

SED Sedan Land System

Undulating rises east of Sedan

Area: 90.1 km²

Annual rainfall: 275 - 325 mm average

Geology: The land system is formed on a dissected plain of Bakara Calcrete. Less than 20% of the original land surface remains. Underlying Pleistocene sediments, mainly Blanchetown Clay equivalent, are exposed on the dissection slopes. Older Tertiary sediments (eg Norwest Bend Formation) may occur in depressions.

Topography: The Sedan Land System is an extensively dissected calcrete plain. The last remnants of the plain occur as a series of isolated flat topped stony benches. Between the benches are long slopes grading to depressions, which occasionally collect runoff water from the ranges to the west.

Elevation: 70 - 110 m

Relief: 5 - 10 m

Soils: Calcareous soils, both shallow and deep are dominant

Main soils

- A5** Deep calcareous loam
- B2** Shallow rubbly calcareous sandy loam
- A4** Rubbly calcareous sandy loam

Minor soils

- B3** Sandy loam over calcrete
- F1** Loam over brown clay

Main features: The Sedan Land System comprises three distinctive elements. Long gentle slopes with shallow to moderately deep calcareous sandy loams are predominant. These soils often have restricted moisture holding capacity, and moderately low fertility, but are widely used for cereal cropping (mainly wheat). Depressions have loamy to clay loamy soils with clayey subsoils which although deep and fertile have moisture release limitations and are consequently limited in their productive potential. Calcrete benches are characterized by shallow stony soils which are largely non arable.



Soil Landscape Unit summary: 3 Soil Landscape Units (SLUs) mapped in the Sedan Land System

SLU	% of area	Main features #
IBE	22.5	Depressions underlain by Pleistocene clays (usually Blanchetown Clay equivalent), or older sandier Tertiary sediments. Main soils: <u>deep calcareous loam</u> - A5 (V), with <u>loam over brown clay</u> - F1 (M) and <u>rubbly calcareous sandy loam</u> - A4 (M). These soils are deep, moderately fertile and well structured. However, the relatively heavy soils have high wilting points so significant soil moisture is unavailable for plant uptake. This is a significant limitation in a low rainfall environment. Other limitations to crop growth are likely to be due to high subsoil pH, boron concentrations and salinity reducing effective root zone depth.
QHA	11.7	Low flat topped rises formed on sheet calcrete with 20% or more surface calcrete stone. Main soils: <u>shallow rubbly calcareous sandy loam</u> - B2 (V) and <u>sandy loam over calcrete</u> - B3 (L). This land is largely non arable due to shallow soils and rock.
SeB	65.8	Gently undulating rises and long slopes formed on a complex of rubbly Woorinen Formation carbonates, sheet calcrete and Pleistocene clays. There is up to 20% surface calcrete stone. Slopes are 2-3%. Main soils: <u>shallow rubbly calcareous sandy loam</u> - B2 (E) and <u>rubbly calcareous sandy loam</u> - A4 (E), with <u>deep calcareous loam</u> - A5 (L) and <u>sandy loam over calcrete</u> - B3 (M). About half of the land has shallow soils over calcrete, with associated moisture holding and fertility limitations. The deeper soils are potentially more productive; the main limitations to crop growth are likely to be due to high subsoil pH, boron concentrations and salinity limiting effective root zone depth.

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:

- A4** Rubbly calcareous sandy loam (Regolithic, Supracalcic / Lithocalcic Calcarosol)
Medium thickness calcareous loamy sand to sandy loam over Class III B or III C rubble at 30 cm, grading to slightly rubbly very highly calcareous sandy clay loam continuing below 100 cm.
- A5** Deep calcareous loam (Calcic / Hypercalcic Calcarosol)
Medium thickness calcareous sandy loam to clay loam grading to a highly calcareous brown sandy clay loam to clay with abundant soft and minor rubbly carbonate from 30 cm, becoming more clayey with depth and overlying Tertiary Clay (usually Blanchetown Clay equivalent) from between 60 and 100 cm.
- B2** Shallow rubbly calcareous sandy loam (Petrocalcic, Supracalcic / Lithocalcic Calcarosol)
Medium thickness calcareous sandy loam grading to a Class III B or III C rubble layer, abruptly overlying sheet calcrete at about 30 cm. Usually associated with abundant surface calcrete.
- B3** Sandy loam over calcrete (Petrocalcic, Leptic Tenosol)
Thick non calcareous loamy sand to sandy loam overlying sheet or rubbly calcrete within 50 cm.
- F1** Loam over brown clay (Hypercalcic, Brown Chromosol)
Medium thickness loam abruptly overlying a well structured brown clay, highly calcareous from 30 cm and grading to Blanchetown clay equivalent within 100 cm.

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

