

#### 7.4 Cobaw Land System (Cw)

This land system occurs on the north-western slopes of a high ridge at the southern edge of the granitic Cobaw Batholith. Dissection has produced long spurs with broad crests, often strewn with large boulders, and some accumulations of alluvium in the drainage depressions. The ridgeline forms the catchment boundary; the status to the south flowing into Port Phillip Bay.

Coarse sandy horizons characterise the soils. They constitute the soils in areas of rock outcrop, and on the alluvial/colluvial deposits, and form deep A horizons in the yellowish-grey or red duplex soils of the slopes. These coarse materials are permeable but have low capacities for storing water.

In most of the area the original forests of *E. obliqua* and *E. viminalis* remain, usually with an open understorey dominated by *Pteridium esculentum*. *E. ovata* occupies the drainage depressions.

The forest supplies sawn timber products, especially from the preferred species *E. obliqua*, and the small cleared areas are used for grazing of sheep. Droughty soils, high fertiliser requirements and leaching of nutrients limit pasture improvement, and most cleared areas have low agricultural productivity.

Although the steeper slopes are susceptible to erosion, they remain stable under forest. Leaching of nutrients may be a problem, particularly where clay subsoils are absent.



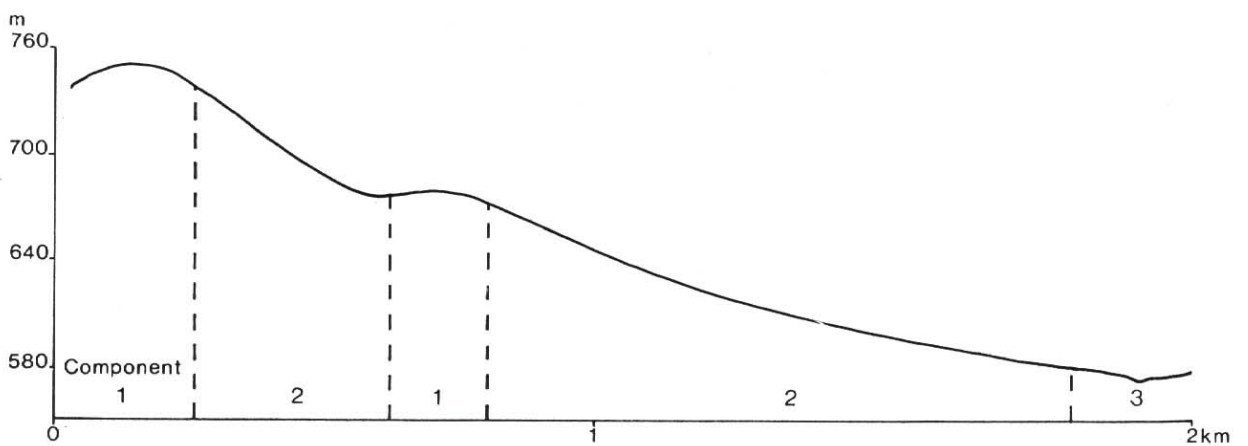
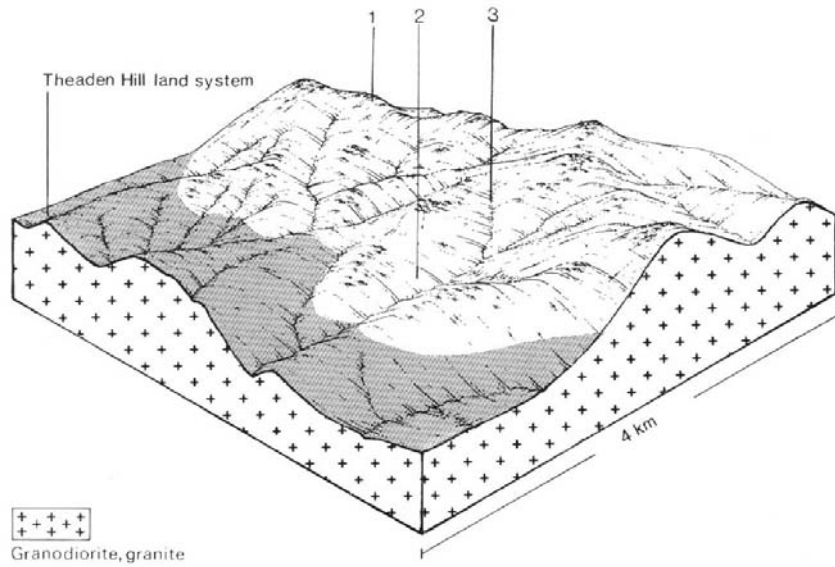
*A continuous forest canopy cover the boulder-strewn slopes of the Cobaw Ridge.*



*An open forest of E. obliqua and E. viminalis grows among the granitic boulders and rock sheets of the upper slopes and crests.*



*E. ovata grows in the slightly moister drainage depressions where deep deposits of sandy alluvium/colluvium occur*

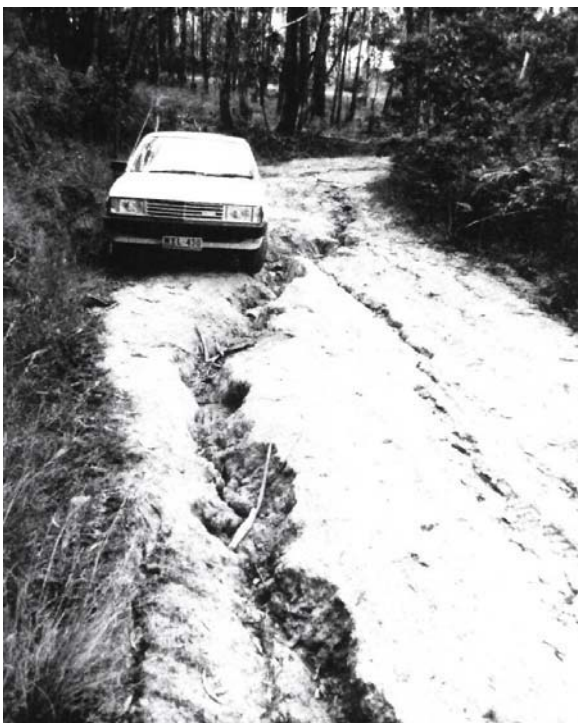


**COBAW LAND SYSTEM (Cw) Area 22 km<sup>2</sup> 0.5% of catchment**

<b>CLIMATE</b> Rainfall, mean (mm) Temperature, mean (°C) Seasonal growth limitations	Annual, 750-800; lowest January (35-40), highest June (90-95) Annual, 11.5; lowest July (5), highest January (18) Temperature less than 10°C (av.): April – September Rainfall less than potential evapotranspiration: mid October – mid March		
<b>GEOLOGY</b> Age, rock type	Devonian, granodiorite, granite		
<b>PHYSIOGRAPHY</b> Landform pattern Elevation range (m) Relative relief (m) Drainage pattern Channel spacing	Rolling hills 560-776 80 Dendritic Moderate		
<b>LAND COMPONENT</b> Number Percentage of land system	1 15	2 80	3 5
<b>PHYSIOGRAPHY</b> Landform element Slope; modal, range (%) Site drainage	Rocky crest and knoll Variable, 0-25 Excessively drained	Slope, often rocky 20, 5-40 Somewhat excessively drained	Drainage depression 1, 0-1 Well 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	Granodiorite & colluvium Sandy soils, frequently shallow  Uc2.12, Uc1.43 Coarse loamy sand 0-1.2 Very low Low Rapid 10-50 1099	Granodiorite & colluvium Yellowish grey duplex soils with mottled acidic subsoils; occasional sandy soils and red duplex soils on steep somewhat excessively drained upper slopes Dy3.41, Dr2.41, Uc1.42; minor Dy2.41 Coarse sandy loam 0.5-1.5 Low Sandy soils – low; duplex soils – low topsoil, moderate subsoil Sandy soils – rapid; duplex soils – rapid topsoil, slow subsoil 0-30 728, 1100	Colluvium & alluvium Loamy topsoil over sandy granitic colluvium/alluvium  Uc1.21 Sandy loam, loam >2.0 Low Low Rapid 0 1061
<b>NATIVE VEGETATION</b> Structure Characteristic species (+ indicates predominant species)	Open forest II <i>E. viminalis</i> , <i>E. obliqua</i>	Open forest II/III <i>E. obliqua</i> / <i>E. viminalis</i>	Open forest II <i>E. ovata</i>
<b>PRESENT LAND USE</b>	Forestry	Grazing on native and introduced pastures; forestry	Minor grazing
<b>OBSERVED SOIL DETERIORATION</b>	Sheet erosion is significant on the steeper slopes when cleared, logged or burnt		Minor gully erosion in cleared lower drainage depressions

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

Compt.	Process	Susceptibility	Critical land factors	Off-site effects	Comments
1	Sheet & rill erosion	Low to moderate	<ul style="list-style-type: none"> <li>Moderate to steep slopes</li> </ul>	<ul style="list-style-type: none"> <li>Sedimentation</li> </ul>	High soil permeability reduced overland flow and reduces the erosion hazard
	Wind erosion	Moderate to high	<ul style="list-style-type: none"> <li>Rock outcrop</li> <li>Weakly structured sandy topsoil</li> <li>Exposed topographic position</li> </ul>	<ul style="list-style-type: none"> <li>Sedimentation</li> </ul>	-
	Leaching of nutrients	High	<ul style="list-style-type: none"> <li>Droughty topsoil</li> <li>High soil permeability</li> <li>Low cation exchange capacity</li> <li>Low percentage base saturation</li> </ul>	<ul style="list-style-type: none"> <li>-</li> </ul>	Added fertilizers are readily leached
	Landslip	Low to moderate	<ul style="list-style-type: none"> <li>moderate to steep slopes</li> <li>high soil permeability</li> <li>impermeable rock or hardpan below soil</li> </ul>	<ul style="list-style-type: none"> <li>Sedimentation</li> </ul>	These slopes are presently stabilized by native vegetation
2	Sheet & rill erosion	Moderate	<ul style="list-style-type: none"> <li>Moderate slopes</li> <li>Clayey subsoil of low permeability</li> <li>Rock outcrops that shed water</li> </ul>	<ul style="list-style-type: none"> <li>Sedimentation</li> </ul>	-
	Wind erosion	Moderate	<ul style="list-style-type: none"> <li>Weakly structured sandy topsoil</li> <li>Droughty topsoil</li> </ul>	<ul style="list-style-type: none"> <li>Sedimentation</li> </ul>	-
	Leaching of nutrients (topsoil)	High	<ul style="list-style-type: none"> <li>High topsoil permeability</li> <li>Low cation exchange capacity</li> <li>Low percentage base saturation</li> </ul>	<ul style="list-style-type: none"> <li>-</li> </ul>	-
3	Gully erosion	Low	<ul style="list-style-type: none"> <li>Accumulations of alluvium</li> </ul>	<ul style="list-style-type: none"> <li>sedimentation</li> </ul>	-
	Leaching of nutrients	High	<ul style="list-style-type: none"> <li>High soil permeability</li> <li>Low cation exchange capacity</li> <li>Low percentage base saturation</li> </ul>	<ul style="list-style-type: none"> <li>-</li> </ul>	Added fertilizers are readily leached.



*The siting and gradient of roads need to be carefully planned to prevent this form of land deterioration.*