

## NOMINATION TO THE WORLD HERITAGE LIST

Convention concerning the Protection of the World Cultural and Natural Heritage

Name: NEW SOUTH WALES RAINFORESTS

Identification No: 368

Date received by WH Secretariat: 20.11.85

Contracting State Party having submitted the nomination of the property in accordance with the Convention: AUSTRALIA

Summary prepared by IUCN (April 1986) based on the original nomination submitted by Australia. This original and all documents presented in support of this nomination will be available for consultation at the meetings of the Bureau and the Committee.

1. LOCATION:

The nomination proposal consists of seven separate clusters containing a total of 17 different national parks, flora reserves and nature reserves. The sites extend from the NSW/Queensland border in the north, 750 km south along the south-east coastal region of Australia. 36°20'S-28°15'S, 150°05'E-153°20'E.

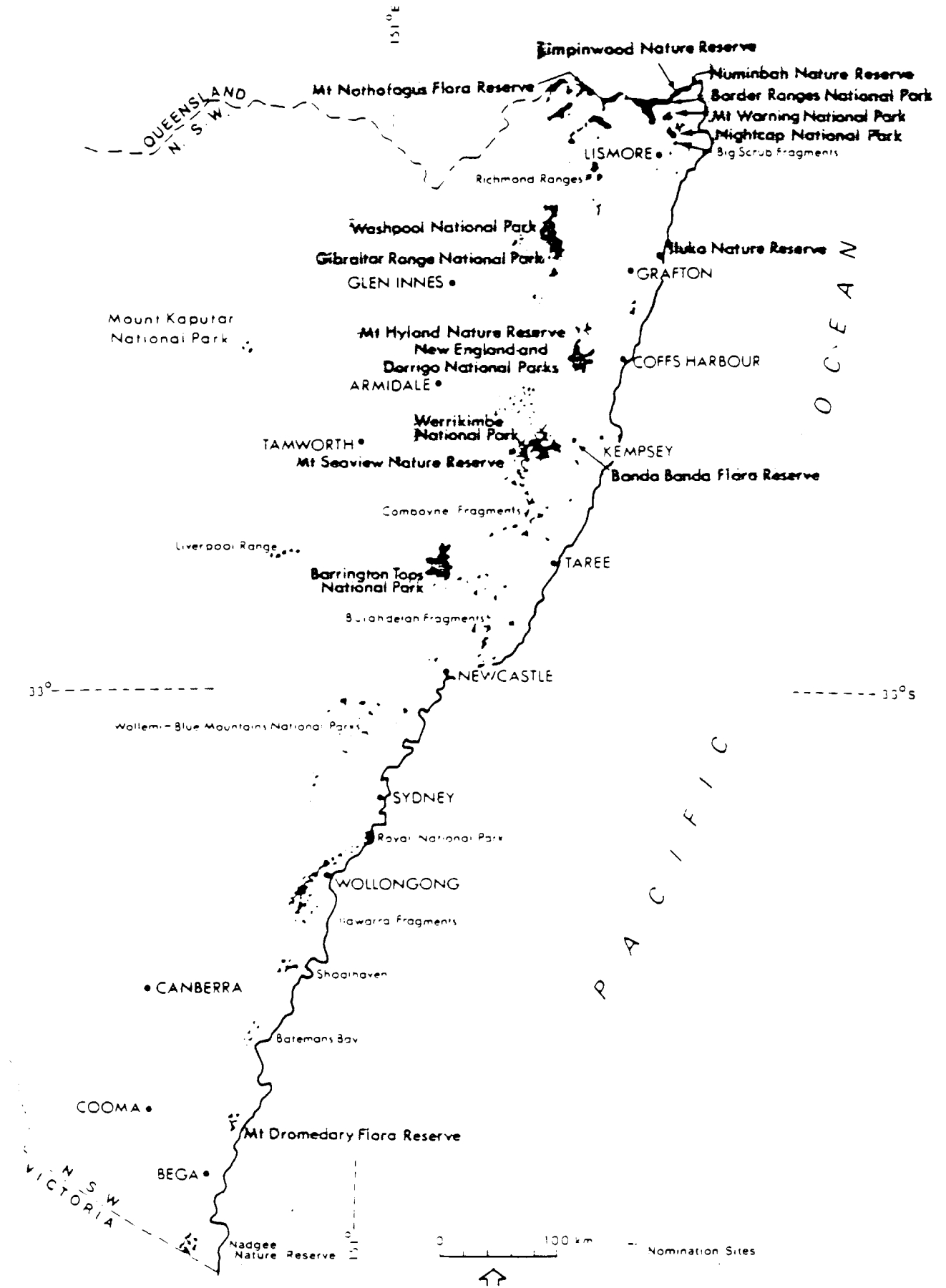
2. JURIDICAL DATA:

All the nomination areas are in public ownership. Fourteen of the sites (national parks and nature reserves) are administered by the NSW National Parks and Wildlife Service and three (flora reserves) are administered by the Forestry Commission of NSW. Dates of establishment and boundary modifications date from 1931 to the present with the major acquisitions made between 1964 and 1983. The Acts which apply are the National Parks and Wildlife Act (1974), the Forestry Act (1916), and the Forestry Revocation and National Park Reservation Act (1983, 1984).

3. IDENTIFICATION:

The 17 rainforest reserves are grouped in seven clusters from north to south along the Great Dividing Range as follows:

a) Tweed Volcano Group includes:		e) Hastings Group includes:	
Border Ranges National Park	31,229ha	Werrikimbe National Park	34,753ha
Limpinwood Nature Reserve	2,443ha	Mt. Seaview Nature Reserve	1,624
Numinbah Nature Reserve	800ha	Banda Banda Flora Reserve	1,400ha
Mount Nothofagus Flora Reserve	650ha		
Mount Warning National Park	2,138ha	f) Barrington Tops	
Nightcap National Park	4,945ha	National Park	39,114ha
b) Washpool National Park	27,715ha	g) Mt. Dromedary	
Gibraltar Range National Park	17,273ha	Flora Reserve	1,255ha
c) Iluka Nature Reserve	136ha		
d) New England Group includes:			
New England National Park	29,823ha		
Dorrigo National Park	7,819ha		
Mt. Hyland Nature Reserve	1,634ha		
Total	204,819ha		



Distribution of rainforest in New South Wales

The above sites comprise the major part of the remaining largely undisturbed subtropical rainforests of New South Wales. In addition, sclerophyll forests and other non-rainforest habitats are contained within the reserves. The reserves are seen as a series of island remnants surrounded by eucalypt forest and settled landscapes. In total they represent about one-fifth of the original extent of pre-European pristine rainforest in the State.

Justifications for selection of sites in each of the seven groups is as follows:

a) Tweed Volcano Group (6 sites).

This area was the centre of the most extensive sub-tropical rainforest in Australia. The main rainforest formations are subtropical and dry rainforest but there are also areas of warm and cool temperate rainforest that are of considerable scientific and scenic importance. Among endemics are a number with affinities to species in Oceania, particularly New Caledonia. These include Uromyrtus australis, restricted to about 15 trees in the northeast of Nightcap National Park, Corokia whiteana, which is also confined to the Nightcap Range, and Argophyllum nullumense, which is virtually limited to the vicinity of Mount Warning Volcano. In addition to Owenia cepiodora, Ardisia bakeri, Lepiderema pulchella and Ochrosia moorei are reduced to small populations. A number of species in the Nightcap Range are rare or endemic. In addition to the above mentioned, these include: Endiandra introrsa, E. hayesii, Acronychia bauerlenii, Symplocos bauerlenii and Quassia sp. aff. bidwillii. A further 14 threatened or rare plant species are also found in this group.

The Tweed Volcano group is of special significance because of the overall diversity of the fauna and the intermingling of northern and southern biogeographic elements. The region is likely to have been a refugium for rainforest biota during the onset of continental aridity in the late Tertiary. For a number of faunal groups, species diversity is the highest on the continent. Among the avifauna, the distribution of a number of species is concentrated in the region. These include Albert's lyrebird, the southern race of the marbled frogmouth and Coxen's fig parrot. Of the herpetofauna, the unusual pouched frog has its distribution centred on the Border Ranges.

The majority of sites are remnants of the Mount Warning (Tweed) Volcano while Mount Nothoragus and the western part of Border Ranges lie within the area of Focal Peak Volcano. The erosion caldera of Mount Warning Volcano, one of the largest in the world, is remarkable for its size, prominent central mountain mass and because the caldera floor has been eroded down to basement rock by the Tweed River.

b) Washpool/Gibraltar Range National Parks

Gibraltar Range National Park is a high plateau, at almost 1,200m, which extends north into Washpool National Park as a series of high ridges and plateaux separated by sharply dissected, steeply inclined valleys. As far as is known, the area is not marked by any great concentration of rare plant species or of species at their geographic limits. Rather, the outstanding feature is the diversity of plant communities and the mosaic of wet sclerophyll and rainforest communities. Most rainforest occurs in the Washpool National Park, as much of Gibraltar Range National Park was logged prior to its dedication. Warm temperate rainforest is the most extensively distributed form. Sub-tropical rainforest is restricted to more sheltered sites on better soils, while dry rainforest is very limited in extent. Despite the very high rainfall at high altitude, cool temperate rainforest is

absent. Willowie Scrub in Washpool National Park is the largest extent of coachwood rainforest remaining in Australia and, therefore, the world. A total of 501 plant species have been recorded for the Washpool area of which Marsdenia longiloba and Dendrobium tenuissimum are rare or threatened and a further 65 have restricted distributions. The majority of mammal species known to occur on the tablelands and escarpment in north-eastern New South Wales are present. Two species of small macropod still recorded in the areas are the potoroo and the rufous rat kangaroo. The parma wallaby, until recently thought to be extinct, occurs throughout the area where it is at its northernmost limit. The tiger quoll one of the larger carnivorous marsupials, has a very high population density. The avifauna is particularly rich. Some 141 bird species have been recorded and about 180 species in total are thought likely to occur. About a quarter of the total avifauna reaches its geographic limit in the Gibraltar Range region.

c) Iluka Nature Reserve

This small reserve is the only one of the nominated sites to occur on the coast. The Iluka peninsula itself consists of a series of dune ridges. The rainforest can be classified as littoral rainforest, a distinctive coastal variant of sub-tropical rainforest. Littoral rainforest is the least extensive of all New South Wales rainforest types, with a total area estimated at only 1,300ha. The reserve contains the largest single stand, and is considered the best example of its type. There is also scientific interest in four of the many bird species that are found in this reserve.

d) New England Group (3 sites)

The erosion of the Dorrigo volcanic plateau by the westward retreat of the Great Escarpment is the outstanding feature of the New England/Dorrigo region. The sweep of the escarpment around the head of the Bellinger Valley is one of the most impressive sections of the whole Great Escarpment. The sites here display very good rainforests of three main types: cool temperate, warm temperate and sub-tropical. There are large areas of wet sclerophyll intergrading with rainforest which is a distinguishing feature of the Australian flora and is of considerable scientific interest. A list of vascular plants recorded for the New England Group includes 15 rare or threatened species. Of additional interest is an undescribed species of Astelia which, as far as is known, is endemic to the New England area.

Notable avifauna includes: the rufous scrub-bird found in cool temperate rainforest in New England National Park. The low altitude sub tropical rainforests are important habitats for fruit-eating birds, particularly pigeons. Amongst the herpetofauna, two noteworthy species are the pouched frog, recorded from Dorrigo National Park, and the sphagnum frog, occurring at higher altitudes in New England National Park.

e) Hastings Group (3 sites)

The Hastings Group forms part of a block of rugged country and include an extension of the New England Tableland, together with the Hastings and Forbes river valleys to the southeast, the Kunderang Brook area to the north and Mount Banda Banda.

The vegetation is diverse and includes cool temperate, warm temperate, sub-tropical and dry rainforest, a range of eucalypt dominated communities as well as heath and swamp. In the cool temperate rainforest, which contains some of the largest Nothofagus trees in existence, there is often a well-developed understorey of warm temperate species with sub-tropical elements. The Hastings area is the only region where a virtually continuous warm temperate understorey occurs under Nothofagus. An important stand of dry

rainforest occurs in Mount Seaview Nature Reserve, with a good example of the shelterwood association. Of special interest is Smalls Creek, a tributary of Kunderang Brook, where epiphytic mosses, ferns and orchids are prolific within this rainforest type. The Banda Banda plateau also has a range of non-forest communities, including swamps, grassland and areas of heath and scrub. A striking feature of both the upper Hastings and upper Forbes is the presence of tall grass trees. The area is particularly important for two species of birds associated with cool temperate rainforest. The olive whistler which has a restricted distribution in southeastern Australia is particularly numerous on the eastern edge of the plateau and the rufous scrub-bird which has one of its major strongholds in the Nothofagus forests of Werrikimbe National Park and Banda Banda Flora Reserve. The Hastings river rat, previously thought extinct in NSW was rediscovered in the area in 1982.

f) Barrington Tops National Park

Barrington Tops is a plateau at 1,200-1,500m with steep rugged slopes on all sides. The park contains an unsurpassed series of gradations between various sclerophyll and rainforest types in response to factors such as altitude, aspect, soil type, rainfall and fire history. The major rainforest forms are sub tropical and cool temperate, with relatively smaller areas of warm temperate. The Barrington Tops region marks the northern or southern distribution limits of a number of species. Of considerable scientific interest is the rare endemic Tasmania purpurascens, among the most primitive of living angiosperms. Faunal species of interest are the Hastings river rat, the broad-toothed rat, the Parma wallaby, koala, rufous scrub-bird, and wompoo pigeon.

g) Mount Dromedary Flora Reserve

This small reserve is found 350 km to the south of the Barrington Tops in the south-east corner of the State. It contains primarily cool temperate rainforest and marks the southern limit for a number of sub-tropical rainforest species.

4. STATE OF PRESERVATION/CONSERVATION:

During the 1970s, scientific evidence on the uniqueness of Australian rainforests and particularly to the sub-tropical rainforests of NSW began to accumulate. At the same time general public interest and concern for the remaining stands of undisturbed forest habitats expressed itself at the political level. After a series of controversial public debates and formal enquiries the NSW parliament adopted a new rainforest policy in 1982 which resulted in major additions to the park and reserve system. The most significant remaining forests were given the strongest statutory protection measures. Continuing efforts are being made to add other important properties and to refine boundaries of the existing sites.

For most stands of rainforest the principal management problem is maintenance of the integrity of the stand in the face of fire. In some sites poaching of epiphytes for horticultural use has been a problem but more visible management presence is reducing this practice. Minor issues are illegal shooting of brush turkeys and invasion of exotic weed species (e.g. Spanish broom and lantana) in localised areas. Some long-standing grazing leases have been inherited from areas previously administered by the Forestry Commission but these will eventually be phased out. Management plans and working plans now exist for five of the sites and interim management guidelines exist for three others. Formal plans are in preparation for the remaining nine sites.

5. JUSTIFICATION FOR INCLUSION ON THE WORLD HERITAGE LIST:

The New South Wales Rainforest nomination, as presented by the Government of Australia provides the following justification for designation as a World Heritage property:

a) Natural property

- (i) Earth's evolutionary history. The evolution of the tropical, sub-tropical and temperate forests of Australia and their past links with Gondwanaland are a major feature of the nomination and are of great scientific interest.
- (ii) Biological/Geological Evolution. The sub-tropical rainforests of the property are a unique type with a evolutionary history distinct from forests to the north and to the south. The sites also include geological features such as a major erosion caldera and the Great Escarpment.
- (iii) Exceptional natural beauty. The nominated sites provide opportunities to view dramatic landscapes covered by dense luxuriant forests.
- (iv) Rare and Endangered Species. Contained in the nominated sites are many examples of "primitive" families of flowering plants and a significant number of endemic floral species.

WORLD HERITAGE NOMINATION -- IUCN TECHNICAL EVALUATION368 NEW SOUTH WALES RAINFORESTS (AUSTRALIA)1. DOCUMENTATION:

- (i) IUCN Data Sheets
- (ii) Consultations: Australian Government Officials, N. Wran, N. Greiner, P. Adam, G. Mosley, O. Hamann, G. Middleton, M. Chilcott, G. Stankey.
- (iii) Literature consulted: Rainforests of Australia - C. Meier and P. Figgis, ed.
- (iv) Site visit: January 1983, 20-30 January 1986.

2. COMPARISON WITH OTHER AREAS

The rainforests of NSW fall within an intermediate position in the transect of east coast Australian forests which extend from the wet tropical rainforest of North Queensland to the temperate forests of Tasmania. The NSW sites are thus best classified as sub-tropical. Research over the past decade has demonstrated their distinctiveness from the wet tropics in North Queensland, which contain a strong Indomalayan component and lack the strong Gondwana element as well as the interspersed rainforest/sclerophyll structure and composition. Although the North Queensland rainforests are more species-diverse, the NSW sites are seen as important and distinctive on structural, physiognomic and floristic grounds. Similarly, although the NSW sites share many common species with the temperate Tasmanian forests, these, being at a lower latitude yet, do not have the diversity or luxuriance of the more northerly sites.

In summary, although the NSW rainforest parks and reserves have affinities to forests to the north and south, they are a distinct unit and deserve special recognition for their particular values. The most outstanding example of the temperate forests in the south are contained in the South-Western Tasmania Wilderness National Park World Heritage Site, and another World Heritage proposal in the wet tropics in the north has been proposed. The NSW nomination is considered as a separate case on its own merits.

Within the Eastern Sclerophyll Biogeographic Province there are 95 protected areas on the UN List (IUCN, 1985) covering 2.4 million ha of land. The sites selected for inclusion in this nomination excluded those that did not include a significant component of rainforest or those that were not of sufficient size to ensure integrity. Twenty-two other parks and reserves in NSW that do include rainforest habitats were thus excluded from the nomination. The only major comparable area is the Lamington National Park in neighbouring Queensland which is contiguous with two of the nominated sites (Border Ranges National Park and Limpinwood Nature Reserve). Lamington and several smaller nearby parks represent the effective northern limit to sub-tropical forests of Australia and are an integral part of the system from an ecological point of view.

3. INTEGRITY

The main question on the integrity of the property relates to the small size of some of the sites that make up the nomination. Seven of the properties in fact are less than 2000 ha. It is a general principle of the emerging field of conservation biology that there is a minimum critical size if a reserve is to retain its biological diversity. It is known however, that minimum size

for long term maintenance of floral communities is much smaller than for that of faunal communities. Since the nominated areas' values are focussed on the floral values the question of small size becomes less of a concern. Moreover, several of the sites are contiguous and found in clusters which effectively adds to their viability.

Related to the question of size is the distance between the isolated fragments on the complex ecological relationships of the total rainforest ecosystem. According to the theory of island biogeography, small separated protected areas isolated by modified habitats will behave like "islands" and will lose some of their original species until a new equilibrium is reached. Six of the seven clusters of the nominated protected areas are in reasonable proximity and are joined by corridors of semi-natural habitats and buffers. The one site in the nomination that is not directly linked with the others is the Mt. Dromedary Flora Reserve (1255ha) in the far south which is 350 km removed from Barrington Tops and is thus seen as a somewhat extreme outlier in the context of the other six clusters.

Compensation for small size and the scattered fragments can also be made through intensive management. The NSW National Parks and Wildlife Service is one of the world's most highly regarded park administrations and a very high standard of management is anticipated. Completion of approved management plans will take several more years but all will eventually be available. The proposed new rainforest policy of the Commonwealth Government will also serve to reinforce the efforts of the NSW Government in ensuring effective management of the sites.

An administrative matter relating to the integrity of the property relates to the fact that one central agency (National Parks and Wildlife Service) controls the majority (14 of 17) of the nominated sites. The three exceptions are managed by the Forestry Commission. Such central policy, planning and management arrangements foster a coordinated approach to the total grouping and there would be some advantage in transferring the Flora Reserve exceptions to NPWS control.

#### 4. ADDITIONAL COMMENTS

A complication will arise with the name of the site which is now related to the political unit. With possible extension of the site to include the contiguous sites in the State of Queensland, the NSW label would be inappropriate. A more definitive description would be: "Australian east coast sub-tropical rainforest parks". This matter should be referred to the Australian authorities for their suggestions.

#### 5. EVALUATION

The documentation for the nomination of the NSW rainforests (275 pages of text plus 76 pages of illustrations and 15 pages of maps) is the most comprehensive ever received for a nominated natural property. The nomination is a complex one, incorporating a complicated array of 17 protected areas in 7 different clusters scattered over a large geographic area. In many ways the NSW rainforests can be seen as the terrestrial equivalent of the Galapagos Islands as each of the separated units, though related to the others, combine to reveal a pattern of evolution of great interest to science.

The disparate nature of the site scattered over a distance of 750 km could be simplified greatly if one of the small Flora Reserves (Mt. Dromedary) were excluded from the nomination. This would then present a more compact grouping over a distance of only 360 km and would not detract from the nomination as a whole. This possibility was discussed with NSW government officials who would consider the exclusion of this reserve from the total nomination.



The adjusted property would then consist of six clusters of 16 of the most outstanding and representative rainforest parks. The number of individual protected areas can be expected to be reduced in future as boundaries are adjusted and lands are acquired which will allow coalescence of more compact units.

It is noted that, like the Galapagos, no one island remnant would be adequate on its own as a World Heritage property. Rather, it is the collection of the whole grouping that add up in a synergistic manner to display the biological richness and evolutionary story of the sub-tropical rainforests of coastal eastern Australia.

The property therefore merits inscription on the World Heritage List primarily on the basis of criteria (ii): outstanding example of biological evolution of a sub-tropical rainforest biome but also criteria (i): the development of the Australian flora during and subsequent to the existence of Gondwanaland, and criteria (iii) where habitats of numerous rare and endemic plant and animal species are provided.

#### 6. RECOMMENDATIONS

The six recommended clusters containing the 16 reserves therein should be inscribed as a single property on the World Heritage List. The Bureau should request the Australian authorities to resolve the following minor issues in time for the Committee meeting:

- a) the most appropriate name for the property, and
- b) the agreement to omit the Mt. Dromedary Flora Reserve from the nomination.

The Committee may also wish to commend the NSW Government in its efforts to protect these remaining rainforest habitats and to encourage completion of management plans for all units included in the nomination.

