

PART IV

ECOLOGY AND LAND-USE

TABLE OF CONTENTS

DISTRIBUTION OF ENVIRONMENTAL PATTERNS.....	3
PATTERNS	3
<i>Principles Involved</i>	3
<i>Mapping Techniques</i>	3
MAPPING UNITS RECOGNISED	3

LIST OF PLATES

PLATE 31. THE BOGONG LAND SYSTEM NEAR SPION KOPJE.....	4
--	---

DISTRIBUTION OF ENVIRONMENTAL PATTERNS

Patterns

Principles Involved

Methods of ecological and land-use surveys with various levels of detail have been developed by the Soil Conservation Authority (Gibbons and Downes 1964). The basic and smallest mapping unit, termed a *land component*, has conditions uniform for a particular form of land-use, within defined limits. Larger mapping units consist of recognisable patterns of land components, based upon the features considered to be most important for the purpose. Such patterns may be at different scales, and the mapping units based on them are termed *land units*, *landsystems* and *land zones*, with increasing scale.

In this study, the land zones and land systems in the Hume catchment are described. Their recognition and delineation has been based mainly on geomorphology. A subdivision of some land systems, but without providing the level of descriptive detail required by land units, has been used in this survey. These have been termed *subsystems*.

Mapping Techniques

Preliminary work involved the recognition of the different land forms from a study of stereo-pairs of aerial photographs, and the delineation of the land forms over the whole catchment on 1 mile to 1 inch or 40 chains to 1 inch photo-mosaics, whichever was available. It was then possible to distinguish the pattern formed by the arrangement of the land forms and to delineate the basic topographic units. Several land systems were separated on the basis of geology, and several more were divided into sub-systems on the basis of differences in rainfall and vegetation.

Mapping units recognised

Eighteen land systems have been recognised in the area of the survey, including eleven sub-systems, and these land systems have been grouped on the basis of geomorphological affinity into eight land zones. The land zones, land systems and sub-systems are listed in Table 14 and the land systems and sub-systems are shown on the map which accompanies this report.

The Bogong land zone contains the land systems in which plateaux form an important part. All have steep montane slopes falling away below the plateaux but present in various proportions. The Koetong land system also has some steep montane slopes extending above the plateaux.

The Benambra land zone consists of the steep montane slopes and contains only the Benambra land system which is divided into three sub-systems.

The combination of land forms typifying the Adjie land zone consists of rolling to hilly valleys surrounded by steep montane slopes. Differences in the proportions of the land forms and in elevation and climate are the main distinguishing features of the land systems in this land zone.

The Omeo land zone contains two land systems in which hilly topography predominates but where some steep montane slopes occur. The main differences between the two land systems in this land zone are in climate and elevation.

Mature valley topography, including alluvial flats, terraces and hillocks, is the criterion for inclusion of land systems in the Murray land zone. Differences in proportions of the land forms and differences in elevation and climate separate the land systems.

The Hinno Munjie land zone contains only the Hinno Munjie land system which is centred on the basin to Lake Omeo.

The Burrowa land zone brings together land systems composed almost entirely of coarse-textured acid igneous rocks with predominantly steep slopes. The Burrowa land system has a few small plateaux, and the Staleyville land system has some small areas of rolling to hilly valleys.

The Mowamba Land zone contains only the Mowamba land system which is characterised by the presence of a basalt flow.

Table 14. - Land Zones, Land Systems and Sub-systems

Land Zone	Land System	Sub-system
1. BOGONG Plateaux with steep montane slopes	1. Bogong 2. Pinnibar 3. Cobungra 4. Bunjil 5. Koetong
2. BANAMBRA Steep montane slopes	6. Benambra	a. Magorra b. Thowgla c. Gibbo
3. ADJIE Rolling to hilly valleys, with montane slopes	7. Adjie 8. Livingstone 9. Enano	a. Towong b. Dart c. Parslow d. Glen Wills
4. OMEO Hills, with some montane slopes	10. Omeo 11. Bethanga
5. MURRAY Mature valleys with alluvial flats, terraces and hillocks	12. Murray 13. Berringama 14. Beloke	a. Lucyvale b. Waga ..
6. HINNO MUNJIE Drainage basin	15. Hinno Munjie	..
7. BURROWA Prophyritic or granitic steep slopes	16. Burrowa 17. Staleyville	a. Jemba b. Mittamitite ..
8. MOAMBA Basaltic areas	18. Mowamba	..

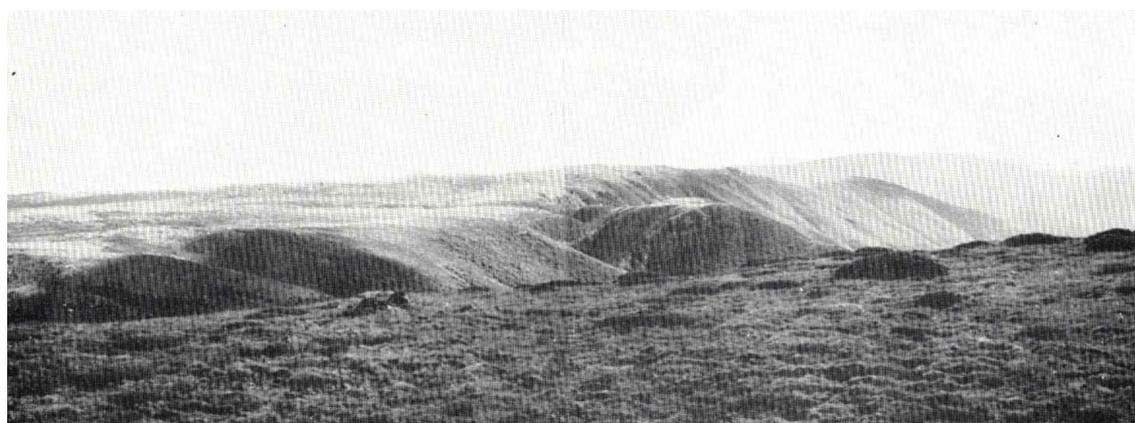


Plate 31. The Bogong land system near Spion Kopje.
Rolling to hilly dissected plateau with some steep montane slopes. The vegetation in the foreground is alpine with scattered low shrubs.