

# YAR Yararoo Land System

Escarpment slopes, gullies and rises separating the Gulf Plains from the Yorke Peninsula 'plateau'. This area is a stony southerly extension of the Hummock Range geology, and forms part of the Ardrossan-Kulpara fault scarp.

**Area:** 44.3 km<sup>2</sup>

**Landscape:** Escarpment slopes, gullies and rises separating the St Vincent Gulf Plains from the Yorke Peninsula 'plateau'. This is a stony southerly extension of the Hummock Range geology. The system is mostly underlain by quartzitic bedrock. In most areas red heavy to medium clay overlies the bedrock – from which it is derived. Wind-deposited calcareous loess (Woorinen Formation) overlies the older sediments in places, usually as a relatively thin layer less than one metre thick, and often containing hard carbonate rubble. Accessions of calcareous dust have affected all soils: many soils formed on weathered rock are calcareous throughout, often with significant amounts of hard carbonate rubble, and with abundant fine carbonate inhabiting saprolitic layers and rock fissures. Soils are either formed in heavy red clay, silty weathered rock, calcareous loess, or directly overlying hard rock.

Non arable deep gullies with moderately steep to steep slopes dominate this system. Arable land occurs on crests, upper slopes, and some lower slopes and rises. Drainage is toward the east and southeast and the Gulf Plains adjacent to the head of St Vincent Gulf.

**Annual rainfall:** 350 - 470 mm average

**Main soils:** **D7-C2** *loam to clay loam over red clay on rock*  
**A2** *calcareous loam on rock*

**Minor soils:** **A5** *rubbly calcareous loam*  
**L1** *shallow soil on rock*  
**D3-C4** *loam to clay loam over red clay.*  
**A6** *gradational calcareous clay loam*  
**B2** *shallow calcareous loam on calcrete*

**Main features:** The land system is mostly non arable – with most arable areas situated in the south and central parts of the system. The most common soils are: clay loamy to loamy topsoils overlying reddish clayey subsoils overlying weathered rock, and calcareous loams and clay loams grading to weathered rock. Arable land is used for grazing and some rotational cropping. The main limitations include water erosion potential, shallow and stony soils limiting waterholding capacity and hence productive potential, boron and sodium accumulations in clayey subsoils, fine carbonate and alkaline soil conditions limiting the availability of certain nutrients especially in those soils which have the highest surface soil fine carbonate contents. Careful management is needed to maintain good surface condition on the numerous soils with clay loamy surfaces. Most non arable gullies and steeper slopes have long been denuded of native perennial vegetation.



**Soil Landscape Unit summary:** Yararoo Land System (YAR)

SLU	% of area	Main features
ATB ATI	0.1 38.4	Land dominated by shallow stony soils. Main soils: <i>clay loam to loam over red clay on rock C2-D7</i> , with <i>calcareous loam on rock A2</i> and <i>shallow soil on rock L1</i> . <b>ATB</b> – non arable slopes (relief <30m, slopes 10-30%). <b>ATI</b> – non arable gullies with moderately to very steep slopes (relief >30m, slopes mostly 10-30%, but up to 100%, with eroded watercourses).
AUI	8.6	Land dominated by shallow stony soils. Main soils: <i>shallow calcareous loam on rock A2</i> , with <i>loam to clay loam over red clay on rock D7-C2</i> and <i>very shallow soil on rock L1</i> . <b>AUI</b> – non arable gullies with moderately steep to very steep slopes (relief >30m, slopes mostly 10-30%, but up to 100%, with eroded watercourses).
EAA EAC EAD	0.2 16.3 1.3	Land dominated by soils formed in weathered rock. Main soils: <i>calcareous loam on rock A2</i> , with extensive areas of <i>loam to clay loam over red clay on rock D7-C2</i> grading to <i>loam to clay loam over red clay D3-C4</i> . <b>EAA</b> – lower convex slopes/rise (slopes 0-1.5%). <b>EAC</b> – crests and slopes with some channels and minor gullies (slopes 2-8%). <b>EAD</b> – slopes and crests with minor gullies (slopes 5-20%).
EBC EBD EBH EBI EBZ	4.3 0.4 4.3 4.5 2.9	Land dominated by soils formed in weathered rock. Main soils: <i>loam to clay loam over red clay on rock D7-C2</i> grading to <i>loam to clay loam over red clay D3-C4</i> , with common to extensive areas of <i>calcareous loam on rock A2</i> . <b>EBC</b> – crests and slopes with minor gullies (slopes 2-12%). <b>EBD</b> – slopes with a few channels (slopes 8-20%). <b>EBH</b> – slopes dissected by eroded channels and creeklines (slopes mostly 3-12, but up to 20%). <b>EBI</b> – semi arable slopes and crests with eroded gullies (slopes 5-20%). <b>EBZ</b> – crests with minor gullies (slopes mostly 2-6%, with some up to 12%).
EEC EEZ	1.3 3.1	Land dominated by soils formed in weathered rock. Main soils: <i>rubbly calcareous loam on rock A2</i> grading to <i>rubbly calcareous loam A5</i> and <i>shallow calcareous loam on calcrete B2</i> . <b>EEC</b> – undulating slopes (slopes 2-6%). <b>EEZ</b> – crests/summit surfaces (slopes 0-3.5%).
EFC	1.2	Land dominated by soils formed in weathered rock. Main soils: <i>calcareous loam on rock A2</i> grading to <i>calcareous loam A5</i> , with common to extensive areas of <i>loam to clay loam over red clay on rock D7-C2</i> . <b>EFC</b> – upper slopes and concave drainage area with some drainage lines (slopes 1-4.5%).
EHC	3.4	Land dominated by soils formed in weathered rock. Main soils: <i>calcareous loam on rock A2</i> grading to <i>calcareous loam A5</i> . With minor areas of <i>loam to clay loam over red clay on rock D7-C2</i> . <b>EHC</b> – slopes with drainage lines (slopes 3-8%).
KPC KPH	4.7 3.5	Land dominated by soils formed in clayey outwash sediments. Main soils: <i>calcareous loam A5</i> . With some loose sandy surfaces (spreads of Molineaux Sand). There are minor to common areas of <i>gradational calcareous clay loam A6</i> grading to <i>clay loam over red clay C4</i> – the latter especially in eroded areas adjacent to channels. <b>KPC</b> – slopes with some eroded channels (slopes 3-8%). <b>KPH</b> – slopes dissected by numerous eroded channels (slopes 2-6%).
QRCg	1.6	Land dominated by shallow calcreted soils. Main soils: <i>shallow calcareous loam on calcrete B2</i> , including some <i>shallow sandy loam on calcrete B3</i> . With limited areas of <i>rubbly calcareous loam A5</i> . <b>QRCg</b> – stony slopes with some drainage lows (slopes 3-15%).



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

**D7-C2** *loam to clay loam over red clay on rock* [Sodic-Effervescent Hypercalcic-Lithocalcic Chromosol-Dermosol]  
Red brown medium thickness to thin non-calcareous to slightly calcareous clay loamy to loamy topsoil over red clayey subsoil grading to a clay with abundant fine carbonate. This is underlain by silty clay loams or silty light clays grading to weathered bedrock, at shallow to moderate depth. Texture contrast variants can have moderately calcareous surfaces. Coarse fragments usually occur in the profile and on the soil surface: consolidated rock fragments, usually quartzite, are characteristically present, quartz fragments occur, and hard carbonate fragments are common. Mostly found on moderately steep or steeper slopes – on concave slopes when in association with **A2** soils.

**A2** *calcareous loam on rock* [Paralithic Supracalcic-Lithocalcic Calcarosol]  
Grey brown calcareous loams to clay loams grading to subsoil with abundant fine carbonate and often hard carbonate rubble. The soil grades to a silty clay loamy or light clayey saprolitic layer which grades into bedrock, at shallow to moderate depth. Saprolitic layers are calcareous, and fine carbonate inhabits fissures in hard rock. Found on gentle to moderately steep slopes and summit surfaces. Typically on convex slopes in association with **D7-C2** soils on concave slopes.

**Minor soils:**

**A5** *rubbly calcareous loam* [Regolith Supracalcic-Lithocalcic Calcarosol]  
Grey brown to brown medium thickness calcareous clay loamy or loamy topsoil grading to clay loamy subsoil with abundant fine carbonate. Profiles typically contain significant amounts of carbonate rubble. The majority of these soils are underlain by a clayey substrate within 120 cm of the surface (soil **A5**). Typically found on slight highs on very gentle to gentle slopes.

**L1** *shallow soil on rock* [rocky Tenosol-Rudosol]  
Stony to rocky loams and clay loams, sometimes with red clayey subsoils, overlying hard rock at very shallow to shallow depth. Found on the steepest slopes

**D3-C4** *loam to clay loam over red clay* [Sodic-Effervescent Red Chromosol-Dermosol]  
Red brown medium thickness non-calcareous to slightly calcareous clay loamy to loamy topsoil over red clayey subsoil grading to a clayey lower subsoil with abundant fine carbonate. This is underlain by silty clay loams or silty light clays grading to weathered bedrock or blocky heavy red clay (Hindmarsh Clay). Texture contrast variants can have moderately calcareous surfaces. Typically found in slight lows, drainage depressions, and most gentle slopes.

**A6** *gradational calcareous clay loam* [Pedal Hypercalcic-Supracalcic Calcarosol]  
Medium thickness calcareous brown to red brown clay loamy to loamy topsoil grading to a reddish clayey subsoil with abundant fine carbonate, which is underlain by heavy red clay (outwash clay: Pooraka Formation-Hindmarsh Clay). Most common on the outwash slopes in the north of the system.

**B2** *shallow calcareous loam on calcrete* [Petrocalcic Calcarosol]  
Grey brown to red brown calcareous loams and clay loams overlying calcrete at shallow depth. These may grade to non calcareous types (soil **B3**) in places. Found on slopes and summit surfaces.

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

