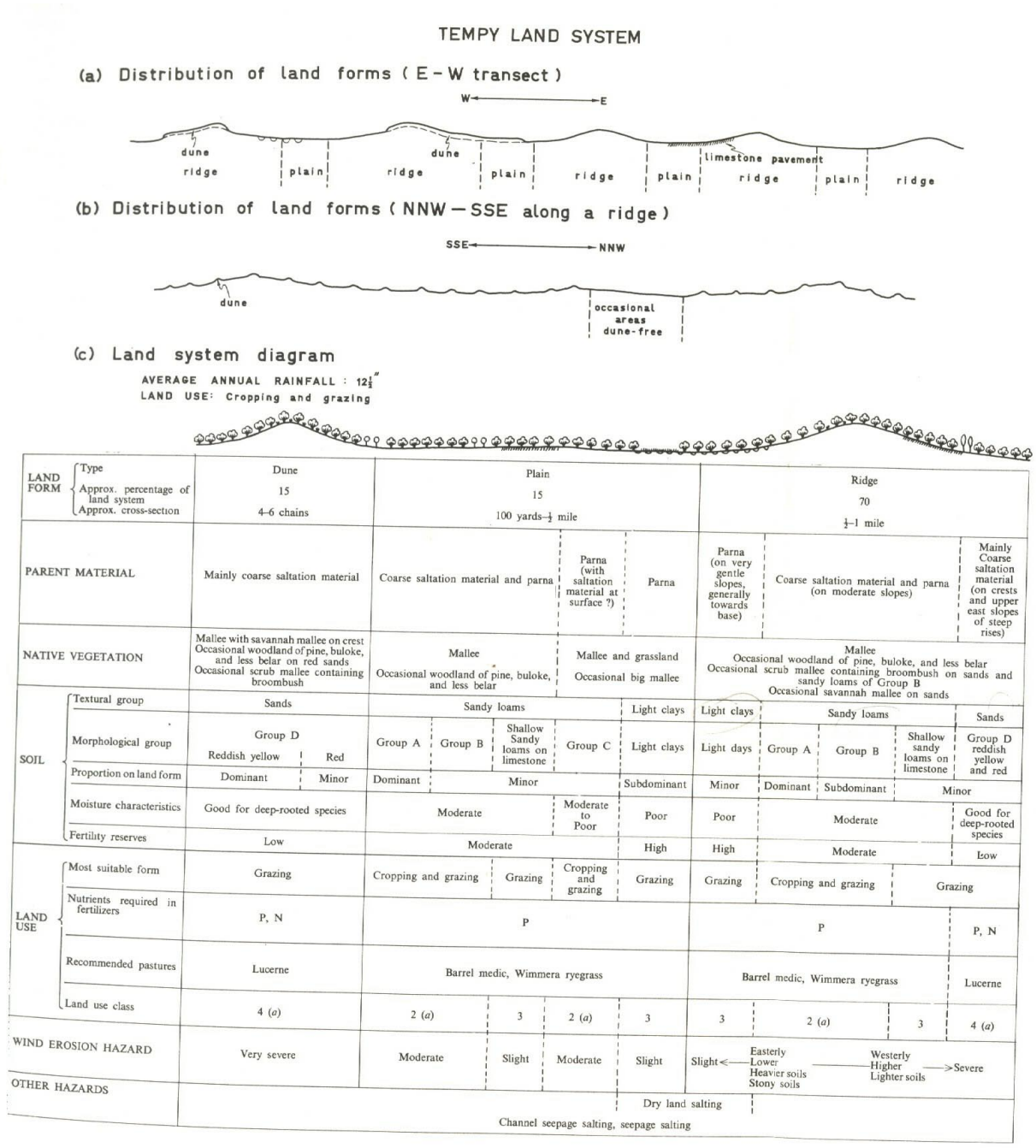
Tempy Land System

Fig. 19 – Tempy Land System



LAND FORM	Type	Dune	Plain					Ridge							
	Approx. percentage of land system	15	15					70							
	Approx. cross-section	4–6 chains	100 yards–½ mile					½–1 mile							
PARENT MATERIAL		Mainly coarse saltation material	Coarse saltation material and parna			Parna (with saltation material at surface ?)	Parna	Parna (on very gentle slopes, generally towards base)	Coarse saltation material and parna (on moderate slopes)					Mainly Coarse saltation material (on crests and upper east slopes of steep rises)	
NATIVE VEGETATION		Mallee with savannah mallee on crest Occasional woodland of pine, buloke, and less belar on red sands Occasional scrub mallee containing broombush	Mallee Occasional woodland of pine, buloke, and less belar			Mallee and grassland Occasional big mallee		Mallee Occasional woodland of pine, buloke, and less belar Occasional scrub mallee containing broombush on sands and sandy loams of Group B Occasional savannah mallee on sands							
SOIL	Textural group	Sands	Sandy loams				Light clays	Light clays	Sandy loams					Sands	
	Morphological group	Group D Reddish yellow / Red	Group A	Group B	Shallow Sandy loams on limestone	Group C	Light clays	Light days	Group A	Group B	Shallow sandy loams on limestone			Group D reddish yellow and red	
	Proportion on land form	Dominant / Minor	Dominant	Minor			Subdominant	Minor	Dominant	Subdominant	Minor				
	Moisture characteristics	Good for deep-rooted species	Moderate			Moderate to Poor	Poor	Poor	Moderate					Good for deep-rooted species	
	Fertility reserves	Low	Moderate				High	High	Moderate					Low	
LAND USE	Most suitable form	Grazing	Cropping and grazing		Grazing	Cropping and grazing	Grazing	Grazing	Cropping and grazing			Grazing			
	Nutrients required in fertilizers	P, N	P					P						P, N	
	Recommended pastures	Lucerne	Barrel medic, Wimmera ryegrass					Barrel medic, Wimmera ryegrass						Lucerne	
	Land use class	4 (*a*)	2 (*a*)		3	2 (*a*)	3	3	2 (*a*)			3		4 (*a*)	
WIND EROSION HAZARD		Very severe	Moderate		Slight	Moderate	Slight	Slight ← Easterly, Lower, Heavier soils, Stony soils — Westerly, Higher, Lighter soils → Severe							
OTHER HAZARDS		Channel seepage salting, seepage salting					Dry land salting								

At its north-eastern extremity the Big Desert splits into two arms enclosing a mixed farming area of some 440 square miles which have been mapped as the Tempy land system. Here the landscape is composed of a regular series of large N.N.W.-S.S.E. trending ridges (Plate 21), less extensive inter-ridge plains and a relatively dense array of dunes (Fig. 19). The distance between ridge crests is typically about 1½ to 2 miles and the only other area with such a regular array of ridges is the Hopetoun land system which differs however in having a much weaker system of dunes. A typical east-west section across two adjacent ridges in the Tempy land system is shown in Figure 6. One of these ridges is relatively steep with average slopes of 2 per cent whilst the other is lower and broader with slopes of less than 1 per cent. The steeper ridges are the more widespread. The dunes occupy about 15 per cent of the landscape. They are less dense on the inter-ridge plains than on the ridges where the density is comparable with that in the Central Mallee land system.

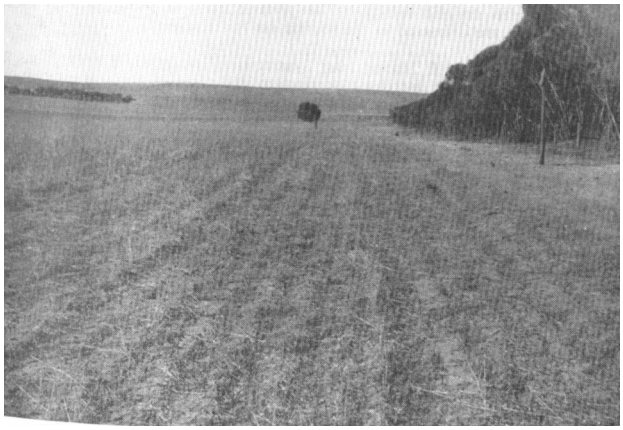


Plate 21 – Ridge topography in the Tempy land system between Speed and Patchewollock, looking east from the upper slope of a ridge.
The next ridge to the east forms the skyline.

Sands of Group D occupy the dunes and also the upper slopes of the steepest ridges. Reddish yellow sands predominate whilst there are scattered areas of the more fertile red sands. Sandy loams of Group A are the most widespread soils, occurring mainly on the middle and lower ridge slopes and also on the plains. Sandy loams of Oroup B are most commonly found on the upper slopes of moderate and gentle ridges. Shallow sandy loams on limestone are scattered on the ridges and plains whilst gilgaied light clays occur to a limited extent, mainly on the plains but also on the gentlest ridge slopes. Small areas of sandy loams of Group C have been noted on the plains.

Mallee is by far the most widespread native vegetation. It predominates on all sites except the crests of the dunes and the upper slopes of the steepest ridges which support mainly savannah mallee but also scrub mallee in which broombush is prominent. Scattered stands of pine, belar and buloke occur on all sites.

The average annual rainfall is 12½ inches. Agronomically the area has much in common with southern parts of the Central Mallee land system because of the similar soils and rainfall. However in the Tempy land system the dense dunes are more regularly arranged into bands elongated N.N.W.-S.S.E. along the ridges, with relatively few dunes in the lower sites. The fertility of the dunes has in general declined to a level at which wheat crops, and sometimes even cereal rye crops, are unprofitable unless a mixture of phosphatic and nitrogenous fertilizer is used. The sandy loams are the most suitable cropping sails. They show signs of nitrogen deficiency indicating that rotations should include a period under annual medics to rebuild fertility. The light clays appear to be only marginally suitable for cereals.

The overall erosion hazard is relatively severe and it is comparable to that in the Central Mallee land system. The dense dunes on the ridges are particularly unstable whilst the hazard is relatively low on the lower ridge slopes and on the inter-ridge plains. The most stable and productive form of land used on the dunes is the grazing of lucerne which makes outstanding growth. Seepage salting is common at the base of dunes. Channel salting also occurs and possibly also dryland salting. The reclamation and prevention of these salting problems are discussed in the section on the Hopetoun land system.

As with the Central Mallee land system the Tempy land system has a considerable potential for increased production and the pattern of conservation farming which has developed in the two areas is similar. In the Tempy land system the problem of the rearrangement of fences to separate areas requiring differential treatment is somewhat simpler because of the more regular pattern of soils distribution in which the sands occur mainly in bands along the ridges with the heavier soils in the lower sites.

The area around Patchewollock is a better-than-average cropping district because it contains relatively few dunes. In addition the dunes are composed of the more fertile red sands. The native vegetation consists largely of pine, belar and buloke woodlands.