

HIV Hillview Land System

Elevated plains, rises, and slopes. This system could be considered to form a north-easterly extension of the Yorke Peninsula central highlands zone.

Area: 81.4 km²

Landscape: Elevated plains, rises and slopes, and a relatively low lying area in the south. The system is underlain by bedrock at depth, but this is overlain by red blocky clay (Hindmarsh Clay). The clayey sediments are mostly overlain by calcareous loess (Woorinen Formation), and to a lesser extent, calcreted calcareous sediments (Bakara-Ripon Calcrete and ancient Bridgewater Formation). These wind deposited sediments are often relatively thin: very often less than a metre thick. The calcareous loess often includes hard carbonate rubble. A number of ill-defined drainage ways cross this system, with drainage toward the lower lying Moonta land system in the west. Much modern drainage occurs as subsurface flow. Overland flow is only likely after prolonged heavy rainfall. An isolated mallee sand dune (Molineaux Sand) occurs in the southwest of the system.

Annual rainfall: 360 – 400 mm average

Main soils:

A5-A4	(Rubbly) calcareous loams (around 56% of area: mostly A5 soil)
A6	Gradational calcareous clay loam (around 35% of area)
B2	Shallow calcareous loam on calcrete (around 9% of area)

Main features: The system is mostly arable. The most common soils are moderate depth rubbly calcareous loams. Significant areas of calcareous soils with clayey subsoils occur, especially in the southern part of the system. Toxic accumulations of boron and sodium occur in many subsoils or substrates. Toxic elements especially occur where a clayey subsoil or substrate restricts drainage. Clayey subsoils and substrates also limit the internal drainage of many soils; this can result in waterlogged conditions within soils, especially in lower lying areas. Temporary flooding may even occur in a few low lying patches with clayey subsoils.

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. The powdery calcareous loamy surfaces present in many soils have potential for wind erosion. Some slopes are steep and long enough to cause some concern regarding water erosion, but it is mostly along the sloping ill-defined drainage ways that overland flow of water and subsequent erosion is likely to occur. However, the likelihood of erosion is reduced due to the massive nature and clay loamy textures of most surface soils in these drainage ways. Soils with hard carbonate rubble and/or shallow depth to calcrete have reduced effective water holding capacities, and hence reduced production potentials. Also surface rubble interferes with some farming operations.



Soil Landscape Unit summary: Hillview Land System (HIV)

SLU	% of area	Main features
IHB IHZ	1.4 0.5	Rises and slopes dominated by soils formed in clayey sediments and rubbly calcareous loess. Main soils: <i>gradational calcareous clay loam A6</i> (possibly including some very similar soils with non calcareous surfaces: soil C4), and extensive areas of <i>rubbly calcareous loam A5-A4</i> . IHB – slopes (slopes 1-3%). IHZ – rise surface and slopes (slopes 0-2%).
ITA ITE	25.5 7.4	Plains dominated by soils formed in clayey sediments. Main soils: <i>gradational calcareous clay loam A6</i> (possibly with some very similar soils with non calcareous surfaces: soil C4). With limited to common areas of <i>calcareous loam A5-A4</i> , and <i>shallow calcareous loam on calcrete B2</i> . ITA – elevated gently undulating plain and some rising land (slopes 0-2%). III -defined drainage ways cross this land unit: these have soils which are imperfectly drained and minor areas of temporary flooding can occur. ITE – relatively low lying plain (slopes 0-1%). This land unit has soils which are imperfectly drained and areas of temporary flooding can occur.
QKA	0.4	Plains dominated by shallow calcreted soils. Main soils: <i>shallow calcareous loam on calcrete B2</i> . With limited to common areas of <i>calcareous loam A5-A4</i> . QKA – somewhat elevated gently undulating plain (slopes 0-1.5%).
QeB	1.0	Rises and slopes dominated by calcreted soils. Main soils: <i>shallow calcareous loam on calcrete B2</i> (possibly including some very similar soils with non calcareous surfaces: soil B3). With limited to common areas of <i>calcareous loam A5-A4</i> , and <i>gradational calcareous clay loam A6</i> (possibly including some very similar soils with non calcareous surfaces: soil C4). QeB – rise surface and slopes (slopes 1-3%).
SdA SdB SdZ	28.2 2.8 1.5	Plains, rises, and slopes dominated by soils formed in rubbly calcareous loess. Main soils: <i>rubbly calcareous loam A5-A4</i> . With limited to common areas of <i>gradational calcareous clay loam A6</i> (possibly including some very similar soils with non calcareous surfaces: soil C4), and limited to common areas of <i>shallow calcareous loam on calcrete B2</i> (possibly including some very similar soils with non calcareous surfaces: soil B3). SdA – elevated gently undulating plains, slight slopes, and rising land (slopes 0-1.5%). III -defined drainage depressions, mostly with soils formed in clayey sediments, cross this land unit. These flow toward the lower lying Moonta land system. SdB – slopes (slopes 1-3%). SdZ – rise (slopes 0-2%).
SOA SOK	13.3 1.6	Plains dominated by soils formed in calcareous loess. Main soils: <i>calcareous loam A5-A4</i> . With limited to common areas of <i>gradational calcareous clay loam A6</i> (possibly including some very similar soils with non calcareous surfaces: soil C4). SOA – elevated gently undulating plains (slopes 0-1.5%). SOK – slight slopes (slopes 0-2%).
SPZ	3.6	Rise dominated by soils formed in calcareous loess. Main soils: <i>calcareous loam A5-A4</i> . With limited to common areas of <i>gradational calcareous clay loam A6</i> (possibly including some very similar soils with non calcareous surfaces: soil C4), and limited to common areas of <i>shallow calcareous loam on calcrete B2</i> (possibly including some very similar soils with non calcareous surfaces: soil B3). SPZ – rise (slopes 0-2%).
SRB	12.5	Slopes dominated by soils formed in calcareous loess. Main soils: <i>calcareous loam A5-A4</i> . With limited to common areas of <i>shallow calcareous loam on calcrete B2</i> , and <i>gradational calcareous clay loam A6</i> . SRB – rise (slopes 0-3.5%).
U-D	0.2	Mallee sand dunes. Main soils: <i>calcareous siliceous sand H2</i> . U-D – low mallee sand dune.



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

- A5-A4** *(Rubbly) calcareous loams* [Regolithic Lithocalcic-Supracalcic Calcarosol]
Grey brown to brown calcareous loamy or clay loamy topsoil, grading to clay loamy subsoil with abundant fine carbonate. These profiles often contain significant amounts of hard carbonate rubble, and can be very rubbly. Most profiles are underlain by clayey sediments (Hindmarsh Clay) within 120 cm of the surface (soil **A5**). Often found on slight highs in slightly undulating land.
- A6** *Gradational calcareous clay loam* [Pedal Hypercalcic-Supracalcic Calcarosol]
Grey brown to red brown calcareous clay loams and loams grading to reddish clay with abundant fine carbonate. This is underlain by red blocky clay (Hindmarsh Clay proper). Profiles can contain some hard carbonate rubble. Typically found in slight lows, including ill-defined drainage ways, on slightly undulating land.
- B2** *Shallow calcareous loam on calcrete* [Petrocalcic Calcarosol]
Grey brown to brown calcareous loam or sandy loam, with loamy or clay loamy subsoils, and calcrete at shallow depth. Found on rises, slopes, and plains.

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

