

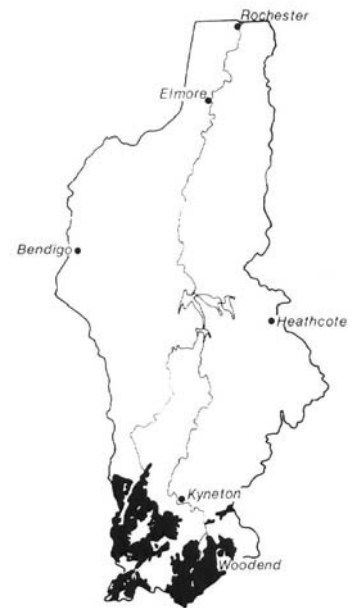
### 7.35 *Wombat land system (Wt)*

This land system occurs on Ordovician sediments along the southern and south-western catchment boundary of the study area, where dissection by the Campaspe River and the upper reaches of the Coliban River has been limited. Gentle slopes and broad drainage depressions with gradational soils frequently extend to the catchment boundary. Interspersed with the gentle slopes are steeper slopes and narrow crests that have shallow stony red gradational soils.

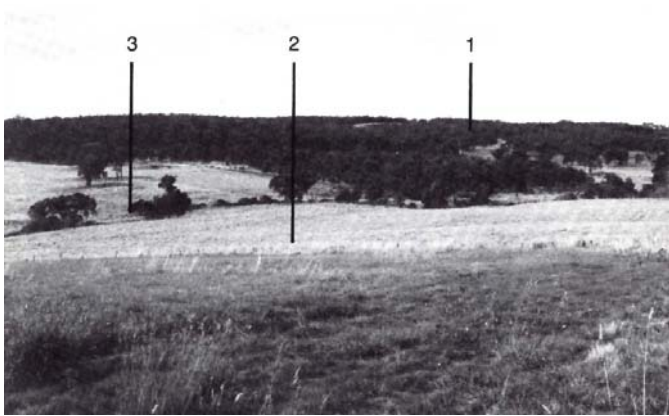
The open forests are dominated by *E. obliqua* and *E. radiata*, and less commonly by *E. rubida*, reflecting the higher rainfall in the south of the catchment.

A significant proportion of the area is State forest, part of which has been planted to *Pinus radiata*. The eucalypt forest comprising the major part is a significant source of hardwood timber, mainly from the preferred species *E. obliqua*. Some of the gentler slopes have been cleared and sown to introduced pasture species.

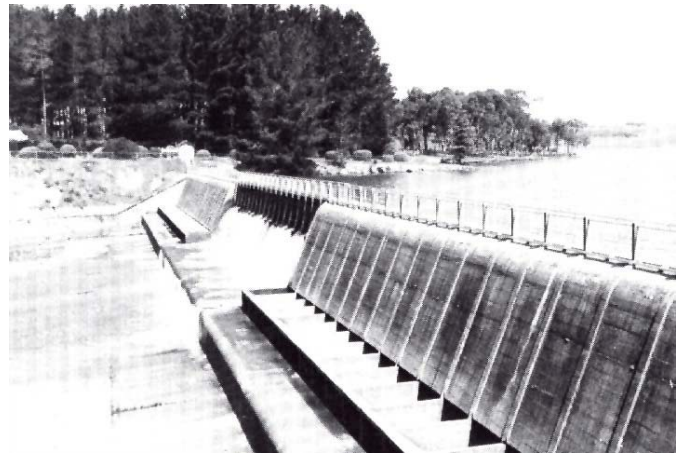
Under the high rainfall, significant leaching of nutrients can be expected, particularly on cleared gradational soils. Compaction is also a problem, particularly in low-lying areas that are seasonally wet. The hazards of sheet and gully erosion are limited, but some instability is apparent on cleared land that is not carefully managed.



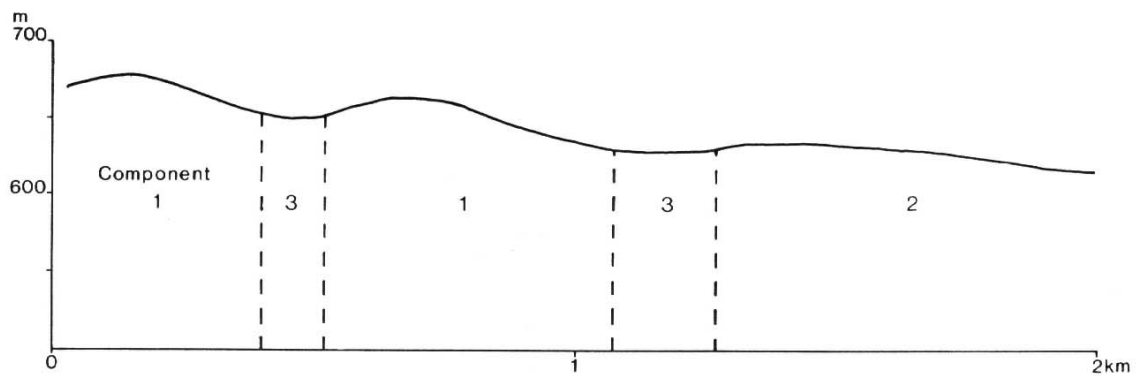
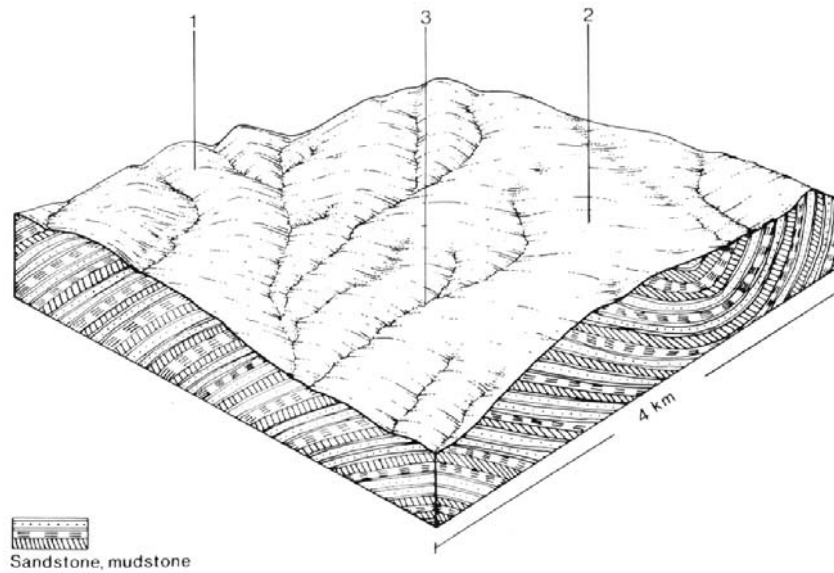
*Sheep grazing introduced pastures in the Wombat land system*



*Identification of land components*



*The upper Coliban reservoir is an integral part of a complex system of channels and aqueducts supplying water to northern towns.*

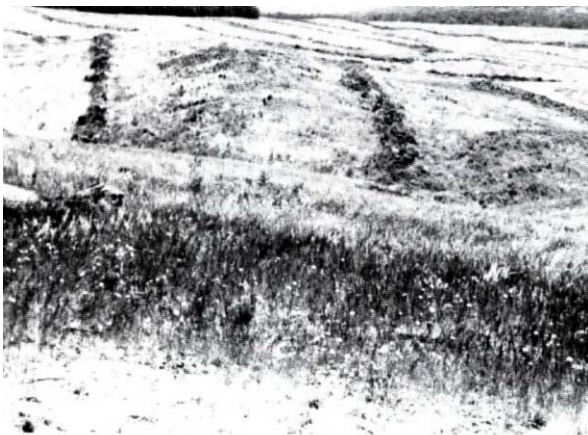


**WOMBAT LAND SYSTEM (Wt)**
**Area 283 km<sup>2</sup> 6.8% of Catchment**

<b>CLIMATE</b> Rainfall, mean (mm) Temperature, mean (°C) Seasonal growth limitations	Annual, 750-1300; lowest January (50-55), highest (120-130) Annual, 11.5; lowest July (6), highest February (18) Temperature less than 10°C (av.): late April-early September Rainfall less than potential evapotranspiration: November-February		
<b>GEOLOGY</b> Age, rock type	Ordovician, sandstone and mudstone		
<b>PHYSIOGRAPHY</b> Landform pattern Elevation range (m) Relative relief (m) Drainage pattern Channel spacing	Undulating to rolling low hills 460-840 30 Dendritic Moderate		
<b>LAND COMPONENT</b> Number Percentage of land system	1 40	2 50	3 10
<b>PHYSIOGRAPHY</b> Landform element Slope; modal, range Site drainage	Narrow crest and steeper slope 12,5-35 Somewhat excessively drained	Broad crest and gentle slope 5,1-12 Well drained	Broad drainage depression 2,14 Somewhat poorly drained
<b>SOIL</b> Parent material Description Classification Surface texture Depth to hardpan or bedrock (m) Nutrient status Available water capacity Permeability Exposed rock/stone Sampled site number	Sandstone and mudstone Reddish brown, brown or yellowish brown friable gradational soils with acidic subsoils Gn4.11, Gn374; minor Gn4.81, Gn4.31, Um2.21 Loam 0.3-1.0 Very low Moderate to high Moderate 0-20 710,711,1113	Sandstone and mudstone Yellowish brown, brown or reddish brown gradational or duplex soils; A2 horizons frequently bleached Gn3.74, Gn3.84, Dy3.41; minor Dy2.21 Loam 1.0-1.5 Very low surface, low to moderate subsoil Moderate to high Moderate surface, moderate to slow subsoil 0 725,1112	Alluvium and colluvium Brown, yellowish brown or greyish brown gradational soils, occasionally with a pale or bleached A2 horizon Gn3.91, Gn4.71, Gn4.31 Loam, clay loam > 1.0 Low to moderate Moderate to high Moderate surface, moderate to slow subsoil 0 1114
<b>NATIVE VEGETATION</b> Structure Characteristic species (+ indicates predominant species)	Open forest II / III <i>E. obliqua</i> +, <i>E. radiata</i> +, <i>E. rubida</i>	Open forest II / III <i>E. radiata</i> +, <i>E. rubida</i> , <i>E. obliqua</i>	Open forest II <i>E. ovata</i> +, <i>E. rubida</i> , <i>E. radiata</i>
<b>PRESENT LAND USE</b>	Forestry - predominantly native hardwoods, also softwood plantations ( <i>Pinus radiata</i> )	Forestry - predominantly hardwoods, also softwood plantations ( <i>Pinus radiata</i> ); grazing on native and improved pastures	Grazing on native and introduced pastures
<b>OBSERVED SOIL DETERIORATION</b>	Minor sheet erosion; limited compaction	Limited soil compaction; minor sheet erosion	Gully erosion in cleared areas; minor salting

## SUSCEPTIBILITY OF LAND TO PROCESSES OF SOIL DETERIORATION – Wombat

Compt.	Process	Susceptibility	Critical land factors	Off-site effects	Comments
1	sheet and rill erosion	low to moderate	<ul style="list-style-type: none"> <li>• moderate slopes</li> </ul>	<ul style="list-style-type: none"> <li>• sedimentation</li> </ul>	moderate soil permeability reduces the overland water flow and the erosion hazard
	leaching of nutrients	moderate	<ul style="list-style-type: none"> <li>• moderate soil permeability</li> </ul>	<ul style="list-style-type: none"> <li>• -</li> </ul>	-
	compaction of topsoil	moderate	<ul style="list-style-type: none"> <li>• loamy texture</li> <li>• topsoil often moist</li> </ul>	<ul style="list-style-type: none"> <li>• increased run-on</li> </ul>	-
2	sheet and rill erosion	low to moderate	<ul style="list-style-type: none"> <li>• gentle slopes</li> <li>• clayey subsoils of low permeability</li> </ul>	<ul style="list-style-type: none"> <li>• sedimentation</li> </ul>	-
	compaction of topsoil	moderate	<ul style="list-style-type: none"> <li>• loamy texture</li> <li>• topsoil often moist</li> <li>• high organic matter contents</li> </ul>	<ul style="list-style-type: none"> <li>• increased run-on</li> </ul>	-
3	gully erosion	low to moderate	<ul style="list-style-type: none"> <li>• accumulations of alluvium</li> <li>• subsoils that slake/disperse</li> </ul>	<ul style="list-style-type: none"> <li>• sedimentation</li> </ul>	-
	salting	low	<ul style="list-style-type: none"> <li>• stored salts in soil and parent material</li> <li>• saline groundwater table may occur at shallow depth</li> </ul>	<ul style="list-style-type: none"> <li>• saline stream flows</li> </ul>	the retention of native vegetation in this land system maintains the groundwater table at safe depths
	compaction of topsoil	high	<ul style="list-style-type: none"> <li>• loam or clay loam texture</li> <li>• topsoil usually moist</li> <li>• high organic matter content</li> </ul>	<ul style="list-style-type: none"> <li>• -</li> </ul>	-



*The native vegetation has been cleared in readiness for a pine plantation (*Pinus radiata*).*



*Bushfires remove all protective ground cover, thereby increasing the hazard of soil compaction, run-off and soil erosion.*