

# SNO Snowtown Land System

Gentle slopes abutting the eastern edge of the Hummocks - Barunga Range extending from Merriton to South Hummocks.

**Area:** 253.2 km<sup>2</sup>

**Annual rainfall** 325 - 425 mm average

**Geology:** Clayey alluvium derived from the Barunga - Hummocks Range to the west. Mixed with the alluvium are patches of older Pleistocene clay (Hindmarsh Clay). A small Tertiary sand remnant occurs at the northern end of the system and there is some minor drift sand (Molineaux Sand) at the southern end.

**Topography:** Gently to very gently inclined outwash fans with slopes ranging from 1% on the eastern margins to 10% on the western edge abutting the Barunga - Hummocks range. East flowing, roughly parallel watercourses dissect the slopes. These are ephemeral only and are generally stable. There is an elongate gently sloping rise on Tertiary sand at the northern end of the system and a small area of low sand hills at the southern end.

**Elevation:** 180 m in the north to 10 m in the south

**Relief:** Generally less than 10 m except for the isolated Tertiary sand rise which is up to 35 m above the adjacent fan surface.

**Soils:** The soils are mainly loams to clay loams. Most are calcareous with gradational texture profiles. The non calcareous soils have clayey subsoils, often dispersive.

**Main soils:** *Soils formed on alluvial sediments*  
**C3** Gradational clay loam  
**A6** Calcareous clay loam

**Minor soils:** *Soils formed on alluvial sediments*  
**C4** Hard gradational loam  
**D2** Loam over red clay  
**D3** Loam over dispersive red clay  
**E2** Red cracking clay  
**A4a** Calcareous loam  
**M3** Stony alluvial soil  
*Soils formed on rises*  
**A4b** Rubbly calcareous loam  
**H2** Deep sand

**Main features:** The Snowtown Land System is a gently sloping outwash fan which is virtually fully arable. The land has generally good agricultural potential over most of its area. There are minor low lying areas and patches of cracking clays where boron toxicity is a limitation, and limited areas of poorly structured soils. Erosion control measures are required over much of the area, and implement abrasion by the locally extensive quartzite stone cover is significant. Shallower rubbly soils occur sporadically - these have reduced moisture holding capacity. Minor sand hill country has light, infertile and erosion prone sand rises and heavier potentially more productive swales.



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

SLU	% of area	Main features #
IWC	1.7	Rising ground with slopes of 4-12% formed on Tertiary sands to sandy clays, capped by soft to rubbly carbonates. Main soil: <u>rubbly calcareous loam</u> - <b>A4b</b> (D). The land has only minor limitations (provided erosion is controlled), due mainly to the dominant soil which is moderately shallow and calcareous - waterholding and fertility limitations.
KA KAA KAB KAC KAH	29.8 39.4 23.5 4.9	Outwash fans and flats formed on fine grained alluvium capped by secondary carbonates: <b>KAA</b> Flats and fans with slopes of 0-2%. <b>KAB</b> Fans with slopes of 2-4%. <b>KAC</b> Fans with slopes of 4-12% and up to 20% surface quartzite. <b>KAH</b> Fans with slopes of 4-12%, eroded creeks and up to 20% surface quartzite. Main soils: <u>calcareous clay loam</u> - <b>A6</b> (E) and <u>gradational clay loam</u> - <b>C3</b> (C), with <u>hard gradational loam</u> - <b>C4</b> (L), red <u>cracking clay</u> - <b>E2</b> (L), <u>loam over red clay</u> - <b>D2</b> (L), <u>loam over dispersive red clay</u> - <b>D3</b> (L), <u>calcareous loam</u> - <b>A4a</b> (M) and <u>stony alluvial soil</u> - <b>M3</b> (M). The land has generally good agricultural potential, with the minor to moderate limitations of boron toxicity (lower lying areas and E2 cracking clays), and poor soil structure (D3 soils) restricted in occurrence. Erosion control measures are required over much of the area, and implement abrasion by the locally extensive quartzite stone cover is significant.
UIf	0.7	Low sand rises with 30-60% land surface coverage, deposited on gently inclined (2-4% slope) outwash fans. Main soils: <u>deep sand</u> - <b>H2</b> (E) on the rises and <u>calcareous clay loam</u> - <b>A6</b> (C) to <u>rubbly calcareous loam</u> - <b>A4b</b> (C) in the swales. The land is a complex of light, infertile and erosion prone sand rises and heavier potentially more productive swales.

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

(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:****A4a** Calcareous loam (Regolithic, Hypercalcic / Supracalcic Calcarosol)

Calcareous sandy loam to sandy clay loam, more clayey and calcareous (often rubbly) with depth, grading to clayey alluvium.

**A4b** Rubbly calcareous loam (Regolithic, Supracalcic / Lithocalcic Calcarosol)

Calcareous sandy loam to clay loam, more clayey and calcareous with depth overlying rubbly Class III B or III C carbonate at about 55 cm, grading to Tertiary sediments.

**A6** Calcareous clay loam (Pedal, Hypercalcic Calcarosol)

Calcareous clay loam to clay, grading to a well structured red brown very highly calcareous clay over soft Class I carbonate at about 55 cm, overlying clayey alluvium.

**C3** Gradational clay loam (Hypercalcic / Calcic, Red Dermosol)

Friable silty loam to light clay grading to a well structured medium to heavy clay with soft Class I carbonate from about 50 cm, overlying clayey alluvium.

**C4** Hard gradational loam (Hypercalcic, Red Dermosol)

Thin hard loam grading to a hard clay loam over a coarsely structured red clay, calcareous within 30 cm, grading to clayey alluvium.



- D2** Loam over red clay (Calcic / Hypercalcic, Red Chromosol)  
Hard setting sandy loam to clay loam, abruptly overlying a red well structured clay with soft Class I carbonate from 65 cm, grading to clayey alluvium
- D3** Loam over dispersive red clay (Calcic / Hypercalcic, Red Sodosol)  
Hard setting sandy loam to clay loam, sharply overlying a red coarsely structured and dispersive clay with soft Class I carbonate from 65 cm, grading to clayey alluvium.
- E2** Red cracking clay (Epipedal, Red Vertosol)  
Red brown calcareous cracking clay with a well structured surface, becoming coarsely structured and more highly calcareous with depth, with soft Class I carbonate from 60 cm, overlying a heavy red coarsely structured clay.
- H2** Deep sand (Calcic Calcarosol)  
Very thick reddish calcareous sand overlying a calcareous red clayey sand.
- M3** Stony alluvial soil (Basic, Fluvic, Clastic, Rudosol)  
Thick very stony sandy loam overlying variable gravelly and stony alluvial sediments.

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

