HLU Hallelujah Hills Land System

Area: 81.3 km²

Landscape: Steep low hills and undulating rises with very shallow rocky soils. The hills are mostly

north-west to south east trending ridges and are broadly dissected by Burra Creek

tributaries.

Annual rainfall: 275 – 410 mm average

Geology: The land system straddles a fold of Proterozoic Adelaide Geosyncline rocks. From the

centre outwards the Formations encountered include: Wilyerpa Formation, Appila Tillite, Saddleworth Formation Woolshed Flat Shale and Skillogalee Dolomite. Other

minor strata also occur.

Main soils: L1 (39%) Shallow soil on rock (Rocky Rudosol-Tenosol)

A2 (29%) Calcareous loam on rock (Paralithic Calcarosol)

A3 (11%) Deep moderately calcareous loam (Calcic Calcarosol)

Minor soils: A4 (7%) Deep (rubbly) calcareous loam (Hypercalcic-Lithocalcic Calcarosol)

C2 (7%) Gradational loam on rock (Shallow Red Dermosol-Kandosol-Calcarosol)

M1 (4%) Deep sandy loam (Brown-Grey-Red Kandosol-Tenosol)

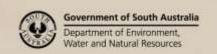
Summary: The Hallelujah Hills land system consists of Steep low hills and undulating rises with very

shallow rocky soils on Proterozoic sedimentary rocks. Shallow soils are dominant and are mostly calcareous, but non-calcareous soils occur on non-calcareous parent

materials.

Soil Landscape Unit summary: Hallelujah Hills Land System (HLU)

SLU	% of area	Component	Main soils	Prop#	Notes
AAD	18.4	Steep low hills	Ll	D	Bare steep low hills with much rock outcrop and very shallow, calcareous rocky sandy loam soils. Slopes range from 30% to 60% Relief is less than 90m. Non-arable. Main soils: Shallow stony soils on rock - L1.
ACB	1.5	Rolling rises	C2A2	D	Hills and rises with clay loamy gradational soils formed on
АСН	0.9	Rolling rises	C2A2	D	limestone. ACB Rolling rises. Relief is 9-30m, slopes are 10-30%. ACH Rolling rises with eroded watercourses. Relief is 9-30m, slopes are 10-30%. Main soils: Gradational loam on rock -C2 and Calcareous loam on rock - A2.
ADH	8.0	Rolling rises Non arable	A2L1	٧	Non-arable rocky rises formed on limestones and calc- siltstones such as Skillagollee Dolomite with very shallow
		Arable	A2C2	L	loamy soils.
ADh	3.2	Rolling rises	A2L1	D	ADH Rolling rises as above, with eroded watercourses. Relief is 9-30m, slopes are 10-30%. ADh Rolling rises as above with eroded watercourses and scalding. Relief is 9-30m, slopes are 10-30%. Main soils: Non-arable areas: Calcareous clay loam on rock – A2 and Shallow stony soils on rock - L1 Arable areas: Calcareous clay loam on rock – A2 and





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					gradational red clay-loam over clay (Red clayey pedaric
A 77 A	0.7		1110	_	Dermosols) - C2.
AKA	8.7	Undulating	L1A2	D	Hills and rises with very shallow rocky calcareous soils formed
A IZD	0.7	rises	1140	6	on coarse-grained rocks of the Pre-Cambrian Burra Group
AKB	9.7	Rolling rises	L1A2	D	including the Rhynie Sandstone and Skillagollee Dolomite.
AKD	12.0	Steep low	L1A2	D	AKA Undulating rises. Relief is less than 30m, slopes are 3-10%.
A 7777		hills	1110	_	AKB Rolling rises. Relief is 9-30m, slopes are 10-30%. AKD Steep low hills. Relief is less than 90m, slopes are 30-60%.
AKH	2.8	Rolling rises	L1A2	D	AKH Rolling rises with eroded watercourses.
					Relief is 9-30m, slopes are 10-30%.
					Main soils: Shallow stony soils on rock - L1 and Calcareous
					loam on rock - A2.
ЕНВ	8.5	Rise	A2C2	Е	Rises and pediments on calcareous siltstones and limestones.
LIID	0.5	Fan	A3A4	E	EHB Gently sloping rises and fans. Slopes: 1-3%, relief: 9-30m.
EHE	0.6	Rise	A2L1	E	EHE Rises and creek flats.
LIIL	0.0	Flat	A3A4	E	EHH Undulating rises and fans. Slopes are 3-10%, relief is less
ЕНН	1.0	Rise	A2C2	E	than 30m. Gullying affects up to 20% of land.
Lilli	1.0	Fan	A3A4	E	
		I GII	A3A4	-	Main soils:
					Rises: Calcareous clay loam on rock – A2 , gradational red
					<u>clay-loam over clay</u> - C2 and <u>Shallow stony soils on rock</u> - L1 .
					Fans and flats: <u>Deep moderately calcareous loam</u> - A3 and
					Deep (rubbly) calcareous sandy loam -A4.
EVH	6.8	Rise	A2C2	Е	Rises and fans complex with shallow calcareous soils formed
		Fan	A3A4	Е	on fine-grained calcareous rocks and deep gradational soils.
EVm	4.1	Rise	A2C2	Е	EHH Undulating rises and fans.
		Fan	A3A4	Е	Slopes are 3-10%, relief is less than 30m. Gullying affects up to
					20% of land.
					EVm Undulating rises with 5-10% of land is gullied, and up to
					50% is scalded.
					Slopes are 3-10%, relief is less than 9-30m.
					Main soils:
					Rises: Calcareous clay loam on rock – A2 and Gradational
					loam on rock -C2.
					Fans: Deep moderately calcareous loam - A3 and Deep
					<u>(rubbly) calcareous sandy loam</u> -A4.
KLB	5.8	Fan	A4A3	D	Gently undulating fans with clay loamy calcareous soils.
					Slopes are 1-3%, relief is less than 9m.
					Main soils: Deep (rubbly) calcareous sandy loam -A4 and
					<u>Deep moderately calcareous loam</u> - A3 .
KQm	1.0	Fan	A3A4	D	Fans with mostly calcareous gradational soils. Over 50% of
			1		land is scalded and up to 20% is gullied. Soils are moderately
					saline throughout the profiles.
					Main soils: <u>Deep moderately calcareous loam</u> - A3 and <u>Deep</u>
					<u>(rubbly) calcareous sandy loam</u> -A4.
XAB	4.1	Creek flat	M1	D	Creek flats with a range of alluvial soils.
37.4.77		0 1 5 1	A3		XAB Creek flat with mixed alluvium. Eroded watercourses
XAZ	2.9	Creek flat	M1	D	with stable banks.
			A3		XAZ Creek flat. Soil surfaces are scalded with up to 50% of
					land affected.
			1		Main soils Doon alluvial loam. M1 and Doon moderately
					Main soils: <u>Deep alluvial loam</u> - M1 and <u>Deep moderately</u>
					<u>calcareous sandy loam</u> - A3.

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

D Dominant in extent (>90% of SLU)

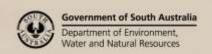
V Very extensive in extent (60–90% of SLU)

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:

- A2/L1 Shallow calcareous loam (Paralithic, Hypercalcic / Lithocalcic Calcarosol) (A2) OR Shallow stony loam (Calcareous, Paralithic, Leptic Tenosol) (L1)
- A3 <u>Deep moderately calcareous (sandy) loam (Calcic Calcarosol)</u>
 Calcareous (sandy) loam topsoil grading into loamy-clay loamy subsoil without a significant CO₃
 build-up in the subsoil (<20% CO₃ in subsoil). Pediment type Calcarosols.
- A4 <u>Deep (rubbly) calcareous loam (Hypercalcic-Lithocalcic Calcarosol)</u>
 Calcareous sandy-clay loamy topsoil grading into loamy-clay loamy subsoil with a significant CO₃
 build-up in the subsoil. Often rubbly. Soil usually >120 cm in depth.
- C2 <u>Gradational loam on rock (Calcic / Hypercalcic Red Dermosol)</u>
 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.
- Shallow stony loam (Paralithic, Leptic Tenosol)
 Shallow stony loam, often calcareous throughout or with depth, overlying weathering rock shallower than 50 cm.
- M1 <u>Alluvial loam (Orthic Tenosol)</u>
 Very thick loam with variable gritty or more-clayey lenses, formed over recent alluvium.

Further information: DEWNR Soil and Land Program

