

7.14 Ingleburn land system

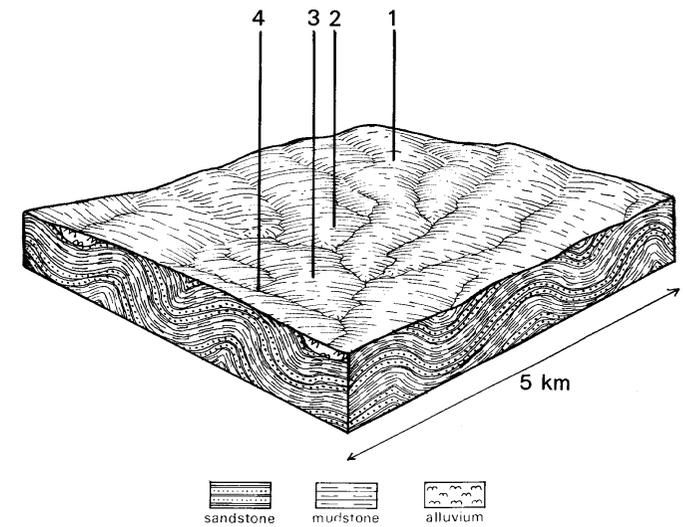
Mallee scrub occupies the upper slopes of gentle ridges on weathered Ordovician sandstones and mudstones in the St Arnaud and Wedderburn areas.

The shallow soils support a number of mallee species, but *Eucalyptus viridis* and *E. polybractea* are most common. These areas are renowned for their variety of flora and fauna and form a unique recreational resource for that reason. Other forms of land use include eucalyptus-oil production, cropping and grazing. However, the low nutrient status and low water storage capacity of the soils severely restrict productivity.

The land system is particularly sensitive to disturbance, and sheet erosion is widespread. Reclamation is hampered by the harsh climate and difficult soil conditions. The drainage lines are prone to gully erosion and salting and are usually left under natural vegetation for stabilisation, but sheet erosion is by far the most common form of deterioration.



Large areas of mallee scrub have been cleared for grazing.



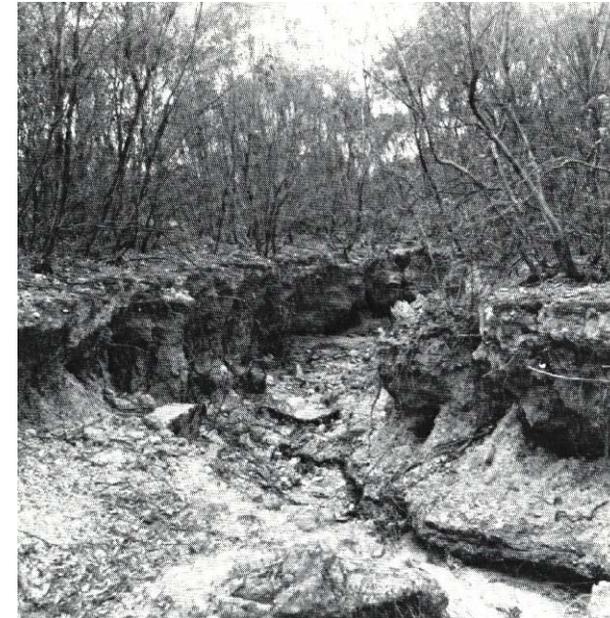
In areas harvested for eucalyptus-oil production, different ages of regrowth are clearly seen from the air.

INGLEBURN LAND SYSTEM Area67sq.km

CLIMATE Rainfall (mm) Temperature (°C) Seasonal growth limitations	Annual, 400-470; lowest January (25), highest June (54) Annual, 15; lowest July (8), highest February (22) Temperature: less than 10 ^o C (av.) June-August Rainfall: less than potential evapotranspiration September-April			
GEOLOGY Age, lithology	Ordovician sandstone and mudstone, Quaternary alluvium			
PHYSIOGRAPHY Elevation range (m) Relative relief (m) Drainage pattern Drainage density (km/ sq. km) Land form	200-300 20 Dendritic 0.6 Gentle ridge			
LAND COMPONENT Percentage of land system	1 10%	2 60%	3 20%	4 10%
PHYSIOGRAPHY Position on land form Slope (typical) and range Slope shape	Highest level 1,1-3 Convex	Middle slope 6,3-14 Linear	Lower slope 2,1-2 Linear	Drainage floor 2,1-3 Concave
NATIVE VEGETATION Structure Dominant species	Scrub <i>E. viridis</i> <i>E. sideroxyton</i> <i>E polyanthemos</i>	Scrub <i>E. polybractea</i> <i>E viridis</i> <i>E behriana</i> <i>E microcarpa</i>	Woodland <i>E. leucoxyton</i> <i>E microcarpa</i>	Woodland <i>E. behriana</i> <i>E microcarpa</i>
SOIL Parent material Description Classification Surface texture Surface consistence (dry) Depth (m) Nutrient status Available soil water capacity Perviousness to water Drainage Exposed stone Dispersibility Slaking tendency	Sandstone and mudstone Shallow stony red gradational soils Gn 4.14-3/1/010 Stony clay loam Moderately hard 0.1-0.5 Very low throughout Low throughout Slow Somewhat excessively drained Abundant Low Moderate	Sandstone and mudstone stony red gradational soils Gn 4.14-3/1/010 Sandy clay loam Moderately hard 0.5-1 Very low throughout Low throughout Slow-moderate Somewhat excessively drained Common Low Moderate	Sandstone and mudstone Red sodic duplex soils Dr 2.21-2/1/025 Sandy loam Slightly hard 0.5-1 Low throughout Low surface, moderate subsoil Slow-moderate Well drained Nil Moderate Moderate	Site 931 Alluvium Reddish brown sodic gradational soils Gn 4.11-3/0/012 Fine sandy loam Slightly hard >2 Very low throughout Low throughout Slow-moderate Moderately well drained Nil Low Low
PRESENT LAND USE	Eucalyptus-oil production, grazing	Eucalyptus-oil production, grazing	Grazing, cropping	Grazing, cropping

Land deterioration hazards - Ingleburn 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	1,2,3	Increased leaching	Increased nutrient decline	Low	Movement of water and 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	1,2,3	Increased soil compaction	Structure decline	Low	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	4	Increased evaporation	Soil salting	Low	Increased salinity of surface waters



Forage-harvesting the eucalyptus leaf also removes ground litter, leaving the soil surface bare and unprotected. This decreases infiltration of water and increases run-off. High run-off can cause severe gully erosion even when the drainage floors are densely vegetated.