

SLT Saltia Land System

Range of hills north east of Port Augusta

Area: 29.2 km²

Annual rainfall 300 – 350 mm average

Geology: ABC Range Quartzites and sandstones, and calcareous siltstones of the Willochra Formation. Most rocks are mantled by soft to semi-hard carbonate. Locally derived fine to medium grained alluvium occurs on outwash fans and creek flats. In flats especially, stones and boulders are common.

Topography: North - south oriented ranges of moderately steep to steep low rocky hills and hills with slopes of 10 - 60%. Rock outcrops are variable, extensive in places, particularly where quartzite seams occur. The ranges are flanked by moderately inclined outwash fans with well defined and generally eroded water courses. There is abundant surface quartzite.

Elevation: 150 m on lower slopes to 460 m at the highest point (Saltia Hill)

Relief: Maximum relief is 120 m

Soils: Soils are shallow over basement rock or calcreted rock on rises, but deep over alluvium on fans and flats.

Main soils

Soils formed on basement rocks

B2/A2 (Rubby) calcareous loam

L1a Shallow stony loam

C2 Shallow gradational loam

Soils formed on alluvium

A3 Calcareous loam

Minor soils

Soils formed on basement rocks

L1b Shallow stony sandy loam

Soils formed on alluvium

M2 Gradational clay loam

M1 Deep gradational sandy loam

D4 Loam over red crumbly clay

M3 Deep stony sandy loam

Main features: This land is rough and hilly and is dominated by shallow, stony and moderately low fertility soils. The moderately steep to steep slopes are at risk of erosion if over-grazed. Outwash fans have been degraded in the past and are affected by scalding and water course erosion.



Soil Landscape Unit summary: 22 Soil Landscape Units (SLUs) mapped in the Saltia Land System

SLU	% of area	Main features #
ADC ADH ADI ADJ ADj	5.5 10.8 2.3 7.4 0.7	Rises, low hills, hills and ridges formed on fine grained basement rocks, often calcareous. There is extensive rock outcrop and surface stone. ADC Low hills up to 70 m high with slopes of 15-30%. ADH Rises and low hills to 40 m high with slopes of 10-30% and eroded water courses. ADI Dissected ridge up to 80 m high with slopes of 20-50%. ADJ Dissected hills to 120 m high and with slopes of 30-60%. ADj Dissected slope, 20-40%. Main soils: <u>shallow calcareous loam</u> - A2 (E) and <u>shallow stony loam</u> - L1a (E), with <u>shallow gradational loam</u> - C2 (L). This land is too steep and stony for any uses other than rough grazing.
ASE	7.9	Steep ridges up to 100 m high formed on ABC Range Quartzite. Slopes are 20-50%. Rock outcrop and surface stone are extensive. Main soil: <u>shallow stony sandy loam</u> - L1b (D). This land is too steep and stony and the soils too shallow for any uses other than rough grazing.
AUC AUD	7.1 7.8	Moderately steep rocky low hills formed on quartzite. AUC Low hills with slopes of 10-30%. AUD Steep very rocky slopes of 30-40%. Main soils: (<u>rubbly</u>) <u>calcareous loam</u> - B2/A2 (V) with <u>shallow stony (sandy) loam</u> - L1a/L1b (E). The land is rough and hilly and is dominated by shallow, stony and moderately low fertility soils. The moderately steep to steep slopes are at risk of erosion if over-grazed.
EFI	3.2	Dissected low rises formed on mixed sandstones and siltstones. Slopes are 5-15%. Water courses are eroded. Main soils: (<u>rubbly</u>) <u>calcareous loam</u> - B2/A2 (V) and <u>shallow stony loam</u> - L1a (E). Low rainfall and shallow stony soils restrict land use to grazing only.
EGC EGD EGH EGI EGQ EGW	1.5 0.9 4.0 1.8 0.9 7.1	Rises and slopes formed on fine grained basement rocks, with variable erosion and scalding. EGC Low rise with slopes of 5-10%, occasionally steeper. EGD Low ridge with slopes of 10-20%. EGH Dissected slopes of about 10% with eroded watercourses. EGI Dissected slopes of 10-20% with eroded watercourses. EGQ Low scalded rise with slopes of less than 5%. EGW Complex of basement rock rises with slopes of 10-20%, and fans with slopes of 5-10%. Fans especially are severely eroded and scalded. Main soils: <u>rubbly calcareous loam</u> - A2 (E) and <u>shallow gradational loam</u> - C2 (E) with <u>shallow stony loam</u> - L1a (L). These soils are generally shallow and stony, moderately fertile and alkaline. Apart from low rainfall, erosion potential, rocky outcrops and uneven terrain are the main limitations.
KGH	5.6	Outwash fans with slopes of 5-10%. There is moderate watercourse erosion. Main soils: <u>gradational clay loam</u> - M2 (E) and <u>calcareous loam</u> - A3 (E), with <u>loam over red crumbly clay</u> - D4 (L). Although soils are deep and moderately fertile, low rainfall and potential for erosion restrict land use options.
KLK	10.7	Flats of Saltia and Albury Creeks with partly eroded watercourses. Main soils: <u>calcareous loam</u> - A3 (E) and <u>deep gradational sandy loam</u> - M1 (E) with <u>gradational clay loam</u> - M2 (L). These soils are deep and moderately fertile but the terrain (dominated by the water courses) restricts most land uses. Grazing potential is high, but protection of creek banks is a major issue.
KQC KQG KQm KQn	0.2 1.6 5.9 6.4	Outwash fans with basement rock rises. The land is variably eroded. KQC Fans with slopes of 5-10% and minor watercourse erosion. KQG Fans with slopes of 3-6% and moderate watercourse erosion. KQm Complex of fans and basement rock rises with slopes of 6-12%, severe watercourse erosion and scalding. KQn Complex of fans and basement rock rises with slopes of 6-12%, severe watercourse erosion and scalding. Main soils: <u>calcareous loam</u> - A3 (E) with <u>gradational clay loam</u> - M2 (L) and <u>deep gradational sandy loam</u> - M1 (L) on fans, and <u>calcareous loam</u> - A2 (L) with <u>shallow gradational loam</u> - C2 (M) and



		<u>shallow stony loam</u> - L1a (M) on rises. Erosion potential and shallow soils on rises limit land use options.
XHT	0.6	Flats of Saltia Creek downstream from the junction with Albury Creek. Flats are stony and eroded. Main soils: <u>deep gradational sandy loam</u> - M1 (E) and <u>deep stony sandy loam</u> - M3 (C) with <u>calcareous loam</u> - A3 (L) and <u>gradational clay loam</u> - M2 (L). The dominance of the watercourse limits use of this land.

PROPORTION codes assigned to soils within Soil Landscape Units (SLU):

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| (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** Calcareous loam (Regolithic, Calcic / Supracalcic, Calcarosol)
Calcareous stony (quartzite) loam becoming more clayey, calcareous (soft or rubbly) and stony with depth. 30% of profiles are derived from siltstones and contain siltstone fragments and become silty with depth.
- B2/A2** Rubbly calcareous loam (Petrocalcic / Lithic, Calcic / Lithocalcic Calcarosol)
Stony calcareous sandy loam to loam, grading to soft or rubbly Class III A, III B or III C carbonate overlying either hard quartzite (Lithic class), or sheet calcrete (Petrocalcic class) within 50 cm.
- C2** Shallow gradational loam (Calcic, Red Dermosol)
Sandy loam to clay loam grading to a friable red clay loam to clay with variable carbonate at depth, over weathering basement rock at depths of up to 100 cm, usually shallower than 50 cm.
- D4** Loam over red crumbly clay (Calcic / Hypocalcic, Pedaric, Red Sodosol)
Thin crusting gravelly sandy loam to loam over a red very friable (saline) stony clay with soft carbonate shallower than 50 cm.
- L1a** Shallow stony loam (Lithic, Leptic Rudosol OR Calcareous, Lithic, Leptic Tenosol)
Shallow stony loam to clay loam overlying fine grained basement rock with or without soft carbonate in fissures.
- L1b** Shallow stony sandy loam (Lithic, Leptic Rudosol OR Calcareous, Lithic, Leptic Tenosol)
Shallow stony loam overlying quartzite with or without soft carbonate in fissures.
- M1** Deep gradational sandy loam (Basic, Regolithic, Red-Orthic Tenosol OR Eutrophic / Calcic, Red Kandosol)
Thick sandy loam, continuing below 100 cm, or gradually becoming more clayey, with minor fine carbonate at depth and variable stone content.
- M2** Gradational clay loam (Calcic, Red Dermosol)
Medium thickness stony clay loam to clay grading to a well structured red stony clay, calcareous with depth.
- M3** Deep stony sandy loam (Basic, Regolithic, Brown-Orthic Tenosol)
Thick very stony sandy loam becoming slightly more clayey with depth.

Further information: [DEWNR Soil and Land Program](#)

