

TIC Tickera Land System

Mostly somewhat elevated plains and rises

Area: 153.3 km²

Landscape: Somewhat elevated plains, rises and slopes. Coastal slopes and gullies occur along the coastline north and south of the Tickera township. The system is underlain by bedrock at depth, which only outcrops along the coast. Red blocky clay (Hindmarsh Clay) overlies the bedrock. The dominant sediments in which soils have formed are calcreted calcareous sediments (Bakara-Ripon Calcrete and ancient Bridgewater Formation), and younger calcareous loess (Woorinen Formation) – often including hard carbonate rubble. These wind-blown deposits overlie the older Hindmarsh Clay. The Hindmarsh Clay often occurs within 100 cm of the land surface, and in many slight lows it is the material in which the soil has formed. The youngest deposits are minor areas of mallee sand dunes and sandy rises (Molineaux Sand). Reworking of the Woorinen Formation material has played a part in the formation of some of these dunes.

Annual rainfall: 335 - 375 mm average

Main soils: **A4-A5** (*rubbly*) *calcareous loams*
B2 *shallow calcareous loam on calcrete*

Minor soils: **A6** *gradational calcareous clay loam*
H2 *calcareous siliceous sand*
B3 *shallow sandy loam on calcrete*

Main features: The land system is mostly arable. The main soils are calcareous loams over clay loam or loam, often with hard carbonate rubble, and shallow calcareous loams on calcrete. Calcareous soils limit the availability of certain nutrients: deficiencies of the major nutrient phosphorus and the trace element zinc are common, while deficiencies of the trace elements manganese and iron are possible. Temporary trace element deficiencies can occur in cold and wet conditions with susceptible crops. Soil with hard carbonate rubble and shallow soil on calcrete have reduced effective waterholding capacities, and hence reduced production potentials. Also surface rubble interferes with some farming operations. Toxic accumulations of boron and sodium occur in many lower subsoils or subsoils, especially if a clayey substrate or subsoil which restricts drainage is present. Many soils have a slight build up of salinity in their lower subsoils. The sandy soils on dunes and sandy rises need careful management due to their low fertility and potential for wind erosion. The powdery calcareous loamy surfaces present in most other soils have significant potential for wind erosion.



Soil Landscape Unit summary: Tickera Land System (TIC)

SLU	% of area	Main features
QBA QBAu QBB QBLg QBMg	27.2 7.6 1.6 0.8 0.1	Plains and slopes dominated by shallow calcreted soils and deeper soils formed in calcareous loess. Main soils: <i>shallow calcareous loam on calcrete</i> B2 , and extensive areas of <i>rubbly calcareous loam</i> A4-A5 . Minor areas of <i>gradational calcareous clay loam</i> A6 occur in slight lows. QBA – gently undulating to level plains and slight slopes (slopes 0-1.5%). QBAu – gently undulating plains with minor areas of low mallee sand dunes and sandy rises (slopes 0-1%). QBB – slopes (slopes 1-3%). QBLg – slopes with some saline seepage and minor waterways (slopes 1-3%). QBMg – slopes with some saline seepage (slopes 2.5-10%).
QCA	2.5	Plains dominated by shallow calcreted soils and deeper soils formed in calcareous loess. Main soils: <i>shallow calcareous loam on calcrete</i> B2 , and extensive areas of <i>rubbly calcareous loam</i> A4-A5 . Also with limited to common areas of <i>shallow sandy loam on calcrete</i> B3 . Minor areas of <i>gradational calcareous clay loam</i> A6 occur in slight lows. QCA – gently undulating plains and slight slopes (slopes 0-1.5%).
QJA	0.5	Plains dominated by shallow calcreted soils. Main soils: <i>shallow calcareous loam on calcrete</i> B2 . With limited to common areas of <i>rubbly calcareous loam</i> A5-A4 , and <i>gradational calcareous clay loam</i> A6 . QJA – gently undulating plains and slight slopes (slopes 0-1.5%).
QKA QKB	1.2 0.4	Plains and slopes dominated by shallow calcreted soils. Main soils: <i>shallow calcareous loam on calcrete</i> B2 . With limited to common areas of <i>calcareous loam</i> A4-A5 . QKA – low lying plain: a former drainage depression (slopes <1%). QKB – slopes (slopes 1-3%).
QOAg	1.2	Plains dominated by shallow calcreted soils. Main soils: <i>shallow calcareous loam on calcrete</i> B2 . With limited to common areas of <i>rubbly calcareous loam</i> A4-A5 , and <i>calcareous siliceous sand</i> H2 on low sand dunes and sandy rises. Minor areas of <i>gradational calcareous clay loam</i> A6 occur in slight lows. QOAg – gently undulating near-coastal plains, with limited to common areas of low dunes or sandy rises, and minor waterways (slopes 0-1.5%).
QRA	0.4	<i>Shallow calcareous loam on calcrete</i> B2 . With limited to common areas of <i>shallow sandy loam on calcrete</i> B3 . QRA – level to gently undulating plain (slopes 0-1%).
SbA	6.8	Plains dominated by soils formed in rubbly calcareous loess. Main soils: <i>rubbly calcareous loam</i> A4-A5 . With limited to common areas of <i>gradational calcareous clay loam</i> A6 . SbA – gently undulating plains (slopes 0-1.5%).
SMA SMB SMZ	12.5 2.7 1.1	Plains, slopes and rises dominated by soils formed in calcareous loess. Main soils: <i>calcareous loam</i> A4-A5 . SMA – gently undulating plains (slopes 0-1%). SMB – slopes (slopes 1-3%). SMZ – rise surface and adjacent slight slopes (slopes 0-2%).
SRLg	0.9	Slopes dominated by soils formed in calcareous loess. Main soils: <i>calcareous loam</i> A4-A5 . With limited to common areas of <i>shallow calcareous loam on calcrete</i> B2 , and <i>gradational calcareous clay loam</i> A6 . SRLg – near-coastal slopes with minor waterways (slopes 1-3%).
SVA SVB SVCg SVI SVZ	20.4 5.9 2.6 1.0 0.7	Slopes dominated by soils formed in calcareous loess. Main soils: <i>calcareous loam</i> A4-A5 . With limited to common areas of <i>shallow calcareous loam on calcrete</i> B2 . Minor areas of <i>gradational calcareous clay loam</i> A6 occur in slight lows, especially in the SVA land unit. SVA – gently undulating plains (slopes 0-1.5%). SVB – slopes (slopes 1-3%). SVCg – near-coastal slopes with minor waterways (slopes 2.5-10%).



		SVI – relatively steep coastal slopes with 10-20% gullies (slopes 10-30%). SVZ – rise surface (slopes 0-1.5%).
U-D	0.1	Mallee sand dunes. Main soils: <i>calcareous siliceous sand</i> H2 . U-D – low mallee sand dune.
UIc UIf UIJ	0.1 0.1 0.1	Dunefields with >30% mallee sand dunes Dune soils: <i>calcareous siliceous sand</i> H2 . Swale soils: <i>calcareous loam</i> A4-A5 . UIc – dunefields with 60-90% low dunes overlying sloping land (swale slopes 1-3.5%). UIf – dunefields with 30-60% low dunes overlying sloping land (swale slopes 1-3.5%). UIJ – dunefields with 30-60% low dunes overlying gently undulating plains (swale slopes 0-1.5%).
UUG UUJ	0.2 1.0	Dunefields with >30% mallee sand dunes Dune soils: <i>calcareous siliceous sand</i> H2 . Swale soils: <i>shallow calcareous loam on calcrete</i> B2 . With minor to common areas of <i>rubbly calcareous loam</i> A4-A5 . UUG – dunefields with 60-90% low dunes overlying gently undulating to level plains (swale slopes 0-1%). UUJ – dunefields with 30-60% low dunes overlying gently undulating to level plains (swale slopes 0-1%).
WFE1	0.1	Recently deposited coastal sand. Main soils: <i>carbonate sand</i> H1 and/or <i>calcareous siliceous sand</i> H2 . WFE1 – non arable low jumbled dunes (5a).

Detailed soil profile descriptions:

Main soils:

A4-A5 (*rubbly*) *calcareous loams* [Regolithic Hypercalcic-Lithocalcic Calcarosol]

Grey brown calcareous loam and sandy loam, or occasionally loamy sand, grading to clay loamy and loamy subsoil with abundant fine carbonate. These profiles often contain significant amounts of hard carbonate rubble, and are often very rubbly. Profiles can be underlain by calcrete at moderate depth. Some are underlain by clayey sediments within 120 cm of the surface (soil **A5**). Found on undulating land, slopes, and rises; with sandy variants found on some lower dune slopes, sandy rises, and in some swales.

B2 *shallow calcareous loam on calcrete* [Petrocalcic Calcarosol]

Grey brown calcareous loam and sandy loam, overlying calcrete at shallow depth. Subsoils can be a heavily textured as clay loam. Surface soils can be sandy when adjacent to sand dunes. Found on level and gently undulating land, and on some slopes.

Minor soils:

A6 *gradational calcareous clay loam* [Pedal Hypercalcic-Supracalcic Calcarosol]

Grey brown to red brown calcareous loams and clay loams grading to brown or reddish clay with abundant fine carbonate, and sometimes with some hard carbonate rubble. Typically found in slight lows.

H2 *calcareous siliceous sand* [Arenaceous Hypercalcic-Supracalcic Calcarosol]

Deep to moderate depth light brown calcareous siliceous sand, sometimes with hard carbonate rubble in the subsoil. Found on longitudinal mallee sand dunes and sandy rises.

B3 *shallow sandy loam on calcrete* [Petrocalcic Tenosol]

A brown variant of soil **B2** with non calcareous surface soil.

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

