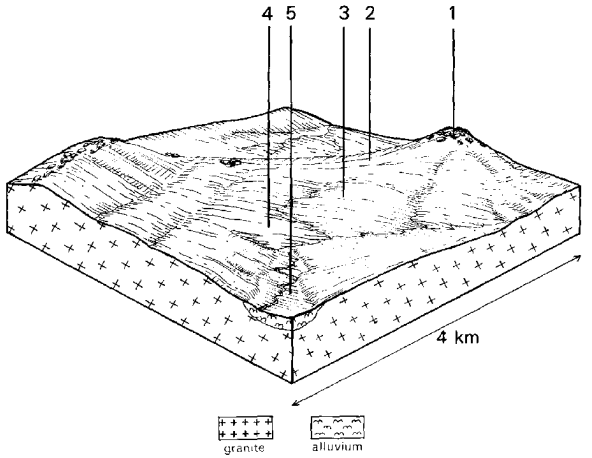
7.10 Dunluce land system

Gently undulating plains on granite between Natte Yallock and Archdale are bounded on the cast by the Bealiba Range and on the west by alluvium of the Avoca River.

Most of the area is underlain by a siliceous hardpan that restricts the water-holding capacity and the perviousness of the soils. Most widespread are the red sodic duplex soils, which normally have a woodland vegetation dominated by *Eucalyptus microcarpa*.

The land has been cleared for cropping and grazing. The country responds quickly to early-season rains; however, the growing season is short and productivity is relatively low.

The more obvious forms of deterioration include sheet and gully erosion, and deposition in the major drainage lines. Erosion is particularly significant because of the shallowness of soils above the hardpans.



Most of the gentle landscape overlies a siliceous hardpan at 0.5 - 1.5 metres depth.

A small timber reserve retains some of the original woodland of grey box (E. microcarpa) and yellow gum (E leucoxylon).

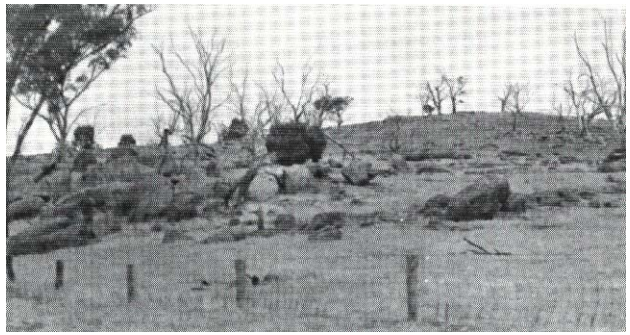
DUNLUCE LAND SYSTEM Area 107 sq. km

CLIMATE				
Rainfall (mm)	Annual, 430-500; lowest January (22), highest July (59)			
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 granite			
PHYSIOGRAPHY				
Elevation range (m)	200~280			
Relative relief (m)	5			
Drainage pattern	Dendritic			
Drainage density (km/sq. km)	1.2			
Land form	Undulating plain			
LAND COMPONENT	1	2	3	4
Percentage of land system	5%	10%	75%	10%
PHYSIOGRAPHY	Upper slope	Middle slope	Lower slope	Drainage floor
Position on land form				
Slope (typical) and range (%)	8,6-12	4,3-6	1, 1-3	1,0-1
Slope shape	Convex	Linear	Linear	Concave
NATIVE VEGETATION	Woodland	Woodland	Woodland	Woodland
Structure	*E. melliodora*	*E. microcarpa*	*E. microcarpa* *E. leucoxylon*	*E. camaldulensis*
Dominant species	*E. microcarpa*	*E. leucoxylon* *Casuarina luehmannii*	*Casuarina luehmannii*	*E. melliodora* *E. microcarpa*
SOIL		Granite	Site 9 13	Site 914
Parent material	Granite	Yellowish brown duplex	Granite Red sodic duplex	Granite
Description	Uniform coarse sandy loam soils	soils, coarsely structured, overlying siliceous hardpan	soils, overlying siliceous hardpan	Yellowish brown sodic duplex soil
Classification	Uc 5. 11- 1/0/040	Dy 3.42-2/0/040	Dr 2.41-2/1/011	Db 2.42-2/1/029
Surface texture	Coarse loamy sand	Sandy loam	Sandy loam	Sandy loam
Surface consistence (dry)	Soft	Slightly hard	Slightly hard	Slightly hard
Depth (m)	0.1-0. 5	0.1-0.5	1-1.5	1-1.5
Nutrient status	Very low	Low throughout	Low surface, moderate subsoil	Low surface, moderate subsoil
Available soil water capacity	Very low	Low surface, moderate subsoil	Low surface, moderate subsoil	Low surface, moderate subsoil
Perviousness to water	Rapid	Slow	Slow	Slow
Drainage	Excessively drained	Moderately well drained	Well drained	Somewhat poorly drained
Exposed stone	Abundant (rock)	Common (rock)	Common	Slight
Dispersibility	Nil	Moderate	High	High
Slaking tendency	Nil	Moderate	Moderate	Moderate
PRESENT LAND USE	Grazing	Cropping, grazing	Cropping, grazing	Grazing

Land deterioration hazards - Dunluce 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	1,2,4	Reduced transpiration, increased leaching	Nutrient decline	Low	Movement of water to groundwaters
	3	Reduced transpiration, increased leaching	Nutrient decline	Moderate	Movement of water to groundwaters
Reduced soil surface cover	1,2,4	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	2,3,4	Soil compaction	Structure decline	Low	Increased flash flows and sediment loads
Increased soil disruption	2,3	Increased subsoil detachment	Gully erosion	Low	Increased flash flows and sediment loads
	4	Increased subsoil detachment	Gully erosion	Moderate	Increased flash flows and sediment loads
Increased accession of sediment load	4		Deposition	Moderate	-

Sandy material - eroded from the undulating plain -chokes the watercourses and increases the potential flooding hazard.



Overgrazing of the rocky outcrops increases overland flow and groundwater recharge.