

MNL Minlaton Land System

A small land system occupying an undulating valley. Landscapes consist of low rises, low lying level plains, and salinised depressions.

Area: 12.5 km²

Landscape: A small land system occupying an undulating valley. Landscapes consist of low rises, low lying level plains, and salinised depressions. The system is mostly underlain at depth by Permian age sediments associated with glacial activity (Crawford, A.R., 1965). However, almost the entire system consists of shallow to very shallow soils underlain by calcrete. The only significant areas without calcrete are the wettest parts of the saline depressions, where the calcrete has been 'dissolved', and soils overlie clayey to clay loamy sediments. It is likely that most of the area was once covered by 'sand over clay' dunes, and that the calcrete present today is remnant dune core material.

Drainage in the low lying parts of this system is relatively poor, however, there is a very gentle slope northward. At the northern end of the system, water can enter a drainage depression which then passes through a gap to the west.

Annual rainfall: 415 – 435 mm average

Main soils: **B3** *shallow loam on calcrete*

Minor soils: **B2** *shallow calcareous loam on calcrete*
N2 *saline soil*

Main features: The system is mostly semi arable to non-arable areas. There are a number of areas with very shallow stony soils that are unable to be cropped. Most other areas have shallow stony soils and are only marginal for cropping. The saline depressions are too salty to be cropped. The low lying areas to the east and south of Minlaton are also prone to flooding. The presence of calcrete at shallow depth, and the hard carbonate rubble many soils contain, limit profile water holding capacity and hence productive potential. Surface stones also interfere with many farming practices.

Most soils have hardsetting surfaces and hard subsoils which are often dispersive. Hard dispersive soils limit potential root exploration, and increase runoff. Soils on slopes have some potential for water erosion.

The marginally saline flat to the east of Minlaton is home to a rare and isolated variety of red gum. This population is at risk from increasing salinity levels and flooding in this area.



Soil Landscape Unit summary: Minlaton Land System (MNL)

SLU	% of area	Main features
QnA QnB	3.5 2.3	Land dominated by shallow soil on calcrete. Main soils: <i>shallow loam on calcrete</i> B3 and extensive areas of <i>shallow calcareous loam on calcrete</i> B2 . QnA – low stony rises (slopes 0-1%). QnB – low stony rises (slopes 0-2.5%).
RCA RCL RCO RCT	43.4 4.1 39.7 2.6	Land dominated by shallow soil on calcrete. Main soils: <i>shallow loam on calcrete</i> B3 and limited to common areas of <i>shallow calcareous loam on calcrete</i> B2 . Minor <i>shallow loam over clay on calcrete</i> B6 may occur in low lying areas. RCA – low stony rises (slopes 0-1.5%). RCL – stony slopes (slopes 0.5-3%). RCO – low lying stony plains/drainage area (slopes <1%). RCT – marginally saline stony depression (slopes <1%).
ZA-	4.4	Salinised land. Main soils: <i>saline soil</i> N2 : saline variants of shallow soils on calcrete (soils B3 and B6) in drier saline areas, and saline variants of deeper soil (probably <i>loam over clay</i> D3) in wetter saline areas. ZA- – saline land: prone to flooding (5-4s).

Detailed soil profile descriptions:**Main soils:**

B3 *shallow loam on calcrete* [Petrocalcic Tenosol]
Red to red brown loamy soil, with calcrete at very shallow to shallow depth. Subsoils are loams or light clay loams. Surfaces are hardsetting, and subsoils can be dispersive. Profiles often contain abundant hard carbonate rubble. These soils are often very shallow and non-arable. Found in flats, depressions, and on low rises.

Minor soils:

B2 *shallow calcareous loam on calcrete* [Petrocalcic Calcarosol]
Grey brown to red brown moderately calcareous loamy soil, with calcrete at very shallow to shallow depth. Subsoils are loams or light clay loams. Surfaces are hardsetting, and subsoils can be dispersive. Profiles often contain abundant hard carbonate rubble. These soils are often very shallow and non-arable. Usually found on low rises.

N2 *saline soil* [Salic-Hypersalic Hydrosol]
Saline variants of several soils: **B3** (*shallow loam on calcrete*) and **B6** (*shallow loam over clay on calcrete*) soils in the drier saline areas, and **D3** soils (*loam over clay*) in the wetter saline areas.

References: Crawford, A.R. (1965). 'The Geology of Yorke Peninsula'. *Bull. geol. Surv. S. Aust.*, 39.

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

