

### 7.25 Redesdale land system (Rs)

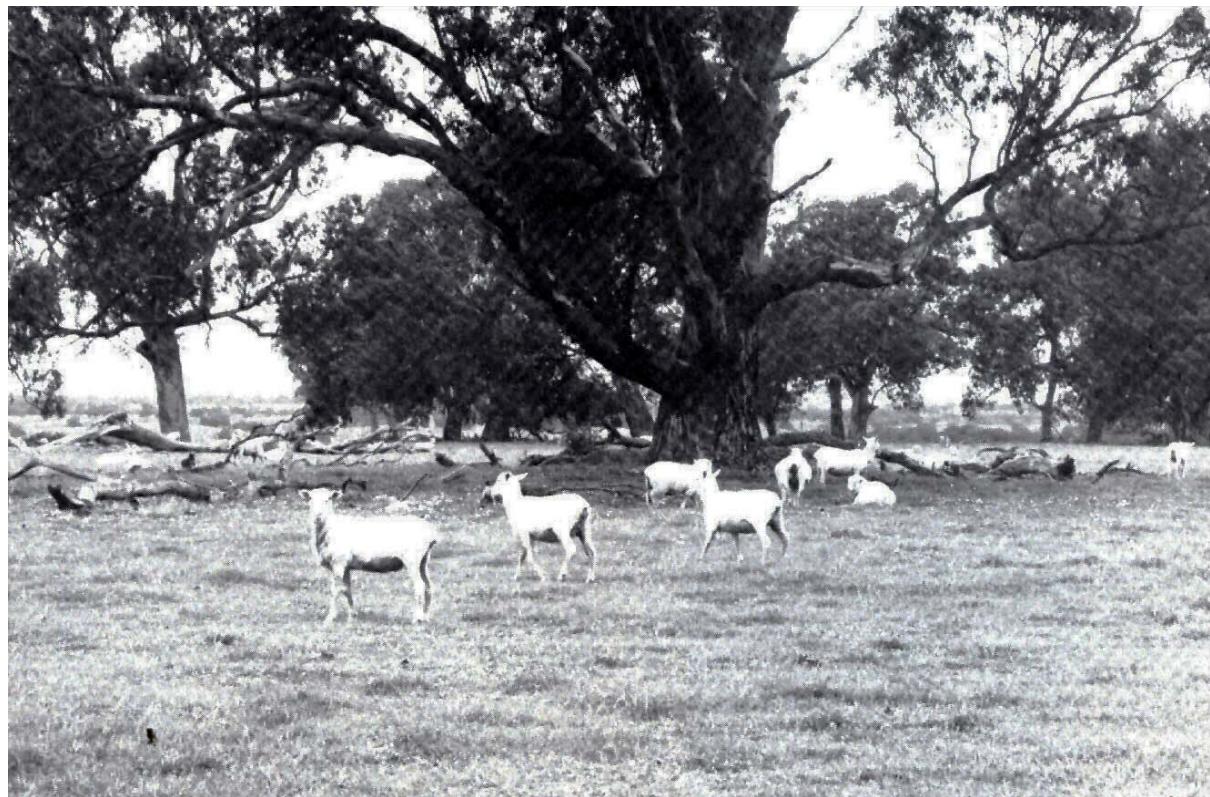
Basaltic plains near Redesdale are characterised by abundant surface rock and by majestic specimens of *E. camaldulensis*. The gently undulating plain is usually bounded by steep scarps along the major streams. A line of basalt-capped mesas are all that remain of a basalt flow along the Coliban River. Dissection by the Campaspe River has formed the spectacular Barfold Gorge, where basalts of three ages are exposed.

Deep gilgaiied soils occupy the flatter section of the plain, with stony red gradational soils on the steeper parts. The latter soils also occupy the scarps, along with self-mulching clays. The broad depressions and alluvial valleys generally have dark clays.

*E. camaldulensis* is dominant and scattered trees remain in much of the area. *E. viminalis* and *E. melliodora* occur along the Campaspe river valley.

Agricultural land use is restricted by the excessive amounts of surface and subsurface rock to the grazing of introduced pastures by sheep and cattle. Crops are grown only where the soils are deeper or where rocks have been cleared.

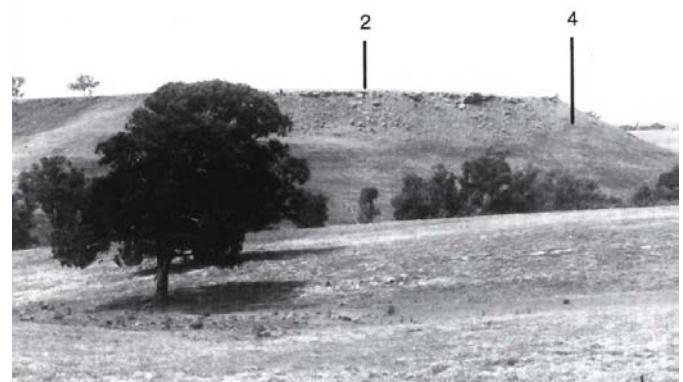
The erosion hazard is minimal except on the scarps, which have a moderate susceptibility to soil loss. However, the shallowness of soils even on gentle slopes indicates that past rates of soil loss have equalled rates of soil formation. Areas with shallow stony gradational soils are susceptible to leaching of nutrients, and compaction is a problem on the flatter gilgaiied areas.



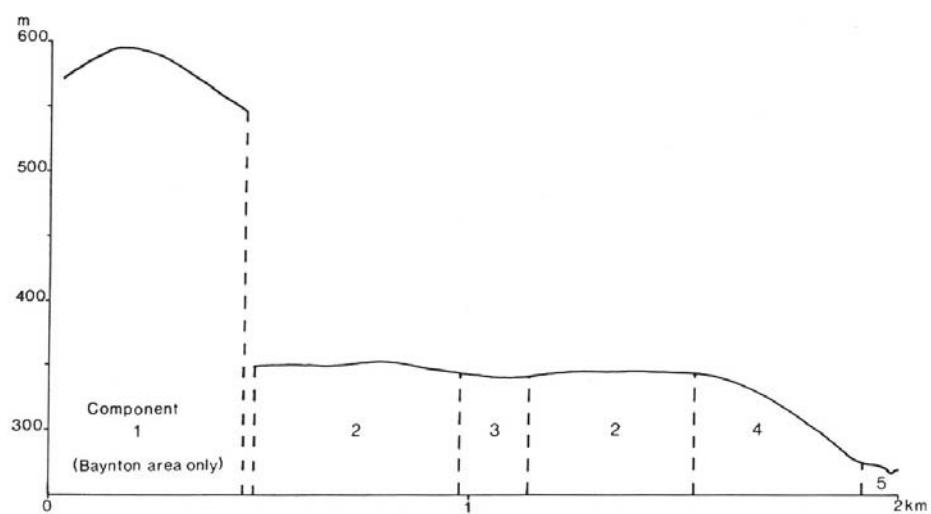
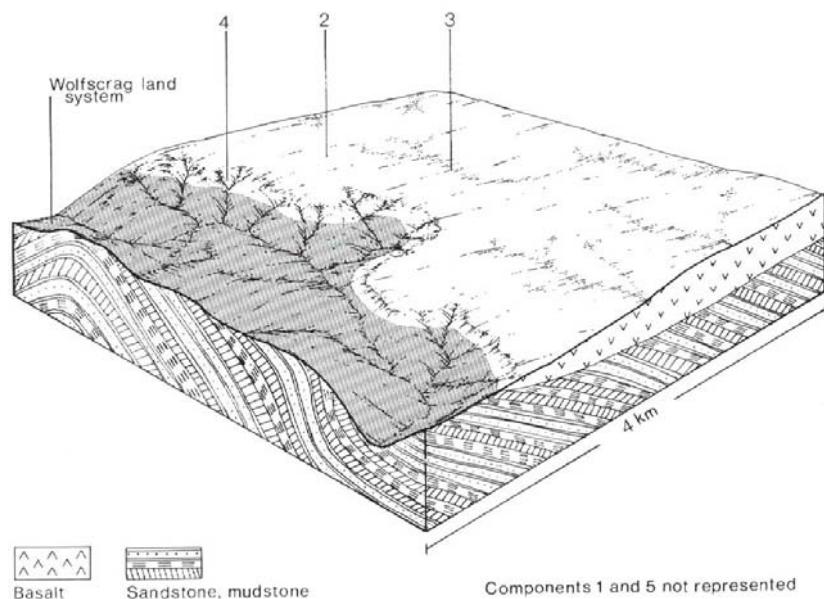
***Sheep grazing introduced pastures under *E. camaldulensis* near Redesdale.***



*The relatively flat basalt plain is steeply dissected by Pohlman Creek*



*Columnar basalt forms in impressive backdrop in the picturesque Barfold Gorge.*

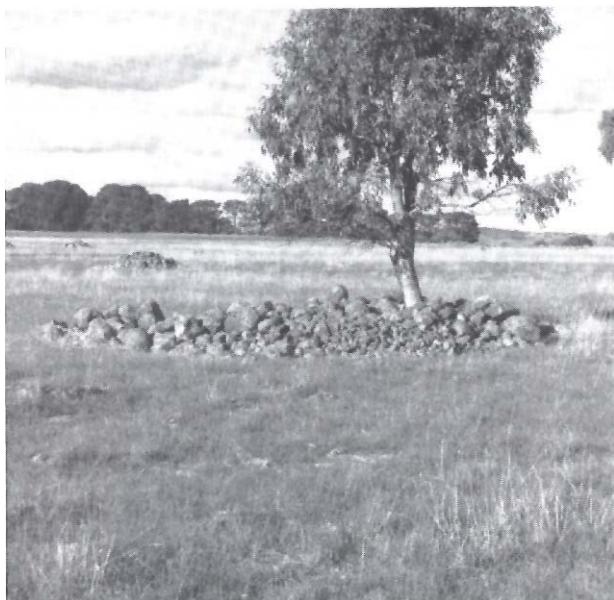


**REDESDALE LAND SYSTEM (Rs)**
**Area 158 km<sup>2</sup> 3.9% of catchment**

<b>CLIMATE</b> Rainfall, mean (mm) Temperature, mean (°C) Seasonal growth limitations	Annual, 550-750; lowest January (35-40), highest June (65-75) Annual, 13; lowest July (7), highest January or February (20) Temperature less than 10°C (av.): May-August Rainfall less than potential evapotranspiration: October-early April				
<b>GEOLOGY</b> Age, rock type	Pliocene, olivine basalt				
<b>PHYSIOGRAPHY</b> Landform pattern Elevation range (m) Relative relief (m) Drainage pattern Channel spacing	Gently undulating plain bounded by scarps, volcanic cones in south 220-594 Variable, usually less than 15 Dendritic Sparse				
<b>LAND COMPONENT</b> Number Percentage of land system	1 5	2 75	3 10	4 5	5 5
<b>PHYSIOGRAPHY</b> Landform element  Slope; modal, range Site drainage	Crest and slope of volcanic cone  15,10-30 somewhat excessively drained	Undulating plain, gilgaiied in parts  2,0-6 Moderately well drained	Minor drainage depression  1,0-2 Poorly drained	Scarp, occasionally precipitous  10,5-30 Somewhat excessively drained	Narrow flood-plain and terraces of the Campaspe River 1,0-1 Poorly drained
<b>SOIL</b> Parent material Description  Classification Surface texture Depth to hardpan or bedrock (in) Nutrient status'  Available water capacity Permeability  Exposed rock/stone Sampled site number	Basalt Shallow stony red gradational soils  Gn2.12, G3.11 Silty loam 0.2-0.6 Moderate  Low Rapid  10-50 -	Basalt Shallow stony red gradational soils; complex of uniform grey clays (puffs) and yellow duplex soils (depressions) Gn3.1, Ug5.25, Dy3.1 Loam, clay loam 0.5-> 2.0 Moderate surface, high subsoil Moderate Moderate (red soils), slow (others) 0-5 1054	Alluvium and colluvium Variable; often loamy deposits over buried, dark clay soils  Variable; Um, Dy3.12 Sandy loam to clay loam 1.0-> 2.0 Moderate to high Moderate Moderate to slow  0 1080,1116	Basalt and colluvium Shallow stony gradational soils, usually stony; occasional shallow friable clay soils Gn3.11; minor Uf6.32 Silty loam 0.3-0.6 High Low Rapid to moderate  20-80 1081, 1082	Alluvium Variable; young loamy deposits, dark duplex or dark clay soils  Um, Ug, Dd Silty loam to clay loam > 1.0 Moderate Moderate to high Variable  0 -
<b>NATIVE VEGETATION</b> Structure Characteristic species (+ indicates predominant species)	Open forest II <i>E. viminalis</i>	Woodland III Open forest II <i>E. camaldulensis</i> + Baynton area: <i>E. viminalis</i> , <i>E. ovata</i>	Woodland II / Open forest II <i>E. camaldulensis</i> + Baynton area: <i>E. viminalis</i> , <i>E. ovata</i>	Woodland II / Open forest II <i>E. camaldulensis</i> <i>E. viminalis</i>	Woodland II / Open forest II <i>E. camaldulensis</i> + <i>E. melliodora</i> , <i>E. viminalis</i>
<b>PRESENT LAND USE</b>	Grazing, mainly introduced pastures	Grazing, mainly introduced pastures; cropping of cereals and legumes	Grazing, mainly introduced pastures	Grazing, introduced pastures	Grazing, mainly introduced pastures
<b>OBSERVED SOIL DETERIORATION</b>	Minor sheet erosion	Compaction of surface soil	Minor gully erosion	Minor stream-bank erosion	Minor sheet erosion, occasional landslips

## SUSCEPTIBILITY OF LAND TO PROCESSES OF SOIL DETERIORATION – Redesdale

Compt.	Process	Susceptibility	Critical land factors	Off-site effects	Comments
1	sheet and rill erosion	low	<ul style="list-style-type: none"> <li>moderate to steep slopes</li> </ul>	<ul style="list-style-type: none"> <li>sedimentation</li> <li>increased run-on</li> <li>increased run-on</li> </ul>	high soil permeability and a perennial vegetation cover usually limits this process of deterioration -
	compaction of topsoil	moderate	<ul style="list-style-type: none"> <li>loamy texture</li> <li>moderate organic matter content</li> </ul>		
2	compaction of topsoil	moderate to high	<ul style="list-style-type: none"> <li>loamy or clay loamy texture</li> <li>moderate organic matter content</li> </ul>	<ul style="list-style-type: none"> <li>increased run-on</li> </ul>	-
3	gully erosion	low	<ul style="list-style-type: none"> <li>shallow accumulations of alluvium</li> </ul>	<ul style="list-style-type: none"> <li>sedimentation</li> </ul>	moderate levels of organic matter offer some resistance to compaction
	compaction of topsoil	moderate to high	<ul style="list-style-type: none"> <li>loamy or clay loamy texture</li> <li>soil often moist</li> <li>moderate organic matter content</li> </ul>	<ul style="list-style-type: none"> <li>-</li> </ul>	
4	sheet and rill erosion	low	<ul style="list-style-type: none"> <li>moderate to steep slopes</li> <li>moderate to high soil permeability</li> </ul>	<ul style="list-style-type: none"> <li>sedimentation</li> <li>increased run-on</li> </ul>	moderate to high soil permeability usually limits this process of deterioration
	landslip	low to moderate	<ul style="list-style-type: none"> <li>moderate to steep slopes</li> <li>moderate to high soil permeability</li> <li>steeply dipping underlying Ordovician bedrock</li> <li>loamy texture</li> <li>moderate organic matter content</li> </ul>	<ul style="list-style-type: none"> <li>sedimentation</li> </ul>	
	compaction of topsoil	low to moderate		<ul style="list-style-type: none"> <li>increased run-on</li> </ul>	
5	stream-bank erosion	moderate	<ul style="list-style-type: none"> <li>deep deposits of alluvium</li> </ul>	<ul style="list-style-type: none"> <li>sedimentation</li> </ul>	the existing native riparian vegetation usually restricts the actual amount of deterioration the generally high levels of organic matter offer some resistance to erosion
	compaction of topsoil	moderate to high	<ul style="list-style-type: none"> <li>loamy or clay loamy texture</li> <li>soil often moist</li> <li>moderate-high organic matter content</li> </ul>	<ul style="list-style-type: none"> <li>-</li> </ul>	



**Rocks have been gathered by hand and stockpiled to increase pasture density and dry matter yields.**



**The gentleness of the landscape and a grazing land use present minimal land deterioration hazards**