

PVP Pewsey Vale Peak Land System

Prominent rocky ridges in the Mount Crawford area.

Area: 12.9 km²

Annual rainfall: 650 – 750 mm average

Geology: The main part of the land system is underlain by quartzites and quartzitic sandstones of the Stonyfell Formation. These occur as prominent ridges. Softer rocks between the quartzite strata are schists and phyllites of the Woolshed Flat Formation.

Topography: The landscape is dominated by a series of steep rocky ridges with north - south orientation. Mount Crawford and Pewsey Vale Peak are the best known, although "Microwave Tower Hill" is the highest. Several of the ridges have moderately steep concave mid to lower slopes which grade to adjacent Land Systems. Between the parallel ridges in the north of the System are limited areas of moderately steep to steep hillslopes which are an extension of the Trial Hill Land System.

Elevation: 400 m (South Para River) to 630 m

Relief: Up to 130 m

Soils: The characteristic soils of the land system are sandy, stony and often shallow over quartzitic rocks. Subdominant soils are typical of the adjacent Trial Hill Land System.

Main soils

Soils formed on quartzitic sandstones

K4 Acidic loamy sand over brown clay

K5 Acidic gradational sandy loam

L1a Shallow stony loamy sand

Limited and minor soils

Soils formed on schists or phyllites

K3 Sandy loam over red clay

L1b Shallow stony sandy loam

D1 Sandy loam over red alkaline clay

Soils formed on deeply weathered rocks

J2 Ironstone soil

Soils formed on alluvial sediments

F2/F1 Loamy sand over thick brown clay

M1 Gradational loamy sand

Main features: The Pewsey Vale Peak Land System is characterized by moderately steep to steep rocky ridges with shallow stony infertile soils. These account for almost half of the area and have very little agricultural value. Somewhat gentler mid to lower slopes have deeper soils with no outcrop, but poor soil structure, low fertility and high erosion potential limit land use options. The most productive land is on the slopes between the quartzite ridges. These areas have moderately deep red sandy loam soils, usually with clayey subsoils. The land is well suited to grazing of improved pastures, and perennial horticulture where water is available.



Soil Landscape Unit summary: 9 Soil Landscape Units (SLUs) mapped in Pewsey Vale Peak Land System:

SLU	% of area	Main features #
AqC	20.1	<p>Concave mid to lower slopes below the high ridges of AsD. Underlying rocks are quartzites and metasandstones, often deeply weathered and kaolinized. Slopes are 16-30%. There is up to 10% surface quartzite, but no rock outcrop. Soils are deep to moderately shallow with thick sandy and quartz gravelly surfaces.</p> <p>Main soils: <u>Acidic loamy sand over brown clay</u> - K4 (E) <u>Shallow stony loamy sand</u> - L1a (E)</p> <p>Although deep, these soils are poorly structured, infertile and prone to waterlogging. The slopes are susceptible to significant runoff from the adjacent quartzite ridges, so erosion potential is high, particularly as the slopes are moderately steep and the soils are highly erodible. The land is best used for either grazing or forestry.</p>
ArC	2.5	<p>Rolling low hills with relief of up to 70 metres and slopes of 16-30% formed on micaceous sandstones and schists, commonly kaolinized, of the Stonyfell Quartzite and Woolshed Flat Formations. Most soils consist of sandy to sandy loam surfaces overlying yellow and brown subsoils, sometimes shallow over weathering rock.</p> <p>Main soils: <u>Acidic loamy sand over brown clay</u> - K4 (E) <u>Shallow stony sandy loam</u> - L1b (C) <u>Loamy sand over thick brown clay</u> - F2/F1 (L) on lower slopes <u>Ironstone soil</u> - J2 (L) on upper slopes</p> <p>These soils are generally moderately deep and moderately well drained, but inherent infertility is a significant limitation, particularly as the soils are highly susceptible to acidification. The slopes are highly susceptible to erosion, but there is some potential for perennial crops provided soil management is adequate. Pasture productivity is restricted by low fertility.</p>
AsC AsD	8.6 44.2	<p>Moderately steep to steep rocky prominent crests of highly resistant quartzite and quartzitic sandstone.</p> <p>AsC Rocky, moderately steep hillslopes with slopes of 20-30%. AsD Very rocky, steep upper slopes and crests with slopes of 30-75%.</p> <p>Soils are characterized by stony and gravelly sandy surfaces, weakly developed or absent subsoils and hard rock at shallow depth.</p> <p>Main soils: <u>Acidic gradational sandy loam</u> - K5 (E) <u>Shallow stony loamy sand</u> - L1a (E)</p> <p>This land is steep, stony and exposed with shallow, stony, highly infertile soils. It has little agricultural value, and most is uncleared.</p>
AyC AyD	20.7 1.5	<p>Moderately steep to steep slopes formed on phyllites and schists. Slopes range from 18% to 50%. Relief is up to 80 metres. Drainage channels are very well defined, narrow and mostly un-mappable. They are often gullied.</p> <p>AyC Moderately steep slopes up to 80 m high with gradients of 18-30%. AyD Minor steep slopes to 40 m high with gradients of 30-50%.</p> <p>The soils are predominantly loamy, usually with reddish clay subsoils, but shallow soils formed directly on weathering rock are common.</p> <p>Main soils: <u>Sandy loam over red clay</u> - K3 (V) <u>Shallow stony sandy loam</u> - L1b (C) <u>Sandy loam over red alkaline clay</u> - D1 (L)</p> <p>The soils are mostly shallow and stony, but there is a significant proportion of deeper moderately fertile sandy loam over clay soils. Although most of the land is used for grazing, it has horticultural potential where water is available. Fertility maintenance, acidity control and erosion prevention are the main management issues.</p>



CcD	0.5	<p>Slopes and rises formed on micaceous sandstones and quartzites of the Stonyfell and Mitcham Formations. There is variable surface sandstone, quartzite and ironstone.</p> <p>CcD Moderate slopes of 10-15% adjacent to the steep quartzite ridges of the Pewsey Vale Peak Land System.</p> <p>Main soils: <u>Loamy sand over yellow brown sandy clay</u> - K4a (V) <u>Brown ironstone soil</u> - J2 (L) <u>Sandy loam over poorly structured brown clay</u> - K4b (L) <u>Shallow stony sandy loam</u> - L1 (L) on steeper slopes</p> <p>These soils have low inherent fertility, and are acidic throughout, but are commonly deep. They are moderately well drained. On steeper slopes, erosion potential is high.</p>
LEE	0.5	<p>Broad alluvial flats and drainage depressions formed on sand, clayey sand and sandy clay alluvium.</p> <p>LEE Flats adjacent to the South Para River and major tributaries.</p> <p>Main soils: <u>Sand over brown sodic clay</u> - G3/G4 (E) <u>Sandy loam over brown sodic clay</u> - F2 (E) <u>Deep bleached siliceous sand</u> - H3 (L)</p> <p>These soils are deep but inherently infertile and acidic. The sodic soils are prone to severe waterlogging. There are sporadic patches of saline seepage.</p>
LTJ	1.4	<p>Creek flats with eroded water courses formed on sand, clayey sand and sandy clay alluvium derived from the erosion of coarse grained metamorphic rocks.</p> <p>Main soils: <u>Loamy sand over thick brown clay</u> - F2/F1 (E) <u>Gradational loamy sand</u> - M1 (E)</p> <p>These soils have low natural fertility and are subject to waterlogging, salinization, acidification and compaction. However, with suitable species and grazing management, pasture productivity potential is moderately high. Water course management is an additional consideration in these landscapes, due to past stream bank erosion and high soil erodibility.</p>

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:

Soils formed on quartzitic sandstones

- K4** Acidic loamy sand over brown clay (Mesotrophic, Brown Chromosol)
Thick, brownish loamy sand to sandy loam with a paler coloured and quartz gravelly A2 horizon, overlying a yellow and brown, coarsely blocky clay, grading to freshly weathered or kaolinized quartzitic sandstone deeper than 100 cm.
- K5** Acidic gradational sandy loam (Bleached-Acidic, Mesotrophic, Yellow Kandosol)
Thick, gravelly loamy coarse sand to coarse sandy loam surface soil with a bleached and very gritty and gravelly A2 horizon, overlying a brown or yellow sandy clay loam to sandy clay subsoil with abundant rock fragments, grading to coarse grained quartzitic sandstone.
- L1a** Shallow stony loamy sand (Acidic, Lithic, Bleached-Leptic Tenosol)
Thick, greyish, very gravelly loamy sand to sandy loam with a bleached A2 horizon, grading to hard metasandstone by 50 cm.



Soils formed on schist or phyllite

- D1** Sandy loam over red alkaline clay (Calcic, Red Chromosol)
Medium thickness loamy surface soil with a paler and stony A2 horizon, overlying a dark reddish brown, well structured clay subsoil which is calcareous from about 50 cm. Weathering, calcified schist or phyllite occurs within 100 cm.
- K3** Sandy loam over red clay (Sodic, Eutrophic, Red Chromosol)
Medium thickness sandy loam to sandy clay loam surface soil, with a pale and very gravelly A2 horizon, overlying a red or dark reddish brown well structured clay subsoil grading to weathering schist or phyllite by 100 cm.
- L1b** Shallow stony sandy loam (Paralithic, Leptic Tenosol)
Thick, stony sandy loam to loam, forming in weathering schist or phyllite at 50 cm or less.

Soils formed on deeply weathered rocks

- J2** Ironstone soil (Bleached-Ferric, Mesotrophic, Brown Kurosol)
Medium thickness grey brown loamy sand with a bleached A2 horizon containing over 50% ironstone gravel, overlying a yellow brown clay with soft red inclusions of weathered ironstone, grading to a greyish silty clay forming in weathering schist or deeper than 200 cm.

Soils formed on alluvial sediments

- F2/F1** Loamy sand over thick brown clay (Eutrophic, Brown Chromosol / Sodosol)
Thick massive grey loamy sand to sandy loam with a bleached and quartz gravelly A2 horizon, overlying a yellow brown and grey brown sandy clay to clay with variable structure - friable and finely structured (Chromosols) and coarsely prismatic (Sodosols) - grading to medium textured gravelly alluvium from 100 cm.
- M1** Gradational loamy sand (Eutrophic, Brown Kandosol)
Very thick brown sand with bleached and rusty mottles, overlying a massive brown clayey sand to light sandy clay loam at about 100 cm, grading to sandy alluvium.

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

