

817351

LYELL HIGHWAY

The Lyell Highway runs through the middle of this land system which is a rugged area with steep slopes, deep valleys and prominent ridges. It has traditionally been used as a route to Queenstown and the west coast with the inevitable consequence of disturbance through firing, especially close to the highway. It has been separated from the Franklin River Land System, which has similarities in topography, soil and geology, due to frequent disturbance by firing. Precambrian quartzite and schist are the dominant rock types in the area, although (Pleistocene) glacial outwash, morainal and solifluction deposits also occur. These often contain dolerite coarse fragments and finer yellow brown material which was probably derived from the Central Plateau. River terraces, evident on the flats of the upper Franklin River (e. g. in the Artists Hill area), may indicate higher water levels associated with Pleistocene glaciations.

A high degree of disturbance in this land system has resulted in a complex vegetation pattern which is often hard to predict. Slope components are especially difficult in this respect and may support

a mosaic of sedgeland/heath, scrub or forest which vary continuously over similar slopes, soils and aspects. The variation is probably an indication of regular firing along a section of road that is notorious for burns initiated by arsonists.

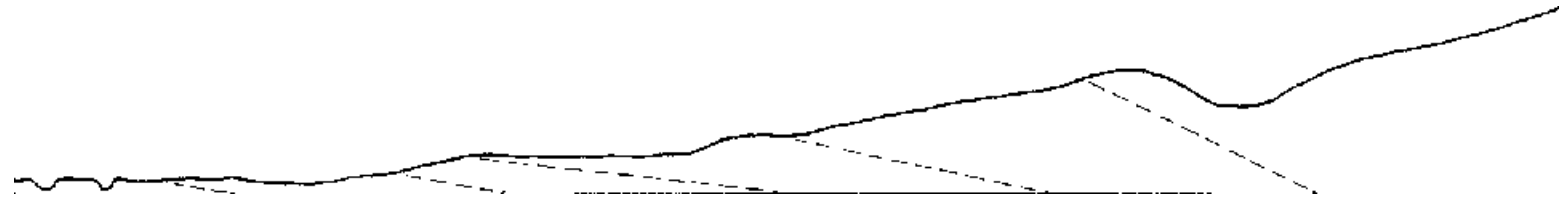
Organic surface horizons are typical of most soil profiles in this land system with the shallowest peats occurring under rainforest (closed forest). The rainforest peats are often a different colour to other organic soils while the underlying mineral soils are characteristically deeper. Sclerophyllous vegetation grows on black to grey organic soils over sandy, gravelly mineral substrates that are probably derived from glacial deposits. Riverine forest is dominated by *Nothofagus cunninghamii*, *Eucryphia lucida*, *Phyllocladus aspleniifolius* and *Atherosperma moschatum* with some emergent *Eucalyptus nitida*. Similar associations occur on protected slopes and gullies where surface soil and litter is less likely to dry out. As a consequence these positions are relatively well protected from firing. *Gymnoschoenus sphaerocephalus* is widespread on flats and slopes often forming a dense understorey under open *Eucalyptus nitida* forest, with *Leptospermum* and *Melaleuca* spp. These latter species together with *Acacia* spp. are common in scrubby areas.

The main land uses in the land system are recreation, nature conservation and forestry. The main hazards are peat loss associated with regular firing and subsequent erosion of lower soil layers.

LAND SYSTEM
LYELL HIGHWAY

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Area (ha) : 31566



ALTITUDINAL	600-900		APPROXIMATE ANNUAL RAINFALL (mm)			
SITE ID. (m) /ASPECT	136/400/-	76/400/0	77/440/SW	(134/400/0) (137/680/S)	135/440/NE	138/800/SE
TOPOGRAPHY	Mountainous areas with steep slopes, deep valleys and prominent ridges					
Position	River banks	Poorly drained flats	Slopes on glacial	Well drained flats/slopes	Slopes	Protected gullies/
Typical Slope()	0	0	10-20	0-10	15-40	10-20
Proportion (%)	10	15	5	20	20	30
GEOLOGY	Precambrian quartzite and schist			localised alluvial		
NATIVE VEGETATION	Closed -forest	Open to closed-heath	Open-heath	Open to closed-scrub	Open-forest	Closed forest
Floristic Association (See Appendix 1 for common names)	Nothofagus cunninghamii. Atherosperma moschatum Dicksonia antarctica Aristotelia peduncularis Cennarrhens	Gymnoschoenus sphaerocephalus Leptocarpus tenax Melaleuca squarrosa Sprengelia incarnata Xyris sp. Lepyrodia tasmanica Leptospermum scoparium Diplarrena	Leptospermum nitidum Eucalyptus nitida Gymnoschoenus sphaerocephalus Sprengelia incarnata Restio monocephalus Bauera rubioides Empodisma	Eucalyptus nitida Acacia melanoxylon A. dealbata A. mucronata Leptospermum nitidum Morotoca glauca Gahnia	Eucalyptus nitida Melaleuca squarrosa Leptospermum lanigerum Leptocarpus tenax Gymnoschoenus sphaerocephalus Pteridium esculentum Gahnia grandis	Nothofagus cunninghamii Eucryphia lucida Phyllocladus aspleniifolius Trochocarpa gunnii Orites diversifolia Atherosperma moschatum Gahnia
SOIL Surface(A or P horizon) Colour (moist) and texture	Dark brown (7.5 YR 3/2) fibrous peat	Dark reddish brown (5 YR 3/2) fibrous peat over black (5 YR 2.5/1) muck peat	very dark greyish brown (10 YR 3/2) fibrous peat over a very dark grey (7.5 YR 3/2)	Grey (10 YR 5/1) to very dark greyish brown (10 YR 3/2) loamy sand often	Sandy black (10 YR 2/1) fibrous peat over a black (10 YR 2/1) muck	Dark brown (7.5 YR 3/2) fibrous peat
Subsoil (or B horizon) colour (moist) and texture	Very dark brown (10 YR 2/2) gravelly silt loam over a gravelly	Quartzitic gravels	Poorly sorted glacial deposit with shist, quartzite and	Strong brown (7.5 YR 5/6) loam or sandy clay loam	Gravelly peat	Mottled strong brown (7.5 YR 5/8) clay loam over a grey (7.5 YR 5/0)
Primary Profile form	Complex (alluvium)	Organic	Organic	Complex	Organic	Gradational
Depth surface horizon(m)		0.50	0.25	0.10-0.30	0.50	0.15
Typical total depth(m)	>0.60	>0.60	0.30	>0.20-1.00	0.65	1.30
Permeability	High	High	High	High-Moderate	High	
LAND USE			Native	forestry, recreation		
HAZARD	High sheet erosion if burnt					