

VEGETATION OF UPPER MANGROVE CREEK, WYONG, NEW SOUTH WALES

D. H. BENSON

(Accepted for publication 20.12.1979)

ABSTRACT

Benson, D. H. (National Herbarium of New South Wales, Royal Botanic Gardens, Sydney, New South Wales, Australia 2000) 1981. *Vegetation of Upper Mangrove Creek, Wyong, New South Wales. Cunninghamia* 1 (1): 7-22. In a survey of 9 000 ha of the upper catchment of Mangrove Creek, Wyong, New South Wales, four types of vegetation, distinguished structurally and floristically, are described and related to physiographic and geological variation. On Hawkesbury Sandstone, *Eucalyptus eximia-E. gummifera-E. punctata* woodland occurs on ridgetops and N to W facing slopes, while *Angophora costata-Eucalyptus piperita* open-forest occurs on S to E facing slopes and in sheltered gullies. In valleys cut into Narrabeen Group shales and sandstones, *Eucalyptus tereticornis-E. eugenioides* open-forest occurs on dry aspects of the lower slopes while *Eucalyptus deanei-Angophora floribunda* tall open-forest occupies the lower slopes on sheltered S facing slopes and on Recent alluvium. The value of "forest types" for the description and mapping of vegetation is discussed.

INTRODUCTION

The vegetation of the catchment of the planned Mangrove Creek Dam is described here. The catchment covers approximately 9 000 ha of the headwaters of Mangrove Creek (lat 33° 10' S, long 151° 10' E) which rises approximately 30 km north-west of Wyong, and flows south to join the Hawkesbury River at Spencer. This area was included in Pidgeon's (1941) general survey of the vegetation of the Central Coast of New South Wales and the vegetation assigned to two broad plant Associations, the Mixed *Eucalyptus* Forest Association and the *Eucalyptus saligna-E. pilularis* Association. She recognized that there was considerable variation within these Associations and suggested that within them a number of "forest types" could, with further work, be recognized. The opportunity arose to see whether the vegetation could be satisfactorily described and mapped in terms of "forest types" in a catchment where much of the vegetation was, at the time, relatively little altered from its natural state.

The catchment area is on part of the Triassic Hawkesbury Sandstone plateau which covers much of the Sydney region (N.S.W. Department of Mines, 1966). Here the plateau has been dissected by Mangrove Creek and its tributaries, which have cut deep valleys through the sandstone to expose the softer shales and sandstones of the underlying Narrabeen Group, also of Triassic age. On the floors of the valleys are alluvial flats. Included in the catchment area is a small outcrop of Tertiary basalt, which has been cleared of its original native vegetation.

Climatic data for Cessnock, a similar distance from the coast as the catchment area and approximately 45 km north, are given in Figure 1.

SURVEY METHOD

Colour aerial photography (approximate scale 1:16 300) was used to map recognizable units or "phototypes". Vehicular and foot traverses were made in April and August 1976 to field-check mapped boundaries and to record detailed data from ten sites. These sites were chosen from the aerial photography to sample the different phototypes recognized and the range of variation within each phototype. Detailed recording sites were 20 x 20 m square quadrats in which all vascular plant species present were recorded. All stems with a diameter (d.b.h.) greater than 5 cm were measured, and the density and basal area for each site determined. Projected canopy foliage cover was measured at 50 points within the site, using a vertical sighting tube with cross-wires. Aspect and slope were recorded and an estimate of general canopy height was made.

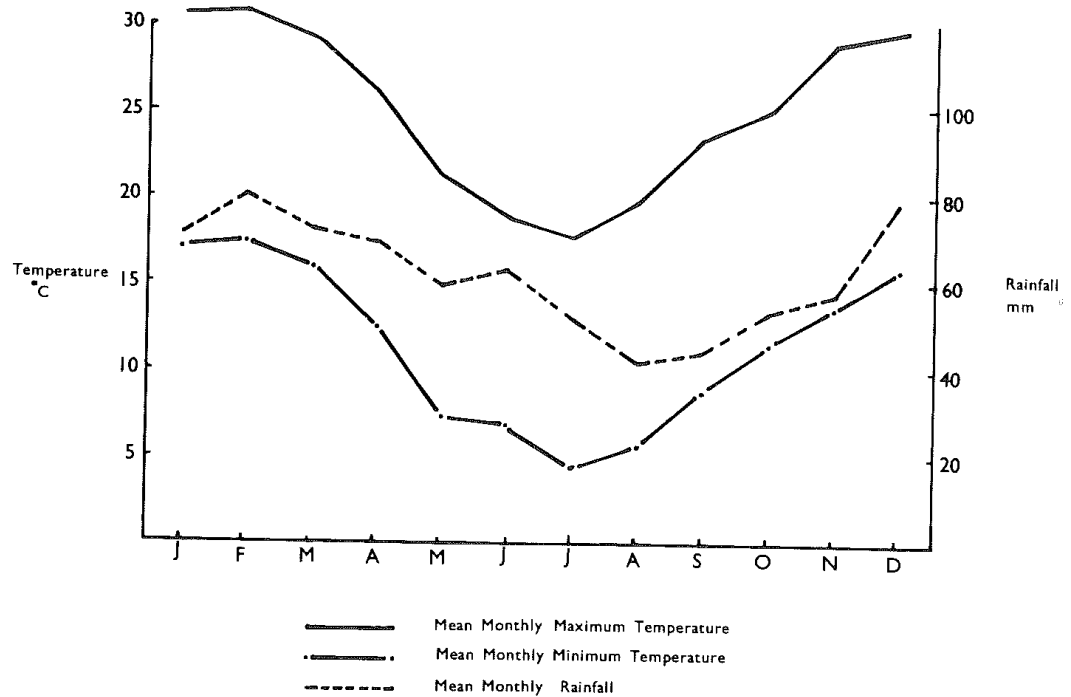


Figure 1. Climatic data for Cessnock, New South Wales, approximately 45 km north of Mangrove Creek. Data for period 1903–1964 (Hall, 1972).

THE VEGETATION

The alluvial flats were cleared in the early days of settlement, but the rest of the catchment area still retains much of the original native vegetation, though this has been regularly grazed, logged and burnt, particularly on the lower hillsides.

Only three phototypes could be distinguished: (i) tall open-forest/open-forest, (ii) woodland and (iii) cleared agricultural land. The structural formations of Specht (1970) are used. Field work enabled the tall open-forest/open-forest type to be subdivided into three floristic units, each occupying a distinctive physiographic position along a gradient from ridgetop to gully but which, because of the amount of intergradation between them, could not be mapped separately at the scale presented here (Figure 2). The relationships between the structural units mapped, the vegetation communities described, and the geology and physiography are summarized in Table 1. Descriptions of the communities are given below. Site data are given in Table 2 and Appendices 1 and 2.

Eucalyptus deanei-Angophora floribunda TALL OPEN-FOREST

This community is found in sheltered conditions with relatively fertile soil and is restricted to sheltered alluvial valleys or lower hill slopes on exposures of the Narrabeen Group, usually on southerly to south westerly aspects. It originally occupied most of the alluvial flats of Mangrove Creek down to its junction with the Hawkesbury River (Benson, 1974) but has been extensively cleared for agriculture and grazing. The original structure of the community was probably tall open-forest with very tall straight trees commonly exceeding 30 m in height. Remaining stands are now generally less than 25 m high, often composed of a large number of even-aged trees which have regenerated following clearing or extensive logging.

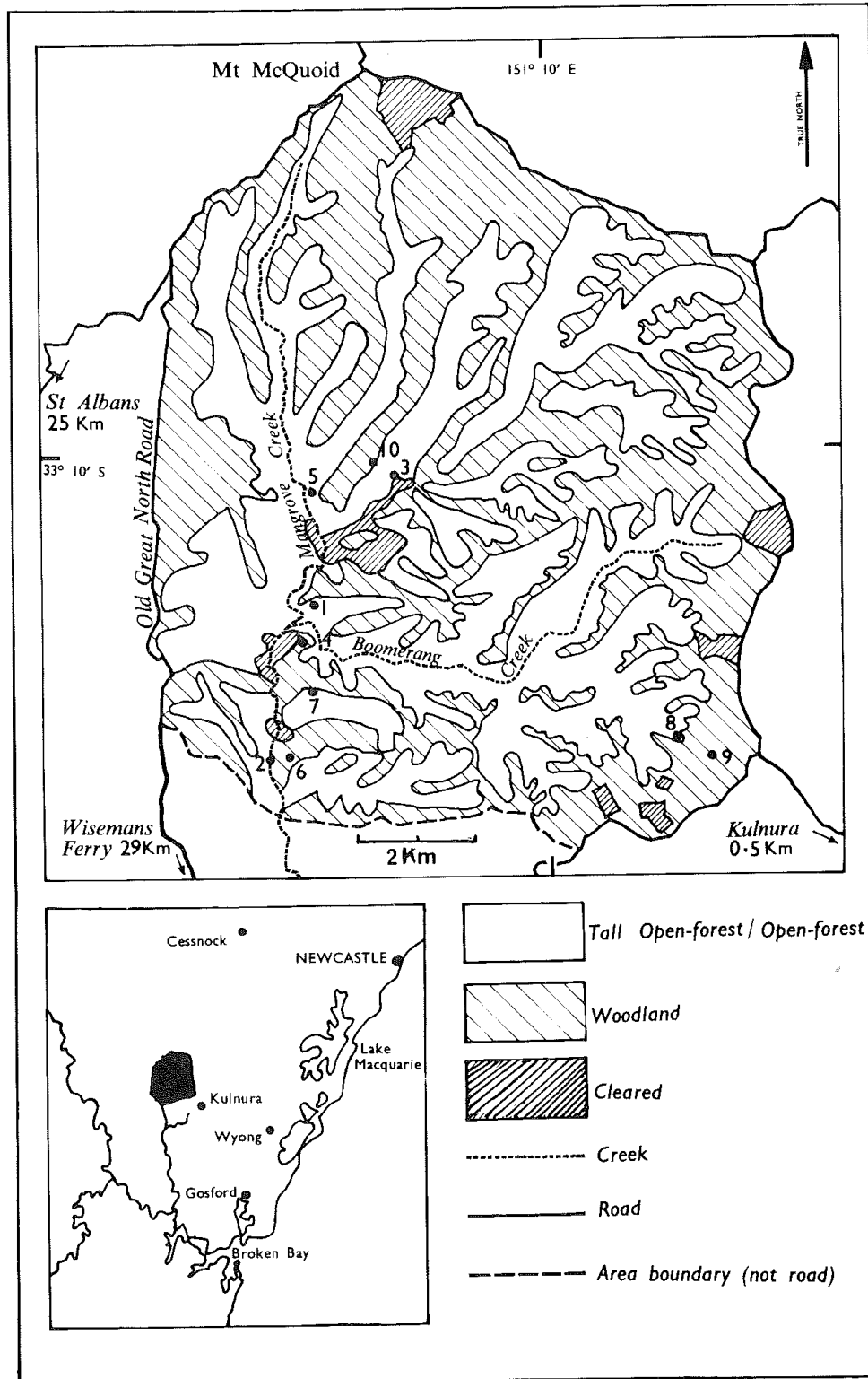


Figure 2. Vegetation of Upper Mangrove Creek catchment area. Numbers refer to sites in which structural and floristic data were recorded.

TABLE 1

Relationship between mapped units, plant communities, geology and physiography.

| Mapped unit | Plant community | Geology | Physiography |
|------------------------------|--|----------------------------------|---|
| Tall open-forest/open-forest | <i>Eucalyptus deanei</i> - <i>Angophora floribunda</i> Tall open-forest | Recent alluvium, Narrabeen Group | Sheltered valleys, S to SW facing slopes. |
| | <i>Eucalyptus tereticornis</i> - <i>E. eugenioides</i> Open-forest | Narrabeen Group | Lower slopes of hills, drier aspects. |
| | <i>Angophora costata</i> - <i>Eucalyptus piperita</i> Open-forest | Hawkesbury Sandstone | Sheltered gullies, S to E facing slopes. |
| Woodland | <i>Eucalyptus eximia</i> - <i>E. gummifera</i> - <i>E. punctata</i> Woodland | Hawkesbury Sandstone | Ridgetops and exposed slopes, N to W facing slopes. |

The main tree species are *Eucalyptus deanei* (Deane's Gum) a tall straight smooth-barked tree, abundant in sheltered gullies, and *Angophora floribunda* (Rough-barked Apple), a rough-barked tree with twisted branches, generally shorter than *E. deanei* and more common on alluvial flats. Other canopy trees found are *Eucalyptus tereticornis* (Forest Red Gum) and *E. acmenoides* (White Mahogany). Below the main canopy may be a small-tree stratum about 8 m high of *Casuarina torulosa* (Forest Oak) and *Acacia flicifolia* (Fern-leaf Wattle). *Acacia flicifolia* is particularly abundant where the tree canopy has been opened and forms dense thickets in and around clearings. Ground cover is a dense layer of ferns and grasses, and appears to have been grazed and regularly burnt for many years. Common ground species are *Adiantum aethiopicum*, *Pteridium esculentum*, *Doodia aspera*, *Culcita dubia*, *Imperata cylindrica* and *Dichondra repens*. *Hibbertia scandens*, a small trailing shrub, is often abundant.

Boundaries with the drier *Eucalyptus tereticornis*-*E. eugenioides* open-forest are transitional.

Remnants of the *Eucalyptus deanei*-*Angophora floribunda* tall open-forest are found also along Mogo and Wyong Creeks. This vegetation type was probably originally widespread along most creeks in the area. Samples have been preserved in Dharug National Park (Matthew, 1973) and along Mooney Mooney Creek in Brisbane Water National Park.

Eucalyptus tereticornis-*Eucalyptus eugenioides* OPEN-FOREST

On the drier northerly and westerly aspects on exposures of the Narrabeen Group, the *Eucalyptus deanei*-*Angophora floribunda* tall open-forest is replaced by an open-forest of *Eucalyptus tereticornis* (Forest Red Gum) and *E. eugenioides* (Thin-leaved Stringybark). This community ranges in height from 12 to 20 m and includes a number of other tree species such as *E. acmenoides* (White Mahogany), *E. punctata* (Grey Gum) and *E. crebra* (Narrow-leaved Ironbark). *E. deanei* and *A. floribunda* may be present on moister sites. Smaller trees of *Casuarina torulosa* and sapling eucalypts to 8 m with a discontinuous shrub layer of *Persoonia linearis* and *Jacksonia scoparia* form the understorey. Ground cover is open with grasses and small shrubs up to 0.5 m. Common species are *Pteridium esculentum*, *Imperata cylindrica* and *Hibbertia scandens*.

Boundaries with *E. deanei*-*A. floribunda* tall open-forest on alluvial flats are transitional, but are abrupt with the communities found on Hawkesbury Sandstone.



Figure 3. *Eucalyptus deanei*-*Angophora floribunda* tall open-forest showing *E. deanei* with *Culcita dubia* understorey and scattered shrubs of *Acacia filicifolia*.

Figure 4. *Eucalyptus tereticornis*-*E. eugenioides* open-forest showing *E. eugenioides* with understorey of *Jacksonia scoparia*.

Figure 5. *Angophora costata*-*Eucalyptus piperita* open-forest showing *Angophora costata* with *Pteridium esculentum* understorey.

Remnants of the *E. tereticornis*-*E. eugenioides* open-forest occur in the upper MacDonal River and Mogo Creek, though most have been cleared or partially cleared and are regularly grazed and burnt. Small examples have possibly been included in Dharug National Park.

Angophora costata-*Eucalyptus piperita* OPEN-FOREST

This community is confined to the Hawkesbury Sandstone and is found in moist gullies and on the sheltered sides of ridges, mainly those with easterly and southerly aspects. Tree height depends on the degree of shelter, and ranges from 26 m in sheltered gullies to less than 12 m near ridge crests.

TABLE 2
Structural and species richness data recorded from 20 x 20 m sites

| Community | Number of sites | Estimated canopy height (m) | Projected foliage cover (%) | Basal area (m ² /ha) | Stem density (stems/ha) | Number of species | Total exotic species |
|---|-----------------|-----------------------------|-----------------------------|---------------------------------|-------------------------|-------------------|----------------------|
| Tall open-forest <i>E. deanei-A. floribunda</i> | 3 | 20,20,25 | 44,56,60 | 31,37,38 | 250,475,850 | 46,57,59 | 4 |
| Open-forest <i>E. tereticornis-E. eugenioides</i> | 3 | 14,20,20 | 38,40,54 | 20,27,30 | 475,750,1625 | 43,52,57 | 3 |
| Open-forest <i>A. costata-E. piperita</i> | 2 | 12,20 | 54,64 | 25,50 | 225,250 | 56,62 | 0 |
| Woodland <i>E. eximia-E. gummifera-E. punctata</i> | 2 | 10,15 | 20,52 | 8,25 | 325,500 | 30,40 | 0 |



Figure 6. *Eucalyptus eximia*-*E. gummifera*-*E. punctata* woodland showing *E. racemosa* and *E. gummifera* with *Xanthorrhoea media*.

The main tree species are *Angophora costata* (Smooth-barked Apple) and *Eucalyptus piperita* subsp. *piperita* (Sydney Peppermint), though in moist gullies *Syncarpia glomulifera* (Turpentine) is frequent. Small trees of *Casuarina torulosa* and *Acacia elata* are often present. The characteristic understorey is a mid-dense to open layer of shrubs less than 1 m high together with ferns, predominantly *Pteridium esculentum*. Common shrub species are *Acacia ulicifolia*, *Platysace linearifolia*, *Oxylobium ilicifolium*, *Pultenaea flexilis* and *Persoonia linearis*. *Doryanthes excelsa* (Gynea Lily) may be locally abundant.

Boundaries are generally abrupt with *Eucalyptus tereticornis*-*E. eugenioides* open-forest and transitional or abrupt with *Eucalyptus eximia*-*E. gummifera*-*E. punctata* woodland.

The *Angophora costata*-*E. piperita* open-forest is essentially undisturbed though there has been some localized logging of larger trees, particularly *Syncarpia glomulifera*. The community is widespread on sandstone country around Sydney. Examples are preserved in Dharug National Park.

Eucalyptus eximia-*Eucalyptus gummifera*-*Eucalyptus punctata* WOODLAND

This community ranges in height from about 8 to 16 m and in density from woodland to open-forest, varying with exposure. It is confined to Hawkesbury Sandstone ridges and plateaux, on exposed, principally northerly and westerly, aspects.

Tree species vary with changes in aspect, slope and soil depth. Common species are *Eucalyptus gummifera* (Red Bloodwood), *E. eximia* (Yellow Bloodwood), *E. oblonga* (Narrow-leaved Stringybark), *E. punctata* (Grey Gum), *E. racemosa* (Scribbly Gum) and *Angophora bakeri* (Narrow-leaved Apple). The understorey is mid-dense to open with sclerophyllous shrubs up to 1 m high. Typical species are *Banksia aspleniifolia*, *Leptospermum attenuatum*, *Phyllota phyllicoides*, *Lambertia formosa* and *Acacia ulicifolia*.

Boundaries with the adjacent *Angophora costata*-*E. piperita* open-forest are transitional or abrupt.

The community is not very disturbed, since it is restricted to poor soils which are little used agriculturally. It is widespread over much of the sandstone plateau area around Sydney. Good examples have been preserved in adjacent Dharug National Park.

Structure and floristics

Structural and species richness data for the four communities are presented in Table 2. Canopy height ranges from 10 to 25 m, mainly along a gradient related to exposure, i.e. from exposed ridgetop to sheltered gully. Projected foliage cover for almost all sites, except one in woodland was within the Mid-Dense (30–70%) category of Specht (1970). Basal area figures for all sites, except the woodland site were scattered between 20 and 50 m²/ha, the ranges of different communities overlapping. Greatest basal area was in *A. costata*-*E. piperita* open-forest, a community that has been less severely logged or disturbed than the tall open-forest and other open-forest communities, which generally have a high number of small, even-sized trees or coppice regrowth. Disturbance in these latter two communities is indicated by the high stem density and low mean stem diameter figures.

Total number of species/site was lower for the woodland than the other communities, the sites in the former showing evidence of more recent fire than those in the forest communities, though all sites, except two in tall open-forest, showed signs of past burning. Although all sites were selected as being the least disturbed in a particular area, exotic species were recorded only in the tall open-forest and *E. tereticornis*-*E. eugenioides* open-forest. This may be due in part to the greater disturbance these communities have suffered, but may also be due to the unsuitability to exotics of the habitats on unmodified Hawkesbury Sandstone soils, even when disturbed.

TABLE 3

Czechanowski similarity coefficients for community pairs calculated from the total species lists for each community

| Plant community | <i>E. tereticornis</i> - <i>E. eugenioides</i> Open-forest | <i>A. costata</i> - <i>E. piperita</i> Open-forest | <i>E. eximia</i> - <i>E.</i> <i>gummifera</i> - <i>E.</i> <i>punctata</i> Woodland |
|--|--|--|---|
| <i>Eucalyptus deanei</i> - <i>Angophora floribunda</i> Tall open-forest | 0.63 | 0.35 | 0.17 |
| <i>Eucalyptus tereticornis</i> - <i>E. eugenioides</i> Open-forest | .. | 0.38 | 0.19 |
| <i>Angophora costata</i> - <i>Eucalyptus piperita</i> Open-forest | .. | .. | 0.39 |

Floristic differences between the communities on the two major geological units are indicated (Table 3) by the Czechanowski similarity coefficients (Clifford & Stephenson, 1975). As sites sampled were chosen as representative of each community, similarity coefficients were not calculated for all site pairs but only from the total species lists for each community. The two communities on Narrabeen Group geology, *Eucalyptus deanei*-*Angophora floribunda* tall open-forest and *E. tereticornis*-*E. eugenioides* open-forest are most similar to one another and least similar to the *E. eximia*-*E. gummifera*-*E. punctata* woodland on Hawkesbury Sandstone. The *Angophora costata*-*E. piperita* open-forest is intermediate between the woodland and the Narrabeen Group communities.

TABLE 4
Comparison of plant communities from Mangrove Creek with those of Pidgeon, Specht et al. and Baur.

| Plant community | Pidgeon (1937) | Specht et al. (1974) | Baur (1965) |
|---|--|---|--|
| <i>Eucalyptus deanei</i> - <i>Angophora floribunda</i> Tall open-forest | <i>Eucalyptus saligna</i> - <i>E. pilularis</i> Association | Tall open-forest <i>E. saligna</i> - <i>E. resinifera</i> - <i>E. pilularis</i> | Forest Type 52. Round leaved Gum-Turpentine |
| <i>Eucalyptus tereticornis</i> - <i>E. eugenoides</i> Open-forest | <i>Eucalyptus saligna</i> - <i>E. pilularis</i> Association | Open-forest <i>E. acmenoides</i> - <i>E. propinqua</i> - <i>E. microcorys</i> | Forest Type 64. Grey Gum-Stringybark |
| <i>Angophora costata</i> - <i>Eucalyptus piperita</i> Open-forest | Mixed <i>Eucalyptus</i> Forest Association | Open-forest Sandstone Complex | Forest Type 106. Smooth barked Apple-Sydney Peppermint-Stringybark |
| <i>Eucalyptus eximia</i> - <i>E. gummifera</i> - <i>E. punctata</i> Woodland | Mixed <i>Eucalyptus</i> Forest Association | Open-forest Sandstone Complex | Forest Type 100. Yellow Bloodwood |

Although no attempt was made to record all species present in the area, an idea of the total flora to be expected may be estimated from a comparison with the adjacent Dharug National Park, an area of similar size. Here Matthew (1973), in three years of botanical exploration, recorded 514 native plant species. In Mangrove Creek only 196 species have been listed, including six exotic species, and it is reasonable to believe that a list of similar size to Matthew's could be compiled.

Classification of communities

Comparisons between the plant communities described for Mangrove Creek and relevant communities described by other workers are shown in Table 4. Pidgeon (1937) described two Associations for the area, while Specht *et al.* (1974) probably largely based on Pidgeon, described three. Pidgeon (1940), however, suggested that her Associations could be subdivided into "forest types", each of which would have a similar floristic composition of dominants and develop in essentially similar habitats. She did not, however, suggest any "forest types" for the Mangrove Creek area. The four communities recognized in the present survey are essentially "forest types" though each probably contains more habitat variation than she would have intended. Baur's (1965) "Forest Types" are similarly defined and types can be correlated with each of the communities recognized for Mangrove Creek.

However, although this level of classification was satisfactory for descriptive work, it was unsatisfactory for mapping. This is due mainly to the particular topography of the dissected sandstone plateaux, features of which are narrow, linear units along creek and gullies, and marked aspect differences, making up a recurring mosaic of communities often with intergradation between them. For mapping, medium-scale colour aerial photography and a 1:25 000 scale topographic base map were used, but only structural vegetation units could be consistently recognized (Table 1) and even then the differentiation between some of these (tall open-forest and open-forest) was unsatisfactory. It appears that although forest types are recognizable on Hawkesbury Sandstone, it is very difficult to map units within structural formations, except where these can be related to topographic or geological factors, which are otherwise evident in aerial photography. Similar results are indicated by J. S. Benson and Fallding (1979) who mapped Hawkesbury Sandstone areas in Brisbane Water National Park, about 20 km south-east of Mangrove Creek. Dealing with a more varied area, both floristically and structurally, ranging from closed-forest to sedgeland, they mapped (at scale 1:25 000) 18 communities, almost all recognized on structure with some subdivisions related to topographic position.

Forest types on Hawkesbury Sandstone are therefore probably best treated as components of a vegetation gradient associated with slope, soil depth, aspect etc. Austin (1978), in dealing with the sclerophyll forest communities of the South Coast of New South Wales, successfully grouped his forest communities into "types" on the basis of toposequences and altitudinal range. Using a similar approach at Mangrove Creek one would also take into consideration the major geological units present, as these are associated with important floristic differences. Thus a *Eucalyptus tereticornis-E. deanei-Angophora floribunda* toposequence type could be recognized on Narrabeen Group shales and sandstones, and a *E. eximia-E. punctata-Angophora costata* type on Hawkesbury Sandstone. Such types may need to be modified or extended when applied to areas with greater topographic variation than Mangrove Creek. For instance, on Hawkesbury Sandstone in the vicinity of the Colo River a possible toposequence-type would be *E. eximia-E. punctata-Angophora costata-E. saligna*.

Once toposequence types have been established, the relationships between vegetation structure, floristic composition and various gradients within these types can be studied in greater detail.

ACKNOWLEDGMENTS

The survey was undertaken at the request of the New South Wales Department of Public Works for information on the native vegetation which would be affected by the proposed Gosford-Wyong Water Supply Scheme. I wish to thank Mrs Helen Bryant for her help in collecting the data and preparing the diagrams and map, and my colleagues at the National Herbarium of New South Wales for help with the identification of specimens and comments on the manuscript.

REFERENCES

- Austin, M. P. (1978). Vegetation. In *Land use on the South Coast of New South Wales; a study in methods of acquiring and using information to analyse regional land use options* (Ed. M.P. Austin & K. D. Cocks), Vol. 2. *Biophysical background studies* (Ed. R. H. Gunn), pp. 44-67. CSIRO, Melbourne.
- Baur, G. N. (1965). *Forest types in New South Wales*. Forestry Commission of N.S.W. Research Note No. 17.
- Beadle, N. C. W., Evans, O. D. & Carolin, R. C. (1972). *Flora of the Sydney region*. Reed, Sydney.
- Benson, D. H. (1974). Survey of the natural vegetation of the Hawkesbury River and its tributaries. In H. A. Scholer, *Geomorphology of New South Wales coastal rivers*, pp. 68-89. UNSW Water Research Laboratory Report No. 139.
- Benson, J. S. & Fallding, H. (1979). Vegetation survey of Brisbane Water National Park and environs. Unpub. report, Royal Botanic Gardens, Sydney.
- Clifford, H. T. & Stephenson, W. (1975). *An introduction to numerical classification*. Academic Press, New York.
- Hall, N. (1972). *Summary of meteorological data in Australia*. Forestry & Timber Bureau Leaflet No. 114. Department of National Development, Canberra.
- Matthew, P. (1973). Flora of the Dharug National Park N.S.W. Unpub. report. (Copy held in Royal Botanic Gardens Library).
- N.S.W. Department of Mines, (1966). Sydney 1:250 000 geological series sheet. Edn. 3.
- Pidgeon, I. M. (1937). The ecology of the Central Coastal area of New South Wales. I. The environment and general features of the vegetation. *Proc. Linn. Soc. N.S.W.* 62, 315-340.
- Pidgeon, I. M. (1940). The ecology of the Central Coastal area of New South Wales. III. Types of primary succession. *Proc. Linn. Soc. N.S.W.* 65, 221-249.
- Pidgeon, I. M. (1941). The ecology of the Central Coastal area of New South Wales. IV. Forest types on soils from Hawkesbury Sandstone and Wianamatta Shale. *Proc. Linn. Soc. N.S.W.* 66, 113-137.
- Pryor, L. D. & Johnson, L. A. S. (1971). *A classification of the Eucalypts*. Australian National University, Canberra.
- Specht, R. L. (1970). Vegetation. In *The Australian environment* (Ed. G. W. Leeper), pp. 44-67. Edn. 4. CSIRO-Melbourne University Press, Melbourne.
- Specht, R. L., Roe, E. M. & Boughton, V. H. (1974). *Conservation of major plant communities in Australia and Papua New Guinea*. Australian Journal of Botany Supplementary Series No. 7.

APPENDIX 1: SITE LOCATIONS

Eucalyptus deanei-*Angophora floribunda* Tall open-forest

| | | |
|---------|------------|------------|
| Site 1— | 33° 11' S, | 151° 07' E |
| Site 2— | 33° 12' S, | 151° 07' E |
| Site 3— | 33° 09' S, | 151° 07' E |

Eucalyptus tereticornis-*E. eugenioides* Open-forest

| | | |
|---------|------------|------------|
| Site 4— | 33° 11' S, | 151° 07' E |
| Site 5— | 33° 09' S, | 151° 06' E |
| Site 6— | 33° 12' S, | 151° 07' E |

Angophora costata-*Eucalyptus piperita* Open-forest

| | | |
|---------|------------|------------|
| Site 7— | 33° 12' S, | 151° 07' E |
| Site 8— | 33° 12' S, | 151° 10' E |

Eucalyptus eximia-*E. gummifera*-*E. punctata* Woodland

| | | |
|----------|------------|------------|
| Site 9— | 33° 12' S, | 151° 11' E |
| Site 10— | 33° 09' S, | 151° 07' E |

APPENDIX 2: SPECIES RECORDED FROM 20 x 20 m SITES

- ? = identification uncertain
 x = present
 C = common
 * = exotic species

Nomenclature follows that currently used at the National Herbarium of New South Wales. Authorities are given in Beadle et al. (1972) except as follows:

Conyza albida Willd. ex Spreng.

C. canadensis (L.) Cronquist

Gonocarpus tetragynus Labill.

G. teucroioides DC.

Petrophile pulchella (Schrad.) R. Br.

Stylidium productum M. Hindmarsh et D. Blaxell

Eucalyptus and *Angophora* codings follow Pryor & Johnson (1971).

| Botanical name | Sites | | | | | | | | | |
|-------------------------------|-------|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| PTERIDOPHYTES | | | | | | | | | | |
| Adiantaceae | | | | | | | | | | |
| <i>Adiantum aethiopicum</i> | .. | .. | C | x | C | .. | C | .. | .. | .. |
| <i>A. hispidulum</i> | .. | .. | .. | x | .. | .. | .. | .. | .. | .. |
| <i>Cheilanthes tenuifolia</i> | .. | .. | x | x | .. | x | x | x | .. | .. |
| <i>Pellaea falcata</i> | .. | .. | .. | .. | .. | .. | x | .. | .. | .. |
| Blechnaceae | | | | | | | | | | |
| <i>Blechnum cartilagineum</i> | .. | .. | .. | x | .. | .. | .. | .. | .. | .. |
| <i>Doodia aspera</i> | .. | .. | .. | x | C | .. | .. | .. | .. | .. |
| Cyatheaceae | | | | | | | | | | |
| <i>Culcita dubia</i> | .. | .. | .. | x | .. | .. | .. | x | x | .. |
| Dennstaedtiaceae | | | | | | | | | | |
| <i>Pteridium esculentum</i> | .. | .. | C | C | C | C | .. | .. | x | C |
| Schizaeaceae | | | | | | | | | | |
| <i>Schizaea dichotoma</i> | .. | .. | .. | .. | .. | .. | .. | x | .. | x |

| Botanical name | Sites | | | | | | | | | |
|-------------------------------------|-------|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| ANGIOSPERMS | | | | | | | | | | |
| DICOTYLEDONS | | | | | | | | | | |
| Acanthaceae | | | | | | | | | | |
| <i>Brunoniella pumilio</i> .. | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| <i>Pseuderanthemum variabile</i> | .. | .. | X | .. | X | .. | .. | .. | .. | .. |
| Apiaceae | | | | | | | | | | |
| <i>Actinotus helianthi</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| <i>A. minor</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | X | .. |
| <i>Centella asiatica</i> .. | .. | X | .. | .. | .. | .. | .. | .. | .. | .. |
| <i>Hydrocotyle ? acutiloba</i> | .. | X | .. | .. | .. | .. | .. | X | .. | .. |
| <i>H. tripartita</i> .. | .. | .. | X | .. | X | .. | .. | .. | .. | .. |
| <i>Platysace linearifolia</i> .. | .. | .. | .. | .. | .. | X | C | X | X | X |
| Araliaceae | | | | | | | | | | |
| <i>Astrotricha floccosa</i> .. | .. | .. | X | .. | X | .. | .. | X | .. | .. |
| <i>Polyscias sambucifolius</i> .. | .. | X | X | X | .. | X | .. | X | .. | .. |
| Asteraceae | | | | | | | | | | |
| <i>Cassinia aculeata</i> .. | .. | .. | .. | X | .. | X | .. | .. | .. | .. |
| <i>C. ? uncatata</i> .. | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| * <i>Conyza albida</i> .. | .. | .. | .. | X | .. | X | X | .. | X | .. |
| * <i>C. canadensis</i> .. | .. | .. | X | .. | .. | .. | .. | .. | .. | .. |
| <i>Gnaphalium japonicum</i> s. lat. | .. | X | X | .. | .. | .. | .. | .. | .. | .. |
| <i>Helichrysum diosmifolium</i> | .. | .. | X | X | .. | X | X | X | X | .. |
| * <i>Hypochoeris radicata</i> .. | .. | X | X | X | X | X | X | .. | .. | .. |
| <i>Lagenifera stipitata</i> .. | .. | X | .. | .. | X | .. | X | .. | X | .. |
| <i>Senecio hispidulus</i> .. | .. | X | .. | .. | .. | .. | .. | .. | .. | .. |
| <i>S. lautus</i> .. | .. | X | X | .. | .. | .. | .. | .. | .. | .. |
| <i>Sigesbeckia orientalis</i> .. | .. | X | X | .. | .. | .. | .. | .. | .. | .. |
| Campanulaceae | | | | | | | | | | |
| <i>Wahlenbergia communis</i> | .. | .. | .. | .. | .. | X | .. | .. | .. | .. |
| <i>W. stricta</i> .. | .. | X | .. | .. | .. | .. | .. | .. | .. | .. |
| Casuarinaceae | | | | | | | | | | |
| <i>Casuarina torulosa</i> .. | .. | .. | .. | X | .. | .. | X | X | .. | .. |
| Celastraceae | | | | | | | | | | |
| <i>Maytenus silvestris</i> .. | .. | .. | .. | X | .. | X | .. | .. | .. | .. |
| Convolvulaceae | | | | | | | | | | |
| <i>Dichondra repens</i> .. | .. | .. | X | C | .. | X | .. | .. | .. | .. |
| <i>Polymeria calycina</i> .. | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| Crassulaceae | | | | | | | | | | |
| <i>Crassula sieberana</i> .. | .. | X | .. | X | .. | X | .. | .. | .. | .. |
| Cunoniaceae | | | | | | | | | | |
| <i>Ceratopetalum gummiferum</i> | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| Dilleniaceae | | | | | | | | | | |
| <i>Hibbertia diffusa</i> .. | .. | .. | .. | .. | X | .. | .. | .. | .. | .. |
| <i>H. empetrifolia</i> .. | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| <i>H. scandens</i> .. | .. | X | C | C | .. | C | .. | X | .. | .. |
| Droseraceae | | | | | | | | | | |
| <i>Drosera</i> sp. .. | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| Elaeocarpaceae | | | | | | | | | | |
| <i>Elaeocarpus reticulatus</i> .. | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| Epacridaceae | | | | | | | | | | |
| <i>Epacris pulchella</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| <i>Leucopogon lanceolatus</i> .. | .. | .. | .. | X | .. | .. | .. | X | .. | .. |
| <i>L. muticus</i> .. | .. | .. | .. | .. | .. | .. | .. | X | .. | X |
| <i>Melichrus procumbens</i> | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| <i>Monotoca scoparia</i> .. | .. | .. | .. | .. | .. | .. | .. | X | .. | X |
| <i>Trochocarpa laurina</i> .. | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| Euphorbiaceae | | | | | | | | | | |
| <i>Amperea xiphoclada</i> .. | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| <i>Breynia oblongifolia</i> .. | .. | X | X | .. | X | X | X | X | .. | .. |
| <i>Phyllanthus thymoides</i> | .. | .. | .. | .. | X | .. | X | X | .. | X |
| <i>Poranthera microphylla</i> .. | .. | .. | .. | .. | .. | X | .. | .. | .. | .. |

| Botanical name | Sites | | | | | | | | | |
|---|-------|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Fabaceae | | | | | | | | | | |
| <i>Bossiaea heterophylla</i> .. | .. | .. | .. | .. | .. | .. | X | .. | .. | X |
| <i>Daviesia acicularis</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| <i>D. ulicifolia</i> .. | .. | X | .. | .. | X | .. | X | .. | X | .. |
| <i>Desmodium rhytidophyllum</i> .. | .. | .. | X | .. | X | .. | X | .. | .. | .. |
| <i>D. varians</i> .. | .. | C | .. | .. | .. | .. | X | .. | .. | .. |
| <i>Dillwynia retorta</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| <i>Glycine</i> spp. .. | .. | X | X | X | X | X | X | .. | X | .. |
| <i>Gompholobium latifolium</i> .. | .. | .. | .. | .. | .. | .. | X | .. | .. | .. |
| <i>Hardenbergia violacea</i> .. | .. | X | .. | .. | X | .. | X | X | .. | C |
| <i>Hovea linearis</i> .. | .. | .. | .. | .. | .. | .. | X | .. | .. | .. |
| <i>Indigofera australis</i> .. | .. | .. | X | .. | .. | .. | .. | .. | .. | X |
| <i>Jacksonia scoparia</i> .. | .. | .. | .. | .. | X | .. | X | .. | .. | .. |
| <i>Kennedia rubicunda</i> .. | .. | X | .. | X | .. | .. | .. | X | .. | .. |
| <i>Oxylobium ilicifolium</i> .. | .. | X | .. | X | C | .. | X | C | .. | X |
| <i>Pultenaea flexilis</i> .. | .. | .. | .. | .. | .. | .. | X | .. | .. | .. |
| <i>Pultenaea scabra</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| Gentianaceae | | | | | | | | | | |
| <i>Centaurium</i> sp. .. | .. | .. | .. | .. | .. | X | .. | .. | .. | .. |
| Geraniaceae | | | | | | | | | | |
| <i>Geranium</i> sp. .. | .. | .. | .. | X | .. | X | .. | .. | .. | .. |
| <i>Pelargonium</i> sp. .. | .. | X | .. | C | .. | X | .. | .. | .. | .. |
| Goodeniaceae | | | | | | | | | | |
| <i>Goodenia heterophylla</i> .. | .. | X | .. | .. | X | .. | X | .. | X | .. |
| <i>Scaevola ramosissima</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| Haloragaceae | | | | | | | | | | |
| <i>Gonocarpus tetragynus</i> .. | .. | X | .. | .. | X | .. | .. | X | .. | X |
| <i>G. teucrioides</i> .. | .. | .. | .. | X | .. | .. | .. | .. | .. | .. |
| Hypericaceae | | | | | | | | | | |
| <i>Hypericum</i> sp. .. | .. | .. | .. | X | .. | .. | .. | .. | .. | .. |
| Lamiaceae | | | | | | | | | | |
| <i>Plectranthus parviflorus</i> .. | .. | .. | .. | X | .. | X | .. | .. | .. | .. |
| <i>Prostanthera ? ovalifolia</i> .. | .. | .. | X | X | .. | .. | .. | .. | .. | .. |
| Lobeliaceae | | | | | | | | | | |
| <i>Lobelia</i> sp. .. | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| <i>Pratia purpurascens</i> .. | .. | X | C | X | X | X | X | .. | .. | .. |
| Menispermaceae | | | | | | | | | | |
| <i>Sarcopetalum harveyanum</i> .. | .. | .. | .. | X | .. | .. | .. | .. | .. | .. |
| <i>Stephania japonica</i> .. | .. | .. | .. | X | .. | .. | .. | .. | .. | .. |
| Mimosaceae | | | | | | | | | | |
| <i>Acacia buxifolia</i> .. | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| <i>A. elata</i> .. | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| <i>A. filicifolia</i> .. | .. | X | X | .. | .. | X | X | .. | .. | .. |
| <i>A. implexa</i> .. | .. | .. | .. | .. | .. | .. | X | .. | .. | .. |
| <i>A. linifolia</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| <i>A. longifolia</i> .. | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| <i>A. suaveolens</i> .. | .. | .. | .. | .. | .. | .. | .. | X | X | X |
| <i>A. ulicifolia</i> .. | .. | .. | .. | .. | .. | .. | .. | C | C | C |
| Myrsinaceae | | | | | | | | | | |
| <i>Rapanea variabilis</i> .. | .. | .. | .. | X | .. | X | .. | .. | X | .. |
| Myrtaceae* | | | | | | | | | | |
| <i>Acmena smithii</i> .. | .. | .. | .. | X | .. | .. | .. | .. | .. | .. |
| <i>Angophora bakeri</i> AAABD .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| <i>A. costata</i> AAADA .. | .. | .. | .. | .. | .. | .. | .. | X | X | .. |
| <i>A. floribunda</i> AAABB .. | .. | X | .. | .. | .. | X | X | .. | .. | .. |
| <i>Backhousia myrtifolia</i> .. | .. | .. | X | X | .. | X | .. | .. | .. | .. |
| <i>Eucalyptus acmenoides</i> MAG:C .. | X | .. | .. | .. | X | .. | X | .. | .. | .. |
| <i>E. crebra</i> SUP:S .. | .. | .. | .. | .. | .. | X | .. | .. | .. | .. |
| <i>E. deanei</i> SECAA .. | .. | C | C | C | X | X | .. | .. | .. | .. |
| <i>E. eugenioides</i> MAHEA .. | .. | X | X | X | C | C | .. | .. | .. | .. |
| <i>E. gummifera</i> CAFUF .. | .. | .. | .. | .. | .. | .. | .. | C | .. | X |
| <i>E. piperita</i> subsp. <i>piperita</i> MATHAA .. | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |

* *Eucalyptus eximia* CCA:E although a characteristic species for the relevant community, was not present in sample sites 9 and 10.

| Botanical name | Sites | | | | | | | | | |
|--|-------|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Myrtaceae—continued | | | | | | | | | | |
| <i>E. punctata</i> SECED .. | .. | .. | .. | C | .. | x | .. | .. | .. | .. |
| <i>E. racemosa</i> MATKE .. | .. | .. | .. | .. | .. | .. | .. | .. | x | .. |
| <i>E. tereticornis</i> SNEEB .. | .. | .. | .. | .. | C | .. | .. | .. | .. | .. |
| <i>E. umbra</i> subsp. <i>umbra</i> MAG: | | | | | | | | | | |
| AA .. | .. | .. | .. | .. | .. | .. | x | .. | .. | .. |
| <i>E. sp. nov.</i> MAHEK .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | x |
| <i>Leptospermum attenuatum</i> .. | .. | .. | .. | .. | .. | .. | x | .. | C | C |
| <i>L. flavescens</i> .. | .. | .. | C | x | .. | .. | .. | .. | .. | .. |
| <i>Syncarpia glomulifera</i> .. | .. | .. | .. | .. | .. | .. | C | x | .. | .. |
| <i>Tristania laurina</i> .. | .. | .. | .. | .. | .. | .. | x | .. | .. | .. |
| Oleaceae | | | | | | | | | | |
| <i>Notelaea longifolia</i> .. | .. | .. | .. | x | .. | .. | .. | .. | .. | .. |
| Oxalidaceae | | | | | | | | | | |
| <i>Oxalis corniculata</i> .. | .. | .. | x | .. | x | x | x | .. | .. | .. |
| Pittosporaceae | | | | | | | | | | |
| <i>Billardiera scandens</i> .. | .. | .. | x | .. | x | x | x | .. | x | .. |
| <i>Bursaria spinosa</i> .. | .. | .. | x | .. | .. | .. | .. | .. | .. | .. |
| Plantaginaceae | | | | | | | | | | |
| <i>Plantago debilis</i> .. | .. | .. | x | x | .. | x | .. | .. | .. | .. |
| Polygonaceae | | | | | | | | | | |
| <i>Muehlenbeckia ? gracillima</i> .. | .. | .. | x | .. | .. | .. | .. | .. | .. | .. |
| Primulaceae | | | | | | | | | | |
| * <i>Anagallis arvensis</i> .. | .. | .. | x | x | .. | .. | .. | .. | .. | .. |
| Proteaceae | | | | | | | | | | |
| <i>Banksia aspleniifolia</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | x | .. |
| <i>B. serrata</i> .. | .. | .. | .. | .. | .. | .. | x | .. | x | .. |
| <i>Conospermum longifolium</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | x | .. |
| <i>Grevillea linearifolia</i> .. | .. | .. | .. | .. | .. | .. | .. | x | .. | .. |
| <i>Hakea sericea</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | x | .. |
| <i>Isopogon anemonifolius</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | x | .. |
| <i>Lambertia formosa</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | x | C |
| <i>Lomatia silaifolia</i> .. | .. | .. | .. | .. | .. | .. | .. | x | x | x |
| <i>Persoonia laurina</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | x | .. |
| <i>P. levis</i> .. | .. | .. | .. | .. | .. | .. | x | .. | .. | .. |
| <i>P. linearis</i> .. | .. | x | x | .. | x | x | x | x | x | x |
| <i>Petrophile pulchella</i> .. | .. | .. | .. | .. | .. | .. | .. | .. | x | .. |
| <i>Telopea speciosissima</i> .. | .. | .. | .. | .. | .. | .. | C | .. | .. | .. |
| <i>Xylomelum pyriforme</i> .. | .. | .. | .. | .. | .. | .. | x | x | .. | .. |
| Ranunculaceae | | | | | | | | | | |
| <i>Clematis aristata</i> .. | .. | x | x | x | .. | x | .. | x | .. | .. |
| <i>Ranunculus lappaceus</i> .. | .. | x | x | .. | .. | x | .. | .. | .. | .. |
| Rosaceae | | | | | | | | | | |
| * <i>Rubus discolor</i> .. | .. | .. | .. | .. | .. | x | .. | .. | .. | .. |
| <i>R. parvifolius</i> .. | .. | .. | x | x | .. | x | .. | .. | .. | .. |
| Rubiaceae | | | | | | | | | | |
| <i>Galium propinquum</i> .. | .. | .. | .. | .. | .. | x | .. | .. | .. | .. |
| <i>Opercularia varia</i> .. | .. | .. | .. | .. | .. | x | .. | .. | .. | .. |
| <i>Pomax umbellata</i> .. | .. | .. | .. | .. | x | .. | x | x | .. | x |
| Rutaceae | | | | | | | | | | |
| <i>Euodia micrococca</i> .. | .. | .. | .. | x | .. | .. | .. | .. | .. | .. |
| Santalaceae | | | | | | | | | | |
| <i>Exocarpos strictus</i> .. | .. | .. | .. | x | x | .. | .. | .. | .. | .. |
| Sapindaceae | | | | | | | | | | |
| <i>Dodonaea triquetra</i> .. | .. | .. | x | .. | .. | x | .. | x | .. | .. |
| Scrophulariaceae | | | | | | | | | | |
| <i>Veronica plebeia</i> .. | .. | .. | x | .. | x | .. | .. | x | .. | .. |
| Solanaceae | | | | | | | | | | |
| <i>Duboisia myoporoides</i> .. | .. | .. | x | x | x | x | x | .. | .. | .. |
| <i>Solanum prinophyllum</i> .. | .. | .. | .. | x | .. | .. | .. | .. | .. | .. |
| <i>Solanum sp.</i> .. | .. | .. | .. | .. | .. | .. | .. | x | .. | .. |
| Stylidiaceae | | | | | | | | | | |
| <i>Stylidium productum</i> .. | .. | .. | .. | .. | .. | .. | x | .. | .. | .. |

| Botanical name | Sites | | | | | | | | | |
|---|-------|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Thymelaeaceae | | | | | | | | | | |
| <i>Pimelea latifolia</i> subsp. <i>C</i> | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| <i>P. linifolia</i> | .. | .. | .. | .. | .. | .. | X | .. | .. | C |
| Ulmaceae | | | | | | | | | | |
| <i>Trema aspera</i> | .. | .. | X | .. | .. | .. | .. | .. | .. | .. |
| Verbenaceae | | | | | | | | | | |
| * <i>Verbena</i> sp. | .. | .. | .. | X | .. | X | .. | .. | .. | .. |
| Vitaceae | | | | | | | | | | |
| <i>Cayratia clematidea</i> | .. | .. | X | X | .. | X | .. | .. | .. | .. |
| MONOCOTYLEDONS | | | | | | | | | | |
| Araceae | | | | | | | | | | |
| <i>Gymnostachys anceps</i> | .. | .. | .. | X | .. | .. | .. | .. | .. | .. |
| Commelinaceae | | | | | | | | | | |
| <i>Commelina cyanea</i> | .. | .. | .. | .. | .. | X | .. | .. | .. | .. |
| Cyperaceae | | | | | | | | | | |
| <i>Carex appressa</i> | .. | .. | X | .. | .. | .. | .. | .. | .. | .. |
| <i>Caustis flexuosa</i> | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| <i>Cyathochaeta diandra</i> | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| <i>Cyperus laevis</i> | .. | .. | X | .. | X | .. | .. | .. | .. | .. |
| <i>Gahnia aspera</i> | .. | .. | .. | .. | .. | X | .. | .. | .. | .. |
| <i>Lepidosperma laterale</i> | .. | X | X | .. | .. | .. | .. | .. | .. | X |
| <i>Ptilanthelium deustum</i> | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| Dioscoreaceae | | | | | | | | | | |
| <i>Dioscorea transversa</i> | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| Haemodoraceae | | | | | | | | | | |
| <i>Haemodorum corymbosum</i> | .. | .. | .. | .. | .. | .. | .. | X | .. | X |
| Hypoxidaceae | | | | | | | | | | |
| <i>Hypoxis hygrometrica</i> | .. | X | X | .. | .. | .. | .. | .. | .. | .. |
| Iridaceae | | | | | | | | | | |
| <i>Patersonia glabrata</i> | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| <i>P. sericea</i> | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| Liliaceae | | | | | | | | | | |
| <i>Arthropodium milleflorum</i> | .. | X | .. | .. | X | .. | .. | .. | .. | .. |
| <i>Dianella caerulea</i> | .. | X | .. | .. | X | .. | .. | X | X | .. |
| <i>D. laevis</i> | .. | .. | .. | .. | X | .. | X | .. | .. | .. |
| <i>D. revoluta</i> | .. | .. | .. | .. | .. | .. | X | .. | .. | X |
| Orchidaceae | | | | | | | | | | |
| <i>Acianthus</i> sp. | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| <i>Lyperanthes suaveolens</i> | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| <i>Pterostylis curta</i> | .. | .. | .. | X | .. | X | .. | .. | .. | .. |
| Philesiaceae | | | | | | | | | | |
| <i>Eustrephus latifolius</i> | .. | X | X | X | .. | .. | .. | .. | .. | .. |
| <i>Geitonoplesium cymosum</i> | .. | .. | X | X | .. | .. | .. | X | .. | .. |
| Poaceae | | | | | | | | | | |
| <i>Aristida vagans</i> | .. | .. | .. | .. | X | .. | X | .. | .. | .. |
| <i>Dichelachne micrantha</i> | .. | .. | .. | .. | X | .. | X | .. | .. | .. |
| <i>Digitaria</i> sp. | .. | .. | .. | .. | .. | .. | X | X | .. | .. |
| <i>Echinopogon caespitosus</i> | .. | X | .. | .. | X | .. | X | .. | .. | .. |
| <i>Entolasia marginata</i> | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| <i>E. stricta</i> | .. | X | .. | .. | X | .. | .. | X | .. | X |
| <i>Eragrostis brownii</i> | .. | .. | .. | .. | .. | .. | X | X | .. | .. |
| <i>Imperata cylindrica</i> | .. | C | .. | X | .. | X | .. | .. | .. | X |
| <i>Microlaena stipoides</i> | .. | X | .. | .. | .. | .. | X | .. | .. | .. |
| <i>Oplismenus aemulus</i> | .. | .. | C | C | X | X | .. | X | .. | .. |
| <i>Panicum simile</i> | .. | X | .. | .. | .. | .. | X | .. | .. | .. |
| <i>Paspalidium radiatum</i> | .. | .. | .. | .. | .. | .. | .. | X | .. | .. |
| <i>Themeda australis</i> | .. | .. | .. | .. | X | .. | X | .. | .. | .. |
| Xanthorrhoeaceae | | | | | | | | | | |
| <i>Lomandra cylindrica</i> | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| <i>L. filiformis</i> | .. | .. | .. | .. | .. | X | .. | X | X | .. |
| <i>L. glauca</i> | .. | .. | .. | .. | .. | .. | .. | .. | .. | X |
| <i>L. gracilis</i> | .. | .. | .. | X | .. | .. | .. | X | .. | X |
| <i>L. longifolia</i> | .. | .. | X | X | X | .. | .. | X | X | .. |
| <i>L. obliqua</i> | .. | .. | .. | .. | .. | .. | .. | X | .. | X |
| <i>Xanthorrhoea media</i> subsp. <i>media</i> | .. | .. | .. | .. | .. | .. | .. | C | .. | C |