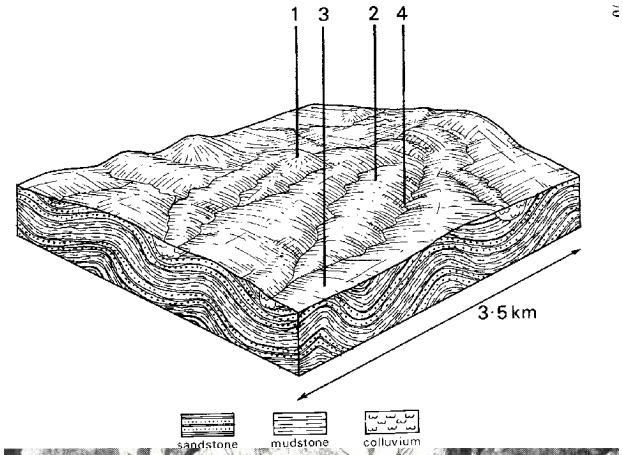
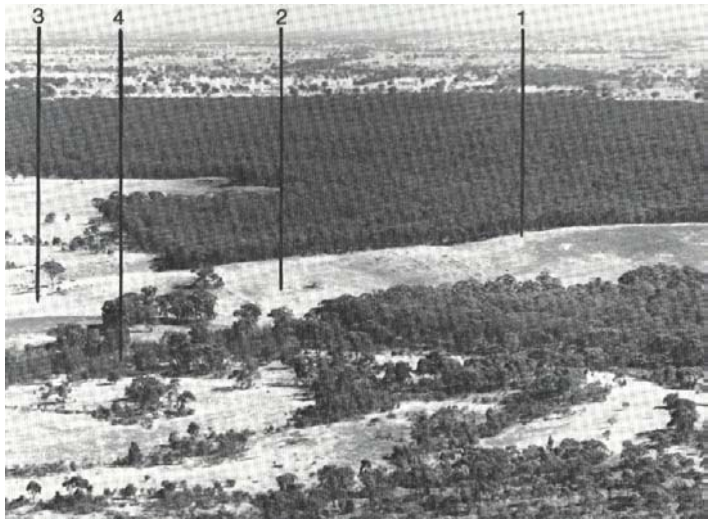
7.12 Glenmona land system

Gentle hills on Ordovician sandstones and mudstones between Amphitheatre and St Arnaud originally supported woodlands in which *Eucalyptus leucoxylon* and *E. microcarpa* predominated on red sodic duplex soils. Some large stands of E *sideroxylon* remain on gentler crests, and these are unique to the Glenmona and Wehla. land systems.

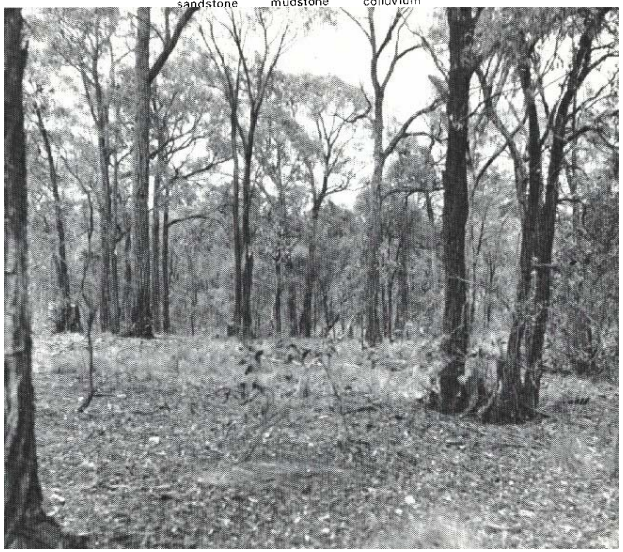
Most of the land has been cleared for grazing and cropping. The uncleared areas generally have a low agricultural potential and the timber is selectively logged.

All soils have hard-setting surfaces and ground cover is usually sparse. Sheet erosion is widespread, particularly on the steeper slopes. Other common forms of deterioration are gully erosion in the drainage lines and soil salting on the lower slopes and in the drainage lines. Increased movement of water and salts to the groundwaters has occurred, with consequent salinity problems lower in the landscape.





Red ironbark (E sideroxylon) forests are a characteristic feature of this land system.



Most of the forest areas have been selectively

GLENMON A LAND SYSTEM Area 192 sq. km

CLIMATE				
Rainfall (mm)	Annual, 500-600; lowest January (24), highest June (83)			
Temperature (^{o}C)	Annual, 14; lowest July (8), highest February (20)			
Seasonal growth limitations	Temperature: less than 10^{0} C (av.) June-August Rainfall: less than potential evapotranspiration September-April			
GEOLOGY				
Age, lithology	Ordovician sandstone and mudstone, Quaternary alluvium			
PHYSIOGRAPHY				
Elevation range (m)	220-260			
Relative relief (m)	10			
Drainage pattern	Dendritic			
Drainage density (km/ sq. km)	1.2			
Land form	Gentle hill			
LAND COMPONENT	1	2	3	4
Percentage of land system	10%	3Wo	55%	5%
PHYSIOGRAPHY				
Position on land form	Relatively steep crest	Gentle crest	Middle slope	Drainage floor
Slope (typical) and range (%)	12, 10-15	8, 6-10	4, 2-5	1, 0-1
Slope shape	Convex	Convex	Linear	Concave
NATIVE VEGETATION	Open forest	Open forest	Open forest	Open forest
Structure				
Dominant species	*E. polyanthemos* *E. macrorhyncha* *E. sideroxylon*	*E. sideroxylon* *E. microcarpa*	*E. leucoxylon* *E. microcarpa*	*E. leucoxylon* *E. melliodora* *E. microcarpa* *E. camaldulensis*
SOIL	Site910	Site 906	Site 911	Site 912
Parent material	Sandstone and mudstone	Sandstone and mudstone	Sandstone and mudstone	Alluvium
Description	Shallow stony red gradational soils	Red sodic duplex soils	Red sodic duplex soils, coarse structure	Yellow sodic duplex soils
Classification	Gn 4.11-3/1/006	Dr 3.41-3/1/014	Dr 2.42-2/1/010	Dy 3.41-2/1/017
Surface texture	Stony loam	Stony loam	Loam	Sandy loam
Surface consistence (dry)	Slightly hard	Moderately hard	Moderately hard	Moderately hard
Depth (m)	0.1-0.5	0-5-1	1-1.5	>2
Nutrient status	Very low throughout	Low surface, moderate subsoil	Moderate throughout	Moderate throughout
Available soil water capacity	Low throughout	Low surface, moderate subsoil	Low surface, moderate subsoil	Low surface, moderate subsoil
Perviousness to water	Moderate-rapid	Moderate	Moderate	Slow-moderate
Drainage	Well drained	Well drained	Well drained	Moderately-well drained
Exposed stone	Slight	Slight	Nil	Nil
Dispersibility	Low	Moderate	Moderate	Low
Slaking tendency	Nil	Low	Moderate	low
PRESENT LAND USE	Forestry, grazing	Forestry, grazing	Grazing, cropping	Grazing

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

Active gully erosion indicates that the area is being managed beyond its capabilities, while overgrazing in forested areas results in extensive sheet erosion.