low.</p> <p>Erosion potential: Water: Low. Wind: Moderately low to moderate (flats). Moderately high (sand)</p>



		<p>rises). Moderately low (stony rises). Water repellence: Moderately to strongly repellent throughout except on stony rises. Rockiness: Minor to moderate calcrete on stony rises.</p> <p><u>Summary:</u> Landscape dominated by sandy soils with moderate to high limitations due to low fertility, water repellence and wind erosion potential. Only the shallow sand over clay soils are cropped regularly.</p>
OAG	2.2	<p>Gently undulating plains with 60-90% low irregular sand dunes. Main soils are <u>deep siliceous sand</u> - H3 (V) on sand dunes and <u>thick sand over clay</u> - G3 (C) on flats.</p> <p>Key properties: Drainage: Rapidly drained (dunes). Well drained (flats). Fertility: Very low (dunes). Low to moderately low (flats). Physical condition: No physical impediments to root growth, other than clayey subsoils in shallower G3 soils. AWHC: Moderately low to moderate. Salinity: Low. Erosion potential: Water: Low. Wind: Moderately high (dunes) to moderately low (flats). Water repellence: Strongly to moderately repellent. Rockiness: Nil.</p> <p><u>Summary:</u> The dunefields are characterized by well drained and non saline soils with moderate to high limitations due to wind erosion potential and low fertility.</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:

B7a Sand over rubbly sandy clay (Lithocalcic, Brown Chromosol)

Medium thickness sand abruptly overlying a well structured brown sandy clay with Class III C carbonate rubble from about 20 cm, grading to sandy to sandy clay loam Padthaway Formation sediments with abundant limestone fragments below 50 cm. Extensive (flats).

B7b Stony sand over thin clay on limestone (Petrocalcic, Brown Chromosol)

Medium thickness loamy sand to sand abruptly overlying a brown well structured sandy clay on calcreted limestone at shallow depth, gradually softening to Padthaway Formation clayey sand from about 100 cm. Minor (stony rises).

G3 Thick sand over clay (Bleached-Mottled, Calcic, Brown Chromosol)

Thick soft sand with a bleached A2 layer abruptly overlying a brown to orange well structured sandy clay, with minor soft carbonate from about 70 cm, grading to clayey sand Padthaway Formation sediments below 150 cm. Extensive (flats).

H3 Deep siliceous sand (Arenic, Brown-Orthic / Bleached-Orthic Tenosol)

Thick loose sand with a paler coloured A2 layer, grading to a yellow sand from about 60 cm, with traces of soft carbonate. Limited (sandhills).

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

