EUR Eurelia Land System

Area: 452.7 km^2

Landscape: Pediments and plains, with rises and low hills mostly with red soils, often with clay subsoils; on basement rock. Grey calcareous soils on pediments and rises are subdominant in parts. Named after the locality of Eurelia.

Annual rainfall: 265 - 385 mm average

Geology: Colluvial and alluvial materials locally derived from calcareous and non-calcareous siltstones and fine grained basement rocks e.g. Ulupa Siltstone, Tarcowie Siltstone and Tapley Hill Formation. Minor quartzites occur as linear ridges and low ranges.

Topography: Undulating plains trending north-east to south-west with rolling rises and low ranges on hard rock. The land system is bounded on both sides by higher ranges. Drainage is well defined and is often incised. Pekina and Yanyarrie creeks are the main streams draining the land system.

Elevation: 500 - 530 m asl in the north, 440 - 450 m asl in the south

Relief: 10 - 20 m is common throughout, but there are some rises and low hills included which may rise 30 m or more.

Typical soils: Red loam to clay over granular clay (pedaric Sodosols/Dermosols). These soils are present on both alluvial plains and broad gently sloping pediments. These soils often are extensively scalded. They are often in association with:

- Grey to red calcareous loam grading to calcareous clay (Calcarosols). These soils are found on pediments and plains derived from fine grained calcareous parent rocks.
- Shallow red loam to clay over fine-grained basement rock. These soils occur on rises and low hills which occur both as isolated knolls and continuous elongate ranges trending NE-SW.
- Shallow grey calcareous loam on fine-grained rock. These soils are found on stony rises and low hills. Some of these soils are powdery and pulverulent and exhibit scalding.

Main soils:

D2 (18%) Loam over red clay (Calcic-Hypercalcic Red Chromosol-Sodosol)
D1 (14%) Loam over clay on rock (Shallow Calcic-Hypercalcic Red Chromosol)
A2 (12%) Calcareous loam on rock (Paralithic Calcarosol)

Minor soils:

L1 (9%)
C3 (6%) Friable gradational clay loam (Calcic-Hypercalcic Red Dermosol-Calcarosol)
A5 (6%) Rubbly calcareous loam on clay (Supracalcic-Lithocalcic Calcarosol on clay)
D4 (6%) Loam over pedaric red clay (Pedaric Red Sodosol-Dermosol)
RR (5%) Bare rock
B2 (4%) Shallow calcareous loam on calcrete (Petrocalcic Calcarosol-Rudosol)
C1 (4%) Gradational sandy loam (Calcic-Hypercalcic Kandosol-Calcarosol)

Summary: The Eurelia Land System is a series of plains and pediments separated by a number of north-east to southwest trending low ranges and rises. Soils are mostly red with clay subsoils, but grey calcareous soils are subdominant in some parts. Shallow red loams and clayey soils occur on or near the ranges, as do shallow calcareous soils.

Soil Landscape Unit summary: Eurelia Land System (EUR)

SLU	% of area	Component	Main soils	Prop#	Notes
ABC	1.3	Rolling low hills	L1RR	D	Rolling low hills with linear rocky quartzite outcrops and shallow rocky soils on interbedded fine-grained rocks. Relief is 30-90m, slopes are 3-10%. Main soils: Shallow stony soils on rock **- L1**. Rock outcrop - **RR** is common.
ACB	0.3	Rolling rises	D1L1	D	Hills and rises with shallow red texture contrast and clay loamy gradational soils formed on limestone. **ACB** Rolling rises. Relief is 9-30m; slopes are 10-30%. **ACI** Rolling low hills with gullying affecting more than 20% of land. Relief is 30-90m, slopes are 10-30%. Main soils: Clay loam over pedaric red clay on rock - **D1** and Shallow stony soils on rock **- L1**.
ACI	0.2	Rolling low hills	D1L1	D	
ADA	1.2	Undulating rises	C2L1 A2	D	Non-arable rocky rises with thin soil cover formed on limestone and calc-siltstone with very shallow loamy soils. **ADA** Undulating rises with very shallow stony calcareous soils formed on Skillagollee Dolomite and calcareous fine-grained rock. Relief is less than 30m, slopes are 3-10%. **ADB** Rolling rises as above. Relief: 9-30m, slopes: 10-30%. **ADC** Rolling low hills as above. Relief: 30-90m, slopes: 3-10%. **ADD** Steep low hills as above. Relief: 30-90m, slopes: 30-50%. **ADE** Steep hills. Relief is greater than 90m, slopes are 30-60%. **ADh** Rolling rises as above with eroded watercourses and scalding. Relief is 9-30m, slopes are 10-30% **ADi** Rolling low hills as above, with eroded watercourses and scalding. Relief is 30-90m, slopes are 3-10%. **ADJ** Steep low hills as above, with eroded watercourses. Relief is 30-90m, slopes are 30-50%. **ADO** Rolling low hills as above, with scalding and sheet erosion. Relief is 30-90m, slopes are 3-10%. Main soils: Calcareous loamy, Shallow stony soils on rock - **L1**; gradational red clay-loam over clay (Red clayey pedaric Dermosols) - **C2** and Calcareous clay loam on rock – **A2**. Non-arable, limited pastoral use.
ADB	1.5	Rolling rises	L1	D	
ADC	0.2	Rolling low hills	L1	D	
ADD	0.5	Steep low hills	L1RR	D	
ADE	0.7	Steep hills	L1RR	D	
ADh	0.1	Rolling rises	L1	D	
ADi	0.4	Rolling low hills	L1	D	
ADJ	0.2	Steep low hills	L1RR	D	
ADO	0.6	Rolling low hills	L1	D	
AHC	1.5	Rolling low hills	L1	D	Rolling low hills with quartzite ridges (Cradock Quartzite) and interbedded valleys on fine grained rocks, typically, Saddleworth Formation siltstones. Relief is 30-90m, slopes are 3-10%. Main soils: Shallow stony soils on rock **- L1**.
AKB	0.1	Rolling rises	L1	D	Hills and rises with very shallow rocky calcareous soils formed on coarse-grained rocks of the Pre-Cambrian Burra Group including the Rhynie Sandstone and Skillagollee Dolomite. **AKB** Rolling rises. Relief is 9-30m, slopes are 10-30%. **AKC** Rolling low hills. Relief is 30-90m, slopes are 10-30%. Main soils: Shallow stony soils on rock **- L1**.
AKC	0.2	Rolling low hills	L1	D	
APC	1.5	Rolling low hills	L1D1	D	Hills and rises on coarse-grained basement rocks particularly Appilla Tillite Formation. **APC** Rolling low hills. Non arable. Relief is 30-90m, slopes are 10-30%.
APH	0.7	Rolling rises	L1D1	D	**API** Rolling low hills with eroded watercourses. Gullying

API	0.5	Rolling low hills	L1D1	D	affects more than 20% of land. Non arable. Relief is 30-90m, slopes are 10-30%. **APK** Steep hills with eroded watercourses. Gullying affects more than 20% of land. Non arable. Relief is 90-300m, slopes are 30-50%. Main soils: Shallow stony soils on rock **- L1** and Loam over pedaric red clay on rock - **D1**.
DAC	0.2	Undulating rises	D1C2	D	Undulating rises with duplex soils over basement rocks, typically siltstones of the Saddleworth Formation. Calcareous subsoils. Relief is 9-30m, slopes are 3-10%. Main soils: Clay loam over pedaric red clay on rock - **D1** and Gradational loam on rock -**C2**.
DBC	1.6	Undulating rises	D1D2 D3	D	Rises formed on basement rocks with texture contrast soils with clay-loamy surfaces and containing carbonate in the subsoils. **DBC** Undulating rises. Relief is 9-30m, slopes are 3-10%. **DBD** Rolling rises. Relief is 9-30m, slopes are 10-30%. Main soils: Clay loam over pedaric red clay on rock - **D1**, Loam over red clay - **D2** and Loam over poorly structured red clay - **D3**.
DBD	0.6	Rolling rises	D1D2 D3	D	
DCB	0.8	Gently undulating rises	D1A6	D	Rises with shallow texture contrast soils on shales and siltstones. Surface soils commonly have clay loamy textures. Calcareous soils occupy more than 20% of the landscape. There is much surface stone. **DCB** Gently undulating rises. Slopes 1-3%, relief <30m. **DCC** Undulating rises. Relief is 9-30m, slopes are 3-10%. Main soils: Clay loam over pedaric red clay on rock - **D1** and Gradational calcareous clay - **A6**.
DCC	1.4	Undulating rises	D1A6	D	
DEC	0.1	Undulating rises	D1C2 A2	D	Rises with duplex soils over basement rocks, typically Bunyeroo Formation shale. Subsoils are calcareous. **DEC** Undulating rises. Relief is 9-30m, slopes are 3-10%. **DEm** Undulating rises. Relief is 9-30m, slopes are 3-10%. **DEW** Undulating rises. Relief is 9-30m, slopes are 3-10%. Main soils: Clay loam over pedaric red clay on rock - **D1**, Gradational loam on rock -**C2** and Calcareous clay loam on rock – **A2**.
DEm	0.3	Undulating rises	D1C2 A2	D	
DEW	1.2	Undulating rises	D1C2 A2	D	
DNC	2.8	Undulating rises	D2D1	D	Rises and plains with shallow texture contrast soils formed on fine-grained rocks, typically Brachina Shale Formation. The soils have sandy clay loam surface textures. **DNC** Undulating rises. Relief is 9-30m, slopes are 3-10%. **DNm** Undulating rises. Relief is 9-30m, slopes are 3-10%. **DNU** Plains with 10-50% scalded land Slopes are less than 1%, relief is less than 9m. **DNW** Undulating rises; 5-10% of land is scalded and gullied. Relief is 9-30m, slopes are 3-10%. Main soils: Loam over red clay - **D2** and Clay loam over pedaric red clay on rock - **D1**.
DNm	0.4	Undulating rises	D2D1	D	
DNU	0.3	Plains	D2D1	D	
DNW	0.2	Undulating rises	D2D1	D	
DPG	0.8	Gently undulating rises	D1D7	D	Gently undulating rises with texture contrast soils formed on weathered, kaolinised rock. Slopes 1-3%, relief <30m. Main soils: Clay loam over pedaric red clay on rock - **D1** and Loam over poorly structured clay on rock - **D7**.
DXC	0.5	Undulating rises	D1L1	V	Landscapes with red duplex soils over basement rock or saprolite within one metre of the surface. More than 20% of soils are formed on outwash sediments. Soils formed on basement rock in complex with soils formed in outwash materials. Surface textures are loamy **DXC** Undulating rises and pediment slopes.
		Pediments	D2D4 C3	C	
DXH	0.4	Undulating rises	D1L1	V	
		Pediments	D2D4 C3	C	

DXI	0.3	Rolling rises	D1L1	V	Relief is 9-30m, slopes are 3-10%. **DXH** Undulating rises and pediment slopes with gullies affecting 10-20% of land. Relief is 9-30m, slopes are 3-10%. **DXI** Rolling rises and pediment slopes with gullies affecting 10-20% of land. Relief is 9-30m, slopes are 10-30%. Main soils: ***Rises:*** Rocky rises have shallow red duplex soils on rock. Clay loam over pedaric red clay on rock - **D1** and Shallow stony soils on rock - **L1**. ***Pediments:*** Pediment slopes have red duplex and gradational soils. Loam over red clay - **D2**, Loam over pedaric red clay - **D4,** Friable gradational clay loam - **C3**.
		Pediments	D2D4 C3	C	
EAC	0.8	Undulating rises	A2C2 D1	D	Undulating rises with gradational calcareous soils over hard rock with more than 20% red texture contrast and/or non-calcareous red gradational soils. Relief 9-30m, slopes 3-10%. Main soils: Calcareous loam on rock **-A2**, Gradational loam on rock -**C2**, Clay loam over pedaric red clay on rock - **D1**.
EBC	0.7	Undulating rises	L1	D	Undulating rises with shallow, mostly calcareous, soils formed on quartzites and siltstones of the ABC Range Quartzite. Relief is 9-30m, slopes are 3-10%. Main soils: Shallow stony soils on rock **- L1**.
EFB	1.1	Gently undulating rises	A2D7 L1	D	Rises with shallow, mainly calcareous loamy soils formed on calc-siltstones of the Wonoka or Tapley Hill Formations typically. **EFB** Gently undulating rises with only minor scalding. Slopes are 1-3%, relief is less than 30m. **EFC** Undulating rises. Relief < 30m, slopes < 10%. **EFW** Undulating rises variably scalded with between 5 and 50% of land affected. Main soils: Calcareous loam on rock – **A2**, Loam over poorly structured clay on rock - **D7,** Shallow stony soils on rock **- L1**.
EFC	0.8	Undulating rises	A2D7 L1	D	
EFW	0.3	Undulating rises	A2D7 L1	D	
EHB	2.1	Gently sloping plain	A2	V	Rises and pediments on calcareous siltstones and limestones such as those of the Tapley Hill Formation, Wonoka Formation and the ABC Range Quartzite of the Wilpena Group. The soil-landscape units are also associated with Bunyeroo Formation shales with some outwash contribution from calcareous Wonoka Formation calc-siltstones. **EHB** Gently sloping plains with rocky outcrops. *Gently sloping Plains:* Slopes are 1-3%, relief is less than 9m. *Rocky rises:* Slopes are 3-10%, relief is 9-30m. **EHC** Undulating rises and pediments. Relief is less than 30m, slopes are 3-10%. **EHD** Undulating rises ***Rolling Rise:*** Rises with shallow calcareous soils on Tapley Hill Formation calc-siltstones. Scalding and sheet erosion affects 20-50% of land, especially in proximity to severely gullied drainage lines. Relief is 9-30m, slopes are 10-30%. ***Pediments:*** Gently sloping plains with slightly deeper, silty calcareous soils over calc-siltstones. Relief is less than 9m, slopes are 3-10%. **EHm** Undulating low rises on calcareous basement rock with deeper calcareous soils on lower slopes & drainage depressions. Scalding is moderate to severe on lower slopes. Relief is less than 30m, slopes are 3-10%. Severely scalded (40-50% of land affected) and gullied (20% of land affected). Main soils: ***Rises, crests:*** Calcareous loam on rock – **A2**. ***Lower slopes:*** Calcareous loam on rock – **A2** and Shallow stony soils on rock **- L1**.
		Rocky outcrops	RR	L	
EHC	1.0	Undulating rises	A2L1	V	
		Undulating pediments	A2	C	
EHD	0.2	Rolling rises	A2L1	V	
		Pediments	A2	C	
EHm	0.2	Undulating rises	A2L1	V	
		Undulating pediments	A2	C	
EHV	0.3	Gently undulating pediments	A2	V	
		Rocky rises	A2L1	C	
EHW	3.9	Undulating rises	A2L1	V	
		Undulating pediments	A2	C	

					EHV Gently undulating pediments with rocky rises ***Pediments:*** Gently undulating plains, 50-50% of land is scalded. Slopes are 1-3%, relief is less than 9m. ***Rocky Rises:*** Undulating rises, 5-50% of land is scalded. Slopes are 3-10%; relief is 9-30m. **EHW** Undulating rocky rises with pediments. Relief is less than 30m, slopes are 3-10%. 5-50% of land is scalded. Main soils: ***Rocky rises:*** Shallow stony soils on rock - **L1**, Bare rock - **RR**. ***Plains and Pediments:*** Calcareous loam on rock – **A2**, Loam over poorly structured clay on rock - **D7** and Shallow stony soils on rock **- L1**.
ELB	0.1	Gently undulating rises	L1C2 B2	D	Gently undulating rises-pediment complex with shallow soils formed on Appila Tillite Formation and alluvium. Slopes are 1-3%; relief is 9-30m. Main soils: Shallow stony soils on rock **- L1**, gradational red clay-loam over clay (Red clayey pedaric Dermosols **- C2)** and Shallow calcareous loam on calcrete - **B2**.
ETC	0.5	Rolling rises	A2L1 RR	D	Rolling rises with very shallow soils and more than 20% outcrop of ABC Range Quartzite Formation rocks, including siltstones and quartzite. Relief is 9-30m, slopes are 10-30%. Main soils: Calcareous loam on rock – **A2** and Shallow stony soils on rock **- L1**.
EVC	0.2	Undulating rises	A2	V	Undulating rises with rock outcrops and shallow calcareous soils formed on fine-grained calcareous rocks. Slopes are 3-10%; relief is less than 9-30m. Main soils: Calcareous loam on rock – **A2**, Bare rock – **RR**.
		Rocky outcrops	RR	C	
EZC	1.4	Undulating rises	A2A5 B2	V	Rises with mostly shallow calcareous soils on weathered siltstones of the Tapley Hill Formation and the Tarcowie Siltstone. **EZC** Undulating rises with rocky outcrops. Slopes are 3-10%, relief is less than 30m. **EZG** Gently undulating rises with rocky outcrops. Gullying affects 10-20% of land, scalding affects around 5%. Slopes are 3-10%, relief is less than 30m. **EZm** Undulating rise-pediment complex. Relief is 9-30m, slopes are 3-10%. **EZn** Rolling rise-pediment complex. Relief is 9-30m, slopes are 10-30%. **EZV** Gently undulating rises and pediments with rocky outcrops. Slopes are 1-3%, relief is less than 30m. **EZW** Undulating rises and pediments with rocky outcrops. Slopes are 3-10%, relief is less than 30m. **EZX** Rolling rises and pediments with rocky outcrops. Relief is 9-30m, slopes are 10-30%. Main soils: ***Rises:*** Calcareous loam on rock **– A2**, Rubbly calcareous loam on clay - **A5** and Shallow calcareous loam on calcrete - **B2**. ***Rocky outcrops:*** Bare rock – **RR.** ***Pediments:*** Calcareous loam on rock **– A2**, Rubbly calcareous loam on clay - **A5** and Shallow calcareous loam on calcrete - **B2**.
		Rocky outcrops	RR	C	
EZG	1.6	Gently undulating rises	A2A5 B2	V	
		Rocky outcrops	RR	C	
EZm	1.5	Undulating rises	A2A5 B2	V	
		Rocky outcrops	RR	C	
EZn	1.4	Rolling rises	A2A5 B2	V	
		Pediments	A2A5 B2	C	
EZV	2.2	Gently undulating rises	A2A5 B2	V	
		Pediments	A2A5 B2	C	
EZW	0.1	Undulating rises	A2A5 B2	V	
		Rocky outcrops	RR	C	
EZX	0.7	Rolling rises	A2A5 B2	V	
		Pediments	A2A5 B2	C	
JAB	0.2	Gently undulating pediments	D4E2 C3	D	Pediments and outwash plains with clay loam surface textures on texture contrast and gradational soils. Red clays are also common. **JAB** Gently undulating pediments. Slopes 1-3%, relief < 9m. **JAE** Creek line
JAE	0.3	Creek line	D4E2 C3	D	

JAG	1.5	Gently undulating pediments	D4E2 C3	D	**JAG** Gently undulating pediments. The slopes are 1-3%, gullying affects 10-20% of the land. Main soils: Loam over pedaric red clay - **D4**, Red cracking clay - **E2** and Friable gradational clay loam - **C3**. **JAH** Undulating pediments. Gullying affects 5-10% of land. Slopes are 3-10%. Main soils: Loam over pedaric red clay - **D4**, Red cracking clay - **E2** and Friable gradational clay loam - **C3**. **D4** and **C3** soils have surfaces which are highly susceptible to water erosion.
JAH	0.3	Undulating pediments	D4E2 C3	D	
JFH	1.2	Undulating pediments	D2D4 C1	D	Pediments with mostly red texture contrast soils with clay loam surfaces. Calcareous soils occupy more than 20% and other gradational soils occupy more than 10%. **JFH** Undulating pediments with gullying affecting 10-20% of land, scalding affects 0-5%. Slopes 3-10%, relief < 9m. **JFo** Creek flat with more than 20% with unstable gullies and 5-10% is scalded. Main soils: Loam over red clay - **D2**, Loam over pedaric red clay - **D4** and Gradational sandy loam - **C1**.
JFo	0.1	Creek flat	D2D4 C1	D	
JKE	0.3	Creek flat	D1A3 A5	D	Creek flat with mostly sandy loam surfaced red duplex soils and calcareous gradational soils. More than 20% gullied. Main soils: Sandy loam over clay on rock- **D1**, Deep moderately calcareous sandy loam - **A3** and Rubbly calcareous loam on clay - **A5**.
JME	0.3	Creek flat	D2D4 A6	D	Pediments, plains and creek flats with stony, pedaric, red, texture contrast soils with quartz gravel on the surface. **JME** Creek flat with stable banks. **JMH** Moderately sloping pediment plain. Slopes are 3-10%; relief is less than 9m. Gullying affects 10-20% of land. **JMm** Undulating pediment; gullying affects more than 20% of the land and over 50% is scalded. Slopes are 3-10%, relief is less than 9m. **JMV** Gently sloping plains with 10-50% scalded. Slopes are 1-3%, relief is less than 9m. **JMY** Creek flat with unstable banks; more than 20% of land is gullied and 10-5-% is scalded. Main soils: Loam over red clay - **D2**, Loam over pedaric red clay - **D4** and Gradational calcareous clay - **A6**.
JMH	0.1	Undulating pediments	D2D4 A6	D	
JMm	0.2	Undulating pediments	D2D4 A6	D	
JMV	0.7	Gently sloping plain	D2D4 A6	D	
JMY	0.7	Creek flat	D2D4 A6	D	
JNA	0.4	Plains	D4D2 A5	D	Pediments with non-stony, pedaric, texture contrast soils with calcareous subsoils. Surface textures are clay loamy most commonly. **JNA** Plains. Slopes are less than 1%, relief is less than 9m. **JNB** Gently sloping pediments. Slopes 1-3%, relief < 9m **JNE** Drainage line with stable banks. **JNG** Gently sloping pediments; 10-20% of land is gullied. Slopes are 1-3%, relief is less than 9m. **JNl** Gently sloping pediment plain; gullying affects up to 50% of land, most severe along watercourses. Scalding affects nearly 50% of land. Slopes are 1-3%, relief is less than 9m. **JNo** Creek flat 10-20% affected by gullying and 40-50% scalded. Scalding may be more than 50% locally. **JNU** Level plain; 5-10% scalded. **JNV** Gently sloping pediments. Scalding affects 10-50% of land. Slopes are 1-3%, relief is less than 9m. **JNY** drainage line with 5-10% scalding and minor (less than 5%) gullying. Main soils: Loam over red clay - **D2**, Loam over pedaric red clay - **D4** and Rubbly calcareous loam on clay - **A5**. Red
JNB	0.1	Gently sloping pediments	D4D2 A5	D	
JNE	0.7	Drainage line	D4D2 A5	D	
JNG	2.8	Gently sloping pediments	D4D2 A5	D	
JNl	0.0	Gently sloping pediments	D4D2 A5	D	
JNo	1.4	Gently sloping pediments	D4D2 A5	D	
JNU	1.3	Creek flats	D4D2 A5	D	
JNV	0.0	Gently sloping pediments	D4D2 A5	D	
JNY	0.2	Drainage line	D4D2 A5	D	

					clay soils occur in minor association.
JXB	0.8	Gent. pediments	D2	V	Pediments with texture contrast soils in complex with rocky rises. Most soils have clay-loam surfaces. **JXB** Gently undulating pediments in complex with rocky rises. Slopes are 1-3%. **JXC** Undulating pediments in complex with rocky rises. Slopes are 3-10%. **JXG** Gently undulating pediments in complex with rocky rises. Gullying affects 10-20% of land. Slopes are 1-3%. **JXH** Undulating pediments in complex with rocky rises. Slopes are 3-10%. Gullying affects 10-20% of land. **JXI** Rolling pediments and rocky rises in complex. Slopes are 10-30%, relief is up to 30m. Gullying is severe and affects more than 20% of land on pediments ,but less than 10% on rocky rises. **JXl** Gently undulating pediments in complex with rocky rises. Gullying affects 10-20% of land on pediments, and less than 5% on rises. Scalding affects around 10% of pediments and up to 50% in places. Rocky rises have less than 5% scalded land. Slopes are 1-3%. **JXm** Gently undulating pediments in complex with rocky rises. Gullying affects over 20% of land on pediments, and 5-10% on rises. Scalding affects around 10% of pediments and up to 50% in places. Rocky rises have less than 5% scalded land. Slopes are 3-10%. **JXo** Creek line with rocky rises in complex. Unstable gullies affect more than 20% of the land along the watercourse. Up to 10% of watercourse land is scalded. Rocky rises are not gullied or scalded. **JXV** Gently undulating pediments and rocky rise complex. Scalding affects 10-50% of land, around 10% is gullied. Slopes are 1-3% on flats and 3-10% on rises. **JXW** Undulating pediments in complex with rocky rises, scalding affects 10-50% of land, around 10% is gullied. Slopes 3-10%, relief < 9m on pediments and 9-30m on rises. Main soils on pediments: Loam over red clay - **D2**. Loam over clay on rock - **D1** soils are associated with rocky rises.
		Rocky rises	D1	C	
JXC	0.5	Undulating pediments	D2	V	
		Rocky rises	D1	C	
JXG	0.8	Gent. pediments	D2	V	
		Rocky rises	D1	C	
JXH	1.1	Undulating pediments	D2	V	
		Rocky rises	D1	C	
JXI	0.3	Rolling pediments	D2	V	
		Rocky rises	D1	C	
JXl	4.0	Gent. pediments	D2	V	
		Rocky rises	D1	C	
JXm	3.7	Undulating pediments	D2	V	
		Rocky rises	D1	C	
JXV	2.8	Gent. pediments	D2	V	
		Rocky rises	D1	C	
JXW	4.6	Undulating pediments	D2	V	
		Rocky rises	D1	C	
JZl	2.8	Gently undulating pediments	D4D1 D2	V	Pediment-basement rock complex with gently sloping pediments with red texture contrast soils and 20-30% rocky rises with shallow texture contrast soils. **JZl** Gently undulating pediments and rocky rise complex. The pediments have between 10-50% of gullied land, with 20-75% scalded. Rises are not affected. Slopes are 1-3% on pediments and 3-10% on rises. **JZm** Undulating pediments and rocky rise complex. Scalding affects nearly 50% and gullying affects more than 20% of pediments. Rises have less than 5% scalding and around 15% gullying. Slopes are 3-10%; relief is less than 9m on pediments and 9-30m on rises. **JZo** Creek flat with rocky outcrops. >20% of creek banks have unstable gullies and more than 50% of the banks are scalded. Rocky outcrops are not scalded or gullied. Main soils: ***Pediments and plains:*** Loam over pedaric red clay - **D4**, Loam over clay on rock- **D1** and Loam over red clay - **D2** with minor Rubbly calcareous loam on clay - **A5**. ***Rocky rises:*** Loam over clay on rock- **D1**, 10-30% bare rock.
		Rocky rises	D1	C	
JZm	0.3	Undulating pediments	D4D1 D2	V	
		Rocky rises	D1	C	
JZo	0.3	Creek flat	D4A5	D	
		Rocky outcrops	RR	C	
KCB	2.3	Gently undulating	C3A3	D	Plains and pediments of outwash sediments with gradational soils with sandy clay loam surface textures. Soils

		pediments			are mostly not calcareous throughout.
KCE	0.4	Creek line	C3A3 M3	D	**KCB** Gently undulating pediments. Slopes are 1-3%; relief is less than 9m.
KCG	2.1	Gently undulating pediments	C3A3	D	**KCE** Creek line.
KCH	0.4	Undulating pediments	C3A3	D	**KCG** Gently undulating pediments with 10-20% gullying and minor scalding, up to 5%. Slopes 1-3%, relief is less than 9m. **KCH** Undulating pediments, with 10-20% gullied and minor scalding, up to 5%. Slopes are 3-10%; relief is less than 9m. Main soils: Friable gradational sandy clay loam - **C3** and Deep moderately calcareous sandy loam - **A3**. Additionally, Deep gravelly soil -**M3** is found associated with creek flats.
KGB	1.7	Gently undulating pediments	C3C1	D	Pediments and plains with sandy surface-textured red gradational soils with calcareous subsoils. **KGB** Gently undulating pediments, with minor scalding and gullying. Slopes are 1-3%; relief is less than 9m.
KGE	0.6	Creek flat	C3C1	D	**KGE** Creek flat.
KGG	0.8	Gently undulating pediments	C3C1	D	**KGG** Gently undulating pediments, with 10-20% of land affected by gullying and 10-50% scalded. Slopes are 1-3%, relief is less than 9m.
KGl	0.1	Gently undulating pediments	C3C1	D	**KGl** Gently undulating pediments with slight scalding (less than 5%) and minor gullying which is locally more severe along drainage lines. Slopes are 1-3%; relief is less than 9m. Main soils: Friable gradational sandy clay loam - **C3** and Gradational sandy loam - **C1**.
KHB	0.7	Gently undulating rises	A4D4 C1	D	Gently undulating pediments formed on outwash with red gradational sandy soils, calcareous at depth. Slopes are 1-3%, relief is less than 9m. Main soils: Deep (rubbly) calcareous sandy loam **-A4**, Loam over pedaric red clay - **D4**, Gradational sandy loam - **C1**.
KIH	0.1	Pediment	C1A2 D3	V	Pediment-basement rock complex with mostly gradational soils. Soils which have carbonate free surfaces are dominant. Soils which are calcareous throughout are common but not dominant. **KIH** Undulating pediments and rises; 10-50% of pediments are scalded. Pediment slopes are 3-10%, relief is less than 9m. Relief on rises is 9-30m, slopes are 3-10%. **KIV** Gently sloping pediments with undulating basement rises. 5-10% of land on pediments is scalded. Pediment slopes are 1-3%. Rises relief is 9-30m, slopes are 3-10%. **KIW** Undulating pediments and rises; 5-10% of pediments are scalded and gullied. Pediment slopes are 3-10%, relief is less than 9m. Relief on rises is 9-30m, slopes are 3-10%. Main soils: ***Pediment***: Gradational sandy loam - **C1**, Calcareous loam on rock – **A2**. ***Rises:*** Shallow stony soils on rock **- L1**, Gradational sandy loam - **C1**, Calcareous loam on rock – **A2** and Loam over poorly structured red clay - **D3**.
		Undulating rises	L1A2 D1	L	
KIV	2.6	Pediment	C1A2	V	
		Gently undulating rises	L1C1 A2	L	
KIW	0.2	Pediment	C1A2 D3	V	
		Undulating rises	L1A2 D1	L	
KJB	0.0	Gently undulating pediments	C4C3 A6	D	Pediments with clay loam surface-textured red gradational soils with calcareous subsoils and gradational calcareous soils. **KJB** Gently undulating pediments. Slopes 1-3%, relief < 9m. **KJC** Undulating pediments. Slopes 3-10%; relief < 9m. **KJE** Creek line. **KJG** Gently undulating pediments with up to 20% gullying. Slopes are 1-3%; relief is less than 9m. **KJH** Undulating pediments with up to 20% gullying. Slopes are 3-10%, relief is less than 9m. **KJh** Undulating pediments with more than 20% gullying and
KJC	0.1	Undulating pediments	C4C3 A6	D	
KJE	0.3	Creek line	C4C3 A6	D	
KJG	0.3	Gently undulating pediments	C4C3 A6	D	
KJH	0.3	Undulating	C4C3	D	

		pediments	A6		10-50% scalding. Soils are moderately saline throughout. Slopes are 3-10%, relief is less than 9m. **KJm** Undulating pediments with up to 50% scalding and 5-10% gullying. Subsoils are saline. **KJq** Gently undulating pediments with 10-50% scalded land. Soils have moderate salinity throughout. Slopes are 1-3%, relief is less than 9m. **KJV** Gently undulating pediments with up to 50% scalding and less than 5% gullying. Slopes 1-3%; relief is less than 9m. Main soils: Hard gradational clay loam - **C4**, Friable gradational sandy clay loam - **C3** and Gradational calcareous clay - **A6**.
KJh	0.2	Undulating pediments	C4C3 A6	D	
KJm	0.1	Undulating pediments	C4C3 A6	D	
KJq	1.2	Gently undulating pediments	C4C3 A6	D	
KJV	0.5	Gently undulating pediments	C4C3 A6	D	
KLB	0.6	Gently undulating pediment	A5	D	Pediments with clay loamy calcareous soils. **KLB** Gently undulating pediment Slopes are 1-3%, relief is less than 9m. **KLH** Undulating pediment; gullying affects 5-10% of land, around 5% is scalded. Slopes: 3-10%, relief is less than 9m. Main soils: Rubbly calcareous clay loam on clay - **A5**. Minor soils: Calcareous clay loam on rock – **A2**, Gradational red-brown clay loam over rock-**C2** and Shallow calcareous loam on calcrete – **B2**.
KLH	0.4	Undulating pediment	A5	D	
KQl	0.2	Pediment	A5	V	Gently undulating pediments with shallow basement-rises in complex and with mostly calcareous gradational soils. Up to 50% of land on pediments is scalded and up to 10% is gullied. Rises have little or no scalds and gullies. Slopes are 1-3%, relief is less than 9m. Main soils: Rubbly calcareous loam on clay - **A5** on pediments and Calcareous loam on rock – **A2** on rises.
		Shallow rises	A2	C	
XGS	1.6	Drainage depression	M3M1	D	Drainage depressions and watercourses with stable banks and with gravelly loamy alluvial soils. Main soils: Deep gravelly soil -**M3,** Deep alluvial loam - **M1**.
XHJ	0.8	Creek flat	M1C1 C3	D	Drainage lines with mostly coarse textured soils. **XHJ** Creek flat with stable gullies. **XHT** More than 20% of banks are eroded. Main soils: Deep alluvial loam - **M1**, Gradational sandy loam - **C1** and Friable gradational sandy clay loam - **C3**.
XHT	1.1	Drainage line	M1C1 C3	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/L1 Shallow calcareous loam (Paralithic, Hypercalcic / Lithocalcic Calcarosol) (**A2**) **OR** Shallow stony loam (Calcareous, Paralithic, Leptic Tenosol) (**L1**)

A3 Deep moderately calcareous (sandy) loam (Calcic Calcarosol)
Calcareous (sandy) loam topsoil grading into loamy-clay loamy subsoil without a significant CO_3 build-up in the subsoil (<20% CO_3 in subsoil). Pediment type Calcarosols.

A4 Deep (rubbly) calcareous loam (Hypercalcic-Lithocalcic Calcarosol)
Calcareous sandy-clay loamy topsoil grading into loamy-clay loamy subsoil with a significant CO_3 buildup in the subsoil. Often rubbly. Soil usually >120 cm in depth

A5 Rubbly calcareous loamy sand on clay (Supracalcic-Lithocalcic Calcarosol on clay)
Calcareous loamy sand topsoil grading into loamy-clay loamy subsoil on a clayey substrate. Usually rubbly. Clayey substrate occurs at >60 cm and <120 cm.

A6 Gradational calcareous clay loam (Pedal Hypercalcic-Lithocalcic Calcarosol on clayey subsoil)
Calcareous loams to clay loams grading into brown-red clay. Often rubbly.

B2 Shallow calcareous loam on calcrete (Petrocalcic Calcarosol-Rudosol)
Shallow, grey to reddish calcareous sandy to clay loamy soil on calcrete. This includes calcareous Petrocalcic Rudosols.

C1 Gradational sandy loam (Calcic-Hypercalcic Kandosol-Calcarosol)
Friable sandy to loamy topsoil grading into massive red-brown alkaline loamy to clay loamy subsoil.

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 soft Class I carbonate within 50 cm, grading to alluvium within 100 cm.

C4 Hard gradational clay loam (Calcic-Hypercalcic Sodic Red Dermosol-Calcarosol)
Topsoil <30 cm over a poorly structured subsoil. Often hard setting clay loam to loam grading into prismatic/poorly structured/sodic red (-brown) alkaline clayey to clay loamy subsoil. Includes eroded former texture contrast soils.

D1 Loam over red clay on rock (Hypercalcic / Calcic, Red Chromosol / Sodosol)
Medium thickness hard gravelly loam over red clay, friable and finely structured, calcareous with depth, grading to weathering basement rock within 100 cm.

D2 Hard loam over red clay (Calcic / Hypercalcic, Red Chromosol)
Hard setting sandy loam to clay loam (with variable quartzite stones) abruptly overlying a well structured red clay with soft Class I carbonate at depth.

D3 Hard clay loam over dispersive red clay (Calcic, Red Sodosol / Sodic, Calcic, Red Chromosol)
Medium thickness hard clay loam with up to 50% quartzite stones over a coarsely prismatic dispersive red clay, calcareous with depth over stony and clayey alluvium.

D4 Loam over red friable clay (Calcic, Pedaric, Red Sodosol)
Thin to medium thickness fine sandy loam to loam over a finely structured friable red clay, calcareous from about 50 cm, grading to fine or medium grained alluvium.

D7 Loam over dispersive red 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 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. Often containing gypsum segregations in subsoil.

L1 Shallow stony loam (Paralithic, Leptic Tenosol)
Shallow stony loam, often calcareous throughout or with depth, overlying weathering rock shallower than 50 cm.

M1 Alluvial loam (Orthic Tenosol)
Very thick loam with variable gritty or more-clayey lenses, formed over recent alluvium.

M3 Deep gravelly soil (Gravelly Kandosol-Tenosol)
Deep uniform loamy alluvial soils with at least 50% gravel in the major part of the profile.

RR Bare rock

Further information: DEWNR Soil and Land Program