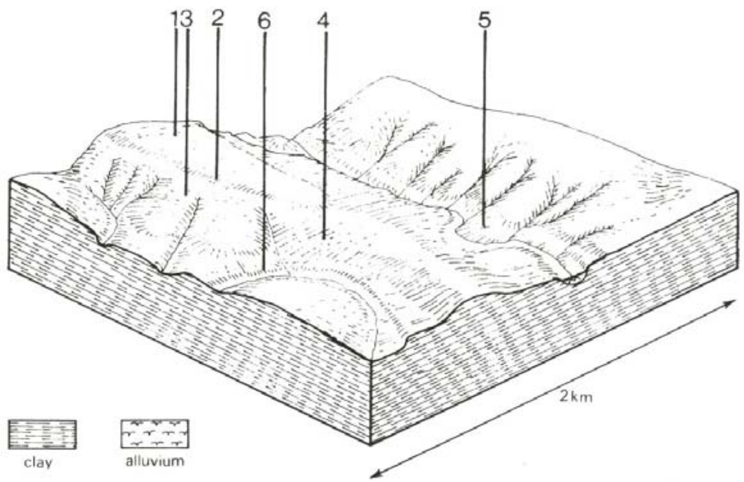
7.38 Tomahawk Creek Land System

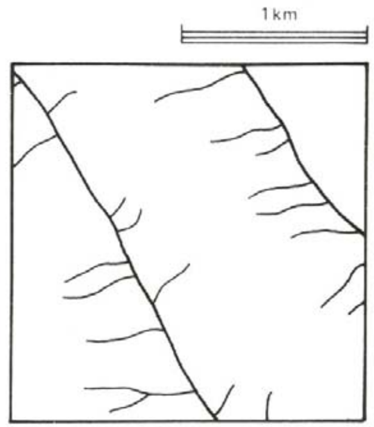
Tomahawk Creek and its tributaries have dissected out deep valleys with characteristic north-nor'-west- and south-sou'-east-oriented parallel rides and spurs. Small remnants of lateritic plateaux on the high parts of the landscape are bounded by scarps on which ironstone outcrops. Tertiary sand is often exposed in a narrow band below these scarps, and springs are often present at this level. Silt and clay are the more common parent materials on long straight slopes leading down to the valley floor. Small dissected terraces are found along the wider valleys.

The terrain to the south and east of Tomahawk Creek shows a lower local relief than the area to the north and west. Areas of lateritic plateaux are often wider and surrounding slopes are shorter and more gentle. Site drainage is affected by the more subdued relief. Woodlands and lowlands appear to have been more common in this area, with open forests to the north and west.

Most of this land system has been cleared as part of the Heytesbury Settlement Scheme, and dairy farming is the main land use. Subsoils on many slopes are dispersible and gully and tunnel erosion are quite active. Some landslips have occurred, particularly below springs at the base of scarps.



Cattle graze the undulating plateau country.



TOMAHAWK CREEK Area: 101 km²	Component and its proportion of land system					
	1 15%	2 6%	3 10%	4 50%	5 9%	6 10%
CLIMATE						
Rainfall, mm	**Annual**: 850 – 1,050, lowest January (40), highest August (125)					
Temperature, $0^{o}C$	**Annual**: 13, lowest July (8), highest February (19)					
Seasonal growth limitations	**Temperature**: less than $10^{o}C$ (av.) June – August **Precipitation**: less than potential evapotranspiration November – March					
GEOLOGY Age, lithology	Pliocene lateritized sand and clay		Miocene unconsolidated sand, silt and clay			
TOPOGRAPHY						
Landscape	Deep valleys dissected out from lateritic plateaux					
Elevation, m	50 – 160					
Local relief, m	70					
Drainage pattern	Trellis predominantly, some dendritic areas					
Drainage density, km/km²	2.9					
Land form	Plateau remnants	Scarp				Valley floor
Land form element	-	Upper slope	Upper slope	Mid slope	Lower slope	-
Slope (and range), %	1 (0-3)	28 (13-40)	12 (8-18)	12 (8-20)	5 (1-8)	0 (0-2)
Slope shape	Straight	Concave	Straight	Straight	Straight	Concave
NATIVE VEGETATION						
Structure	Open forest	Open forest	Woodland	Open forest	Low woodland	Woodland
Dominant species	*E. obliqua, E. baxteri*	*E. obliqua, occasionally E. viminalis*	*E. radiata, E. baxteri, E. viminalis*	*E. ovata, E. obliqua, E. radiata, E. baxteri*	*E. radiata, E. ovata*	*E. viminalis, E. ovata*
SOIL						
Parent material	Lateritic remains	Colluvial lateritic ironstone	Siliceous sand	Sandy clay (in-situ)	Colluvial/alluvial sand over sandy clay	Sand and clay alluvium
Description	Mottled yellow and red gradational soils with ironstone	Stony red gradational soils	Grey sand soils, uniform texture	Yellow-brown gradational soils, coarse structure	Grey sand soils, structured clay underlay	Grey gradational soils
Surface texture	Sandy loam	Gravelly sandy loam	Coarse sandy loam	Sandy loam	Sandy loam	Sandy loam
Permeability	Moderate	Very high	Very high	Low	Very low	Very low
Depth, m	1.6	1.0	>2	>2	>2	>2
LAND USE	**Cleared areas:** Mainly dairy farming; some beef cattle grazing. **Uncleared areas:** Hardwood forestry for sawlogs, some posts and poles, gravel extraction; nature conservation.					
SOIL DETERIORATION HAZARD Critical land features, processes, forms	Low inherent fertility and phosphorus fixation lead to nutrient decline. Leaching of salts leads to increased salinity of drainage waters.	Steep slopes with weakly structured surfaces of low water-holding capacity are prone to sheet erosion. Low inherent fertility and high permeability lead to nutrient decline.	Emergence of springs from these permeable aquifers leads to seasonal waterlogging and soil compaction. Permeable soils of low inherent fertility are prone to nutrient decline.	Highly dispersible clay subsoils of low permeability receiving seepage water are prone to gully and tunnel erosion and to landslips and slumping.	Dispersible soils of low permeability receiving seepage water are prone to gully and tunnel erosion, waterlogging and surface compaction. Permeable surfaces of low inherent fertility are prone to nutrient decline.	Dispersible clay subsoils of low permeability receiving rapid run-off from surrounding hills are prone to gully erosion. Rising water tables and low permeabilities lead to seasonal waterlogging and soil compaction.