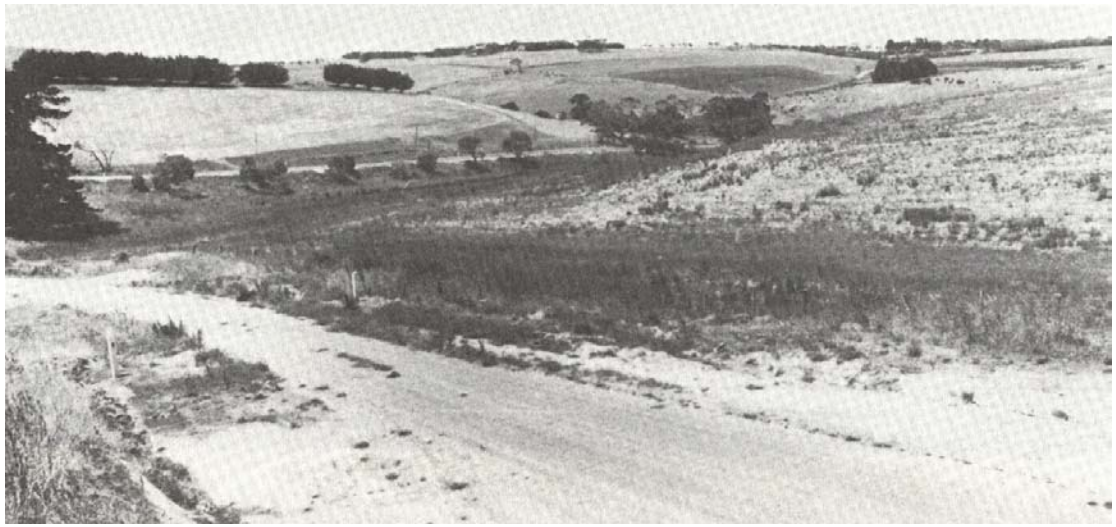
7.8 Bellbrae Land System

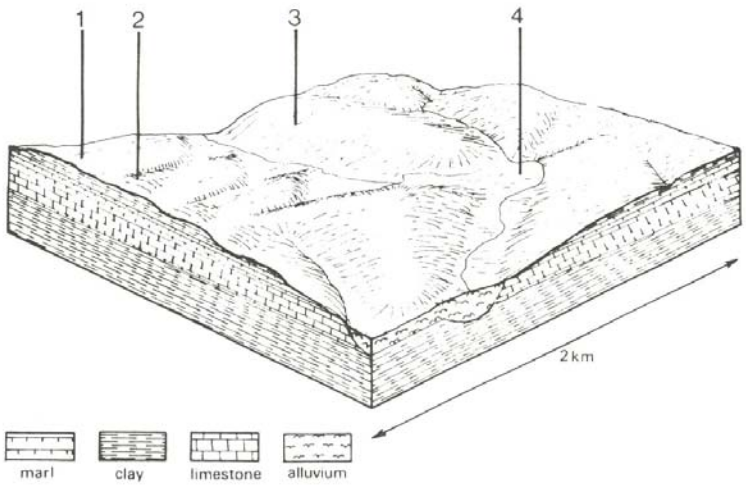
Below the lateritized plateaux to the east of the Otway Range lie a series of rolling hills have formed by dissection along the valleys of Spring Creek and Jan Juc Creek. Weathering of limestone and marl exposed along these valleys has resulted in calcareous soils. Fertility is moderate, and thus contrasts with the surrounding impoverished soils of the lateritic plateaux and acid sands and clays.

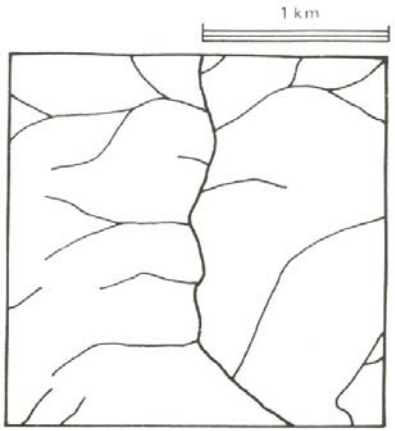
The red soils, or those deeper profiles transitional to the red soils, are the most favoured for agriculture and are used or cropping as well as dairy-farming. Grazing of sheet and beef cattle is also common. Agricultural use is decreasing, however, as the township of Torquay extends its urban limits. Subdivision int small farmlets in other parts of the valleys also tends to decrease agricultural production.

Sheet erosion occurs on some of the cropped steeper slopes, while gully erosion and slumping are problems of the dispersible duplex soils.



Wide drainage lines and rounded hill s typify this landscape, as it rises to the lateritic plateau in the distance





BELLBRAE Area: 25 km^2	Component and its proportion of land system			
	1 25%	2 40%	3 20%	4 15%
CLIMATE Rainfall, mm Temperature, 0^{o}C Seasonal growth limitations	**Annual**: 600 – 650, lowest January (30), highest August (65) **Annual**: 14, lowest July (10), highest February (18) **Temperature**: less than 10^{o}C (av.) July **Precipitation**: less than potential evapotranspiration early October – early April			
GEOLOGY Age, lithology	Miocene limestone and marl			
TOPOGRAPHY Landscape Elevation, m Local relief, m Drainage pattern Drainage density, km/km^2 Land form	Rolling hills dissected out below the lateritic plateaux 5 – 70 60 Dendritic 3.0 Hill			
Land form element Slope (and range), % Slope shape	Upper slope 5 (3-9) Linear	Middle slope 11 (5-14) Linear	Steeper slope 15 (7-20) Convex	Lower slope, drainage 7 (1-9) Concave
NATIVE VEGETATION Structure Dominant species	Open forest *E. viminalis, E. sideroxylon, E. obliqua*	Open forest *E. leucoxylon. E. sideroxylon, E. viminalis*	Open forest *E. viminalis, E. ovata, Acacia melanoxylon*	Open forest *E. viminalis, E. sideroxylon, E. leucoxylon, E. ovata*
SOIL Parent material Description Surface texture Permeability Depth, m	Truncated lateritic remnants Brown duplex soils, coarse structure Fine sandy loam Low >2	Calcareous clay and deeply weathered limestone Yellow-brown calcareous sodic duplex soils, coarse structure Fine sandy loam Moderate >2	Limestone Red calcareous gradational soils Fine sandy clay loam High 0.7	Colluvial limestone, clay, lateritic material Yellow sodic duplex soils Loamy sand Moderate >2
LAND USE	Cleared areas: Dairy farming; beef cattle grazing; residential; cropping Minor uncleared areas: Forest grazing; active and passive recreation; hardwood forestry for fuel, posts and poles			
SOIL DETERIORATION HAZARD Critical land features, processes, forms	Dispersible subsoils receiving seepage water are prone to gully erosion, slumping and rilling.	Highly dispersible subsoils are prone to gully erosion and slumping.	Steeper slopes are prone to sheet erosion.	Highly dispersible subsoils are prone to gully erosion and tunnel erosion.