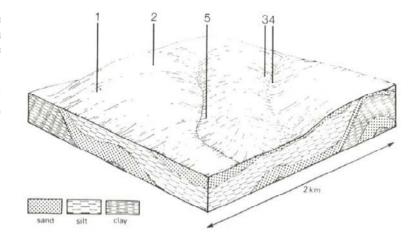
7.4 Barongarook Land System

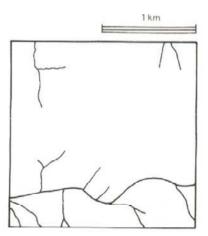
North of Forrest and extending towards Colac, undulating plains with often deeply weathered soils are found. The geology is mainly Tertiary clay with minor outcrops of sand. Redistribution of surface sand has resulted in polygenetic soils over much of the landscape, with weak hardpan development and impeded drainage. Surface soils seem to be naturally low in plant nutrients.

Many areas remain uncleared and support open forests dominated by *Eucalyptus obliqua* and *E. radiata*. *E. baxteri* is notably absent in this slightly drier region. Other areas have been cleared for agriculture or converted to pines. The main hazards to land use are loss of soil structure, by compaction, and leaching of nutrients.



Poor site drainage and low soil permeability lead to waterlogging and pugging of the soil by stock in many parts of this land system.





CLIMATE State St	BARONGAROOK	Component and its proportions of land system				
CEOLOGY Age, lithology Precipitation: less than potential evapotranspiration late October – early April	Area: 92 km ²	1	2	3	4	5
Rainfall, mm Temperature; O'C Seasonal growth limitations Freeipitation: less than 10°C (av.) June – August Precipitation: less than potential evapotranspiration late October – early April FOPOGRAPHY Landscape Elevation, m Local relief, m Drainage pattern Drainage dansity, km/km² Land form Land form element Slope (and range), % Slope shape Linear Crest, upper slope Linear Courvex Linear Copen forest Dominant species Foliqua, E. radiata, E. viminalis E. obliqua, E. radiata, E. viminalis E. ovata, E. radiata, E. viminalis E. ovata, E. radiata, E. viminalis Surface texture Description Yellow gradational soils, weak structure Surface texture Sandy loam Loam Clay, silt and sand Clay, silt and sand Clay, silt and sand Crest, upper slope Upper and middle slope Upper and middle slope Lower slope Upper and middle slope Lower slope Linear Convex Couvex Couvex Linear Concave NATIVE VECETATION Structure Dominant species Fredienta, E. obliqua, E. radiata, occasionally E. ovata, E. viminalis E. ovata, E. viminalis Surface texture Sandy loam High Moderate Low Low Indicating plan Lower slope Upper and middle slope Lower slope Upper and middle slope Lower slope Upper and middle slope Lower slope Undulating plan		8%	55%	15%	15%	7%
Repertature, O'C Seasonal growth limitations Seasonal growth limitations Precipitation: less than potential evapotranspiration late October – early April	CLIMATE					
Emperature: less than 10°C (av.) June – August	Rainfall, mm	Annual: 100 – 900, lowest January (40), highest August (80)				
Emperature: less than 10°C (av.) June – August	Temperature, 0°C					
Plicene unconsolidated clay, silt and sand Recent sand veneer		Temperature: less than 10°C (av.) June – August				
Plicene unconsolidated clay, silt and sand Recent sand veneer		Precipitation: less than potential evapotranspiration late October – early April				
Recent sand veneer Recent sand veneer Recent sand veneer	GEOLOGY					
TOPGGRAPHY Landscape Elevation, m Lord relief, m Drainage pattern Drainage density, km/km² Land form Drainage density, km/km² Land form Land f	Age, lithology	Pliocene unconsolidated clay, silt and sand				
Land form Steep slope Crest, upper slope Upper and middle slope Lower slope Drainage line Slope (and range), % 25 (15-40) 5 (0-10) 5 (0-10) 5 (0-10) 7 (1-15) 1 (10-2)		· · · · · · · · · · · · · · · · · · ·				
Elevation, m 120 - 280 20 30 30 30 30 30 30 3	TOPOGRAPHY		'		<u>'</u>	
Elevation, m 120 - 280 20 30 30 30 30 30 30 3	Landscape	Gently undulating to rolling plain in the western parts of the Barwon catchment				
Local relief, m Drainage pattern Drainage pattern Drainage density, km/km² Land form Steep slope Crest, upper slope Upper and middle slope S(0-10) T(1-15)						
Drainage density, km/km² Land form Steep slope Crest, upper slope Upper and middle slope Total (1-2)	Local relief, m					
Drainage density, km/km² Land form Land form element Steep slope Crest, upper slope Upper and middle slope Total (1-5) Total (1-2)	Drainage pattern	Dendritic				
Land form Land form element Steep slope Slope (and range), % Slope (and range), % Slope shape Linear Convex Convex Linear Concave NATIVE VEGETATION Structure Dominant species Clay, silt and sand Veneer Grey sand soils, structured clay underlay structure Surface texture Sandy loam Permeability High Moderate Depth, m Clay Clay areas: Sheep and beef cattle grazing; dairy farming. Convex Convex Linear Concave Woodland E. radiata, E. nitida E. radiata occasionally E. aromaphicia Clay, silt and sand with quartz sand veneer Grey sand soils, structured clay underlay sandy loam Loam Permeability High Moderate Depth, m Clay areas: Sheep and beef cattle grazing; dairy farming. Clay areas: Hardwood forestry for sawlogs, post and poles; nature conservation; active and passive recreation; softwood forestry; forest grazing. High seasonal water table leads to waterlogging and soil compaction. Woodland E. radiata, E. nitida E. vaita, E. radiata occasionally E. aromaphicia Clay, silt and sand with quartz sand veneer Grey sand soils, weakly structured clay underlay sandy loam Loam Sandy loam Loam Noderate Depth, m Sieper slopes with weak-structured surfaces are prone to sheet erosion. Sieper slopes with weak-structured decline. Low inherent fertility with leaching of permeable surface horizons lead to nutrient decline. Low inherent fertility with leaching of permeable surface horizons lead to nutrient decline. Woodland Woodland Woodland Woodland Woodland E. radiata, E. nitida E. radiata, E. vima, E. vima, E. vi		1.2				
Land form element Steep slope Crest, upper slope Upper and middle slope Lower slope To (1-15) To (1-15) To (10-2)		Undulating plan				
Slope (and range), % 25 (15-40) 5 (0-10) 5 (0-10) 5 (0-10) 7 (1-15) 1 (10-2)	Land form element	Steep slope	Crest, upper slope		Lower slope	Drainage line
NATIVE VEGETATION Structure Dominant species Clay, silt and sand Clay, silt and sand Clay, silt and sand Veneer Open forest E. obliqua, E. radiata, E. viminalis SOIL Parent material Clay, silt and sand Veneer Open forest E. obliqua, E. radiata, E. obliqua, E. nitida E. radiata, E.	Slope (and range), %	25 (15-40)			7 (1-15)	1 (10-2)
Structure Dominant species Open forest E. obliqua, E. radiata, E. viminalis E. obliqua, E. radiata, e. viminalis E. obliqua, E. radiata, e. ocasionally E. ovata, E. viminalis SOIL Parent material Clay, silt and sand Clay, silt and sand Clay, silt and sand Clay, silt and sand Veneer Crey sand soils, structure day underlay structure Sandy loam Permeability Depth, m Permeability and sand with quartz sand veneer Clay, silt and sand with quartz sand veneer Grey sand soils, weakly structured soils Sandy loam Loam Moderate Dow	Slope shape	Linear	Convex	Convex	Linear	Concave
Dominant species E. obliqua, E. radiata, E. viminalis E. obliqua, E. radiata, occasionally E. ovata, E. viminalis E. vimi	NATIVE VEGETATION					
SOIL Parent material Clay, silt and sand Clay, silt and sand with quartz sand veneer Ven	Structure	Open forest	Open forest	Open forest	Woodland	
SOIL Parent material Clay, silt and sand Clay, silt and sand Clay, silt and sand Clay, silt and sand with quartz sand veneer Description Yellow gradational soils, weak structure Surface texture Surface texture High Depth, m Soil Clay, silt and sand Clay, silt and sand with quartz sand veneer Mottled yellow and red gradational soils, structured clay underlay Sandy loam Loam Moderate Depth, m Soil Clay, silt and sand with quartz sand veneer Mottled yellow and grey gradational soils, weakly structured clay underlay Sandy loam Loam Moderate Depth, m Soil Clay, silt and sand with quartz sand veneer Mottled yellow and grey gradational soils, weakly structured clay underlay Sandy loam Loam Moderate Soil Low Depth, m Soil Clay, silt and sand with quartz sand veneer Mottled yellow and grey gradational soils, weakly structured clay underlay Sandy loam Loam Moderate Soil Low Depth, m Soil So	Dominant species	E. obliqua, E. radiata, E. viminalis	E. obliqua, E. radiata, occasionally	E. radiata, E. obliqua, E. nitida	E. radiata, E. nitida	E. ovata, E. radiata occasionally E.
Parent material Clay, silt and sand Clay, silt and sand with quartz sand veneer Yellow gradational soils, weak Surface texture Sandy loam Permeability Depth, m Clay, silt and sand with quartz sand veneer Grey sand soils, structured clay underlay Sandy loam Loam Sandy loam Sandy loam Loam Moderate Soils Loam Moderate Low Low Depth, m Clay, silt and sand with quartz sand veneer Grey sand soils, weakly structured clay underlay soils Sandy loam Sandy loam Loam Moderate Soils Loam Moderate Soils Loam Moderate Soils Loam Moderate Soils Loam Moderate Soils Low Moderate Soils Low Moderate Soils Low Moderate Soils Low Moderate Soils Loam Moderate Soils Loam Moderate Soils Low Mod	1	_				
Description Yellow gradational soils, weak structure Surface texture Permeability Depth, m Cleared areas: Sheep and beef cattle grazing; dairy farming. Uncleared areas: Hardwood forestry for sawlogs, post and poles; nature conservation; active and passive recreation; softwood forestry; forest grazing. SOIL DETERIORATION HAZARD Critical land features, processes, Veneer Grey sand soils, structured clay underlay Sandy loam Sandy loam Sandy loam Loam Mottled yellow and grey gradational soils weakly structured clay underlay Sandy loam Loam Moderate Low Low Moderate 2 >2 >2 >2 >2 Low inherent fertility with leaching of permeable surface horizons lead to nutrient decline. Low permeability waterlogging and soil compaction. Low permeability and seasonal perched water table lead to waterlogging and soil compaction.	SOIL					
Description Yellow gradational soils, weak structure Surface texture Sandy loam Loam Sandy loam Loam Sandy loam Loam Sandy loam Loam Moderate Low Low Moderate Low Moderate Depth, m >2 >2 >2 >2 >2 >2 >2	Parent material	Clay, silt and sand	Clay, silt and sand	Clay, silt and sand with quartz sand	Clay, silt and sand with quartz sand	Alluvium
structure soils underlay clay underlay soils Surface texture Sandy loam Loam Sandy loam Loam Permeability High Moderate Low Low Moderate Depth, m >2 >2 >2 >2 >2 >2 >2 >2 >2 >2 >2 >2 >2				veneer	veneer	
Surface texture Surface texture Surface texture Sundy loam Permeability Depth, m Cleared areas: Sheep and beef cattle grazing; dairy farming. Uncleared areas: Hardwood forestry for sawlogs, post and poles; nature conservation; active and passive recreation; softwood forestry; forest grazing. SOIL DETERIORATION HAZARD Critical land features, processes, Sils Loam Low Moderate Low Sandy loam Low Moderate 22 22 22 Low inherent fertility and phosphorus fixation lead to nutrient decline. Low inherent fertility with leaching of permeable surface horizons lead to nutrient decline. Waterlogging and soil compaction.	Description	Yellow gradational soils, weak	Mottled yellow and red gradational	Grey sand soils, structured clay	Grey sand soils, weakly structured	Mottled yellow and grey gradational
Permeability Depth, m High		structure			clay underlay	soils
Depth, m >2 >2 >2 >2 >2 >2 >2	Surface texture	Sandy loam	Loam	Sandy loam	Sandy loam	Loam
Depth, m >2 >2 >2 >2 >2 >2 >2	Permeability	High	Moderate	Low	Low	Moderate
Uncleared areas: Hardwood forestry for sawlogs, post and poles; nature conservation; active and passive recreation; softwood forestry; forest grazing. SOIL DETERIORATION HAZARD Critical land features, processes, Uncleared areas: Hardwood forestry for sawlogs, post and poles; nature conservation; active and passive recreation; softwood forestry; forest grazing. Low inherent fertility with leaching of permeable surface horizons lead to nutrient decline. Low inherent fertility with leaching of permeable surface horizons lead to nutrient decline. Waterlogging and soil compaction.	Depth, m		>2	>2	>2	>2
SOIL DETERIORATION HAZARD Critical land features, processes, Steeper slopes with weak-structured surfaces are prone to sheet erosion. Critical land features, processes, Steeper slopes with weak-structured surfaces are prone to sheet erosion. Critical land features, processes, Steeper slopes with weak-structured phosphorus fixation lead to nutrient decline. Low inherent fertility with leaching of permeable surface horizons lead to nutrient decline. High seasonal water table leads to waterlogging and soil compaction.	LAND USE	Cleared areas: Sheep and beef cattle grazing; dairy farming.				
SOIL DETERIORATION HAZARD Critical land features, processes, Steeper slopes with weak-structured surfaces are prone to sheet erosion. Critical land features, processes, Steeper slopes with weak-structured surfaces are prone to sheet erosion. Critical land features, processes, Steeper slopes with weak-structured phosphorus fixation lead to nutrient decline. Low inherent fertility with leaching of permeable surface horizons lead to nutrient decline. High seasonal water table leads to waterlogging and soil compaction.		Uncleared areas: Hardwood forestry for sawlogs, post and poles; nature conservation; active and passive recreation; softwood forestry; forest grazing.				
HAZARD surfaces are prone to sheet erosion. Critical land features, processes, critica	SOIL DETERIORATION					High seasonal water table leads to
	HAZARD		phosphorus fixation lead to nutrien	of permeable surface horizons lead	perched water table lead to	waterlogging and soil compaction.
	Critical land features, processes,		decline.	to nutrient decline.	waterlogging and soil compaction.	