

14. MT. WILLIAM CREEK LAND-SYSTEM

One of the biggest tributaries of the Wimmera River is Mt. William Creek which rises on the slopes of Mt. William in the Grampians and flows slowly to the north-west, through Dadswell's Bridge on the Western Highway, and on to the Wimmera River near Taylor's Lake. A number of smaller streams flow into Mt. William Creek from the upland areas of sedimentary and granitic rocks in the eastern section of the survey area. As well as Mt. William Creek and its tributaries, there are Dwyer's Creek, which flows down Victoria Valley in the Grampians into the Wannon River, and also Hopkins River and Good Morning Bill Creek between Ararat and Willaura.

The alluvial plains of all these streams are built up mainly of Pliocene and Pleistocene fluvial sands and clays. Narrow bands of Holocene deposits are in the immediate vicinity of each creek. The combined area of the alluvial plains is 218 square miles and it has been named the Mt. William Creek land-system. Gloe (1947) has mapped the approximate boundary of the Tertiary Murray Sea and it would appear that the land covered by this land-system was never under that sea. In this way, the area has a different history of geomorphology from the previous four land-systems.

Along the greater part of its boundary, the land-system is sharply defined by its flatness from the rising country from which the streams derive their flow. Elsewhere, differences of soil distinguish it from surrounding land-systems. The diagram in Figure 18 summarizes its features and indicates that the flat plain is the only land-form.

The soils throughout Mt. William Creek land-system are solodic and solonchic soils. A few areas of gilgaied solodic soils have been noted. These soils have in common an A horizon of coarse to medium texture overlying a B horizon of heavy clay. However, the clay varies in depth between three and thirty inches below the surface and the A horizon varies from sand to loam with sometimes a sandy clay loam in the A₃ horizon.

A savannah woodland of red gum is the common plant community and it occurs in the central and southern parts of the land-system. Elsewhere tall woodlands of yellow box, yellow gum, grey box and red gum occur.

Fine wool grown on native and introduced pastures is the main primary industry. Around Lake Fyans and north to beyond Dadswell's Bridge, the widespread sowing of introduced species has only recently commenced, but elsewhere this development is more general and much older. Usually Mt. Barker subterranean clover is sown, although the variations in average rainfall and in drainage across the land-system allow the choice of a number of varieties and species. Perennial ryegrass and phalaris are suitable perennial grasses. Legumes like Yarloop subterranean clover and Palestine strawberry clover which tolerate poorly drained soils should find wide application because of the flat topography and the likelihood of local seasonal flooding. This is particularly so in Warra Warra and Illawarra parishes where the clay horizon of the solonchic soils is usually less than six inches below the surface and, in Warra Warra parish, Mt. William Creek divides into a number of effluents. The predominance of sedges over grasses in the ground flora indicates the wetness of these areas.

Generally superphosphate is the only fertilizer needed to assist the growth of the introduced pastures. The possibility of the need for potash should be considered where the topsoils are comparatively deep and sandy and the clay subsoils are more than about two feet below the surface.

The topography, soils and climate give this land-system a potential for fodder crops and root crops. Only along Salt Creek near Moyston is there any appreciable development in this direction. Heavy crops of linseed have also been grown there.

There is a negligible erosion hazard because of the flat topography. The only serious examples of erosion are stream-bank erosion along sections of Salt Creek, Fyans Creek, Pentland's Creek and Hopkins River.

Land-Units

Differences of soil, vegetation and rainfall within the land-system have led to the recognition of the Mt. William Creek, Warra Warra, Hopkins River and Dwyer's Creek land-units.

Mt. William Creek land-unit covers the middle and upper sections of the Mt. William Creek alluvial plain, from west of Moyston north to beyond Lake Lonsdale. The alluvial plain includes several tributaries, the more important of which are Salt Creek, Pentland's Creek, Sugarloaf Creek, Barney's Creek and Fyans Creek.

Solodic soils predominate in the land-unit although variations have been found in the depth to the clay and in the texture of the A horizon which are impossible to map except by an intensive grid survey. For example, along the

flood plain of Salt Creek, clay has been found at between three and eleven inches below ground level, whilst the A horizon at some sites is a loam throughout and at others a sandy loam over a sand. Around Lake Fyans, the A horizon is a sand underlain by clay at about 18 inches below the surface. In the south-western parts of the parish of Bellaure, the A horizon averages 25 inches in depth. Gilgaied solodic soils have also been noted in which the puff has clay within one or two inches of the surface and the shelf has a deeper A horizon.

Except for the area around Lake Fyans which has a tall woodland of red gum and yellow box, the dominant vegetation is a savannah woodland of red gum.

Towards the north-western corner of the parish of Bellellen there is a small area of the Warratong land-system which is too small to show on the land-system map. It has a number of low east-west sand dunes supporting a heath woodland of apple box and bracken. Between the dunes is a flat plain with solonetzic soils and a woodland of yellow gum.

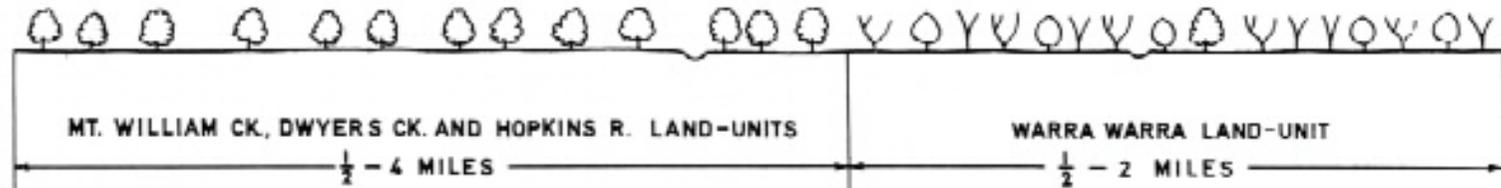
Warra Warra land-unit occurs in two localities. The larger is around Dadswell's Bridge at the northern end of the land-system and the smaller is west of Stawell in the parish of Illawarra. The land-unit is distinguished by tall woodlands of yellow gum, yellow box and grey box with a ground flora dominated by sedges (mainly *Lepidosperma congestum*) rather than by grasses. Patches of red gum occur in the wettest sites. The soils are solonetzic, with an A₁ horizon of sandy loam or loamy sand over an A₂ horizon of sand and then a heavy clay at three to seven inches below the ground surface. There is considerable scope for pasture improvement although the main problem is to adapt such development to the seasonal wetness of the soils.

Hopkins River land-unit is associated with Hopkins River and Good Morning Bill Creek. The narrow alluvial plains of these streams are sharply defined from the surrounding land-systems which are on basalt, granite and sedimentary rocks. The solodic soils are characterized by a loam or silty loam in the A horizon and they support a savannah woodland of red gum.

Dwyer's Creek land-unit constitutes the alluvial floor of Victoria Valley near the southern end of the Grampians. Here again are solodic soils and savannah woodlands of red gum. The soils can be placed into two classes on the basis of their profile morphologies, and Dwyer's Creek approximates to the line of demarcation. The soils of the first class have gritty and coarse sandy textures throughout their profiles, and their sandy clay subsoils are at a greater average depth (24 inches) than the subsoils of the second class. Soils of the second class have fine sandy textures throughout their profiles.

This land-unit has the highest average rainfall (23-25 inches per year in the land-system and it therefore has the best potential for successfully supporting perennial pastures. Phalaris should grow well, and in the wettest sites perennial ryegrass and strawberry clover should be tried.

MT WILLIAM CREEK LAND-SYSTEM



Climate		Average annual rainfall 21-26 inches : growing season April to September and October	
Land-Form		Flat plain	
Geology		Pliocene and Pleistocene fluviatile clay and sands	
Topography		Flat and up to 1% slopes	
Soil		Solodic soils mainly, also gilgaied solodic and solonetzic soils	Solonetzic soils
Land-Class		2A (suitable for cropping within broad rotations of mainly pasture)	
Land-Use	Present	Wool growing on native and introduced pastures, some cropping for fodder reserves	
	Problems	Waterlogging in wet seasons, the development of areas with deeper and sandier soils	
Water Erosion	Hazard	Very low	
	Actual	Restricted to some stream-bank erosion	
Native Vegetation	Structure	Savannah woodland	Tall woodland
	Species	Red gum	Yellow box, yellow gum, grey box (co-dominant) Red gum, manna gum (minor)

Figure 18 – Mt William Creek Land System