

EWH East Whydown Land System

- Area:** 175.4 km²
- Landscape:** The land system is a curved range flanked on both sides by extensive pediment slopes. Drainage is into Paratoo creek, which flows south across the Barrier highway. East Whydown is a property in the area, which is north of Paratoo.
- Annual rainfall:** 230 – 260 mm average
- Geology:** Appila Tillite forms the higher ranges, Tarcowie Siltstone and Tapley Hill Formation siltstones occur on gentler rises, Saddleworth Formation slates and shales are found on the gentlest slopes as are alluvial and colluvial slope deposits.
- Main soils:** *Formed on outwash sediments*
A5 Rubbly calcareous loam to clay loam on clay
D4 Loam to clay loam over pedaric red clay
Formed on basement rock
A2 Shallow calcareous loam to sandy loam
- Minor soils:** *Formed on outwash sediments*
A3 Deep moderately calcareous loam
A4 Deep rubbly calcareous sandy loam
A6 Gradational calcareous clay loam
C3 Gradational clay loam
D6 Ironstone gravelly loam over red clay
E2 Red cracking clay
Formed on basement rock
B2 Shallow calcareous loam to sandy loam on calcrete
C2 Gradational loam to clay loam on rock
D1 Loam to clay loam over clay on rock
D7 Loam over poorly structured clay on rock
L1a Shallow stony loam
L1b Shallow stony sandy loam
RR Rock outcrop
- Summary:** The East Whydown Land System contains an arcuate range reaching elevations around 430m. Lower, disjunct parallel ranges occur on either side with gently sloping pediments and soft rock slopes on their flanks.

Soil Landscape Unit summary: 47 Soil Landscape Units (SLUs) mapped in the East Whydown Land System:

SLU	% of area	Component	Main soils	Prop#	Notes
AAA	0.6	Undulating rises	L1RRA2	D	Rises and hills with shallow stony soils formed on fine grained rocks. Rock outcrops are common. AAA Undulating rises. Relief is less than 30m, slopes are 3-10%. AAB Rolling rises as above. Relief is 9-30m, slopes: 10-30%. AAC Rolling low hills. Relief: less than 30m slopes: 10-30%. AAD Steep low hills. Relief is 30-90m, slopes are 30-50%. Main soils: <u>shallow stony loam</u> - L1 , <u>rock outcrop</u> - RR and <u>shallow calcareous loam</u> - A2 .
AAB	1.7	Rolling rises	L1RRA2	D	
AAC	2.4	Rolling low hills	L1RRA2	D	
AAD	1.9	Steep low hills	L1RRA2	D	
AEB	0.3	Rolling rises	L1RR	D	Non-arable rocky rises and low hills formed on mostly fine



AEC	0.1	Rolling low hills	L1RR	D	grained rocks. Soils are very shallow and more than 20% are Petrocalcic (contain a calcrete layer). Rock outcrop is common. AEB Rolling rises. Relief is 9-30m, slopes are 10-30%. AEC Rolling low hills. Relief is 30-90m, slopes are 3-10%. Main soils: <u>shallow stony loam - L1a</u> and <u>rock outcrop - RR</u> , with <u>shallow calcareous loam on calcrete - B2</u> .
AYA	3.2	Undulating rises	A2L1RR	D	Hills and rises on fine grained rocks, especially siltstones of the Tapley Hill Formation. Rock outcrop is common. AYA Undulating rises. Relief is less than 30m, slopes are 3-10%. AYB Rolling rises. Relief is less than 30m, slopes are 10-30%. AYC Rolling low hills. Slopes are 10-30%, relief is 30-90m. AYD Very steep low hills. Relief is 30-90m; slopes are 50-100%. Main soils: <u>shallow calcareous loam - A2</u> , <u>shallow stony loam - L1a</u> and <u>rock outcrop - RR</u> .
AYB	3.7	Rolling rises	A2L1RR	D	
AYC	0.6	Rolling low hills	A2L1RR	D	
AYD	0.3	Very steep low hills	A2L1RR	D	
DTB	0.1	Gently undulating rises	D1D7	D	Rises formed on fine grained rock. Limited rock outcrop. DTB Gently undulating rises. Slopes are 1-3%, relief is less than 30m. DTC Undulating rises. Relief is 9-30m, slopes are 3-10%. DTH Undulating rises. Moderately gullied (10-20%). Relief is 9-30m, slopes are 3-10%. Main soils: <u>clay loam over (pedaric) red clay on rock - D1</u> and <u>loam over poorly structured clay on rock - D7</u> , with <u>rock outcrop - RR</u> and <u>shallow stony loam - L1a</u> .
DTC	1.6	Undulating rises	D1D7	D	
DTH	2.3	Undulating rises	D1D7	D	
EHB	5.8	Gently undulating pediment	A2	V	Rises and pediments on calcareous siltstones and limestones such as Tarcowie Siltstone and Tapley Hill Formation. EHB Gently sloping pediments of 1-3% slope, with rocky rises of 3-10% slope. EHC Undulating pediments with slopes of 3-10%, and rocky rises. EHS Rolling rises of 10-20% slope, and gently sloping pediments (1-3% slope) with moderately saline soils. Main soils: Plains and Pediments: <u>shallow calcareous sandy loam - A2</u> , with <u>shallow calcareous sandy loam on calcrete - B2</u> and <u>rock outcrop - RR</u> . Rocky rises: <u>rock outcrop - RR</u> and <u>shallow stony sandy loam - L1b</u> .
		Rocky outcrops	RR	L	
EHC	0.6	Undulating pediment	A2	V	
		Rocky outcrops	RR	L	
EHS	1.1	Rolling rises	A2	V	
		Gently undulating pediments	RR	L	
EOC	0.6	Undulating rises	A2A6	D	Rises with pulverulent calcareous soils formed mainly on siltstones and shales. EOC Undulating rises. Relief is less than 30m, slopes are 3-10%. EOD Rolling rises. Relief is 9-30m, slopes are 10-30%. EOLz Gently undulating rises. Relief is less than 30m, slopes are 1-3%. Landscape is moderately gullied and moderately to severely scalded. Soils are moderately saline. Main soils: <u>shallow calcareous loam - A2</u> and <u>gradational calcareous clay loam - A6</u> , with <u>shallow stony loam - L1a</u> and <u>rock outcrop - RR</u> .
EOD	0.4	Rolling rises	A2A6L1	D	
EOLz	2.4	Gently undulating rises	A2A6	D	
		Rocky outcrops	RR	C	
EVB	0.4	Gently undulating rises	A2	V	Rises with rock outcrops formed on fine grained calcareous rocks. EVB Gently undulating rises. Slopes are 1-3%; relief is less than 30m. EVC Undulating rises. Slopes are 3-10%, relief is 9-30m. EVI Gently undulating rises with moderate gullying (5-10%) and scalding (10-50%). Slopes are 1-3%, relief is less than
		Rocky outcrops	RR	C	
EVC	1.4	Undulating rises	A2	V	
		Rocky outcrops	RR	C	
EVI	5.9	Gently undulating rises	A2	V	



		Rocky outcrops	RR	C	30m. Main soils: Rises: <u>shallow calcareous loam - A2</u> , with <u>rubbly calcareous loam on clay - A5</u> and <u>shallow calcareous loam on calcrete - B2</u> . Rocky outcrops: <u>rock outcrop - RR</u> , with <u>shallow stony loam - L1a</u> .
JLI	14.4	Gently undulating plains	D1D4A3	D	Plains and pediments formed on a mixture of fine grained weathering rock and alluvium. JLI Gently sloping pediments and plains. Moderately gullied (10-20%) and scalded (5-10%). Slopes are 1-3%, relief is less than 9m.
JLoo	6.0	Creek flats	D4D1	D	JLoo Creek flats. Severely gullied (over 20%), moderately scalded (10-50%).
JLV	0.3	Pediments	D4	D	JLV Gently sloping pediments. Moderately scalded (10-50%). Slopes are 1-3%, relief is less than 9m. Main soils: <u>clay loam over pedaric red clay - D4</u> and <u>clay loam over pedaric red clay on rock - D1</u> , with <u>deep moderately calcareous loam - A3</u> , <u>loam over poorly structured clay on rock - D7</u> and <u>gradational clay loam - C3</u> .
JPm	1.6	Pediments	D4A5	D	Pediments and plains and flats formed on outwash sediments derived from basement rocks. JPm Undulating pediment plains. Moderately gullied (5-10%) and scalded (10-50%). Slopes are 3-10%, relief is less than 9m. JPoo Creek flats. Severely gullied (over 20%), moderately scalded (10-50%). JVH Gently sloping pediments. Moderately gullied (10-20%) and scalded (5-10%). Slopes are 1-3%, relief is less than 9m. Main soils: <u>loam over pedaric red clay - D4</u> and <u>rubbly calcareous loam on clay - A5</u> , with <u>deep moderately calcareous loam - A3</u> and <u>gradational loam on rock - C2</u> .
JPoo	1.0	Creek flat	D4A5	D	
JPV	1.1	Pediments	D4A5	D	
JYm	2.1	Pediments	D4D1	D	Undulating pediments formed on a complex of fine grained outwash sediments and weathering rock. Moderately gullied (10-20%) and scalded (10-50%). Slopes are 3-10%, relief is less than 9m. Main soils: <u>clay loam over pedaric red clay - D4</u> and <u>loam over pedaric red clay on rock - D1</u> , with <u>loam over poorly structured clay on rock - D7</u> .
KFB	7.4	Pediment	A5	D	Pediments formed on fine grained outwash sediments. KFB Gently sloping pediments. Slopes are 1-3%, relief is less than 9m. KFC Undulating pediments. Slopes: 3-10%, relief < 9m. KFV Gently sloping pediments. Moderately scalded (10-50%). Slopes are 1-3%, relief is less than 9m. KFW Undulating pediments. Moderately scalded (10-50%). Slopes are 3-10%, relief is less than 9m. KFY Valley floor. Moderately scalded (10-50%). KFYz Flood plains. Severely gullied (over 20%), moderately saline and moderately scalded (10-50%). Main soils: Pediments: <u>rubbly calcareous loam on clay - A5</u> with <u>clay loam over pedaric red clay - D4</u> . Valleys and plains: <u>deep moderately calcareous loam - A3</u> and <u>loam over pedaric red clay - D4</u> , with <u>ironstone gravelly loam over red clay - D6</u> .
KFC	1.7	Pediment	A5	D	
KFV	0.5	Pediment	A5	D	
KFW	0.6	Pediment	A5	D	
KFY	1.2	Valley floor	A3D4	D	
KFYz	1.7	Flood plain	A3D4	D	
KIB	2.2	Undulating pediment	D1D4E2	D	Undulating pediments formed on a complex of alluvium and weathering rock. Slopes are 3-10%. Main soils: <u>loam over clay on rock - D1</u> , <u>clay loam over</u>



KLB	4.1	Pediments	A5	D	<u>pedaric red clay - D4</u> and <u>red cracking clay E2</u> . Gently undulating pediments formed on a complex of fine grained alluvium and weathering rock. Slopes are 1-3%, relief is less than 9m. Main soils: <u>rubbly calcareous clay loam on clay - A5</u> , with <u>shallow calcareous loam - A2</u> , <u>gradational clay loam on rock - C2</u> and <u>shallow calcareous loam on calcrete - B2</u> .
KOB	1.0	Pediment	A5	D	Pediments formed on fine grained outwash sediments with mostly calcareous soils KOB Gently sloping pediments. Slopes are 1-3%, relief is less than 9m. KOG Gently sloping pediments. Moderately gullied (5-10%). Slopes are 1-3%, relief is less than 9m. KOGz Gently sloping pediments. Moderately saline and scalded (10-50%). Slopes are 1-3%, relief is less than 9m. Main soils: <u>rubbly calcareous clay loam on clay - A5</u> , with <u>clay loam over pedaric red clay - D4</u> and <u>deep rubbly calcareous sandy loam - A4</u> .
KOG	7.1	Pediment	A5	D	
KOGz	1.3	Pediment	A5	D	
KQC	1.9	Pediment Shallow rises	A5 A2	V C	Complexes of pediments and basement rock rises with mostly calcareous gradational soils. KQC Undulating pediments with 20-30% rocky rises. Slopes are 3-10%, relief is less than 9m on pediments and 9-30m on rises. KQD Rolling rises and pediments in equal proportions. Relief is 9-30m, slopes are 10-20%. KQFz Plains with minor rocky rises. Moderately saline soils and 10-50% of land is scalded. Slopes are less than 1%. KQG Gently sloping pediments with 20-30% rocky rises. Moderately gullied (5-10%). Slopes are 1-3% on pediments and 3-10% on rises; relief is less than 9m on pediments and 9-30m on rises. KQV Gently sloping pediments with 20-30% rocky rises. Moderately scalded (10-50%). Slopes are 1-3% on pediments and 3-10% on rises; relief is less than 9m on pediments and 9-30m on rises. Main soils: Pediments: <u>rubbly calcareous clay loam on clay - A5</u> with <u>clay loam over pedaric red clay - D4</u> . Rises: <u>hallow calcareous loam - A2</u> , with <u>shallow calcareous loam on calcrete - B2</u> and <u>rock outcrop - RR</u> .
KQD	0.2	Rolling rises Pediment	A2 A5	E E	
KQFz	1.5	Plains Shallow rises	A5 A2	D M	
KQG	2.5	Pediment Shallow rises	A5 A2	V C	
KQV	0.9	Pediment Shallow rises	A5 A2	V C	
KVB	0.1	Gently undulating pediments	A2	D	
KVV	0.2	Gently undulating pediments	A2	D	

PROPORTION codes assigned to Soil Landscape Unit (SLU) components:

- | | | | |
|---|--|---|-----------------------------------|
| 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:

- A2** Shallow calcareous loam (Paralithic, Hypercalcic / Lithocalcic Calcarosol)
Calcareous stony loam grading to soft or rubbly carbonate over weathering dolomite or calc-siltstone within 50 cm.
- A3** Deep moderately calcareous loam (Regolithic, Calcic Calcarosol)
Calcareous loam to sandy loam grading to a loamy to clayey subsoil without a significant carbonate accumulation in the subsoil, grading to medium to fine grained alluvium.
- A4** Deep (rubbly) calcareous loam (Regolithic, Hypercalcic / Lithocalcic Calcarosol)
Calcareous sandy loam to clay loam grading to a very highly calcareous sandy clay loam to light clay with variable rubble, continuing below 120 cm.
- A5** Rubbly calcareous loam to clay loam on clay (Regolithic, Supracalcic / Hypercalcic Calcarosol)
Calcareous sandy loam to clay loam grading to a very highly calcareous rubbly sandy clay loam to light clay, over a clayey substrate deeper than 60 cm, but within 120 cm.
- A6** Gradational calcareous clay loam (Pedal, Hypercalcic / Supracalcic Calcarosol)
Calcareous loam to clay loam grading to a well structured very highly calcareous (sometimes rubbly) clay, over a red clayey substrate within 120 cm.
- B2** Shallow calcareous loam on calcrete (Petrocalcic, Calcic / Lithocalcic Calcarosol)
Stony calcareous sandy loam to loam, often with a very highly calcareous more clayey subsoil, over sheet calcrete within 50 cm. This grades to rubbly carbonate over weathering basement rock within 150 cm.
- C2** Gradational loam on rock (Calcic / Hypercalcic Red Dermosol)
Loam to clay loam grading to a friable red clay with soft Class I carbonate within 50 cm, grading to weathering rock within 100 cm.
- C3** Gradational clay loam (Calcic / Hypercalcic Red Dermosol)
Loam to clay loam grading to a friable red clay with abundant soft Class I carbonate within 50 cm, overlying alluvium within 100 cm.
- D1** Loam over clay on rock (Hypercalcic / Calcic, Red Chromosol)
Medium thickness hard gravelly loam over a friable and finely structured red clay, calcareous with depth, grading to weathering basement rock within 100 cm.
- D4** Loam over red friable clay (Calcic, Pedaric, Red Sodosol)
Thin to medium thickness loam to clay loam over a finely structured friable red clay, calcareous from about 50 cm, grading to fine or medium grained alluvium.
- D6** Ironstone gravelly loam over red clay (Ferric, Red Chromosol)
Ironstone gravelly sandy loam to loam abruptly overlying a red weakly to moderately well structured clay grading to highly weathered alluvial sediments.
- D7** Loam over poorly structured clay on rock (Calcic / Hypercalcic, Red Sodosol)
Medium to thick hard sandy loam to clay loam sharply overlying a coarsely structured dispersive red clay, calcareous with depth, grading to highly weathered kaolinized or quartzitic siltstone.
- E2** Red cracking clay (Epicalcareous, Epipedal, Red Vertosol)
Dark strongly structured clay grading to a well structured red calcareous medium to heavy clay continuing below 100 cm. Gypsum segregations often occur in subsoil.
- L1a** Shallow stony loam (Paralithic, Leptic Tenosol)
Shallow stony loam, often calcareous with depth, overlying weathering fine grained rock shallower than 50 cm.
- L1b** Shallow stony sandy loam (Paralithic, Leptic Tenosol)
Shallow stony sandy loam, often calcareous with depth, overlying weathering medium to coarse grained rock shallower than 50 cm.
- RR** Rock outcrop

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

