# 6. LAND CAPABILITY

## 6.1 INTRODUCTION

Land is classified according to its physical characteristics i.e. soil and topographical features, including steepness and drainage. The classification reflects the capacity of the land to support a particular landuse in a long-term sustainable manner. Land classes are numbered 1-8; the higher the class number, the greater the limitations or potential hazard to use. Land capability was mapped by the Soil Conservation Service in the early 1990's, using 1988 aerial photography. Since this time, outbreaks of dryland salinity and increased understanding of its impacts have reduced the productive capacity of some land e.g. the creek flats along Myrangle and Doughboy Creeks, mapped as Class 2, can now only support salt tolerant pasture and trees.

Figure 6 shows the distribution of Land Classes within the Little River Catchment and Table 7 provides the areas of each class within each subcatchment. These data sets highlight the Baldry catchment as being substantially suited to grazing (only 20% Class 2 and 3), while the arable country, (suited to rotational cropping) is found along the eastern side of the catchment in the Cumnock, Yeoval and Suntop subcatchments (75% Class 1, 2 and 3).

**Table 7: Area and distribution of each land capability type across the subcatchments.**

| Land Capability Class | Baldry | Yeoval | Cumnock -Little River | Cumnock -Bell River | Suntop/ Arthurville -Little River | Suntop/ Arthurville -Bell River | TOTAL |
|---|---|---|---|---|---|---|---|
| 1 | | | | | 990 | | **990** |
| 2 | 5530 | 3928 | 3639 | 63 | 13308 | 1709 | **28177** |
| 3 | 17371 | 22726 | 24269 | 4033 | 26003 | 9544 | **103946** |
| 4 | 30507 | 5057 | 6289 | 1129 | 5502 | 1048 | **49532** |
| 5 | 18200 | 2545 | 2290 | 438 | 1204 | 355 | **25033** |
| 6 | 10749 | 1778 | 431 | 269 | 1919 | 80 | **15226** |
| 7 | 8239 | | 454 | 328 | 3737 | 837 | **13596** |
| 8 | 112 | | | 9 | 451 | 72 | **645** |
| Crown Land under timber | 20423 | | 202 | | | | **20625** |
| Urban or other | | 233 | 147 | | 174 | | **553** |
| **TOTAL** | **111133** | **36266** | **37722** | **6268** | **53287** | **13646** | **258322** |

## 6.2 DESCRIPTIONS OF LAND CAPABILITY CLASSES

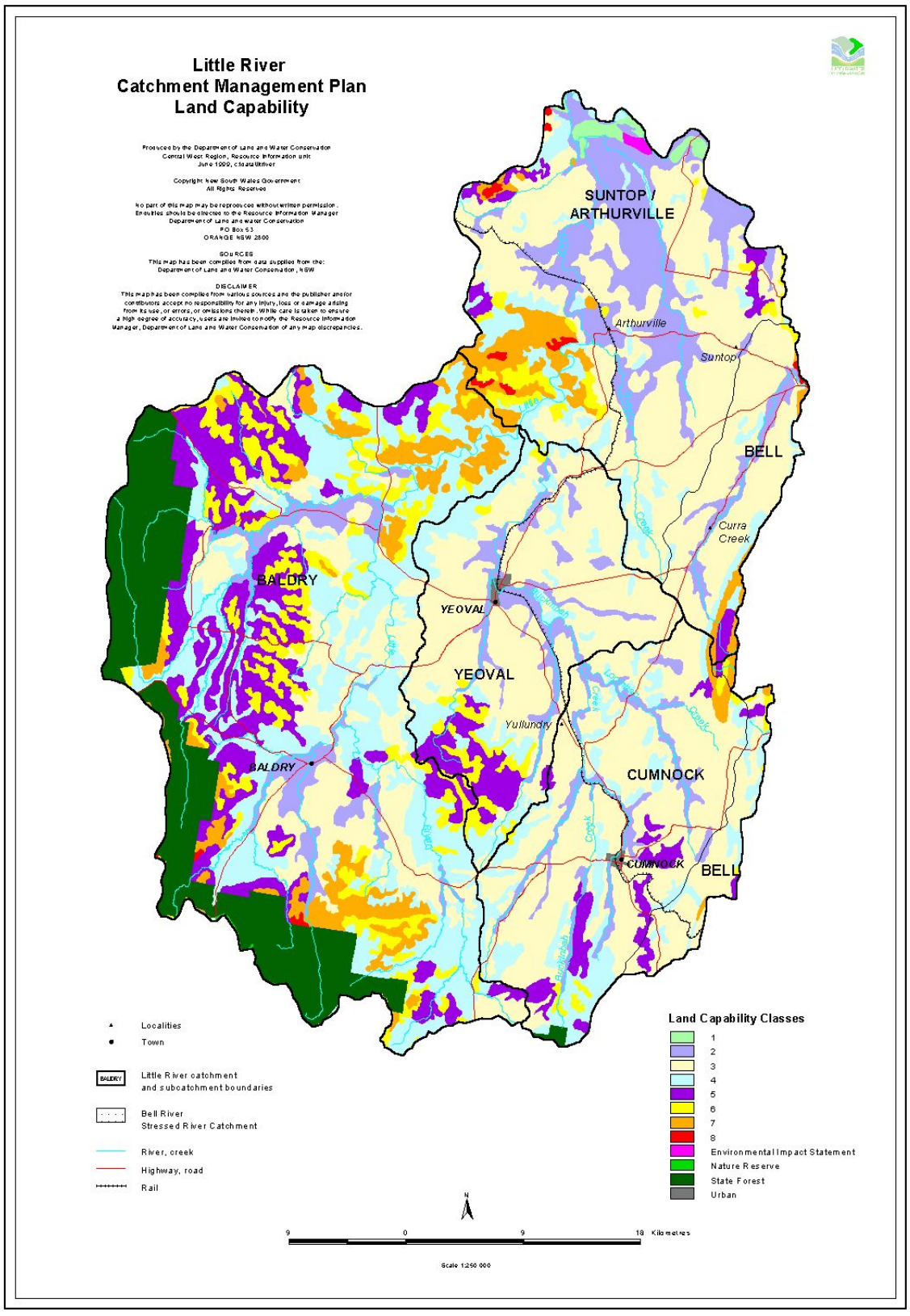
### 6.2.1 Class 1 - *Arable land requiring no special soil conservation practices*

This land is level or almost level land with virtually no physical limitations. The land is generally very fertile and suitable for most agricultural purposes including irrigation. The land class is not widespread and occurs on small areas (~1000 ha) of alluvium adjacent to existing creeks and rivers such as the Macquarie River in the Suntop/Arthurville subcatchment. It may be subject to flooding.

### 6.2.2 Class 2 - *Arable land requiring simple soil conservation measures*

This class occurs on gentle short footslopes or valley floors along the creeks on alluvium. Approximately 28000 hectares of the catchment is Class 2 land; about half of the area is found on the flat land north of Arthurville and Suntop between Little River and Barneys Gully. This land can be used for a wide range of agricultural uses. It is potentially as productive as Class I land, but requires conservation management practices such as stubble retention and rotations to avoid soil degradation, including fertility and structural decline.

**Figure 6 Land Capability**



### 6.2.3 Class 3 - *Arable land requiring intensive soil conservation measures*

About 40% (or 104,000 ha) of the Little River Catchment is Class 3 land, and it is found in the Cumnock, Yeoval and Suntop/Arthurville subcatchments, i.e. the eastern half of Little River. There are also some smaller areas in the Baldry subcatchment. The Cabonne, Cudal Formations and Gregra Limestones have commonly resulted in this land type. The land generally has a slope of between 3% and 8% and occurs on the lower slopes with deeper, moderately fertile soils.

It is suitable for cropping and pastures on a rotational basis. It is generally fair to good agricultural land, currently used for cereals, canola and improved pastures. Productivity is dependent on soil fertility. Soil erosion problems are often severe if the cropping phase is too long or stubble is not retained. Class 3 land has been extensively cleared, often beyond its recommended level of 10% tree cover (13, 57) (See Table 8).

**Table 8: Recommended % Tree Cover for Land Capability Classes**

| Land capability Class | Recommended Tree Cover % | Total Area in Catchment (ha) | Recommended Area of Trees (ha) |
|---|---|---|---|
| 1 | 5 | 990 | 50 |
| 2 and 3 | 10 | 132123 | 13212 |
| 4 and 5 | 15 | 74565 | 11185 |
| 6 | 50 | 15226 | 7613 |
| 7 and 8 | 100 | 14241 | 14241 |
| Crown Land | 100 | 20625 | 20625 |
| Urban | 0 | 553 | 0 |
| **Total** | **26** | **258322** | **66926** |

### 6.2.4 Class 4 - *Grazing land requiring no special soil conservation practices*

There is nearly 50000 hectares of this classification within the Little River Catchment, of which more than half of this occurs in the Baldry subcatchment. It is commonly found on the footslopes of some units of the Yeoval Batholith - including the Sorronto Granites and Naringla Granodiorites. This land is not suitable for regular cultivation due to slope gradient, soil erosion hazard, shallowness or rockiness or a combination of these factors. Soil conservation practices such as pasture improvement, stock control to maintain high levels of ground cover, and minimal cultivation for the establishment of permanent pasture or occasional cropping are necessary to prevent land degradation.
The recommended tree cover for Class 4 and 5 land is at least 15%.

### 6.2.5 Class 5 - *Grazing land requiring structural soil conservation measures*

About 25000 hectares of Class V land is found within the Little River Catchment. Most of this (70%) is found in the Baldry and Yeoval subcatchments, particularly in association with the Yennora and Glengowrie Granites and the Nallawa Complex; all part of the Yeoval Batholith. The land is not suitable for regular cultivation due to slope, rock outcrops, soil erosion, shallowness or rockiness, infertility or a combination of any of these factors. Structural soil conservation works such as absorption banks or diversion banks may be beneficial together with the practices recommended in Class 4.

### 6.2.6 Class 6 - *Steep grazing land requiring conservation management*

Most of this class is found within the Baldry subcatchment, with other areas south of Yeoval and southwest of Arthurville, associated with the same geological units of the Yeoval Batholith as results in Class 5 country. There is approximately 15000 hectares of this classification within the catchment. The slope of this land is generally above 17%. The class tends to be the less productive grazing lands although productivity varies due to soil depth and soil fertility. Soil conservation practices recommended for this class include limited stock numbers, prevention of fire, destruction of vermin and strategic grazing management. At least 50% perennial woody vegetation is recommended for retention.

### 6.2.7 Class 7 -*Reserved for timber, due to inaccessibility or other extreme physical limitations*

There is 13500 hectares of Class 7 land within the catchment around Yahoo Peaks (Dulladerry Volcanics), the Hervey and Catombal Ranges and west of Arthurville (Yeoval Complex). The majority of this classification is associated with hilly, shallow soils. Infertility, erosion hazard, slope and stony shallow soils limit landuse. The land is best retained under a canopy of green timber with limited grazing and minimal fire damage.

### 6.2.8 Class 8 - *Lands not suited for agriculture, grazing or forestry*

Small parcels of Class 8 land, totaling 650 ha, are found in the Baldry and Suntop/Arthurville subcatchments, generally associated with the Mesozoic Igneous rocks. Land includes cliffs, rock outcrops and steep land which is unsuitable for agricultural uses, including grazing. It should be left for the preservation of natural vegetation and used for water supply catchments, wildlife refuges, national parks and reserves and scenic areas.

### 6.2.9 *Crown Land (Timbered)*

The Goobang National Park covers 20,500 ha of the Baldry subcatchment and a small part of the Killonbutta State Forest lies on the southern boundary of the Cumnock subcatchment. These areas of Crown land are valuable reserves of remnant vegetation and provide habitat for fauna. Control of excessive populations of native and feral animals may be necessary periodically, along with fire prevention management.

### 6.2.10 *Urban and Other*

There are some small urban areas within the catchment, including the villages of Yeoval and Cumnock and the hamlets of Baldry and Obley. Approximately 550 hectares of the catchment is under residential or other development.

**References:**


(3) Soil Conservation Service (1982) *Wellington Tech Manual Ch 10*

(13) Department of Conservation and Land Management (1994) *Macquarie River Catchment - Land degradation report*

(24) Soil Conservation Service (1978) *Orange Tech Manual Ch 10*

(48) Department of Land and Water Conservation (1999) *GIS Maps and statistics* – land capability, soil landscapes

(57) Department of Conservation and Land Management (1997) *Namoi River Catchment - Land degradation report*