

ADJIE LAND SYSTEM

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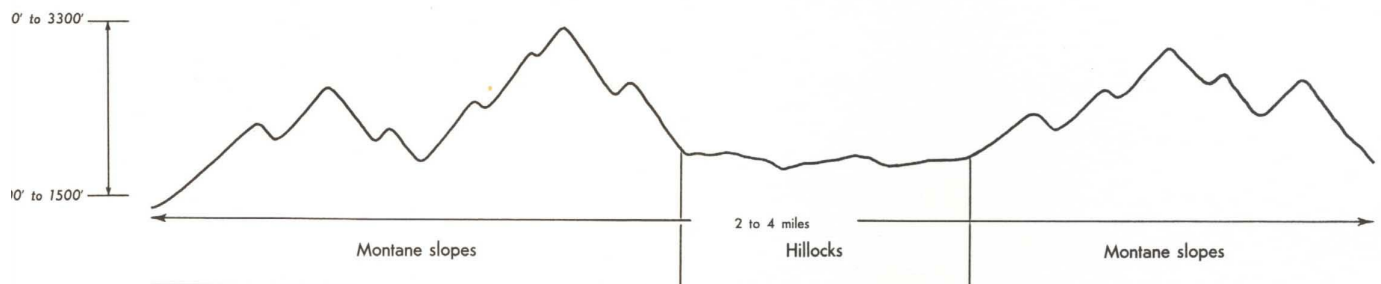
Area: 538 square miles 13.9% of catchment

Comprising two sub-systems

(b) Towong sub-system

(c) Dart sub-system

) Distribution of land forms

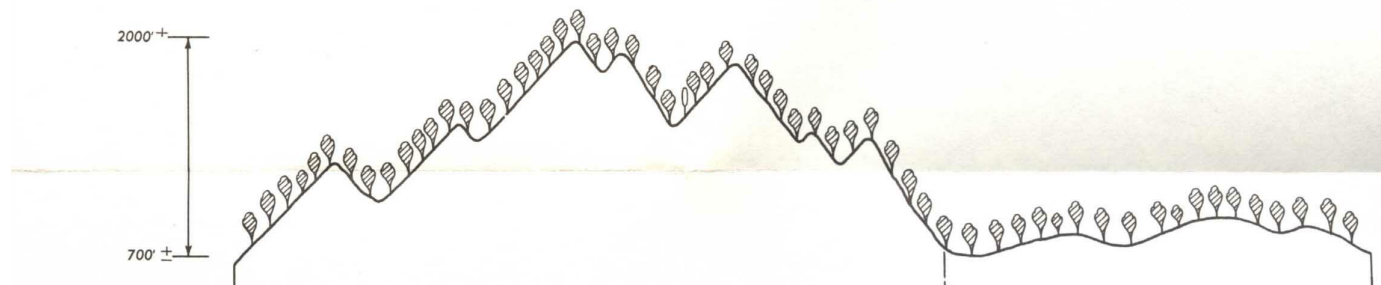


) Sub-system diagram

TOWONG SUB-SYSTEM

Area: 148 square miles 3.8% of catchment

north to west ← → south to east



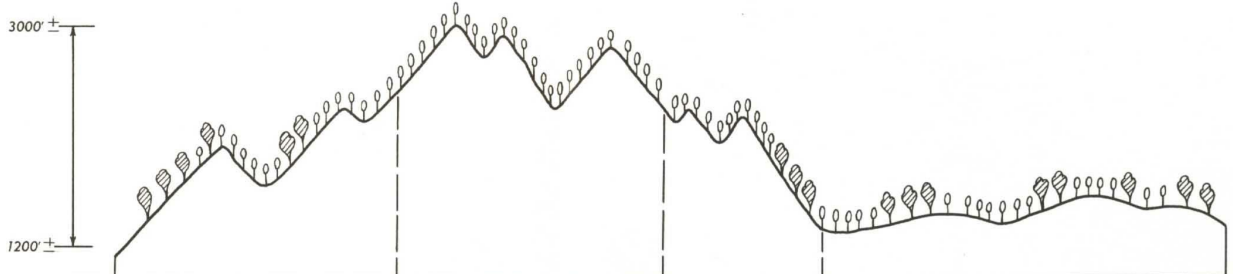
Climate	Average annual rainfall 30 in. to 35 in. Summers warm to hot, winters cool	
Geology	Mainly granite, some schist	
Topography	Steep to very steep	Rolling to hilly
Land Form	Montane slopes	Hillocks
Soil Groups	Leptopodzols, some lithosols and regosols	Red podzolic soils, leptopodzols and some regosols
Vegetation Structure	Dry sclerophyll forest tending to wet sclerophyll forest	
Vegetation Floristics	<i>E. macrorhyncha</i> alliance	
Present Land-use	Forestry—catchment protection. Limited utilization for local supplies of fencing timber, poles and some scantling-quality mill-logs	Mainly protection forestry with licensed grazing of cattle and sometimes sheep. Some cleared land used for cattle and sheep grazing, and some dairying
Potential Land-use	Forestry—catchment protection, with utilization aimed at improving the quality of the remaining timber, and maintenance of ground cover	Capable of development for grazing or dairying. Most cleared land could be improved with sown pastures and adequate fertilizer applications
Hazards	Moderate sheet erosion hazard. Rilling of logging tracks and roadside erosion. The erosion hazards are higher on coarse-textured soils derived from granite	Moderate sheet and gully erosion hazard. Roadside erosion. The erosion hazards are higher on the coarse-textured soils derived from granite
Problems	Fire protection and provision of vehicular access. Improvement of timber stand quality. Maintenance of ground cover. Prevention of road erosion	Pockets of country suitable for agriculture are often isolated and not readily accessible at present. Developmental costs of uncleared land would be high. Establishment of improved pastures and management of the steeper cleared land is difficult

(c) Sub-system diagram

DART SUB-SYSTEM

Area: 390 square miles 10.1% of catchment

north to west ← → south to east



Climate	Average annual rainfall 40 in. to 45 in. Summers warm to hot, winters cool		
Geology	Variable—Ordovician shales and mudstones, schist, granite and quartz porphyry		
Topography	Steep to very steep		Rolling to hilly
Land Form	Montane slopes		Hillocks
Soil Groups	Leptopodzols, some lithosols	Cryptopodzols, some lithosols	Leptopodzols, some lithosols Red podzolic soils, leptopodzols, some cryptopodzols and regosols
Vegetation Structure	Wet sclerophyll forest tending to dry sclerophyll forest		
Vegetation Floristics	<i>E. radiata-E. rubida-E. dives</i> alliance, to <i>E. macrorhyncha</i> alliance		
Present Land-use	Forestry—catchment protection, with limited utilization for local supplies of fencing timbers, poles and some scantling—quality mill-logs		Mainly protection forestry with licensed grazing of cattle and some sheep. Some cleared land used for grazing cattle, sheep, and some dairying
Potential Land-use	Forestry—improvement of stand quality and growth rate with utilization. Catchment protection, maintenance of ground cover		Suitable conditions for softwood plantations. Fattening or dairying on perennial pastures. Most freehold land could be improved with sown pastures and adequate fertilizer applications
Hazards	Low sheet erosion hazard. Rilling of logging tracks and roadside erosion. Slumping on steep cleared land. The erosion hazards are higher on coarse-textured soils derived from granite and porphyry		Low sheet and gully erosion hazard. The erosion hazards are higher on coarse-textured soils derived from granite and porphyry
Problems	Fire protection and provision of vehicular access. Improvement of timber stand quality. Prevention of road erosion		Pockets of country suitable for plantations or farm development may be too scattered. Developmental costs would be relatively high. Access is generally poor. Pasture species and fertilizer requirements for farm lands

Fig. 26 – Adjie Land System

The Adjie land system is another which has been subdivided into two sub-systems, once again mainly on the basis of differences in climate and indigenous vegetation. Both sub-systems consist of a number of separate areas. The area of the whole land system is about 538 square miles which is almost 14 per cent. of the catchment.

Towong Sub-System

The four separate areas included in this sub-system are all in the central-northern part of the catchment. The lower part of the Dry Forest Creek drainage and the area between Pine Mountain and the Cudgewa Creek valley are the smallest of these areas. Another is the Burrowye Creek catchment, except for the lower valley tract, and the fourth is the Mt. Alfred area between Burrowye and Walwa Creeks and the Murray River.

The majority of the land is freehold but there is some Crown land, mainly in the parishes of Koetong and Jinjellie. The area of this sub-system is 148 square miles which is a little less than 4 per cent of the total catchment.

About 60 per cent. of the sub-system is steep montane slopes and the remainder is made up of the hillocks land form (Figure 26). The elevation ranges from 700 feet to 1,000 feet in the valley bottoms, and from about 2,000 feet to 2,500 feet on the ridge tops. These areas are at a stage of dissection intermediate to that of the Benambra land system, which has only steep-sided valleys, and the Berringama land system where terraces have been formed in the valleys.

The rocks in these areas are mostly grey granite, but there are some schists along the lower reaches of Burrowye and Walwa Creeks.

The separation of this sub-system from the Dart sub-system is based primarily on differences in climate and the indigenous vegetation. The Towong sub-system has an average annual rainfall of about 30 inches to 35 inches. More rain falls during the winter three months than during any other season, but the highest rainfall intensities, which are generally associated with thunder-storms, occur during the summer. Summer maximum temperatures are fairly high and winter maxima are moderately low. Frosts occur from autumn through to spring.

The soils with the most general distribution in the sub-system are leptopodzols. They occupy all of the steeper slopes except for the steepest and the narrow ridge tops where lithosols occur. The more gently-sloping country of the hillocks land form has red podzolic soils where drainage is free, and yellow podzolic soils where drainage is slow. At the break in slope between hillocks and montane land forms, alluvial fans or cones are often formed, on which the soils are regosols or leptopodzols. In sheltered gullies which have a generally southerly aspect, the soils may be cryptopodzols or amphipodzols.

In general, the vegetation over most of the sub-system is, or was prior to clearing, a dry sclerophyll forest of the *E. macrorhyncha* alliance, with *Poa australis* and dry litter providing ground cover. Areas where soil-moisture availability is higher than is general, have a dry sclerophyll forest tending to wet sclerophyll forest of the same general floristic composition, but tending towards a dominance of *E. radiata* and *E. rubida* with a shrub layer of *Platylobium formosum* and *Pteridium esculentum*.

The grazing of sheep for wool is the main form of land-use in this area, but beef cattle are grazed on some properties. The proportion of cattle to sheep is to a certain extent controlled by their relative economic returns. There is a limited amount of dairying. Some of the less-steep country has been sown to improved pasture, but in general, the only pasture improvement is top-dressing with superphosphate. Fodder conservation is a general practice. Some farmers grow special crops, such as oats or lucerne, and most cut meadow hay. Property sizes are mostly larger than in the more intensively developed valley tracts.

The forested country has little commercial value at present, there being only a limited local market for the fencing materials, poles and firewood it produces. Because of this there is probably little opportunity for improving the quality of the forest.

Over-grazing in some areas, particularly on steeper slopes where improvement of pastures is difficult, results in some mild sheet erosion. More, well-located subdivisional fencing, would facilitate better control of grazing. Most of the hill country could be cultivated and sown to improved pasture species. The complete elimination of fire, which is as necessary in the timbered areas as in farmland, should be the aim, because re-establishment of ground cover is slow.

Dart Sub-System

This, the larger of the two sub-systems, consists of four separate areas. The largest is in the north-central part of the catchment, and occupies the catchments of Log Bridge, Reedy and Rawes Creeks, and the headwaters of a number of other creeks flowing either into Tallangatta or Cudgewa Creeks. Next in order of size is the area which includes the lower Dart River valley, the section of Mitta Mitta River valley from Dartmouth down to Mt. Tabor Creek, the Six Mile and Eight Mile Creeks, and the area around Granite Flat. This area is more-or-less in the centre of the catchment. The remaining two areas are in the east, each being in the catchments of tributaries to the Indi River. One involves the Teapot Creek-Bunroy Creek area and the other the lower parts of the Omeo Creek and Buckwong Creek, excluding the Tom Groggin area which is included in the Murray land system because of its river terraces.

Within this sub-system, a large area of Timber Reserve is located in the parish of Adjie, and another, in the parish of Thowgla, is partly in the sub-system. The greatest part of the remainder of the sub-system is Crown land. The largest areas of the freehold are at Biggera, Bunroy, and Granite Flat.

The area of the whole sub-system is about 390 square miles, which is 10 per cent of the total catchment.

The Dart sub-system is made up of the same land forms in the same general proportions as is the Towong sub-system, however the elevation range is somewhat higher (Figure 26). Valley bottoms are at about 1,000 feet to 1,500 feet and ridge-top elevations are up to about 2,500 feet to 3,300 feet.

Geologically, this sub-system is more diverse than the Towong area. Ordovician fine sandstones, mudstones and shales occur in the Teapot Creek area, in parts of the Log Bridge Creek-Reedy Creek area and around Granite Flat, where there is also grey granite. Quartz porphyry occupies a large part of the lower valley of the Dart River, and schists are common in the Six Mile Creek, Mt. Tabor Creek area, and the lower Log Bridge Creek-Reedy Creek areas.

The generally higher rainfall in the Dart sub-system is the main reason for its separation from the Towong sub-system. An average annual rainfall of 40 inches to 45 inches can be expected over most of these areas. More rain falls in winter than in the other seasons, and summer is not as dry as in the Towong sub-system. Some snow may fall on the higher peaks during winter although this is not a common occurrence. Summer temperatures are milder and winter temperatures cooler than in the Towong sub-system.

The higher rainfall and milder temperatures are reflected in the soils. Cryptopodzols are the most widely distributed soils on the montane slopes. They grade into acid brown earths on some of the higher ridges, and lithosols are common on the narrow ridge tops and steeper slopes with northerly aspects. In drier parts leptopodzols are dominant, and may be associated with regosols where a sharp break of slope occurs. Red podzolic soils are found on the less-steep hills and red amphipodzols occur in higher-rainfall areas.

The vegetation is generally dry sclerophyll forest tending to wet sclerophyll forest with the *E. macrorhyncha* alliance merging into the *E. radiata-E. rubida-E. dives* alliance. The understorey may be open and dominated by tussocks of *Poa australis* or dense with *Platylobium formosum* and sometimes *Daviesia latifolia* and *Pultenaea juniperina* as dominants. The ground cover is generally fairly good, but dry litter contributes considerably to its completeness.

Erosion is not a problem in these areas at present. They are mostly unalienated and forested, so that little or no disturbance of ground cover occurs. The areas of freehold country could develop gullies, and sheet erosion may occur with mismanagement. Clearing of steep land should be discouraged as it is difficult to improve and the management of such areas presents many problems.

The freehold land is used chiefly for grazing of both sheep and beef cattle. The forested land is not producing any appreciable quantities of timber. Local supplies of fencing timber, poles and some firewood are the main forms of produce. The timber in moister situations may be suitable for sawmilling but the proportion of scantling-quality timber to better grades would be high. These areas would be suitable for *Pinus radiata* plantations.

Some of the rolling to hilly country in this sub-system has a suitable environment for agricultural development. However, costs of development would be high and individual areas are probably not of sufficient size to warrant encouragement. These areas are generally fairly remote from existing townships and are not easily accessible, so that roads and other services would have to be extended to develop them properly.

As in all land systems in the catchment, elimination of fire should be an objective. Even a ground fire will damage the ground cover and leave bare soil exposed. Periodic burning also appears to promote the development of thick leguminous scrub which becomes an additional fire hazard. Construction of roads for fire-protection purposes should be undertaken where access is not already good, but care must be taken to ensure that erosion does not occur from roads. New fill batters are the most frequent source of trouble.