BAC Baldina Creek Land System

Area: 89.5 km^2

Landscape: This land system is the deeply eroded plain east of the ranges where the Baldina and Stone Chimney Creeks debouch. It contains the eroded and deeply gullied area known locally as "Redbanks".

Annual rainfall: 230 – 300 mm average

Geology: Holocene alluvium associated with modern streams and creeks. Older alluvium forms lateral terraces and floodplain deposits. Calcreted sediments of Pleistocene age alluvium also occur, especially in downstream locations away from the ranges. Deeply weathered and kaolinised sediments occur in places.

Main soils:
A3 (34%) Deep moderately calcareous loam (Calcic Calcarosol)
A4 (25%) Deep (rubbly) calcareous loam (Hypercalcic-Lithocalcic Calcarosol)
D4 (12%) Loam over pedaric red clay (Pedaric Red Sodosol-Dermosol)

Minor soils:
B2 (9%) Shallow calcareous loam on calcrete (Petrocalcic Calcarosol-Rudosol)
M1 (8%) Deep sandy loam (Brown-Grey-Red Kandosol-Tenosol)
A5 (6%) Rubbly calcareous loam on clay (Supracalcic-Lithocalcic Calcarosol)

Summary: The Baldina Creek Land System consists of alluvial deposits ranging from Pleistocene to Recent ages. Soils are mostly deep calcareous uniform and gradational types, with significant areas of red pedaric texture contrast soils.

Soil Landscape Unit summary: Baldina Creek Land System (BAC)

SLU	% of area	Component	Main soils	Prop#	Notes
A2O	6.8	Eroded slope	A3A4	V	Eroded steep land with more than 80% of soils formed on unconsolidated deeply weathered materials. Creek beds are associated landscape features. More than 20% of soils have secondary carbonate. Relief is 30-90 m, slopes are 10-30%. Severely scalded and gullied. Main soils: *Eroded slopes:* Deep moderately calcareous sandy loam - **A3** and Deep (rubbly) calcareous sandy loam **-A4**. *Creeks:* Deep alluvial loam - **M1** and Deep moderately calcareous sandy loam - **A3**.
		Creek	M1A3	C	
H3ii	4.4	Eroded fan	C3A3	D	Eroded fan on deeply weathered material with more than 20% calcareous soils. Relief is 9-30 m, slopes are 10-30%. Severely gullied (over 20% affected) and saline (10-50% affected) Main soils: Friable gradational clay loam - **C3** and Deep moderately calcareous sandy loam - **A3**.
Hgxx	0.5	Eroded slope	D4C3	D	Eroded fan slope formed in deep unconsolidated clayey sediments or highly weathered rock. Relief is 9-30 m, slopes are 10-30%. Severely gullied (over 20% affected) and scalded (over 50% affected). Main soils: Clay loam over pedaric red clay - **D4** and Friable gradational clay loam - **C3**.

IJU	3.4	Flat	A5	D	Flat with soils formed on unconsolidated clay sediments (eg.Blanchetown Clay Formation) / highly weathered rock. Soils have non-sandy surfaces and are mostly gradational calcareous soils with clay subsoils with more than 10% shallow Petrocalcic soil. Main soils: Rubbly calcareous loam on clay - **A5**.
JPo	5.2	Scalded flat	D4A3	D	Pediments and plains with texture contrast soils formed on outwash sediments derived from basement rocks. Calcareous in some part of the profile. More than 20% of soils are pedaric (fine crumbly structure in subsoils). **JPo** Drainage depressions. Moderately gullied (10-20%) and scalded (10-50%). **JPp** Plains. Severely (over 50%) scalded. **JPy** Creek flats. Moderately gullied, severely scalded. **JPyy** Drainage depression. Severely gullied (over 20%) and scalded (over 50%). Main soils: Clay loam over pedaric red clay - **D4** and Deep moderately calcareous loam - **A3**.
JPp	3.3	Scalded flat	D4A3	D	
JPy	4.7	Scalded flat	D4A3	D	
JPyy	2.0	Scalded flat	D4A3	D	
KFB	1.7	Flat	A3A4	D	Plains with calcareous gradational soils. **KFB** Gently sloping fan. Slopes are 1-3%, relief is less than 9m. **KFU** Flats and low, gentle rises, 10-50% scalded. Main soils: Deep moderately calcareous sandy loam - **A3** and Deep (rubbly) calcareous sandy loam **-A4**.
KFU	5.0	Flat	A3A4	D	
KLA	0.7	Flat	A4A3	D	Fans and rises with clay loamy calcareous soils. Subsoils are moderately saline. **KLA** Plains with rubbly calcareous loam over clay soils. **KLB** Gently undulating fans and rises. Subsoils have moderate salinity. Slopes are 1-3%, relief is less than 9m. **KLl** Gently undulating pediments. Moderately gullied (10-20%) and scalded (5-10%). Slopes are 1-3%, relief is less than 9m. **KLll** Gently undulating pediments. Severely gullied (over 20%) and scalded (over 20%). Slopes are 1-3%, relief is less than 9m. Main soils: Deep (rubbly) calcareous sandy loam **-A4** and Deep moderately calcareous loam - **A3**. Shallow calcareous loam on calcrete - **B2** dominates some rises.
KLB	5.8	Flat	A4A3	V	
		Rise	B2A4	L	
KLl	10.9	Fan	A4A3	D	
KLll	4.2	Fan	A4A3	D	
KVA	0.9	Flat	A3A4	D	Plains formed on calcareous outwash sediments derived from basement rock. More than 90% of soils are calcareous throughout (Calcarosols). Moderately saline soils throughout. **KVA** Flats **KVU** Flats, 10-50% scalded. Main soils: Deep moderately calcareous sandy loam - **A3** and Deep (rubbly) calcareous sandy loam **-A4**.
KVU	3.0	Flat	A3A4	D	
KXE	10.7	Flat	A3M1	D	Flats and drainage depressions formed on outwash sediments derived from basement rock. Soils are not texture contrast and are calcareous in some part of the profile. Most soils are mainly Tenosols, Kandosols or Rudosols. Less than 50% have more than 20% gravel & stone. Main soils: Deep moderately calcareous sandy loam - **A3** and Deep alluvial loam - **M1**.
QGB	7.4	Stony	B2A4	E	Stony rises and flats with shallow soils over calcrete of which over 90% are gradational calcareous soils (Calcarosols) with clay loamy surface textures.
		Flat	A4A3	E	

					Main soils: *Stony Rises:* Shallow calcareous loam on calcrete - **B2** and Deep (rubbly) calcareous sandy loam **-A4** *Flats:* Deep (rubbly) calcareous sandy loam **-A4** and Deep moderately calcareous sandy loam - **A3**.
QHB	10.6	Stony	B2A4	D	Stony rises with shallow soils over calcrete of which over 90% are gradational calcareous soils (Calcarosols) but have loamy or sandy surface textures. Main soils: Shallow calcareous loam on calcrete - **B2** and Deep (rubbly) calcareous sandy loam **-A4**.
QHV	1.0	Stony	B2A4	D	
XAB	2.6	Creek flat	A3M1	D	Flood plains with a range of alluvial soils. **XAB** Creek flat with mixed alluvium. Eroded watercourses with stable banks. **XAS** Creek flat. Main soils: Deep moderately calcareous sandy loam - **A3** and Deep alluvial loam - **M1**.
XAS	4.3	Creek flat	A3M1	D	
XKA	0.8	Depression	A3A5	D	Alluvial depression with deep silty calcareous clay loamy soils with stable banks and gully walls. Main soils: Deep moderately calcareous sandy loam - **A3** and Rubbly calcareous clay loam on clay - **A5**.

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:

A3 Deep moderately calcareous (sandy) loam (Calcic Calcarosol)
Calcareous (sandy) loam topsoil grading into loamy-clay loamy subsoil without a significant CO_3 buildup 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)
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.

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.

C3 Gradational clay loam (Calcic / Hypercalcic Red Dermosol)
Loam to clay loam grading to friable red clay with soft Class I carbonate within 50 cm, grading to alluvium within 100 cm.

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

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

Further information: DEWNR Soil and Land Program