

7.11 Glenlogie land system

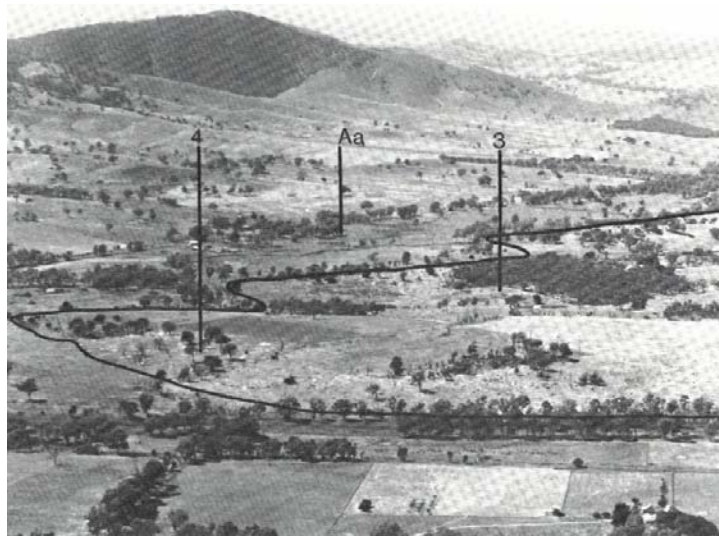
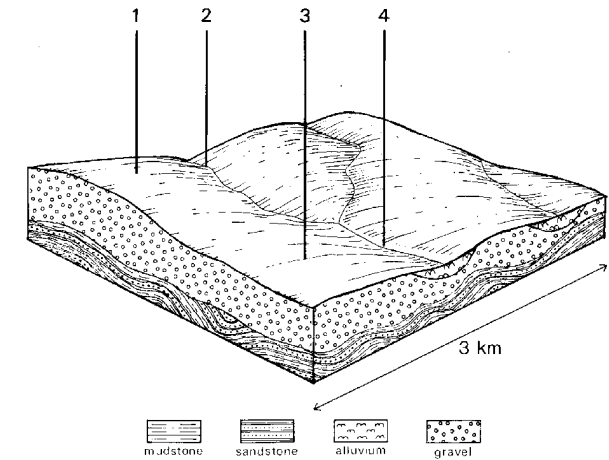
South of Avoca, water-worn quartz gravels deposited in Tertiary times have been dissected to form isolated low hills.

Old soils of low fertility predominate, mainly as mottled duplex soils with finely structured B horizons underlain by siliceous hardpans.

The vegetation is a characteristic straggly, heathy woodland dominated by *Eucalyptus macrorhyncha*. Only small areas have been cleared because of the low soil fertility. However, the gravels are of considerable value as road-making material.

The greatest hazard would appear to be increased soil salting within and beyond the land system should the native trees be removed. Reduced cover on the erodible fine sandy loam topsoils also constitutes a serious hazard of sheet erosion and increased flash flows to lower sites.

At present severe erosion is occurring on gravel-stripped sites and this affects adjacent drainage lines. The slowly permeable siliceous hardpan increases lateral flow into the drainage lines; however, the depth of gullying is limited by the hardpan itself.



The low agricultural potential of this land system is directly related to the extremely low nutrient status of the old river gravel deposits.



The heathy woodland has a characteristic straggly appearance.

GLENLOGIE LAND SYSTEM Area 17 sq. km

CLIMATE Rainfall (mm) Temperature (°C). Seasonal growth limitations	Annual, 625-700; lowest January (32), highest August (70) 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 river gravel and Quaternary alluvium			
PHYSIOGRAPHY Elevation range (m) Relative relief (m) Drainage pattern Drainage density (km/sq. km) Land form	280-360 10 Dendritic 1.0 Undulating plain			
LAND COMPONENT Percentage of land system	1 40%	2 5%	3 45%	4 10%
PHYSIOGRAPHY Position on land form Slope (typical) and range (%) Slope shape	Crest and upper slope 10, 6-12 Convex	Upper drainage floor 3, 2-4 Concave	Lower slope 2, 1-4 Convex	Lower drainage floor 1, 0-3 Concave
NATIVE VEGETATION Structure Dominant species	Heathy woodland <i>E. macrorhyncha</i> <i>E. goniocalyx</i> <i>E. polyanthemos</i>	Tall open forest <i>E. globulus</i> <i>E. rubida</i>	Heathy woodland <i>E. goniocalyx</i> <i>E. macrorhyncha</i> <i>E. rubida</i>	Open forest <i>E. melliodora</i> <i>E. camaldulensis</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	Fluviatile gravelly deposits Mottled reddish yellow duplex soils, finely structured, overlying siliceous hardpan Dy 3.41-3/0/015 Gravelly loam Soft 0.1-0.5 Very low surface, low subsoil, moderate subsoil Low surface, moderate subsoil Slow Somewhat excessively drained Moderate Nil High	Alluvium Stony red duplex soils Dy 3.41-3/1/010 Gravelly loam Slightly hard 0.5-1 Low surface, moderate subsoil Low surface, moderate subsoil Slow Somewhat poorly drained Common Moderate Low	Site 907 Fluviatile gravelly deposits Mottled reddish yellow duplex soils, finely structured, overlying siliceous hardpan Dy 5.41-1/0/030 Fine loamy sand Soft 1-1.5 Very low surface, low subsoil Low surface, moderate subsoil Slow Somewhat excessively drained Slight Nil High	Alluvium Yellow sodic duplex soils Dy 3.32-3/1/005 Fine sandy loam Slightly hard 1-1.5 Low surface, moderate subsoil Low surface, moderate subsoil Slow Poorly drained Nil Moderate Low
PRESENT LAND USE	Gravel extraction	Grazing	Gravel extraction	Grazing

Land deterioration hazards -- Glenlogie 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, perennality Reduced soil surface cover	1,3	Decreased transpiration, increased leaching	Nutrient decline	Low	Movement of water to groundwaters
	1,2,4	Increased soil detachment	Sheet erosion	Moderate	Increased flash flows and sediment loads
	3	Increased soil detachment	Sheet erosion	Low	Increased flash flows and sediment loads
Cultivation, increased trafficking, trampling	1,3	Increased soil compaction	Structure decline	Low	Increased flash flows and sediment loads
	2,4	Increased soil compaction	Structure decline	Moderate	Increased flash flows and sediment loads
Increased soil disruption and run-on	2	Increased subsoil detachment	Gully erosion	Moderate	Increased flash flows and sediment loads
	4	Increased subsoil detachment	Gully erosion	Low	Increased flash flows and sediment loads
Raised water table	2	Increased evaporation	Soil salting	Low	Increased salinity of surface waters
	4	Increased evaporation	Soil salting	Moderate	Increased salinity of surface waters



A rising saline water table, has caused soil salting, and subsequent low pasture production.



The rather straggly appearance of these gravelly areas deteriorates further when they are used as rubbish dumps.