EKE Eke Land System

Area: 34.0 km^2

Landscape: Prominent moderately steep to steep ranges, often steeply dissected, with very shallow soils on fine to medium grained rocks grained rocks. Very narrow valley floors are typical. The highest point in the range is Eke Hill, 710m asl, which is just outside the mapped area. Most of the range is around 600 - 650m asl. Relief is around 100 - 150m.

Geology: Skillogalee dolomites, Appila tillites, Tapley Hill calc-siltstones and Saddleworth siltstones, with interbedded Rhynie sandstones, and Emeroo, Ingomar and Minburra quartzites.

Annual rainfall: 270 – 345 mm average

Main soils: Soils are typically shallow and stony, and often calcareous, formed over basement rock.

L1a Shallow stony loam
L1b Shallow stony sandy loam
A2 Shallow calcareous loam
RR Rock outcrop

Minor soils:

A5 Rubbly calcareous loam on clay
A6 Gradational calcareous clay loam
B2 Shallow calcareous sandy loam on calcrete
C2 Gradational loam on rock
C3 Gradational clay loam
C4 Hard gradational clay loam
D1 Sandy loam over clay on rock

Summary: The Eke Land System consists of prominent north-east to south-west trending ranges north-east of Johnburg. The topography is rolling to steep hills and rises, with shallow soils formed on mostly, fine-grained rocks, often calcareous. Lower slopes and narrow valley floors have gradational or texture contrast soils with red clay subsoils.

Soil Landscape Unit summary: 10 Soil Landscape Units (SLUs) mapped in the Eke Land System:

SLU	% of area	Component	Main soils	Prop#	Notes
AAD	28.9	Steep low hills	L1	D	Hills and rises formed on Appila Tillite and Saddleworth Formation siltstones, with extensive rock outcrop. **AAD** Steep low hills with slopes of 30-60% generally, but up to 75% in places. On some upper slopes and broader crests, slopes are less than 10%. Relief is less than 100 m. **AAE** Steep hills with relief up to 150 m, and slopes generally 25-60%, but up to 100%. Main soils: shallow stony sandy loam to loam **- L1a** and **L1b**, with shallow calcareous loam - **A2**. Non-arable.
AAE	17.3	Steep hills	L1	D	
ADH	27.3	Rolling rises	L1	D	Non-arable rocky rises formed on limestones, dolomites and calc-siltstones of the Skillogalee Dolomite and Tapley Hill Formations. **ADH** Rolling rises with eroded watercourses. Relief is 9-30m,

ADJ	10.9	Steep low hills	L1	D	slopes are 10-30%. Non-arable, limited pastoral use. **ADJ** Steep low hills with eroded watercourses. Relief is 30-90m, slopes are 30-50%. Main soils: shallow stony loam **- L1a**, shallow calcareous loam - **A2** and gradational loam on rock - **C2** (on gentler slopes), with rock outcrop - **RR**. Non-arable.
APA	3.2	Undulating rises	L1D1	D	Hills and rises on medium to coarse grained basement rocks particularly Appila Tillite Formation. **APA** Undulating rises; relief less than 30m; slopes 3-10%. **APB** Rolling rises with relief of 9-30m and slopes 10-30%. **APH** Rolling rises with relief of 9-30m, slopes of 10-30%, and eroded watercourses. Gullying affects more than 20% of land. Non arable. **API** Rolling low hills with relief of 30-90m, slopes of 10-30%, and eroded watercourses. Gullying affects more than 20% of land. Non arable. Main soils: shallow stony sandy loam **- L1b** and sandy loam over clay on rock - **D1**.
APB	0.2	Rolling rises	L1D1	D	
APH	7.6	Rolling rises	L1D1	D	
API	1.3	Rolling low hills	L1D1	D	
EVH	2.7	Undulating rises	A2	V	Rises with rock outcrops formed on fine grained calcareous rocks. **EVH** Undulating rises with slopes of 3-10%, relief to 30 m, and 5-10% gullying. Subsoil salinity is moderate. Main soils: shallow calcareous loam - **A2**, with rubbly calcareous loam on clay - **A5**, rock outcrop - **RR**, shallow stony loam **- L1a** and shallow calcareous sandy loam on calcrete -**B2**
		Rocky outcrops	RR	C	
KJJ	0.6	Drainage depression	C4C3 A6	D	Lower slopes and drainage depression with slopes to 5%. 10-20% of land affected by gullying, mostly stabilized. Main soils: hard gradational clay loam - **C4**, gradational clay loam - **C3**, gradational calcareous clay loam - **A6**.

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.

A5 Rubbly calcareous loam on clay (Regolithic, Supracalcic / Lithocalcic 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 sandy 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 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.

C4 Hard gradational clay loam (Sodic, Hypercalcic, Red Dermosol)
Hard setting loam to clay loam grading to a coarsely structured dispersive red clay, highly calcareous with depth, over clayey alluvium. Includes eroded former texture contrast soils.

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

L1a Shallow stony loam (Calcareous / Basic, Paralithic, Leptic Tenosol)
Shallow stony loam to clay loam, often calcareous with depth, overlying weathering fine grained rock shallower than 50 cm.

L1b Shallow stony sandy loam (Calcareous / Basic, Paralithic, Leptic Tenosol)
Shallow stony sandy loam to loamy sand, 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