

7.19 Lonsdale land system (Le)

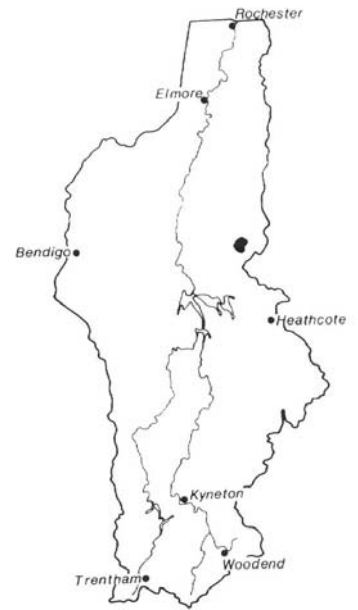
This small area on granodiorite near Toolleen has a subdued relief with some rock outcrop on the crests. It differs from the other land systems on gentle granitic terrain in having lower rainfall, and this is reflected in differences in vegetation and soils.

The soils on the rocky crests and steeper slopes have a uniform coarse sandy texture, whereas mottled yellowish grey duplex soils predominate on the slopes and in the drainage depressions. Deep sandy layers commonly overlie the clay in the drainage depressions.

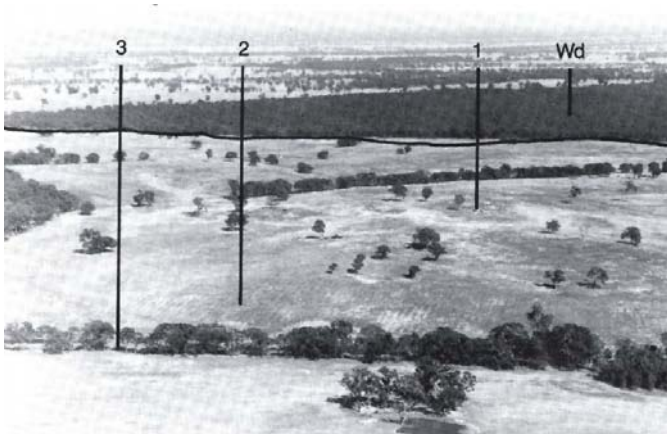
The vegetation on the crests and steeper slopes is a woodland of *E. macrorhyncha*, *E. polyanthemos*, *E. goniocalyx* and *E. microcarpa* while a *E. microcarpa*, *E. macrorhyncha* and *E. melliodora* woodland characterises the slopes. *E. microcarpa*, *E. melliodora* and occasionally *E. leucoxyton* form a woodland in the drainage depressions.

Most of the area is forested public land and managed for limited timber extraction. A small proportion is cleared and grazed.

The sandy topsoils are susceptible to wind erosion and to leaching of nutrients, but the incidence is minimal where the native vegetation is retained. Gully erosion occurs in some of the major depressions.



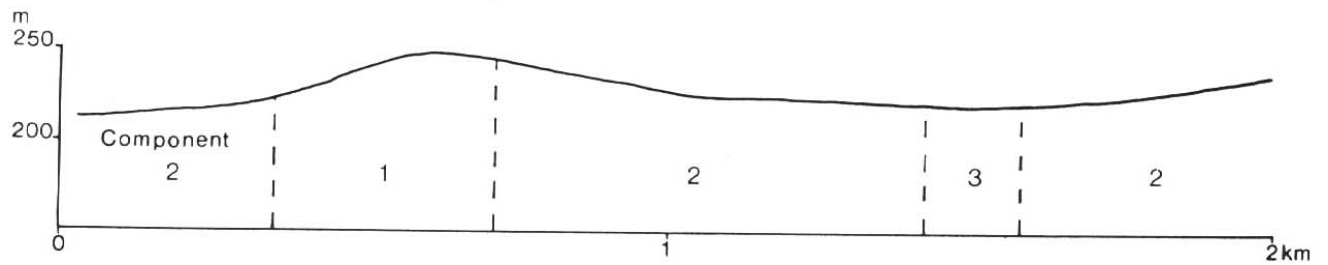
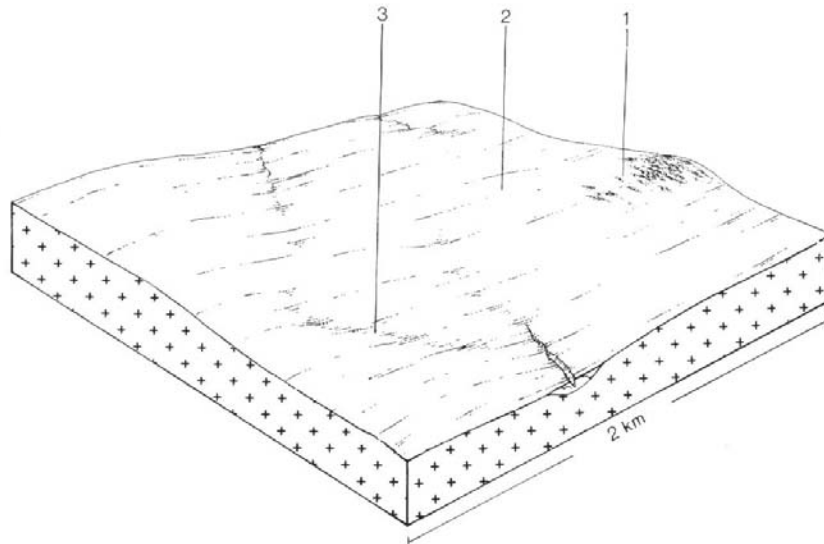
Granitic boulders are present even on the gentle slopes of the Lonsdale land system.



This granitic are is only used for grazing, but the parallel rows of an old orchard are still visible.



The uncleared woodland is straggly and sparse, with limited quantities of timber suitable for fence posts.



LONSDALE LAND SYSTEM (U)
Area 4 km²
0.1% of catchment

CLIMATE Rainfall, mean (mm) Temperature, mean (°C) Seasonal growth limitations	Annual, 550-600; lowest January (30), highest June (55-60) Annual, 14; lowest July (8), highest February (22) Temperature less than 10°C (av.): May-August Rainfall less than potential evapotranspiration: October-early April		
GEOLOGY Age, rock type	Devonian, granodiorite		
PHYSIOGRAPHY Landform pattern Elevation range (m) Relative relief (m) Drainage pattern Channel spacing	Gently undulating rises 190-240 25 Radial Sparse		
LAND COMPONENT Number Percentage of land system	1 15	2 75	3 10
PHYSIOGRAPHY Landform element Slope; modal, range Site drainage	Crest and steeper slope; usually rocky 2,0-10 Somewhat excessively drained	Gentle slope 2,04 Well drained	Broad drainage depression 1,0-2 Moderately well drained
SOIL Parent material Description Classification Surface texture Depth to hardpan or bedrock (m) Nutrient status Available water capacity Permeability Exposed rock/stone (%) Sampled site number	Granodiorite Sandy soils, often with pale A2 horizons Ucl.21, Uc2.12, Uc4.11, Uc5.11; minor Dy5.41 Coarse sandy loam, loamy coarse sand 0.1-0.5 Very low Very low Rapid 30-50 -	Granodiorite Mottled yellowish grey duplex soils with bleached A2 horizons; variants with brown or reddish brown subsoils occur Dy5.41; minor Db4.42, Dr4.41 Coarse loamy sand 1.0 Very low surface, low subsoil Low surface, moderate subsoil Rapid surface, moderate subsoil 0-5 -	Alluvium and colluvium Mottled yellowish grey duplex soils with deep sandy bleached A2 horizons Dy5.41, Dy3.41 Coarse sandy loam > 2.0 Very low surface, low subsoil Low surface, moderate subsoil Rapid surface, moderate subsoil 0 -
NATIVE VEGETATION Structure Characteristic species (+ indicates predominant species)	Woodland I / Woodland II <i>E. macrorhyncha</i> +, <i>E. polyanthemos</i> +, <i>E. goniocalyx</i> +, <i>E. microcarpa</i>	Woodland II/ Open forest II <i>E. microcarpa</i> +, <i>E. melliodora</i> +, <i>E. macrorhyncha</i> +, <i>E. polyanthemos</i>	Woodland III Open forest II <i>E. microcarpa</i> +, <i>E. melliodora</i> +, <i>E. leucoxydon</i>
PRESENT LAND USE	Limited selective logging for fence	posts and firewood, minor bush grazing and grazing of sheep; nature conservation	on native pastures in cleared areas;
OBSERVED SOIL DETERIORATION	Minor sheet erosion	Minor sheet erosion	Gully erosion in the major depressions

SUSCEPTIBILITY OF LAND TO PROCESSES OF SOIL DETERIORATION – Lonsdale

Compt.	Process	Susceptibility	Critical land factors	Off-site effects	Comments
1	sheet and rill erosion	low	<ul style="list-style-type: none"> gentle slopes rock outcrops that shed water weakly structured sandy topsoil 	<ul style="list-style-type: none"> sedimentation increased run-on 	high topsoil permeability reduces overland water flow and reduces the erosion hazard
	wind erosion	moderate to high	<ul style="list-style-type: none"> weakly structured sandy topsoil 	<ul style="list-style-type: none"> sedimentation 	-
	leaching of nutrients	high	<ul style="list-style-type: none"> droughty topsoil high soil permeability low cation exchange capacity low percentage base saturation 	<ul style="list-style-type: none"> - 	added fertilizers readily leached
2	sheet and rill erosion	low to moderate	<ul style="list-style-type: none"> gentle slopes clayey subsoils of low permeability weakly structured sandy topsoil 	<ul style="list-style-type: none"> sedimentation increased run-on 	added fertilizers readily leached
	wind erosion	moderate to high	<ul style="list-style-type: none"> weakly structured sandy topsoil 	<ul style="list-style-type: none"> sedimentation 	-
	leaching of nutrients (topsoil)	high	<ul style="list-style-type: none"> high topsoil permeability low cation exchange capacity low percentage base saturation 	<ul style="list-style-type: none"> - 	-
3	gully erosion	moderate	<ul style="list-style-type: none"> accumulations of sandy alluvium subsoils that slake/disperse 	<ul style="list-style-type: none"> sedimentation water turbidity 	-
	compaction of topsoil	low to moderate	<ul style="list-style-type: none"> loamy texture low organic matter content 	<ul style="list-style-type: none"> - 	-



Increased run-off has scoured the drainage depressions and transported large quantities of sand into Mount Pleasant Creek.



The effects of the 1982 drought: the highly permeable sandy profiles have a low water-storage capacity and could not maintain the native woodland during the extended dry period.