

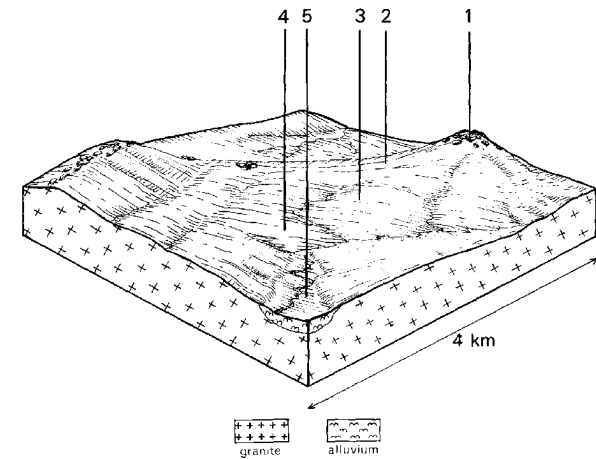
7.10 Dunluce land system

Gently undulating plains on granite between Natte Yallock and Archdale are bounded on the east 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 hardpan.



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) Temperature (°C) Seasonal growth limitations | Annual, 430-500; lowest January (22), highest July (59) 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 | Ordovician granite | | | |
| PHYSIOGRAPHY Elevation range (m) Relative relief (m) Drainage pattern Drainage density (km/sq. km) Land form | 200~280 5 Dendritic 1.2 Undulating plain | | | |
| LAND COMPONENT | 1 | 2 | 3 | 4 |
| Percentage of land system | 5% | 10% | 75% | 10% |
| PHYSIOGRAPHY Position on land form Slope (typical) and range (%) Slope shape | Upper slope 8,6-12 Convex | Middle slope 4,3-6 Linear | Lower slope 1, 1-3 Linear | Drainage floor 1,0-1 Concave |
| NATIVE VEGETATION Structure Dominant species | Woodland <i>E. melliodora</i> <i>E. microcarpa</i> | Woodland <i>E. microcarpa</i> <i>E. leucoxyton</i> <i>Casuarina luehmannii</i> | Woodland <i>E. microcarpa</i> <i>E. leucoxyton</i> <i>Casuarina luehmannii</i> | Woodland <i>E. camaldulensis</i> <i>E. melliodora</i> <i>E. microcarpa</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 | Granite Uniform coarse sandy loam soils Uc 5. 11- 1/0/040 Coarse loamy sand Soft 0.1-0. 5 Very low Very low Rapid Excessively drained Abundant (rock) Nil Nil | Granite Yellowish brown duplex soils, coarsely structured, overlying siliceous hardpan Dy 3.42-2/0/040 Sandy loam Slightly hard 0.1-0.5 Low throughout Low surface, moderate subsoil Slow Moderately well drained Common (rock) Moderate Moderate | Site 9 13 Granite Red sodic duplex soils, overlying siliceous hardpan Dr 2.41-2/1/011 Sandy loam Slightly hard 1-1.5 Low surface, moderate subsoil Low surface, moderate subsoil Slow Well drained Common High Moderate | Site 914 Granite Yellowish brown sodic duplex soil Db 2.42-2/1/029 Sandy loam Slightly hard 1-1.5 Low surface, moderate subsoil Low surface, moderate subsoil Slow Somewhat poorly drained Slight High 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 Increased soil disruption | 2,3,4 | Soil compaction | Structure decline | Low | Increased flash flows and sediment loads |
| | 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.