

# PEA Peake Land System

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

**Area:** 56.1 km<sup>2</sup>

**Annual rainfall:** 380 – 410 mm average

**Geology:** The Land System is formed on calcreted Bridgewater Formation calcarenites abutting the Marmon Jabuk Range. The calcrete is extensively overlain by dunefields of Molineaux Sand which have accumulated against the base of the range.

**Topography:** The Peake Land System comprises a long gentle slope with a south westerly aspect, extensively overlain by low, medium and high jumbled sandhills.

**Elevation:** 20 - 60 m

**Relief:** 5 - 15 m

**Soils:** The soils are typically sandy, with limited calcareous sandy loams.

Main soils

*Sandhills*

**H3** Deep sand

*Flats and gentle slopes*

**G1** Shallow loamy sand over red sandy clay

**B2** Shallow calcareous sandy loam

**Main features:** Sandhills and sandy flats dominate the Peake Land System. Low fertility, water repellence and moderate to extreme wind erosion potential limit agricultural productivity. Stony flats and rises are safer to farm, although shallowness of soil may restrict yields.

**Soil Landscape Unit summary:** 6 Soil Landscape Units (SLUs) mapped in the Peake Land System:

SLU	% of area	Main features #
O-A	0.8	Dunefields of mainly jumbled low to high sandhills superimposed on flats and very gentle slopes. <b>O-A</b> Isolated high jumbled sandhills. <b>OJE</b> 60-90% high jumbled sandhills. <b>OJF</b> 60-90% moderate jumbled sandhills. <b>OJJ</b> 30-60% low irregular sandhills. Main soils: <u>deep sand</u> - <b>H3</b> (V-E) on sandhills, with <u>shallow loamy sand over red sandy clay</u> - <b>G1</b> (L-E) and <u>shallow calcareous sandy loam</u> - <b>B2</b> (L-E) on flats.  Key properties: Drainage: The soils of both the dunes and the flats are well drained. Fertility: Deep sands of the sandhills are very infertile. The calcareous soils and sandy texture contrast soils of the flats have moderately low fertility.
OJE	12.4	
OJF	22.4	
OJJ	43.5	



		<p>Physical condition: There are no soil physical limitations to root growth, but hard calcrete, particularly in the calcareous soils will restrict root growth if within 50 cm of the surface.</p> <p>AWHC: Moderate in G1 and H3 soils. Low to very low in B2 soils.</p> <p>Salinity: Low (sandhills). Low at surface on flats, but may be moderate in the carbonate layers with depth.</p> <p>Erosion potential: Water: Low to moderately low. Wind: High to extreme on large sandhills, moderate on low sandhills. Moderate to low in flats.</p> <p>Water repellence: Deep sands of sandhills are strongly repellent. Sand over sandy clay loam soils are also repellent.</p> <p>Rockiness: Sandy soils generally stone free, but stone picking / rolling may be required on some flats and slopes.</p> <p><u>Summary:</u> Sandhills and sandy flats dominate these landscapes. Low fertility, water repellence and moderate to extreme wind erosion potential limit agricultural productivity. Stony flats and rises are safer to farm, although shallowness of soil may restrict yields.</p>
OJb OJf	12.5 8.4	<p>Dunefields of mainly jumbled low to high sandhills superimposed on lower slopes of the Marmon Jabuk Range.</p> <p><b>OJb</b> 60-90% moderate sandhills. <b>OJf</b> 30-60% low sandhills.</p> <p>Main soils: <u>deep sand</u> - <b>H3</b> (V-E) on sandhills, with <u>shallow loamy sand over red sandy clay</u> - <b>G1</b> (L-E) and <u>shallow calcareous sandy loam</u> - <b>B2</b> (L-E) on slopes. Key properties as for OJF and OJJ above.</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:

- B2** Shallow calcareous sandy loam (Petrocalcic, Lithocalcic Calcarosol)  
Calcareous sandy loam grading to a highly calcareous sandy clay loam with abundant rubbly carbonate over sheet calcrete at about 30 cm. This grades to very highly calcareous pink sandy clay loam (Bridgewater Formation) continuing below 200 cm.
- G1** Shallow loamy sand over red sandy clay (Petrocalcic, Red Chromosol)  
Medium to thick loamy sand to sandy loam with a paler coloured A2 layer, abruptly overlying a massive red sandy clay loam to sandy clay underlain by calcrete at about 55 cm. This grades to very highly calcareous pink sandy clay loam (Bridgewater Formation) continuing below 200 cm.
- H3** Deep sand (Basic, Arenic, Bleached-Orthic / Yellow-Orthic Tenosol)  
Greyish brown loose sand becoming yellow with depth and continuing below 200 cm.

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

