THE

BLACKBUTT PLATEAU

AN OLD GROWTH FOREST

THE CASE AGAINST LOGGING

A SUBMISSION TO THE FOREST AND TIMBER RESOURCES INQUIRY

THE WILSONS CREEK ACTION GROUP

Access:
Vehicular and pedestrian access to all parts of this foreshore is very easy. Lota railway station is a short walk from the reserve that starts at White's Road and runs along the edge of the creek. The island in the middle of the mouth of the Tingalpa and Lota Creeks can only be reached by boat.

Current Major Uses:
Exposed flats used for fishing and bait collecting at low tide. Bayside Action Group counted 30 people using the flats for these purposes during a recent day trip of the area (B.A.G., submission). Recreational boaters and commercial fishing vessels moor in the lower reaches of the creek around the jetties.

Site Infrastructure:
Parks are located at two points along the foreshore each providing tables and chairs, barbeques, garbage bins, playground equipment and toilets.

Current Town Planning Zoning:
Foreshore areas between Manly marina and Lota Creek are unzoned (beach area) with the exception of two park areas that are zoned open space. Other areas around the estuary mouth are zoned special use, non urban and open space. The islands in the mouth of Lota /Tingalpa Creeks are zoned non urban.

Degree and Nature of Threat: n.a.

Land Tenure:
Areas zoned open space and non urban - Dept Recreation and Health, Parks Branch, B.C.C.
Area zoned special use - The Commissioner for Railways

Site History: n.a.

Major Site Values: Recreation, conservation.

Relevant Studies:
The Bayside Action Group's submission to the wetlands study contained information and recommendations based on a one day field study of the area, including a list of bird species recorded.

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prepared by the Wilsons Creek

Action Group

1.3 Study Methodology

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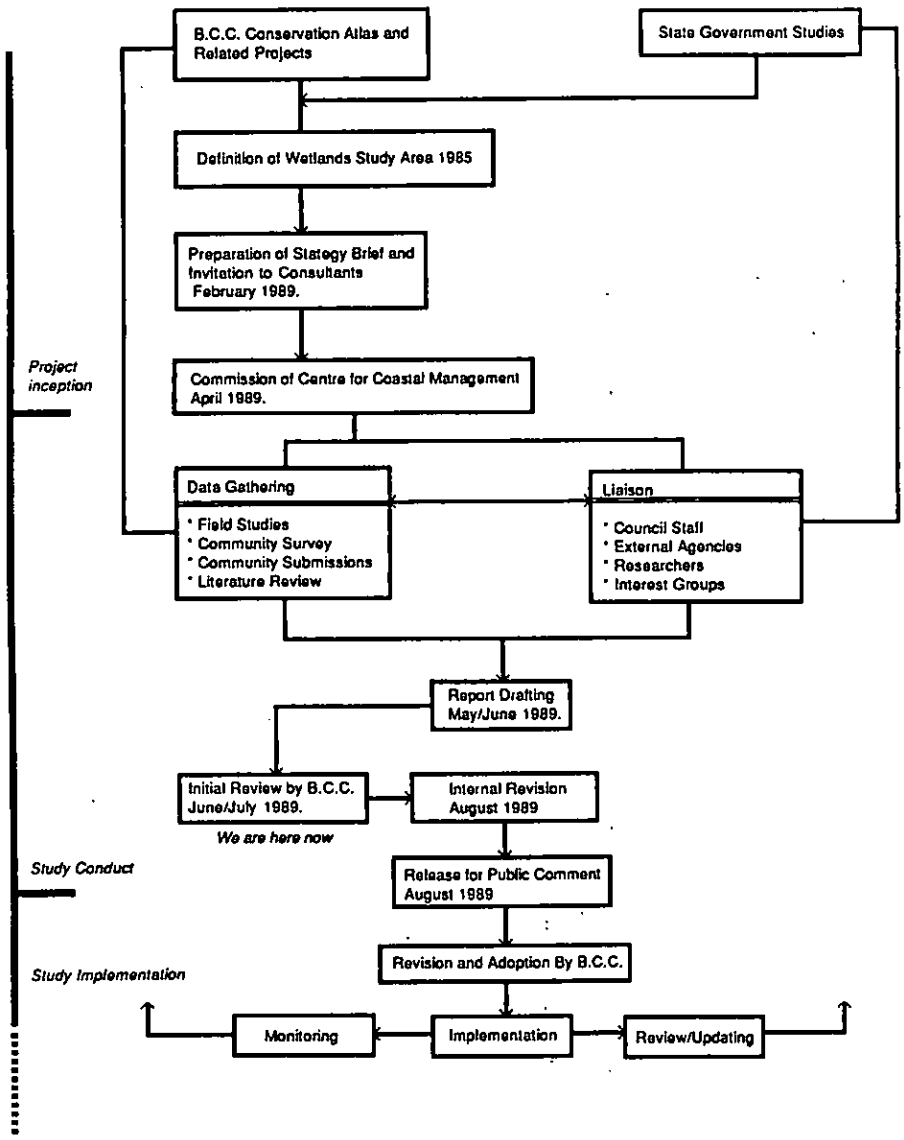
Figure 1.2 Study Approach



As will be noted from the Figure, considerable emphasis was placed on liaison between the consultant and Council, and between the consultant and external agencies throughout the course of the study. Section 1.4 lists individuals and organisations contacted during the study. In addition to these, submissions to the study were invited from the general public - these are analysed in Section 6.

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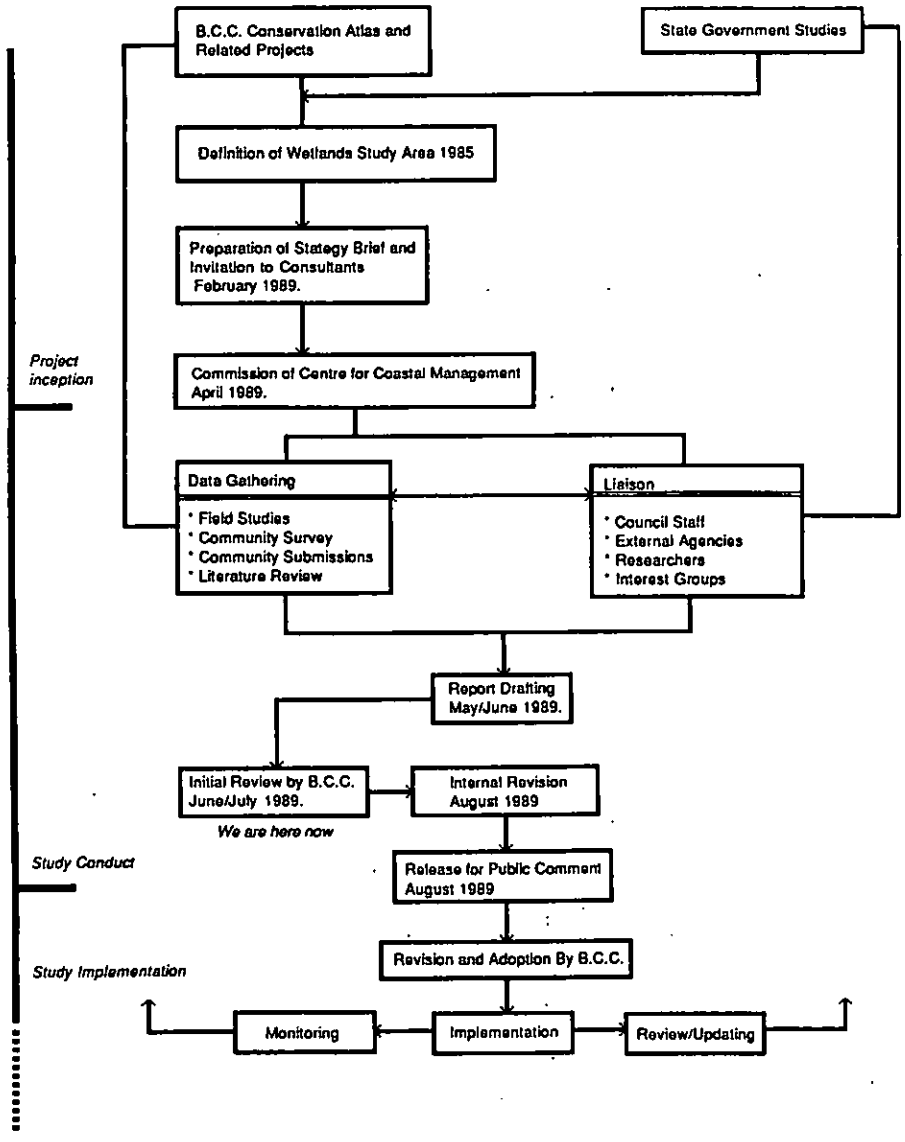

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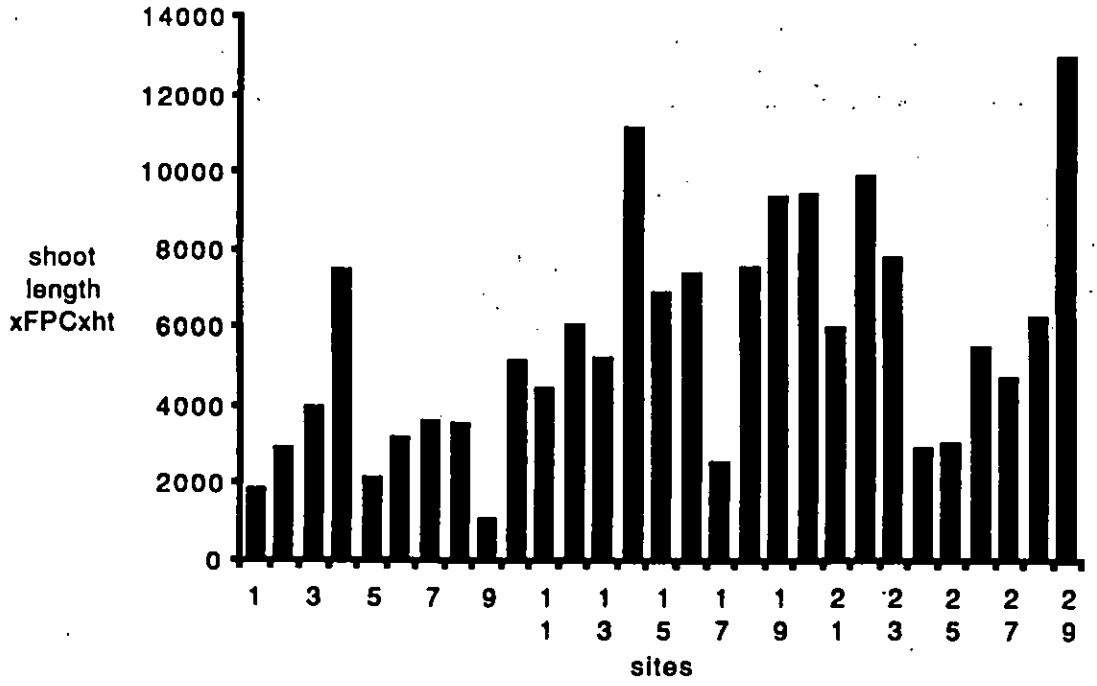
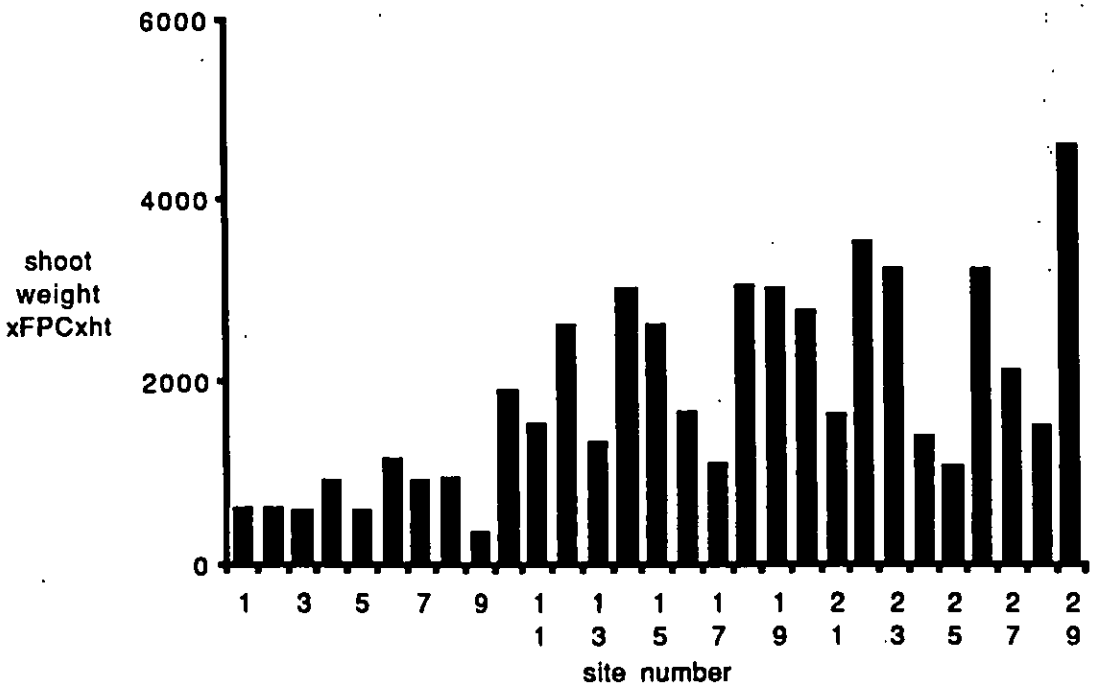
SUMMARY

920ha of the southern section of Nullum State Forest incorporating the Blackbutt Plateau and Mt Jerusalem areas contains an extensive area of unlogged, old growth forest and is recommended for dedication as the Blackbutt Plateau Nature Reserve as an alternative land use to logging. The proposed reserve comprises part of the erosion caldera rim of the Mt Warning Shield Volcano, ranging in altitude from 300 to 800m. It contains a particularly diverse range of habitats from lowland subtropical rainforest to high altitude heath. The physical isolation of much of the area has militated against significant past human intrusion such that it contains a substantial remnant of some major commercial forest types. The complex topography of the area in conjunction with the very high rainfall have provided long-term mitigation of natural disturbances such as fire with the result that the Blackbutt forests are of a structural type not found elsewhere in the region. These stands serve as an important wildlife refuge and scientific reference area. The presence of a high proportion of endangered plants and vertebrate animals, most notably Peach Myrtle, Corokia and the Rufous Scrub-bird together with the unique form of Coral Lichen give the area regional, State and national conservation significance.

Figure 2.2.10:





Canopy productivity measures for mangroves sampled at 29 sites in the Brisbane city region.

(a) average shoot length (cm) x FPC (%) x average total height of the stand; and
(b) average shoot weight (g) x FPC (%) x average total height of the stand.

1. INTRODUCTION

1.1 Definition of basic terms

The proposed logging of the Blackbutt Plateau and the controvery the project has unleased make it an ideal case study of the general merits of initiating logging operations in old growth forests. Old growth forests (not included in the Background Paper's glossary of terms) are defined by this submission as tall open forest, typically wet sclerophyll type, which has never been logged or if so, then only a very small percentage of the forest has been taken, and in which there is usually little regeneration of the canopy species such that the forest is dominated by very large trees of a similar, over-mature age class. These trees invariably carry a considerable amount of dead wood in their canopies and their boles and major limb scars are hollow.

Conflict over the Blackbutt Plateau revolves around a Forestry Commission proposal to log an area of old growth eucalypt forest on an isolated and previously inaccessible plateau. Construction of an access, named Nevasae road, which traversed a cliff in an extremely high rainfall area was necessary to attempt the harvest.

1.2 Location

The Blackbutt Plateau comprises approximately 300 ha of the southern section (Compartments 57 and 58) of Nullum State Forest in the NSW Forestry Commission District of Murwillumbah. The location is 12 km west of the township of Mullumbimby and 32 km NNE of Lismore.

Extensive logging has taken place on the higher slopes of Mt Jerusalem during the past few decades and some areas have been clear-fallen. Eucalypt regeneration has abeen negligible and replanting has been inadequate. A few sections of the lower slopes were also cleared for banana plantations some 40 to 50 years ago but generally these sections are small such that,due to the mosaic of habitats, including large areas of exposed rock and non-commercial vegetation types in conjunction with the rugged terrain, the lower slopes have retained much of their naturalness.

The Blackbutt Plateau on the other hand, because of its inaccessibility up to the present time, has largely escaped human disturbance. A small section of about 40 ha along the southern edges was lightly selectively logged in the 1960's but the majority of forest remains in virgin condition. However the construction of Nevasae Road from Wilsons Creek Road in May 1984 has now opened up this area to the possibility of logging and other concomitant disturbances.

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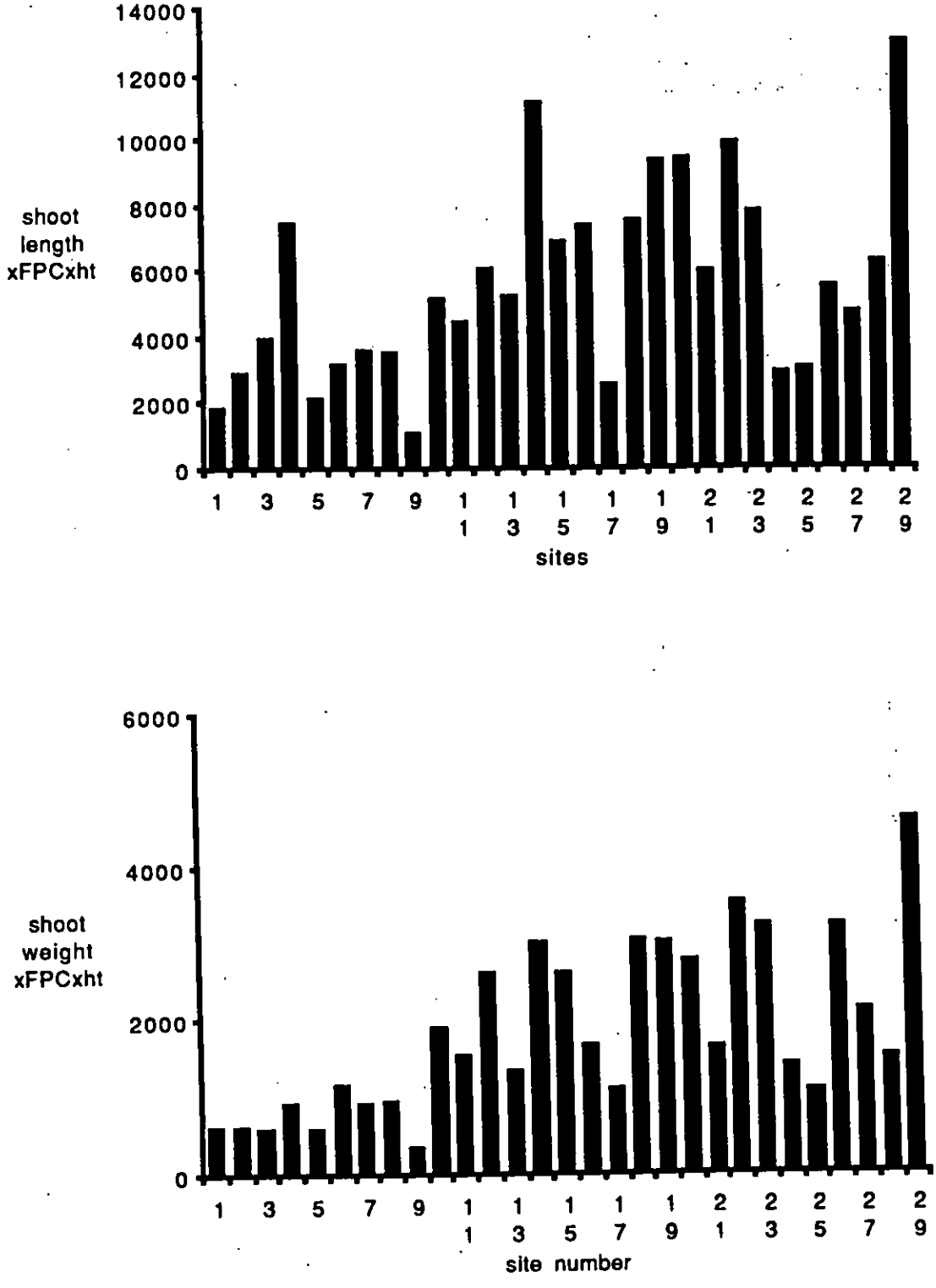

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1.3 History

Residents were first made aware of the issue when roadworks began in 1984. Action by the Wilsons Creek Action Group (WAG), together with continuing access problems, eventually resulted in the calling of a 3-4 year moratorium on logging of the Plateau by the then Minister for Natural Resources Mrs Crosio. WAG prepared a Nature Reserve Proposal document but the State government has never investigated the merits of that proposal. Rather, the Forestry Commission has announced that it will shortly declare a Flora Reserve to protect an area of rock outcrop covered with snow lichen (*Cladia retipora*) and a small forest area. This offers no protection for the old growth Blackbutt forest and the integrity of the systems of the area as a whole, and has been rejected as totally inadequate by WAG.

Public pressure plus recent legal decisions (eg Mt Mistake) has forced the Forestry Commission to undertake an Environmental Impact Study (EIS) before they proceed further. They now claim that the project has no urgency.

Calling on the resources of local and outside experts, WAG researched the natural values of the area. Though the study was preliminary in nature, the significance of the area was evident and the Group compiled a Nature Reserve Proposal document. The relevant sections of that document have been included in the body of this submission.

The Forestry Commission prepared an Environmental Review for the project which included an evaluation of the timber resource of the area (Forestry Commission of New South Wales, 1983).

WAG's investigation, however, pointed to serious shortcomings in Forestry Commission's Environmental Review. Apparently there had been little or no on-ground survey of flora and fauna other than assessment of plant species of economic value.

The significance of the area from a national perspective was later recognised by the North Coast Environment Council who nominated the area for the National Estate. The Blackbutt Plateau was placed on the Interim List in 1985 and is due to be assessed for listing this year.

2. THE RESOURCE

2.1 Physiographic features

The Blackbutt Plateau is an elevated spur of the Koonyum Range mainly between 500m and 700m above sea level. The Koonyum Range forms part of the rim of the erosion caldera of the Mt Warning Shield Volcano and the Blackbutt Plateau spur typifies much of this rim in its formation. The area was formerly overlain by a layer of basaltic rock which has been eroded except for a few very small pockets. The remaining more erosion-resistant rhyolite now exists as a block fringed by cliffs, the result of rock shear caused by undercutting of softer rock by the erosion gullies of the surrounding Commissioners, Doon Doon and Coopers Creeks and the Wilsons River (see Map 1).

Lying at the eastern end of the spur, the Blackbutt Plateau is almost

The variation of canopy characteristics between the sites is considerable, largely because of sampling across the edaphic and hence structural gradients described by Davie (1984). The FPC of the site contributes to the values obtained, and the height of the community either raises or lowers the production, both values that have been described as responding closely to variations in tidal inundation. Comparing sites of similar edaphic quality (that is degree of tidal inundation), the comparison between growth at each site will be more defined. In some cases (notably Mud Island) the closed sites in the area have not been sampled. The productivity values using Productivity 1 for the closed sites alone are shown in Figure 2.2.11. This graph shows more clearly that the sites are grouped into two to three major zones; the northern creeks, the river mouth and islands, with a trend to increased production from the northern creeks to the island sites. It must be noted that the islands are direct recipients of sediments from the river mouth.

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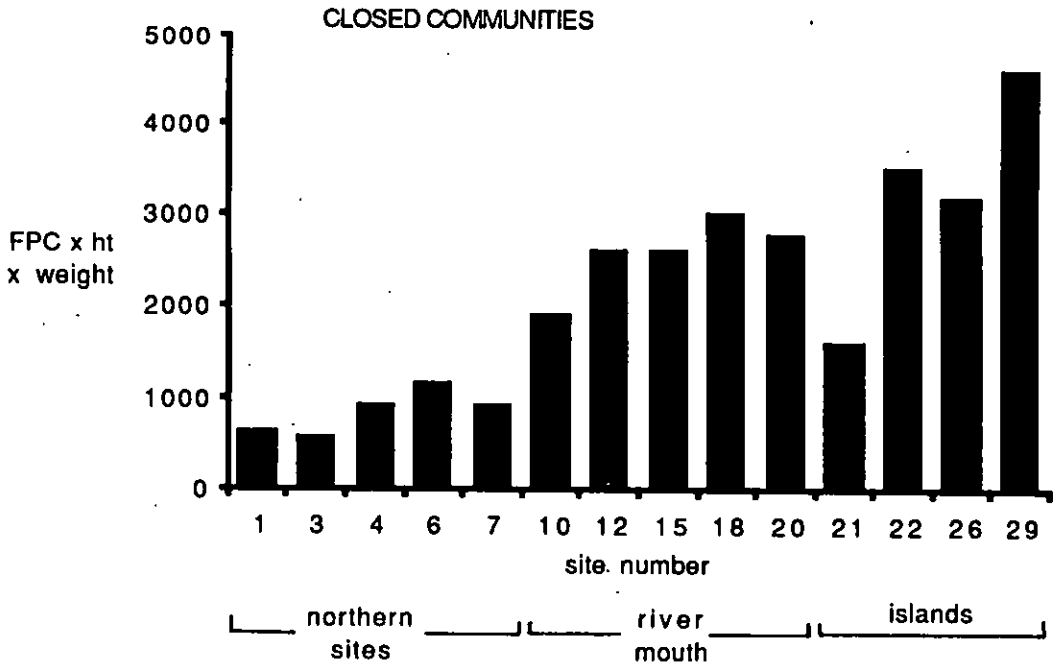

Productivity measure (FPC(%), average height of stand (m) and average current shoot weight (g) for closed communities (FPC 70 - 100%) in the sampled mangrove sites in the Brisbane city area.

encircled by cliffs, and is connected to the neighboring Mt Jerusalem by a narrow ridge.

The Koonyum Range, together with the Nightcap Range to which it is tenuously linked at the Doon Doon Saddle, forms an island of high altitude forested country isolated from the remainder of the Mt Warning caldera rim by low-lying valleys and plains now cleared for agriculture.

Soils of the area are derived mainly from rhyolite and basalt. Soil depth varies from thin to moderately deep but generally soils of the area tend to be shallow and of poor nutrient status. At higher elevations there are also extensive areas of exposed rock (Map 2).

2.2 Flora

Forestry Commission typing (Map 2) shows the vegetation of the area to be composed principally of wet sclerophyll forest types dominated by Moist Blackbutt but also including significant areas of Inland Brush Box and Turpentine. The rainforest types of Booyong and Myrtle comprise much of the remainder, with dry sclerophyll types of Scribbly Gum - Bloodwood and New England Blackbutt making up the balance.

The use of only the subtropical Booyong and depauperate Myrtle types to classify the rainforest of the area is inaccurate because warm temperate species such as Coachwood (*Ceratopetalum apetalum*), Crabapple (*Schizomeria ovata*), Sassafras (*Doryphora sassafras*) and Soft Corkwood (*Caldcluvia paniculosa*) dominate a high proportion of the stands. While there are a few very small patches of the Myrtle type (too small to map), the booyong type occurs only in the more sheltered gullies and slopes at lower elevations.

There is also an extensive and well-developed heath and tall shrub community dominated by six species of *Leptospermum* but which the Commission has typed as rock or else incorporated it into its mapping of the Scribbly Gum - Bloodwood type.

Overall the predominant vegetation formation of the Blackbutt Plateau is tall moist open forest where stand height usually reaches 45m and with Blackbutt (*Eucalyptus pilularis*), Turpentine (*Syncarpia glomulifera*), and New England Blackbutt (*Eucalyptus campanulata*) being the major canopy trees. Warm temperate closed forest occurs in the gullies , on sheltered shelves and on the lower slopes with Olivers Sassafras (*Cinnamomum oliveri*), Bolly-gum (*Litsea reticulata*), Bennetts Ash (*Flindersia bennettiana*), Rough Possumwood (*Quintinia sieberi*), Grey Possumwood (*Q. verdonii*) and Coachwood, Crabapple, Sassafras and Soft Corkwood among the dominants.

In the more exposed areas and where the soils become poor and thin, tall to low dry open forest occurs with the main canopy trees including the two blackbutts as well as Red Bloodwood (*E. gummifera*) and Scribbly Gum (*E. signata*). The heath and tall shrub community adjacent to the rock outcropping are dominated by Small-fruited Teatree *Leptospermum microcarpum*, Lemon-scented Teatree *L.petersonii* and New England Teatree *Leptospermum sp.*

Together with a rich lichen community on the exposed rock, the area is characterised by a wide range of diverse plant communities occurring in particularly close proximity. In this small area no fewer than 10 species of Eucalyptus occur in a mosaic of canopy communities. Aside

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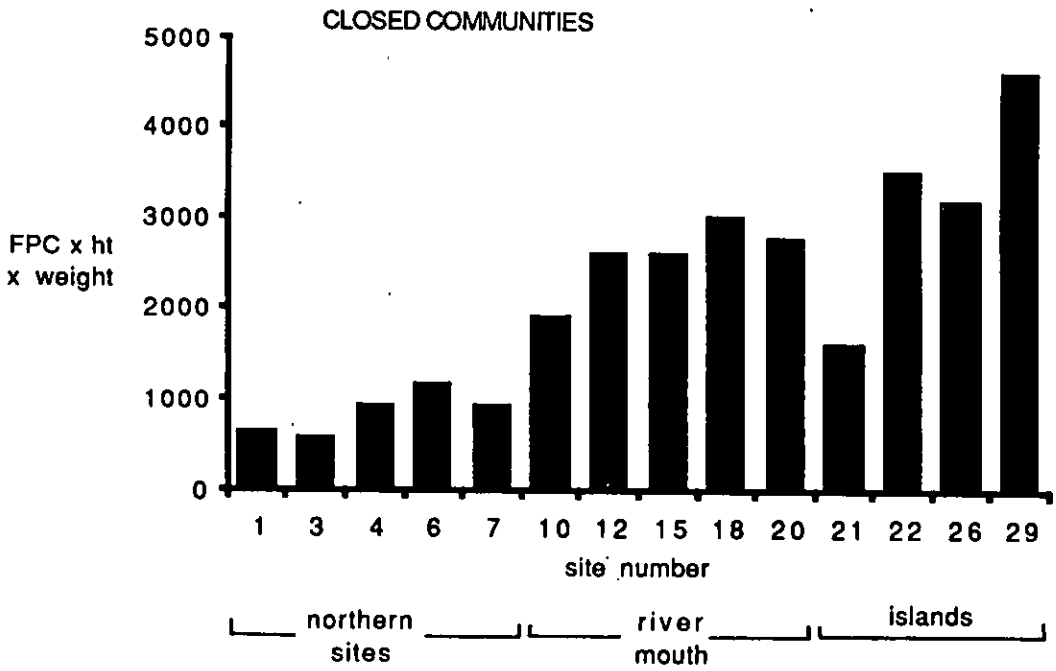

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from those mentioned above, other associations include blackbutt-white mahogany (*Eucalyptus acmenioides*), blackbutt-mountain wattle (*Acacia orites*), blackbutt-tallowwood (*E. microcorys*), Flooded gum (*E. grandis*)-Brush box (*Lophostemon confertus*), a significant stand of the discontinuously distributed Blue Mountains mahogany (*E. notabilis*) and Sydney Blue gum (*E. saligna*)-Red mahogany (*E. resinifera*). The extensive heath area also reflects this complex of associations with six species of Leptospermum forming several distinct association types and occupying about 60 ha of the Plateau.

The understorey patterns reflect the same unusual diversity of the canopies. Beneath the relatively even-aged stands of blackbutt the understorey can vary from grasses to low or tall sedges to sparse or dense sclerophyllous shrubs to low and tall ferns and to sparse or dense rainforest shrubs or trees. The extent to which soil depth and nutrient status could also be limiting factors in these situations has yet to be ascertained. With trees estimated at over 300 years of age, these stands may represent a fire disclimax at a most interesting stage of development. Already, these aged giants are starting to fall down and because of the very high rainfall and long-term absence of hot fire, there is no regeneration of the eucalypt species. The dilemma that this poses for future forest management is discussed below.

There have been no systematic plant surveys of the area although several botanists have compiled lists during casual visits. Well over 200 native plant species have been identified of which nine are classified as rare or threatened (Table 1). This number will sharply increase when all the plant communities have been sampled and when the lower flora (mosses etc) have been included.

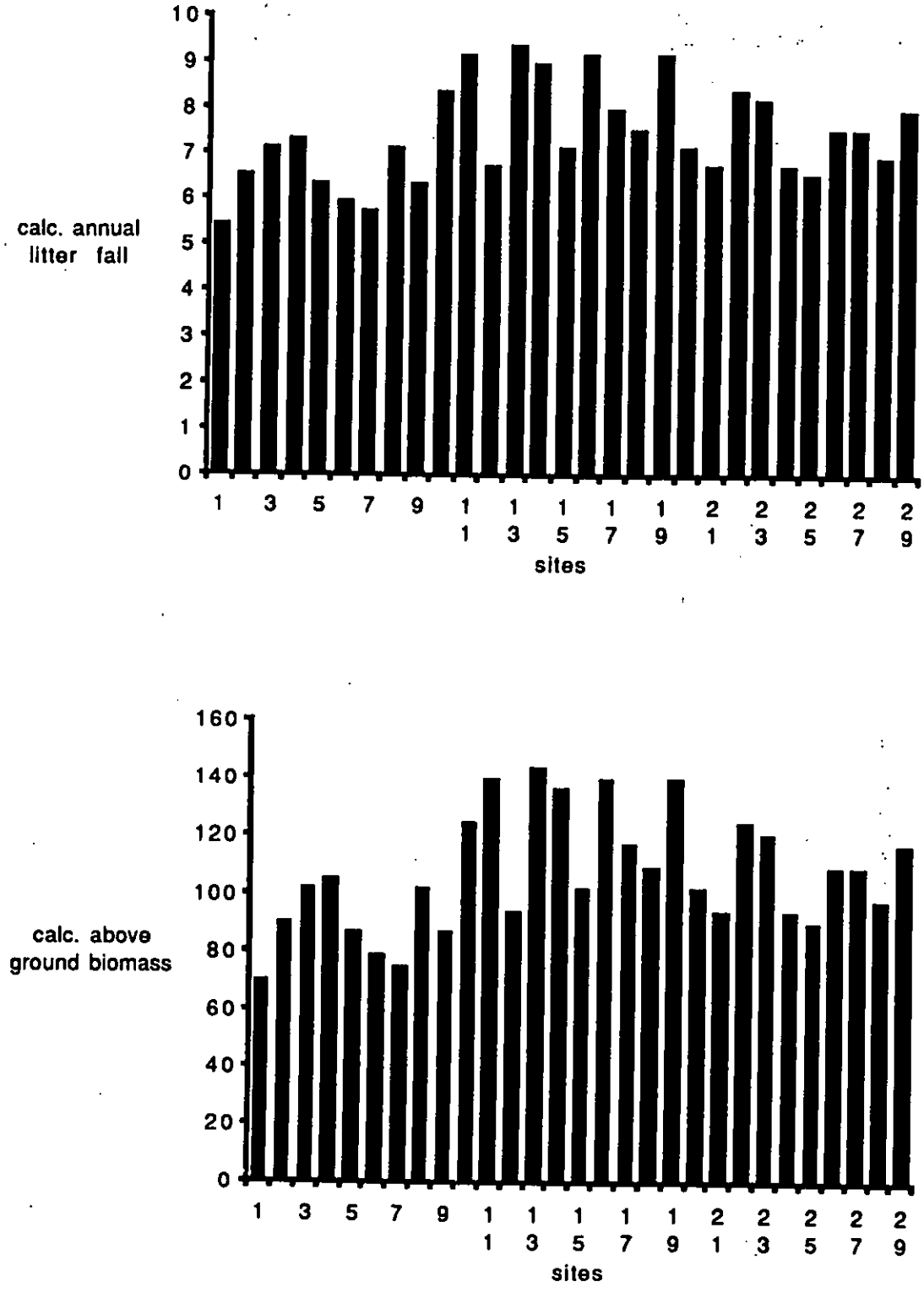
Three of the nine rare plants are of particular significance: Corokia (*Corokia whiteana*) was formerly thought to be confined to the Nightcap and Koonyam Ranges but has recently been recorded in the Tweed area. Nevertheless, it is still of very limited occurrence and although conserved in the Nightcap National Park and Big Scrub Flora Reserve, is currently classed as vulnerable and inadequately conserved (Briggs and Leigh, 1988). Floyd (1987) considers further survey work is warranted to accurately define its status. The species has been found to occur occasionally in rainforest communities on the Blackbutt Plateau.

Small-leaved Hazelwood (*Symplocos baeuerlenii*) occurs uncommonly, mainly on rhyolitic soils from Springbrook on the McPherson Range to Alstonville (Floyd, 1987). Although it is generally considered to be adequately conserved (Briggs and Leigh, 1988), the very restricted range of the species warrants reservation of all samples of discrete populations. On the Blackbutt Plateau it occurs infrequently in the understorey of both rainforest and wet sclerophyll communities.

Peach Myrtle (*Uromyrtus australis*) is one of Australia's rarest rainforest plants and until its discovery on the Blackbutt Plateau (J.B. Williams in litt.) was known from only one population located on the Nightcap Range and one other at Point Lookout, Lamington National Park. Part of the Nightcap Range population is conserved in Nightcap National Park but much of this stand occurs in the adjacent Whian Whian State Forest. It is considered endangered and inadequately conserved (Briggs and Leigh, 1988) and Floyd (1987) states "rescue" is required.

Two other plants are also of special note: the extensive patches of snow lichen found in cushion and other complex forms in the area of rock outcropping on the Blackbutt Plateau are unique on the eastern side of

Figure 2.2.12:



Predicted annual litter fall (tonnes per hectare) (a) and aboveground biomass (tonnes per hectare) (b) for mangroves in the Brisbane city region, using regressions of Saenger and Snedaker (in press).

the Great Dividing Range (J.B. Williams in litt., R.A. Filson in litt.) and may be the most significant in Australia. The population of the Oval Fork Fern (*Tmesipteris ovata*) on the Blackbutt Plateau may be the most important in northern NSW-southern Queensland (J.B. Williams in litt.). This fern ally is very uncommon throughout its range and future survey work could show it worthy of classification as rare or threatened. Additionally, the occurrence of New England Blackbutt is close to the eastern extremity of its range in NSW, with just a few specimens occurring on the slightly more easterly Koonyam Range.

2.3 Fauna

As with the flora, there have been no systematic faunal surveys of the area. However, ornithologists have listed a total of 59 bird species during visits over a period of about a year and six mammal species have been recorded for the area, most during one night's spotlighting on the Blackbutt Plateau. Again as with plants, observations of fauna have centred on the area of the Blackbutt Plateau. There are few records of amphibians or reptiles although a number of significant species undoubtedly occur.

The vertebrates known from the area comprise a rich assemblage of mainly moist forest-dependent species typical of the NSW north coast. Of particular note is the high bird species richness for a relatively small area. The mosaic of rainforest and wet sclerophyll habitats is of special significance, resulting in increased diversity by providing requirements for species which utilise both habitats in close proximity, as well as providing many habitats for those birds which utilise ecotones. Examples of such species are the Sooty Owl (*Tyto tenebricosa*) which forages in rainforest and requires hollows in trees provided mainly by eucalypt species, brush box or turpentine for roosting and nesting and Alberts Lyrebird (*Menura alberti*) which appears to have specific foraging requirements in wet sclerophyll forest and rainforest during different seasons.

Vertebrate diversity is also increased by the mid-altitudinal range of the Plateau as exemplified by the presence of high altitude elements such as the Rufous Scrub-bird (*Atrichornis rufescens*) and Eastern Pygmy-possum (*Cercartetus nanus*) and the essentially lowland Varied Triller (*Lalage leucomela*), Little Shrike-thrush (*Colluricincla megarhyncha*) and White-eared Monarch (*Monarcha leucotis*).

An important aspect of vertebrate habitats, notably on the Blackbutt Plateau, is the abundance of mature or veteran trees of sclerophyll species affording nest and den sites for hollow-dwelling species. This enables hole-nesting cockatoos, parrots and owls and arboreal hole-using mammals to occur at relatively high densities.

Eleven species of birds and one mammal are listed as endangered fauna (Table 1) and six of these are of particular significance:

The Wompoo Fruit-dove (*Ptilinopus magnificus*) and Alberts Lyrebird which are both considered vulnerable and rare and in NSW have their centres of distribution in the rainforests of the north coast. Alberts Lyrebird has a very restricted range, being confined to the area of northern NSW-southern Queensland from the Blackall Range near Wardell (Holmes 1987) to the Mistake Mountains (Blakers et al 1984). The Wompoo Fruit-dove, however, occurs north to Cape York, although the southern race (which includes the NSW population) has suffered greatly from

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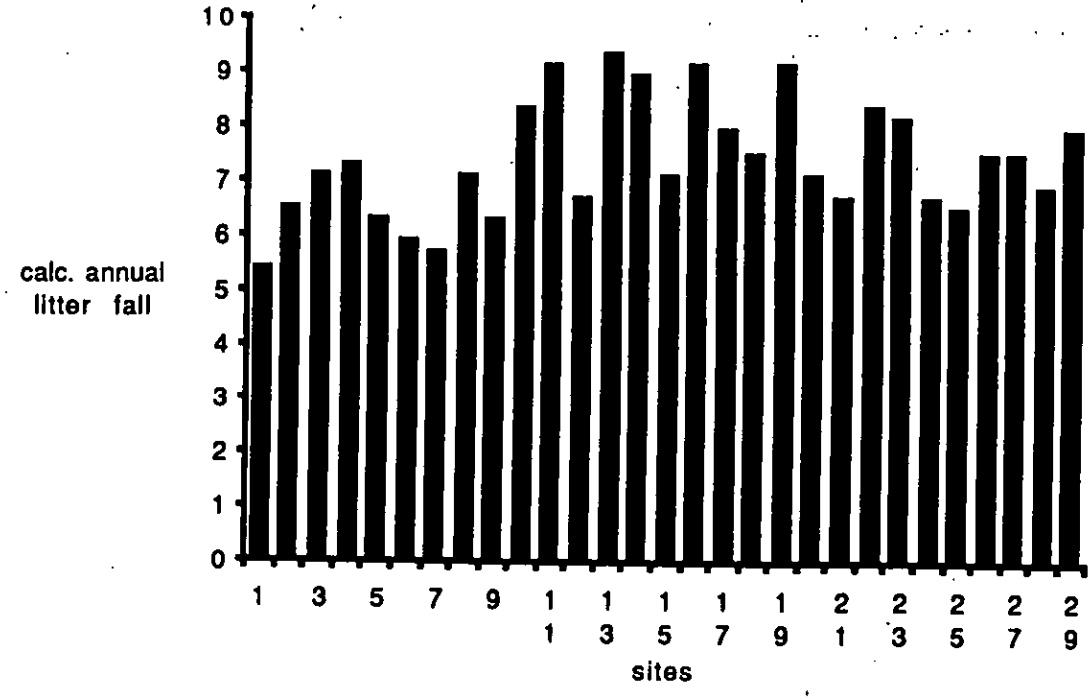

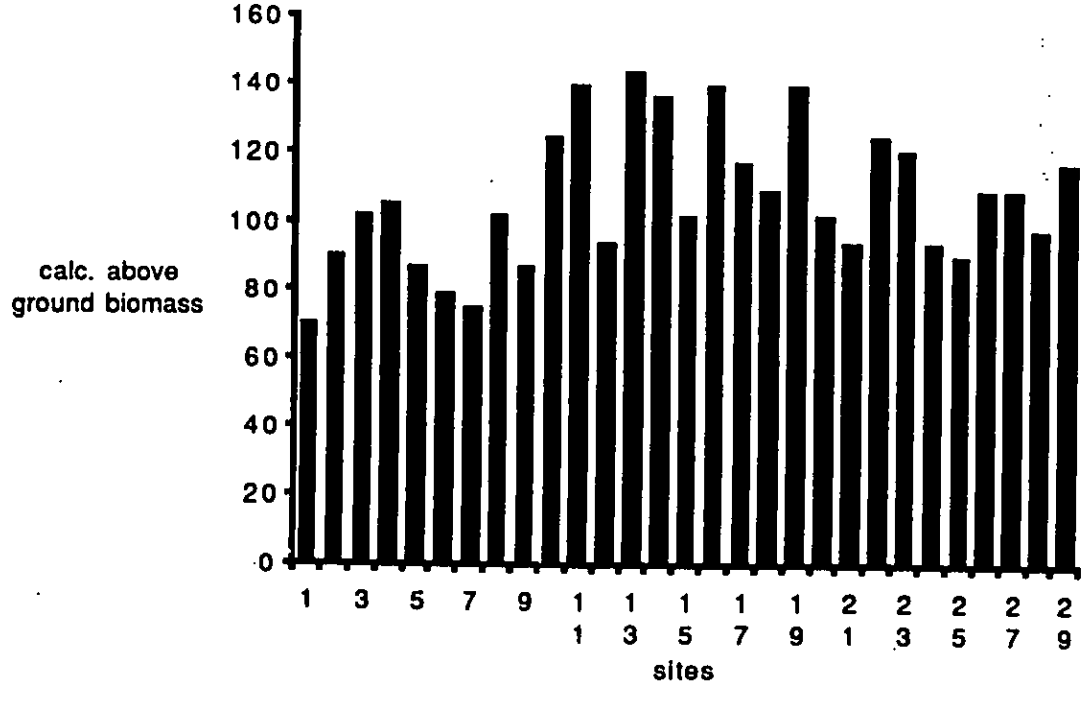

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habitat destruction and until recently was considered restricted as a breeding species to the Richmond and Border Ranges (H.J. Frith in litt.). While both species are represented in National Parks and Nature Reserves in the region, no detailed knowledge of their ecological requirements or conservation status is available and their habitats should receive maximum protection until such information becomes known. During field inspections of the Blackbutt Plateau area in June 1984, high numbers of Alberts Lyrebirds were noted advertising breeding territories from forest adjacent to the rock outcroppings on the summit (D. Milledge in litt.).

The Powerful Owl (*Ninox strenua*) and Sooty Owl are also classified as vulnerable and rare and although both have relatively extensive ranges throughout south-eastern Australia, they are species which occur only at very low densities in specific habitats and have particular ecological requirements. These large owls require well-developed hollows in mature eucalypts or other canopy trees for nesting and high densities of their mammal prey species. The undisturbed wet sclerophyll forest on the Plateau offers prime habitat in this regard.

The Rufous Scrub-bird is another vulnerable and rare bird which has suffered a significant contraction of range since European settlement. Prior to the confirmation of its presence in the Blackbutt Plateau - Mt Jerusalem area it was thought to be restricted to five remnant upland populations (Ferrier 1985). This sixth location represents a rediscovery of the Mt Warning - Nightcap Range population which Ferrier (in litt.) had considered extinct, although an unpublished record for the area of the Doon Doon Saddle was obtained relatively recently (S. Ferrier pers. comm.). There is no estimate of numbers or locations of territories of the Rufous Scrub-bird in the area of the Plateau and no additional records of the bird have been obtained since the June 1984 unconfirmed sighting on the Blackbutt Plateau (D. Milledge pers. obs.), and the August 1985 record of a bird calling near Mt Jerusalem (D. Stewart pers. obs.).

The single record of the Eastern Pygmy-possum for the Blackbutt Plateau in December 1984 (D. Milledge, A. Gilmore pers. obs.) is of great significance because the species appears to be extremely scarce in northern NSW. The most northerly specimen in the collection of the Australian Museum was obtained at Norah Head near Newcastle (L. Gibson in litt.), although there are four specimens from high altitude rainforest on the Lamington Plateau in the Queensland Museums collection (S. Van Dyck in litt.). The only other records from the NSW north coast (all unconfirmed) are from near Lismore, Dorrigo and inland from Coffs Harbour (A. Smith in litt.).

TABLE 1

RARE OR THREATENED PLANTS* AND ENDANGERED FAUNA+
RECORDED FROM THE BLACKBUTT PLATEAU - MT JERUSALEM AREA

		Risk code**
FLORA		
Byron Bay Acronychia	*Acronychia baeuerlenii*	3RC

The major activities undertaken at wetlands locations are shown in Figure 6.5. As noted in the Figure the predominant activity at all sites is "Relaxation" (often described by respondents as an incidental activity to a major active use such as fishing). This finding accords with studies undertaken throughout Australia which indicate that catching fish is usually a secondary motivation for a fishing trip - *.... the majority of recreational fisherpersons go fishing to escape the pressures of everyday life, to enjoy an outing or to enjoy the outdoor environment* (Gartside, 1988) . "Relaxation" accounted for 33% of all recreational activities in wetlands areas, and was followed in popularity by fishing (17%), swimming (9%), crabbing (7.3%), bushwalking and sightseeing (both 5.8%)and boating (5.2%). These observations underpin the special place which wetlands occupy in the broader spectrum of recreational opportunities in the City area. Fishing and crabbing (undertaken by some 25% of all users) are directly dependent upon the productivity of wetlands, and together with other uses (e.g. boating), are indirectly dependent upon the recreational and visual setting provided by wetlands. The high level of use of wetlands for swimming is surprising, and may reflect the limited opportunities available in equally proximal locations in the City area.

Figure 6.5: Major Activities Undertaken at Wetlands Locations

d. Management of Wetlands

The final question asked of respondents (both those who visit/use wetlands and non-users) sought to ascertain what the public believe could be done to manage wetlands more effectively. The question indirectly also sought to evaluate who the public believe is responsible for management and management improvement. This latter aspect was not asked directly (see Questionnaire) in order to not induce bias, but rather relied on mention by respondents.

Veiny Laceflower	*Archidendron muellerianum*	3RC
Pink Cherry	*Austrobuxus swainii*	3RC
Corokia	*Corokia whiteana*	2VCi
Slender Saw Grass	*Gahnia insignis*	3RCa
Giant Creek Lily	*Helmholtzia glaberrima*	2RC
Small-leaved Hazelwood	*Symplocos baeuerlenii*	2VC-
Red Lillypilly	*Syzgium hodgkinsoniae*	3VC
Peach Myrtle	*Uromyrtus australis*	2ECi

TABLE 1 (continued)

FAUNA

PART 1 Fauna of Special Concern

Emerald Dove *Chalcophaps indica*
Whites Thrush *Zoothera dauma* complex
Rufous Fantail *Rhipidura rufifrons*
Eastern Pygmy-possum *Cercartetus nanus*

PART 2 Vulnerable and Rare Fauna

Pacific Baza *Aviceda subcristata*
Wompoo Fruit-dove *Ptilinopus magnificus*
Powerful Owl *Ninox strenua*
Sooty Owl *Tyto tenebricosa*
Alberts Lyrebird *Menura alberti*
Rufous Scrub-bird *Atrichornis rufescens*
White-eared Monarch *Monarcha leucotis*

* Briggs and Leigh (1988).

\+ Schedule 12, *National Parks and Wildlife Act*, 1 January 1984.

** Risk code symbols:

2 species with a very restricted distribution in Australia with a maximum geographic range of less than 100km;

3 species with a range of over 100km in Australia but occurring only in small populations mainly restricted to highly specific habitats;

E endangered species seriously at risk of disappearing from the wild within one or two decades if present land use and other causal factors continue to operate;

V vulnerable species not presently endangered but at risk over a longer period through continual depletion;

R - species which are rare in Australia but not currently considered endangered or vulnerable;

C species known to be represented in a proclaimed reserve;

a species considered adequately conserved (population in reserves exceeding 1000 individuals);

In addition to the sites identified in the study area (coding was based on sites listed in Community Submissions brochure), respondents indicated that they visit several other sites both in the City area and in the vicinity of the City (especially Southern Moreton Bay). Total visitation to these sites as a proportion of total visits was 5%. None of the external sites receive more than 2.5% of total visits. Of the City sites identified, respondents identified several areas (usually close to creeks and swamps). Where these coincided with study area sites, they were included in the visitation data for those sites.

A total of 1967 visits to all sites was made by respondents in the 12 months preceding the survey, giving an average number of visits per user of 16.8 per annum. This figure is obviously significantly affected by the purpose of use and the nature of use of the site (e.g. transient use such as boat launching c.f. a site dependent use such as fishing). Figure 6.4 indicates that the predominant frequency of visitation to wetlands (66% of users) is less than five times per annum. Given also that the figures are based on instant recollection, they should be interpreted cautiously.

Figure 6.4: Frequency of Site Visitation

Although not asked to comment specifically, it was noted that most users tend to visit these sites on weekends and during holiday periods, reflecting the fact that in most cases, these sites require a special access effort (most are not conveniently located to enable casual access during week day periods).

i species considered inadequately conserved;

- species whose reserved population size is unknown.

Figure 6.6 outlines suggestions made by respondents in relation to improving the management of wetlands. Some 46% of respondents had no comment to make on how management could be improved - these can be subdivided into two principal groups:

* 34% who believe that current approaches/directions are adequate, and
* 12% who believe that something should be done to improve management, but could not describe what should be done.

Of the remaining 54%, the predominant suggestion was the need for conservation/preservation of the remaining wetlands estate (31%). The next most common suggestions were the need for rubbish removal/clean-up (9.7%) and better enforcement of regulations (3%). As indicated in the Figure, the remaining suggestions (9.3% total) were evenly divided between site management/development suggestions and policy options for future management.

Figure 6.6: Suggestions for Management of Wetlands

Only 9.7% of respondents made a comment about responsibility for management and management improvement. The majority of these (61%) believed that responsibility lies primarily with the City Council, with other levels of government having minor responsibility (State Government - 11%, Commonwealth - 3.8%). Respondents indicated that others with responsibility for management include Developers (11%), the public at large (3.8%) and "Rangers" (7.7%).

2.4 Ecological and scientific significance

The proposed Nature Reserve is located in close proximity to the Nightcap National Park. A link between the two is feasible and desirable to provide reserved wildlife corridors between the two areas, continuity of vegetation and administrative expediency, as well as enhancing the value of the Nightcap National Park itself. The intermediate vegetation has immediate wildlife value for many species and has potential for future revegetation. The necessary link will involve the rezoning of privately owned land in the area and it is suggested that this course of action can be followed at a later date.

The Nature Reserve would become part of the ring of reserved lands known as the Caldera National Parks. The Blackbutt Plateau would extend the series at its southern edge and add vegetation types including the mature Blackbutt stands, the ecological importance and rarity of which is expanded below. An evaluation of the context of the proposed reserve in relation to the vegetation types, altitudinal range and fire protection status of other areas in the Caldera Parks which include the similar rhyolite derived soil types would be appropriate here but those data are yet to become available.

Despite the lack of systematic surveys of flora and fauna, it is apparent that the area proposed for the Blackbutt Plateau Nature Reserve is of very high ecological and scientific importance. It is representative of an ecological unit of particularly limited distribution characterised by rhyolite-derived soils and a high degree of endemism among its flora.

The proposed Reserve contains the largest remaining mature, undisturbed tract of Blackbutt-dominated, tall moist open forest in the Mt Warning caldera area. Moist Blackbutt is the major economic forest type on the NSW north coast and as a result, undisturbed stands are now extremely scarce. The Blackbutt Plateau remnant is probably the most important with respect to size and condition north of Coffs Harbour and must also rank very highly in terms of State significance.

The mature, undisturbed stands of tall moist open forest in the Blackbutt Plateau area serve not only as a source of emigrant forest-dependent wildlife (and perhaps, too, as a refuge for mature wildlife disadvantaged by local forestry operations), but also as an important scientific reference area. With intensive forestry operations widespread in the Nightcap and Koonyum Ranges, it is essential that a large area of undisturbed forest be conserved against which to gauge the long-term effects of logging and silvicultural practices. No such sample exists in the National Parks and Nature Reserves or Flora Reserves of the region and reservation of the Blackbutt Plateau area represents the last chance to achieve this. The maintenance of relatively large, undisturbed stands of forest for scientific reference purposes is critical for both conservation and the future viability of the timber industry.

The absence of recent fire from the mature Blackbutt stands is a

Willingness to Participate Further

The final question sought to establish, for all persons contacted their willingness to/interest in being further involved in planning for Brisbane's wetlands, initially by receiving a copy of the Community submission brochure. Of the 109 persons who declined to participate in the full interview, 7 (4.9%) requested a copy of the brochure. Of the full survey respondents (268), 155 (58%) requested a copy of the brochure. These were mailed out in late April, 1989.

6.4 References

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Gartside, D.F.G. (1988) Commercial and Recreational Fisheries Management. In: Arakel, A. (Ed.) (1988) Workshop on Coastal Management, Centre for Sedimentary and Environmental Geology, QUT, Brisbane, pp 80-85.

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Strike, T. and Paradice, W.E.J. (1989) The Experience-Setting Relationship in Recreation: An Examination, Hunter Valley Research Foundation, Working Paper 1/89, Newcastle.

feature of further scientific interest. Succession in tall open forest where fire has been excluded for long periods is poorly understood because situations where this occurs are unusual. Consequently, any future management strategy for the Blackbutt Plateau will be faced with a fundamental dilemma because of this situation. The question is: should we burn the forest in order to maintain a blackbutt community or do we leave the forest intact in order to observe and preserve the wealth of data that will be provided to ecologists by this disclimax community becoming 'unlocked'? That is, allow the warm temperate rainforest to succeed the tall open forest by withholding fire.

The high altitude heath community of the Blackbutt Plateau - Mt Jerusalem area appears to be the best developed of this type on rhyolite-derived soils in NSW (J.B. Williams in litt.). It makes an interesting comparison with the Daves Creek heath of the Lamington Plateau although the latter occurs at higher altitude.

One of the most notable attributes of the proposed Nature Reserve is the diversity of different habitat types present within a relatively small area. As indicated above there are ten species of *Eucalyptus* and six species of *Leptospermum* growing on the Plateau. The resultant high species diversity is characterised by a large proportion of rare and endangered plant and animal species which impart national, State and regional significance. The populations of Peach Myrtle and Corokia, the cushion form of the snow lichen and the Rufous Scrub-bird population all warrant reservation in their own right.

In summary, the totality of aesthetic, scientific and land management values establishes an outstanding justification for the Blackbutt Plateau - Mt Jerusalem area not to be logged.

2.5 Local residents

It is estimated 1000 people live in the Wilsons Creek/Huonbrook valleys which surround the Plateau. The logging operation as proposed in 1983 would involve the passage of trucks carrying out three return trips per day every day for six months per year for up to two years. An operation of this type and duration is clearly totally inappropriate in a residential area. Residents would be subject to noise from the operation (Forestry Commission of New South wales, 1983).

A major concern for residents is the physical danger posed by logging trucks on Wilsons Creek Road. This is very narrow, winding and poorly maintained. This concern is voiced also in a report by the Council Engineer.

As well as the danger of logging trucks on the road, significant damage to Wilsons Creek Road will also occur. Dobinson (1985) has found that the amount of damage that a truck loaded to the permissable limit will do to road pavement is about 14,000 times greater than the average car. This damage will be at a cost to the ratepayer as the Commission has no obligation to contribute.

3. THE LOGGING OPERATION

In addition to the sites identified in the study area (coding was based on sites listed in Community Submissions brochure), respondents indicated that they visit several other sites both in the City area and in the vicinity of the City (especially Southern Moreton Bay). Total visitation to these sites as a proportion of total visits was 5%. None of the external sites receive more than 2.5% of total visits. Of the City sites identified, respondents identified several areas (usually close to creeks and swamps). Where these coincided with study area sites, they were included in the visitation data for those sites.

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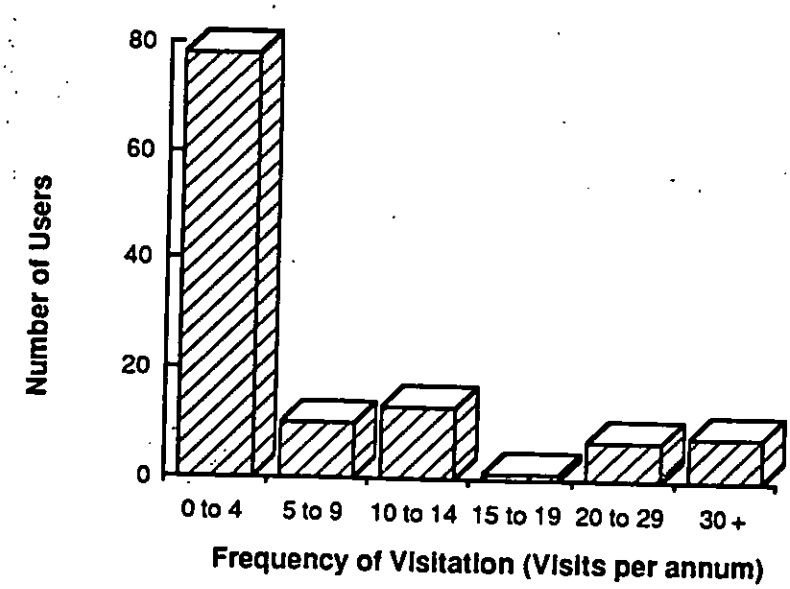
Figure 6.4: Frequency of Site Visitation



Although not asked to comment specifically, it was noted that most users tend to visit these sites on weekends and during holiday periods, reflecting the fact that in most cases, these sites require a special access effort (most are not conveniently located to enable casual access during week day periods).

3.1 Forestry issues

The Forestry Commission in New South Wales has been engaged in a forest management strategy which has converted predominantly oldgrowth forests to young regenerating stands which are cut at increasingly short cycles. The ecological consequences of this strategy will not be fully understood for many years.

Because of the extension of forested areas reserved for nature conservation during the last 15 years, the Forestry Commission claims it is now necessary to attempt harvest in inaccessible areas such as the Blackbutt Plateau to maintain its quota commitments. But the Forestry Commission has failed to take appropriate account of changing community values on conservation issues indicated by the increases in reserved areas. Notwithstanding the increase in lands preserved by the Commission, it has displayed inadequate forward planning by not engaging in extensive reforestation for which the community has been calling. The plantations which should have been put in years ago must be given priority now.

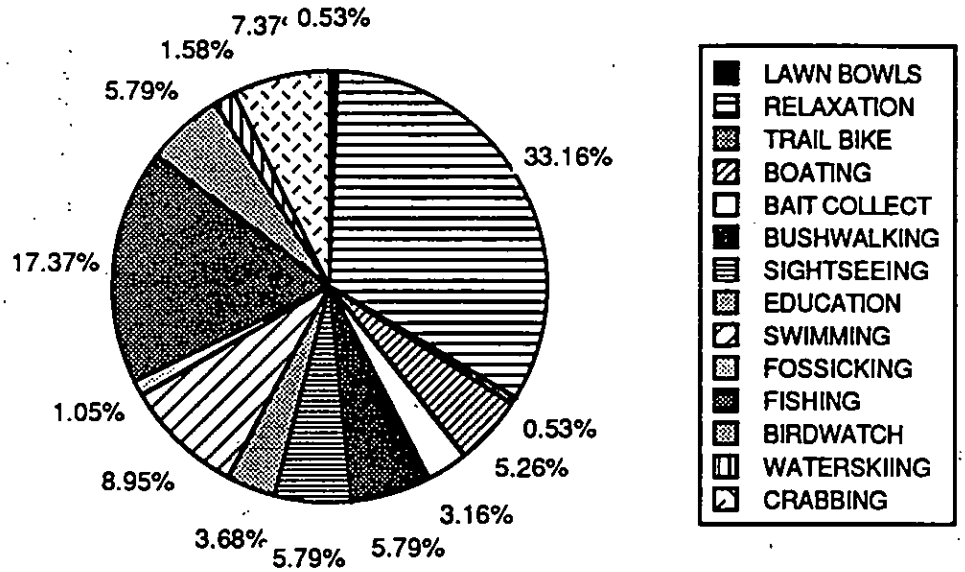
A further criticism of the Forestry Commission in NSW is that it presents a 'we know best' response to public querying of its actions or policies. The conduct of the operation on the Blackbutt Plateau has been typical of this from the outset in 1984. At no time were residents advised that there was to be a road built least of all those landholders whose land was littered with debris from the road construction on the slopes above. Without having conducted a scientifically valid investigation and using data based on erroneous mapping and field work, the Commission asserted that the Plateau was of no special environmental significance, a position maintained despite the contrary findings of several informal studies. The Forestry Commission also has apparently been unable or unwilling to devote sufficient of its resources to researching the ecology of old growth forests and other topics which are vitally connected with its operations. There has been no attempt to solicit research from tertiary institutions into the general ecology of the Blackbutt Plateau. These unlogged forests are demonstrably different from other Forestry Commission managed forests elsewhere in the district, and accordingly should be carefully researched before they are modified.

In defence of their attempted operation, the Forestry Commission has claimed that their proposal is economically viable. That is, the income from royalties from the timber exceeds the costs involved in roading, supervision etc. The original economic analysis carried out as part of the 1983 Environmental Review (Forestry Commission of New South Wales, 1983) has been challenged by Richard Whitling who undertook a study of the economics of the operation for a final year project. It is also evident that many other hidden costs have been ignored in this analysis.

The Forestry Commission has repeated its claim of economic viability for the project in recent times. The original analysis is now clearly out of date, roading costs having escalated and the original logging prescriptions having been altered. However the Forestry Commission has been evasive in the face of public attempts to verify current claims of viability, refusing to supply details of the basis of such calculations. This attitude adopted by the Commission has merely served to suggest that it, too, believes that the project is not viable and if indeed this is the case, then the operation should be

The major activities undertaken at wetlands locations are shown in Figure 6.5. As noted in the Figure the predominant activity at all sites is "Relaxation" (often described by respondents as an incidental activity to a major active use such as fishing). This finding accords with studies undertaken throughout Australia which indicate that catching fish is usually a secondary motivation for a fishing trip - *.... the majority of recreational fisherpersons go fishing to escape the pressures of everyday life, to enjoy an outing or to enjoy the outdoor environment* (Gartside, 1988) . "Relaxation" accounted for 33% of all recreational activities in wetlands areas, and was followed in popularity by fishing (17%), swimming (9%), crabbing (7.3%), bushwalking and sightseeing (both 5.8%)and boating (5.2%). These observations underpin the special place which wetlands occupy in the broader spectrum of recreational opportunities in the City area. Fishing and crabbing (undertaken by some 25% of all users) are directly dependent upon the productivity of wetlands, and together with other uses (e.g. boating), are indirectly dependent upon the recreational and visual setting provided by wetlands. The high level of use of wetlands for swimming is surprising, and may reflect the limited opportunities available in equally proximal locations in the City area.

Figure 6.5: Major Activities Undertaken at Wetlands Locations



d. Management of Wetlands

The final question asked of respondents (both those who visit/use wetlands and non-users) sought to ascertain what the public believe could be done to manage wetlands more effectively. The question indirectly also sought to evaluate who the public believe is responsible for management and management improvement. This latter aspect was not asked directly (see Questionnaire) in order to not induce bias, but rather relied on mention by respondents.

abandoned before any more public money is wasted on roading operations and EIS.

The current quota system of timber resource allocation must also be called into question as it has, in this case, resulted in a disastrous attempt to mount an operation which should never have been attempted on either ecnomic or environmental grounds.

3.2 Government processes subjugated by the Forestry Commission

There have been a number of instances of Local or State bureaucratic processes being overridden by or not applied to the Forestry Commission. The Blackbutt Plateau forms part of the catchment of the Wilsons River which is dammed downstream to supply water to the township of Mullumbimby. The Rous County Council is currently investigating a proposal to dam the river again at Federal in order to augment the supply to the rapidly growing regional population. In recognition of the necessity to restrict certain activities in a water catchment, the Byron Shire Council, in its Draft Environmental Plan, zoned much of the surrounds of the river as Water Catchment and Habitat. However the proposal to protect the Plateau area with a Water Catchment and Scientific zoning was overridden by the State Government which insisted on retaining the Forestry classification. It should be noted that a large number of government bodies are involved in the management of the catchment area. With the exception of the Byron Shire Council, not one of these bodies has suggested that there should be no logging in a water catchment area.

Logging operations inevitably result in the loss of soil. This is of concern in a high rainfall area (it is acknowledged that logging would take place in the 'dry' but there is always the possibility of heavy rain at any time of the year). Of particular concern is the erosion resulting from the construction of Nevasase Road. Rockfalls and gully and sheet erosion have caused extensive soil loss, damage to the surrounding environment and siltation of the upper reaches of Wilsons River. Currently the road is blocked by a huge landslide. The Forestry Commission claims that their operations are carried out in accordance with the Standard Erosion Mitigation Conditions (Catchment Areas Protection Board and Forestry Commission of New South Wales, 1983). However these guidelines have been transgressed on several counts. WAG reported the bulldozing of a large tree and the clearing of vegetation within 20 metres of a prescribed stream to the Soil Conservation Service in June, 1984. There were considerable delays and problems in eliciting a response and the outcome demonstrated the reluctance of Government agencies to use their powers, especially against another Government department.

In February 1986, the Ombudsman found that the road was constructed illegally, in that an EIS should have been prepared. The Commission never formally responded to or acted upon the Ombudsman's report.

Two engineers have independently measured grades in excess of the Forestry Commission's own specifications, and commented on the incompetent engineering of the road.

The defence of the Forestry Commission rests on a claim that restriction of access has prevented consolidation of the road. It is evident, however, that no such action could have prevented the major

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Of the remaining 54%, the predominant suggestion was the need for conservation/preservation of the remaining wetlands estate (31%). The next most common suggestions were the need for rubbish removal/clean-up (9.7%) and better enforcement of regulations (3%). As indicated in the Figure, the remaining suggestions (9.3% total) were evenly divided between site management/development suggestions and policy options for future management.

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landslips which have occurred, and that these are entirely the result of poor siting and incompetent dynamiting and engineering. Further, the land holder in question has indcated his willingness to allow access for reasonable erosion control measures but not the extensive works required to reopen the road for traffic, which was the Forestry Commission's original intention. The Forestry Commission has been unable to effect the simple negotiations required to achieve this permission.

WAG has twice requested the Minister for the Environment to investigate its submitted Nature Reserve proposal. The Minister has replied that he will not order the investigation as the Minister for Natural Resources will not release State Forest for that purpose. The issue of the Blackbutt Plateau has become a complex one and it would seem to be imperative that the conservation significance be investigated by the National Parks and Wildlife Service.

The Federal Government has limited powers over environmental matters, but in view of the demonstrated problems and lack of expertise on the part of state resource management agencies, it should be actively exploring all possible options for intervention. The Federal Government will have some jurisdiction over the area should it be listed as part of the National Estate. However insufficient resources are made available to the Heritage Commission for investigation of proposals. The Blackbutt Plateau was proposed for listing in February 1985 and it has not yet been investigated.

4. RECOMMENDATIONS

A scientifically important remnant of undisturbed forest has been proposed for a logging operation which is not economically viable. A disastrous roading operation has been attempted in the process. Although a number of government agencies are involved in land management in the area, the Forestry Commission has played the major role and must accept responsibility for the problems to date. Some of the objections to the logging of the Blackbutt Plateau are unique to the situation but many are the same as or have parallels to the objections being raised to the logging of old growth forests wherever it is occurring in New South Wales and Victoria. It follows then that the specific recommendations for the management of the Blackbutt Plateau are largely transferable to other old growth locations and the recommendations indicate when this applies.

WAG therefore recommends:

i) The proposed logging of the Blackbutt Plateau be abandoned in view of the economic and environmental arguments against the project. Whenever an old growth forest is designated for logging then an independant EIS should be mandatory. Such an operation would therefore be regarded as having a significant environmental affect in terms of the *Environmental Planning and Assessment Act*.

ii) An investigation of the Forestry Commission be carried out include its competence in forest management and forward planning and its conduct in dealing with the public and other government bodies.

iii) The management of the Plateau be passed over to the National

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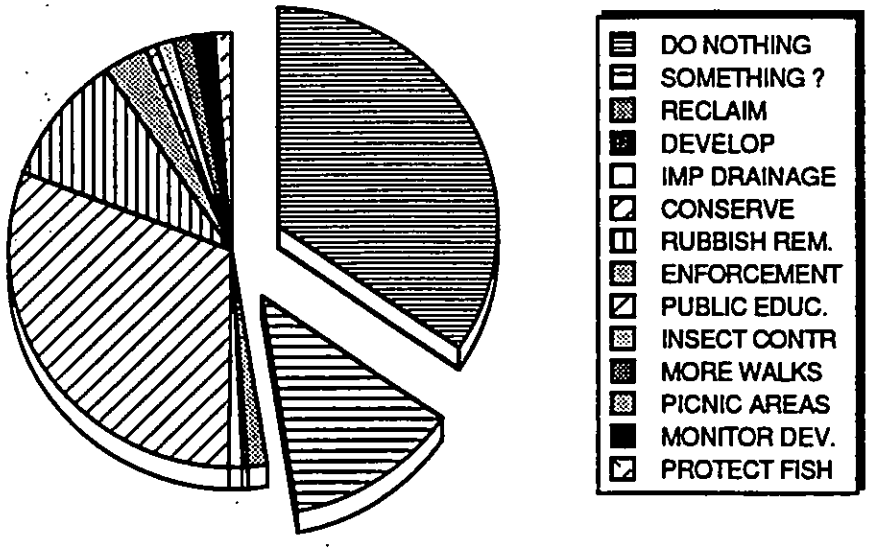

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Parks and Wildlife Service and the Nature Reserve Proposal be properly investigated. All old growth forests should be identified and mapped as a matter of urgency and their management be progressively handed over to National Parks and Wildlife Sevices.

iv) That land use decisions should be taken in a regional and community context rather than in isolation. Old growth forests should be regarded and managed as a regional resource because of their capacity to support and supply old growth obligated fauna and flora.

v) That environmental factors be given precedence over economic arguments in land use decisions in general and certainly old growth forest use decisions in particular.

vi) The user pays principle be applied to all operations involving the exploitation of natural resources, including the use of roads by heavy vehicles.

vii) That the royalty system be restructured to reflect the real value of timber and costs associated with harvest. That is, the loss of the benefits of the living tree should be paid for by the users.

viii) That an integrated approach be applied to the development of tourism in the area and that appropriate measures be taken to ensure that over exploitation of natural areas does not occur. Because old growth forests support many obligate species, over utilisation of these forests for any form of tourism can also have deleterious effects.

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Interestingly, no visits to wetlands at St. Helena Island, Green Island, Tingalpa, Whyte Island, Sunnybank, Runcorn or Drewvale were recorded. This may highlight the relatively greater importance of destinations shown on Figure 6.3. It may, however, also reflect lack of perception of these sites as wetlands destinations, although the ability of respondents to discriminate and recall both freshwater and tidal sites was evident.

In addition to the sites identified in the study area (coding was based on sites listed in Community Submissions brochure), respondents indicated that they visit several other sites both in the City area and in the vicinity of the City (especially Southern Moreton Bay). Total visitation to these sites as a proportion of total visits was 5%. None of the external sites receive more than 2.5% of total visits. Of the City sites identified, respondents identified several areas (usually close to creeks and swamps). Where these coincided with study area sites, they were included in the visitation data for those sites.

Figure 6.3: Visitation to Wetlands Within the Study Area

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Holmes, G. (1987). *Avifauna of the Big Scrub Region.* Aust. Nat. Parks and Wildl. Serv. and NSW Nat. Parks and Wildl. Serv. Sydney.

Appendix 6A: Interview Proforma (Telephone Survey)

WETLANDS MANAGEMENT STRATEGY

SURVEY OF ATTITUDES TOWARDS WETLANDS AND THEIR USE

- INTERVIEW PROFORMA -

Instructions to Interviewer:

a. Using predefined random telephone numbers, contact respondents (sample with substitution).

b. Introduce yourself, your affiliation and purpose of survey -- assure confidentiality if required.

c. Code answers on data sheet concurrently with replies.

d. Make sure that respondent is an adult (>15 yrs).

Question:	**Code**
1. Would you be willing to answer a few questions on wetlands of the Brisbane area? (If N, then exit as per final instructions/if Y then go to Q 2) *N.B. RECORD SEX OF ALL RESPONDENTS*	(Y/N) (M/F)
2. What do you understand is meant by the term "wetlands"? *(If term is not known, explain summary description of freshwater and tidal)*	(Free/ Summary)
3. Brisbane City contains numerous freshwater and tidal wetlands -- Have you visited any of these areas? *(If N, go to Q 7)*	(Y/N)
4. Which areas have you visited? *(Ask for specific names/locations if necessary)*	(Site Codes)
5. How often do you visit those sites? *(Convert visitation)*	(Visits per annum)
6. What activities did you undertake in, or adjacent to the wetlands, during those visits?	(Running code)
7. What do you believe could be done to manage wetlands areas more effectively? *(Note whether respondent comments on responsibility for management)*	(Free/ Summary)
8. Thank you for your assistance - the Council has prepared a leaflet which sets out more details on the study and how you can have your say - would you like a copy mailed to you? (If Y, then obtain mailing details)	

END SURVEY

Rainforest illegally logged: Action group

25/10/91

By RUSSELL ELDRIDGE

Another logging row has broken out, with claims that the NSW Forestry Commission has illegally logged a rainforest next to the Blackbutt Plateau, near Mullumbimby.

The Wilsons Creek Action Group (WAG) claims that the commission has logged 500-year-old brushbox trees and cleared an understorey of 150-year-old coachwood in the Mt Jerusalem rainforest.

WAG also claims that it is a pre-emptive strike to devalue an area which the Opposition Labor Party proposes to declare a national park.

The regional forester, Mr John Bruce, has denied that the logging was illegal. He also said that at the time of logging, the commission was unaware of the ALP proposal.

Mr Bruce said from Coffs Harbour that the commission did not classify brushbox as rainforest, but as wet sclerophyll forest.

He conceded that coachwood was a rainforest species but said it was also a characteristic of wet sclerophyll forest.

The North East Forest Alliance has entered the row, demanding the resignation of the Minister for Conservation and Land Management, Mr Garry West.

A NEFA spokesperson, Mr Andrew Steed, said the Forestry Commission was out of control.

"It is no longer sufficient to confront the Forestry Commission," Mr Steed said.

"It is the direct responsibility of Mr West to ensure his department obeys the law. If he cannot control the commission, or chooses not to, then he is breaching the doctrine of ministerial responsibility under the Constitution and should resign."

WAG, which was formed to protect the old-growth forest of the Blackbutt Plateau, also claims that there has been 'extraordinary waste' in the logging operation, which took place in March.

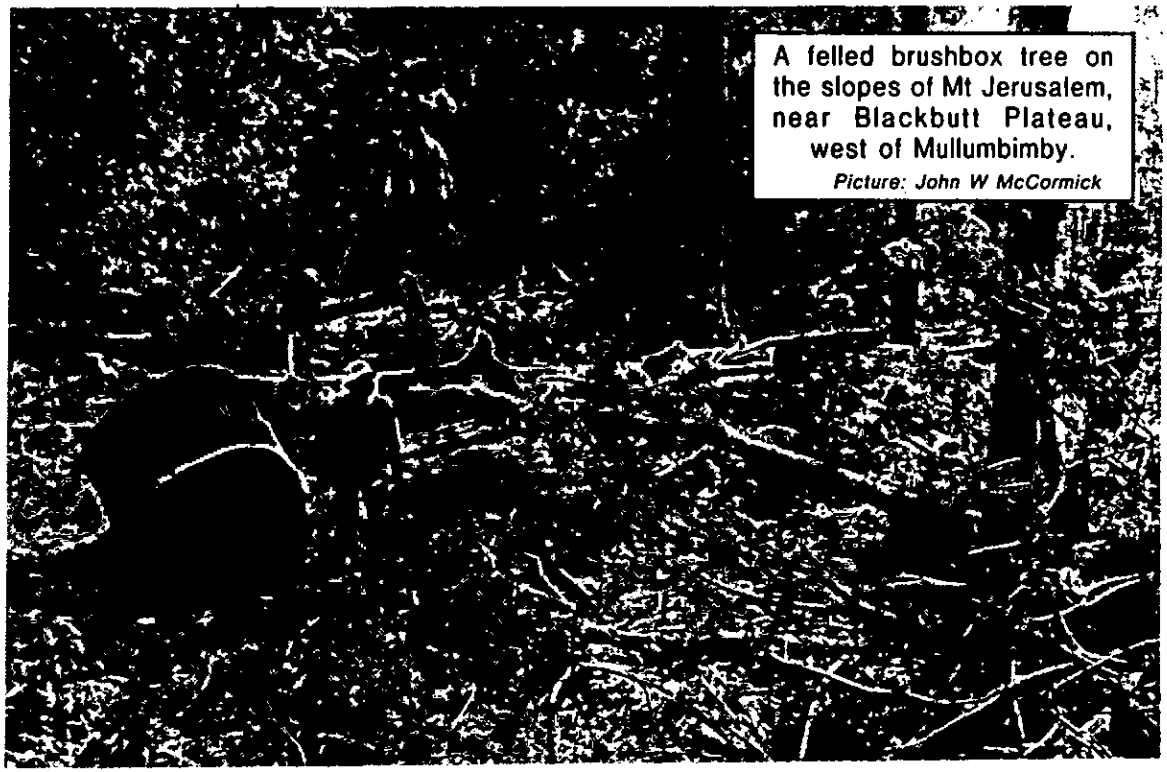
WAG says that old brushbox have been felled and left, forming huge stockpiles of log ends.

But Mr Bruce said that it was characteristic of brushbox to have fungal rot inside the base of the tree. He said WAG was probably referring to these sections.

On a NEFA claim that the area should have been subject to an environmental impact study, Mr Bruce said that it was a matter of interpretation because of recent court decisions.

He said the commission had agreed to complete an environmental impact study for the entire Murwillumbah management area before the start of logging on the Blackbutt Plateau in 1993.

"But unless we close down the industry, we have to log somewhere before we complete the impact study," Mr Bruce said.



A felled brushbox tree on the slopes of Mt Jerusalem, near Blackbutt Plateau, west of Mullumbimby.

Picture: John W McCormick

THE

BLACKBUTT PLATEAU

AN OLD GROWTH FOREST

THE CASE AGAINST LOGGING

A SUBMISSION TO THE FOREST AND TIMBER RESOURCES INQUIRY

THE WILSONS CREEK ACTION GROUP

THE BLACKBUTT PLATEAU
AN OLD GROWTH FOREST
THE CASE AGAINST LOGGING

A submission to the Forest and Timber Resources Inquiry

prepared by the Wilsons Creek

Action Group

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SUMMARY

920ha of the southern section of Nullum State Forest incorporating the Blackbutt Plateau and Mt Jerusalem areas contains an extensive area of unlogged, old growth forest and is recommended for dedication as the Blackbutt Plateau Nature Reserve as an alternative land use to logging. The proposed reserve comprises part of the erosion caldera rim of the Mt Warning Shield Volcano, ranging in altitude from 300 to 800m. It contains a particularly diverse range of habitats from lowland subtropical rainforest to high altitude heath. The physical isolation of much of the area has militated against significant past human intrusion such that it contains a substantial remnant of some major commercial forest types. The complex topography of the area in conjunction with the very high rainfall have provided long-term mitigation of natural disturbances such as fire with the result that the Blackbutt forests are of a structural type not found elsewhere in the region. These stands serve as an important wildlife refuge and scientific reference area. The presence of a high proportion of endangered plants and vertebrate animals, most notably Peach Myrtle, Corokia and the Rufous Scrub-bird together with the unique form of Coral Lichen give the area regional, State and national conservation significance.

1. INTRODUCTION

1.1 Definition of basic terms

The proposed logging of the Blackbutt Plateau and the controvery the project has unleased make it an ideal case study of the general merits of initiating logging operations in old growth forests. Old growth forests (not included in the Background Paper's glossary of terms) are defined by this submission as tall open forest, typically wet sclerophyll type, which has never been logged or if so, then only a very small percentage of the forest has been taken, and in which there is usually little regeneration of the canopy species such that the forest is dominated by very large trees of a similar, over-mature age class. These trees invariably carry a considerable amount of dead wood in their canopies and their boles and major limb scars are hollow.

Conflict over the Blackbutt Plateau revolves around a Forestry Commission proposal to log an area of old growth eucalypt forest on an isolated and previously inaccessible plateau. Construction of an access, named Nevasae road, which traversed a cliff in an extremely high rainfall area was necessary to attempt the harvest.

1.2 Location

The Blackbutt Plateau comprises approximately 300 ha of the southern section (Compartments 57 and 58) of Nullum State Forest in the NSW Forestry Commission District of Murwillumbah. The location is 12 km west of the township of Mullumbimby and 32 km NNE of Lismore.

Extensive logging has taken place on the higher slopes of Mt Jerusalem during the past few decades and some areas have been clear-fallen. Eucalypt regeneration has abeen negligible and replanting has been inadequate. A few sections of the lower slopes were also cleared for banana plantations some 40 to 50 years ago but generally these sections are small such that,due to the mosaic of habitats, including large areas of exposed rock and non-commercial vegetation types in conjunction with the rugged terrain, the lower slopes have retained much of their naturalness.

The Blackbutt Plateau on the other hand, because of its inaccessibility up to the present time, has largely escaped human disturbance. A small section of about 40 ha along the southern edges was lightly selectively logged in the 1960's but the majority of forest remains in virgin condition. However the construction of Nevasae Road from Wilsons Creek Road in May 1984 has now opened up this area to the possibility of logging and other concomitant disturbances.

1.3 History

Residents were first made aware of the issue when roadworks began in 1984. Action by the Wilsons Creek Action Group (WAG), together with continuing access problems, eventually resulted in the calling of a 3-4 year moratorium on logging of the Plateau by the then Minister for Natural Resources Mrs Crosio. WAG prepared a Nature Reserve Proposal document but the State government has never investigated the merits of that proposal. Rather, the Forestry Commission has announced that it will shortly declare a Flora Reserve to protect an area of rock outcrop covered with snow lichen (*Cladia retipora*) and a small forest area. This offers no protection for the old growth Blackbutt forest and the integrity of the systems of the area as a whole, and has been rejected as totally inadequate by WAG.

Public pressure plus recent legal decisions (eg Mt Mistake) has forced the Forestry Commission to undertake an Environmental Impact Study (EIS) before they proceed further. They now claim that the project has no urgency.

Calling on the resources of local and outside experts, WAG researched the natural values of the area. Though the study was preliminary in nature, the significance of the area was evident and the Group compiled a Nature Reserve Proposal document. The relevant sections of that document have been included in the body of this submission.

The Forestry Commission prepared an Environmental Review for the project which included an evaluation of the timber resource of the area (Forestry Commission of New South Wales, 1983).

WAG's investigation, however, pointed to serious shortcomings in Forestry Commission's Environmental Review. Apparently there had been little or no on-ground survey of flora and fauna other than assessment of plant species of economic value.

The significance of the area from a national perspective was later recognised by the North Coast Environment Council who nominated the area for the National Estate. The Blackbutt Plateau was placed on the Interim List in 1985 and is due to be assessed for listing this year.

2. THE RESOURCE

2.1 Physiographic features

The Blackbutt Plateau is an elevated spur of the Koonyum Range mainly between 500m and 700m above sea level. The Koonyum Range forms part of the rim of the erosion caldera of the Mt Warning Shield Volcano and the Blackbutt Plateau spur typifies much of this rim in its formation. The area was formerly overlain by a layer of basaltic rock which has been eroded except for a few very small pockets. The remaining more erosion-resistant rhyolite now exists as a block fringed by cliffs, the result of rock shear caused by undercutting of softer rock by the erosion gullies of the surrounding Commissioners, Doon Doon and Coopers Creeks and the Wilsons River (see Map 1).

Lying at the eastern end of the spur, the Blackbutt Plateau is almost

encircled by cliffs, and is connected to the neighboring Mt Jerusalem by a narrow ridge.

The Koonyum Range, together with the Nightcap Range to which it is tenuously linked at the Doon Doon Saddle, forms an island of high altitude forested country isolated from the remainder of the Mt Warning caldera rim by low-lying valleys and plains now cleared for agriculture.

Soils of the area are derived mainly from rhyolite and basalt. Soil depth varies from thin to moderately deep but generally soils of the area tend to be shallow and of poor nutrient status. At higher elevations there are also extensive areas of exposed rock (Map 2).

2.2 Flora

Forestry Commission typing (Map 2) shows the vegetation of the area to be composed principally of wet sclerophyll forest types dominated by Moist Blackbutt but also including significant areas of Inland Brush Box and Turpentine. The rainforest types of Booyong and Myrtle comprise much of the remainder, with dry sclerophyll types of Scribbly Gum - Bloodwood and New England Blackbutt making up the balance.

The use of only the subtropical Booyong and depauperate Myrtle types to classify the rainforest of the area is inaccurate because warm temperate species such as Coachwood (*Ceratopetalum apetalum*), Crabapple (*Schizomeria ovata*), Sassafras (*Doryphora sassafras*) and Soft Corkwood (*Caldcluvia paniculosa*) dominate a high proportion of the stands. While there are a few very small patches of the Myrtle type (too small to map), the booyong type occurs only in the more sheltered gullies and slopes at lower elevations.

There is also an extensive and well-developed heath and tall shrub community dominated by six species of *Leptospermum* but which the Commission has typed as rock or else incorporated it into its mapping of the Scribbly Gum - Bloodwood type.

Overall the predominant vegetation formation of the Blackbutt Plateau is tall moist open forest where stand height usually reaches 45m and with Blackbutt (*Eucalyptus pilularis*), Turpentine (*Syncarpia glomulifera*), and New England Blackbutt (*Eucalyptus campanulata*) being the major canopy trees. Warm temperate closed forest occurs in the gullies , on sheltered shelves and on the lower slopes with Olivers Sassafras (*Cinnamomum oliveri*), Bolly-gum (*Litsea reticulata*), Bennetts Ash (*Flindersia bennettiana*), Rough Possumwood (*Quintinia sieberi*), Grey Possumwood (*Q. verdonii*) and Coachwood, Crabapple, Sassafras and Soft Corkwood among the dominants.

In the more exposed areas and where the soils become poor and thin, tall to low dry open forest occurs with the main canopy trees including the two blackbutts as well as Red Bloodwood (*E. gummifera*) and Scribbly Gum (*E. signata*). The heath and tall shrub community adjacent to the rock outcropping are dominated by Small-fruited Teatree *Leptospermum microcarpum*, Lemon-scented Teatree *L.petersonii* and New England Teatree *Leptospermum sp.*

Together with a rich lichen community on the exposed rock, the area is characterised by a wide range of diverse plant communities occurring in particularly close proximity. In this small area no fewer than 10 species of Eucalyptus occur in a mosaic of canopy communities. Aside

from those mentioned above, other associations include blackbutt-white mahogany (*Eucalyptus acmenioides*), blackbutt-mountain wattle (*Acacia orites*), blackbutt-tallowwood (*E. microcorys*), Flooded gum (*E. grandis*)-Brush box (*Lophostemon confertus*), a significant stand of the discontinuously distributed Blue Mountains mahogany (*E. notabilis*) and Sydney Blue gum (*E. saligna*)-Red mahogany (*E. resinifera*). The extensive heath area also reflects this complex of associations with six species of Leptospermum forming several distinct association types and occupying about 60 ha of the Plateau.

The understorey patterns reflect the same unusual diversity of the canopies. Beneath the relatively even-aged stands of blackbutt the understorey can vary from grasses to low or tall sedges to sparse or dense sclerophyllous shrubs to low and tall ferns and to sparse or dense rainforest shrubs or trees. The extent to which soil depth and nutrient status could also be limiting factors in these situations has yet to be ascertained. With trees estimated at over 300 years of age, these stands may represent a fire disclimax at a most interesting stage of development. Already, these aged giants are starting to fall down and because of the very high rainfall and long-term absence of hot fire, there is no regeneration of the eucalypt species. The dilemma that this poses for future forest management is discussed below.

There have been no systematic plant surveys of the area although several botanists have compiled lists during casual visits. Well over 200 native plant species have been identified of which nine are classified as rare or threatened (Table 1). This number will sharply increase when all the plant communities have been sampled and when the lower flora (mosses etc) have been included.

Three of the nine rare plants are of particular significance: Corokia (*Corokia whiteana*) was formerly thought to be confined to the Nightcap and Koonyam Ranges but has recently been recorded in the Tweed area. Nevertheless, it is still of very limited occurrence and although conserved in the Nightcap National Park and Big Scrub Flora Reserve, is currently classed as vulnerable and inadequately conserved (Briggs and Leigh, 1988). Floyd (1987) considers further survey work is warranted to accurately define its status. The species has been found to occur occasionally in rainforest communities on the Blackbutt Plateau.

Small-leaved Hazelwood (*Symplocos baeuerlenii*) occurs uncommonly, mainly on rhyolitic soils from Springbrook on the McPherson Range to Alstonville (Floyd, 1987). Although it is generally considered to be adequately conserved (Briggs and Leigh, 1988), the very restricted range of the species warrants reservation of all samples of discrete populations. On the Blackbutt Plateau it occurs infrequently in the understorey of both rainforest and wet sclerophyll communities.

Peach Myrtle (*Uromyrtus australis*) is one of Australia's rarest rainforest plants and until its discovery on the Blackbutt Plateau (J.B. Williams in litt.) was known from only one population located on the Nightcap Range and one other at Point Lookout, Lamington National Park. Part of the Nightcap Range population is conserved in Nightcap National Park but much of this stand occurs in the adjacent Whian Whian State Forest. It is considered endangered and inadequately conserved (Briggs and Leigh, 1988) and Floyd (1987) states "rescue" is required.

Two other plants are also of special note: the extensive patches of snow lichen found in cushion and other complex forms in the area of rock outcropping on the Blackbutt Plateau are unique on the eastern side of

the Great Dividing Range (J.B. Williams in litt., R.A. Filson in litt.) and may be the most significant in Australia. The population of the Oval Fork Fern (*Tmesipteris ovata*) on the Blackbutt Plateau may be the most important in northern NSW-southern Queensland (J.B. Williams in litt.). This fern ally is very uncommon throughout its range and future survey work could show it worthy of classification as rare or threatened. Additionally, the occurrence of New England Blackbutt is close to the eastern extremity of its range in NSW, with just a few specimens occurring on the slightly more easterly Koonyam Range.

2.3 Fauna

As with the flora, there have been no systematic faunal surveys of the area. However, ornithologists have listed a total of 59 bird species during visits over a period of about a year and six mammal species have been recorded for the area, most during one night's spotlighting on the Blackbutt Plateau. Again as with plants, observations of fauna have centred on the area of the Blackbutt Plateau. There are few records of amphibians or reptiles although a number of significant species undoubtedly occur.

The vertebrates known from the area comprise a rich assemblage of mainly moist forest-dependent species typical of the NSW north coast. Of particular note is the high bird species richness for a relatively small area. The mosaic of rainforest and wet sclerophyll habitats is of special significance, resulting in increased diversity by providing requirements for species which utilise both habitats in close proximity, as well as providing many habitats for those birds which utilise ecotones. Examples of such species are the Sooty Owl (*Tyto tenebricosa*) which forages in rainforest and requires hollows in trees provided mainly by eucalypt species, brush box or turpentine for roosting and nesting and Alberts Lyrebird (*Menura alberti*) which appears to have specific foraging requirements in wet sclerophyll forest and rainforest during different seasons.

Vertebrate diversity is also increased by the mid-altitudinal range of the Plateau as exemplified by the presence of high altitude elements such as the Rufous Scrub-bird (*Atrichornis rufescens*) and Eastern Pygmy-possum (*Cercartetus nanus*) and the essentially lowland Varied Triller (*Lalage leucomela*), Little Shrike-thrush (*Colluricincla megarhyncha*) and White-eared Monarch (*Monarcha leucotis*).

An important aspect of vertebrate habitats, notably on the Blackbutt Plateau, is the abundance of mature or veteran trees of sclerophyll species affording nest and den sites for hollow-dwelling species. This enables hole-nesting cockatoos, parrots and owls and arboreal hole-using mammals to occur at relatively high densities.

Eleven species of birds and one mammal are listed as endangered fauna (Table 1) and six of these are of particular significance:

The Wompoo Fruit-dove (*Ptilinopus magnificus*) and Alberts Lyrebird which are both considered vulnerable and rare and in NSW have their centres of distribution in the rainforests of the north coast. Alberts Lyrebird has a very restricted range, being confined to the area of northern NSW-southern Queensland from the Blackall Range near Wardell (Holmes 1987) to the Mistake Mountains (Blakers et al 1984). The Wompoo Fruit-dove, however, occurs north to Cape York, although the southern race (which includes the NSW population) has suffered greatly from

habitat destruction and until recently was considered restricted as a breeding species to the Richmond and Border Ranges (H.J. Frith in litt.). While both species are represented in National Parks and Nature Reserves in the region, no detailed knowledge of their ecological requirements or conservation status is available and their habitats should receive maximum protection until such information becomes known. During field inspections of the Blackbutt Plateau area in June 1984, high numbers of Alberts Lyrebirds were noted advertising breeding territories from forest adjacent to the rock outcroppings on the summit (D. Milledge in litt.).

The Powerful Owl (*Ninox strenua*) and Sooty Owl are also classified as vulnerable and rare and although both have relatively extensive ranges throughout south-eastern Australia, they are species which occur only at very low densities in specific habitats and have particular ecological requirements. These large owls require well-developed hollows in mature eucalypts or other canopy trees for nesting and high densities of their mammal prey species. The undisturbed wet sclerophyll forest on the Plateau offers prime habitat in this regard.

The Rufous Scrub-bird is another vulnerable and rare bird which has suffered a significant contraction of range since European settlement. Prior to the confirmation of its presence in the Blackbutt Plateau - Mt Jerusalem area it was thought to be restricted to five remnant upland populations (Ferrier 1985). This sixth location represents a rediscovery of the Mt Warning - Nightcap Range population which Ferrier (in litt.) had considered extinct, although an unpublished record for the area of the Doon Doon Saddle was obtained relatively recently (S. Ferrier pers. comm.). There is no estimate of numbers or locations of territories of the Rufous Scrub-bird in the area of the Plateau and no additional records of the bird have been obtained since the June 1984 unconfirmed sighting on the Blackbutt Plateau (D. Milledge pers. obs.), and the August 1985 record of a bird calling near Mt Jerusalem (D. Stewart pers. obs.).

The single record of the Eastern Pygmy-possum for the Blackbutt Plateau in December 1984 (D. Milledge, A. Gilmore pers. obs.) is of great significance because the species appears to be extremely scarce in northern NSW. The most northerly specimen in the collection of the Australian Museum was obtained at Norah Head near Newcastle (L. Gibson in litt.), although there are four specimens from high altitude rainforest on the Lamington Plateau in the Queensland Museums collection (S. Van Dyck in litt.). The only other records from the NSW north coast (all unconfirmed) are from near Lismore, Dorrigo and inland from Coffs Harbour (A. Smith in litt.).

TABLE 1

RARE OR THREATENED PLANTS* AND ENDANGERED FAUNA+ RECORDED FROM THE BLACKBUTT PLATEAU - MT JERUSALEM AREA

		Risk code**
FLORA		
Byron Bay Acronychia	*Acronychia baeuerlenii*	3RC

Veiny Laceflower	*Archidendron muellerianum*	3RC
Pink Cherry	*Austrobuxus swainii*	3RC
Corokia	*Corokia whiteana*	2VCi
Slender Saw Grass	*Gahnia insignis*	3RCa
Giant Creek Lily	*Helmholtzia glaberrima*	2RC
Small-leaved Hazelwood	*Symplocos baeuerlenii*	2VC-
Red Lillypilly	*Syzgium hodgkinsoniae*	3VC
Peach Myrtle	*Uromyrtus australis*	2ECi

TABLE 1 (continued)

FAUNA

PART 1 Fauna of Special Concern

Emerald Dove *Chalcophaps indica*
Whites Thrush *Zoothera dauma* complex
Rufous Fantail *Rhipidura rufifrons*
Eastern Pygmy-possum *Cercartetus nanus*

PART 2 Vulnerable and Rare Fauna

Pacific Baza *Aviceda subcristata*
Wompoo Fruit-dove *Ptilinopus magnificus*
Powerful Owl *Ninox strenua*
Sooty Owl *Tyto tenebricosa*
Alberts Lyrebird *Menura alberti*
Rufous Scrub-bird *Atrichornis rufescens*
White-eared Monarch *Monarcha leucotis*

* Briggs and Leigh (1988).

\+ Schedule 12, *National Parks and Wildlife Act*, 1 January 1984.

** Risk code symbols:

2 species with a very restricted distribution in Australia with a maximum geographic range of less than 100km;

3 species with a range of over 100km in Australia but occurring only in small populations mainly restricted to highly specific habitats;

E endangered species seriously at risk of disappearing from the wild within one or two decades if present land use and other causal factors continue to operate;

V vulnerable species not presently endangered but at risk over a longer period through continual depletion;

R - species which are rare in Australia but not currently considered endangered or vulnerable;

C species known to be represented in a proclaimed reserve;

a species considered adequately conserved (population in reserves exceeding 1000 individuals);

i species considered inadequately conserved;

\- species whose reserved population size is unknown.

2.4 Ecological and scientific significance

The proposed Nature Reserve is located in close proximity to the Nightcap National Park. A link between the two is feasible and desirable to provide reserved wildlife corridors between the two areas, continuity of vegetation and administrative expediency, as well as enhancing the value of the Nightcap National Park itself. The intermediate vegetation has immediate wildlife value for many species and has potential for future revegetation. The necessary link will involve the rezoning of privately owned land in the area and it is suggested that this course of action can be followed at a later date.

The Nature Reserve would become part of the ring of reserved lands known as the Caldera National Parks. The Blackbutt Plateau would extend the series at its southern edge and add vegetation types including the mature Blackbutt stands, the ecological importance and rarity of which is expanded below. An evaluation of the context of the proposed reserve in relation to the vegetation types, altitudinal range and fire protection status of other areas in the Caldera Parks which include the similar rhyolite derived soil types would be appropriate here but those data are yet to become available.

Despite the lack of systematic surveys of flora and fauna, it is apparent that the area proposed for the Blackbutt Plateau Nature Reserve is of very high ecological and scientific importance. It is representative of an ecological unit of particularly limited distribution characterised by rhyolite-derived soils and a high degree of endemism among its flora.

The proposed Reserve contains the largest remaining mature, undisturbed tract of Blackbutt-dominated, tall moist open forest in the Mt Warning caldera area. Moist Blackbutt is the major economic forest type on the NSW north coast and as a result, undisturbed stands are now extremely scarce. The Blackbutt Plateau remnant is probably the most important with respect to size and condition north of Coffs Harbour and must also rank very highly in terms of State significance.

The mature, undisturbed stands of tall moist open forest in the Blackbutt Plateau area serve not only as a source of emigrant forest-dependent wildlife (and perhaps, too, as a refuge for mature wildlife disadvantaged by local forestry operations), but also as an important scientific reference area. With intensive forestry operations widespread in the Nightcap and Koonyum Ranges, it is essential that a large area of undisturbed forest be conserved against which to gauge the long-term effects of logging and silvicultural practices. No such sample exists in the National Parks and Nature Reserves or Flora Reserves of the region and reservation of the Blackbutt Plateau area represents the last chance to achieve this. The maintenance of relatively large, undisturbed stands of forest for scientific reference purposes is critical for both conservation and the future viability of the timber industry.

The absence of recent fire from the mature Blackbutt stands is a

feature of further scientific interest. Succession in tall open forest where fire has been excluded for long periods is poorly understood because situations where this occurs are unusual. Consequently, any future management strategy for the Blackbutt Plateau will be faced with a fundamental dilemma because of this situation. The question is: should we burn the forest in order to maintain a blackbutt community or do we leave the forest intact in order to observe and preserve the wealth of data that will be provided to ecologists by this disclimax community becoming 'unlocked'? That is, allow the warm temperate rainforest to succeed the tall open forest by withholding fire.

The high altitude heath community of the Blackbutt Plateau - Mt Jerusalem area appears to be the best developed of this type on rhyolite-derived soils in NSW (J.B. Williams in litt.). It makes an interesting comparison with the Daves Creek heath of the Lamington Plateau although the latter occurs at higher altitude.

One of the most notable attributes of the proposed Nature Reserve is the diversity of different habitat types present within a relatively small area. As indicated above there are ten species of *Eucalyptus* and six species of *Leptospermum* growing on the Plateau. The resultant high species diversity is characterised by a large proportion of rare and endangered plant and animal species which impart national, State and regional significance. The populations of Peach Myrtle and Corokia, the cushion form of the snow lichen and the Rufous Scrub-bird population all warrant reservation in their own right.

In summary, the totality of aesthetic, scientific and land management values establishes an outstanding justification for the Blackbutt Plateau - Mt Jerusalem area not to be logged.

2.5 Local residents

It is estimated 1000 people live in the Wilsons Creek/Huonbrook valleys which surround the Plateau. The logging operation as proposed in 1983 would involve the passage of trucks carrying out three return trips per day every day for six months per year for up to two years. An operation of this type and duration is clearly totally inappropriate in a residential area. Residents would be subject to noise from the operation (Forestry Commission of New South wales, 1983).

A major concern for residents is the physical danger posed by logging trucks on Wilsons Creek Road. This is very narrow, winding and poorly maintained. This concern is voiced also in a report by the Council Engineer.

As well as the danger of logging trucks on the road, significant damage to Wilsons Creek Road will also occur. Dobinson (1985) has found that the amount of damage that a truck loaded to the permissable limit will do to road pavement is about 14,000 times greater than the average car. This damage will be at a cost to the ratepayer as the Commission has no obligation to contribute.

3. THE LOGGING OPERATION

3.1 Forestry issues

The Forestry Commission in New South Wales has been engaged in a forest management strategy which has converted predominantly oldgrowth forests to young regenerating stands which are cut at increasingly short cycles. The ecological consequences of this strategy will not be fully understood for many years.

Because of the extension of forested areas reserved for nature conservation during the last 15 years, the Forestry Commission claims it is now necessary to attempt harvest in inaccessible areas such as the Blackbutt Plateau to maintain its quota commitments. But the Forestry Commission has failed to take appropriate account of changing community values on conservation issues indicated by the increases in reserved areas. Notwithstanding the increase in lands preserved by the Commission, it has displayed inadequate forward planning by not engaging in extensive reforestation for which the community has been calling. The plantations which should have been put in years ago must be given priority now.

A further criticism of the Forestry Commission in NSW is that it presents a 'we know best' response to public querying of its actions or policies. The conduct of the operation on the Blackbutt Plateau has been typical of this from the outset in 1984. At no time were residents advised that there was to be a road built least of all those landholders whose land was littered with debris from the road construction on the slopes above. Without having conducted a scientifically valid investigation and using data based on erroneous mapping and field work, the Commission asserted that the Plateau was of no special environmental significance, a position maintained despite the contrary findings of several informal studies. The Forestry Commission also has apparently been unable or unwilling to devote sufficient of its resources to researching the ecology of old growth forests and other topics which are vitally connected with its operations. There has been no attempt to solicit research from tertiary institutions into the general ecology of the Blackbutt Plateau. These unlogged forests are demonstrably different from other Forestry Commission managed forests elsewhere in the district, and accordingly should be carefully researched before they are modified.

In defence of their attempted operation, the Forestry Commission has claimed that their proposal is economically viable. That is, the income from royalties from the timber exceeds the costs involved in roading, supervision etc. The original economic analysis carried out as part of the 1983 Environmental Review (Forestry Commission of New South Wales, 1983) has been challenged by Richard Whitling who undertook a study of the economics of the operation for a final year project. It is also evident that many other hidden costs have been ignored in this analysis.

The Forestry Commission has repeated its claim of economic viability for the project in recent times. The original analysis is now clearly out of date, roading costs having escalated and the original logging prescriptions having been altered. However the Forestry Commission has been evasive in the face of public attempts to verify current claims of viability, refusing to supply details of the basis of such calculations. This attitude adopted by the Commission has merely served to suggest that it, too, believes that the project is not viable and if indeed this is the case, then the operation should be

abandoned before any more public money is wasted on roading operations and EIS.

The current quota system of timber resource allocation must also be called into question as it has, in this case, resulted in a disastrous attempt to mount an operation which should never have been attempted on either ecnomic or environmental grounds.

3.2 Government processes subjugated by the Forestry Commission

There have been a number of instances of Local or State bureaucratic processes being overridden by or not applied to the Forestry Commission. The Blackbutt Plateau forms part of the catchment of the Wilsons River which is dammed downstream to supply water to the township of Mullumbimby. The Rous County Council is currently investigating a proposal to dam the river again at Federal in order to augment the supply to the rapidly growing regional population. In recognition of the necessity to restrict certain activities in a water catchment, the Byron Shire Council, in its Draft Environmental Plan, zoned much of the surrounds of the river as Water Catchment and Habitat. However the proposal to protect the Plateau area with a Water Catchment and Scientific zoning was overridden by the State Government which insisted on retaining the Forestry classification. It should be noted that a large number of government bodies are involved in the management of the catchment area. With the exception of the Byron Shire Council, not one of these bodies has suggested that there should be no logging in a water catchment area.

Logging operations inevitably result in the loss of soil. This is of concern in a high rainfall area (it is acknowledged that logging would take place in the 'dry' but there is always the possibility of heavy rain at any time of the year). Of particular concern is the erosion resulting from the construction of Nevasase Road. Rockfalls and gully and sheet erosion have caused extensive soil loss, damage to the surrounding environment and siltation of the upper reaches of Wilsons River. Currently the road is blocked by a huge landslide. The Forestry Commission claims that their operations are carried out in accordance with the Standard Erosion Mitigation Conditions (Catchment Areas Protection Board and Forestry Commission of New South Wales, 1983). However these guidelines have been transgressed on several counts. WAG reported the bulldozing of a large tree and the clearing of vegetation within 20 metres of a prescribed stream to the Soil Conservation Service in June, 1984. There were considerable delays and problems in eliciting a response and the outcome demonstrated the reluctance of Government agencies to use their powers, especially against another Government department.

In February 1986, the Ombudsman found that the road was constructed illegally, in that an EIS should have been prepared. The Commission never formally responded to or acted upon the Ombudsman's report.

Two engineers have independently measured grades in excess of the Forestry Commission's own specifications, and commented on the incompetent engineering of the road.

The defence of the Forestry Commission rests on a claim that restriction of access has prevented consolidation of the road. It is evident, however, that no such action could have prevented the major

landslips which have occurred, and that these are entirely the result of poor siting and incompetent dynamiting and engineering. Further, the land holder in question has indcated his willingness to allow access for reasonable erosion control measures but not the extensive works required to reopen the road for traffic, which was the Forestry Commission's original intention. The Forestry Commission has been unable to effect the simple negotiations required to achieve this permission.

WAG has twice requested the Minister for the Environment to investigate its submitted Nature Reserve proposal. The Minister has replied that he will not order the investigation as the Minister for Natural Resources will not release State Forest for that purpose. The issue of the Blackbutt Plateau has become a complex one and it would seem to be imperative that the conservation significance be investigated by the National Parks and Wildlife Service.

The Federal Government has limited powers over environmental matters, but in view of the demonstrated problems and lack of expertise on the part of state resource management agencies, it should be actively exploring all possible options for intervention. The Federal Government will have some jurisdiction over the area should it be listed as part of the National Estate. However insufficient resources are made available to the Heritage Commission for investigation of proposals. The Blackbutt Plateau was proposed for listing in February 1985 and it has not yet been investigated.

4. RECOMMENDATIONS

A scientifically important remnant of undisturbed forest has been proposed for a logging operation which is not economically viable. A disastrous roading operation has been attempted in the process. Although a number of government agencies are involved in land management in the area, the Forestry Commission has played the major role and must accept responsibility for the problems to date. Some of the objections to the logging of the Blackbutt Plateau are unique to the situation but many are the same as or have parallels to the objections being raised to the logging of old growth forests wherever it is occurring in New South Wales and Victoria. It follows then that the specific recommendations for the management of the Blackbutt Plateau are largely transferable to other old growth locations and the recommendations indicate when this applies.

WAG therefore recommends:

i) The proposed logging of the Blackbutt Plateau be abandoned in view of the economic and environmental arguments against the project. Whenever an old growth forest is designated for logging then an independant EIS should be mandatory. Such an operation would therefore be regarded as having a significant environmental affect in terms of the *Environmental Planning and Assessment Act*.

ii) An investigation of the Forestry Commission be carried out include its competence in forest management and forward planning and its conduct in dealing with the public and other government bodies.

iii) The management of the Plateau be passed over to the National

Parks and Wildlife Service and the Nature Reserve Proposal be properly investigated. All old growth forests should be identified and mapped as a matter of urgency and their management be progressively handed over to National Parks and Wildlife Sevices.

iv) That land use decisions should be taken in a regional and community context rather than in isolation. Old growth forests should be regarded and managed as a regional resource because of their capacity to support and supply old growth obligated fauna and flora.

v) That environmental factors be given precedence over economic arguments in land use decisions in general and certainly old growth forest use decisions in particular.

vi) The user pays principle be applied to all operations involving the exploitation of natural resources, including the use of roads by heavy vehicles.

vii) That the royalty system be restructured to reflect the real value of timber and costs associated with harvest. That is, the loss of the benefits of the living tree should be paid for by the users.

viii) That an integrated approach be applied to the development of tourism in the area and that appropriate measures be taken to ensure that over exploitation of natural areas does not occur. Because old growth forests support many obligate species, over utilisation of these forests for any form of tourism can also have deleterious effects.

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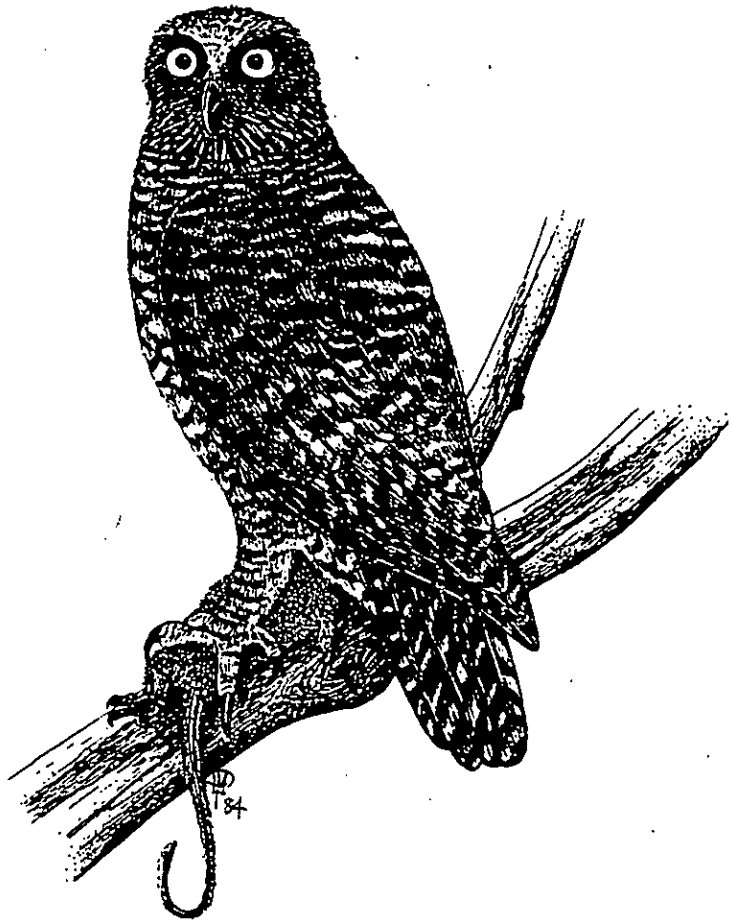
THE

BLACKBUTT PLATEAU

NATURE RESERVE PROPOSAL



Powerful Owl Ninox strenua

A SUBMISSION TO THE MINISTER

FOR THE ENVIRONMENT

THE WILSONS CREEK ACTION GROUP

THE BLACKBUTT PLATEAU
NATURE RESERVE PROPOSAL

A submission to the Minister for the Environment

prepared by the Wilsons Creek

Action Group

CONTENTS

SUMMARY

920ha of the southern section of Nullum State Forest incorporating the Blackbutt Plateau and Mt Jerusalem areas is recommended for dedication as the Blackbutt Plateau Nature Reserve. The proposed reserve comprises part of the erosion caldera rim of the Mt Warning Shield Volcano, ranging in altitude from 300 to 800m. It contains a particularly diverse range of habitats from lowland subtropical rainforest to high altitude heath. The physical isolation of much of the area has militated against significant past human intrusion such that it contains a substantial remnant of some major commercial forest types. The complex topography of the area in conjunction with the very high rainfall have provided long-term mitigation of natural disturbances such as fire with the result that the Blackbutt forests are of a structural type not found elsewhere in the region. These stands serve as an important wildlife refuge and scientific reference area. The presence of a high proportion of endangered plants and vertebrate animals, most notably Peach Myrtle, Corokia and the Rufous Scrub-bird together with the unique form of Coral Lichen give the area regional, State and national conservation significance.

ACKNOWLEDGEMENTS

The Wilsons Creek Action Group wishes to thank those who assisted in the preparation of this document:

David Milledge researched, drafted and illustrated the manuscript
Jenny Holmes, Barbara Stewart, Ian Walker, Graham Watson and John Williams contributed to the flora list for the area and John Williams provided a report on the ecological significance of the area.
Sandy Gilmore, Glenn Holmes, David Milledge and David Stewart contributed to the fauna list.
Russ Corben initiated investigation of the lichen formations and a report was provided by Rex Filson.
Dr. Juliet Burrows-Shearer, and Graham Watson provided comments on the draft manuscript .
Graham Watson provided photographs.
Annette McKinley and Barbara Stewart typed the manuscript.

LOCATION AND SIZE

The Blackbutt Plateau - Mt Jerusalem area proposed as the Blackbutt Plateau Nature Reserve (Map 1) comprises approximately 920 ha of the southern section of Nullum State Forest. The area consists of Forestry Commission Compartments 54-58 and 62 and is located 12 km west of Mullumbimby and 32 km NNE of Lismore.

PHYSIOGRAPHIC FEATURES

The proposed Nature Reserve is an elevated spur of the Koonyum Range lying mainly between 500m and 700m, but ranging from 300m at its lower elevations to the 810m summit of Mt Jerusalem.

The Koonyum Range forms part of the rim of the erosion caldera of the Mt Warning Shield Volcano and the Blackbutt Plateau - Mt Jerusalem spur typifies much of this rim in its formation. The area was formerly overlain by a layer of basaltic rock which has been eroded except for a small cap forming Mt Jerusalem. The remaining more erosion-resistant rhyolite now exists as a block fringed by cliffs, the result of rock shear caused by undercutting of softer rock by the erosion gullies of the surrounding Commissioners, Doon Doon and Coopers Creeks and the Wilsons River.

The Blackbutt Plateau, lying at the eastern end of the spur, is almost encircled by cliffs, and is connected to Mt Jerusalem by a narrow ridge.

The Koonyum Range, together with the Nightcap Range to which it is tenuously linked at the Doon Doon Saddle, forms an island of high altitude forested country isolated from the remainder of the Mt Warning caldera rim by low-lying valleys and plains now cleared for agriculture.

Soils of the area are derived mainly from rhyolite and basalt. Soil depth varies from thin to moderately deep but generally soils of the area tend to be shallow and of poor nutrient status. At higher elevations there are also extensive areas of exposed rock (Map 2).

FLORA

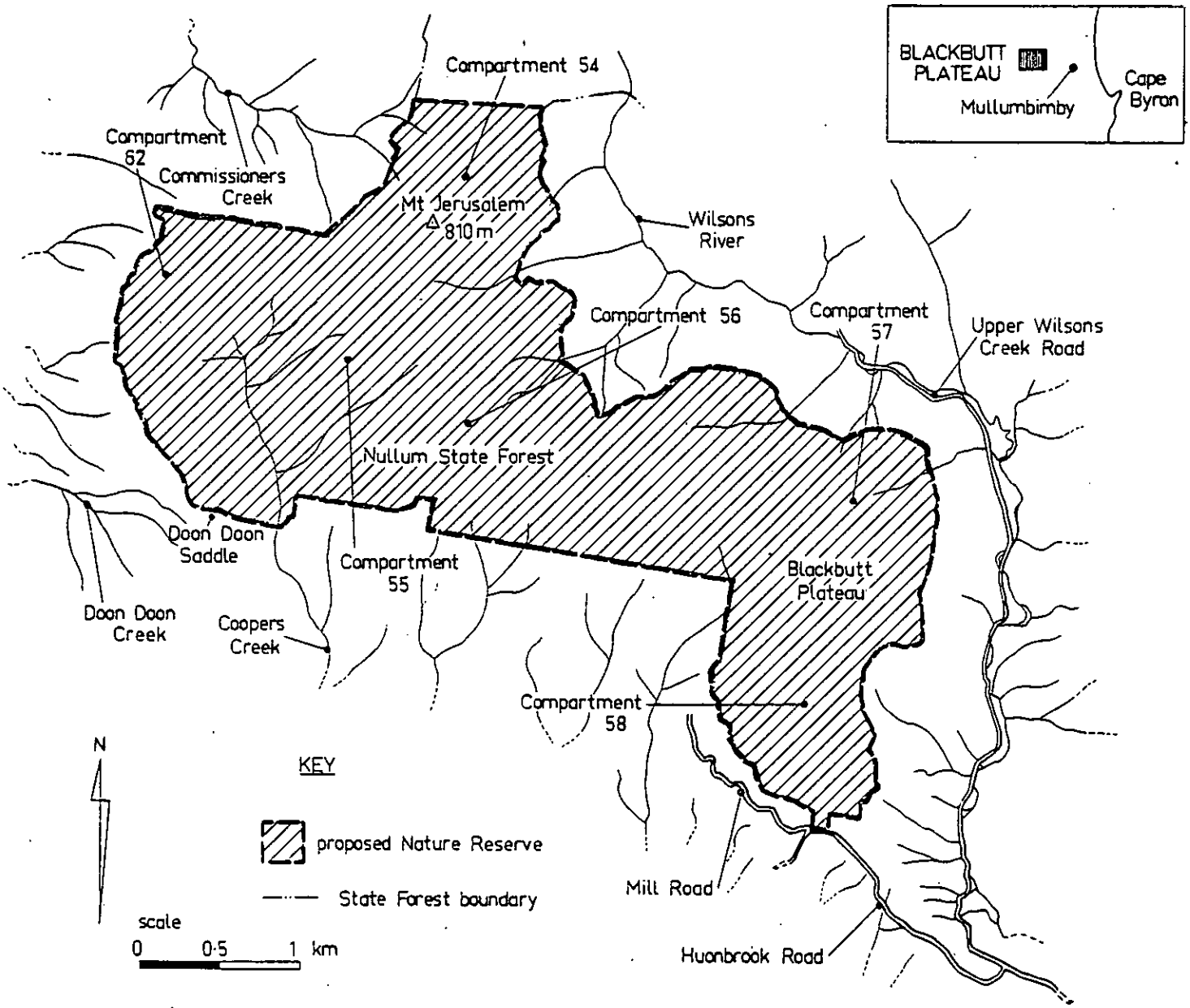
Forestry Commission typing (Map 2) shows the vegetation of the area to be composed principally of wet sclerophyll forest types dominated by Moist Blackbutt but also including significant areas of Inland Brush Box and Turpentine. The rainforest types of Booyong and Myrtle comprise much of the remainder, with dry sclerophyll types of Scribbly Gum - Bloodwood and New England Blackbutt making up the balance.

The use of only the subtropical Booyong and depauperate Myrtle types to classify the rainforest of the area is inaccurate because warm temperate species such as Coachwood *Ceratopetalum apetalum*, Crabapple *Schizomeria ovata*, Sassafras *Doryphora sassafras* and Soft Corkwood *Caldcluvia paniculosa* dominate a high proportion of the stands. However both Booyong and Myrtle types occur widely with the former present mainly in the more sheltered gullies and at lower elevations.

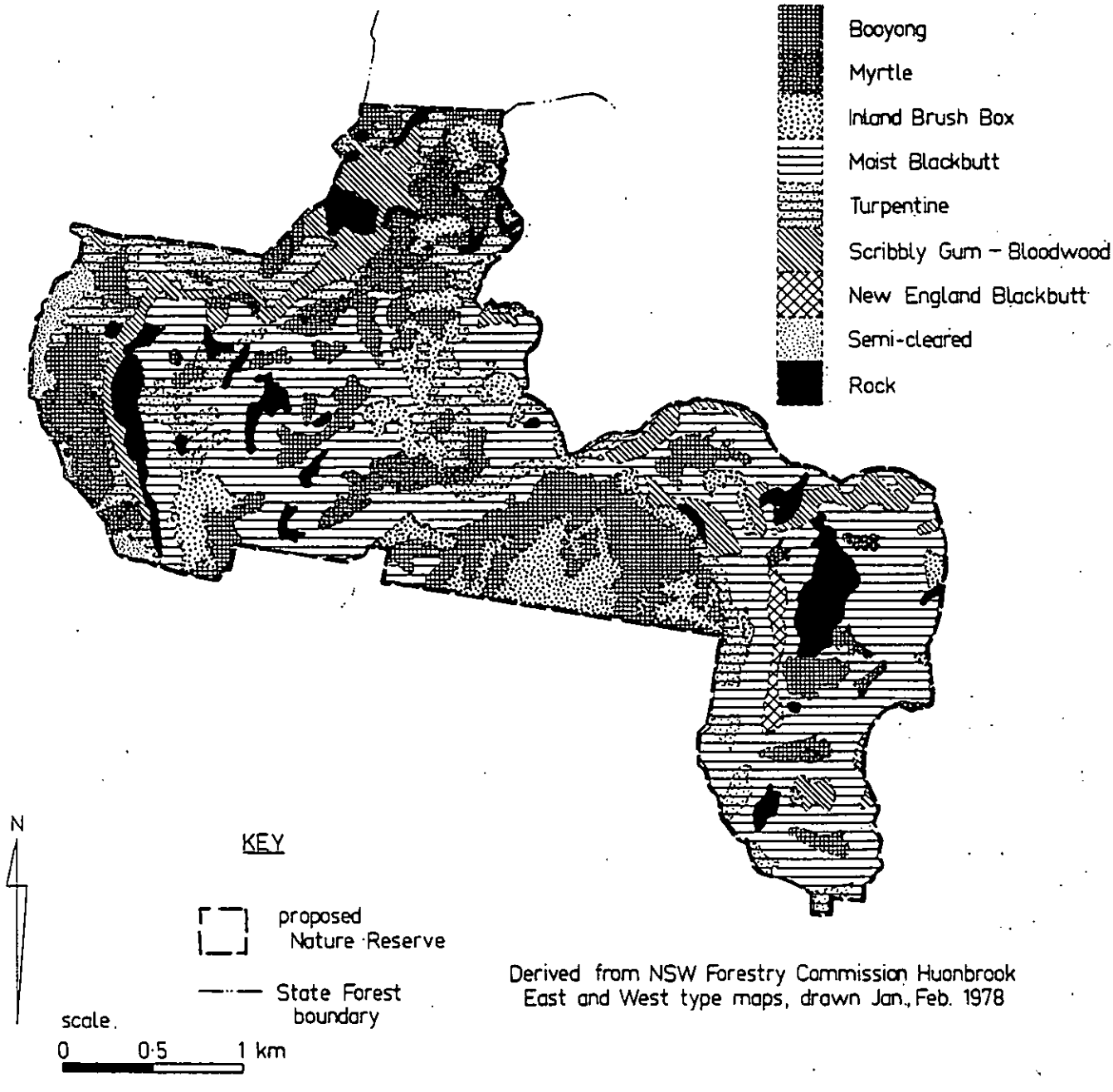
There is also an extensive and well-developed heath and tall shrub community dominated by species of *Leptospermum* which the Commission has incorporated into its Rock type and to a lesser extent into that of Scribbly Gum - Bloodwood.

Overall the predominant vegetation formation of the proposed Blackbutt Plateau Nature Reserve is tall moist open forest with Blackbutt *Eucalyptus pilularis*, Turpentine *Syncarpia glomulifera* (Photograph 1), Brush Box *Lophostemon confertus* and New England Blackbutt the major canopy trees. Subtropical and warm temperate closed forest occurs in the gullies (Photograph 2), on sheltered shelves and on the lower slopes with Olivers Sassafras *Cinnamomum oliveri*, Bolly-gum *Litsea reticulata*, Bennetts Ash *Flindersia bennettiana*, Rough Possumwood *Quintinia sieberi*, Grey Possumwood *Q. verdonii* and Coachwood, Crabapple, Sassafras and Soft Corkwood among the dominants.

MAP 1 PROPOSED BLACKBUTT PLATEAU NATURE RESERVE

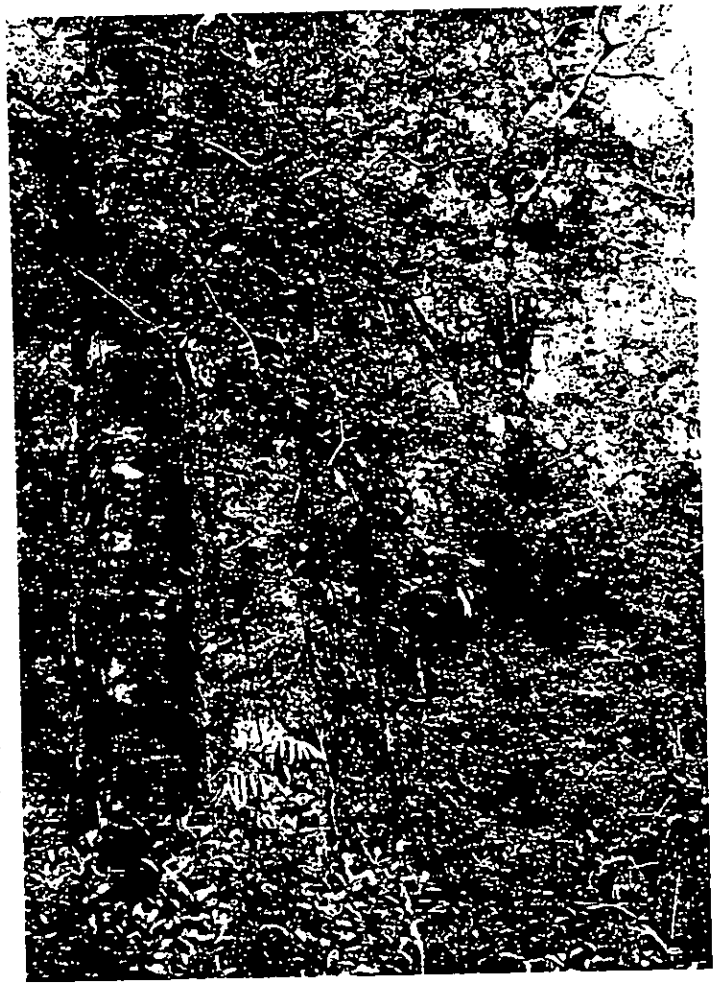


MAP 2 FOREST TYPING FOR THE BLACKBUTT PLATEAU – MT JERUSALEM AREA



Derived from NSW Forestry Commission Huonbrook East and West type maps, drawn Jan., Feb. 1978

Photograph 1. Large Turpentine trees *(Syncarpia glomulifera)* are common canopy trees in the moist open forest.



Photograph 2. Warm temperate rain forest near the summit of the Blackbutt Plateau.

In the more exposed areas and where the soils become poor and thin, tall to low dry open forest occurs with the main canopy trees New England Blackbutt *Eucalyptus andrewsii*, Red Bloodwood *E. gummifera*, Scribbly Gum *E. signata* and Nightcap Wattle *Acacia orites*. The heath and tall shrub community adjacent to the rock outcropping are dominated by Small-fruited Teatree *Leptospermum microcarpum*, Lemon-scented Teatree *L.petersonii* and New England Teatree *Leptospermum sp.*

Together with a rich lichen community on the exposed rock, the area of the proposed Nature Reserve is characterised by a wide range of diverse plant communities occurring in particularly close proximity.

In the Blackbutt Plateau area some stands of mature Blackbutt appear relatively even-aged and have an understorey of sclerophyllous and fire-resistant rainforest species. With trees estimated at over 300 years of age, these stands may represent a fire disclimax at a most interesting stage of development, although the extent to which soil depth and nutrient status could also be limiting factors in these situations is yet to be ascertained.

There have been no systematic plant surveys of the area although several botanists have compiled lists during casual visits, mainly in the vicinity of the Blackbutt Plateau. Well over 200 species of native plant species have been identified (Appendix 1) of which nine are classified as rare or threatened (Table 1).

Three of these are of particular significance:

Corokia *Corokia whiteana* was formerly thought to be confined to the Nightcap and Koonyum Ranges but has recently been recorded in the Tweed area. Nevertheless it is still of very limited occurrence and although conserved in the Nightcap National Park and Big ScrubFlora Reserve, is currently classed as vulnerable and inadequately conserved (Briggs and Leigh, 1988). Floyd (1987) considers further survey work is warranted to accurately define its status. Within the proposed Nature Reserve, Corokia has been found to occur occasionally in rainforest communities on the Blackbutt Plateau (J.B. Williams in litt.).

Small-leaved Hazelwood *Symplocos baeuerlenii* occurs uncommonly, mainly on rhyolitic soils, from Springbrook on the McPherson Range to Alstonville (Floyd 1987). Although it is generally considered to be adequately conserved (Briggs and Leigh, 1988) the very restricted range of the species warrants samples of all discrete populations being reserved. On the Blackbutt Plateau it occurs infrequently in the understorey of rainforest(J.B. Williams in litt.).

Peach Myrtle *Uromyrtus australis* is one of Australias rarest rainforest plants and until its discovery on the Blackbutt Plateau (J.B. Williams in litt.) was known from only one population located on the Nightcap Range and one other at Point Lookout, Lamington National Park. Part of the Nightcap Range population is conserved in Nightcap National Park but much of this stand occurs in the adjacent Whian Whian State Forest. It is considered endangered and inadequately conserved (Briggs and Leigh ,1988) and Floyd (1987) states "rescue" is required. As well as occurring on the Blackbutt Plateau within the area of the proposed Nature Reserve, Peach Myrtle has also been recorded on Mt Jerusalem (J. Holmes pers. comm.).

Two other plants are also of special note:

The extensive patches of Coral Lichen *Cladia retipora* found in cushion and other complex forms in the area of rock outcropping on the Blackbutt Plateau are unique on the eastern side of the Great Dividing Range (J.B. Williams in litt., R.A. Filson in litt.) and may be the most significant in Australia (Photographs 3 and 4). The population of the Oval Fork Fern *Tmesipteris ovata* on the Blackbutt Plateau may be the most important in northern NSW-southern Queensland (J.B. Williams in litt.). This fern ally is very uncommon throughout its range and future survey work could show it worthy of

classification as rare or threatened. Additionally, the occurrence of New England Blackbutt (Photograph 5) is close to the eastern extremity of its range in NSW.

FAUNA

As with the flora, there have been no systematic faunal surveys of the area proposed for the Nature Reserve. However, ornithologists have listed a total of 59 bird species during visits over a period of about a year and six mammal species have been recorded for the area, most during one night's spotlighting on the Blackbutt Plateau (Appendix 2). Again as with plants, observations of fauna have centred on the area of the Blackbutt Plateau. There are no records of amphibians or reptiles although a number of significant species undoubtedly occur.

The vertebrates known from the area comprise a rich assemblage of mainly moist forest-dependent species typical of the NSW north coast. Of particular note is the high bird species richness for a relatively small area. The mosaic of rainforest and wet sclerophyll habitats is of special significance, resulting in increased diversity by providing requirements for species which utilise both habitats in close proximity, as well as providing many habitats for those birds which utilise ecotones. Examples of such species are the Sooty Owl *Tyto tenebricosa* which forages in rainforest and requires hollows in trees such as eucalypt species, brush box or turpentine for roosting and nesting and Alberts Lyrebird *Menura alberti* which appears to have specific foraging requirements in wet sclerophyll forest and rainforest during different seasons.

Vertebrate diversity is also increased by the altitudinal range as exemplified by the presence of high altitude elements such as the Rufous Scrub-bird *Atrichornis rufescens* and Eastern Pygmy-possum *Cercartetus nanus* and the essentially lowland Varied Triller *Lalage leucomela*, Little Shrike-thrush *Colluricincla megarhyncha* and White-eared Monarch *Monarcha leucotis*.

An important aspect of vertebrate habitats, notably in the vicinity of the Blackbutt Plateau, is the abundance of mature or veteran trees of sclerophyll species affording nest and den sites for hollow-dwelling species. This enables hole-nesting cockatoos, parrots and owls and arboreal hole-using mammals to occur at relatively high densities.

Eleven species of birds and one mammal are listed as endangered fauna (Table 1) and six of these are of particular significance:

The Wompoo Fruit-dove *Ptilinopus magnificus* and Alberts Lyrebird are both considered vulnerable and rare and in NSW have their centres of distribution in the rainforests of the north coast. Alberts Lyrebird has a very restricted range, being confined to the area of northern NSW-southern Queensland from the Blackall Range near Wardell (Holmes 1987) to the Mistake Mountains (Blakers et al 1984). The Wompoo Fruit-dove, however, occurs north to Cape York, although the southern race (which includes the NSW population) has suffered greatly from habitat destruction and until recently was considered restricted as a breeding species to the Richmond and Border Ranges (H.J. Frith in litt.). While both species are represented in National Parks and Nature Reserves in the region, no detailed knowledge of their ecological requirements or conservation status is available and their habitats should receive maximum protection until such information becomes known. During field inspections of the Blackbutt Plateau area in June 1984,high numbers of Alberts Lyrebirds were noted advertising breeding territories from forest adjacent to the rock outcroppings on the summit (D. Milledge in litt.).

TABLE 1

RARE OR THREATENED PLANTS* AND ENDANGERED FAUNA+ RECORDED FROM THE BLACKBUTT PLATEAU - MT JERUSALEM AREA

FLORA

		Risk code**
Byron Bay Acronychia	*Acronychia baeuerlenii*	3RC
Veiny Laceflower	*Archidendron muellerianum*	3RC
Pink Cherry	*Austrobuxus swainii*	3RC
Corokia	*Corokia whiteana*	2VCi
Slender Saw Grass	*Gahnia insignis*	3RCa
Giant Creek Lily	*Helmholtzia glaberrima*	2RC
Small-leaved Hazelwood	*Symplocos baeuerlenii*	2VC-
Red Lillypilly	*Syzgium hodgkinsoniae*	3VC
Peach Myrtle	*Uromyrtus australis*	2ECi

** Risk code symbols:

2 species with a very restricted distribution in Australia with a maximum geographic range of less than 100km;

3 species with a range of over 100km in Australia but occurring only in small populations mainly restricted to highly specific habitats;

E endangered species seriously at risk of disappearing from the wild within one or two decades if present land use and other causal factors continue to operate;

V vulnerable species not presently endangered but at risk over a longer period through continual depletion;

R- species which are rare in Australia but not currently considered endangered or vulnerable;

C species known to be represented in a proclaimed reserve;

a species considered adequately conserved (population in reserves exceeding 1000 individuals);

i species considered inadequately conserved;

- species whose reserved population size is unknown.

TABLE 1 (continued)

FAUNA

PART 1 Fauna of Special Concern

Emerald Dove *Chalcophaps indica*
Whites Thrush *Zoothera dauma* complex
Rufous Fantail *Rhipidura rufifrons*
Eastern Pygmy-possum *Cercartetus nanus*

PART 2 Vulnerable and Rare Fauna

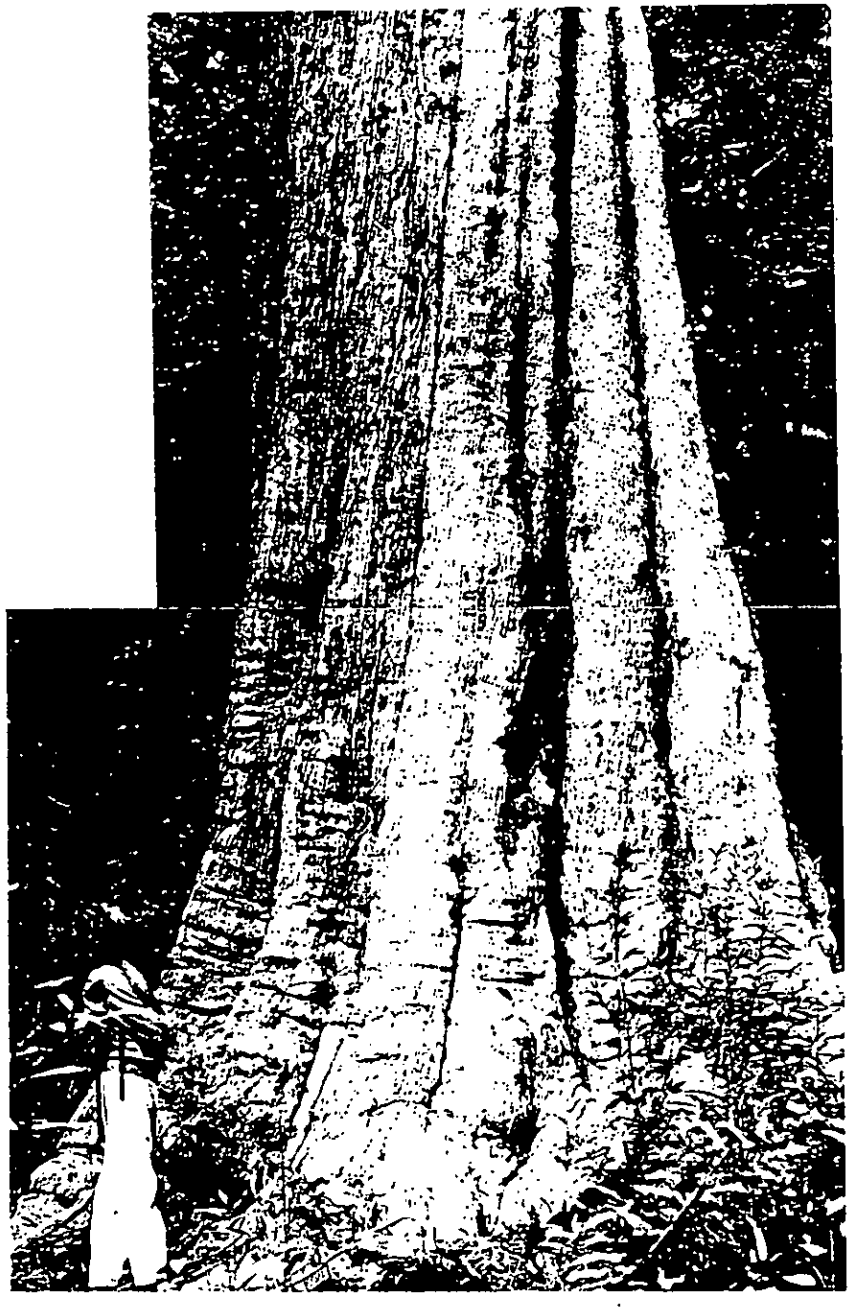
Pacific Baza *Aviceda subcristata*
Wompoo Fruit-dove *Ptilinopus magnificus*
Powerful Owl *Ninox strenua*
Sooty Owl *Tyto tenebricosa*
Alberts Lyrebird *Menura alberti*
Rufous Scrub-bird *Atrichornis rufescens*
White-eared Monarch *Monarcha leucotis*

* Briggs andLeigh(1988).

\+ Schedule 12, National Parks and Wildlife Act, 1 January 1984.

Photograph 3. The cushion form of the Snow Lichen *(Cladia retipora).*

Photograph 4. Typical appearance of the Snow Lichen amongst the summit heath.



Photograph 5. Large New England Blackbutt *(Eucalyptus andrewsii)* near the summit of the Plateau.

The Powerful Owl *Ninox strenua* and Sooty Owl are also classified as vulnerable and rare and although both have relatively extensive ranges throughout south-eastern Australia, they are species which occur only at very low densities in specific habitats and have particular ecological requirements. These large owls require well-developed hollows in mature eucalypts or other canopy trees for nesting and high densities of their mammal prey species. In the area of the proposed Nature Reserve the undisturbed wet sclerophyll forest offers prime habitat in this regard.

The Rufous Scrub-bird is another vulnerable and rare bird which has suffered a significant contraction of range since European settlement. Prior to the confirmation of its presence in the Blackbutt Plateau - Mt Jerusalem area it was thought to be restricted to five remnant upland populations (Ferrier 1985). This sixth location represents a rediscovery of the Mt Warning - Nightcap Range population which Ferrier (in litt.) had considered extinct, although an unpublished record for the area of the Doon Doon Saddle was obtained relatively recently (S. Ferrier pers. comm.). There is no estimate of numbers or locations of territories of the Rufous Scrub-bird in the area of the proposed Nature Reserve and no additional records of the bird have been obtained since the June 1984 unconfirmed sighting on the Blackbutt Plateau (D. Milledge pers. obs.), and the August 1985 record of a bird calling near Mt Jerusalem (D. Stewart pers. obs.).

The single record of the Eastern Pygmy-possum for the Blackbutt Plateau in December 1984 (D. Milledge, A. Gilmore pers. obs.) is of great significance because the species appears to be extremely scarce in northern NSW. The most northerly specimen in the collection of the Australian Museum was obtained at Norah Head near Newcastle (L. Gibson in litt.), although there are four specimens from high altitude rainforest on the Lamington Plateau in the Queensland Museums collection (S. Van Dyck in litt.). The only other records from the NSW north coast (all unconfirmed) are from near Lismore, Dorrigo and inland from Coffs Harbour (A. Smith in litt.).

LAND USE HISTORY

There is no information available on the use of the Blackbutt Plateau - Mt Jerusalem area by Aborigines prior to European settlement.

Extensive logging has taken place on the higher slopes of Mt Jerusalem during the past few decades and some areas have been clear-fallen and established as plantations of Blackbutt. A few sections of the lower slopes were also cleared for banana plantations some 40 to 50 years ago but generally these sections are small such that,due to the mosaic of habitats, including large areas of exposed rock and non-commercial vegetation types in conjunction with the rugged terrain, the lower slopes have retained much of their naturalness.

The Blackbutt Plateau on the other hand, because of its inaccessibility up to the present time, has largely escaped human disturbance. A small section of about 40 ha along the south-western edge was lightly selectively logged in the 1960's but the majority of forest remains in virgin condition. However the construction of Nevasae Road from Wilsons Creek Road in May 1984 has now opened up this area to the threat of logging and other disturbances associated with forestry operations.

RELATIONSHIP TO EXISTING RESERVED AREAS

The proposed Nature Reserve is located in close proximity to the Nightcap National Park. A link between the two is feasible and desirable to provide reserved wildlife corridors between the two areas, continuity of vegetation and administrative expediency, as well as enhancing the value of the Nightcap National Park itself. The intermediate vegetation has immediate wildlife value for many species and has potential for future revegetation. The necessary link will involve the rezoning of privately owned land in the area and it is suggested that this course of action can be followed at a later date.
The Nature Reserve would become part of the ring of reserved lands known as the Caldera National Parks. The Blackbutt Plateau would extend the series at its southern edge and add

vegetation types including the mature Blackbutt stands, the ecological importance and rarity of which is expanded in the following section. An evaluation of the context of the proposed reserve in relation to the vegetation types, altitudinal range and fire protection status of other areas in the Caldera Parks which include the similar rhyolite derived soil types would be appropriate here but is beyond the resources of the present proposal document.

ECOLOGICAL AND SCIENTIFIC SIGNIFICANCE

Despite the lack of systematic surveys of flora and fauna, it is apparent that the area proposed for the Blackbutt Plateau Nature Reserve is of very high ecological and scientific importance.

It is representative of an ecological unit of particularly limited distribution characterised by rhyolite-derived soils and a high degree of endemism among its flora.

The proposed Reserve contains the largest remaining mature, undisturbed tract of Blackbutt-dominated, tall moist open forest in the Mt Warning caldera area (Photograph 6). Moist Blackbutt is the major economic forest type on the NSW north coast and as a result, undisturbed stands are now extremely scarce. The Blackbutt Plateau remnant is probably the most important with respect to size and condition north of Coffs Harbour and must also rank very highly in terms of State significance.

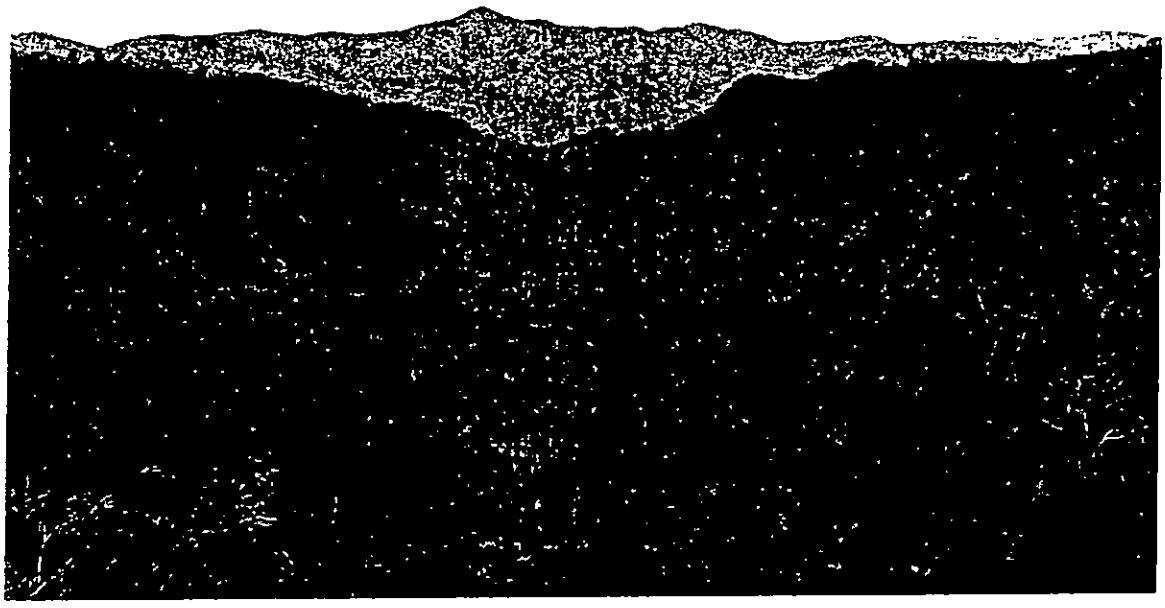
The mature, undisturbed stands of tall moist open forest in the Blackbutt Plateau area serve not only as a refuge for mature forest-dependent wildlife disadvantaged by local forestry operations, but also as an important scientific reference area. With intensive forestry operations widespread in the Nightcap and Koonyum Ranges, it is essential that a large area of undisturbed forest be conserved against which to gauge the long-term effects of logging and silvicultural practices. No such sample exists in the National Parks and Nature Reserves or Flora Reserves of the region and reservation of the Blackbutt Plateau area represents the last chance to achieve this. The maintenance of relatively large, undisturbed stands of forest for scientific reference purposes is critical for both conservation and the future viability of the timber industry.

The absence of recent fire from the mature Blackbutt stands is a feature of further scientific interest. Succession in tall open forest where fire has been excluded for long periods is poorly understood because situations where this occurs are unusual.

The high altitude heath community of the Blackbutt Plateau - Mt Jerusalem area appears to be the best developed of this type on rhyolite-derived soils in NSW (J.B. Williams in litt.). It makes an interesting comparison with the Daves Creek heath of the Lamington Plateau although the latter occurs at higher altitude.

One of the most notable attributes of the proposed Nature Reserve is the diversity of different habitat types present within a relatively small area. The resultant high species diversity is characterised by a large proportion of rare and endangered plant and animal species which impart national, State and regional significance. The populations of Peach Myrtle and Corokia, the cushion form of the snow lichen and the Rufous Scrub-bird population all warrant reservation in their own right.

In summary, the totality of aesthetic, scientific and land management values establishes an outstanding justification for the Blackbutt Plateau - Mt Jerusalem area to be dedicated as a Nature Reserve.



Photograph 6. View from the summit to the east depicting part of the unlogged Blackbutt. Previously logged (1980) Koonyum Range is in the middle distance.

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APPENDIX 1

A PRELIMINARY SYSTEMATIC LIST OF THE NATIVE FLORA OF THE BLACKBUTT PLATEAU-MT JERUSALEM AREA

Compiled between June 1984 and August 1988 by J.Holmes, B.Stewart, I.Walker, G. Watson and J.B.Williams.

LICHENS

Snow Lichen	*Cladia retipora*

PTERIDOPHYTES

ADIANTACEAE

Maidenhair Fern	*Adiantum sp.*
Rough Maidenhair	*A. hispidulum*

ASPLENIACEAE

Birds Nest Fern	*Asplenium australasicum*

BLECHNACEAE

Gristle Fern	*Blechnum cartilagineum*
Prickly Rasp Fern	*Doodia aspera*

CYATHEACEAE

Rough Tree Fern	*Cyathea australis*
Prickly Tree Fern	*C. leichhardtiana*

DENNSTAEDTIACEAE

Batswing Fern	*Histiopteris incisa*

GLEICHENIACEAE

Pouched Coral Fern	*Gleichenia dicarpa*
White Coral Fern	*G. rupestris*
Shiny Fan Fern	*Sticherus flabellatus*

GRAMMITIDACEAE

Finger Fern	*Grammitus billardieri*

HYMENOPHYLLACEAE

Jungle Bristle Fern	*Macroglena caudata*

LINDSAEACEAE

Screw Fern	*Lindsaea linearis*
Lacy Wedge Fern	*L. microphylla*

POLYPODIACEAE

Elkhorn	*Platycerium bifurcatum*
Staghorn	*P. superbum*

TMESIPTERACEAE

Oval Fork Fern	*Tmesipteris ovata*

ANGIOSPERMS - MONOCOTYLEDONS

AGAVACEAE

Red-fruited Palm Lily	*Cordyline rubra*

ARACEAE

Pothos	*Pothos longipes*

ARACACEAE

Bangalow Palm	*Archontophoenix cunninghamiana*
Lawyer Vine	*Calamus muelleri*
Walking Stick Palm	*Linospadix monostachyus*

CYPERACEAE

Slender Saw Grass	*Gahnia insignis*
Tall Saw Grass	*Lepidosperma elatius*
Rifle Sedge	*L. urophorum*

DIOSCORACEAE

Native Yam	*Dioscorea transversa*

FLAGELLARIACEAE

Whip Vine	*Flagellaria indica*

IRIDACEAE

Leafy Purple Flag	*Patersonia glabrata*

LILIACEAE

Paroo Lily	*Dianella sp.*
Kreysigia	*Kreysigia multiflora*
Fringed Lily	*Thysanotus tuberosus*

ORCHIDACEAE

Christmas Orchid	*Calanthe triplicata*
Bird Orchid	*Chiloglottis sp.*
Bonnet Orchid	*Cryptostylis erecta*
Snake Orchid	*Cymbidium suave*
Spice Orchid	*Dendrobium gracilicaule*
Pink Rock Orchid	*D.kingianum*
Fairy Tree Orchid	*Liparis coelogynoides*
Yellow Rock Orchid	*L.reflexa*

Greenhood Orchid	*Pterostylis daintreana*
Sun Orchid	*Thelymitra sp.*

PETERMANNIACEAE

Petermannia	*Petermannia cirrosa*

PHILESIACEAE

Scrambling Lily	*Geitonoplesium cymosum*

PHILYDRACEAE

* Giant Creek Lily	*Helmholtzia glaberrima*

POACEAE

Wallaby Grass	*Danthonia sp.*
Picnic Grass	*Entolasia sp.*

SMILACEAE

Hairy Supplejack	*Ripogonum elseyanum*
Austral Sarsaparilla	*Smilax australis*
Sweet Sarsaparilla	*S. glyciphylla*

XANTHORRHOEACEAE

Common Matrush	*Lomandra longifolia*
Grass Tree	*Xanthorrhoea sp.*

ZINGIBERACEAE

Native Ginger	*Alpinia caerulea*

ANGIOSPERMS - DICOTYLEDONS

APOCYNACEAE

Prickly Alyxia	*Alyxia ruscifolia*
Melodinus	*Melodinus australis*

ARALIACEAE

Silver Basswood	*Polyscias elegans*
Pencil Cedar	*P. murrayi*
Elderberry Panax	*P. sambucifolius*

ARISTOLOCHIACEAE

Aristolochia	*Aristolochia praevenosa*

ASTERACEAE

Daisy Bush	*Olearia elliptica*

BURSERACEAE

Mangobark	*Canarium baileyanum*

CASUARINACEAE

Scrub Sheoak	*Alloasuarina distyla*
Shrubby Sheoak	*A.rigida*
Forest Oak	*A.torulosa*

CELASTRACEAE

Denhamia	*Denhamia pittosporoides*
Narrow-leaved Orangebark	*Maytenis silvestris*

CUNONIACEAE

Soft Corkwood	*Caldcluvia paniculosa*
Callicoma	*Callicoma serratifolia*
Coachwood	*Ceratopetalum apetalum*
Crabapple	*Schizomeria ovata*

DILLENACEAE

Twining Guinea Flower	*Hibbertia scandens*
Hairy Guinea Flower	*H. vestita*

DROSERACEAE

Sundew	*Drosera sp.*

ELAEOCARPACEAE

White Quandong	*Elaeocarpus kirtonii*
Blueberry Ash	*E. reticulatus*
Maidens Blush	*Sloanea australis*
Yellow Carabeen	*S. woolsii*

EPACRIDACEAE

Tall Acrotriche	*Acrotriche aggregata*
Common Beard Heath	*Leucopogon lanceolatus*
Beard Heath	*L. melaleucoides*
Beard Heath	*Leucopogon sp. aff. juniperinus*
Tree Heath	*Trochocarpa laurina*

ESCALLONIACEAE

Abrophyllum	*Abrophyllum ornans*
Macleay Laurel	*Anopterus macleayanus*
Corokia	*Corokia whiteana*
Grey Possumwood	*Quintinia sieberi*
Rough Possumwood	*Q. verdonii*

EUPHORBIACEAE

Pink Cherry	*Austrobuxus swainii*
Breynia	*Breynia oblongifolia*
Bleeding Heart	*Omalanthus populifolius*

EUPOMATIACEAE

Small Bolwarra	*Eupomatia bennettii*
Bolwarra	*Eupomatia laurina*

FABACEAE

Tree Daviesia	*Daviesia arborea*
Forest Hovea	*Hovea acutifolia*
Native Wisteria	*Millettia megasperma*
Veined Mirbelia	*Mirbelia rubifolia*
Handsome Flat Pea	*Platylobium formosum*
Leafless Globe Pea	*Sphaerolobium vimineum*

FLACOURTIACEAE

Coast Redberry Vine	*Streptothamnus moorei*

GOODENIACEAE

Mountain Dampiera	*Dampiera purpurea*
Blue Dampiera	*D. stricta*

LAMIACEAE

Cockspur Flower	*Plectranthus sp.*
Coast Mintbush	*Prostanthera scutellarioides*

LAURACEAE

Grey Walnut	*Beilschmeidia elliptica*
Olivers Sassafras	*Cinnamomum oliveri*
Jackwood	*Cryptocarya glaucescens*
Thick-leaved Laurel	*C. meisnerana*
Murrogun	*C. microneura*
Rose Maple	*C. rigida*
Rose Walnut	*Endiandra discolor*
Brown Bolly-gum	*Litsea leefeana*
Bolly-gum	*L. reticulata*
White Bolly-gum	*Neolitsea dealbata*

MELIACEAE

Rosewood	*Dysoxylum fraserianum*
Scentless Rosewood	*Synoum glandulosum*

MENISPERACEAE

Prickly Snake Vine	*Stephania aculeata*

MIMOSACEAE

Thick-leaf Wattle	*Acacia obtusifolia*
Nightcap Wattle	*A. orites*
Prickly Moses	*A. ulicifolia*
Veiny Laceflower	*Archidendron muellerianum*

MONIMACEAE

Socketwood	*Daphnandra micrantha*
Red-flowered Socketwood	*D. tenuipes*
Sassafras	*Doryphora sassafras*
Anchor Vine	*Palmeria scandens*
Veiny Wilkiea	*Wilkiea hugeliana*

MORACEAE

Creek Sandpaper Fig	*Ficus coronata*
Strangler Fig	*F. watkinsiana*
Burny Vine	*Malaisia scandens*

MYRSINACEAE

Red Muttonwood	*Rapanea subsessilis*

MYRTACEAE

Lillypilly	*Acmena smithii*
Rose Myrtle	*Archirhodomyrtus beckleri*
Velvet Mytle	*Austromyrtus lasioclada*
Grey Myrtle	*Backhousia myrtifolia*
Swamp myrtle	*Baeckia linifolia*
a bottlebrush	*Callistemon sp.*
White Mahogany	*Eucalyptus acmenoides*
New England Blackbutt	*E.andrewsii*
Flooded Gum	*E. grandis*
Red Bloodwood	*E. gummifera*
Tallowood	*E. microcorys*
Blue Mountain Mahogany	*E. notabllis*
Blackbutt	*E. pilularis*
Red Mahogany	*E. resinifera*
Scribbly Gum	*E. signata*
Brush Box	*Lophostemon confertus*
Black Teatree	*Leptospermum attenuatum*
Small-fruited Teatree	*L. microcarpum*
Lemon-scented Teatree	*L. petersonii*
New England Teatree	*Leptospermum sp.*
Native Guava	*Rhodomyrtus psidioides*
Turpentine	*Syncarpia glomulifera*
Purple Cherry	*Syzygium crebrinerve*
Red Lillypilly	*S. hodgkinsoniae*
Riberry	*S. luehmannii*
Blue Lillypilly	*S. oleosum*
Peach Myrtle	*Uromyrtus australis*

OLEACEAE

Large Mock Olive	*Notolaea longifolia*

PITTOSPORACEAE

Dumpling Vine	*Billardiera scandens*
Orange Thorn	*Citriobatus pauciflorus*
Hairy Pittosporum	*Pittosporum revolutum*
Sweet Pittosporum	*P. undulatum*

POLYGALACEAE

Pink Milkwort	*Comesperma ericinum*
Blue Love Creeper	*C. volubile*

PROTEACEAE

Hairpin Banksia	*Banksia spinulosa var. collina*
Willow-leaf Hakea	*Hakea salicifolia*
Silky Hakea	*H. sericea*
Rusty Helicea	*Helicea ferruginea*
Crinkle Bush	*Lomatia silaifolia*
Prickly Ash	*Orites excelsa*
Tall Geebung	*Persoonia attenuata*
Scrub Beefwood	*Stenocarpus salignus*
Spice Bush	*Triunia youngiana*

RANUNCULACEAE

Toothed Clematis	*Clematis aristata*

RHAMNACEAE

Red Ash	*Alphitonia excelsa*
Silver Pomaderris	*Pomaderris argyrophylla*
Rusty Pomaderris	*P. ligustrina*

ROSACEAE

Molucca Bramble	*Rubus hillii*
Green-leaved Bramble	*R. moorei*
Rose-leaved Bramble	*R.rosifolius*

RUBIACEAE

Coast Canthium	*Canthium coprosmoides*
Morinda	*Morinda jasminoides*
Small Psychotria	*Psychotria simmondsiana*
Native Gardenia	*Randia benthamiana*
Narrow-leaf Gardenia	*R. chartacea*

RUTACEAE

Byron Bay Acronychia	*Acronychia baeuerlenii*
Hairy Acronychia	*A. pubescens*
Corky Acronychia	*A. suberosa*
Small-leaved Euodia	*Euodia sp.*
Bennett's Ash	*Flindersia bennettiana*
Saffron Heart	*Halfordia kendack*
Tall Phebalium	*Phebalium elatius*
Tall Zieria	*Zieria arborescens*
Angular Zieria	*Z. laevigata*

SAPINDACEAE

Native Tamarind	*Diploglottis australis*
Guioa	*Guioa semiglauca*
Wing-leaved Tulip	*Harpullia alata*
Foambark	*Jagera pseudorhus*
Steelwood	*Sarcopterix stipata*

SAPOTACEAE

	Black Apple	*Planchonella australis*

SOLANACEAE

	Duboisia	*Duboisia myoporoides*

SYMPLOCACEAE

*	Small-leaved Hazelwood	*Symplocos baeuerlenii*

VITACEAE

	Five-leaf Water Vine	*Cissus hypoglauca*
	Long-leaf Water Vine	*C. sterculifolia*

WINTERACEAE

	Brush Pepperbush	*Tasmannia insipida*

Total : 205 species

* species classed as rare or threatened (Briggs and Leigh, 1988)

APPENDIX 2

A PRELIMINARY SYSTEMATIC LIST OF THE BIRDS AND MAMMALS

OF THE BLACKBUTT PLATEAU - MT JERUSALEM AREA

Compiled between June 1984 and August 1985 by A.M.Gilmore, G.Holmes,D.Milledge and D.A. Stewart.

BIRDS

*	Pacific Baza	*Aviceda subcristata*
	Grey Goshawk	*Accipiter novaehollandiae*
	Wedge-tailed Eagle	*Aguila audax*
	Australian Brush-turkey	*Alectura lathami*
*	Wompoo Fruit-dove	*Ptilinopus magnificus*
	Topknot Pigeon	*Lopholaimus antarcticus*
	White-headed Pigeon	*Columba leucomela*
	Brown Cuckoo-dove	*Macropygia amboinensis*
*	Emerald Dove	*Chalcophaps indica*
	Wonga Pigeon	*Leucosarcia melanoleuca*
	Yellow-tailed Black-cockatoo	*Calyptorhynchus funereus*
	Australian King Parrot	*Alisteris scapularis*
	Crimson Rosella	*Platycercus elegans*
	Fantailed Cuckoo	*Cuculus pyrrhophanus*
	Shining Bronze-cuckoo	*Chrysococcyx lucidus*
*	Powerful Owl	*Ninox strenua*
	Southern Boobook	*N. novaeseelandiae*
*	Sooty Owl	*Tyto tenebricosa*
	Tawny Frogmouth	*Podargus strigoides*
	Laughing Kookaburra	*Dacelo novaeguineae*
*	Alberts Lyrebird	*Menura alberti*
*	Rufous Scrub-bird	*Atrichornis rufescens*
	Varied Triller	*Lalage leucomela*
*	White's Thrush	*Zoothera dauma* complex
	Rose Robin	*Petroica rosea*
	Eastern Yellow Robin	*Eopsaltria australis*
	Pale-yellow Robin	*Tregellasia capito*
	Golden Whistler	*Pachycephala pectoralis*
	Little Shrike-thrush	*Colluricincla megarhyncha*
	Grey Shrike-thrush	*C. harmonica*
*	White-eared Monarch	*Monarcha leucotis*
*	Rufous Fantail	*Rhipidura rufifrons*
	Grey Fantail	*R. fuliginosa*
	Logrunner	*Orthonyx temminckii*
	Eastern Whipbird	*Psophodes olivaceus*
	Variegated Fairy-wren	*Malurus lamberti*
	Large-billed Scrubwren	*Sericornis magnirostris*
	Yellow-throated Scrubwren	*S. citreogularis*
	White-browed Scrubwren	*S. frontalis*
	Brown Gerygone	*Gerygone mouki*
	Brown Thornbill	*Acanthiza pusilla*
	Striated Thornbill	*A. lineata*
	White-throated Treecreeper	*Climacteris leucophaea*
	Red-browed Treecreeper	*C. erythrops*

Lewins Honeyeater	*Meliphaga lewinii*
White-naped Honeyeater	*Melithreptus lunatus*
White-cheeked Honeyeater	*Phylidonyris nigra*
Eastern Spinebill	*Acanthorhynchus tenuirostris*
Scarlet Honeyeater	*Myzomela sanguinolenta*
Mistletoe Bird	*Dicaeum hirundinaceum*
Spotted Pardalote	*Pardalotus punctatus*
Striated Pardalote	*P. striatus*
Silvereye	*Zosterops lateralis*
Olive-backed Oriole	*Oriolus sagittatus*
Satin Bowerbird	*Ptilonorhynchus violaceus*
Green Catbird	*Ailuroedus crassirostris*
Paradise Riflebird	*Ptiloris paradiseus*
Grey Butcherbird	*Cracticus torquatus*
Pied Currawong	*Strepera graculina*

Total : 59 species

MAMMALS

Common Ringtail Possum	*Pseudocheirus peregrinus*
Greater Glider	*Petaurus volans*
Mountain Brushtail Possum	*Trichosurus caninus*
Eastern Pygmy-possum	*Cercartetus nanus*
Grey-headed Flying-fox	*Pteropus poliocephalus*
Red-legged Pademelon	*Thylogale stigmatica*

Total : 6 species

* species classed as Endangered Fauna, Schedule 12, National Parks and Wildlife Act (1984).

WAG charges Forestry with illegal logging

The Forestry Commission has been illegally logging rainforest adjacent to Blackbutt Plateau, according to the Wilsons Creek Action Group (WAG).

WAG – formed to protect the old growth forest of the Blackbutt Plateau – claims the Commission has logged 500-year-old brush box trees and cleared an understorey of 150-year-old coachwood.

WAG spokesperson Alan Riordan said the results of the logging (see photo page 2) showed 'the extraordinary waste of this operation' and made a mockery of the Commission's claims that there is no rainforest logging in NSW.

'Veteran brush box trees have been felled and simply left, forming huge stockpiles of log ends. This unnecessary waste further highlights Forestry Commission mismanagement of this public resource,' Riordan said.

This area of warm temperate rainforest is within the new Mt Jerusalem National Park proposed by NSW Opposition leader Bob Carr.

'WAG believes this pre-emptive strike to be a Forestry Commission ploy to devalue the proposed park before its dedication,' Riordan said.

The logging area in question is in a compartment of Nullum State Forest reached from the end of Wild Dog Road. A spokesperson from the Murwillumbah office of the Forestry Commission confirmed they had recently been logging in that area.

Regional forester John Bruce at Coffs Harbour said it was 'not an absolute no-no' to log rainforest, but they no longer carry out general purpose rainforest logging for standard sawmill operations.

Bruce said he suspected the area in question was wet sclerophyll and not rainforest.

'If there is a general canopy of brush box, then we do not regard that as rainforest,' he said. 'However, you could have a brush box growing in rainforest. It is difficult to draw lines, there is not a clear cut distinction.'

ECHO 20·10·91 continued on page 2

A picture of desolation where the Forestry Commission has been logging brush box. Conservationists claim that an important young coachwood rainforest has been wantonly destroyed in the process. Photo by John McCormick. 20·10·91 ECHO

Logging from page 1

Bruce said there were still provisions in some management plans for limited logging in rainforests. This includes logging rainforest trees that would otherwise be destroyed by activities such as roadbuilding, understorey in wet sclerophyll, salvaging dead or dying trees and supplying timber to specific markets such as woodworkers.

He said they had been able to satisfy demands from these activities.

Graham Watson, a Forest Ecologist at the University of New England, Armidale, challenged the explanation given by the Forestry Commission.

He has visited the area in question and says it was definitely a rainforest and not wet sclerophyll, with very old brush box and an understorey of young and quite vigorous coachwood rainforest.

'In my opinion, the rainforest will be substantially damaged as a result of being exposed to climatic conditions by the removal of the brush box,' he said.

'We are now unlikely to have a coachwood rainforest of the quality that would have occurred, had the brush box been allowed to live out its natural life.'

He said it was a great loss as he had not seen any other areas representing pure coachwood rainforest that compared to this one.

Watson is completing a Ph.D. in Forest Ecology studying the distribution of unlogged plant communities, predominantly in the Blackbutt Plateau region.

'A healthy young coachwood rainforest has been destroyed in return for harvesting eighty or ninety brush box trees,' he said.

MEDIA RELEASE 22nd October 1991

NEFA DEMANDS MINISTER RESIGNS OVER ILLEGAL LOGGING

The North East Forest Alliance is demanding the resignation of the Minister for Conservation and Land Management, Gary West after discovering illegal logging of old growth rainforest near the Blackbutt Plateau, west of Byron Bay.

"The Forestry Commission is out of control. Minister Gary West and the whole Greiner Government, is failing in their responsibility for controlling Government departments such as the Forestry Commission," NEFA Spokesperson Andrew Steed said today.

"It is no longer sufficient to confront the Forestry Commission, it is the direct responsibility of Mr West to ensure his department obeys the law. If he cannot control the Commission, or chooses not to, then he is breaching the doctrine of ministerial responsibility under the constitution and should resign," Mr Steed said.

NEFA has successfully shown that the Forestry Commision has acted illegally in logging and roading in both Chaelundi and North Washpool and here again it is involved in illegal activities.

"Why has the Minister Gary West continually allowed the Forestry Commission to blatantly ignore such important Land and Environment Court judgements?" Mr Steed asked.

The area consists of 500 year old Brush Box emergents and an understorey of 150 year old Coachwood. It is undoubtably rainforest, and whatever the reason for logging, an Environmental Impact Statement should have been prepared. It is highly likely the area contains a number of rare and endangered animals, but no fauna survey has been conducted.

"It is a clear breach of the Environmental Planning and Assessment Act and a potential breach of s.98 and 99 of the National Parks and Wildlife Act.

"The fact that the area is a current National Park proposal suggests a sinister motive by the Commission. It appears to be a deliberate attempt to destroy the National Park values of the area judging by the level of destruction and waste." Mr Steed said.

Huge old Brush Box log ends have been left to rot and vigourous Coachwood have been decimated. Local residents were not consulted. the logging has certainly had a significant impact and an EIS has not been prepared. It is obviously illegal. Any denials fly in the face of the Environmental Planning & Assessment Act.

"This incident demonstrated exactly why the Commission has been so heavily criticised by the Land and Environment Court, the NSW Public Accounts Committee, the Federal Resources Assessment Commission and the conservation movement," Mr Steed said.

BLACKBUTT PLATEAU NATURE RESERVE

Background

The issue of the Blackbutt Plateau was first raised in 1984 when the Forestry Commission commenced roading operations prior to logging the area which lies to the west of Mullumbimby in northeastern NSW. The Wilsons Creek Action Group (WAG), with enormous local and State wide support, began a campaign which resulted in the declaration of a 3-4 year moratorium by the then Minister for Natural Resources Mrs Janice Crosio. In February 1987 the State Ombudsman found that the Commission had acted illegally in constructing the "road" without an EIS.

With a new Government in power, it is believed that the Commission may attempt to commence logging in the near future. There have been in the meantime objections raised to the listing of the Plateau on the Commonwealth National Estate, and to the Byron Shire Council's scientific zoning of the area. Indirect sources claim that both the Ministers for Natural Resources and for the Environment have undertaken not to take any further hardwood forest out of timber production as was agreed at the time of the declaration of the rainforest National Parks.

WAG will shortly put forward a proposal to have the area declared a Nature Reserve.

Features of the Proposed Reserve

920ha of the southern section of Nullum State Forest incorporating the Blackbutt Plateau and Mt Jerusalem areas is recommended for dedication as the Blackbutt Plateau Nature Reserve. The proposed reserve comprises part of the erosion caldera rim of the Mt Warning Shield Volcano, ranging in altitude from 300 to 800m. It contains a particularly diverse range of habitats from lowland subtropical rainforest to high altitude heath. The physical isolation of much of the area has militated against significant past human intrusion such that it contains a substantial remnant of some major commercial forest types. The complex topography of the area in conjunction with the very high rainfall have provided long-term mitigation of natural disturbances such as fire with the result that the Blackbutt forests are of a structural type not found elsewhere in the region. These stands serve as an important wildlife refuge and scientific reference area. The presence of a high proportion of endangered plants and vertebrate animals, most notably Peach Myrtle, Corokia and the Rufous Scrub-bird together with the unique form of Coral Lichen give the area regional, State and national conservation significance.

Other Problems

The local community is unanimous in its opposition to the use of the narrow, badly formed and heavily trafficked Wilsons Creek Road by logging trucks. A landslip in the recent floods caused damage for which the local council may be held liable. The Commissions access "road" negotiates a steep cliff face in a very high rainfall area and has been subject to numerous landslips and rockfalls damaging vegetation and silting the water of a creek in a water catchment area.

Contact Group

Wilsons Creek Action Group, P O Box 325, Mullumbimby. 2482.

Alan Riordan Ph 066-840152

PRESS RELEASE 11/10/91

Mt Jerusalem Rainforest Destroyed

The Wilsons Creek Action Group (WAG), formed to protect the old growth forest of the Blackbutt Plateau, has uncovered recent illegal rainforest logging in an area adjacent to the Plateau.

WAG claims the Forestry Comission has logged 500 year old Brush Box trees and cleared an understorey of 150 year old Coachwood. Botanists believe that the exposed coachwoods will suffer from dieback and this resource will also be lost.

Whilst the Forestry Commission claims there is no rainforest logging in NSW, WAG has documented the extraordinary waste of this operation. Veteran Brush Box trees have been felled and simply left forming huge stockpiles of log ends (see photo).

WAG believes this unecessary waste further highlights Forestry Commission mismanagement of this public resource.

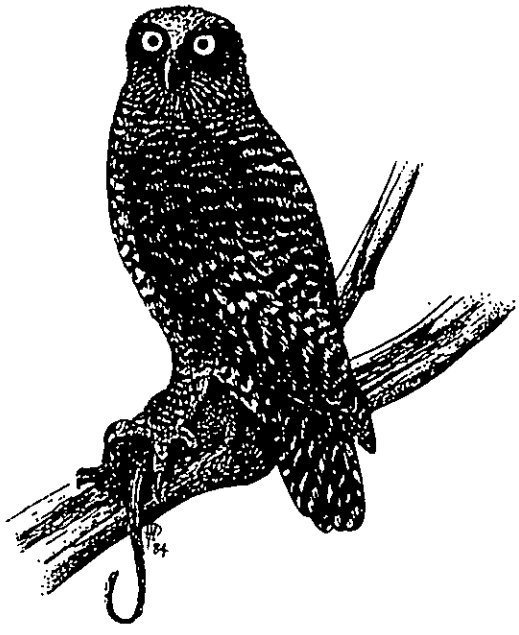
This area of warm temperate rainforest is within the new Mt Jerusalem National Park as proposed by Mr Carr, Leader of the NSW Labor Opposition.

WAG believes this pre-emptive strike to be a Forestry Commission ploy to devalue the proposed park before its dedication.

Wilsons Creek Action Group,
PO Box 325,
Mullumbimby 2482

Spokesperson Alan Riordan
Ph 066-840152

Photos - John McCormick



STANDING COMMITTEE ON STATE DEVELOPMENT

COASTAL DEVELOPMEMT INQUIRY

WRITTEN SUBMISSION COVER SHEET

Names... Alan Riordan, Graham Watson, Barbara Stewart

Name of group... Wilsons Creek Action Group

Position in group... Members

Address... P O Box 325, Mullumbimby 2482

Address of group... as above

Telephone number... 066-840152, 066-840127

Facsimile number...N/A

COASTAL DEVELOPMENT INQUIRY

BLACKBUTT PLATEAU SUBMISSION

WILSONS CREEK ACTION GROUP

SUMMARY

A Forestry Commission operation proposed for the Blackbutt Plateau west of Mullumbimby in north-east New South Wales threatens an area of scientific importance, on the interim list for the National Estate. The issue has implications for water catchment, soil conservation and tourism. The potential yield of timber is small, the proposal is demonstrably uneconomic, and attempts to put in an access road have resulted in ongoing erosion problems. The issues are complex, but it is the Forestry Commission which has played the major role to date and which must be held responsible.

We recommend that the proposed logging of the Blackbutt Plateau be abandoned and that an investigation of the Forestry Commission's competence in forest management and its conduct in dealing with the public and other government bodies be carried out. The management of the Plateau should be passed over to the National Parks and Wildlife Service.

More generally, land use decisions should be taken in a regional and community context rather than in isolation, and environmental factors should be given precedence over economic arguments in land use decisions. The user pays principle be applied to all operations involving the exploitation of natural resources and an integrated approach should be applied to the development of tourism.

TABLE OF CONTENTS

1. INTRODUCTION

Conflict over the Blackbutt Plateau revolves around a Forestry Commission proposal to log an area of old growth eucalypt forest on an isolated and previously inaccessible plateau. Construction of an access "road" which traversed a cliff in an extremely high rainfall area was necessary to attempt the harvest.

1.1 Location - west of Mullumbimby in north-eastern New South Wales

1.2 History

Residents were first made aware of the issue when roadworks began in 1984. Action by the Wilsons Creek Action Group (WAG), together with continuing access problems, eventually resulted in the calling of a 3-4 year moratorium on logging of the Plateau by the then Minister for Natural Resources Mrs Crosio. WAG prepared a Nature Reserve Proposal document but the State government has never investigated the merits of such a proposal. Rather, the Forestry Commission has announced that it will shortly declare a Flora Reserve to protect an area of snow lichen covered rock outcrop and a small forest area. This offers no protection for the old growth Blackbutt forest and the integrity of the systems of the area as a whole, and has been rejected as totally inadequate by WAG.

Public pressure plus recent legal decisions (eg Mt Mistake) has forced the Forestry Commission to undertake an Environmental Impact Study (EIS) before they proceed further. They now claim that the project has no urgency.

1.3 The Resource

Calling on the resources of local and outside experts, WAG researched the natural values of the area. Though the study was preliminary in nature, the significance of the area was evident and the Group compiled a Nature Reserve Proposal document (Attachment 1).

An evaluation of the timber resource of the area is included in the Forestry Commission's Environmental Review (Forestry Commission of New South Wales, 1983).

WAG's investigation, however, pointed to serious shortcomings in Forestry Commission's Environmental Review. Apparently there had been little or no on-ground survey of flora and fauna other than assessment of plant species of economic value.

The significance of the area from a national perspective was later recognised by the North Coast Environment Council who nominated the area for the National Estate. The Blackbutt Plateau was placed on the Interim List in 1985 and is due to be assessed for listing this year.

2. RELEVANCE TO THE DEVELOPMENT AND MANAGEMENT OF THE COASTAL ZONE

The Blackbutt Plateau issue highlights a number of important aspects of coastal zone management.

The Plateau lies between the valleys created by the headwaters of the Wilsons and Coopers Creeks, so that the river systems of which they are part form direct physical links with the coastal plains and their communities. Thus problems of changes to the water quality and siltation resulting from logging would have immediate effects on the coastal zone.

During the last two or three decades, landuse in the surrounds has undergone a change from relatively large farming holdings (dairy and bananas) to smaller residential blocks and hobby farms. The effect has been one of an increase in population density accompanied by an increased interest in and appreciation of the natural values of the area.

The mountains of the Koonyum and Nightcap Ranges, surrounding the Blackbutt Plateau, form a backdrop to the coastal communities of Brunswick Heads and Byron Bay, both increasingly popular as residential sites and tourist destinations. The aim of the Byron Shire has been to resist the pressure for intensive tourist and residential development, substituting low-key development which emphasises and conserves the natural values of the area. The importance of the hinterland of which the Plateau is a part is evident, as is the need for careful management.

3. PUBLIC CONCERNS

Issues which concern WAG and their many supporters include:-

3.1 Water catchment

The area is a part of the catchment of the Wilsons River. A weir at Laverty's Gap dams the flow of Wilsons Creek to supply water to the townships of Mullumbimby and the Rous County Council is currently investigating a proposal to dam the river at Federal to augment the supply to the rapidly growing population. The necessity to restrict certain activities in a water catchment is recognised by the Water Catchment and Habitat zoning of much of the surrounds of Wilsons Creek by the Byron Shire Council. However their proposal to protect the Plateau area with a Water Catchment and Scientific classification was over-ridden by the State Government which insisted on retaining the Forestry Zoning.

3.2 Soil conservation

Logging operations inevitably result in the loss of soil. This is of particular concern in a high rainfall area. (Although logging would take place in the "dry" there is always the possibility of heavy rain at any time of the year.)

Of particular concern is the erosion resulting from the construction of Nevasae Road, the Commission's access road. Rockfalls and gully and sheet erosion have caused extensive soil loss, damage to the surrounding environment and siltation of the creek. Currently the road is blocked by a huge landslide.

The Forestry Commission claims that their operations are carried out in accordance with the Standard Erosion Mitigation Conditions (Catchment Areas Protection Board and Forestry Commission of New South Wales, 1983). However these guidelines have been transgressed on several counts. WAG reported the bulldozing of a large tree and the clearing of vegetation within 20 metres of a prescribed stream to the Soil Conservation Service in June, 1984. There were considerable delays and problems in eliciting a response and the outcome demonstrated the reluctance of Government agencies to use their powers, especially against another Government department.

In February 1986, the Ombudsman found that the road was constructed illegally, in that an EIS should have been prepared (see Attachment 2)

Two engineers have independently measured grades in excess of the Forestry Commission's own specifications, and commented on the incompetent engineering of the road (Attachments 3 & 4).

The defence of the Forestry Commission rests on a claim that restriction of access has prevented consolidation of the road. It is evident, however, that no such action could have prevented the major landslips which have occurred, and that these are entirely the result of poor siting and incompetent dynamiting and engineering. Further, the land holder in question has indcated his willingness to allow access for reasonable erosion control measures which do not involve the extensive works required to reopen the road for traffic, the Forestry Commission's original intention. The Forestry Commission has been unable to effect the simple negotiations required to achieve this permission.

3.3 Conservation of natural ecosystems and rare flora and fauna

The environmental values of the area are described in the Nature Reserve Proposal document (Attachment 1).

In summary, the area contains a particularly diverse range of habitats from lowland subtropical rainforest to high altitude heath. Physical isolation from human intrusion and other disturbances such as fire has resulted in a substantial remnant of some major commercial forest types. These stands serve as an important wildlife refuge and scientific reference area. The presence of a high proportion of endangered plants and vertebrate animals, most notably Peach Myrtle, Corokia and the Rufous Scrub-bird, together with unique formations of Coral Lichen, give the area regional, State and national conservation significance.

3.4 Forestry issues

The Forestry Commission in New South Wales has been engaged in a forest management strategy which has converted predominantly oldgrowth forests to young regenerating stands which are cut at increasingly short cycles. The ecological consequences of this are poorly understood.

In addition, the Forestry Commission has failed to take account of changing community values on conservation issues. Because the reservation of remaining native forests has been forced by public pressure, the Forestry Commission claims it is now necessary to attempt harvest in inaccessible areas such as the Blackbutt Plateau to maintain its quota commitments. Clearly this is a reflection of inadequate forward planning on the part of the Forestry Commission, and the

plantations which should have been put in years ago must be given priority now.

In defence of their attempted operation, the Forestry Commission has claimed that their proposal is economically viable i e that the income from royalties from the timber exceeds the costs involved in roading, supervision etc. The original economic analysis carried out as part of the 1983 Environmental Review (Forestry Commission of New South Wales, 1983) has been challenged (Attachment 5). It is also evident that many other hidden costs have been ignored in this analysis.

The Forestry Commission has repeated its claim of economic viability for the project in recent times. The original analysis is now clearly out of date, roading costs having escalated and the original logging prescriptions having been altered. However the Forestry Commission has been evasive in the face of public attempts to verify current claims of viability, refusing to supply details of the basis of such calculations. (see correspondence Attachment 6). We therefore repeat our belief that the project is not viable and should be abandoned before any more public money is wasted on roading operations and EIS.

The current quota system of timber resource allocation must also be called into question as it has, in this case, resulted in a disastrous attempt to mount an operation which should never have been attempted on either ecnomic or environmental grounds.

3.6 Tourism

The Byron Shire with its emphasis on low key development is very much dependent on the natural values of its environment to attract visitors to the area. The Blackbutt Plateau could be an important tourist attraction, and is included in the Shire Wide Walking Trail system proposed by Damien Wilkinson.

Careful consideration should precede any exploitation of the area for tourist or recreational purposes. The Plateau has important scientific value, as indicated in Section 3.3, and includes the vulnerable Coral Lichen community which could easily be damaged by foot traffic or fire. Should visitation be considered appropriate or desirable, the level of encouragement, manner of management and protection require consideration by some competent agency.

It should be noted that while there are doubtless some members of the community who would be interested in exploiting passing tourist trade for commercial ventures of some kind, the majority of residents value their privacy, are concerned about increasing traffic levels on the already inadequate roads, and would oppose active encouragement of high volumes of tourist visitation.

Regardless of the visitation level, the skyline of the Blackbutt Plateau is visible from Ballina to Kingscliff. In its unlogged state this backdrop contributes, albeit subtly, to the value of the coast for tourists and tourist development projects.

3.6 Conflict with residential uses of nearby land, road traffic

It is estimated 1000 people live in the Wilsons Creek/Huonbrook valleys which surround the Plateau. A logging operation of this type is clearly totally inappropriate in a residential area. Residents would be subject to noise from the operation (Forestry Commission of New South wales, 1983).

A major concern for residents is the physical danger posed by logging trucks on Wilsons Creek Road. This is very narrow, winding and poorly maintained. This concern is voiced also by the Council Engineer (Attachment 4)

3.7 Damage to Shire roads by logging trucks.

As well as the danger of logging trucks on the road, significant damage to Wilsons Creek Road will also occur. Dobinson (1985) has found that the amount of damage that a truck loaded to the permissable limit will do to road pavement is about 14,000 times greater than the average car. This damage will be at a cost to the ratepayer as the Commission has no obligation to contribute.

The operation as proposed in 1983 would involve the passage of trucks carrying out three return trips per day every day for six months per year for up to two years.

3.8 Inadequate provision for research

The Forestry Commission has been unable or unwilling to devote sufficient of its resources to researching the ecology of old growth forests and other topics which are vitally connected with its operations. There has been no attempt to solicit research e g from tertiary institutions into the general ecology of the Blackbutt Plateau. These unlogged forests are demonstrably different from other Forestry Commission managed forests elsewhere in the district, and accordingly should be carefully researched before they are modified.

4.GOVERNMENT PROCESSES

4.1 Conflict between local and State governments

Conflicts between these two levels of government are reflected in the overriding of the local shire Draft Environment Plan zoning by the State Government (Section 3.1).

4.2 Failure of the Soil Conservation Service to act against the Forestry Commission

The tardiness of Soil Conservation Service in investigation of a complaint and their failure to take a firm stand when the Forestry Commission contrvened the Standard Erosion Mitigation Control guidelines is descibed in Section 3.2.

4.3 Conflict between the Ministers for Natural Resources and the Environment.

WAG has twice requested the Minister for the Environment to investigate its submitted Nature Reserve proposal. The Minister has replied that he will not order the investigation as the Minister for Natural Resources will not release State Forest for that purpose. The issue of the Blackbutt Plateau has become a complex one and it would seem to be imperative that the conservation significance be investigated by the National Parks and Wildlife Service. An inspection of the Forestry Commission records for the area has revealed a very poor data base which must be considered inadequate for planning.

4.4 Provision for the timber industry.

The Forestry Commission has failed to adequately provide for the timber industry. Its establishment of plantation timber has been insufficient and too late.

4.5 Government dealings with the public.

The commencement of blasting associated with the 1984 roading attempt without informing local residents exemplifies this. In addition, the ineptitude of the Forestry Commission in negotiating access for erosion control is evident now that yet another dry season has passed and more erosion must be expected before such works can begin.

WAG has followed legitimate channels in attempting to deal with the problem of Nevasae Road, eventually involving the Ombudsman (Section 3.2). The Commission has not acted on the Ombudsman's report, however.

4.6 Government management of water catchment

The area is a part of the catchment of the Wilsons River (Section 3.1) and a large number of government bodies are involved management of the catchment area. With the exception of the Byron Shire Council, not one of these bodies is coming out and stating that there should be no logging in a water catchment area.

4.7 State/Federal government interaction.

The Federal Government has limited powers over environmental matters, but in view of the demonstrated problems and lack of expertise on the part of state resource management agencies, it should be actively exploring all possible options for intervention. The Federal Government will have some jurisdiction over the area should it be listed as part of the National Estate. However insufficient resources are made available to the Heritage Commission for investigation of proposals. The Blackbutt Plateau was proposed for listing in February 1985 and it has not yet been investigated.

5. RECOMMENDATIONS

A scientifically important remnant of undisturbed forest has been proposed for a logging operation which is not economically viable. A disastrous roading operation has been attempted in the process. Although a number of government agencies are involved in land management in the area, the Forestry Commission has played the major role and must accept responsibility for the problems to date.

We therefore recommend

i) the proposed logging of the Blackbutt Plateau be abandoned in view of the economic and environmental arguments against the project.

ii) an investigation of the Forestry Commission be carried out include its competence in forest management and forward planning and its conduct in dealing with the public and other government bodies.

iii) the management of the Plateau be passed over to the National Parks and Wildlife Service and the Nature Reserve Proposal be properly investigated.

iv) that land use decisions should be taken in a regional and community context rather than in isolation.

v) that environmental factors be given precedence over economic arguments in land use decisions.

vi) the user pays principle be applied to all operations involving the exploitation of natural resources, including the use of roads by heavy vehicles (Section 3.6) and the structuring of the royalty system to reflect the real value of timber and costs associated with harvest.

vii) that an integrated approach be applied to the development of tourism in the area and that appropriate measures be taken to ensure that over exploitation of natural areas does not occur (Section 3.5)

References

Catchment Areas Protection Board and Forestry Commission of New South Wales (1983). *Amended Standard Erosion Mitigation Conditions for Logging and Clearing in New South Wales - May 1983.* (unpublished)

Dobinson, K. (1985) Do you have a weight problem? *Engineers Australia* 22 February 1985, pp 24-26.

Forestry Commission of New South Wales (1983). *Environmental Review* (unpublished).

LIST OF ATTACHMENTS

ATTACHMENT 1	Blackbutt Plateau Nature Reserve proposal (Wilsons Creek Action Group)
ATTACHMENT 2	Report under Section 26 of the Ombudsman's Act - The Forestry Commission. Issued 6 February 1987.
ATTACHMENT 3	Nevasae Road, Upper Wilsons Creek. An Engineering Assessment. R.G. Corben 11 January 1989
ATTACHMENT 4	Byron Shire Council Works and Services Directors Report 89/11 - Wilsons Creek Action Group - Blackbutt Plateau and Nevasae Road.
ATTACHMENT 5	Economic assessment of the Blackbutt Plateau logging proposal. Richard Whitling.
ATTACHMENT 6	Correspondence between WAG and the Forestry Commission.

Judgement fire

IN THE LAND AND
ENVIRONMENT COURT
OF NEW SOUTH WALES

No. 40212 of 1987
Coram: HEMMINGS J.
31st March, 1989

JUDGMENT

T.R. BAILEY

Applicant

v.

THE FORESTRY COMMISSION OF NEW SOUTH WALES

Respondent

HIS HONOUR: The respondent, The Forestry Commission of New South Wales ("the Forestry Commission") is responsible for the administration of the Forestry Act 1916 and has the care and control of all State Forests and other Crown timber lands in N.S.W. It provides planning and research, supervision, fire control and road construction therein and logging operations are authorised by the grant of licences, harvesting plans and other approvals.

The applicant is part owner and the occupier of land adjacent to the Mistake State Forest in an area near the head of South Arm Creek near Bowraville. Mistake State Forest is a hardwood forest having an area of some 8,616ha, and is inland and to the west of Macksville on the north coast of N.S.W. some 500km north of Sydney. The applicant is a member of an

unincorporated body known as the "South Arm Catchment Protection Group", which has been active in opposition to logging activities in the said forest.

The application seeks declarations concerning the lawfulness of activities carried out by the Forestry Commission and approvals granted by it to others to carry out logging activities in the Mistake State Forest.

This application initially also sought orders with respect to a licensee who was authorised by the Forestry Commission to carry out the felling and removal of logs from the forest. The second respondent withdrew from these proceedings as a consequence of interlocutory orders against both respondents made by Stein J. on 30th November, 1987. Such orders relate to logging activities in compartments in the catchments of South Arm, Lowes, Purgatory and Jasper Creeks.

Mistake State Forest forms part of the Macksville Management Area which encompasses a total area of over 50,000ha. Approvals and works relevant to this application purport to be in accordance with prescriptions in a Management Plan adopted by the Forestry Commission, and amended in 1980, 1982, 1983, 1986 and 1987. The first record of timber cutting in the Nambucca area was 1842 and hardwood sawmilling commenced in the 1870s with a mill located at the port of Nambucca Heads, followed by sawmills at Bowraville and Macksville. Early logging was selective in that only superior trees were removed and extraction was by bullock teams concentrated on the closer coastal forests of better topography. Poles, piles, girders, sleepers and other miscellaneous sawn and hewn timbers have been obtained from coastal forests since the turn of the century. Hardwood logging commenced in the mid-1940s and concentrated on the more accessible eastern sections located significantly closer to the sawmills, and in particular on Mistake State Forest. The earlier

logging was selective, so some stands logged in the 1940s and 1950s now carry some larger merchantable trees not then considered suitable for saw logs, and twenty to thirty year old regeneration. Since the 1960s, hardwood logging operations in the management area have concentrated on up river forests on the basis of maximum economic utilisation of mature and over-mature growing stock.

Most areas adjacent to the residents of the Upper South Creek were last logged between the years 1945 and 1961.

The evidence called by the parties in this matter was extensive and it is impossible and inappropriate to set it all out herein. I have given careful consideration to that evidence and will make reference only to some aspects thereof.

The applicant is unemployed and has lived in the area since about 1975 and the main rural pursuit on his land is the grazing of a small number of cattle and horses. Most of his property, which has an area of about 121ha, is steep country and immediately adjoins the State Forest. He was aware of the existence of the State Forest at time of purchase, and that logging activities were carried out therein. He alleges that as a consequence of such logging activities and, particularly since the construction of Hanging Rock Road between 1982 and 1984, rainforest areas have been logged and serious erosion has taken place which has caused siltation and pollution of creeks within his property.

Mr Bailey alleges that the areas proposed for logging include very steep areas which drain to the existing creek and river system, and large areas have been laid bare. In some areas more than fifty per cent of the over-storey has been removed, including ridge lines, and he observed benching of slopes in excess of thirty-five degrees. He says that rainforest pockets have

been destroyed by removal of brush box over-storey and the construction of log dumps, and that there has been "rampant" regeneration of lantana and burning by exposure to the sun of light-intolerant species such as palms and epiphytes. Snig tracks have caused erosion channels up to half a metre deep, trees have been felled into stream beds, and filter strips and stream beds damaged by bulldozers. He says that the present logging operations appear to be more intensive and extensive than those which have been the practice of the Forestry Commission in the past, and is concerned that if the activities continue in the same manner in steep country there will be a significant impact upon the forest and adjoining properties.

William K. Jolley, Alfred Tesser, Ronald Begg, Graham McPeade and Peter Hunt are the owner/occupiers of various properties in the vicinity of the Mistake State Forest. They all claim to have observed significant disturbance of soils, mostly in the form of poorly drained snig tracks, particularly where constructed on steep gradients. They also observed the subsidence and erosion in sections of Hanging Rock Road, and erosion generally in snig tracks, which they say caused soil erosion within drainage lines and considerable forest and soil disturbance therefrom. They observed what they describe as "an increased siltation of creeks". Some are compelled to rely upon rainwater for drinking purposes because the water in the creek is often polluted. They claim an adverse visual impact of logging operations particularly along the ridges and in the valleys and rainforest. They object to the logging of the steeper slopes and the removal of the majority of trees from "group selection" logging.

Alan Lea of Brush Box Creek, Taylors Arm, is a qualified forester and was employed formerly by the A.C.T. Forest Department of Territories and Local Government. In his opinion, environmental problems

arise in these "up river forests" (or working circle) because management involves low economic input for expected low economic returns. The up river forests are generally steep, logging costs are high and haulage distances greater. He agrees that the Mistake State Forest's soils are of moderate erosion hazard, but says that there is a potential for soil slumping and erosion on steep slopes during heavy rain. He says that brush box is now logged whereas in the past it was unacceptable, and that this practice exposes adjoining rainforest pockets. He accepts that log dumps are inevitable in working State Forests and, whilst some have regenerated, says that erosion will take place therein unless properly restored.

David Milledge, ecologist, specialises in flora and fauna surveys. Whilst he has extensive practical experience, he does not hold relevant tertiary qualifications. Until these proceedings commenced, the Forestry Commission was unaware of the existence of *bosistoa floydii* in the proposed logging areas. This species is found in rainforest areas and is rare, but not classed as vulnerable. Mr Milledge says that in this forest it is "threatened". Mistake State Forest is fairly rich in flora and fauna, and this is despite logging activities over many years. Mr Milledge says that, on the other hand, the diversity of flora and fauna would be richer had there not been logging activities. He observed a snig trail cut through what he considers to be a rainforest in Compartment 324, and is of the opinion that brush box in or in the vicinity of such rainforests is under heavy pressure from logging operation activities. The brush box is also the habitat of the spotted tail quoll.

John Schmidt is a geologist and, at the request of the applicant, visited the Mistake State Forest. In particular, he inspected the Jaspers Creek, Purgatory Creek and Hanging Rock Road areas. He formed the opinion that the main forest soils in the forest would

have moderate erodability. In his opinion, soil erosion and stream siltation is attributed to the critical factor combination of high slope, large volumes of soil disturbance, and bench cuts across drainage lines. In his opinion, logging and associated works in areas of high slope of twenty-five degrees and over, as observed in both the Purgatory and Hanging Rock areas, poses a serious threat to the balance and stability of the upper water catchment areas in that area in the form of unnecessary soil erosion and forest degradation. He says that logging is affecting water quality in creeks, and that many people draw water from such creeks. If log dump areas are not regraded after the termination of works the likelihood of erosion in those areas is much greater.

John McGarity is an Associate Professor of Agronomy and Soils at the University of New England, and a lecturer in soils and soil conservation for many years to rural science and resource management students, including those employed by the Forestry Commission.
Mistake State Forest is a high rainfall area and, in his opinion, the erodability of the Mistake State Forest is four times that of Eden State Forest.
Despite attempts to conform to the Standard Erosion Mitigation Conditions, in his opinion selective logging as undertaken in the Purgatory Creek, South Creek and Jasper Creek upper catchment areas has led to an increase in accelerated soil erosion in the short term and poses a substantial threat to the landscape stability in the longer term. Closed access roads, snig tracks, log dumps, batters and banks have generally been subject to surface wash, rilling and more severe cutting in on steeper slopes. These features now threaten to initiate more permanent gullies. In the absence of replacement of surface soil and stockpiles where vegetation has been extremely slow, he is doubtful whether soil replaced over bladed sub-soil would be retained on slopes exceeding thirty degrees. Professor McGarity assumed that further

disturbance of the upper catchment will exacerbate the existing problems. However, he did not corroborate the allegations of the local residents that logging operations at this stage had caused siltation and deposition in the local stream system outside the forest.

The Forestry Commission called eight employees, a representative of the Soil Conservation Service and three contractors.

Dr J.H. Drielsma, an Assistant Commissioner for Forestry in N.S.W. and formerly Chief of the N.S.W. Forestry Commission Planning Division, responsible for management, planning and environmental matters generally within the Forestry Commission, Mr C. Roberts, District Forester, and Mr P. Busby, Regional Forester, explained the history of the forest, management policies, the concept of "sustainable yield", procedures and documentation, and the nature and extent of environmental review by the Forestry Commission.

Mistake State Forest has been selectively logged over many years and no further major roading is proposed, although snig tracks, short log haul roads and log dumps will be built by contractors or their operators as required for short term use. The Forestry Commission asserts that the proposed activities are merely a continuation of existing selective logging operations.

All operations are said to be in conformity with the Management Plan, and the amendments in 1982 flowed from a re-inventory of the coastal working circle in 1979, and the calculation of an annual yield of saw log timber from the area designed to be sustainable indefinitely into the future. Permissible yields from the area will reduce in conformity with this calculation. The objective in the calculation of

sustainable yield is said to have two major characteristics:

1. The yield is equal to or less than the average growth of the forest, and can therefore be harvested indefinitely.

2. The growing stock of the forest is never depleted, and the forest structure on average remains essentially unaltered over time or builds up temporarily if the yield is set at less than the growth.

However, sustainable yield does not regulate the number of trees to be removed because it is calculated only on crown quality, and therefore the only limit is on quota logs.

In the calculations of sustained yield in the Management Plan the upper river circle was not included because it was then considered to be a buffer. However, from the early 1900s white beech, red cedar logs and ironbark girders were obtained from accessible areas within such up river forests. The Management Plan does refer to several environmental matters, e.g. climate, soil, ecological and silvicultural matters, and environmental reviews were made before timber licences were issued in 1987. The Management Plan mainly deals with commercial management and, with respect to wildlife, no specific study has been carried out by the Forestry Commission. I infer this is because it believed that wildlife populations are likely to be similar to those in the north coast area generally.

A harvesting plan must be issued by the Forestry Commission to contractors before logging may take place, and depicts the physical boundaries of the areas to be logged. Filter strips and identified rainforest are excluded from areas which may be logged and an experienced contractor is aware that he is required to avoid rainforest species. The Forestry Commission claims that species types and filter strips present field boundaries which can be easily identified by experienced field operators. There is a dispute

between the Forestry Commission and other experts as to the identification of rainforest areas and species. Brush box, because it is regarded as a hardwood by the Forestry Commission, is permitted to be logged if it is outside a filter strip or designated retention area, and where it occurs on the edges of rainforest areas.

Some harvesting plans which have been issued apply to the whole of the compartment and do not limit extraction to hardwood nor specify prescriptions.

The licences issued to contractors incorporate the Standard Erosion Mitigation Conditions. Notwithstanding the conditions of the licences, a forester is said to have delegated power to permit departures therefrom and, in particular, to authorise snig tracks of more than twenty-five degrees slope "according to the field situation". From time to time, snig tracks were authorised in slopes of more than twenty-five degrees, and when assessing gradients for this purpose it is the practice of the forester to average slopes over longer sections of snig tracks. No records are kept of any such special authorisation. In many cases, a contractor might merely assume authorisation because of his awareness of the practices of the Forestry Commission. Because trees are not selected or marked by the Forestry Commission for extraction, and the location of snig tracks is not usually shown on harvesting plans, decisions with respect thereto are also left to the operator. The contractor removes every possible merchantable stem, including sleeper trees and pole trees. After logging there could be areas where no trees would be left, particularly with group selection, but generally the Forestry Commission seeks to retain a forest appearance. In this way timber is left to grow larger for future cutting cycles, and a fifty per cent canopy cover is sought over the nett loggable area.

Even though Stein J. was informed that Compartment 357 would not be logged, a timber licence and harvesting plan has been issued to permit logging of almost the whole of the compartment. The Forestry Commission regarded it and compartments 366, 367 and 369 as being less environmentally sensitive than those the subject of the original application. An environmental check list was used with respect to Compartment 357.

Dr Drielsma and the said foresters gave detailed reasons why they are of the opinion that the proposed activities are unlikely to significantly affect the subject environment, and that the Forestry Commission, particularly since the institution of environmental reviews, has discharged all of its duties pursuant to ss.111 and 112 of the Environmental Planning and Assessment Act, 1979 ("the E.P.& A. Act").

Soil erodability and the appropriateness of the Standard Erosion Mitigation Conditions in the proposed logging areas was considered by Mr R.S. Saul, who is a soil conservationist with the Soil Conservation Service of N.S.W., Mr P.J. Ryan, forest soil scientist, Mr R.H. Squire, professional management officer, and Dr P.M. Cornish, forest hydrologist, each employed by the Forestry Commission. They are of the opinion that the soil types in the area range from low to moderate erodability, and concluded that the Standard Erosion Mitigation Conditions for logging had generally been implemented in a satisfactory manner, except along some minor logging roads. Mr Saul says there is room for improvement in the implementation of drainage works and care should be taken in planning and designing drainage works. In their opinion, erosion in the area under review is minimal, with only minor sediment layers reaching the main stream. In the Wilkes Road/Purgatory Creek area he observed considerable slumpage on the steep uphill cut batter of the road. In his opinion, the batter is very prone to slumpage because of its steepness, type of soil and the dip of the rock strata

in the direction of slope, and prevailing weather conditions had a significant effect upon the stability of the batter. He said stabilisation of the batter would occur over a period of time.

They confirmed that snig tracks varied from being almost flat up to a slope of thirty degrees. There is, in their opinion, minor erosion of snig tracks, except where cross banks have been damaged by stock or vehicles, and in some cases initial construction was of a poor standard.

Mr Ryan arranged for laboratory soil testing of samples from the Mistake State Forest. Professor McGarity did not. Mr Ryan saw no evidence that the surface soils were any more or less dispersible than the sub-soils, and no evidence of sodic sub-soils which would cause dispersion. He agrees that, in the assessment of erosion hazard, steepness is important and says that the main factors are the chemical features, the erodability of the terrain and the cover. He concedes, if that test is applied, that significant sections of Mistake State Forest could not be logged. He disagrees with the findings of Professor McGarity as to the propensity of the soil to disperse.

Dr Cornish conceded that he had formed his opinions before he made a visit to the forest and carried out any inspection, but still challenged most of the findings of Professor McGarity.

They therefore concluded that logging operations in the Mistake State Forest had led to an increase in soil erosion, but that the long term effect of erosion should be minimal if the Standard Erosion Mitigation Conditions for logging are implemented in a satisfactory manner.

Mr G.N. Baur is a silviculturalist employed by the Forestry Commission, and formerly a research officer on

the north coast. He has not visited the Mistake State Forest in recent years, but he was present on several occasions during Forestry Commission excursions into this and adjacent State Forests prior to 1973.

The vegetation in the Mistake State Forest varies considerably, often over quite short distances. Most of the area is dominated by one or usually more species of the genus *eucalyptus*, of which over sixty species occur in the area, or by their relatives, brush box and turpentine. Interspersed with these more widespread sclerophyll or open forests are usually smaller areas of rainforest of complex structure and floristic composition. Mr Baur says that ill effects from the logging of sclerophyll forest stands appear to relate to long past harvesting operations carried out without the benefit of the knowledge, techniques and supervision now available. Where species coded as "rare" or "threatened", such as *bosistoa floydii*, are known to occur in a forest, the Commission officers would consider what, if any, steps are needed to ensure their adequate protection. No such action is required because, in his opinion, rainforests are not proposed for logging. If they were, and the logging were to be a low intensity harvesting of selected stems only, probably no special protection would be sought as the impact of the logging operation would be so slight, but some subsequent checking of the condition of rare species would be expected. In his opinion, whilst lantana is a result of logging in the forest and will delay regeneration and may deflect the nature of it, it can also be beneficial. In his opinion, brush box is rarely a rainforest species, although it certainly is a species that will occur in a rainforest. In his opinion, rainforest areas can be logged quite successfully and still maintain their integrity as rainforest stands.

Mr D.L. Binns is a research forester employed by the Forestry Commission and he reported on a vegetation

research and fauna survey in the Mistake State Forest. In his opinion, the area is a working forest and there is no evidence of significant harm. He did find *bosistoa floydii*, but is of the opinion that it would not be affected by logging because it occurs in the fringes of the rainforest areas. In his opinion, rainforest areas or communities are not sensitive to minor disturbance such as selective logging, and does not believe that the spotted tail quoll is endangered by the logging which occurs in the Mistake State Forest. In his opinion, particularly in the Jaspers Creek catchment, sufficient individuals of the pre-logging over-storey species exist as new regeneration remnant mature trees, or pre-existing advanced growth, to reconstitute an over-storey characteristic of mature, undisturbed forest, even allowing for at least fifty per cent mortality. He says that Mr Milledge failed to make important distinctions between current Forestry Commission activities and those prior to 1960, and that he had a very strong bias towards investigation of rainforest. He said this ignores the forest types most likely to be disturbed by logging.

Mr R.A. Ainley, a forester employed by Allen Taylor & Co. Limited, is responsible for purchasing logs for its six mills on the north coast. His company has a sawmill licence and a timber licence to take timber from the subject area. The up river working circle involves less intensive logging than in the coastal working circle. In the Hanging Rock Road area the approximate yield of merchantable hardwood trees has been about thirteen trees per hectare over the nett loggable area. This does not include poles and follow-up removal which might involve a further thirteen trees. Trees in the follow-up operation are more likely to be fifty per cent than one hundred per cent. In some compartments he anticipates only one or two trees per hectare over the whole gross compartment area because a large part of that compartment will be inaccessible. He says that slopes in logging areas of

Close. Replacement for defective page in Bailey v Forestry Comm.

Hanging Rock Road vary from ten degrees to forty degrees, and the area of slope in excess of thirty degrees would be approximately thirty per cent of the total logging area.

Mr. G.P. L'Estrange, Commercial Manager for Allen Taylor & Co. Pty Ltd, is responsible for the management and operation of the Bowraville Sawmill. The mill employs twenty-one people and engages a contractor, Mr Neaves, who also gave evidence. They each gave details of the disruption and economic hardship if the subject logging operations were not permitted to continue. Mr Neaves was not cross examined.

The issues are therefore:

i) Whether it was open to the respondent to conclude that the proposed logging in areas within the Mistake State Forest was not likely to significantly affect the environment within the meaning of s.112 of the E.P.& A. Act, so that it was not required to obtain, examine and consider an environmental impact statement prepared in accordance with that Act before it granted further annual timber licences, contractor's licences and operator's licences under the Forestry Act 1916 and Forestry Regulation 1983 to enable the said logging to continue.

ii) Alternatively, whether in fact, according to determination by the Court itself as distinct from by the respondent, the proposed logging in areas within the Mistake State Forest is likely to significantly affect the environment within the meaning of s.112 of the E.P.& A. Act, so that the respondent was required to obtain, examine and consider an environmental impact statement prepared in accordance with that Act before it granted, and does grant in the future, annual timber licences, contractor's licences and operator's licences under the Forestry Act 1916 and Forestry Regulation 1983 to enable the said logging to continue.

iii) Whether the respondent in its consideration of the said logging examined and took into account to the fullest extent possible within the meaning of s.111 of the E.P.& A. Act all matters affecting or likely to affect the environment by reason of the said further selective logging.

iv) If any of the above questions are answered unfavourably to the respondent, whether in the exercise of its discretion the Court should grant injunctive relief to the applicant.

The applicant's claim is based upon a number of alleged breaches of statutory duty imposed by the E.P.& A. Act. That Act provides a mutually exclusive regime with respect to procedures to be adopted in the granting of approval for the development of land, and imposes new statutory obligations to include environmental assessment in the decision making processes of public authorities under any State legislation.

With minor exceptions, with the introduction of the E.P.& A. Act, exemption from control by planning laws to development by public authorities has been repealed. Part IV continued the requirement in former planning legislation that all development, including development of land by the Crown, included in an environmental planning instrument is either prohibited or expressly permitted with or without the necessity of the written approval of a prescribed consent authority. Pursuant to Part V, however, an act, matter or thing which was not prohibited by a planning instrument, but does not require such approval, does not now escape environmental assessment in the decision making process pursuant to other legislation. To distinguish the obligations under Part IV from Part V it was necessary to introduce new concepts, and impose obligations whereby a defined "activity" requires an "approval" of a "determining authority". An approval is defined in the widest of terms and includes *"a consent, licence or permission or any form of authorisation; and a provision of financial accommodation by a determining authority to another person."* (Emphasis added.) (s.110.) Since amendment in 1985, the definition of "activity" is now almost identical to that of "development" in Part IV.

Generally speaking, these new obligations apply to development by, on behalf of or with the consent of a public authority or Minister on Crown land, which is the determining authority.

The Mistake State Forest is zoned 1(f)-Rural (Forestry) pursuant to the provisions of the Nambucca Local Environmental Plan 1986 (Amendment No.2) The objectives of that zone are to enable the continuance and expansion of forestry and development for associated purposes, and development for the purpose of forestry may be carried out without development consent. It is common ground that the carrying out of the said works by the Forestry Commission and the grant of licenses for logging activities does not require approval pursuant to the L.E.P., and are "activities" pursuant to Part V. It is common ground that the Forestry Commission is the determining authority for all of the activities and the proponent for the construction of roads, tracks, trails and log dumps, and their restoration and maintenance. The actual logging and associated works and log removal is to be carried out by others pursuant to approvals granted to them by the Forestry Commission.

S.111 provides:

> *"Duty to consider environmental impact.*
>
> *For the purpose of attaining the objects of this Act relating to the protection and enhancement of the environment, a determining authority in its consideration of an activity shall, notwithstanding any other provisions of this Act or the provisions of any other Act or of any instrument made under this or any other Act, examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity."*

The obligations under Part V reflect contemporary community awareness of the need not only for the development and utilisation of public property and natural resources, but also simultaneous environmental protection. For this purpose the scheme of the United States "National Environmental Policy Act" ("N.E.P.A.") was adopted, which also in certain circumstances requires the assessment of an "environmental impact statement" prior to the grant of approval to or the carrying out of an activity.

Section 112(1) provides:

> *"Decision of determining authority in relation to certain activities.*
>
> *A determining authority shall not carry out an activity, or grant an approval in relation to an activity, being an activity that is a prescribed activity, an activity of a prescribed kind or an activity that is likely to significantly affect the environment unless -*
>
> *a) the determining authority has obtained or been furnished with and has examined and considered an environmental impact statement in respect of the activity -*
>
> *i) prepared in the prescribed form and manner by or on behalf of the proponent; and*
>
> *ii) except where the proponent is the determining authority, submitted to the determining authority in the prescribed manner;".*

The duty to prepare the environmental impact statement, if it arises, is cast upon the proponent, that is, the person intending to carry out the activity, but the alleged breach is the determination by the Forestry Commission to carry out or grant an approval in relation to the activity in the absence of such an environmental impact statement.

It is well settled that an environmental impact statement is designed to serve the ultimate decision making process, not to replace it. It is not a decision making end in itself; its purpose is to ensure that activities carried out by a public authority or with its consent and which are likely to significantly affect the environment are properly considered and exposed to public comment.

The Regulations provide for the contents of an environmental impact statement and, in certain circumstances, compel the participation of the Director of Planning. The Director may order consideration of relevant matters in such environmental impact statement and thereafter may report on the assessment. The determining authority is obliged to have regard to such requirements, and it is not sufficient merely to address such matters on its own perception of their

utility or reasonableness. In this way the legislation ensures that determination of the relevance of environmental matters is not confined merely to the Forestry Commission as the decision maker seeking to achieve the objectives of the Forestry Act.

In my opinion, Part V does permit, in appropriate circumstances, an environmental impact statement which adequately assesses the overall activity without necessarily at that time also assessing the detail of the site specific impact of intended structures, activities and land use; cf. Guthega Development Pty Limited v. The Minister, 1987 7 NSWLR 353, at 367. In a multi-stage activity this may compel further environmental impact statements, but does not in all situations compel the preparation of statements which must necessarily be voluminous or duplicated at each stage. At the time of consideration of site specific proposals, it is a question of fact and degree whether the environmental impact statement for the overall activity is sufficient to satisfy again the obligations under Part V, or the extent to which it requires to be supplemented, amended or updated.

The legislation is silent as to the procedure to be implemented or guidelines to determine the likelihood of a significant impact on an environment and therefore the need for an environmental impact statement. It is of course a question of fact and degree. This has led to a number of challenges similar to this matter seeking to dispute the correctness of the conclusions of the public authority, and seeking declarations and orders setting aside the approval as a consequence of the alleged actual likelihood of a significant impact in the carrying out of the activity. This Court has consistently said it should decline to do so, even if it disagrees with the decision, if it is satisfied it was reasonably open to the determining authority; see Bentham and Anor v. Kiama Municipal Council and Ors (1986) 59 LGRA 94, and the cases referred to therein.

However, the question whether it is for the Court to substitute its own assessment in order to determine the lawfulness of a development approval granted pursuant to Part IV has been expressly left open by Cripps C.J. in Hunter Valley Vineyards Association and Anor v. Cessnock City Council and Anor, Land and Environment Court, 7th October 1988 (unreported).

However, this Court must be "vigilant" not to exceed its supervisory role by reviewing an administrative decision on its merits; see Minister for Aboriginal Affairs and Anor v. Peko-Wallsend Limited and Ors, 162 CLR 24. In my opinion, whether it can do so is a question of legislative intention which may be discerned from the words used. In Part V it is clearly not intended that an environmental impact statement be prepared with respect to all activities. The determining authority therefore has a duty as a condition precedent to carrying out or granting approval in relation thereto to determine the extent to which an activity is likely to affect the environment. In my opinion, in a review of the lawfulness of a decision made pursuant to Part V, it is not the function of this Court to substitute its opinion for that of the Forestry Commission because the legislature has vested the determination of matters of fact in that body. Also, it is well settled that in the absence of any statutory indication it is for the decision maker and not the Court to determine the appropriate weight to be given to the matters which are to be taken into account in exercising the statutory duty pursuant to Part V.

The duty to prepare and assess an environmental impact statement may arise pursuant to s.112 if the carrying out of the activity is "likely" to "significantly" affect the environment. Neither of these terms is defined. Each is an ordinary English word and it follows that their meaning is a question of fact and not of law. To find such meaning, assistance may be

obtained from dictionaries. Unless the context demands, it would be an error to assign to "significant" a meaning which was not its popular meaning; Hope v. Council of the City of Bathurst, (1980) 144 CLR 1. I have previously accepted that in the context of Part V "likely" does not mean "more probably than not", but rather a "real chance" or "probably". The test to determine whether the activity is likely to "significantly" affect the environment in this context is whether it is "important", "notable", "weighty" or "more than ordinary"; Jarasius v. Forestry Commission of N.S.W., Land & Environment Court, 4th March, 1988 (unreported); see also Drummoyne Municipal Council v. Roads and Traffic Authority of N.S.W., Stein J., Land & Environment Court, 22nd March, 1989 (unreported).

I accept that in each case it is relevant to consider not only the absolute qualitative environmental effects of the activity, but also those in the context of existing adverse impacts arising from the subject environment; cf. Hanly v. Kleindienst 1972 471 F.2d 823. There is, in my opinion, no sensible reason for construing the duty imposed by s.112 as extending to every activity or to an activity whose impact is, considered alone, "significant", yet of only marginal impact as part of the relevant existing environment. In my opinion such activity, unless likely to exacerbate adversely the existing situation, is unlikely to have an impact which would significantly affect the relevant environment within the meaning of s.112.

The significance of the likely impact of the activity must therefore be gauged against the nature and scale of the relevant environment. The "environment" is defined to include all aspects of the surroundings of man (s.4), whether affecting him as an individual or in his social grouping. Whilst this Court has on a number of occasions accepted that the definition is expressed

in the widest possible terms, it has, however, rejected claims that the relevant environment of a particular activity should be regarded as the whole of the State or region in order to justify a determination of an "insignificant" likely impact. Whilst in appropriate circumstances it is open to look at the whole undertaking of which the relevant activity forms a part, it must remain a question of fact as to what is the environment for relevant purposes with respect to the proposed activity.

The Forestry Commission regarded the "environment" as the whole area (i.e. more than 8,600ha), and as a working forest and not what it calls a "pristine" one. Its operations and those of its contractors are described as:

> *"... a form of multiple-purpose rural land use rather than a project-specific, discrete development process, and involves continuing, progressive and cyclic activities over long time frames and large areas of land. Planning for it is done on a much longer cycle than for any other activity and this is part of the relevant environment. The determination of a sustained yield strategy with selective logging, as applies in the present matter, requires a time frame over many years which commenced many years ago, and the delineation of a resource base which will be available over a long period of time. This situation commenced a long time ago and is part of the existing environment. The most relevant contractor, Allen Taylor and Co. Limited, has been operating in the forest for many years and that is part of the relevant environment.*
>
> *Properly managed forestry involves periodic ecosystem disturbances of a relatively minor nature over a relatively short period of time and this is part of the relevant environment."*

The Forestry Commission says it is most relevant that the forest is zoned under the L.E.P. for the proposed activities without the necessity of development consent, and that there are no proposals for inclusion in a park or reserve. However, the fact of the zoning under the L.E.P. for forestry purposes has, in my opinion, little relevance in the resolution of the lawfulness of the determinations by the Forestry Commission. It is the absence of the need for

development consent under that instrument which triggers the obligations pursuant to Part V, and compels the decision of the Forestry Commission to be environmentally sensitive.

The logging operations are not intended to be carried out in an environment which is a rainforest, but in a forest which contains pockets of rainforest. It was open to the Forestry Commission to conclude that, to some extent, all relevant localities in the forest have been subject to selective logging, but in my opinion large areas of the steep up river areas could not be described as a "working forest". These areas were previously virtually inaccessible and logging is now only feasible since the introduction of the bulldozer and the chainsaw. However, no reliable post-logging data has been kept and the extent of logging that has occurred and the likely impact of further logging therefore, must be drawn from the opinions of experts on little information. Natural regeneration has and will in time occur over most, if not all of the logged area, particularly in the long term. I accept that it was open to find that creeks in the area have always been susceptible to natural erosion in times of heavy flow, and that to the present time erosion is largely confined to the general vicinity of extraction areas. I am satisfied that claims of siltation of creeks outside the forest as a direct consequence of logging activities are exaggerated and unfounded. No further major roading is proposed in the forest and it was open to the Forestry Commission to determine that existing roads have already significantly altered the character and nature of the relevant environment.

I am persuaded by the Forestry Commission that most of the above matters describe the nature and extent of the "environment", and also are relevant to determine whether it was reasonably open to it to determine that the subject activities were not likely to "significantly affect" it. There can be no doubt that

the subject environment is part of a mature dry sclerophyll forest, with pockets of rainforest, which is generally steep and subject to high rainfall. Notwithstanding previous selective logging and associated works, it is fairly rich in flora and fauna and for relevant purposes could not be described as "depauperate". That is a Forestry Commission term, having relevance only to describe an area of little economic value and poor structural development. In my judgment, it was not open to the Forestry Commission to determine that the relevant environment for the purposes of s.112 in this matter is the whole forest. However, nor would it be merely the individual compartments or land included in harvesting plans whose areas do not appear to follow meaningful ecological or geographical boundaries. In my judgment, the Forestry Commission should have determined the relevant "environment" by reference to the area the subject of the licences and harvesting plans, but considered as part of land to be used for the overall activity.

I accept that the proposed operations in the Mistake State Forest will be generally in conformity with the plan of management and, with some exceptions, generally in accordance with the conditions attached to the timber licences and the provisions of the harvesting plans. I also accept that most of the operations will be competently supervised by foresters employed by the Forestry Commission.

I also accept that Forestry Commission officers when supervising logging operations take care to identify and preserve rare, threatened or endangered fauna or flora species, and take what they consider to be appropriate steps to protect their habitat. However, there is no doubt that it is the intention of the Forestry Commission and the loggers at their discretion to remove brush box in areas in close proximity to what normally would be regarded by others as rainforest, and that tracks are likely to be cut through such

rainforest areas. The removal of the surrounds to pockets of rainforest, particularly of brush box, is likely to cause some degradation in status to such rainforest and is therefore likely to have an effect on the nature and extent of species therein.

I am fully conscious of the fact that the subject logging activities do not involve either what is known as integrated logging or clear felling operations. However, it is clear that in some areas the logging activities, both initial and follow-up, particularly with group selection, are likely to involve the removal of a large number, if not the majority, of mature trees in a compartment. Such activities must be likely to change significantly the character of the environment and cause a significant change in the age, species and structure of trees therein and, in my judgment, it was not open to the Forestry Commission to determine otherwise.

I accept that to some extent such changes are likely to remain only for what could be described as the short term, and that some of the said operations actually facilitate regrowth, particularly of blackbutt, in this type of forest.

Notwithstanding the challenge by the Forestry Commission, I have no hesitation in accepting Professor McGarity as an expert in respect of matters relating to soil management and likely soil erosion in the subject forest. I prefer his opinions and I am satisfied that the proposed logging operations of the Forestry Commission and the contractors must be likely to pose a substantial threat to landscape stability in the subject area in the longer term. This is a consequence of the potential in this area for rains of high intensity, duration and prevalence on land which has long slopes in the elevated parts of the catchment, and which are potentially readily reactivated, erosion prone drainage systems.

I am satisfied that had the Forestry Commission given "real" consideration to the matter (Parramatta City Council v. Hale, 1982 47 LGRA 319), it would have had no option but to conclude that in the up river forest where the surface soil was removed and the sub-soil exposed it must be likely to be highly erodable, particularly as a result of logging and tracks on slopes over twenty-five degrees. The Standard Erosion Mitigation Conditions imposed on the operations by the Forestry Commission are likely to be unsuitable guidelines for erosion control in the steeper catchments in the Mistake State Forest. I accept the opinion of Professor McGarity that, even if the Standard Erosion Mitigation Conditions were conscientiously applied, it was very doubtful whether they would hold such exposed soils and prevent the formation of gullies and continuing generalised erosion. The Forestry Commission should have been concerned at the incompleteness of knowledge of the soils in the area and particularly the existence of sodium clays in the catchments. There is a lack of data regarding the sub-soil stability and dispersiblity of the yellow and red podsolic soils in the catchment, and of the direction of dip of folded rocks which might predispose some slopes to mass movement. I agree that for this purpose there is a need for proper surveys to enable a discharge of the Forestry Commission's duties pursuant to Part V. I would expect an environmental impact statement to provide the data which would enable the Forestry Commission to assess properly the extent of highly dispersible sub-soils in areas proposed for logging activities.

I am therefore of the opinion that it was not reasonably open to the Forestry Commission to determine the subject activities are not likely to significantly affect the environment. It is common ground that, if required, no environmental impact statement complying with the provisions of Part V of the E.P.& A. Act has

been prepared with respect to any relevant activity. It follows that in the absence of an environmental impact statement with respect thereto, the Forestry Commission has failed to discharge its duties pursuant to Part V.

The Forestry Commission has, as an alternative, adopted procedures to demonstrate that for the purposes of Part V it has reasonably determined for itself the need for an environmental impact statement with respect to carrying out logging activities, and that it has also discharged its obligations pursuant to s.111.

The duty imposed on the subject determinations by the Forestry Commission under the Forestry Act by s.111 is in the widest of terms and is mandatory. However, the obligation to take into account to the fullest extent possible all matters affecting or likely to affect the environment is not taken literally. The concept has also been derived from N.E.P.A. and decisions of the United States Court of Appeal thereon have been applied in this Court and it will construe the obligation to be to the fullest extent "reasonably practicable"; Guthega Development Pty Limited v. The Minister (supra), and Drummoyne Municipal Council v. Roads and Traffic Authority of N.S.W. (supra).

I accept that all harvesting and road operations within the Mistake State Forest have been subject to not only consideration of economic, but also some environmental factors. The consideration of such matters is said to have been by way of:

1. The Macksville Management Plan 1978, with amendments in 1980, 1982, 1983, 1986 and 1987.
2. Environmental reviews and environmental review check lists.
3. The imposition of Standard Erosion Mitigation Conditions, June 1984.
4. The issue of licences and harvesting plans, with conditions, in accordance with the Forestry Act and Regulations and with the benefit of historical and renewed aerial photography, maps and the local

knowledge of foremen and foresters with past experience.

However, some material relied upon was prepared only for the purpose of these proceedings, and not considered in the relevant determinations by the Forestry Commission. In any event, in my opinion, the Management Plan, as amended, was concerned predominantly with economic factors and the environmental reviews are superficial documents. Such documents were inadequate to enable a full and proper consideration of the likely effects of the activities, and neither separately nor collectively with the other material would satisfy the requirements of Part V.

A survey or an assessment of soil or its erodability in steep country was not undertaken, and it is clear that the Forestry Commission has at all relevant times, without review, acted on the erroneous premise that the imposition of the Standard Erosion Mitigation Conditions on licences would be appropriate under all circumstances. No "real" consideration appears to me to have been given to the appropriateness of these Conditions in the up river steep country which is now proposed for logging activities.

No reason was given in these proceedings why practices of the Forestry Commission in other forests, such as the marking of trees to be logged or retained and the planning of snig tracks, are not carried out by it or its foresters in the Mistake State Forest. Neither in the subject harvesting plans nor the licences is the contractor told:

1. Which specific or number of trees may be logged, as distinct from volume of quota logs.
2. Which specific areas are too steep.
3. Which specific areas are rainforest.
4. The width of filter strips.
5. The location of snig tracks.

Such matters were not examined or taken into account by the Forestry Commission at all, and are mostly left to the discretion of the contractor, unless controlled in the field at the discretion of the forester.

Whilst the Forestry Commission might have confidence in its foresters and the contractors to administer and apply its practices and procedures, in my opinion it is in error to approve the activity but leave to those persons the later consideration and determination of important environmental matters. In my opinion, it is clear that the assessment of environmental matters as now required by Part V must be made by the Forestry Commission or its delegate before or at the time of making the relevant determinations. I therefore am unable to discern "real" consideration (Parramatta City Council v. Hale, supra) of environmental factors or to the fullest extent reasonably practicable by the Forestry Commission in accordance with s.111.

Whilst an applicant who has established that a breach of the law has occurred, and that a continuous breach is threatened, is usually entitled to an injunction to restrain that breach, the Court retains a discretion to make orders in the context of disputes "as it thinks fit", or whether any orders should be made at all. Such discretion has been described as being a wide one, not given an unduly restrictive operation, and being just as much a part of the structure and scheme of the E.P.& A. Act for the enforcement of planning laws as are the other parts. The obligations imposed on the Forestry Commission arise from the provisions of a Statute by which Parliament has expressed itself on the public interest. The discretion permits, in appropriate cases, refusal of injunctive relief where to grant it would work such an injustice as to be disproportionate to the ends secured by enforcement of the legislation. Relief will be denied if the breach is technical, or is not serious when taken into account in relation to the totality of factors the decision

maker had to consider.

Relevant authorities and principles applicable to the approach to be taken when exercising discretion are collected and explained by Kirby P. in Warringah Shire Council v. Sedevcic (1987) 10 NSWLR 335, at 339-341, ACR Trading Pty Ltd and Anor v. Fat-Sel Pty Ltd and Anor 1987 11 NSWLR 67, at 82. It is clear that the discretion conferred upon the Court should not be used to set aside the new regime imposed by the E.P.& A. Act to make the decisions of a determining authority environmentally sensitive.

There can be no doubt that the growing and winning of timber in this forest promotes the objects of the E.P.& A. Act and is in the public interest (s.5). The subject forest is specifically zoned for such purposes and forestry may be carried out therein without the need for development consent. The forest is not included or proposed to be included in open space areas or public reserves. I accept that the activities are taking place in a forest which has been subject to logging operations over many years, and that there will be further monitoring by expert Forestry Commission officers if such operations are continued. I consider that it is common ground that there will be considerable hardship to contractors, their families and associated persons if logging activities in this forest are terminated or suspended pending the preparation and consideration of an environmental impact statement and a discharge of duties imposed by s.111.

However, whilst I have found a breach by the Forestry Commission of its duties pursuant to Part V to consider an environmental impact statement and to assess properly the likely impact of the proposed activities on the environment, I consider that many of the claims of the applicant are exaggerated or technical or are merely criticism of Forestry Commission practices.

I consider that the most serious matter is the likelihood of soil erodability in steep country, nevertheless the adverse effects of erosion from many years of logging activities are in the main localised and continuation thereof is not likely to affect areas outside the forest, except in the long term.

With respect to logging and associated works generally, unless it is acting ultra vires, it is not my function in these proceedings to determine the wisdom or appropriateness of Forestry Commission practices and procedures which are within its general area of expertise, and I do not have the power to exercise my discretion in order to substitute my opinions for those of the determining authority. That it presently is in breach of its duties prescribed by Part V of the Act does not mean that it could not properly approve any or all of the subject activities in the future. I assume that the respondent wishes to continue with logging operations in the Mistake State Forest and that, as a consequence of this judgment, it will now take all necessary steps properly to discharge the duties imposed pursuant to Part V.

I am persuaded that in most parts of this forest it is highly likely, after compliance with those obligations, that it would be open to the Forestry Commission properly to determine that similar logging operations could and should be approved in suitable locations and under appropriate conditions. I consider for that purpose that whilst I should make declarations with respect to the validity of the existing determinations to carry out or approve current logging activities, I should not make orders at this time restraining all logging operations. The parties are therefore requested to bring in Short Minutes of declarations to enable me to give effect to this judgment and, unless the Forestry Commission gives appropriate undertakings, orders which only restrain logging and associated works within identified portions of compartments comprising