MEH Mengler Hill Land System

Steep escarpment slopes in the Kaiserstuhl - Mengler Hill - Angaston area

Area: 17.0 km^2

Annual rainfall: 540 – 725 mm average

Geology: The system is underlain by metasandstones and metasiltstones of the Backstairs Passage and Tappanappa Formations. There is minor locally derived alluvium in drainage depressions.

Topography: The Mengler Hill Land System comprises a belt of moderately steep to steep escarpment slopes on the eastern side of the Barossa Valley. Relief is up to 180 metres and slopes range from 15% to 75%. Rock outcrop is moderate to extensive. Watercourses are very well defined in deeply dissected narrow valleys.

Elevation: 300 - 530 m

Relief: Up to 180 m

Soils: The majority of soils are shallow stony loamy sands to sandy loams overlying basement rock. Associated soils have red clayey subsoils. Deep soils on alluvium are minor.

Main soils
Soils on hillslopes
L1a Shallow stony sandy loam
L1b Shallow stony loam
K2 Loam over red clay

Minor soils
Soils on flats
M1 Deep gradational sandy loam

Main features: The Mengler Hill Land System is a non arable escarpment of moderately steep to steep and rocky north to west facing slopes. Shallow stony soils and exposure limit pasture productivity and virtually preclude perennial horticulture. Watercourses in narrow valleys are sporadically eroded and require protection. Over-grazing on slopes has the potential to result in severe sheet erosion and landslip.

Soil Landscape Unit summary: 3 Soil Landscape Units (SLUs) mapped in the Mengler Hill Land System:

SLU	% of area	Main features #
AoC AoE	50.5 44.2	Escarpment slopes with variable rock outcrop (up to 10% on steeper slopes) and abundant surface stone. **AoC** Moderately steep hillslopes with relief to 100 m and slopes of 15-30%. **AoE** Steep hillslopes with relief up to 180 m and slopes of 30-75%. Main soils: shallow stony sandy loam - **L1a** (E), shallow stony loam - **L1b** (E) with loam over red clay - **K2** (L). These soils are shallow and generally stony with restricted waterholding capacity and moderately low fertility. The land is too steep for uses involving cultivation, and although gentler slopes may allow perennial crops, exposure is likely to be a problem. The slopes of AoE are too steep for any primary production uses other than rough grazing. There is potential for severe erosion if over-grazed, and steeper slopes are susceptible to landslip.
LRJ	5.3	Narrow drainage depressions formed on medium to coarse grained alluvium. There is sporadic watercourse erosion. The streams in these narrow valleys flow north westwards into the Barossa Valley. Main soil: deep gradational sandy loam - **M1** (D). These soils are deep and generally well drained. Fertility is moderately low due to the mainly sandy profiles. Productive potential is restricted by the narrowness of the flats and the high proportion of the area occupied by fragile watercourses.

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:

L1a Shallow stony sandy loam (Palic, Lithic, Leptic Rudosol)
Thick dark brown loamy sand to sandy loam, with a paler coloured A2 layer with up to 50% rock fragments, overlying sandy schist or micaceous sandstone at about 50 cm. Occurs throughout on coarser grained rocks.

L1b Shallow stony loam (Basic, Paralithic, Leptic Tenosol / Basic, Inceptic, Brown-Orthic Tenosol)
Thick stony dark brown sandy loam to loam with a paler coloured and very stony A2 layer grading to weathering phyllite, schist or metasiltstone within 60 cm. Pockets of red clay may occur in rock fissures. Occurs on finer grained rocks.

K2 Loam over red clay (Eutrophic, Red Chromosol)
Medium thickness massive brown loam with a paler coloured and gravelly A2 layer, abruptly overlying a red clay with strong coarse blocky structure grading to weathering metasiltstone by 100 cm. Occurs on finer grained rocks.

M1 Deep gradational sandy loam (Eutrophic, Brown Kandosol)
30 cm to more than 100 cm fine sandy loam with variable gravel grading to a brown fine sandy clay loam over alluvium. Extensive in drainage depressions

Further information: DEWNR Soil and Land Program