6.27 Whittlesea Land System

There are four separate occurrences of this land system in the east, north and west. Together they cover 74.1 km^2 or 2.9% of the survey area.

This land system contains flood plains and river alluvium though such areas have not been included where they are too small to map.

As the land composing this land system is widespread, it is difficult to describe its different characteristics as they tend to show greater variation than usual. However, the information given will be that which is most representative.



The terraces have gentle slopes, mainly less than 3%. They have been cleared for cultivation, market gardening, and grazing. The only native trees are those along the banks of the waterway; they include Swamp Gum, River Red Gum, Manna Gum, Messmate and Yellow Gum. Wattles are common in the understory.

The soils of the terraces depend on two factors, age and parent materials. The younger soils are undifferentiated and are usually closest to the creek. The older soils show profile development, the type depending on parent material which is alluvium derived from either sedimentary or basaltic rock. Soil on alluvium from sedimentary rocks is usually yellow-brown duplex soil with a deep, very porous, apedal A horizon overlying a deep well-structured B horizon, or a red duplex soil. The red duplex soils usually have a light textured, weakly structured A horizon overlying a deep, well-structured B horizon that is often mottled. Soil on alluvium from basaltic rocks is usually a black clay with uniform texture.

Soils developed on material from sedimentary rocks are usually much ' more erodible than those on basaltic material. Salting is present in this land system but is not common.



Schematic Block Diagram



COMPONENT Proportion %	1 10	2 70	3 10	4 10
CLIMATE Rainfall (av.) Temperature (av.) Seasonal growth limitations	Annual: 680-740 mm (monthly range: October 80 mm – January 50 mm) Annual: 13 ⁰ C (monthly range: February 20 ⁰ C – July 7 ⁰ C) Temperature: less than 10 ⁰ C June - August Precipitation less than potential evapotranspiration December - March			
GEOLOGY Age, rock	Quaternary river deposits			
TOPOGRAPHY Landscape Elevation (range) m Local relief (av.) m Drainage pattern Drainage density km/km ²	Terraces 170-210 15 Dendritic 1.7			
Land form Slope (av.) %, slope shape	Terrace 4 <3; Straight	Terrace 3 <3; Straight	Terrace 2 <3; Straight	Terrace 1 <3; Straight
NATIVE VEGETATION Structure Dominant species	Open woodland E. camaldulensis			
SOIL Parent Material Description	Mottled brown-yellow, red sodic duplex soils	Unconsolidated grave Mottled brown-yellow red duplex soils	el, sand, silt and clay Grey calcareous clayey soils, uniform texture, coarse	Variable. Brown gradational soils. Mottled brown gradational
Factual Key Surface Texture Permeability Depth (av.) m	Dy 3.41 Fine sandy loam Moderate – Low 2.0	Dy 3.41 Clay loam Moderate – Low 2.0	Ug 5.12 Clay loam Low 1.0	Gn 4.34 Clay loam – Loam Low – Moderate 1.0
LAND USE	Grazing, occasional cropping (cereal)			
SOIL DETERIORATION HAZARD				
Critical land features Processes	Low permeability, weak surface structure, hard setting surfaces, high watertable Overland flow, movement of salts, subsurface flow, periodic waterlogging			High watertable, low lying area receiving drainage Periodic waterlogging, overland flow
Forms	Streambank erosion, gully erosion, surface compaction			Streambank erosion, gully erosion