

# URR Urripie Land System

**Area:** 256 km<sup>2</sup>

**Landscape:** Rocky low ranges to east of Cradock, and north of Belton. Hills and rises are rounded to steeply dissected, on fine grained rocks (Ulupa Siltstone and Uroonda Siltstone), mostly non calcareous. Shallow soils dominate, with a few pediments having deeper, red, clayey soils. Drainage patterns are dense and valley floors are narrow or drainage lines only. Named from Urripie Creek in this area.

**Annual rainfall:** Over 80% receives 275 - 300 mm annual average. Up to 350 mm where higher ranges exert their influence on precipitation.

**Soils:** Shallow red loamy to clay loamy soils dominate on rises, with deeper red texture contrast or gradational clay loamy soils on pediments and plains.

## Main soils

- D1** Loam to clay loam over clay on rock
- L1a** Shallow stony loam
- RR** Rock outcrop

## Minor soils

### *Basement rock rises*

- A2** Shallow calcareous loam
- B2** Shallow calcareous loam on calcrete
- C2** Gradational loam on rock
- L1b** Shallow stony sandy loam to loamy sand

### *Outwash landscapes (pediments and plains)*

- A4** Deep (rubbly) calcareous loam
- A5** Rubbly calcareous loam to clay loam on clay
- C1** Gradational sandy loam
- C3** Friable gradational clay loam
- D2** Loam to clay loam over red clay
- D4** Clay loam to loam over pedaric red clay
- E2** Red cracking clay
- M1** Deep alluvial loam

**Summary:** Low rainfall zone rocky ranges with shallow soils, suitable for grazing of native pastures



**Soil Landscape Unit summary:** 41 Soil Landscape Units (SLUs) mapped in the Urripie Land System

SLU	% of area	Component	Main soils	Prop#	Notes
AAD	0.1	Steep low hills	L1	D	Rises and hills with shallow rocky calcareous soils formed on fine grained rocks. Rock outcrops are common. <b>AAD</b> Steep low hills. Relief is 30-90m, slopes are 30-50%. <b>AAI</b> Rolling low hills with eroded watercourses; over 20% of land affected by gully. Relief is 30-90m, slopes are 3-10%. <b>AAQ</b> Steep hills with 10-50% sheet erosion and 10-20% gully. Relief is 90-300m, slopes are 30-50%. Main soils: <u>shallow stony loam</u> - <b>L1a</b> , with <u>shallow calcareous loam</u> - <b>A2</b> , <u>gradational loam on rock</u> - <b>C2</b> and <u>rock outcrop</u> - <b>RR</b> .
AAI	2.1	Rolling low hills	L1	D	
AAQ	1.4	Steep hills	L1	D	
ACH	0.4	Rolling rises	L1	D	Rolling rises formed on limestone. Eroded watercourses occur on more than 20% of land. Relief is 9-30m, slopes are 10-30%. Main soil: <u>shallow stony loam</u> - <b>L1a</b> , with <u>rock outcrop</u> - <b>RR</b> (on steeper slopes).
AFC	1.9	Rolling low hills	L1A2	D	Rises and hills with shallow soils formed on fine grained basement rocks, commonly calcreted. Non arable. <b>AFC</b> Rolling low hills. Relief is 30-90m, slopes are 10-30%. <b>AFD</b> Steep rises with more than 20% gullied land. <b>AFH</b> Rolling rises with more than 20% gullied land. Relief is 9-30m, slopes are 10-30%. <b>AFI</b> Rolling low hills with > 20% gullied land and saline soils. Main soils: <u>shallow stony loam</u> - <b>L1a</b> and <u>shallow calcareous loam</u> - <b>A2</b> , with <u>shallow calcareous loam on calcrete</u> - <b>B2</b> and <u>rock outcrop</u> - <b>RR</b> .
AFD	0.3	Steep rises	L1A2	D	
AFH	1.9	Rolling rises	L1A2	D	
AFI	0.9	Rolling low hills	L1A2	D	
AGB	0.2	Rolling rises	D1	D	Hills and rises with shallow non calcareous soils over Pre-Cambrian Pound Quartzite and Cambrian limestones. <b>AGB</b> Rolling rises; 10-20% of land is gullied. Relief is less than 30m, slopes are 10-30%. <b>AGC</b> Rolling low hills 10-20% of land is gullied, extreme in places. Relief is 30-90m, slopes: 10-30%. <b>AGD</b> Steep low hills, with a few gullies. Relief 30-90m, slopes 30-50%. <b>AGE</b> Steep hills with more than 20% gullied land and potential for landslip. Relief is 90-300m, slopes are 30-50%. <b>AGG</b> Undulating rises; 10-20% of land is gullied. Relief is 9-30m, slopes are 3-10%. <b>AGI</b> Rolling hills with more than 20% gullied land. Relief is 90-300m, slopes are 10-30%. <b>AGJ</b> Steep low hills with more than 20% gullied land and potential for landslip. Relief is 30-90m, slopes are 30-50%. Main soils: <u>loam over clay on rock</u> - <b>D1</b> , <u>shallow stony loam</u> - <b>L1a</b> and <u>rock outcrop</u> - <b>RR</b> .
AGC	9.6	Rolling low hills	D1	D	
AGD	0.7	Steep low hills	D1RRL1	D	
AGE	7.2	Steep hills	D1RRL1	D	
AGG	0.1	Undulating rises	D1	D	
AGI	23.1	Rolling hills	D1	D	
AGJ	9.2	Steep low hills	D1RRL1	D	
AHJ	2.7	Steep low hills	L1	D	Steep low hills with quartzite ridges (Cradock Quartzite) and interbedded valleys on fine grained rocks, typically Saddleworth Formation siltstones. More than 20% of land is gullied with potential for landslip. Relief is 30-90m, slopes are 30-50%. Main soils: <u>shallow stony loam and sandy loam</u> - <b>L1a, b</b> , with <u>rock outcrop</u> - <b>RR</b> and <u>shallow calcareous loam</u> - <b>A2</b> .
AQD	0.7	Steep low hills	L1RR	D	Non-arable low hills formed on Pound Quartzite with very shallow rocky soils and bare rocky outcrops. <b>AQD</b> Steep low hills. Relief is 30-90m, slopes are 30-50%. <b>AQE</b> Steep hills. Relief is 90-300m, slopes are 30-50%. Main soils: <u>shallow stony loamy sand</u> - <b>L1b</b> and <u>rock outcrop</u> - <b>RR</b> .
AQE	4.4	Steep hills	L1RR	D	



AWC	1.3	Rolling low hills	L1A2RR	D	Rolling low hills with shallow rocky soils formed on quartzites with more than 50% interbedded calcareous rocks. Relief is 30-90m, slopes are 10-30%. Main soils: <u>shallow stony loamy sand</u> - <b>L1b</b> , <u>shallow calcareous loam</u> - <b>A2</b> and <u>rock outcrop</u> - <b>RR</b> .
AYB	3.1	Rolling rises	A2L1RR	D	Rises and low hills formed on fine grained rocks. <b>AYB</b> Rolling rises. Relief is less than 30m, slopes are 10-30%. <b>AYG</b> Undulating rises with 10-20% gullied land. Relief is less than 30m, slopes are 3-10% <b>AYV</b> Very steep low hills with eroded watercourses; 10-20% of land is gullied. Slopes are unstable and landslip affects more than 5% of land. Relief is 30-90m; slopes are 50-100%. Main soils: <u>shallow calcareous loam</u> - <b>A2</b> , <u>shallow stony loam</u> - <b>L1a</b> and <u>rock outcrop</u> - <b>RR</b> .
AYG	1.2	Undulating rises	A2L1RR	D	
AYV	0.2	Very steep low hills		D	
DGV	6.2	Gent. sloping pediments	D2D1	D	Rises and pediments with shallow red duplex soils over Brachina Shale. The soils have sandy clay loam surface textures. <b>DGV</b> Gently sloping pediments; 5-10% of land is scalded and around 5% is gullied. Relief is less than 9m, slopes are 1-3%. <b>DGW</b> Undulating pediments; 5-10% of land is scalded. Relief is less than 9m, slopes are 3-10%. Main soils: <u>sandy clay loam over red clay</u> - <b>D2</b> and <u>sandy clay loam over (pedaric) clay on rock</u> - <b>D1</b> .
DGW	0.2	Undulating pediments	D2D1	D	
DNH	0.1	Undulating rises	D2D1	D	Rises with shallow texture contrast soils formed on fine-grained rocks, typically Brachina Shale. The soils have clay loam surface textures. <b>DNH</b> Undulating rises; 10-20% of land is gullied. Relief is 9-30m, slopes are 3-10%. <b>DNm</b> Undulating rises. Gullying affects up to 20% of land and scalding occurs on 5-50%. Relief is 9-30m, slopes are 3-10%. <b>DNV</b> Gently undulating rises; 5-10% of land is scalded and gullied. Slopes: 1-3%, relief is <30m. Main soils: <u>clay loam over red clay</u> - <b>D2</b> and <u>clay loam over (pedaric) clay on rock</u> - <b>D1</b> , with <u>red cracking clay</u> - <b>E2</b> .
DNm	0.9	Undulating rises	D2D1	D	
DNV	0.9	Gently undulating rises	D1	D	
DYH	0.3	Undulating pediments	D2D1	V	
		Undulating rises	D1	C	
DYI	0.9	Rolling rises	D1	V	Complex of pediments on fine grained basement rock, saprolite or outwash sediments, and basement rock rises. Surface textures are clay loamy or clay. <b>DYH</b> Undulating pediment slopes (3-10% slopes) and rocky rises with gullies affecting 10-20% of land. Relief is 9-30m, slopes are 3-10%. <b>DYI</b> Rolling rises (relief 9-30m, slopes 10-30%), and pediment slopes (3-10% slope) with gullies affecting 10-20% of land. Main soils: <b>Pediments:</b> <u>clay loam over red clay</u> - <b>D2</b> and <u>clay loam over (pedaric) clay on rock</u> - <b>D1</b> . <b>Rises:</b> <u>clay loam over (pedaric) clay on rock</u> - <b>D1</b> , with <u>rock outcrop</u> - <b>RR</b> .
		Pediments	D2D1	C	
EDD	0.4	Rolling rises	A2	D	Rolling rises with sandy to loamy surfaced soils on quartzites and siltstones. Relief is 9-30m, slopes are 10-30%. Main soils: <u>shallow calcareous loam</u> - <b>A2</b> , <u>shallow stony sandy loam</u> - <b>L1b</b> and <u>gradational loam on rock</u> - <b>C2</b> .
EHm	0.2	Undulating rises	L1	D	Undulating rises formed on calcareous siltstones and limestones such as those of the Tapley Hill, Wonoka and Bunyeroo Formations, and the ABC Range Quartzite. Relief is less than 30m, slopes are 3-10%. Severely scalded (more than 50% of land affected) and gullied (20% of land affected). Main soils: <u>shallow calcareous loam</u> - <b>A2</b> and <u>shallow stony loam</u> - <b>L1a</b> .



JDI	3.3	Gently sloping pediments	D2D4A4	D	Gently sloping pediments with clay loamy soils formed on fine grained outwash. Slopes are 1-3%. Main soils: <u>clay loam over red clay</u> - <b>D2</b> , <u>clay loam over pedaric red clay</u> - <b>D4</b> and <u>deep (rubbly) calcareous loam</u> - <b>A4</b> , with <u>gradational sandy loam</u> - <b>C1</b> and <u>rubbly calcareous loam on clay</u> - <b>A5</b> .
JNE	0.6	Valley floor	D4D2A5	D	Pediments and valley floors formed on fine grained outwash, with mainly clay loamy soils. <b>JNE</b> Creek flats and drainage lines. <b>JNI</b> Gently sloping pediment plain; gullyng affects up to 50% of land, most severe along watercourses. Scalding affects nearly 50% of land. Slopes are 1-3%. <b>JNV</b> Gently sloping pediments. Scalding affects 10-50% of land. Slopes are 1-3%. Main soils: <u>clay loam over pedaric red clay</u> - <b>D4</b> , <u>clay loam over red clay</u> - <b>D2</b> and <u>rubbly calcareous loam on clay</u> - <b>A5</b> , with <u>red cracking clay</u> - <b>E2</b> .
JNV	0.9	Gently sloping pediments	D4D2A5	D	
JNI	1.9	Gently sloping pediments	D4D2A5	D	
JXD	2.0	Rolling pediments	D4D2A5	V	Complex of pediments on fine grained outwash, and rocky rises. Most soils have clay loam surfaces. <b>JXD</b> Rolling pediments and rocky rises. Slopes are 10-30%, relief is up to 30m. <b>JXG</b> Gently undulating pediments and rocky rises. Gullyng affects 10-20% of land. Slopes are 1-3%. Main soils: <b>Pediments:</b> <u>clay loam over pedaric red clay</u> - <b>D4</b> and <u>clay loam over red clay</u> - <b>D2</b> , with <u>rubbly calcareous loam on clay</u> - <b>A5</b> and <u>red cracking clay</u> - <b>E2</b> . <b>Rises:</b> <u>clay loam over clay on rock</u> - <b>D1</b> , with <u>rock outcrop</u> - <b>RR</b> .
		Rocky rises	D1	C	
JXG	0.2	Gently sloping pediments	D2	V	
		Rocky rises	D1	C	
JZm	0.5	Undulating pediments	D4D1D2	V	Complex of undulating pediments and rocky rises formed on fine grained rocks and associated outwash. Scalding affects nearly 50% and gullyng affects more than 20% of pediments. Rises have less than 5% scalding and around 15% gullyng. Slopes are 3-10%; relief is less than 9m on pediments and 9-30m on rises. Main soils: <b>Pediments and plains:</b> <u>clay loam over pedaric red clay</u> - <b>D4</b> , <u>clay loam over clay on rock</u> - <b>D1</b> and <u>clay loam over red clay</u> - <b>D2</b> , with <u>rubbly calcareous loam on clay</u> - <b>A5</b> . <b>Rises:</b> <u>clay loam over clay on rock</u> - <b>D1</b> , with <u>rock outcrop</u> - <b>RR</b> .
		Rocky rises	D1	C	
KDI	2.3	Gently sloping pediments	C3A5	D	Gently sloping pediments formed on fine grained outwash with clay loamy soils. Up to 50% is scalded and 5-10% is gullied. Slopes are 1-3%, relief <9m. Main soils: <u>friable gradational clay loam</u> - <b>C3</b> and <u>rubbly calcareous loam on clay</u> - <b>A5</b> , with <u>clay loam over pedaric red clay</u> - <b>D4</b> and <u>clay loam over clay on rock</u> - <b>D1</b> .
KcG	5.1	Gently sloping pediments	A5D4C1	D	Gently sloping pediments formed on fine grained outwash sediments with clay loamy soils. Slopes are 1-3%. Gullyng affects 10-20% of land. Main soils: <u>rubbly calcareous clay loam on clay</u> - <b>A5</b> , <u>clay loam over pedaric red clay</u> - <b>D4</b> and <u>gradational sandy loam</u> - <b>C1</b> .
XAG	0.6	Flood plains	M1C1 D4	D	Floodplains on mixed alluvium. 5-10% of land is scalded. Main soils: <u>deep alluvial loam</u> - <b>M1</b> , <u>gradational sandy loam</u> - <b>C1</b> and <u>loam over pedaric red clay</u> - <b>D4</b> .

# 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:**

- 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.
- A4** Deep (rubbly) calcareous loam (Regolithic, Hypercalcic / Lithocalcic Calcarosol)  
Calcareous 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 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.
- 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.
- C1** Gradational sandy loam (Hypercalcic, Red Kandosol)  
Friable sandy to loamy topsoil grading to massive red-brown alkaline loamy to clay loamy subsoil, highly calcareous with depth, over alluvium.
- 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** Friable gradational clay loam (Calcic / Hypercalcic Red Dermosol)  
Clay loam grading to a friable red clay with abundant soft Class I carbonate within 50 cm, overlying alluvium within 100 cm.
- D1** Loam to clay loam over clay on rock (Hypercalcic / Calcic, Red Chromosol)  
Medium thickness hard gravelly loam to clay loam over a friable and finely structured red clay, calcareous with depth, grading to weathering basement rock within 100 cm.
- D2** Loam to clay loam over red clay (Calcic / Hypercalcic, Red Chromosol)  
Hard setting loam to clay loam (with variable quartzite stones) abruptly overlying a well structured red clay with soft Class I carbonate at depth.
- D4** Clay loam to loam over red friable clay (Calcic, Pedaric, Red Sodosol)  
Thin to medium thickness clay loam to loam over a finely structured friable red clay, calcareous from about 50 cm, grading to fine or medium grained alluvium.
- E2** Red cracking clay (Epicalcareous, Epipedal, Red Vertosol)  
Well structured (often self-mulching) clay grading to a coarser structured red calcareous medium to heavy clay continuing below 100 cm, often with gypsum segregations.
- L1a** Shallow stony loam on fine grained rock (Paralithic, Leptic Tenosol)  
Shallow stony loam, often calcareous with depth, overlying weathering fine grained rock shallower than 50 cm.
- L1b** Shallow stony loamy sand to sandy loam on quartzite (Paralithic, Leptic Tenosol)  
Shallow stony loamy sand to sandy loam, often calcareous with depth, overlying quartzite shallower than 50 cm.
- M1** Deep alluvial loam (Calcareous, Regolithic, Brown-Orthic Tenosol)  
Very thick brown sandy loam to loam, usually calcareous with depth, continuing below 100 cm.
- RR** Rock outcrop

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

