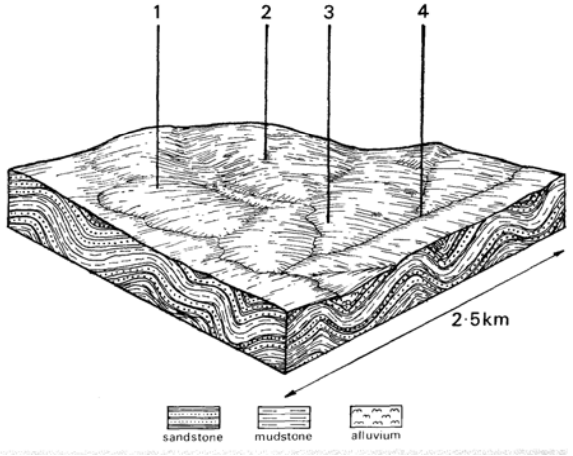
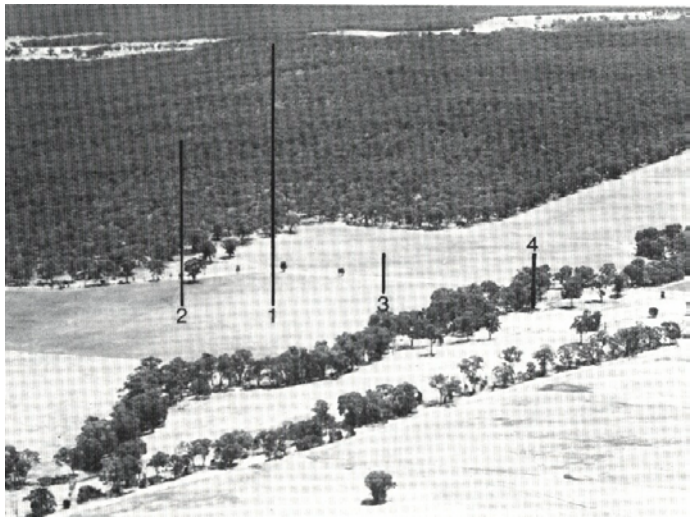
7.24 Wehla land system

Gentle bills on Ordovician sandstones and mudstones within the areas bounded by Bealiba, St Arnaud and Wedderburn support open forests characteristic of the goldfields, with *Eucalyptus sideroxylon-E microcarpa* on the upper slopes and *E microcarpa-E leucoxylon* on the lower slopes. Approximately half the area has been cleared for grazing and cropping, but selective timber-cutting still occurs in the remaining forested areas.

The weakly structured surfaces of the dominant red sodic duplex soils compact readily, with consequent accelerated run-off and sheet erosion. In addition, occasional deep percolation of moisture mobilises accumulated salts, resulting in soil salting on the lower slopes, in the drainage lines and on the adjacent alluvial flats. The highly dispersible soils on the lower slopes and in the drainage lines are prone to gully erosion.





Densely timbered gentle crests and long cleared slopes characterise this land system.

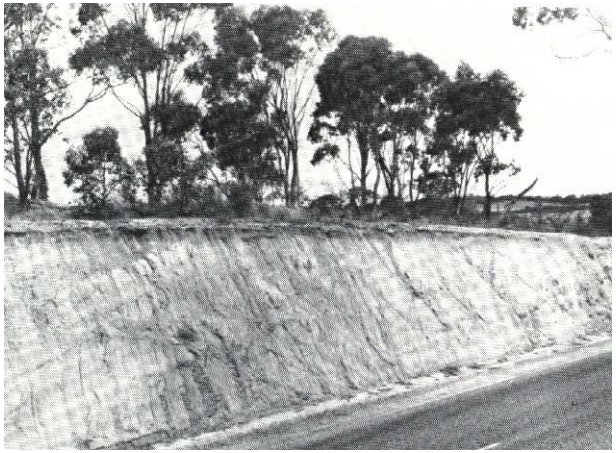
Grazing and cropping are the main forms of land use. Ridges of red iron-bark (E. sideroxylon) may be seen in the background.

WEHLA LAND SYSTEM Area 577 sq. km

CLIMATE Rainfall (mm) Temperature (^{0}C) Seasonal growth limitations	Annual, 400-500; lowest January, (20), highest June (59) Annual, 15; lowest July (8), highest January (21) Temperature: less than 10^{0} C (av.) June-August Rainfall: less than potential evapotranspiration September-April			
GEOLOGY Age, lithology	Ordovician sandstone and mudstone			
PHYSIOGRAPHY Elevation range (m) Relative relief (m) Drainage pattern Drainage density (sq km) Land form	180-360 15 Dendritic 1.0 Gentle hill			
LAND COMPONENT Percentage of land system	1 5%	2 25%	3 60%	4 10%
PHYSIOGRAPHY Position on land form Slope (typical) and range (%) Slope shape	Relatively sharp crest 10,5-14 Convex	Gentle crest 6,4-8 Convex	Long slope 4,3-5 Linear	Drainage floor 1,0-1 Concave
NATIVE VEGETATION Structure Dominant species	Open forest *E. polyanthemos* *E. macrorhyncha* *E. sideroxylon*	Open forest *E. sideroxylon* *E. microcarpa*	Open forest *E. leucoxylon* *E. microcarpa*	Open forest *E. leucoxylon* *E. microcarpa* *E. melliodora*
SOIL Parent material	Sandstone and mudstone	Sandstone and mudstone	Sandstone and mudstone	Alluvium
Description	Shallow stony red gradational soils	Red sodic duplex soils	Red sodic duplex soils, coarsely structured	Yellow sodic duplex soils
Classification	Gn4.11 -3/1/006	Dr2.41-2/1/007	Dr142-2/1//010	Db 2.41 – 2/1/017
Surface texture	Stony clay loam	Stony loam	Fine sandy loam	Fine sandy loam
Surface consistence (dry)	Moderately hard	Slightly hard	Moderately hard	Moderately hard
Depth (m)	0-1-0.5	0.5-1	1.5-2	> 2
Nutrient status	Very low throughout	Low surface, moderate subsoil	Low surface, moderate subsoil	Low surface, moderate subsoil
Available soil water capacity	Low throughout	Low surface, moderate subsoil	Low surface, moderate subsoil	Low surface, moderate subsoil
Perviousness to water	Moderate-rapid	Moderate	Slow-moderate	Slow
Drainage	Somewhat excessively drained	Well drained	Moderately well drained	Somewhat poorly drained
Exposed stun	Abundant	Common	Nil	Nil
Dispersibility	Low	Moderate	High	Low
Slaking tendency	Nil	Low	High	Low
PRESENT LAND USE	Forestry	Forestry, grazing	Grazing, cropping	Grazing

Land deterioration hazards - Wehla land system

Disturbance	Component	Affected process and trend	Primary resultant deterioration		Primary resultant off-site process
			Form	Susceptibility	
Altered vegetation -reduced leaf area, rooting depth, perenniality	2,3	Reduced transpiration, increased leaching	Nutrient decline	Moderate	Increased leaching of salts to groundwaters
Reduced soil surface cover	1,2	Increased soil detachment	Sheet erosion	High	Increased flash flows and sediment loads
	3	Increased soil detachment	Sheet erosion	Moderate	Increased flash flows and sediment loads
Cultivation, increased trafficking, trampling	1	Increased soil compaction	Structure decline	Low	Increased flash flows and sediment loads
	2,3	Increased soil compaction	Structure decline	Moderate	Increased flash flows and sediment loads
Increased soil disruption and run-on	4	Increased subsoil detachment	Gully erosion	High	Increased flash flows and sediment loads
Raised water table	3,4	Increased evaporation	Soil salting	Moderate	Increased salinity of surface waters



Shallow soils on the gentle crests (top) are highly susceptible to sheet erosion. Soil salting in the shallow drainage floors causes reduced vegetative growth, often emphasised by areas completely devoid of vegetation.