

TEM Templeton Land System

Outwash fans east of Kangaroo Hill Range

Area: 59.1 km²

Annual rainfall: 350 - 400 mm average

Geology: Fine grained outwash sediments washed from Kangaroo Hill Range. These are commonly gravelly, particularly on upper outwash fans. On lower slopes the sediments grade to heavy red coarsely structured clay (Hindmarsh Clay). This is capped in places by sheet calcrete, which persists as rubble beds on low rises.

Topography: Gently inclined outwash fans with slopes of 2-10% adjacent to the range, grading to very gently undulating flats adjacent to the Everard salt land. Low calcrete benches and stony rises characterize the flatter ground.

Elevation: 180 m on upper fan slopes to 60 m adjacent to the Everard flats

Relief: Relief is less than 5 m

Soils: The characteristic soils are deep and loamy to clay loamy with red clayey subsoils which are commonly dispersive. About a third of the soils are calcareous throughout.

Main soils

- D3** Hard loam over dispersive red clay - extensive (fans)
- A3** Deep calcareous clay - limited (fans)
- D2** Hard loam over red clay - limited (fans)

Minor soils

- A5** Rubbly calcareous loam - stony rises
- C4** Gradational poorly structured clay loam - fans
- A6** Calcareous clay loam - fans
- B2** Calcareous sandy loam over sheet calcrete - stony rises in the north
- C3** Gradational loam - fans

Main features: The Templeton Land System is characterized by deep medium to fine textured soils with moderately high fertility. The main limitations to productivity are high subsoil boron levels. Poor structure in the predominant texture contrast soils is likely to cause excessive runoff, temporary waterlogging and patchy emergence. On upper slopes, poor surface structure contributes to erosion potential. Runoff from the adjacent range exacerbates the potential erosion problem.



Soil Landscape Unit summary: 6 Soil Landscape Units (SLUs) mapped in the Templeton Land System

SLU	% of area	Main features #
IHA	16.4	Very gently undulating slopes of 1-2% with low stony rises formed on Hindmarsh Clay. Main soils: <u>calcareous clay loam</u> - A6 (E), <u>hard loam over dispersive red clay</u> - D3 (C), <u>rubbly calcareous loam</u> - A5 (C), <u>hard loam over red clay</u> - D2 (L) and <u>calcareous sandy loam over sheet calcrete</u> - B2 (M) on stony rises. Apart from the low rainfall, the main limitations of this land are due to accumulations of boron and salt. Boron levels may be toxic within 50 cm of the surface and average concentrations in the 70-90 cm zone are 40 ppm. Other limitations include marginal fertility and waterholding capacity on the rubbly calcareous soils (A5), and restricted infiltration and root growth conditions in D3 soils.
JDB JDC JDH	53.4 5.2 16.8	Outwash fans formed on fine grained outwash sediments of the Pooraka Formation with up to 20% surface quartzite stone. JDB Slopes are 2-4% with minor water course erosion. JDC Slopes of 4-10% with minor water course erosion. JDH Slopes of 4-10% with moderate water course erosion. Main soils: <u>hard loam over dispersive red clay</u> - D3 (E) and <u>deep calcareous clay loam</u> - A3 (C), with <u>hard loam over red clay</u> - D2 (L), <u>gradational poorly structured clay loam</u> - C4 (L), <u>calcareous clay loam</u> - A6 (M) and <u>gradational loam</u> - C3 (M). This land has moderate production potential for its rainfall. The major limitation is high subsoil boron levels (may be toxic within 50 cm of the surface; average concentration in the 70-90 cm zone is 40 ppm). High pH induced nutrient deficiencies, restricted water infiltration, workability and root growth conditions in D3 soils, elevated salinity and abrasive stone cover are all slight limitations. Runoff from the adjacent range across the slopes of this land creates an erosion potential problem; much of JDH is contour banked.
QHA	2.3	Low flat topped calcrete benches with 20-50% surface calcrete stone. Main soils: <u>calcareous sandy loam over sheet calcrete</u> - B2 (V) with <u>rubbly calcareous loam</u> - A5 (C). These soils are moderately shallow and rubbly so moisture holding capacity and stoniness are the biggest limiting factors. The land has limited agricultural potential.
SeB	5.9	Low rises with slopes of 2-4% and up to 20% surface calcrete stone cover, formed on rubbly calcrete of the Bakara Formation. The calcrete is underlain at depth (100-200 cm) by a red coarsely structured heavy clay. Main soils: <u>rubbly calcareous loam</u> - A5 (E) and <u>calcareous sandy loam over sheet calcrete</u> - B2 (E). Shallowness, stoniness and marginal fertility are the major soil limitations.

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** Deep calcareous clay loam (Regolithic, Calcic Calcarosol)
15 - 20 cm calcareous clay loam grading to a highly calcareous clay loam to light clay at about 40 cm, continuing below 100 cm.
- A5** Rubbly calcareous loam (Regolithic, Lithocalcic / Supracalcic Calcarosol)
10 - 15 cm calcareous sandy loam to loam over Class III B or III C rubble at 30 cm, finer with depth and grading to substrate clay at 80 cm.
- A6** Calcareous clay loam (Regolithic / Pedal, Hypercalcic Calcarosol)
15 - 20 cm calcareous clay loam to light clay becoming more clayey and calcareous with depth with abundant fine carbonate from 35 cm, grading to substrate clay at 95 cm.
- B2** Calcareous sandy loam over sheet calcrete (Petrocalcic Calcarosol)
10 - 15 cm calcareous sandy loam to sandy clay loam, rubbly in the subsurface over sheet calcrete at 25 cm.
- C3** Gradational loam (Calcic, Red Dermosol)
10 - 20 cm clay loam grading to a well structured red clay with fine carbonate from 50 cm over substrate clay at 70 cm.
- C4** Gradational poorly structured clay loam (Sodic, Hypercalcic, Red Dermosol)
10 - 30 cm hard massive clay loam grading to a coarsely structured dispersive red clay with fine Class I carbonate from about 35 cm, over substrate clay from about 50 cm.
- D2** Hard loam over red clay (Calcic, Red Chromosol)
10 - 30 cm firm to hard loam to clay loam sharply overlying a well structured red clay with fine Class I carbonate from about 45 cm over substrate clay from 85 cm.
- D3** Hard loam over dispersive red clay (Calcic, Red Sodosol)
10 - 30 cm firm to hard loam to clay loam sharply overlying a coarsely structured and dispersive red clay with fine Class I carbonate from about 45 cm over substrate clay from 85 cm.

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

