

7.7 Carapooee land system

Gently undulating plains on Tertiary river gravels, sands and clays occur between St Arnaud and Moonambel, usually as small residual hill cappings, but occupying a large area to the north-east of Stuart Mill.

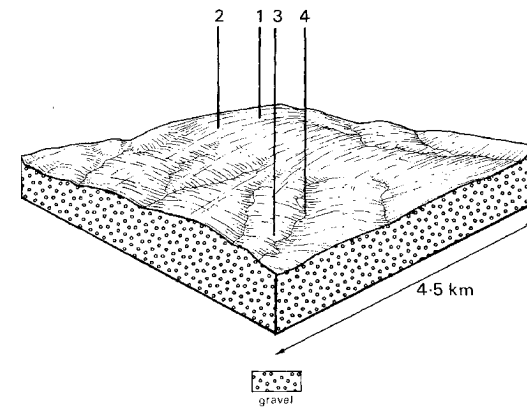
The soils are highly weathered, and are usually underlain by a siliceous hardpan. Most widespread are mottled duplex soils of low fertility with strongly mottled deeper layers. On these soils the characteristic native vegetation is heathy woodland in which *Eucalyptus goniocalyx* is prominent. Small areas with grey clay soils on the higher plains appear to be remnants of an old poorly drained surface.

The heathy plains of low fertility are largely uncleared, although parts are gravel-stripped for road-making material. Elsewhere the land has been cleared and is used mainly for grazing.

Perhaps the most significant land deterioration hazard would be the increased movement of water to groundwaters should native vegetation be extensively removed from the upper slopes. Gullying of drainage lines and sheet erosion following gravel stripping are the more prominent forms of deterioration; however, salinity problems in the lower drainage lines and on the lower slopes are often associated with this land system.



Some areas of woodland have been cleared and replaced with volunteer native pastures.



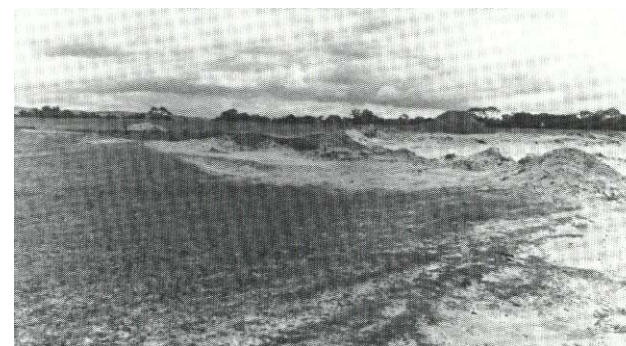
Gravel stripping occurs on the upper slopes.

CARAPOOEE LAND SYSTEM Area 130 sq. km

CLIMATE Rainfall (mm) Temperature (°C) Seasonal growth limitations	Annual, 425~500; lowest January (22), highest July (56) Annual, 14; lowest July (8), highest February (20) Temperature: less than 10°C (av.) June-August Rainfall: less than potential evapotranspiration September-April			
GEOLOGY Age, lithology	Tertiary alluvium, frequently gravelly, Quaternary alluvium			
PHYSIOGRAPHY Elevation range (m) Relative relief (m) Drainage pattern Drainage density (km/ sq. km) Landform	200-260 5 Dendritic 1.1 Undulating plain			
LAND COMPONENT Percentage of land system	1 5%	2 65%	3 20%	4 10%
PHYSIOGRAPHY Position on land form Slope (typical) and range (%) Slope shape	Highest level 1, 0-1 Linear	Crest and upper slope 4, 2-6 Convex	Lower slope 1, 1-3 Linear	Drainage floor 1, 0-1 Concave
NATIVE VEGETATION Structure Dominant species	Woodland <i>E. microcarpa</i>	Heathy low woodland <i>E. goniocalyx</i> <i>E. melliodora</i> <i>E. polyanthemus</i> <i>E. macrorhyncha</i>	Woodland <i>E. microcarpa</i> <i>Casuarina luehmannii</i> <i>E. leucoxyton</i>	Woodland <i>E. camaldulensis</i> <i>E. leucoxyton</i> <i>E. melliodora</i>
SOIL Parent material Description Classification Surface texture Surface consistence (dry) Depth (m) Nutrient status Available soil water capacity Perviousness to water Drainage Exposed stone Dispersibility Slaking tendency	Alluvium Grey uniform clay soils, coarsely structured Ug 5.11-5/2/005 Clay Moderately hard >2 Moderate throughout <i>Low throughout</i> Slow Poorly drained Nil Moderate High	Weathered gravelly alluvium Mottled reddish yellow duplex soils, finely structured, overlying siliceous hardpan Dy 3.41-2/1/030 Loamy sand Soft 0-5-1 Very low throughout <i>Low</i> surface, moderate subsoil Moderate Somewhat excessively drained Nil Low High	Weathered gravelly alluvium Red sodic duplex soils, overlying siliceous hardpan Dr 3.41-3/1/014 Gravelly loam Hard 1-1.5 Low surface, moderate subsoil Low surface, moderate subsoil Moderate Well drained Common High Moderate	Quaternary alluvium Mottled yellowish brown sodic duplex soils, coarsely structured, overlying siliceous hardpan Dy 3.41-2/1/010 Loamy sand Hard 0-5-1 Low surface, moderate subsoil Low surface, moderate subsoil Slow Somewhat poorly drained Nil High Moderate
PRESENT LAND USE	Grazing	Gravel extraction, grazing	Grazing, cropping	Grazing

Land deterioration hazards - Carapooee land system

Disturbance	Component	Affected process and trend	Primary resultant deterioration		Primary resultant off-site process
			Form	Susceptibility	
Altered vegetation -reduced leaf area, rooting depth, perenniality	1	Reduced transpiration	Waterlogging	Moderate	Increased run-off Increased movement of water to groundwaters Increased movement of water to groundwaters
	2	Reduced transpiration, increased leaching	Nutrient decline	Low	
	3	Reduced transpiration, increased leaching	Nutrient decline	Moderate	
Reduced soil surface cover	2	Increased soil detachment	Sheet erosion	Low	Increased flash flows and sediment loads Increased flash flows and sediment loads
	3,4	Increased soil detachment	Sheet erosion	High	
Cultivation, increased trafficking, trampling	1	Increased soil compaction	Structure decline	Moderate	Increased run-off
	2,3,4	Increased soil compaction	Structure decline	Low	Increased run-off
Increased soil disruption and run-on	3	Increased subsoil detachment	Gully erosion	Moderate	Increased flash flows and sediment loads Increased flash flows and sediment loads
	4	Increased subsoil detachment	Gully erosion	High	
Raised water table	3	Increased evaporation	Soil salting	Low	Increased salinity of surface waters
	4	Increased evaporation	Soil salting	Moderate	Increased salinity of surface waters



The hard-setting topsoils and dispersible subsoils are highly susceptible to gully erosion if the catchment is mismanaged.

The sandy topsoils are susceptible to wind erosion once the protective vegetative cover has been disturbed.