POR Porcupine Range Land System

Area: 50 km^2

Landscape: Steep rocky range with extensive rock outcrop and scree slopes. There are two lines of parallel hills included in the land system which are around 13 km apart.

Annual rainfall: 225 – 300 mm average range, with over 60% receiving 250 – 275 mm average

Geology: Proterozoic rocks of the Adelaide Geosyncline especially tillites of the Umberatana Group.

Main soils:
RR (40%) Bare rock
L1 (35%) Shallow soil on rock (Rocky Rudosol-Tenosol)

Minor soils:
C2 (7%) Gradational loam on rock (Shallow Red Dermosol-Kandosol-Calcarosol)
D4 (5%) Loam over pedaric red clay (Pedaric Red Sodosol-Dermosol)
A5 (5%) Rubbly calcareous loam on clay (Supracalcic-Lithocalcic Calcarosol on clay)

Summary: The Porcupine Range Land System consists of parallel elongate, curved, steep, rocky lines of hills and rises. 75% of land has bare rock or very shallow rocky soils and is non-arable. Small pediments may have shallow gradational loam on rock; red, crumbly, texture contrast soils or gradational calcareous soils.

Soil Landscape Unit summary: Porcupine Range Land System (POR)

SLU	% of area	Component	Main soils	Prop#	Notes
ABB	1.3	Rolling rises	L1	D	Hills and rises with linear rocky quartzite outcrops and shallow rocky soils on interbedded fine-grained rocks. **ABB** Rolling rises with shallow, often calcareous, soils on quartzite, 10-30% bare rock. Relief is 9-30m, slopes: 10-30%. **ABL** Very steep hills as above, with eroded watercourses. Relief is more than 90m, slopes are more than 60%. Main soils: Shallow stony soils on rock **- L1**. Rock outcrop - **RR** is common.
ABL	13.5	Very steep hills	L1	D	
AEB	3.5	Rolling rises	L1RR	D	Non-arable rocky rises and low hills formed on mostly fine-grained rocks. Soils are very shallow and more than 20% are petrocalcic (contain a calcrete layer). **AEB** Rolling rises with mostly very shallow loam on fine grained rock or bare rock, not or slightly calcareous. Relief is 9-30m, slopes are 10-30%. **AED** Steep rises with soils as above. Relief is 9-30m, slopes are 30-50%. Main soils: Shallow stony soils on rock - **L1** and Bare rock - **RR**.
AED	11.0	Steep rises	L1RR	D	
AQD	22.0	Steep low hills	L1RR C2	D	Steep low hills formed on quartzite with shallow rocky soils, bare rock outcrop or gradational loam over red clay. Non-arable. Relief is 30-90m, slopes are 30-50%. Main soils: sandy, Shallow stony soils on rock **- L1** and Bare rock - **RR**.

A-t	26.6	Steep low hills	RR	D	Steep low hills on tillites with mostly bare rock outcrop. Relief is 30-90m, slopes are 30-50%. Main soils: Bare rock - **RR**.
AYD	2.6	Steep low hills	RRL1	D	Steep low hills with shallow calcareous loam on calcareous siltstone or other fine grained rocks; or bare rock. Relief is 30-90m, slopes are 30-50%. Main soils: Bare rock - **RR** and. Shallow stony soils on rock - **L1**
DSC	2.2	Shallow pediment	D1C2 D7	V	Undulating pediment and rises complexes with shallow, loamy surfaced, duplex soils over rock with more than 20% outcropping rock. Relief is less than 30m, slopes are 3-10%. Main soils: Clay loam over pedaric red clay on rock - **D1**, Gradational red-brown clay loam over rock-**C2**, Loam over poorly structured clay on rock -**D7** and Shallow stony soils on rock **- L1**.
		Rock outcrop	L1RR	C	
EVc	4.1	Undulating shallow pediments	A2	V	Undulating rises with rock outcrops and shallow calcareous soils formed on fine-grained calcareous rocks, including gradational calcareous sandy loam over clay loam on weathered rock; 10-30% shallow calcareous sandy loam on rock, or bare rock. 20-30% bare rock. Moderately gullied (10-20%) slightly saline subsoils. Slopes: 3-10%, relief: < 9-30m. Main soils: Calcareous loam on rock – **A2** and Bare rock – **RR**.
		Rocky outcrops	RR	C	
JPB	2.9	Pediments	D4D1 A5	D	Gently sloping pediments 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). Deep calcareous rubbly clay loam over clay soils are also common. <10% rock outcrop. Slopes are 1-3%, relief is less than 9m. Main soils: Loam over pedaric red clay - **D4**, Loam over pedaric red clay on rock - **D1** and Rubbly calcareous loam on clay - **A5**.
		Rocky outcrops	RR	M	
JZB	1.8	Pediment	D4A5	V	Pediment-basement rock complex with pediments with red texture contrast soils with clay loam over crumbly red clay, or rubbly calcareous loam on clay and up to 30% rocky rises with shallow texture contrast soils. **JZB** Gently sloping pediments, 10-20% rock outcrop. Slopes are 1-3%, relief is less than 9m. **JZm** Undulating pediments and rock outcrops as above. Moderately gullied (10-20%) and scalded (5-10%). Slopes are 3-10%, relief is less than 9m. Main soils: ***Pediments and plains:*** Loam over pedaric red clay - **D4** and Rubbly calcareous loam on clay - **A5** with minor Deep moderately calcareous sandy loam - **A3**. ***Rocky rises:*** Bare rock - **RR**.
		Rocky outcrops	RR	L	
JZm	8.4	Pediment	D4A5	V	
		Rocky outcrops	RR	L	

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/L1 Shallow calcareous loam (Paralithic, Hypercalcic / Lithocalcic Calcarosol)(**A2**)
Gradational calcareous sandy loam over clay loam on weathered rock.
OR Shallow stony loam (Calcareous, Paralithic, Leptic Tenosol)(**L1**)
Shallow calcareous sandy loam on rock.

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.

A5 Rubbly calcareous loamy sand on clay (Supracalcic-Lithocalcic Calcarosol on clay)
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.

C2 Gradational loam on rock (Calcic / Hypercalcic Red Dermosol)
Loam to clay loam grading to friable red clay with soft Class I carbonate within 50 cm, grading to weathering rock within 100 cm.

D1 Loam over red clay on rock (Hypercalcic / Calcic, Red Chromosol / Sodosol)
Medium thickness hard gravelly loam over a red clay, friable and finely structured (D1), to hard, coarsely structured and dispersive (D7), calcareous with depth, grading to weathering basement rock 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.

D7 Loam over dispersive red clay on rock (Calcic / Hypercalcic, Red Sodosol)
Medium to thick hard sandy loam to clay loam sharply overlying a coarsely structured dispersive red clay, calcareous with depth, grading to highly weathered kaolinized siltstone.

L1 Shallow stony loam (Paralithic, Leptic Tenosol)
Shallow stony loam, often calcareous throughout or with depth, overlying weathering rock shallower than 50 cm.

RR Bare rock.

Further information: DEWNR Soil and Land Program