

698221

LAWRENCE RIVULET

This land system occurs in the Florentine Valley and consists of undulating terrain covered by open or tall open forest. Recent alluvium or Pleistocene glacial deposits, consisting predominantly of dolerite, occur throughout. It is difficult to separate these deposits from the soil profile which has developed, as the deposits are unconsolidated. They probably reach considerable depths in places and are likely to be underlain by Ordovician limestone.

The soils of the Florentine Valley are some of the deepest mineral soils in South West Tasmania. They appear to be quite fertile supporting some of the tallest trees in the study area. These are restricted to small reserves in the area as much of the valley has been logged.

Gradational soil profiles characterise the land system. Surface horizons consist of a shallow (0.05m) layer of litter and peat over loam and clay loam horizons. Subsoils are often brown in colour and consist of silty clays over light clays.

These deep profiles support open or tall open forest dominated by either *Eucalyptus regnans*, *E. obliqua* or *E. viminalis*. Where taller understorey species such as *Nothofagus cunninghamii*, *Atherosperma moschatum* and *Phyllocladus aspleniifolius* occur, lower parts of the sparse understorey have scattered *Aristotelia peduncularis* and *Dicksonia antarctica*. Usually the understorey is thicker with species such as *Pomaderris apetala*, *Phebalium squameum* and *Pittosporum bicolor*.

The major soil problems in the land system include deterioration of soil structure and compaction following logging operations. This can lead to lower permeability and poorer aeration which results in an increased erosion hazard and lower plant productivity. A number of severely disturbed soil profiles were examined during field work. The P and A horizons had either been washed away or thoroughly mixed into underlying horizons. These (underlying horizons) had also been disturbed so that there was little similarity in horizon organisation, and to a lesser extent, texture grades between undisturbed and adjacent logged sites.

Forestry is the only land use in this land system.



Photo 30

Soil disturbance following logging can be severe

LAND SYSTEM
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Area (ha): 6821

ALTITUDINAL RANGE(m)	300-600 APPROXIMATE ANNUAL RAINFALL(mm) 1250-1500	
SITE NO. /ALTITUDE (m)/ASPECT	(155/350/S) (158/440/-)	(33/440/N) (162/360/SE)
TOPOGRAPHY	Undulating plains	
Position	Flats	Slopes
Typical Slope()	0-3	5-10
Proportion(%)	50	50
GEOLOGY	Alluvium, dolerite fluvio-glacial deposits, some till deposits	
NATIVE VEGETATION Structure	Open to tall open-forest (mixed forest)	Open to tall open-forest (mixed forest)
Floristic Association See Appendix 1 for common names)	Eucalyptus regnans E. viminalis Nothofagus cunninghamii Atherosperma moschatum Pomaderris apetala Dicksonia antarctica Anopterus glandulosus Aristotelia peduncularis Drymophila cyanocarpa Polystichum	Eucalyptus obliqua E. delegatensis E. nitida Nothofagus cunninghamii Atherosperma moschatum Phyllocladus aspleniifolius Aristotelia peduncularis Pittosporum bicolor Phebalium sauameum Trochocarpa qunni Dicksonia antarctica
SOIL Surface(A or P horizon)Colour (moist) and texture	Reddish brown fibrous peat over a very dark brown (10 YR 2/2) or dark brown (7. 5 YR 3/4) loam over a dark reddish brown (5 YR 3/4) or very dark greyish brown (10 YR 3/2) clay loam	Reddish brown fibrous peat over a very dark brown (10 YR 2/2) or very dark brown (10 YR 6/2) organic loam over a dark brown (7. 5 YR 3/4) or dark grey (10 YR 4/2) clay loam
Subsoil (or B horizon) colour (moist) and texture	Dolerite gravels, cobbles and rocks common. Brown/dark brown (7. 5 YR 4/4) or strong brown (7. 5 YR 5/6) silty clay over a strong brown (7. 5 YR 5/6) or grey (10 YR 5/1) light clay	Dolerite cobbles and rocks common. Strong brown (7. 5 YR 5/6) or light brownish grey (10 YR 6/2) silty clay over a strong brown (7. 5 YR 5/8) light clay
Primary Profile form	Gradational	Gradational
Depth surface horizon(m)	0. 30	0. 35-0. 50
Typical total depth(m)	1. 00->2. 00	1. 30
Permeability	Moderate	Moderate
LAND USE	Forestry	
HAZARD	Moderate to high compaction	
	Low waterlogging	Moderate rill and sheet erosion