

## **SUMMARY**

This study describes the physical characteristics of approximately 4,100 sq km of land in the Campaspe River and Bendigo Creek catchments, and provides basic information relevant to land use planning and assessment.

The climate is Mediterranean, with annual rainfall increasing from 400 mm on the plains in the north to approximately 1,200 mm in the south.

Ten broad geometric zones have been recognised. Mount Macedon on rhyodacite is the only steep country classified as mountainous; however, moderate to steep hilly country occurs on both Palaeozoic sedimentary and Devonian acid igneous rocks. Gentle sloping rises and hills include a wide variety of geology, namely Palaeozoic sedimentary, Devonian acid igneous, Permian tillite and Tertiary basalt, whereas the flat to gently undulating plains consist of Tertiary unconsolidated sediments, basalt and Quaternary alluvium.

Although extensive clearing of the native vegetation has occurred, significant areas of State forest remain throughout the study area, especially on sedimentary terrain.

The soils, while varying widely, show certain trends. Sodic duplex soils predominate in the drier areas, and in the far north calcareous subsoils are common. Heavy-textured clay soils are associated with basaltic areas except in the Pastoria East and Trentham areas, where deep red friable gradational soils occur. Mottled, non-sodic duplex soils predominate in the higher-rainfall areas.

Agriculture is the main land use, with wheat and sheep in the north and sheep-cattle in the south. Reservoirs on the Coliban River supply water for domestic use to Castlemaine, Harcourt, Maldon and Bendigo. Lake Eppalock on the Campaspe River, designed primarily to supply water for irrigation and more recently for domestic use, is also popular for recreational pursuits.

Land deterioration is common in the northern two-thirds of the catchment, largely as a result of past extensive clearing and improper land use. Sheet and gully erosion and salting are common in the drier areas to the north. Soil compaction and soil acidification are regarded in this report as important soil deterioration processes.

This study describes 35 land systems – in terms of landform, climate, soils, vegetation, soil deterioration and land use. The susceptibility of the land to deterioration is discussed, the relevant factors considered and susceptibility given for each land component.

## A LIST OF PUBLICATIONS IN THE TECHNICAL COMMUNICATION SERIES

- TC-1** 1960 'Reconnaissance Survey of the Ecology and Land Use in the Catchment of the Glenmaggie Reservoir.' R. K. Rowe and R. G. Downes (out of print)
- TC-2** 1963 'A Study of the Land in the North-western Victoria.' J. N. Rowan and R. G. Downes (out of print)
- TC-3** 1964 'A Study of the Land in South-western Victoria.' F. R. Gibbons and R. G. Downes (out of print)
- TC-4** 1967 'A Study of the Land in the Grampians Area.' G. T. Sibley (out of print)
- TC-5** 1967 'A Study of the Land in the Victorian Catchment of Lake Hume.' R. K. Rowe
- TC-6** 1970 'A Study of the Land in the Mount Buffalo National Park.' R. K. Rowe
- TC-7** 1971 'Salting on Dryland Farms in North-western Victoria.' J.N. Rowan
- TC-8** 1972 'A Study of the Land in the Catchment of the Kiewa River.' R. K. Rowe
- TC-9** 1974 'A Study of the Land in the Catchment of the Broken River.' A. S. Rundle and R. K. Rowe
- TC-10** 1975 'A Study of the Land in the Tyers River Catchment.' G. T. Sibley
- TC-11** 1977 'A Study of the Land in the Catchment of Lake Eildon.' A. S. Rundle
- TC-12** 1978 'A Study of the Land in the Gippsland Lakes Area.' B. M. Nicholson
- TC-13** 1979 'Guidelines for Minimising Soil Erosion and Sedimentation from Construction Sites in Victoria.' R. J. Garvin, M. R. Knight and T. J. Richmond
- TC-14** 1971 'A Study of the Land in the Catchment of the Otway Range and Adjacent Plains.' A. J. Pitt
- TC-15** 1982 'A Study of the Land in the Catchment of the Avoca River.' M. S. Lorimer and J. N. Rowan
- TC-16** 1984 'A Study of the Land in the Catchments of the Upper Ovens and Kings Rivers.' R. K. Rowe
- TC-17** 1987 'A Study of the Lands in the Catchments of the Gippsland Lakes.' J. Aldrick, R. A. Hook. R.H. M. van de Graaff, B. M. Nicholson, D. A. O'Beirne, N. R. Schoknecht (In Press)