

# YAG Yaringa Land System

Rises and slopes with drainage depressions. This largely highland area forms part of the Ardrossan-Kulpara fault scarp.

**Area:** 45.4 km<sup>2</sup>

**Landscape:** Rises and slopes with drainage depressions. The system is mostly underlain by Tertiary age coarse-grained quartz sands and possibly some sandstone. The bedrock below this is most probably mostly Cambrian age Parara Limestone (Crawford, A.R., 1965). Topsoils are mostly loamy sands and sandy loams, and profiles typically contain some fine quartz fragments. A few profiles may be underlain by red clayey sediments. Accessions of wind-deposited carbonate dust have infused into profiles. The majority of profiles are calcareous throughout, and many have subsoil accumulations of hard carbonate fragments. Minor patches of calcrete occur (Bakara Calcrete).

**Annual rainfall:** 345 - 395 mm average

**Main soils:** **D2-G1** *sandy loam to loamy sand over sandy clay loam*  
**A4** *calcareous sandy loam*

**Minor soils:** **C1** *gradational sandy loam to loamy sand*  
**B2** *shallow calcareous loam on calcrete*  
**D3** *sandy loam over red clay*

**Main features:** The land system is mostly arable. The most common soils are uniform to gradational calcareous loamy sands and sandy loams which often have subsoil accumulations of hard carbonate rubble, and weak texture contrast soils, which are often calcareous throughout, with sandy loam to loamy sand topsoils and red sandy clay loam subsoils.

Soils are generally well drained. Although many clay loamy to light clayey subsoils are dispersive, and so soils in low lying areas such as drainage ways and drainage depressions can become waterlogged for relatively short periods. Toxic accumulations of boron in soil profiles are rare, however, toxic levels of sodium may occur in some lower subsoils.

Most topsoils have relatively light surface textures, and so have significant potentials for wind erosion. Evidence of wind erosion occurs along some roadsides as depositions of sand. Water erosion is a potential problem on most slopes, especially given the loose nature of most topsoils and the likelihood of an underlying dispersive subsoil. Water erosion is particularly likely in drainage lows, drainage ways, and drainage depressions, where overland flow of water can concentrate.

Where they occur, calcareous soils restrict 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. This is particularly true for soils with highly calcareous surfaces.



**Soil Landscape Unit summary:** Yaringa Land System (YAG)

SLU	% of area	Main features
EgB EgBw EgC EgZ	8.0 13.2 14.1 6.0	Land dominated by soils formed over quartz-rich Tertiary age sediments. Main soils: often calcareous <i>sandy loam to loamy sand over sandy clay loam</i> <b>D2-G1</b> , and sometimes including some <i>gradational sandy loam to loamy sand</i> <b>C1</b> . With limited to extensive areas of <i>calcareous sandy loam</i> <b>A4</b> . <b>EgB</b> – slopes and rises with drainage lows (slopes 0-5-3%). <b>EgBw</b> – relatively low lying drainage area with slopes, low rises and numerous drainage ways (slopes 0-2%). <b>EgC</b> – slopes with drainage ways/drainage lines/drainage depressions (slopes 1-8%). <b>EgZ</b> – crests (slopes 0-1.5%).
EiA EiB EiC EiZ	10.6 24.9 14.8 0.7	Land dominated by calcareous soils formed over quartz-rich Tertiary age sediments. Main soils: often rubbly <i>calcareous sandy loam</i> <b>A4</b> . With common areas of mostly calcareous <i>sandy loam to loamy sand over sandy clay loam</i> <b>D2-G1</b> . With minor areas of <i>shallow calcareous sandy loam on calcrete</i> <b>B2</b> . <b>EiA</b> – gently undulating, mostly elevated plains, with drainage lows (slopes 0-1.5%). <b>EiB</b> – slopes and some rises with drainage ways/drainage lows (slopes 0-3%). <b>EiC</b> – slopes with some drainage lows and a few drainage ways/drainage lines (slopes 1-8%). <b>EiZ</b> – crests (slopes 0-1.5%).
QLB	2.5	Land dominated by shallow calcareous soils on calcrete. Main soils: <i>shallow calcareous loam on calcrete</i> <b>B2</b> . With limited to common areas of rubbly <i>calcareous loam</i> <b>A4</b> , and minor to limited areas of <i>sandy loam over red clay</i> <b>D3</b> in lows. <b>QLB</b> – rise: slopes and crest (slopes 0.5-2.5%).
SWE SWEg	5.1 0.3	Drainage depressions dominated by soils formed in calcareous loess. Main soils: <i>calcareous loam</i> <b>A4</b> . And <i>sandy loam to loamy sand over sandy clay loam</i> <b>D2-G1</b> , possibly including some <i>sandy loam over red clay</i> <b>D3</b> . <b>SWE</b> – drainage depressions (slopes 0-2.5%). <b>SWEg</b> – drainage depressions with a central eroded drainage line (slopes 0-2%).

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

**D2-G1** *sandy loam to loamy sand over sandy clay loam* [Effervescent-Sodic Red-Brown Chromosol-Sodosol]  
Soft to loose brown medium thickness to thick calcareous to non calcareous sandy loam to loamy sand topsoil overlying red brown, brown or red calcareous to non calcareous sandy clay loam to sandy light clay subsoil which has increasing fine carbonate content with depth. Profiles typically contain some fine quartz fragments. Subsoils are often dispersive. Subsoil accumulations of hard carbonate rubble can occur.

**A4** *calcareous sandy loam* [Regolithic Supracalcic-Lithocalcic Calcarosol]  
Soft to loose brown to grey brown medium thickness to thick highly calcareous sandy loam to loamy sand topsoil grading to very highly calcareous red yellow sandy loam, clay loamy or light clayey subsoil. Clay loamy to light clayey subsoils are typically dispersive and strongly alkaline. Subsoil layers mostly contain accumulations of hard carbonate rubble.

**Minor soils:**

**C1** *gradational sandy loam to loamy sand* [Supracalcic-Lithocalcic Brown Kandosol-Tenosol]  
Deep brown loamy sands. Typically with lower subsoil accumulations of hard carbonate rubble. Profiles contain some fine quartz fragments. Some soil layers may be slightly calcareous, and surfaces may be moderately calcareous.



- B2** *shallow calcareous loam on calcrete* [Petrocalcic Calcarosol]  
Brown calcareous loam or sandy loam overlying calcrete at shallow depth. Fine carbonate content increases with depth, and subsoil accumulations of hard carbonate rubble are common.
- D3** *sandy loam over red clay* [Effervescent-Sodic Red Chromosol-Sodosol]  
Brown, red brown or brown sandy loam topsoil overlying red to red brown clayey subsoil. Topsoils and upper subsoils can be highly calcareous to non calcareous, while below this soil layers are very highly calcareous. Possibly occurring in drainage depressions and in some patches in the south of the system.

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

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

