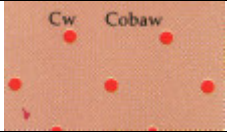

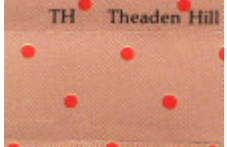
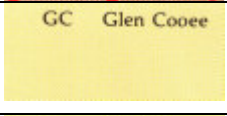
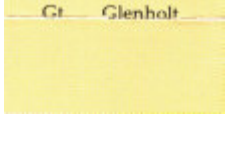
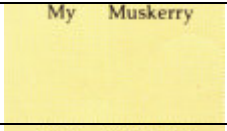
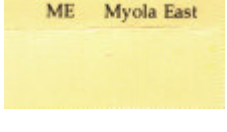
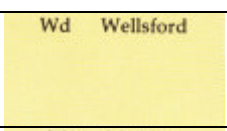
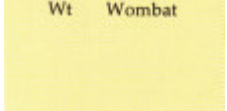
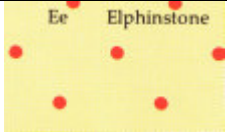
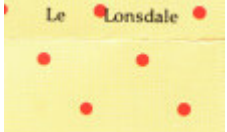
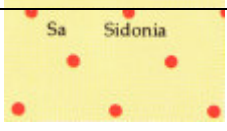
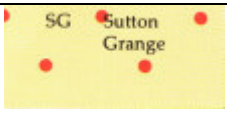
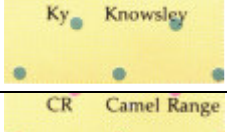

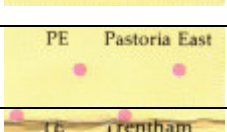
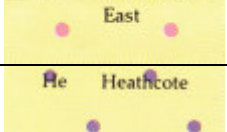
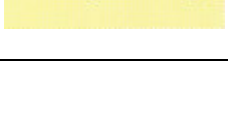







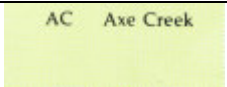
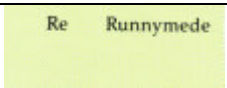


LAND SYSTEMS OF THE CAMPASPE RIVER CATCHMENT – TC 18

Land zone		Land system									
Physiography	Geology	Symbol	Name	Landform pattern	Geology	Area (km ²)	Average annual rainfall (mm)	Soil	Native vegetation	Land use	Notable soil deterioration processes
Mountains with moderate to steep slopes	Devonian acid volcanic rocks	Mn	Macedon	Rolling mountains	Rhyodacite	12	850-900	Red gradational soils. Mottled yellowish brown or brown duplex soils.	Open forest: <i>E. obliqua</i> <i>E. viminalis</i> <i>E. radiata</i>	Forestry Recreation Residential use Grazing	Sheet erosion Compaction Leaching of nutrients
Hills with moderate to steep slopes	Palaeozoic sedimentary rocks	Fs	Fryers	Rolling low hills	Ordovician sandstone and mudstone	112	600-800	Shallow stony yellowish brown loams on crests. Yellowish brown gradational soils	Woodland to open forest: <i>E. macrorhyncha</i> <i>E. polyanthemus</i> <i>E. goniocalyx</i> <i>E. melliodora</i>	Forestry Grazing	Sheet erosion Gully erosion Salting Compaction
		Ia	Ida	Rolling hills forming prominent ridge	Devonian sandstone and siltstone	28	550-700	Yellow or red duplex soils Stony loams (crests)	Woodland to open forest: <i>E. macrorhyncha</i> <i>E. polyanthemus</i> <i>E. goniocalyx</i>	Nature conservation Minor grazing	Sheet erosion Gully erosion Compaction
		Js	James	Rolling hills forming prominent ridge	Metamorphosed Ordovician sandstone and mudstone	43	550-650	Shallow stony loams. Reddish brown gradational soils.	Woodland to open forest: <i>E. polyanthemus</i> <i>E. goniocalyx</i> <i>E. macrorhyncha</i> <i>E. microcarpa</i> <i>E. melliodora</i>	Nature conservation Grazing	Sheet erosion Gully erosion Compaction Leaching of nutrients
		Kn	Kimbolton	Rolling low hills	Ordovician sandstone and mudstone	208	550-650	Red and yellowish brown gradational soils. Minor yellow duplex soils.	Open forest: <i>E. polyanthemus</i> <i>E. macrorhyncha</i> <i>E. microcarpa</i> <i>E. melliodora</i> <i>E. sideroxylon</i>	Forestry Grazing	Sheet erosion Gully erosion Salting Compaction Leaching of nutrients
		Ka	Koala	Rolling hills forming prominent ridge	Metamorphosed Ordovician sandstone and mudstone	32	650-800	Shallow stony loams. Yellow or reddish brown gradational or duplex soils.	Open forest: <i>E. macrorhyncha</i> <i>E. polyanthemus</i> <i>E. goniocalyx</i> <i>E. obliqua</i> <i>E. viminalis</i> <i>E. rubida</i>	Grazing	Sheet erosion Gully erosion Compaction Leaching of nutrients
		Wg	Wolfscrag	Rolling low hills	Ordovician sandstone and mudstone	237	550-700	Reddish brown or brown gradational soils. Yellowish brown duplex soils.	Open forest: <i>E. polyanthemus</i> <i>E. goniocalyx</i> <i>E. macrorhyncha</i> <i>E. microcarpa</i> <i>E. melliodora</i> <i>E. camaldulensis</i>	Grazing	Sheet erosion Gully erosion Salting Compacting Leaching of nutrients
		Ar	Alexander	Rolling hills forming prominent ridge	Granodiorite	7	650-700	Brown coarse sandy soils of variable depth. Minor yellowish grey duplex soils.	Woodland to open forest: <i>E. viminalis</i> <i>E. obliqua</i>	Recreation Nature conservation	Sheet erosion Wind erosion Landslip Leaching of nutrients

Land zone		Land system									
Physiography	Geology	Symbol	Name	Landform pattern	Geology	Area (km ²)	Average annual rainfall (mm)	Soil	Native vegetation	Land use	Notable soil deterioration processes
Hills with moderate to steep slopes	Devonian acid igneous rocks		Cw Cobaw	Rolling hills	Granodiorite, minor granite.	22	750-800	Yellowish grey duplex soils with mottled subsoils. Minor sandy soils and red duplex soils.	Open forest: <i>E obliqua</i> <i>E viminalis</i> <i>E ovata</i>	Forestry Grazing	Sheet erosion Gully erosion Wind erosion Leaching of nutrients
			St Sargent	Rolling hills	Granodiorite	57	600-700	Brown coarse sandy soils. Mottled yellow duplex soils.	Woodland to open forest: <i>E camaldulensis</i> <i>E viminalis</i> <i>E melliodora</i>	Grazing	Sheet erosion Wind erosion Gully erosion Leaching of nutrients
			TH Theaden Hill	Rolling hills	Granodiorite	178	650-800	Brown coarse sandy soil. Mottled yellowish grey duplex soils.	Open forest: <i>E obliqua</i> <i>E viminalis</i> <i>E melliodora</i> <i>E radiata</i> <i>E rubida</i>	Grazing	Sheet erosion Wind erosion Gully erosion Leaching of nutrients
Rises and hills with gentle slopes	Palaeozoic sedimentary rocks		GC Glen Cooee	Undulating rises	Ordovician sandstone and mudstone	359	500-650	Mottled yellow duplex soils. Minor shallow stony loams and yellowish brown gradational soils.	Woodland to open forest: <i>E leucoxylo</i> <i>E microcarpa</i> <i>E melliodora</i> <i>E camaldulensis</i>	Grazing Cropping	Sheet erosion Gully erosion Salting Compaction Leaching of nutrients
			Gt Glenholt	Gently undulating rises	Ordovician sandstone and mudstone	136	450-525	Red gradational or duplex soils. Yellow mottled duplex soils.	Open scrub: <i>E viridis</i> <i>E polybractea</i> <i>E behriana</i> Woodland to open forest: <i>E sideroxylo</i> <i>E microcarpa</i> <i>E leucoxylo</i>	Nature conservation Eucalyptus leaf harvesting Grazing Minor cropping	Sheet erosion Gully erosion Salting Compaction Leaching of nutrients
			My Muskerry	Gently undulating rises	Ordovician sandstone and mudstone	85	450-550	Red duplex soils. Mottled yellow duplex soils in depressions.	Woodland to open forest: <i>E microcarpa</i> <i>E albens</i> <i>E leucoxylo</i>	Cropping Grazing	Sheet erosion Gully erosion Salting Wind erosion Compaction
			ME Myola East	Undulating rises to undulating low hills	Ordovician sandstone and mudstone	163	450-550	Red to reddish brown gradational or duplex soils. Occasional shallow stony loams	Woodland to open forest: <i>E microcarpa</i> <i>E albens</i> <i>E melliodora</i> <i>E leucoxylo</i> <i>C luehmannii</i>	Cropping Grazing	Sheet erosion Salting Gully erosion Compaction Wind erosion
			Wd Wellsford	Undulating rises	Ordovician sandstone and mudstone	402	475-650	Reddish stony gradational soils. Red duplex soils. Mottled yellow duplex soils.	Open forest: <i>E sideroxylo</i> <i>E microcarpa</i> <i>E leucoxylo</i> <i>E polyanthem</i> <i>E macrorhyncha</i>	Forestry Grazing Residential use	Sheet erosion Gully erosion Compaction Salting
			Wt Wombat	Undulating low to rolling low hills	Ordovician sandstone and mudstone	283	750-1300	Reddish brown, brown or yellowish brown gradational soils	Open forest: <i>E obliqua</i> <i>E radiata</i> <i>E rubida</i> <i>E ovata</i>	Forestry Grazing	Sheet erosion Gully erosion Compaction

Land zone		Land system									
Physiography	Geology	Symbol	Name	Landform pattern	Geology	Area (km ²)	Average annual rainfall (mm)	Soil	Native vegetation	Land use	Notable soil deterioration processes
Rises and hills with gentle slopes	Devonian acid igneous rocks		Ee Elphinstone	Gently undulating rises	Granodiorite	25	625-700	Mottled yellow or yellowish grey duplex soils	Woodland to open forest: <i>E radiata</i> <i>E rubida</i> <i>E camaldulensis</i>	Grazing Minor cropping and orchards	Wind erosion Gully erosion Leaching of nutrients
			Le Lonsdale	Gently undulating rises	Granodiorite	4	550-600	Mottled yellowish grey duplex soils. Minor shallow sandy soils.	Open forest: <i>E macrorhyncha</i> <i>E polyanthemus</i> <i>E goniocalyx</i> <i>E microcarpa</i> <i>E melliodora</i>	Forestry Grazing	Gully erosion Wind erosion Leaching of nutrients
			Sa Sidonia	Undulating rises	Granodiorite, minor granite	78	650-800	Mottled yellow and yellowish grey duplex soils	Open forest: <i>E rubida</i> <i>E viminialis</i> <i>E radiata</i> <i>E ovata</i> <i>E melliodora</i> <i>E camaldulensis</i>	Grazing Cropping	Sheet erosion Gully erosion Wind erosion Leaching of nutrients
			SG Sutton Grange	Undulating low hills	Granodiorite	146	550-650	Mottled yellow or yellowish grey duplex soils	Woodland to open forest: <i>E camaldulensis</i> <i>E goniocalyx</i> <i>E microcarpa</i> <i>E macrorhyncha</i> <i>E melliodora</i>	Grazing Cropping	Sheet erosion Gully erosion Wind erosion Leaching of nutrients
	Permian glacial sediments		Ky Knowsley	Gently undulating rises	Tillite Conglomerate Sandstone	100	500-600	Mottled yellow or red duplex soils	Open forest: <i>E microcarpa</i> <i>E albens</i> <i>E melliodora</i> <i>E camaldulensis</i>	Grazing Cropping	Sheet erosion Gully erosion Salting Compaction
	Basic volcanic rocks		CR Camel Range	Low hilly ridge with gentle footslopes	Cambrian rocks, predominantly greenstones	40	450-575	Red gradational soils with calcareous subsoils. Occasional red duplex soils.	Woodland to open forest: <i>E microcarpa</i> <i>E albens</i> <i>E melliodora</i>	Cropping Grazing	Sheet erosion Salting Compaction
			Ge Glenvue	Gently undulating rises Scarps along edge of lava flow	Pliocene trachybasalt	18	750-900	Reddish brown duplex soils. Shallow stony loams or reddish brown gradational soils.	Open forest: <i>E viminialis</i> <i>E radiata</i> <i>E pauciflora</i> <i>E rubida</i> <i>E ovata</i>	Grazing Minor cropping	Sheet erosion Compaction
			PE Pastoria East	Undulating to rolling low hills	Pliocene olivoclase basalt	15	700-800	Red gradational or duplex soils	Open forest: <i>E viminialis</i> <i>E ovata</i>	Grazing Cropping	Sheet erosion Compaction
			TE Trentham East	Undulating rises Isolated volcanic cones	Pliocene olivine basalt	76	800-1300	Red gradational soils	Open forest: <i>E viminialis</i> <i>E obliqua</i> <i>E radiata</i> <i>E ovata</i>	Grazing Cropping	Sheet erosion Compaction Leaching of nutrients
	Varied		He Heathcote	Undulating rises	Cambrian greenstone, shale and chert Devonian granodiorite Quaternary alluvium	23	550-650	Mottled yellow duplex soils Red gradational soils Yellow or brown duplex soils Sandy soils on flood plain	Woodland to open forest: <i>E microcarpa</i> <i>E melliodora</i> <i>E camaldulensis</i>	Grazing Cropping Residential use	Sheet erosion Gully erosion Streambank erosion Compaction Salting

Land zone		Land system									
Physiography	Geology	Symbol	Name	Landform pattern	Geology	Area (km ²)	Average annual rainfall (mm)	Soil	Native vegetation	Land use	Notable soil deterioration processes
Plains, level or gently undulating	Basic volcanic rocks		Diogenes	Gently undulating plain Isolated volcanic cones	Pliocene solvsbergite, trachyte, phonolites, minor olivine basalt	41	800-900	Red and grey gradational duplex soils with abundant buckshot. Minor mottled yellow duplex soils.	Open forest: <i>E viminalis</i> <i>E ovata</i> <i>E rubida</i> <i>E radiata</i>	Grazing Nature conservation Cropping	Compaction Sheet erosion
			Drummond	Gently undulating plain bounded by scarps Isolated volcanic cones	Pliocene olivine basalt	21	750-900	Brown duplex soils; minor red gradational and duplex soils	Open forest: <i>E viminalis</i> <i>E ovata</i> <i>E obliqua</i>	Grazing Minor cropping	Compaction Landslip
			Kyneton	Gently undulating plain Isolated volcanic cones	Pliocene olivine basalt	180	700-850	Red to brown gradational soils. Mottled brown or yellowish brown duplex soils. Dark clays.	Open forest: <i>E viminalis</i> <i>E ovata</i> <i>E pauciflora</i>	Grazing Cropping	Compaction
			Marydale	Gently undulating plain	Pliocene olivine basalt	58	475-600	Dark cracking clays.	Woodland: <i>E microcarpa</i> <i>E albens</i> <i>E camaldulensis</i>	Grazing Cropping	
			Redesdale	Gently undulating deposits – gravels, sands and clays.	Pliocene olivine basalt	158	550-750	Red gradational soils Gilgai complex – yellow duplex soils and grey cracking clays.	Woodland to open forest: <i>E camaldulensis</i> <i>E melliodora</i> <i>E viminalis</i> and <i>E ovata</i> in the south	Grazing Cropping	Sheet erosion Compaction Landslip
	Tertiary unconsolidated sediments		White Hills	Gently undulating plain	Fluviatile deposits – gravels, sands and clays	19	500-600	Red duplex soils Red or yellow mottled duplex soils	Woodland to open forest: <i>E polyanthemus</i> <i>E macrorhyncha</i> <i>E gonitocalyx</i> <i>E microcarpa</i> <i>E leucoxydon</i>	Gravel mining Residential use Grazing Nature conservation	Sheet erosion Leaching of nutrients Wind erosion
Quaternary alluvium		Axe Creek	Gently undulating plain	Alluvium	41	500-600	Red duplex soils Sandy soils on flood plain	Woodland to open forest: <i>E microcarpa</i> <i>E melliodora</i> <i>E camaldulensis</i>	Grazing Cropping	Compaction Gully erosion Salting Streambank erosion Leaching of nutrients	
		Runnymede	Level plain	Alluvium	672	450-550	Red duplex soils Minor loamy soils and grey cracking clays	Woodland: <i>E microcarpa</i> <i>E leucoxydon</i> <i>E melliodora</i> <i>E camaldulensis</i> <i>C luehmannii</i>	Cropping Grazing	Compaction Gully erosion Wind erosion Streambank erosion Leaching of nutrients	