

7.13 Gowar land system

Gently undulating plains on granite occur between Coonoor Bridge and Rheola adjoining steep granitic hills.

Red sodic duplex soils predominate on the lower slopes. However, deeply weathered mottled duplex soils on the upper slopes also account for a substantial proportion of the landscape. A siliceous hardpan usually restricts perviousness and water-holding capacity.

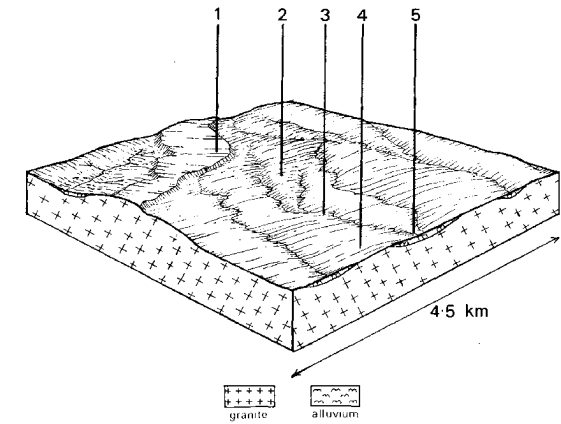
Eucalyptus microcarpa is prominent throughout and *E. camaldulensis* is common in the major drainage lines. The area has been largely cleared to allow cropping and grazing.

The droughty nature of the light-textured surface soil increases an already-severe sheet erosion hazard, as indicated by the numerous sandy creeks'. Deep weathering, erosion and shallow soils result in low productivity and severe land deterioration hazards.

Gowar and Dunluce land systems have many similar features. However, they differ significantly in soil types, vegetation and susceptibility to deterioration.



The gently undulating plains have been mostly cleared for cropping and grazing.



A lateritic breakaway on the upper slopes of the landscape.

GOWAR LAND SYSTEM Area 131 sq. km

CLIMATE Rainfall (mm) Temperature (°C) Seasonal growth limitations	Annual, 400-500; lowest January (20), highest August (59) Annual, 15; lowest July (8), highest February (21) Temperature: less than 10°C (av.) June – August Rainfall: less than potential evapotranspiration September – April				
GEOLOGY Age, lithology	Ordovician granite and granodiorite, Quaternary alluvium				
PHYSIOGRAPHY Elevation range (m) Relative relief (m) Drainage pattern Drainage density (km/sq. km) Land form	180-20 5 Dendritic 0.9 Undulating Plain				
LAND COMPONENT Percentage of land system	1 5%	2 30%	3 5%	4 45%	5 15%
PHYSIOGRAPHY Position on land form Slope (typical) and range (%) Slope shape	Highest level 3, 0-5 Linear	Upper slope 5, 3-8 Linear	Upper drainage floor 2, 1-4 Concave	Lower slope 2, 1-4 Linear	Lower drainage floor 1, 0-1 Linear
NATIVE VEGETATION Structure Dominant species	Woodland <i>E. microcarpa</i> <i>E. leucoxydon</i>	Woodland <i>E. microcarpa</i> <i>E. polyanthemus</i> <i>E. melliodora</i> <i>E. macrohyncha</i>	Woodland <i>E. microcarpa</i> <i>E. camaldulensis</i>	Woodland <i>E. microcarpa</i> <i>E. leucoxydon</i>	Woodland <i>E. microcarpa</i> <i>E. leucoxydon</i> <i>E. camaldulensis</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	Laterised granite and granodiorite Shallow stony red gradational soils overlying sheet ironstone Gn 4.11 – 2/1/005 Sandy loam Moderately hard 0-0.1 Very low Low Slow Well drained Common Low Low	Site 924 Laterised granite and granodiorite Mottled yellow sodic duplex soils overlying siliceous hardpan Dy 3.41 – 2/1/038 Sandy loam Slightly hard 0.5-1 Moderate throughout Low surface, moderate subsoil Slow Moderately well drained Common Low High	Site 926 Laterised granite and granodiorite Grey sodic duplex soils overlying siliceous hardpan Dy 2.41 – 2/1/021 Coarse sandy loam Slightly hard 0.5-1 Very low surface, moderate subsoil Low surface, moderate subsoil Slow Somewhat poorly drained Moderate Moderate Low	Laterised granite and granodiorite Red sodic duplex soils overlying siliceous hardpan Dr 2.22 – 2/1/020 Sandy loam Slightly hard 1-1.5 Low surface, moderate subsoil Low surface, moderate subsoil Slow Moderately well drained Slight Moderate Moderate	Site 925 Alluvium Brown sodic duplex soils Db 1.43 – 2/0/021 Fine sandy loam Moderately hard >2 Moderate surface, high subsoil Low surface, moderate subsoil Moderate Moderately well drained Slight Moderate Moderate
PRESENT LAND USE	Grazing	Cropping, grazing	Cropping, grazing	Cropping, grazing	Grazing

Land deterioration hazards - Gowar 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.	2,4	Reduced transpiration, increased leaching	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
	3,4	Increased soil detachment	Sheet erosion	Moderate	Increased flash flows and sediment loads
Cultivation, increased trafficking, trampling	1,2,3,4	Increased soil compaction	Structure decline	Low	Increased flash flows and sediment loads
Increased soil disruption and run-on	2,4	Increased soil detachment	Gully erosion	Low	Increased flash flows and sediment loads
	3	Increased subsoil detachment	Gully erosion	Moderated	Increased flash flows and sediment loads
Raised water table	4,5	Increased evaporation	Soil salting	Low	Increased salinity of surface waters
Increased accession of sediment load	5	-	Deposition	Moderate	-



The pallid-zone hardpan restricts water penetration and most forms of land use



Fences, roads and the more productive areas in a landscape are threatened by the deposition of eroded material.