

7.11 Glenvue Land System (Ge)

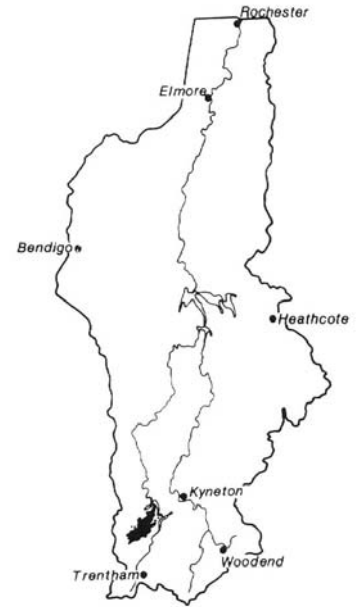
A small basalt flow emanating from Spring Hill has formed an undulating landscape to the south-west of the Lauriston Reservoir. Subsequent dissection by the Coliban River has produced scarps along most of the land system boundary. The basalt has a platy structure, given the appearance of closely bedded fine-grained sediments.

Soils on the scarps, crests and volcanic cones are shallow stony loams and gradational soils, while reddish brown duplex soils occur on the undulating plains.

The original vegetation near Spring Hill is an open forest of *E. obliqua* and *E. radiata*, but towards the north *E. pauciflora* and *E. rubida* predominate. *E. viminalis* is always present, except in depressions, where *E. ovata* dominates.

Most of the land has been cleared, but the shallow rocky soils restrict land use to grazing, except on small areas with deeper red soils where cropping is practised. The reliable, evenly distributed rainfall compensates for the low water-holding capacity of the soils, enabling crops and improved pastures to be grown. However, production is limited by low winter temperatures.

The predominant silty loam topsoils are susceptible to compaction, while the shallow uniform and gradational soils of the scarps, crests and cones are prone to leaching of nutrients. However, the incidence of these problems is reduced by the predominance of grazing and the generally favourable conditions for pasture growth. Minor sheet erosion occurs and there is some slumping on the scarps.



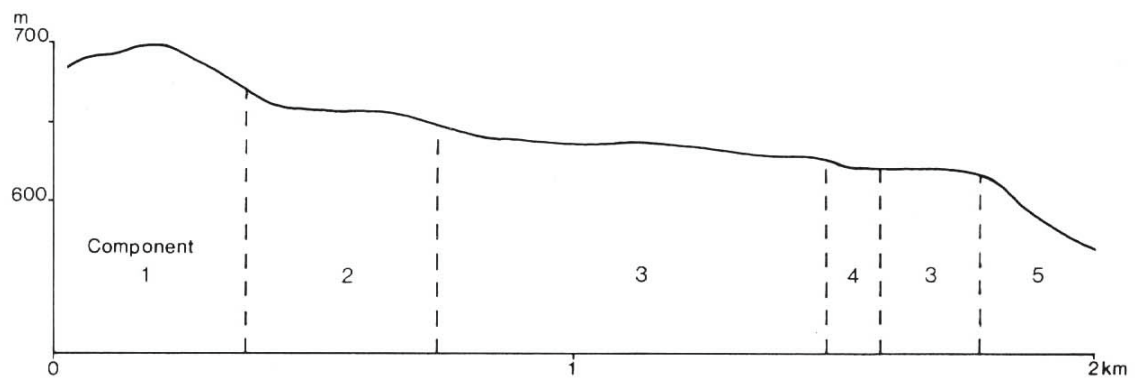
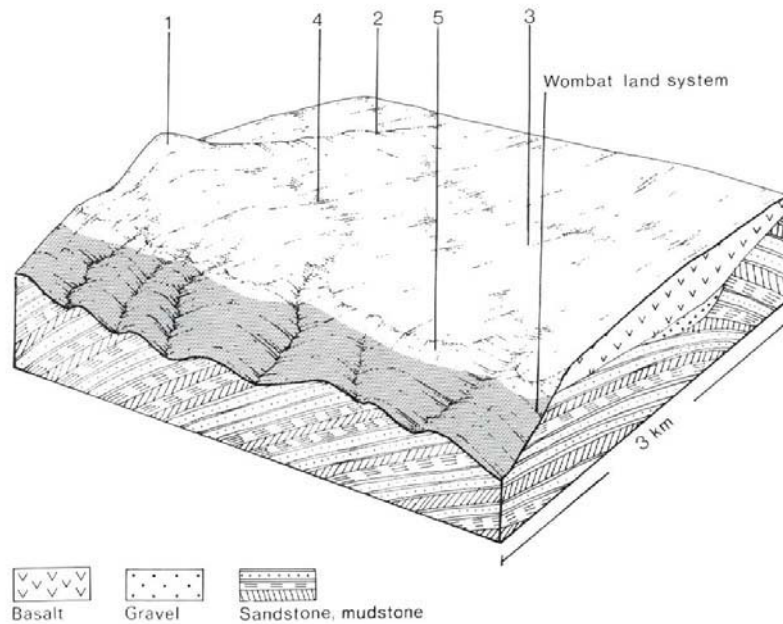
Introduced pastures, red basaltic soils and a long growing season are three valuable ingredients for fat-lamb production.



This gently undulating basalt plain emanated from the wooded volcanic cone seen in the background (Spring Hill).



Picturesque, steep ravines are common along the scarp



GLENVUE LAND SYSTEM (Ge)
Ares 18 km² 0.4% of catchment

CLIMATE Rainfall, mean (mm) Temperature, mean (°C) Seasonal growth limitations	Annual, 750-900; lowest January (35-40), highest June (85-90) Annual, 12; lowest July (8), highest January (18.5) Temperature less than 10°C (av.): mid April – mid September Rainfall less than potential evapotranspiration: October - March				
GEOLOGY Age, rock type	Pliocene, basalt (trachybasalt)				
PHYSIOGRAPHY Landform pattern Elevation range (m) Relative relief (m) Drainage pattern Channel spacing	Gently undulating rises, scarps along edge of lava flow 500-700 10 (plain) Dendritic Sparse				
LAND COMPONENT Number Percentage of land system	1 5	2 20	3 60	4 5	5 10
PHYSIOGRAPHY Landform element Slope; modal, range (%) Site drainage	Volcanic cone 15, 5-20 Somewhat excessively drained	Crest of gentle ridge within plain 1, 0-2 Well drained	Gently undulating plain 2, 0-6 Moderately well drained	Drainage depression 1, 0-2 Poorly drained	Scarp Variable, 5-50 Somewhat excessively drained
SOIL Parent material Description Classification Surface texture Depth to hardpan or bedrock (m) Nutrient status Available water capacity Permeability Exposed rock/stone (%) Sampled site number	Basalt Shallow uniform or gradational soils with fragments of rock throughout the profile Um, Gn4 Silty loam 0.1-0.02 Low Low Rapid 0-20 -	Basalt Shallow brown or reddish brown soils, frequently with a pale A ₂ horizon. Gn4.31, Gn4.34 Silty loam 0.2-0.4 Low Low Moderate 0 -	Basalt and colluvium Reddish brown well-structured duplex soils with acidic subsoils; A ₂ horizons pale or absent. Dr2.21, Dr2.11 Silty loam 0.5-1.5 Low Moderate Moderate surface, slow subsoil 0 1070	Alluvium Mottled greyish brown to yellowish brown gradational soils' pale or occasionally bleached A ₂ horizons. Gn3.74, Gn3.04, Gn4.51 Silty loam >1.0 Low High Moderate surface, slow subsoil 0 1071, 1072	Basalt Shallow uniform or gradational soils with fragments of rock throughout the profile. Um, Gn Silty loam 0.1-0.3 Low Low Rapid 0-20 1059
NATIVE VEGETATION Structure Characteristic species (+ indicates predominant species)	Open forest II E. viminalis	Open forest II E. viminalis, E. radiata	Open forest II E. pauciflora, E. radiata, E. viminalis, E. obliqua	Open forest II E. ovata	Open forest II E. rubida, E. viminalis E. pauciflora
PRESENT LAND USE	Limited grazing on native pastures	Grazing on introduced pastures	Grazing on introduced pastures; minor cropping of cereals or legumes	Grazing on introduced pastures	Grazing on introduced pastures.
OBSERVED SOIL DETERIORATION	Minor sheet erosion	Nil	Nil	Minor gully erosion	Minor sheet erosion; minor landslips

SUSCEPTIBILITY OF LAND TO PROCESSES OF SOIL DETERIORATION – Glenvue

Compt.	Process	Susceptibility	Critical land factors	Off-site effects	Comments
1	Sheet & rill erosion	Low to moderate	<ul style="list-style-type: none"> • moderate often stony, slopes • long slope length • well-aggregated topsoil 	<ul style="list-style-type: none"> • sedimentation 	High soil permeability and a perennial vegetation cover usually precludes this form of deterioration
	Leaching of nutrients	Low to moderate	<ul style="list-style-type: none"> • moderate to high soil permeability 	<ul style="list-style-type: none"> • - 	-
	Compaction of topsoil	Moderate	<ul style="list-style-type: none"> • loamy texture • moderate organic matter content 	<ul style="list-style-type: none"> • increased run-on 	-
2	Leaching of nutrients	Low to moderate	<ul style="list-style-type: none"> • moderate soil permeability low to moderate cation exchange capacity 	<ul style="list-style-type: none"> • - 	-
	Compaction of topsoil	Moderate	<ul style="list-style-type: none"> • loamy texture • moderate organic matter content 	<ul style="list-style-type: none"> • increased run-on 	-
3	Compaction of topsoil	Moderate	<ul style="list-style-type: none"> • loamy texture • moderate organic matter content 	<ul style="list-style-type: none"> • increased run-on 	-
4	Gully erosion	Low	<ul style="list-style-type: none"> • minor accumulations of alluvium 	<ul style="list-style-type: none"> • sedimentation 	The soil is generally very stable and protected by a dense sward of perennial introduced grasses
	Compaction of topsoil	Moderate to high	<ul style="list-style-type: none"> • loamy texture • topsoil frequently moist • moderate organic matter content 	<ul style="list-style-type: none"> • - 	-
5	Sheet & rill erosion	Low to moderate	<ul style="list-style-type: none"> • moderate slopes • well-aggregated topsoil 	<ul style="list-style-type: none"> • sedimentation 	High soil permeability and a perennial vegetation cover usually preclude this process of deterioration
	Landslip	Low	<ul style="list-style-type: none"> • moderate slopes • underlying weathered Ordovician bedrock 	<ul style="list-style-type: none"> • deposition 	-
	Leaching of nutrients Compaction of topsoil	Low to moderate Moderate	<ul style="list-style-type: none"> • moderate soil permeability • moderate soil permeability • loamy texture • moderate organic matter content 	<ul style="list-style-type: none"> • - • increased run-on 	- -



Shallow stony soil are common throughout the landscape



Deep ripping and tree-planting help to stabilise land on the steep scarps