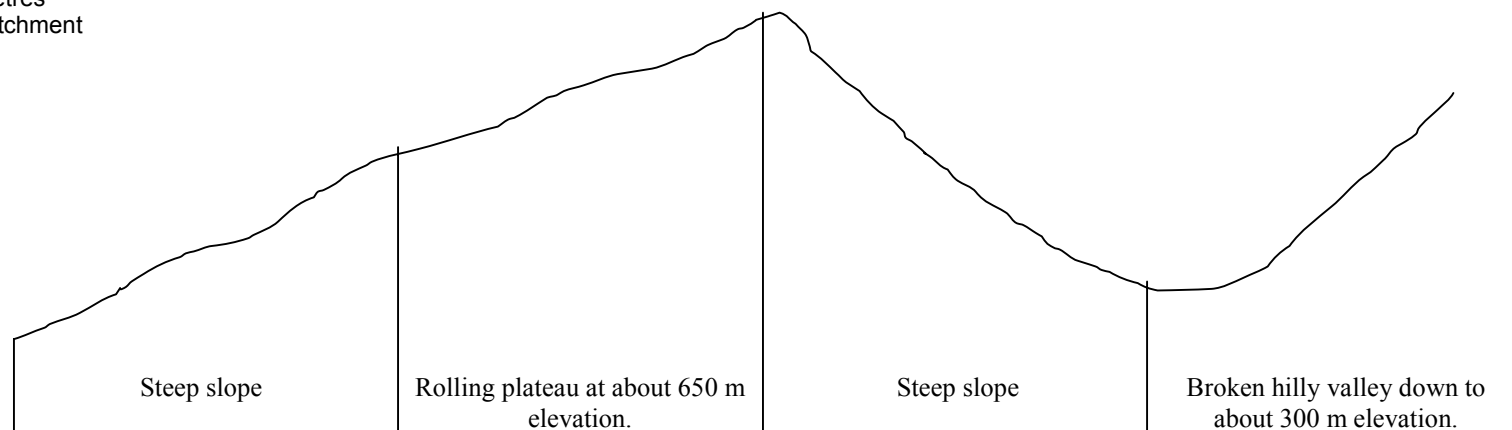


WRIGHTLEY LAND SYSTEM (Figure 31)

Area: 22 square kilometres
1 percent of catchment



Topography	Steep slope	Rolling plateau at about 650 m elevation.	Steep slope	Broken hilly valley down to about 300 m elevation.
Climate	Average annual rainfall from 750 mm to 1 150 mm. Growing season: March-May and September-November in lower areas, and to December in higher areas. Estimated average temperatures: Jan 20°C-22°C; July 6°C-8°C; Year 13°C-15°C. Estimated evapotranspiration: Jan 115 mm-125 mm; July 18 mm-20 mm; Year 700 mm-800 mm.			
Parent Materials	Metamorphosed rocks of Cambrian age			
	Chert and cherty shales	Greenstone and diabase		
Soils	Stony loams; reddish, weakly bleached gradational soils.	Friable reddish gradational soils with well structured subsoil; some calcareous dark clays in areas of impeded drainage.		
Vegetation	Open forest of red stringybark.	Open forest of long-leaf box, yellow box and manna gum.	Open forest of yellow box and long-leaf box.	Open forest of manna gum, yellow box and long-leaf box.
Land Use	Grazing of native pastures.	Grazing, some potatoes have been grown.	Mostly cleared and used for grazing; some areas sown to improved pastures; some areas are being planted with pines.	
Erosion Hazard	High	Moderate	High	Moderate to High
Erosion Status	Some sheet erosion	Generally sound	Mass movement erosion common.	Generally sound; some mass movement erosion.
Potential Land Use	Conservative management of grazing of native pastures.	Horticulture or permanent pasture.	Tree planting; conservative management.	A very productive environment; permanent pastures would seem the best use.

WRIGHTLEY LAND SYSTEM

(See Fig. 31)

This land system has been mapped to separate areas of Cambrian Age rocks which result in distinctive soils and landscape. It consists of a main area around Wrightley to the south of Tatong, mostly to the west of the Tatong-Tolmie road and south into the headwaters of Blue Range Creek, and two smaller areas further to the west in the Samaria area. The total area is 22 square kilometres, which is only 1 per cent of the catchment.

Although much of the land system consists of steep slopes there are substantial areas of rolling to hilly topography at lower levels (Plate 23), and several small plateaux. The elevation range is from about 300 m in Holland's Creek to about 700 m.

The rock is mapped (Geological Survey of Victoria; Wangaratta 1968) as Lower Cambrian greenstone and diabase with small occurrences of Middle and Upper Cambrian tuff, chert and cherty shale. The generally north-easterly strike of some of the beds of the latter has influenced the strike of the ridges in the land system.

The area has a climate very similar to that of the adjacent Loombah land system. Average annual rainfall of about 750 mm in the lower areas in the west, to about 1150 mm may be expected. Seasonal patterns of plant growth on the lower areas may be similar to those indicated for Benalla (Fig. 13) but probably with a more prolonged spring flush than at Benalla because of greater soil moisture availability resulting from the deeper and better structured soils. On the plateaux the pattern of growth would probably be similar to that indicated for Strathbogie North (Fig. 14).

There may be marked contrasts between the warmer, exposed northern aspects and sheltered southern aspects. The effects of these climatic contrasts are increased by the occurrence of the less readily weathered cherty shales, and therefore of shallower and more stony soils on the north-westerly sides of several of the prominent ridges in the land system.



Plate 23. Irregular hilly topography on Cambrian greenstone in the valley of Holland's Creek forms part of the Wrightley land system.

The most widespread rocks are greenstone and diabase which generally weather readily to produce deep clayey soils with relatively high free ferric-oxide content. Although reddish soils are also often associated with the cherty shales these are usually very stony. Furthermore, these rocks seem to be more common on the steep slopes with north-westerly aspects and the soils are usually pale, stony loams or stony, reddish bleached gradational soils.

The most widespread soils are friable reddish gradational types with well structured subsoil, but often the profile is almost a uniform light clay. Black clays occur in areas of impeded drainage, and on the steeper slopes the soils usually have much smaller fragments of stone. The dominant soils are moderately acid and have relatively high phosphorous status. However, the high free ferric oxide content (probably associated also with aluminium oxide) may reduce the availability of phosphorus to plants. It is noteworthy however that thistles grow prolifically in pastures on these soils and pose a considerable problem for pasture management.

The native vegetation has been cleared from most of the land system. The remaining uncleared areas, mainly in the south, support predominantly open forest in which manna gum and yellow box are the dominant species. Long-leaf box occurs with yellow box on the reddish soils on steeper slopes and drier areas, and the bleached gradational soils on cherty shales have open forest with red stringybark dominant. Narrow-leaf peppermint also occurs on southerly aspects.

The friable reddish soils are well suited to pasture development although control of weed species on the steep slopes is difficult and expensive. Potatoes have been grown with success on the plateaux.

Erosion is not a serious problem although incipient sheet erosion occurs on some steep, stony, overgrazed slopes. The most prevalent form is mass movement on the steep slopes. Although sheet or rill erosion could occur if heavy rain fell on finely cultivated soils, the erosion hazard to the friable reddish soils under most uses would be moderate to low. The stony, bleached soils are much less productive than the friable reddish soils and thus their erosion hazard is relatively high.

The less steep areas with friable reddish gradational soils are well suited to pasture development and grazing. On the steeper slopes it would be beneficial for some trees to be retained or re-established to utilize subsoil moisture and thus reduce the risk of mass movement erosion and the development of boggy areas in the lower slopes.

The stony loams and bleached gradational soils on steep slopes can be safely used for grazing but these areas need to be carefully managed to retain adequate ground cover at all times.

The area of the land system is small and it is unlikely that land use within the area would significantly influence the overall catchment hydrology.