

## 7.15 Logan land system

Alluvial terraces beside the Avoca River between Archdale and Coonooer Bridge are narrow, but they widen at the junction with Tarpaulin and Campbell Creeks.

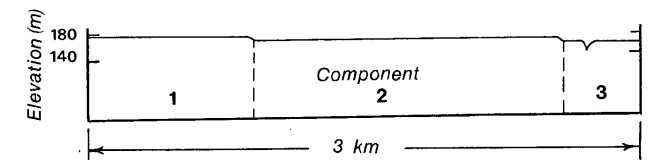
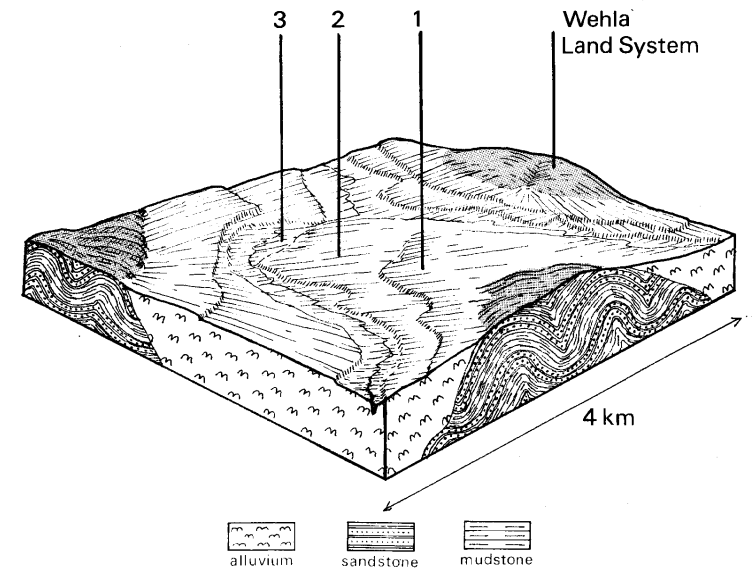
The predominant terrace has sodic duplex soils, which originally supported a woodland of *Eucalyptus leucoxylon* and *E. microcarpa*. This has been cleared to make way for agricultural use. Cropping and grazing are major enterprises.

The erosion hazard is low, but the moderately structured topsoils are particularly prone to surface compaction. There is also a significant hazard of nutrient decline on the highest terrace. Saline seeps have reduced productivity on the lower terraces, mainly in small areas adjacent to deeply weathered Ordovician or Tertiary sediments.

The relatively narrow valley tract lacks the extensive areas of calcareous duplex soils characteristic of the Woosang land system to the north and the variety of soils found in the Natte Yallock land system to the south.



*Broad flat plains are dissected by tree-lined watercourses.*



**LOGAN LAND SYSTEM Area 228 sq. km**

<b>CLIMATE</b> Rainfall (mm) Temperature (°C) Seasonal growth limitations	Annual, 430~500; lowest January (22), highest July (59) Annual, 15; lowest July (8), highest February (2 1) Temperature: less than 10 <sup>0</sup> C (av.) June-August Rainfall: less than potential evapotranspiration September-April		
<b>GEOLOGY</b> Age, lithology	Quaternary alluvium		
<b>PHYSIOGRAPHY</b> Elevation range (m) Relative relief (m) Drainage pattern Drainage density (km/ sq. km) Land form	160-200 5 Parallel 2.1 Flat plain		
<b>LAND COMPONENT</b> Percentage of land system	1 30%	2 55%	3 15%
<b>PHYSIOGRAPHY</b> Position on land form Slope (typical) and range (%) Slope shape	Highest level 1, 0-1 Linear	Lower terrace 1, 0-1 Linear	Present flood plain 1, 0-1 Linear
<b>NATIVE VEGETATION</b> Structure Dominant species	Woodland  <i>E. microcarpa</i> <i>E. leucoxylon</i>	Woodland  <i>E. leucoxylon</i> <i>E. microcarpa</i> <i>Casuarina luehmannii</i>	Woodland  <i>E. camaldulensis</i>
<b>SOIL</b> 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	Alluvium Red calcareous sodic duplex soils Dr 3.33 - 3/1/005 Sandy loam Slightly hard >2 Moderate surface, high subsoil Low surface, moderate subsoil Moderate Well drained Nil High High	Alluvium Red sodic duplex soils Dr 3.42 - 2/1/027 Fine sandy loam Slightly hard >2 Low surface, moderate subsoil Low surface, moderate subsoil Moderate Well drained Nil High High	Alluvium Grey sandy loam soils Uc 4.31 - 2/1/030 Fine sandy loam Soft >2 Low throughout Low throughout Moderate-rapid Somewhat poorly drained Nil Nil Nil
<b>PRESENT LAND USE</b>	Cropping, grazing	Cropping, grazing	Grazing

**Land deterioration hazards - Logan 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	Reduced transpiration	Nutrient decline	Moderate	Increased movement of salts and water to groundwaters Increased movement of salts and water to groundwaters
	2	Reduced transpiration	Nutrient decline	Low	
Reduced soil surface cover	1,2	Increased soil detachment	Windsheeting	Low	
Cultivation, increased trafficking, trampling Increased run-on	1,2	Increased soil compaction	Structure decline	Moderate	Increased run-off
	3	Increased soil detachment	Streambank erosion and flooding	Low	Increased flash flows and sediment loads
Raised water table	2,3	Increased evaporation	Soil salting	Low	Increased salinity of surface waters



*Pasture production is severely reduced where saline groundwaters rise to the surface.*