

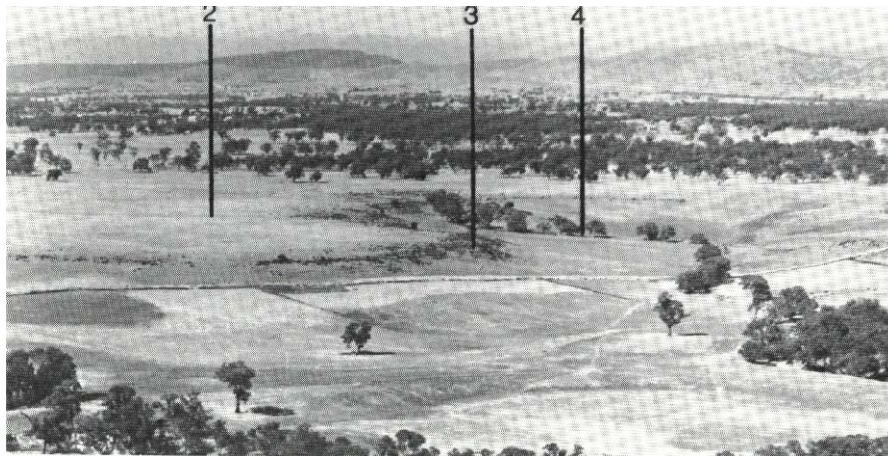
7.23 Wareek land system

Basaltic plains are confined to a small area in the south-east of the catchment. Most of the plains are flat, but there are some low rises with rock outcrop and some dissected drainage lines.

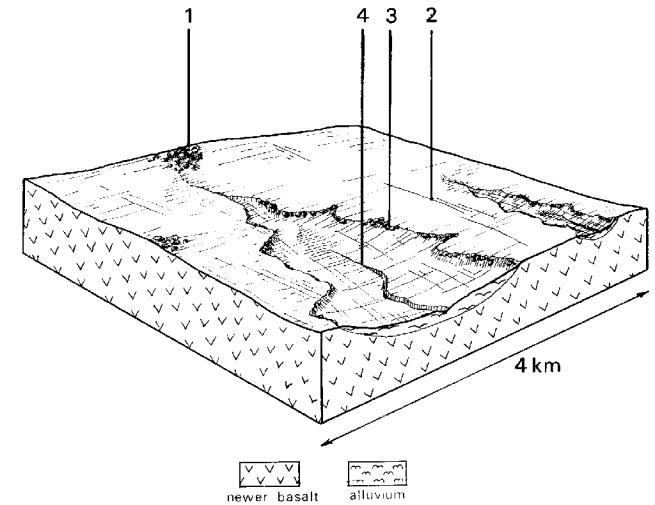
Natural vegetation remains only as isolated trees of *Eucalyptus camaldulensis* in the drainage lines and some clumps of *E. microcarpa* and *E. leucoxylon* left as shelter belts for livestock on the plains.

Grey calcareous clays predominate, and the low available water capacity limits the number of plant species available for improved pastures and early-maturing hay crops. The marked shrink-swell behaviour of the soil causes severe constructional problems.

Access by vehicles is extremely difficult on the rocky rises and steep scarps, and also on the gilgaied plains during wet periods. The area is relatively free from land deterioration except for a moderate degree of sheet and gully erosion on the rocky scarps.



The flat basaltic plains have rocky scarps associated with the major drainage lines.



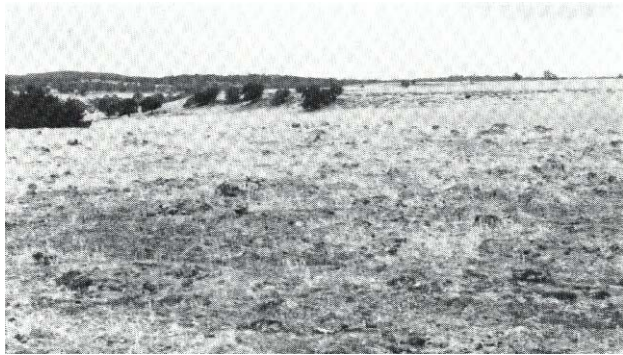
*River red gum (*E. camaldulensis*) grows in the drainage floors below the general level of the plain (right).*

WAREEK LAND SYSTEM Area 36 sq km

CLIMATE Rainfall (mm) Temperature (°C) Seasonal growth limitations	Annual, 525-550; lowest January(26), highest August (61) 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	Quaternary basalt, alluvium			
PHYSIOGRAPHY Elevation range (m) Relative relief (m) Drainage pattern Drainage density (km/sq. km) Land form	220 ~ 260 15 Parallel 0.5 Flat plain			
LAND COMPONENT Percentage of land system	1 25%	2 60%	3 10%	4 5%
PHYSIOGRAPHY Position on land form Slope (typical) and range (%) Slope shape	Rocky rise 1,0-2 Convex	General plain 0,0-1 Linear	Scarp 30,20-40 Convex	Drainage floor 1,0-1 Concave
NATIVE VEGETATION Structure Dominant species	Open woodland <i>E. microcarpa</i>	Open woodland <i>E. microcarpa</i> <i>E. camaldulensis</i> <i>E. leucoxyton</i>	Open woodland <i>E. microcarpa</i>	Open woodland <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	Basalt Grey calcareous sodic uniform clay soils, gilgaied Ug 5.4 - 6/3/000 Clay Hard 0.1 ~0.5 High throughout Low Slow Poorly drained Abundant (rock) High High	Basalt Grey calcareous sodic uniform clay soils, gilgaied Ug 5.4 6/ 3/000 Clay Hard 2 High throughout Low Slow Poorly drained Nil High High	Basalt Red gradational soils with rock outcrop Gn 4.1 – 3/1/010 Loam Slightly hard 0-0.1 High throughout Moderate Moderate Well drained Abundant (rock) Moderate Moderate	Basaltic alluvium Dark brown gradational soils Gn 4.43 -4/2/005 Clay loam Moderately hard 2 High throughout Moderate Moderate Moderately well drained Nil Low Moderate
PRESENT LAND USE	Grazing	Grazing, cropping	Grazing	Grazing, cropping

Land deterioration hazards - Wareek 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	Reduced transpiration	Waterlogging	Moderate	Increased run-off
	3,4	Reduced transpiration, increased leaching	Nutrient decline	Low	Increased movement of water to groundwaters
Reduced soil surface cover	3	Increased soil detachment	Sheet erosion		Increased flash flows and sediment loads
Increased trafficking, trampling	1,2,3	Soil compaction	Structure decline	Low	Increased flash flows and sediment loads
	4	Soil compaction	Structure decline	Moderate	Increased flash flows and sediment loads
Increased soil disruption and run-on	4	Increased subsoil detachment	Gully erosion	Moderate	Increased flash flows and sediment loads



Moderate sheet erosion is associated with the steeper rocky scarps.



Cultivation and constructional practices are often hampered by the high shrink-swell characteristics of these clay soils.