

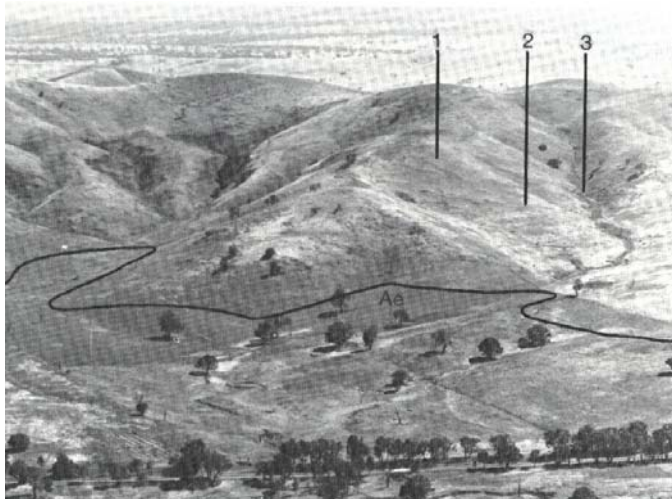
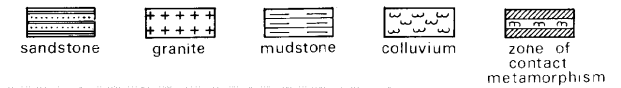
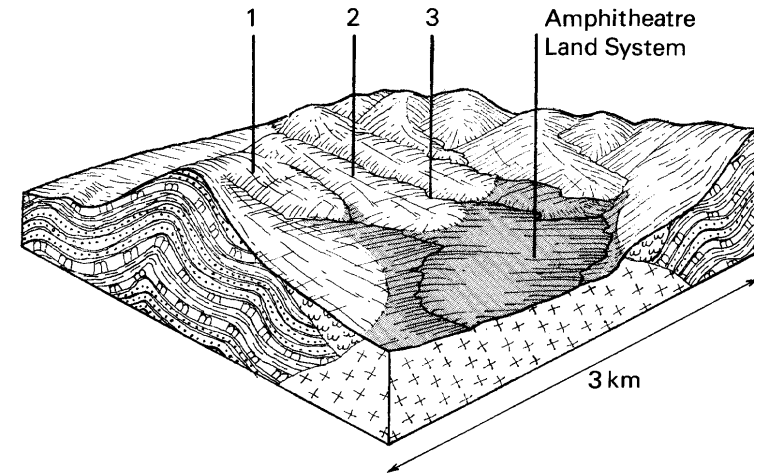
7.22 Sugarloaf land system

Steep metamorphic aureoles south of Amphitheatre have mostly been cleared. Small timber reserves indicate that the original community was an open forest in which *Eucalyptus macrorhyncha* predominated.

The dominant land use is grazing, but productivity has remained low because of difficulty of access for pasture improvement, together with low potential productivity of the shallow stony soils.

The steep slopes are prone to sheet erosion and the drainage lines to gully erosion, while increasing run-off leads to problems of erosion and deposition on adjacent better-quality land. Increased infiltration has mobilised soluble salts in the sedimentary rock, resulting in saltpans and saline seeps on the lower slopes and in the drainage lines. Vegetation and soil stability are adversely affected.

In comparison with the land on metamorphic aureoles in the north, the Sugarloaf land system has a higher rainfall and a longer growing season. Although the sheet erosion hazard may be less, the mobilisation of soluble salts may be considerably higher.



Sugarloaf land system includes some of the steepest cleared land in the catchment.



Annual grasses have low productivity and do not adequately protect the shallow soils against water erosion.

SUGARLOAF LAND SYSTEM Area37sq.km

CLIMATE Rainfall (mm) Temperature (°C) Seasonal growth limitations	Annual, 625-700; lowest January (32), highest August (70) Annual, 13; lowest July (8), highest February (20) Temperature: less than 10° C (av.) June-August Rainfall: less than potential evapotranspiration September- April		
GEOLOGY Age, lithology	Ordovician sandstone and mudstone		
PHYSIOGRAPHY Elevation range (m) Relative relief (m) Drainage pattern Drainage density (km/ sq. k m) Land form	340-480 20 Dendritic 1.1 Hill (metamorphic aureole)		
LAND COMPONENT Percentage of land system	1 80%	2 15%	3 5%
PHYSIOGRAPHY Position on land form Slope (typical) and range (%) Slope shape	Upper and middle slope 30, 10-35 Convex	Lower slope 15,10-20 Linear	Drainage floor 3,2-5 Linear
NATIVE VEGETATION Structure Dominant species	Open forest <i>E. macrorhyncha</i> <i>E. polyanthemus</i> <i>E. goniocalyx</i>	Open forest <i>E. dives</i> <i>E. obliqua</i> <i>E. radiata</i>	Open forest <i>E. dives</i> <i>E. obliqua</i> <i>E. radiata</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	Sandstone and mudstone Shallow stony uniform loam soils Urn 5.21 - 3/1/020 Stony loam Soft 0-0.1 Very low throughout Very low throughout Rapid Excessively drained Abundant Nil Nil	Sandstone and mudstone Stony red gradational soils Gn 3.14 - 3/1/010 Stony loam Slightly hard 0.1 ~0.5 Very low throughout Low throughout Moderate Well drained Moderate Nil Low	Recent alluvium Sandy uniform loam soils overlying compact gravelly layer Um 1.21 2/1/030 Sandy loam Slightly hard 0-1-0.5 Low throughout Low Rapid Poorly drained Nil Nil Low
PRESENT LAND USE	Grazing	Grazing	Grazing

Land deterioration hazards - Sugarloaf 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	1,2	Reduced transpiration, increased leaching, deep percolation	Nutrient decline	Low	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 Increased flash flows and sediment loads
	1	Increased soil detachment	Landslips	Low	
Increased trafficking, trampling	1,2	Increased soil compaction	Structure decline	Low	Increased flash flows and sediment loads
Increased soil disruption and run-on	3	Increased subsoil detachment	Gully erosion	Moderate	Increased flash flows and sediment loads



The steep cleared slopes are highly susceptible to sheet erosion.



Some areas have become unstable after clearing, resulting in small landslips.