BLT   Blanchetown Land System

(Based on the description by Potter, Wetherby and Chittleborough (1973) in "A Description of the Land in County Albert, County Alfred and Part of County Eyre, South Australia". Dept. of Agric. S.A. Soil Cons. Branch LD1).

Stony plains scattered either side of the River Murray from Purnong to Morgan

Area: 664.8 km^2

Annual rainfall: 240 – 320 mm average

Geology: The land is underlain by hard sheet calcrete, probably Ripon. There are minor areas of rubbly calcrete and some spreads of Molineaux Sand. Underlying the calcrete is Blanchetown Clay. This is occasionally exposed in solution holes where the entire thickness of calcrete has been dissolved. Gypsum deposits may occur adjacent to solution holes.

Topography: The System is a flat plain with occasional low rises. The only other topographic features are low sandhills and solution (sink) holes varying in diameter from a few metres to a kilometre.

Elevation: 33 - 40 m

Relief: 2 - 3 m, although sink holes may be up to 10 m deep

Soils: The predominant soils are shallow calcareous sandy loams over calcrete. Deeper calcareous sandy loams and deep siliceous sands are minor overall.

                      <u>Main soil</u>
                      B2   Calcareous sandy loam over sheet calcrete (flats and depressions)

                      <u>Minor soils</u>
                      A4   Rubbly calcareous sandy loam (rises)
                      A5   Calcareous sandy loam (depressions)
                      H2   Deep sand (sandhills)

Main features: The Blanchetown Land System is a flat calcrete plain with shallow stony soils which are mostly non arable.

Soil Landscape Unit summary: 7 Soil Landscape Units (SLUs) mapped in the Blanchetown Land System:

SLU	% of area	Main features #
QHA QHB QHE	85.3 7.1 3.1	Flat plains and low rises formed on sheet Ripon Calcrete. There is extensive surface stone, and minor low sandy rises. The conspicuous features of these landscape units are i) the very low density of tree cover and ii) the characteristic solution holes that dot the land surface. Where these are more than about 500 m in diameter they are mapped as QHE. Gypsum deposits sometimes occur on the edges of some of these depressions. **QHA** Flat plains **QHB** Gently inclined low escarpment slopes **QHE** Depressions (sinkholes) up to 10 m below the surrounding plains Typical soils: <u>calcareous sandy loam over sheet calcrete</u> - **B2** (D) with <u>calcareous sandy loam</u> - **A5** (M) in depressions. These soils are shallow and stony with impenetrable calcrete at shallow depth and are generally non arable. Most of the land is used for light grazing of grasses and native shrubs.
QMB	3.0	Undulating low rises formed on sheet and rubbly calcrete, with variable surface stone. Typical soils: <u>calcareous sandy loam over sheet calcrete</u> - **B2** (E) and <u>rubbly calcareous loam</u> - **A4** (E). These rises have somewhat deeper and less stony soils than **QH_**, and are semi arable although low rainfall and water holding capacity are major factors limiting productivity.
QOA	1.0	Stony flats formed on sheet calcrete overlain by 10-30% low sand ridges. Typical soils: <u>calcareous sandy loam over sheet calcrete</u> - **B2** (V) on stony flats and <u>deep sand</u> - **H2** (L-C) on sand ridges. The flats are non arable due to shallow stony soils (as for **QHA**). The sandhills have deeper soils but they are infertile and prone to wind erosion. Although marginally arable, their occurrence in a landscape of mainly non arable soils makes them effectively non arable.
U-D UUK	0.1 0.4	Low parallel sand ridges overlying the calcrete flats. **U-D** Individual low sand ridges **UUK** Low sand spreads Typical soils: <u>deep sand</u> - **H2** (D-V) with <u>calcareous sandy loam over sheet calcrete</u> - **B2** (C-M) on flats. These sandy soils are infertile and prone to wind erosion. Water repellence may be a problem in some seasons. Productive potential is low, especially in combination with the stony flats.

PROPORTION codes assigned to soils within Soil Landscape Units (SLU):
    (D)   Dominant in extent (>90% of SLU)
    (V)   Very extensive in extent (60–90% of SLU)
    (E)   Extensive in extent (30–60% of SLU)
    (C)   Common in extent (20–30% of SLU)
    (L)   Limited in extent (10–20% of SLU)
    (M)   Minor in extent (<10% of SLU)

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Detailed soil profile descriptions:

Flats and depressions

B2   <u>Calcareous sandy loam over sheet calcrete (Petrocalcic, Supracalcic / Lithocalcic Calcarosol)</u>
5 - 20 cm calcareous sandy loam to loam with variable calcrete rubble over sheet calcrete at 25 cm. Very extensive throughout.

Rises

A4   <u>Rubbly calcareous sandy loam (Regolithic, Supracalcic / Lithocalcic Calcarosol)</u>
10 - 20 cm calcareous sandy loam becoming more calcareous and rubbly with depth.

Depressions

A5   <u>Calcareous sandy loam (Regolithic, Hypercalcic Calcarosol)</u>
15 - 25 cm calcareous sandy loam to loam becoming more calcareous and rubbly with depth, grading to Blanchetown Clay below 100 cm.

Sandhills

H2   <u>Deep sand (Calcareous, Petrocalcic, Red-Orthic Tenosol)</u>
Very thick loose reddish brown sand, becoming slightly clayey and weakly calcareous with depth, overlying calcrete at variable depth, often shallower than 150 cm.

Further information: DEWNR Soil and Land Program