

THE TWISTS CREEK LAND SYSTEM

4 TWISTS CREEK LAND SYSTEM3

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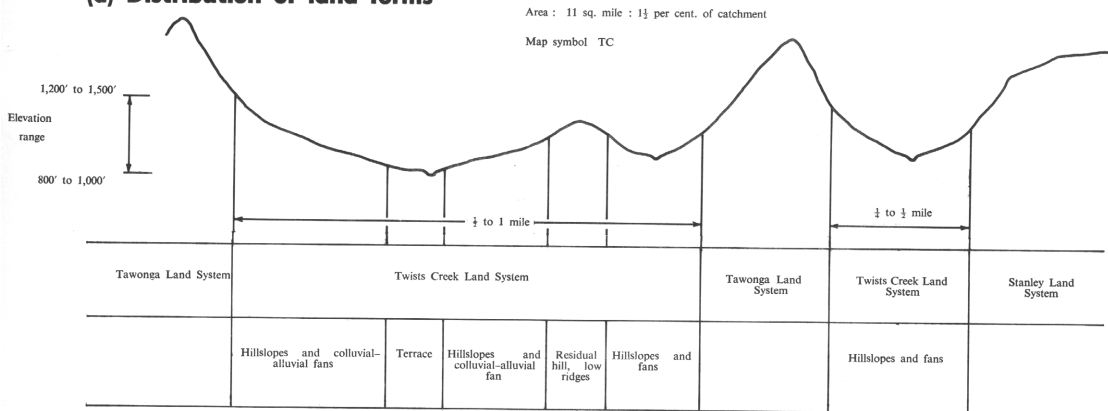
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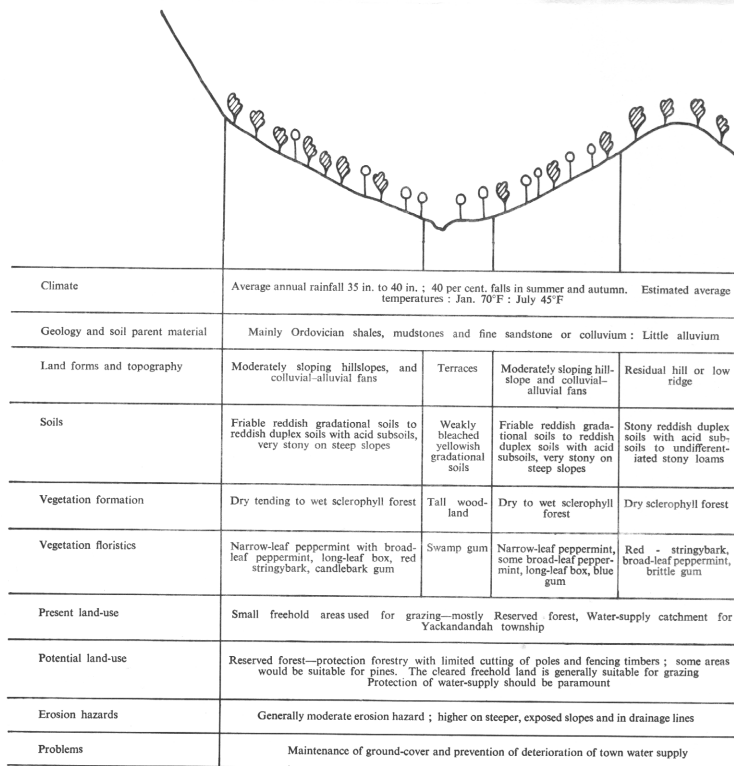


Fig 14 - Twists Creek Land System - Distribution of land forms/land system diagram

4 TWISTS CREEK LAND SYSTEM

The Twists Creek land system occupies part of the north-western corner of the catchment. It is 11 square miles in extent which is 11 per cent of the total catchment. The distribution of land forms in the land system is shown in Figure 14(a) and the land system diagram is Figure 14(b).

It consists of the lower slopes of the small valleys of Twists Creek, Nine Mile Creek, Clear Creek and Back Creek, all tributaries of Yackandandah Creek to the west of Yackandandah.

Except where it adjoins the Yackandandah land system to the east, it is enclosed by the steep slopes of the Baranduda sub-system or the higher Stanley land system.

Most of the land system within the Parish of Stanley is Reserved Forest but there are several small blocks of cleared freehold land in this area. About 40 to 50 per cent of the land system within the Parish of Yackandandah is Crown land. The remainder is freehold land, most of which is cleared, and is concentrated along the valley of Twists Creek.

There are no rainfall stations within the land system but records are kept at Stanley State Plantation to the west and at Yackandandah to the east. Average annual rainfall at Stanley over 16 years is 51 inches and the 30-year average at Yackandandah is 38 inches. Although this would suggest that rainfall would be about 40 inches in the east to about 50 inches in the higher country to the west, the vegetation seems too poor and it is suggested that the area may be in a rain shadow caused by the generally higher Stanley-Beechworth country to the west, and that annual rainfall is probably about 40 inches down to 35 inches. Estimates of average monthly temperature for January and July are 70° F and 45 F respectively.

The rocks of the land system are Ordovician fine sandstones and mudstones. There are small isolated areas of granite within the area on the eastern side, and some contact metamorphism may be expected near the granite which occurs to the south-east.

The land system consists of undulating or gently to moderately-sloping valley bottoms where colluvial-alluvial fans are the main landform, and moderate slopes up to low ridges or residual hills (Plate 31). The drainage lines usually have narrow alluvial terraces, and in the larger valleys there is sometimes a more extensive higher terrace.

There is abundant evidence of colluviation of the soil mantle, and depth to bedrock varies according to whether the site is a depositional or an erosional one.

Friable reddish gradational soils with reddish-brown light clay B-horizons are the most widespread soils on the deeper colluvial material on low slopes. Higher up the slopes bedrock is usually nearer the surface, and more pronounced differentiation develops between the A and B horizons. These are reddish duplex soils with acid subsoils, which are usually very stony and become more so towards the upper slopes. On the tops of the ridges or hills, bedrock may outcrop, or there may be shallow, weakly bleached gradational soils or undifferentiated stony loams. Pseudo B-horizons of reddish-brown well-structured clay may or may not be present in these situations and it is inferred that these represent relics of an older soil.



Plate 31 - The Twists Creek land system. There are several small areas of cleared freehold land in the valley bottoms of this land system

The higher terrace and some of the low gradient fans which merge with the terrace have weakly bleached yellowish gradational soils.

Over most of the area the vegetation is a dry sclerophyll forest of broad-leaf peppermint (*E. dives*) with narrow-leaf peppermint (*E. radiata*), long-leaf box (*E. gonicalyx*), candlebark gum (*E. rubida*), red stringybark (*E. macrorhyncha*) and blue gum (*E. bicostata*) numerically co-dominant. In areas of higher moisture availability, for example on southern aspects, or in higher-rainfall areas, such as the higher country at the southern end of the land system, the vegetation becomes a wet sclerophyll forest of narrow-leaf peppermint with blue gum and candlebark gum. On the wetter soils in the valleys, long-leaf box and blue gum occur, and swamp gum (*E. camphora*) is common along streams and on waterlogged soils. The understorey consists usually of scattered silver wattle (*Acacia dealbata*) and a discontinuous low shrub layer of bracken fern (*Peridium esculentum*), handsome flat-pea (*Platylobium formosum*) and occasionally hop bitter-pea (*Daviesia latifolia*). Ground cover is usually a mixture of herbs, grasses and forest litter. Tussock grasses (*Poa australis* and *Danthonia spp.*) often form a nearly closed sward. On poorly drained sites manuka (*Leptospermum scoparium*) is the characteristic shrub species. Woolly tea tree (*Leptospermum lanigerum*) occurs as tall shrubs along the main streams.

In the Reserved Forest and Crown land, the primary concern is with fire protection, and there is little utilization of the timber. The quality of the indigenous hardwood forest is low; probably small poles, fencing timbers and firewood would be the most common produce it could yield. The southern end of the area has a better potential for hardwood mill-log production. In the south, plantations of exotic conifers have been extended from the Stanley plateau into this land system, but as yet the area is only small. (Plate 32.)



Plate 32 - Pines have been planted extensively on the Stanley land system (right background) and down the steep slopes into the less-steep Twists Creek land system

The cleared freehold land is used for grazing cattle and sheep, and there is some dairying in the Twists Creek valley. In the past, much of the alluvial land along most major streams was sluiced for gold, and many of the ridges are pock-marked with shallow shafts. A small sluicing rig has recently been operated in Clear Creek. The valley bottoms with slopes less than about 25 per cent would be suitable for permanent pastures, but land in the Nine Mile Creek upstream of the offtake to the Yackandandah town water supply should be retained under forest to protect the water supply.

Much of the land system would also be suitable for the establishment of exotic coniferous plantations, but if the soil-moisture availability is as low as indicated by the indigenous vegetation over most of the area, the site quality would probably be only moderate. The better site qualities would be in the upper parts of the valleys. There is probably little prospect of improving the quality or quantity of indigenous timber, which the area could produce. Protection from severe fires to maintain the existing good ground cover should be one of the management aims.

The cleared freehold land within the land system appears to be quite suitable for grazing and generally the slopes would allow tractor working for pasture improvement.

The erosion hazard is moderate because of the close association of steeper slopes and valley drainage lines in which soils with dispersible subsoils occur. Maintenance of ground cover to limit surface run-off is most important.