BAE Braemar Land System

Area: 101.2 km²

BAF

Landscape: Pediments and plains with isolated, approximately north-south trending basement

rock ridges.

Annual rainfall: 205 – 235 mm average

Geology: Hard rock rises in northern part are formed on Precambrian rocks of the Adelaide

Geosyncline, including Ulupa Siltstone Formation, Ketchowla Siltstone Formation, Pepuarta Tillite and igneous granitic and rhyolitic rocks. Basic dolerite dykes also occur. Minor occurrences of other Adelaide Geosyncline rocks also occur. Fine to medium grained Pleistocene and Holocene alluvial and colluvial sediments extend

from the rises to form broad plains to the south and east.

Soils: Most soils are deep over outwash sediments. Calcareous gradational soils with sandy

clay loam to sandy loam surfaces predominate, but gradational and texture contrast soils with non calcareous surfaces are also common. Shallow stony soils occur on

rising ground over basement rock.

Main soils (on outwash sediments)

A3 Deep moderately calcareous sandy loam to clay loam

A4a Deep (rubbly) calcareous sandy loam to loam

D4 Sandy clay loam to sandy loam over pedaric red clay

C1 Gradational sandy loam

Minor soils

On outwash or wind re-worked sediments

A4b Deep ironstone gravelly calcareous sandy loam

A6 Gradational calcareous clay loam

A8 Gypseous calcareous loamC3 Gradational sandy clay loam

M4 Hard gradational sandy loam to sandy clay loam

On rock

A2 Shallow calcareous loamC2 Gradational loam on rockD1 Loam over clay on rock

L1 Shallow stony loam

RR Rock outcrop

Summary: Pediments and plains with hard rock rises on siltstones and igneous rocks. Both

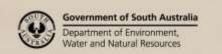
calcareous soils and red soils occur on the pediments, whilst red soils dominate on the plains. Shallow stony soils occur on rises, which are isolated, approximately north-

south trending ridges.



Soil Landscape Unit summary: 21 Soil Landscape Units (SLUs) mapped in the Braemar Land System:

SLU	% of area	Component	Main soils	Prop#	Notes
A-d	1.0	Ridges	RR	D	Steep ridges of mostly dolerite rock. Relief is less than 90m, slopes are 30-60%. Scree slopes occur. Main soils are shallow stony loam - L1 and shallow calcareous loam - A2, with rock outcrop - RR.
AEA	3.2	Rises	A2L1	D	Non-arable rocky rises and ridges formed on mostly fine-
AEB	1.5	Ridges	L1	D	grained rocks. AEA Gently sloping rises. Relief is less than 30m, slopes are 1-3%. AEB Rolling rises. Relief is 9-30m, slopes are 10-30%. Main soils: shallow stony loam - A2 and shallow stony loam - L1 , with rock outcrop - RR .
EHG	2.0	Rises	A4A2	V	Rises and fans on calcareous siltstones and limestones, mainly
		Fans	A3M4	С	of the Umberatana and Wilpena Groups. Fans are formed on
EHV	5.8	Rises	A2C2	٧	outwash from these rocks.
		Fans	A3M4	С	EHG Gently undulating rises (1-3% slope), with 20-30% moderately gullied fans. EHV Gently undulating rises (1-3% slope), with 10-50% scalding. 20-30% fans, more than 50% scalded. Main soils: Rises: deep (rubbly) calcareous loam - A4a, shallow calcareous loam - A2 and gradational loam on rock - C2, with loam over clay on rock - D1 and rock outcrop - RR. Fans: deep moderately calcareous sandy loam - A3 and hard gradational sandy loam - M4, with sandy loam over pedaric red clay - D4.
EOB	3.5	Rises	A2A4	٧	Gently undulating rises and fans formed on fine grained rocks
		Fans	A3A4	С	and associated outwash sediments. Slopes are 1-3%, relief is less than 30m. Main soils: Rises: shallow calcareous loam - A2 and seep (rubbly) calcareous sandy loam - A4a, with shallow stony loam - L1 and gradational loam on rock - C2. Fans: deep moderately calcareous sandy clay loam - A3 and deep (rubbly) calcareous sandy loam - A4a, with gradational sandy loam - C1, gradational sandy clay loam - C3 and sandy clay loam over pedaric red clay - D4.
FcB	0.7	Rises	A4	D	Gently sloping rises formed on weathered siltstones. Most soils have ironstone gravelly layers. Slopes are 1-3%, relief is less than 30m. Main soil: deep ironstone gravelly calcareous sandy loam - A4b.
НКС	0.5	Rises	A4	D	Undulating rises formed on deep unconsolidated clayey sediments or highly weathered rock. Slopes are 3-10%, relief is less than 30m. Main soil: deep ironstone gravelly calcareous sandy loam - A4b.
JLB	0.2	Fans	D4C3	D	Fans formed on medium to fine grained outwash.
JLG	1.0	Fans	D4A3	D	JLB Gently sloping pediments with minor scalding. Slopes 1-3%. JLG Gently sloping fans. Slopes 1-3%. 10-20% gullied. JLv Gently sloping fans. Slopes 1-3%. 10-20% gullied and more than 50% scalded.
JLv	3.6	Fans	D4A3	D	Main soils: <u>sandy clay loam over pedaric red clay</u> - D4 and <u>deep moderately calcareous sandy loam</u> - A3 , with <u>gradational sandy clay loam</u> - C3 , <u>hard gradational sandy loam</u> - M4 and <u>gradational calcareous clay loam</u> - A6 .

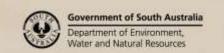




JOB	1.6	Fans	D4A4	D	Gently undulating fans formed on outwash with sandy loam
300	1.0	1 (11)	D4/\4		to clay loam soils, often ironstone gravelly. Slopes are 1-3%.
					Main soils: sandy loam over pedaric red clay - D4 and deep
					ironstone gravelly calcareous sandy loam - A4b, with deep
					moderately calcareous sandy loam - A3 and gradational
					sandy loam - C1.
JPp	1.8	Fans	D4	D	Fans formed on outwash sediments derived from basement
JPq	0.9	Flats	D4	D	rocks.
JPV	1.0	Fans	D4	D	JPp Very gently sloping fans (0-1% slopes). More than 50%
JPy	7.0	Drainage	D4	D	scalded.
		depressions			JPq Gently sloping fans (1-3% slopes). More than 50% scalded.
					JPV Gently sloping pediments (1-3% slopes), 5-10% scalded.
					JPy Drainage depressions. 10-20% gullied and more than 50% scalded.
					Main soils: <u>sandy clay loam over pedaric red clay</u> - D4 , with
					deep moderately calcareous sandy loam – A3, deep (rubbly)
					<u>calcareous loam</u> - A4a and <u>hard gradational sandy clay</u>
					<u>loam</u> - M4 .
JZG	0.9	Fans	D4A3	٧	Complex of gently sloping fans on outwash sediments, and
		Rises	A2A4	L	10-20% rocky rises. Slopes are 1-3%. Fans are 10-20% gullied
					Main soils:
					Fans: loam over pedaric red clay - D4 and deep moderately
					<u>calcareous sandy loam</u> - A3 with <u>hard gradational sandy clay</u>
					loam - M4 and gradational calcareous clay loam - A6.
					Rises: shallow calcareous loam - A2 and deep (rubbly)
KFU	19.4	Flats	A4A3	Е	<u>calcareous sandy loam</u> - A4a .
Kru	17.4	riais	A4A3		Pediments and drainage depressions formed on outwash sediments.
		Drainage	A3D4	Е	KFU Plains, 10-50% scalded. Drainage depressions more than
		depressions			50% scalded.
KFV	17.0		A4A3	V	KFV Gently sloping fans, 1-3% slope, minor scalding. Drainage
		Drainage	A3D4	С	depressions 10-50% scalded.
		depressions			KF1 Gently sloping pediments, 1-3% slope. Drainage
KFl	26.7	Fans	A4A3	V	depressions 10-20% gullied and 10-50% scalded.
					Main soils:
					Fans: deep (rubbly) calcareous sandy loam - A4a and deep
					moderately calcareous sandy clay loam - A3, with
					gradational sandy loam - C1 and sandy clay loam over
					pedaric red clay - D4 .
		Drainage	A3D4	L	Drainage depressions: deep moderately calcareous sandy
		depressions			clay loam - A3 and sandy clay loam over pedaric red clay -
					D4, with deep (rubbly) calcareous sandy loam - A4a, gradational sandy loam - C1 and gradational calcareous
					clay loam - A6 .
SAB	0.7	Lunettes	A4A8	D	Gently undulating lunettes with highly calcareous and
	0.7	201101103	/ () / ()		gypseous soils.
					Main soils: deep calcareous sandy loam - A4a and gypseous
					calcareous loam - A8.
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PROPORTION codes assigned to Soil Landscape Unit (SLU) components:

- 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:

Braemar Land System Report

- A2 <u>Shallow calcareous loam (Paralithic, Hypercalcic / Lithocalcic Calcarosol)</u>
 Calcareous stony loam grading to soft or rubbly carbonate over weathering dolomite or calcsiltstone within 50 cm.
- A3 Deep moderately calcareous sandy loam to clay loam (Regolithic, Calcic Calcarosol)

 Calcareous sandy loam to clay loam grading to a loamy to clayey subsoil without a significant carbonate accumulation in the subsoil, grading to medium to fine grained alluvium.
- A4a <u>Deep (rubbly) calcareous sandy loam to loam (Regolithic, Hypercalcic / Lithocalcic Calcarosol</u> Calcareous loam to sandy loam grading to a very highly calcareous sandy clay loam to light clay with variable rubble, continuing below 120 cm.
- A4b Deep ironstone gravelly calcareous sandy loam (Regolithic, Hypercalcic / Lithocalcic Calcarosol Calcareous sandy loam with variable ironstone gravel, grading to a very highly calcareous sandy clay loam to light clay with variable rubble, continuing below 120 cm.
- A6 Gradational calcareous clay loam (Pedal, Hypercalcic / Supracalcic Calcarosol)

 Calcareous clay loam grading to a well structured very highly calcareous (sometimes rubbly) clay, over a red clayey substrate within 120 cm.
- A8 Gypseous calcareous loam (Gypsic Calcarosol)
 Calcareous loam grading to a highly calcareous clay loam to light clay over highly gypseous light clay at between 50 and 100 cm.
- C1 <u>Gradational sandy loam (Hypercalcic, Red Kandosol)</u>
 Friable sandy to loamy topsoil grading to massive red-brown alkaline loamy to clay loamy subsoil, highly calcareous with depth, over alluvium.
- C2 <u>Gradational loam on rock (Calcic / Hypercalcic Red Dermosol)</u>
 Loam grading to a friable red clay with soft Class I carbonate within 50 cm, grading to weathering rock within 100 cm.
- C3 Gradational sandy 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.
- 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.
- Sandy clay loam to sandy loam over red friable clay (Calcic, Pedaric, Red Sodosol)

 Thin to medium thickness sandy clay loam to sandy loam over a finely structured friable red clay, calcareous from about 50 cm, grading to fine or medium grained alluvium.
- L1 Shallow stony loam (Paralithic, Leptic Tenosol)
 Shallow stony loam, often calcareous with depth, overlying weathering fine grained rock shallower than 50 cm.
- Hard gradational sandy loam to sandy clay loam (Calcic, Brown / Red Dermosol / Kandosol)
 Hard setting sandy loam to sandy clay loam grading to a poorly structured to massive hard red or brown sandy clay to clay, weakly to moderately calcareous with depth, over alluvial sediments.
- RR Rock outcrop.

Further information: DEWNR Soil and Land Program

