APS Apsley Land System

Area: 75.6 km^2

Annual rainfall: 575 – 635 mm average

Geology: The land system is formed on non-marine deposits of fine to medium clayey sands with ferruginous material of the Pliocene Parilla Sand. This system includes the higher plains to the east of the Naracoorte Range.

Topography: The land system is an undulating higher plain with minor sandy rises and shallow depressions. The depressions occur in the low-lying areas of the landscape, which are subject to inundation as there is limited external surface drainage. Surface drains have been installed to move excess water into larger drains, swamps, lagoons and the Yelloch and Mosquito Creeks.

Elevation: 90 – 110 m

Relief: Max local relief is 10 m

Soils:

Sandy soils (plains and rises)
G3 Thick sand over clay
G4 Sand over poorly structured clay
Loamy soils
F1 Loam over brown or dark clay
F2 Sandy loam over poorly structured brown or dark clay
Shallow soils
B6 Shallow loam over red clay on calcrete
B4 Shallow red loam on limestone
Other soils
N3 Wet soil
M2 Deep clay loam over clay

Main features: The Apsley Land System comprises a complex of arable sandy and sandy loam flats and rises, depressions/swamps with deep clayey soils, rises with minor shallow soils over calcrete and non-arable sandy rises. The sandy rises are prone to water repellence and wind erosion. The Land System is arable but moderate limitations are caused by the poorly structured sub-soil clays (waterlogging). The sandy loam plains and sandy rises are marginal or unsuitable for regular cropping.

Soil Landscape Unit summary: 16 Soil Landscape Units (SLUs) mapped in the Apsley Land System:

SLU	% of area	Main features
HaA HaB	13.4 15.1	Undulating higher plains with less than 10% depressions to gently undulating rises that have both sandy and loamy surfaces. Relief is up to 10 m and the slopes are 1 - 3%. **HaA** Very undulating loamy plains with 10 – 30% sandy soils and 0 - 10% depressions **HaB** Sandy rises with 10 - 30% loamy rises. Main soils: ***Plains and sandy rises:*** thick sand over clay - **G3**, sand over poorly structured clay – **G4**, sandy loam over poorly structured clay -**F2** and loam over brown or dark clay - **F1**. These soils are deep, have moderate to moderately low fertility, moderate to high water holding capacity and are well to imperfectly drained. Water repellence and surface soil

		acidity are a limitation and there is also a slight to moderate limitation to root growth due to the dispersive subsoil clays. ***Depressions:*** sandy loam over poorly structured clay -**F2**, friable gradational deep clay loam - **M2** and wet soil – **N3**. These soils are deep, have moderate fertility, high water holding capacity and are poorly drained. There is a slight limitation to root growth due to the dispersive subsoil clays. ***Stony rises:*** loam over brown or dark clay - **F1** and shallow loam over red-brown clay on calcrete - **B6**. These soils are moderately deep, have moderate to high fertility and water holding capacity. Drainage is imperfect.
HeA	22.8	Level loamy plain with up to 10 % swamps. Main soils: loam over brown or dark clay - **F1**, sandy loam over poorly structured clay - **F2** and friable gradational clay loam - **M2** . These soils are deep with moderate to high fertility and high water holding capacity. The plain soils are slightly imperfectly drained and the swamps are imperfect. There is a slight to moderate limitation to root growth due to the dispersive subsoil clays.
HiB	13.0	Gently undulating loamy rises with 0-10% sandy rises. Relief is up to 10 m and the slopes are 1- 3%. Main soils: loam over brown or dark - **F1** , sandy loam over poorly structured clay - **F2** friable gradational clay loam - **M2** and thick sand over clay - **G3** . The loamy soils are deep, have moderate fertility, high water holding capacity and slightly imperfect drainage. The sandy rise soil is deep, has moderately low fertility, moderate water holding capacity and is well drained. Water repellence and the susceptibility to wind erosion are limitations.
HkA HkB	0.7 12.5	Level plain to gently undulating rises comprising of loamy soils and limited shallow soils. **HkA** Level loamy plain **HkB** Loamy rises with 10 –20 % shallow loamy soils Main soils: Loam over brown or dark clay - **F1**, Sandy loam over poorly structured clay - **F2** , Shallow red loam on limestone - **B4** and Shallow calcareous loam on limestone - **B2** Main soils: moderately deep to deep, have moderate fertility, high water holding capacity and are well drained. Soil acidity is a slight limitation. The shallow soils have high fertility, moderately low water holding capacity and are well drained. Surface rockiness and shallowness of soil may be a limitation.
HmA HmE	3.1 0.2	Level loamy to clay loamy plains with low-lying areas. **HmA** Level plain with less than 10% swamps **HmE** Depression Main soils: sandy loam over poorly structured clay - **F2** , friable gradational clay loam - **M2** and wet soil **- N3**. These soils are deep, have moderate fertility and high water holding capacity. The plains are imperfectly drained and the swamps and depressions poorly drained. There is a slight to high limitation to root growth due to the dispersive subsoil clays.
HxA HxE	1.7 0.7	Level plains with mainly texture contrast soils (grey subsoil) with clayey low lying areas. **HxA** Level plain with less than 10% swamps **HxE** Depression Main soils: sandy loam over poorly structured clay - **F2** , friable gradational clay loam - **M2** and wet soil **- N3**. These soils are deep, have moderate fertility and high water holding capacity. The plains are imperfectly drained and the swamps and depressions poorly to very poorly drained. There is a moderate to high limitation to root growth due to the dispersive subsoil clays.
HyA	14.2	Level plain with mainly texture contrast soils (grey subsoil) and 0-10% depressions. Main soils: sandy loam over poorly structured clay - **F2** , loam over brown or dark clay - **F1** and friable gradational clay loam - **M2** . The soils are deep, have moderate fertility and high water holding capacity. The plains are imperfectly drained and the depressions poorly drained. There is a moderate to high limitation to root growth due to the dispersive subsoil clays.
XXB	0.5	Eroded watercourses and drainage depressions that lead into the creek systems and

XXT	0.1	swamps. **XXB** Drainage depressions leading into Mosquito Creek **XXT** Drainage depression into swamp Main soils: thick sand over clay - **G3**, sandy loam over poorly structured clay - **F2**, sand over poorly structured clay – **G4** and friable gradational clay loam - **M2** . The soils are deep, have moderate fertility and high water holding capacity. Drainage is imperfect to poor. This land is not suitable for agriculture production.
XaK	0.1	Yelloch Creek. The soils within the creek system vary however the main soils are: wet soil - **N3** and thick sand over clay - **G3**. These soils are deep, have moderate fertility, high water holding capacity and are imperfectly to poorly drained. The Yelloch Creek in some areas is permanently filled. This landscape unit is not suitable for agricultural production.
Xq-	1.3	Fresh swamps, at least seasonally inundated. Main soils: wet soil - **N3**. These soils are deep with moderately low fertility and high water holding capacity. Drainage is poor to very poor. There is a high limitation for root growth due to the dispersive subsoil clays. The swamps are underwater for greater than 3 months.
XuC	0.6	Non-saline wet swamps, of which one swamp is 'The Sheepwash'. Main soils: wet soil - **N3**. These soils are deep, have moderately low fertility and high waterholding capacity. Drainage is very poor. There is a slight limitation for root growth due to the dispersive subsoil clays. The swamps are underwater for up to 3 months of the year.

Detailed soil profile descriptions:

B4 Red sandy loam over calcrete (Petrocalcic, Red Dermosol)
Medium thickness red sandy loam grading to friable red clay loam over calcreted calcarenite within 50 cm.

F1 Loam over brown or dark clay (Melanic, Hypercalcic, Black/Brown Chromosol
Medium thickness dark brown sandy loam over a thin to medium sand layer over a structured brown to black clay grading to a brown mottled clay with limestone segregations at depth.

F2 Sandy loam over brown or dark poorly structured clay (Mottled, Mesonatric, Grey/Black Sodosol)
Medium thickness brown sandy loam over a thin to medium thickness pale sand layer over a columnar structured dispersive grey to black clay grading to a brown mottled clay with depth.

G3 Thick sand over clay (Mesotrophic, Brown Chromosol)
Medium thickness organically darkened sand to loamy sand over pale sand directly overlying a structured brown clay which becomes mottled with depth. Possibility of limestone within 100 cm.

G4 Sand over poorly structured clay (Sandy Brown-Red Sodosol-Chromosol)
Topsoil <30 cm over a poorly structured subsoil. Thin sandy texture contrast soil with a sodic /dispersive /poorly structured brown or red clayey subsoil. Can have some ironstone.

M2 Deep friable gradational clay loam (Red-Brown-Grey- Black Dermosol)
Deep well structured red clay loamy soil.

N3 Wet soil - non to moderately saline (Dermosolic, Oxyaquic Hydrosol)
Medium thickness clay overlying dispersive grey clay with increasing pH at depth.

WW Water.

Grouped on landscape position

Sandy soils (plains and rises)

G3 Thick sand over clay (Sandy brown Chromosol-Sodosol))
10 – 30 cm of grey/brown to brown sand to loamy sand with a pale A2 horizon, overlying a brown sandy medium clay with blocky structure grading to a yellowish sandy medium clay with red mottles. Minor calcareous material found at depth.

G4 Sand over poorly structured clay (Sandy brown Sodosol)

Loamy soils

F1 Loam over brown or dark clay (Brown-Dark Chromosol-Sodososl)
Dark brown sandy loam to loam (>30 cm) with a brown loamy sand A2 soil horizon overlying a yellowish brown polyhedral to blocky structured medium clay grading to yellowish brown medium clay with the presence of low % carbonates at depth.

F2 Sandy loam over poorly structured brown or dark clay (Brown-Dark Sodosol)
Dark brown sandy loam to sandy clay loam with a loamy sand to sandy loam brown A2 horizon, overlying a greyish brown mottled columnar medium clay grading to a blocky structured yellowish brown mottled fine sandy medium clay.

F2 Sandy loam over poorly structured brown or dark clay (Ferric, Brown Sodosol)
Dark brown sandy loam to sandy clay loam with a loamy sand to sandy loam brown A2 horizon with up to 50% ironstone, overlying a greyish brown mottled columnar medium clay grading to a blocky structured yellowish brown mottled fine sandy medium clay.

Shallow soils

B4 Red loam on limestone (Petrocalcic Dermosol)

B6 Shallow loam over red clay on calcrete (Petrocalcic Chromosol)

Other soils

N3 Wet soil (Sodosolic Hydrosol)

M2 Deep Clay loam over clay (Calcic, Grey Dermosol)
Dark grey clay loam to light clay overlying a blocky structured greyish brown medium clay grading to yellowish brown light-medium clay at depth.

Further information: DEWNR Soil and Land Program