1. INTRODUCTION

This study is part of the Soil Conservation Authority's programme of Land System Surveys of Victoria. The concepts behind these surveys were first outlined by Gibbons and Downes in 1964 and have been further developed by the SCA in recent years. They aim at obtaining an under-standing of the inherent properties and processes of the land so that the land may be used within its capability.

This understanding must be based on information about the independent and dependent features of the natural environment, which are climate, geological material, land form, soils and native vegetation.

Once this understanding has been developed the area is mapped into units of land (.and systems) distinct from the surrounding terrain in which there are particular ranges of land characteristics and maximal covariance between them.

The study area forms part of the hinterland of Melbourne and embraces several catchments draining to Port Phillip Bay with Kororoit Creek catchment in the west and Diamond Creek catchment in the east. The Melbourne metropolitan area is not included.

The area covers approximately 2 579 km² representing 1% of the area of Victoria. The location of the area is shown in Figure 1.

Settlement began in the 1830s around the main water courses such as the Yarra Yarra River, Maribyrnong River and Moonee Ponds Creek. One of the main uses of this area was for sheep grazing. Runs were on natural grasslands and open grassy woodlands common on the basaltic plains. According to Peel (1970) the areas most farmed in the early days for crops to feed this rapidly growing population were the grey clay plains to the north and west of Melbourne. The red soil plains to the west were used mainly for grazing.

Most of the study area is still used mainly for grazing but due to its proximity to Melbourne there is industrial pressure and continued sub-division into smaller holdings resulting from the population growth centered on Melbourne. The region comprises farming land, urban and industrial areas, reserved forest, uncommitted Crown Land, Water Supply Catchments and recreation areas, e.g. The Organ Pipes and Kinglake National Parks and Maribyrnong Valley Metropolitan Park (Brimbank Park).

Data collecting for this Survey commenced late 1969. For various reasons, including pressures of other commitments, this report has just been completed.

The methodology used initially involved the stereoscopic viewing of 1:80 000 black and white aerial photographs for preliminary mapping of the land systems. Interpretation of the dependent and independent variables using the aerial photographs was based mainly on topographic patterns but also on land use and vegetation. On completion this interpretation was checked by field observations in the area.

Sites for detailed description and soil sampling were located using random sampling techniques applied to the co-ordinates of a grid of the

Survey area. Only sites with a suitable catena were chosen for actual sampling and only one component was sampled at any one site. Soil samples were taken to a depth of 120 cm (unless rocks occurred at a shallower depth). The number of sites in each land system depended on the size of the unit. The total number of sites sampled was 95. See Figure 2 for location of these sites.

Physical description of the soil was carried out in the field but chemical properties were analysed in the laboratory of the Soil Conservation Authority.

In the following pages each environmental parameter is described separately in the relevant chapters, as well as together in the tabular descriptions. Thus for any land system further details on the nature of the parameters listed may be obtained by referring to the appropriate chapter. Conversely, the interactions between parameters described in following chapters are outlined in the land system tabular descriptions.







Figure 2 – Location of Sampling Sites