

7.21 Hordern Vale Land System

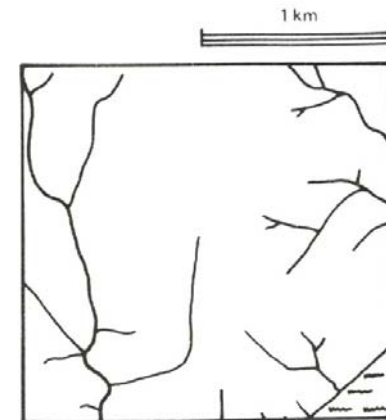
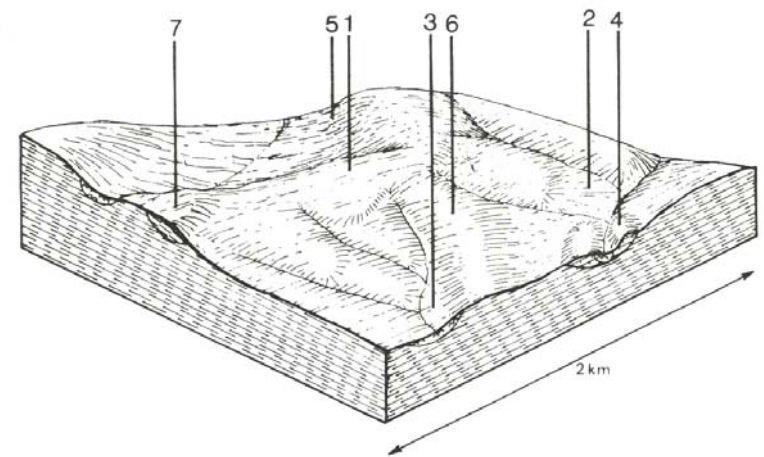
In the vicinity of Cape Otway, Tertiary clay, silt, sand, limestone and marl all outcrop. Three separate areas exist – at Johanna, Hordern Vale and inland from Point Franklin and Blanket Bay. All areas are generally similar, but possess distinct differences in specific features. The limestone and marl outcrops are confined to marine terraces at Hordern Vale. The Johanna area is distinguished by its dominance of red sands. The area east of Cape Otway includes hilltops of kaolinitic clay and silt and these carry rare low woodlands of *Eucalyptus kitsonia*.

In general, these landscapes are old with areas of lateritized soils on the highest parts. Recent dissection has often been superimposed on the more undulating areas, resulting in straight slopes with youthful soil profiles.

Land uses are very diverse. Areas that have been cleared are used for dairy farming, grazing of sheep and beef cattle and a small amount of potato growing. Those areas that remain uncleared are selectively logged, and also have nature conservation values. Sheet erosion and landslips have been quite severe on some of the steeper areas, and some gully erosion occurs on the slopes coming away from the lateritized areas.



Youthful dissection with steep straight slopes and young soils is encroaching on many of the more gently undulating higher parts of the landscape.



HORDERN VALEArea: 38 km²

Component and its proportion of land system							
	1 20%	2 8%	3 7%	4 4%	5 25%	6 30%	7 6%
CLIMATE Rainfall, mm Temperature, 0°C Seasonal growth limitations	Annual: 900 – 1,250, lowest January (50), highest July (130) Annual: 13, lowest July (9), highest February (17) Temperature: less than 10°C (av.) July Precipitation: less than potential evapotranspiration late November - February						
GEOLOGY Age, lithology	Paleocene unconsolidated sand, clay and silt Limestone, marl						
TOPOGRAPHY Landscape Elevation, m Local relief, m Drainage pattern Drainage density, km/km ² Land form Land form element Slope (and range), % Slope shape	Undulating coastal plains surrounding Cape Otway 0 - 200 60 Dendritic 2.1 Rise Upper slope, crest 5 (1-15) Convex						
NATIVE VEGETATION Structure Dominant species	Open forest <i>E. obliqua</i> , <i>E. baxteri</i> , <i>E. cypellocarpa</i> , <i>E. aromaphloia</i> , <i>E. viminalis</i>	Open forest <i>E. obliqua</i> , <i>E. baxteri</i> , <i>E. viminalis</i> , <i>E. ovata</i>	Closed scrub <i>Leptospermum lanigerum</i>	Woodland <i>E. obliqua</i> , <i>E. viminalis</i>	Open forest <i>E. obliqua</i> , <i>E. cypellocarpa</i> , <i>E. baxteri</i>	Tall open forest <i>E. cypellocarpa</i> , <i>E. obliqua</i> , <i>E. viminalis</i> , <i>E. globulus</i>	Low woodland <i>E. kitsoniana</i> , <i>Melaleuca squarrosa</i> , <i>Melaleuca ericifolia</i>
SOIL Parent material Description Surface texture Permeability Depth, m	Lateritized sediments Mottled yellow and red gradational soils with ironstone Gravelly sand Moderate >2	Clay, silt and sand Yellow-brown gradational soils, coarse structure Fine sandy loam Low >2	Alluvial clay, silt and sand Grey gradational soils Sandy loam Very low >2	Freshly weathered limestone and marl Black calcareous gradational soils Fine sandy clay loam Low 0.5	Quartz sand Red sandy loam soils, uniform texture Loamy sand Very high >2	Clay, silt and sand Brown gradational soils Fine sandy loam High >2	Kaolinitic clay, silt and sand Pale brown gradational soils, weak structure Silty loam Very low >2
LAND USE	Cleared areas: Beef cattle grazing; dairy farming; sheep grazing; row crops Uncleared areas: Hardwood forestry for sawlogs and pulpwood; sand extraction; nature conservation; passive recreation						
SOIL DETERIORATION HAZARD Critical land features, processes, forms	Low inherent fertility and phosphorus fixation lead to nutrient decline	Dispersible subsoils are prone to gully erosion.	High seasonal water table and low permeability lead to waterlogging and soil compaction.	Clay subsoils on steep slopes subject to periodic saturation are prone to landslips	Steep slopes with weakly structured soils are prone to some sheet erosion. High rainfall and high permeability lead to nutrient decline.	High rainfall, high permeability and leaching lead to nutrient decline and surface compaction upon disturbance.	Low permeability and high annual rainfall lead to waterlogging and soil compaction.