

1. INTRODUCTION

It has been shown that clearing of Central Victorian forests has resulted in significant changes in the moisture and soluble ion content of soils. There is also a direct connection between clearing and the onset of secondary soil and water salinisation (Jenkin, 1978, 1979; Jenkin and Irwin, 1975; Mitchell et al, 1978). Salinisation in central Victoria is a manifestation of the groundwater recharge/discharge system which has been deformed by the land use imposed since settlement and, as such, is a regional problem. The solution will therefore require control of the geo-hydrological system, necessitating careful land management, over a large area.

Although the broad changes in soil moisture produced by clearing have been elucidated on a catchment basis, indicating the overall nature of the problem, specific information on the individual landscape components is required in order to develop soundly based remedial strategies and associated management recommendations. The areas selected for detailed study are located within the country which is typical of the greater part of the Western Uplands of Victoria (Figure 1), previous work on the same sites having resulted in the accumulation of comparative data on soil salinity, texture, structure and soil water in forested and cleared catchments (Jenkin 1979; Jenkin and Irwin 1975; 1979 SCA unpublished).

The investigation reported here was designed to provide detailed information on the hydrological characteristics of the main soils and underlying materials typical of the Western Uplands. The properties evaluated were infiltration, saturated hydraulic conductivity, porosity, field capacity and wilting point, along with the individual parameters, such as bulk density, particle density and electrical conductivity of the aqueous extracts. The results have now been related to geomorphic situation and soil type, to provide a basis for extrapolation to similar areas elsewhere within the Upland region.

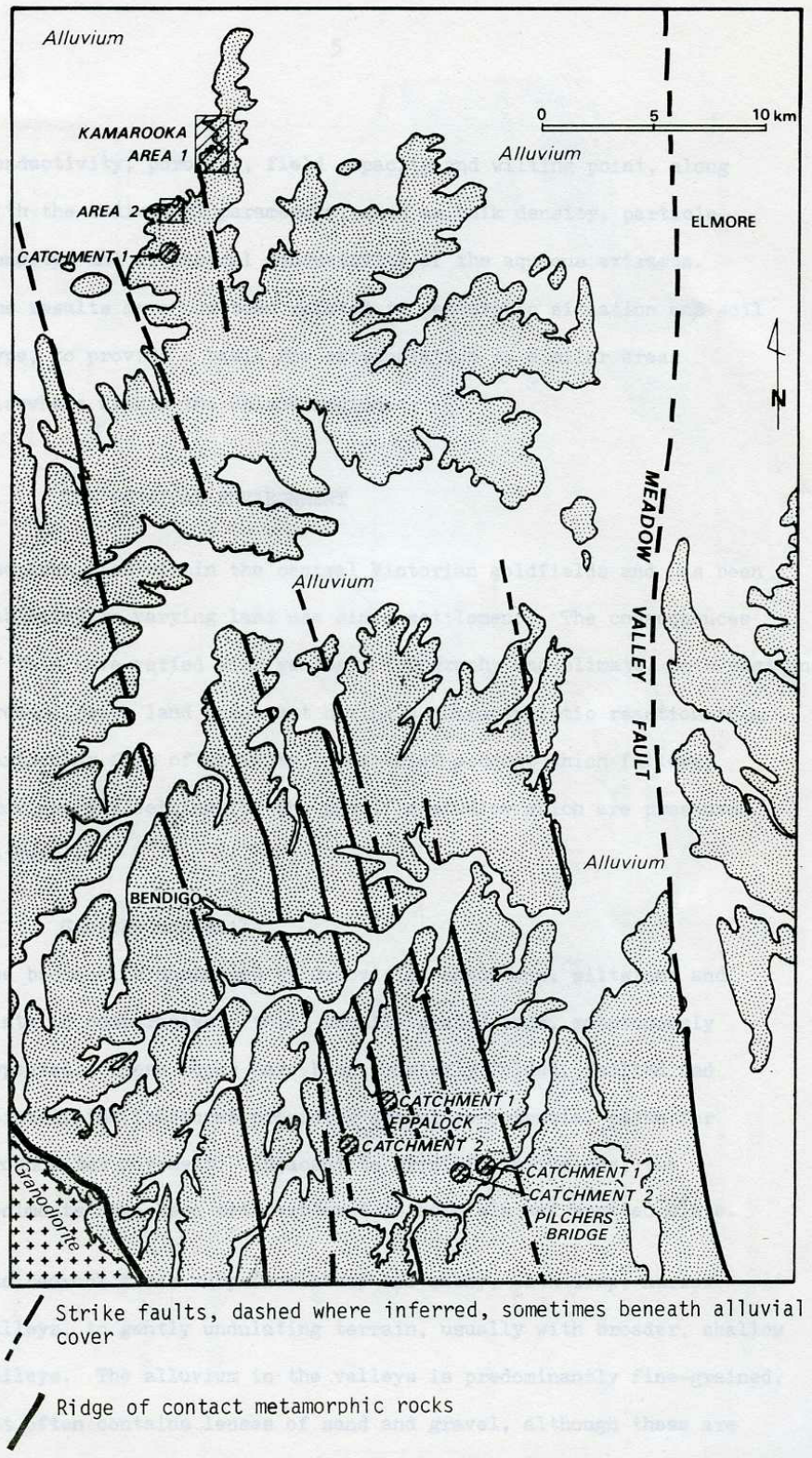


Figure 1 – Generalised geological map showing location of study areas. Stipple indicates the outcrop of Ordovician sedimentary bedrock.

Note: Pilchers Bridge catchments 1 and 2 were not included in the present investigation.