

AUSTRALIA'S FORESTS

INTRODUCTION

In the 200 years since European settlement about one half of Australia's native forests have been cleared, largely for agricultural and urban development, and for softwood plantations.

Today, less than 5 per cent of Australia is covered by native forests. This is a total area of approximately 378 000 square kilometres.

Two important forest types in Australia are **Rainforests** and **Eucalypt** forests.

WHY ARE FORESTS IMPORTANT?

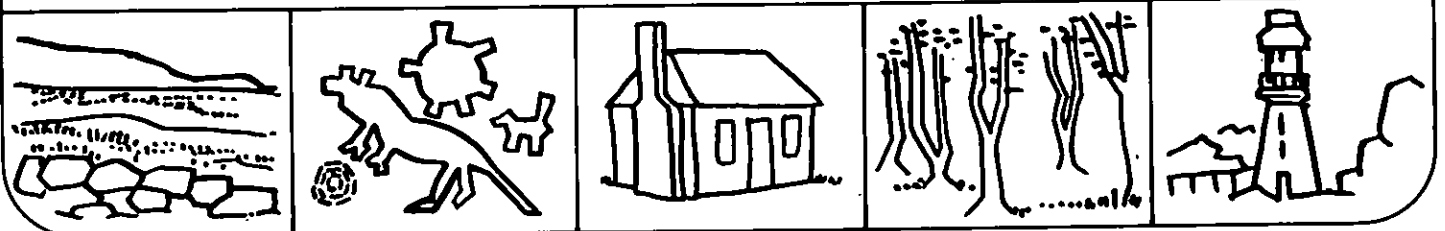
Forests establish the character of the Australian landscape and have important national estate values, such as:

- habitats (homes) for rare and endangered species of plants and animals;
- areas of great beauty;
- areas where natural ecosystem processes can continue, especially the evolution of flora and fauna;
- areas of scientific research;
- wilderness values
- examples of old growth stages of forest communities; and
- cultural significance, both Aboriginal and historical.

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To protect the National Estate



EUCALYPT FORESTS

Eucalypt forests (open forests) are dominated by hard-leaved eucalypt (gum) trees. They range from tall forests with dense shrub cover, to low forests with grassy ground cover. Eucalypt forests mainly occur in south-west, eastern and far northern Australia.

Did you know that....?

- * Eucalypts are native to Australia and the islands to the north (there are a few species in Papua New Guinea, Timor and one in the Philippines).
- * There are more than 500 different species of eucalypt. Some of the characters that distinguish different types of eucalypts are bark type and the shape and size of the leaves, buds and fruits. However, many of these characters may vary quite markedly, especially with variation in environmental factors such as climate, soil and forest density.
- * '*Eucalyptus*' is derived from the Greek *eu* (well) and *kalyptos* (concealed) - which refers to the cap which covers the stamens and falls away on flowering. There is no evidence of petals in Australian eucalypts as these fuse with the sepals at a young developmental stage to form the cap.
- * Most eucalypts have an organ at the base of the trunk known as a 'lignotuber'. On small seedlings it may be a pair of swellings on the stem, but is hidden as the stem size increases. The organ consists of a mass of vegetative buds with food reserves; if aerial parts of the trees are destroyed (e.g. by drought, grazing or fire) new shoots may develop from the lignotuber. New shoots may also appear on the trunk and branches from concealed buds beneath the bark.
- * Many important timber species like Mountain Ash and Alpine Ash have little protective bark, lack lignotubers and do not easily produce new shoots. After intense fire the trees usually die. However, large quantities of seed stored in fruit in the canopy are released after the fire and seedling regeneration is very high.

- * Some uses of eucalypt forests are: the production of honey, eucalypt oil and timber (sawlogs and pulpwood); the collection of eucalypt seed and native flowers; recreation, nature conservation and water catchment protection.
- * Some of our most important forests are old growth forests. These may contain trees between 200 to 300 years old.

Why are old growth eucalypt forests important?

- * At least 25 species of vertebrate animals depend on hollows and dead branches which are characteristic of old growth forests.
- * Rare plant species occur in distinctive habitats within these forests.

What are the alternatives to intensive harvesting of our eucalypt forests?

Over the past 20 years or so, intensive harvesting of forests has become widely practiced as woodchip export operations have grown.

There are economic and employment generating alternatives to the intensive harvesting of Australia's remaining old growth forests. The alternatives include:

- . establishing hardwood eucalypt plantations on already cleared or degraded land;
- . developing employment from tourism in areas currently reliant on the timber industry;
- . restructuring within the timber industry to focus on sawlog products obtained by careful selective logging rather than on woodchipping and intensive forestry harvesting; and
- . more efficient use of the timber resource.

It takes hundreds of years for forest to redevelop to its old growth stage once it has been clearfelled, so under the present logging cycles, old growth forest in Australia will become even rarer. We need to explore the alternatives to help protect our National Estate.

RAINFORESTS

Rainforests (closed forests) are recognised by their closed canopy and wet, very low light conditions inside the forest. They are often dominated by 'soft-leaved' trees, and can also include many vines, ferns, herbs and mosses. Eucalypt (gum) trees are usually absent from rainforests.

Australia's rainforests range from **temperate** to **tropical** rainforests. Temperate rainforests occur mainly in Victoria and Tasmania, and tropical rainforests occur in northern Australia, mainly in Queensland.

Tropical rainforests contain a large variety of tree species, with most having large leaves. These trees grow to various sizes and form a multi-layered forest.

By contrast, **temperate** rainforests have one or two layers of small-leaved trees containing only a limited variety of tree species.

Both temperate and tropical rainforests are listed in the Register of the National Estate.

Did you know that....?

- * There are many adaptations for life in the rainforests that give a distinctive character to it:
 - . **vines** - plants with non rigid stems that have developed a climbing mechanism to enable them to reach the light;
 - . **epiphytes** - life forms that use trees as a support to enhance access to light, but rely on litter fall for nutrition and water. The bulk of epiphytes are ferns, mosses and orchids;
 - . **cauliflory** - flowers and fruits that grow on leafless branches and trunks. These are common in tropical rainforests;
 - . **buttresses** - swellings at the base of the tree trunks which may be thin and parallel sided or thick and rounded. This is one of the obvious features of tropical rainforest;
 - . **stranglers** - the strangling fig often germinates high up in a fork of a tree. After a thin root makes contact with the ground it branches and fuses to eventually form a cylindrical trunk of roots around the host tree. In the end the host dies from intense competition.

- * Australian rainforest is restricted to a series of scattered pockets extending across northern Australia and along the east coast of Australia and is notable for its variety and latitudinal spread.
- * Some uses of rainforests are: timber production (high- grade sawlogs and veneer); mining; tourism; collection of plants and seed for commercial sale; material for cottage industries such as basket weaving and material for traditional Aboriginal use such as boomerangs; recreation and nature conservation.

Why are rainforests important?

In particular, tropical rainforests are significant because they contain:

- . a very high diversity of plant and animal species;
- . a very high concentration of endemic plants, that is, plants which have a limited distribution within rainforests;
- . any rare plant and some rare animal species;
- . plant species showing very primitive characteristics; and
- . many plant and animal species which are important for helping us understand how Australia's plants and animals evolved.

What's happening to our rainforests?

- * It is estimated that 75 per cent of rainforest has been cleared in Australia; most of the rainforest was in lowland and tableland areas, generally on rich soils which are now used for crops such as sugar cane.
- * There are approximately 2 million ha of rainforest left in Australia. All of the rainforest left on the mainland would fit inside a circle of about 70 km in radius. This emphasises just how little rainforest is left in Australia.
- * In Australia, The East Coast Temperate and Subtropical Rainforest Parks of New South Wales and the Wet Tropics of North East Queensland are on the World Heritage List. Temperate rainforest in Tasmania is also included in the Tasmanian Wilderness World Heritage Area.

THINGS TO DO

- * Visit your local plant nursery and find out what species of eucalypts are growing in your local area.
- * List some animals that live in old growth eucalypt forests. List some birds that are found in tropical rainforests.
- * Collect some newspaper/magazine articles about conserving forests. Determine the main messages presented in these articles. How do these messages match your own views?
- * What is the National Estate?
- * Find out the location of forests in your State. Which of these are listed in the Register of the National Estate?
- * Have any of these forests been logged recently?
- * What was this wood used for?
- * Are there any endangered animal or plant species in these forests?
- * How are these species being protected?
- * Investigate forest conservation groups in your area.

FURTHER INFORMATION:

For further information about the work of the Australian Heritage Commission and the Register of the National Estate contact:

The Education Officer
Australian Heritage Commission
GPO Box 1567
CANBERRA ACT 2601
Ph: (06) 2732042 or 2712111.

Background Notes

THE AUSTRALIAN HERITAGE COMMISSION

What is the Australian Heritage Commission?

The Australian Heritage Commission advises the Commonwealth Government on the protection of Australia's National Estate.

The National Estate can be described as those places which are worth keeping for future generations. It encompasses our natural, historic and Aboriginal heritage and can range from wildlife habitats and patches of remnant bushland to outstanding stretches of coastline or forest; from large mansions and historic streetscapes, to woolsheds, humble dwellings or examples of our industrial past; from galleries of Aboriginal rock paintings to middens and bora rings.

The Commission came into being in July 1976, following a major Inquiry into the National Estate. The Australian Heritage Commission Act 1975, which established the Commission, went through Parliament with the support of all political parties.

The Commission, which meets from four to six times a year, is made up of a part-time Chairperson and six part-time Commissioners, with various skills and interests in the natural and cultural environment. Commissioners are appointed by the Government for a term of up to three years in the first instance, but can be reappointed for an additional term. A list of Commissioners is at the end of the leaflet.

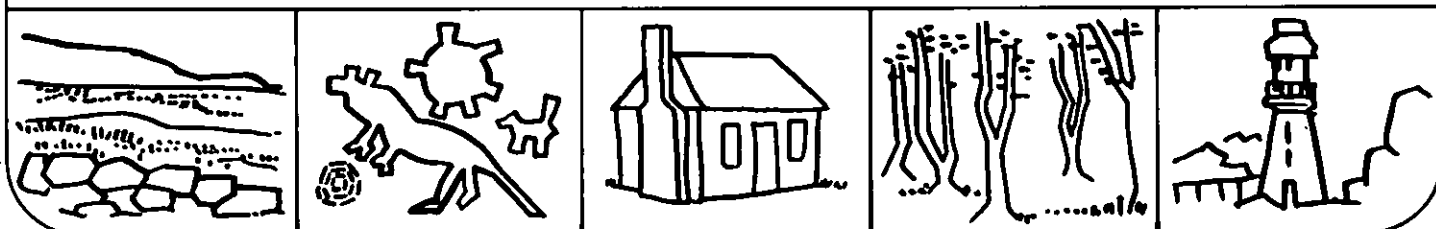
Support for the Commission is provided by technical, administrative and information/education staff based in Canberra.

In November 1988, the Government reaffirmed the role of the Commission by announcing an increase of staff to bring the full complement to about 50, plus additional funds.

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To protect the National Estate



The Commission fulfils its statutory responsibilities by:

- preparing and maintaining a Register of National Estate places;
- advising the Commonwealth Minister responsible for the environment on all matters relating to the National Estate;
- advising other Ministers and Commonwealth Government authorities on Commonwealth Government proposals which might affect the National Estate;
- developing policies and programs for public information and education, research and professional training and public information and education; and
- administering the National Estate Grants Program.

The Register of the National Estate

The Register of the National Estate is the national list of all those parts of Australia's natural, historic and Aboriginal heritage which should be kept for present and future generations. It is a list of places defined in the Australian Heritage Commission Act as those parts of the natural and cultural environment which:

'... have aesthetic, historic, scientific or social significance or other special value for future generations as well as for the present community.'

Compiling the Register is a continuing process, and many nominations await assessment. There are now almost 9 000 places listed in the Register and nearly 400 on the Interim List.

Listing in the Register

The Register is the national reference point of places with national estate values. It is an alert to planners, decision makers, researchers and the community at large of the heritage value of these places.

Listing in the Register gives some protection to a place under Section 30 of the Act.

This Section aims to ensure that the Commonwealth Government does not unnecessarily damage Australia's heritage. Under it, Commonwealth Ministers or their agencies are required not to take any action which adversely affects a place in the Register, unless there is no feasible and prudent alternative. They are also required to inform the Commission of any proposed Commonwealth action which might significantly affect a place in the Register.

Section 30 can only bind the Commonwealth Government. Thus, listing a place in the Register does **not** provide any legal constraints or controls over the actions of State or Local Government, or of private owners. And it **doesn't** give the Commonwealth Government any rights to manage, acquire or enter private property.

Listing a place in the Register does however mean that the heritage values of places entered are recognised and this should contribute to their greater protection.

How places are listed

Nominations for the Register come from all levels of government, conservation bodies such as the National Trust, nature conservation organisations and historical societies, professional and other bodies, individuals and from the Commission itself. To be nominated, a place must be in Australia or its territories, or its territorial sea, or continental shelf.

Nominations undergo very detailed assessment by Commission staff and, where appropriate, external specialists. The latter can include expert advisory panels in each State, specialists from government, academic institutions or voluntary bodies.

Each place is examined on the basis solely of national estate value. This is measured against specified criteria which describe national estate values encompassing natural, historic or Aboriginal places. Full details of this process can be obtained from the Commission.

The final decision on whether a place has sufficient national estate value for listing in the Register is made by the Commission. Once a decision has been made to list a place, a public announcement is placed in the Commonwealth Gazette and in major newspapers. The place is then on the Interim List of the Register.

Objections or comments on listing can be made for up to three months following interim listing. Where objections are received which throw doubt on the national estate significance of a place, the interim listing will be reassessed by independent experts. A final decision on listing is then reached by the Commission and this is again advertised in the Gazette and the press.

Information on places in the Register is kept on a computer database. Details of specific places in the Register, or lists of registered places in particular regions, can be obtained from the Commission on request.

National Estate Grants Program

The National Estate Grants Program is the Commonwealth Government's principal program of financial assistance for conservation of the National Estate. The Program is co-ordinated by the Australian Heritage Commission in liaison with State and Territory authorities.

Under the Program, funding is provided through the States and Territories, to community, professional, academic and State and local government bodies, for conservation projects. To qualify projects must be aimed at the identification, conservation or presentation of the National Estate.

For further Information

Phone:

Assistant Director Information/Education Section
(06) 273 2042

Background Notes

THE REGISTER OF THE NATIONAL ESTATE

THE AUSTRALIAN HERITAGE COMMISSION

The Australian Heritage Commission advises the Commonwealth Government on the protection of Australia's National Estate.

By 'National Estate' we mean all those places which we as a nation have identified as worth keeping. More formally, it is defined in the Australian Heritage Commission Act as:

those places, being components of the natural environment of Australia, or the cultural environment of Australia, that have aesthetic, historic, scientific or social significance or other special value for future generations, as well as for the present community.

The Commission is a statutory authority which came into being in July 1976. It was established under The Australian Heritage Commission Act 1975, which was passed by Parliament with the support of all political parties.

The Commission is made up of a part-time Chairperson and six part-time Commissioners, with various skills and interests in the natural and cultural environment. Administrative and technical support is provided by technical, administrative and community relations staff based in Canberra.

As one of its major tasks, the Commission compiles and maintains a Register of the National Estate.

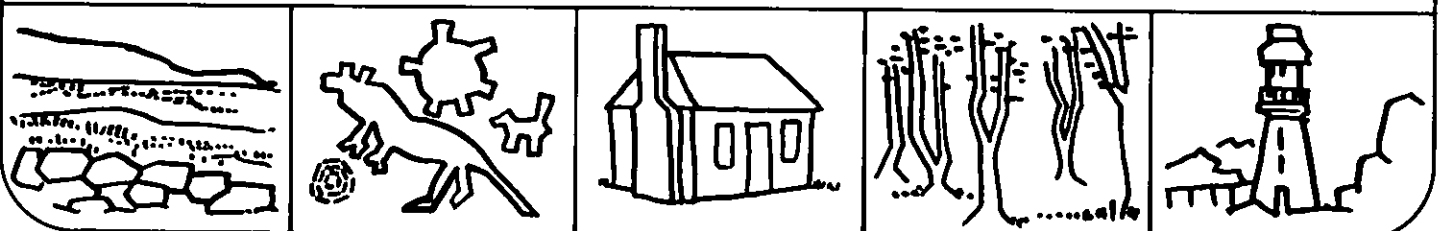
THE REGISTER - WHAT IS IT?

The Register of the National Estate is the national list of all those parts of Australia's natural, historic and cultural heritage which it is believed should be conserved.

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To protect the National Estate



Compiling the Register is a continuing task which will take many years to complete. In June 1989, there were 8824 places in the Register and a further 232 in the Interim List.

Places in the Register reflect the rich variety of Australia's heritage. They range from stretches of coastline and marine environments, to tracts of forest and pieces of remnant bush; from office and business buildings, to stately mansions and wooden huts; from galleries of rock art, to canoe trees and shell middens.

The Register serves several functions:

- . it gives planners and decision-makers at all levels of government and in the private sector, objective information about the national estate values of places, and thus enables them to consider this when they are making decisions;
- . at the Commonwealth level, it ensures as far as possible, that the national estate values of listed places are carefully considered before Commonwealth actions are taken which might affect them;
- . it provides researchers and scientists with information about Australia's National Estate;
- . it alerts Australians to the presence of places of national estate significance and educates them on the value of Australia's natural and cultural heritage.

NOMINATING A PLACE FOR THE REGISTER

Anyone can nominate a place for listing in the Register. Nominations come from all levels of government, from conservation bodies, from professional, specialist and other bodies and from individuals.

Increasing numbers of nominations are now coming as a result of systematic heritage surveys of particular areas or types of places. Much of the funding for this work has been provided through the Commission and the National Estate Grants Program.

To be nominated, a place must be in Australia or its territories, or its territorial sea or continental shelf. It can be part of the natural, historic or Aboriginal environment and according to the Australian Heritage Commission Act can be:

- (a) a site, area or region;
- (b) a building or other structure (which may include contents); or
- (c) a group of buildings or other structures.

Moveable objects such as working trams or ships, or artefacts are not eligible for listing in the Register.

Information required by the Commission when places are nominated includes:

- . a description of the place;
- . precise location and boundary details, including maps, sketches or plans;
- . a set of appropriate photographs;
- . details of the national estate significance of the place; and
- . details of ownership.

Detailed nomination forms are obtainable from the Commission at the address below.

Nominated places which are awaiting the Commission's consideration, do not have any special status or protection under the Australian Heritage Commission Act.

ASSESSING A PLACE FOR ENTRY IN THE REGISTER

Nominations for the Register of the National Estate are assessed solely on the basis of national estate value. Other attributes, such as economic values, are not relevant to national estate significance, and so are not considered in the assessment process.

Nominations for the Register undergo detailed scrutiny against criteria of national estate significance. This significance may be assessed in a number of ways depending on the expertise of the nominator, the availability of information from previous assessments and the existing heritage status of the place in question.

Assessments may be carried out by:

- . referral to an expert panel;
- . referral to government or voluntary expert bodies;
- . or
- . review of existing information by Commission technical staff, possibly with assistance from an independent expert.

Considerable information may be available on the heritage values of Aboriginal and historic places nominated for entry in the Register. This is often due to the valuable work undertaken by State authorities and the National Trust in each State. In these cases, an assessment may be made by Commission staff on the basis of the existing information.

Detailed information however is usually not as readily available on the national estate values of nominated natural environment places. To assist in the assessment of these nominations, the Commission has State panels of experts from a range of disciplines, who provide their services on a voluntary basis. Members of these panels are appointed by the Commission. The Commission also funds a part-time research officer in each State to help research the information required for the assessment of natural environment nominations.

NATIONAL ESTATE CRITERIA

Nominations are assessed using criteria developed by the Commission over a number of years. There are eight criteria for inclusion of places in the Register of the National Estate. These are summarised below. Full guidelines for applying the criteria are available from the Commission.

Criterion A: Its importance in the course or pattern of Australia's natural or cultural history

- A.1 Importance in the evolution of Australian flora, fauna, landscapes or climate.
- A.2 Importance in maintaining existing processes or natural systems at the regional or national scale.
- A.3 Importance in exhibiting unusual richness or diversity of flora, fauna, landscapes or cultural features.
- A.4 Importance for association with events, developments or cultural phases which have had a significant role in the human occupation and evolution of the nation, State, region or community.

Criterion B: Its possession of uncommon, rare or endangered aspects of Australia's natural or cultural history

- B.1 Importance for rare, endangered or uncommon flora, fauna, communities, ecosystems, natural landscapes or phenomena, or as wilderness.
- B.2 Importance in demonstrating a distinctive way of life, custom, process, land use, function or design no longer practised, in danger of being lost, or of exceptional interest.

Criterion C: Its importance to yield information that will contribute to an understanding of Australia's natural or cultural history

- C.1 Importance for information contributing to wider understanding of Australian natural history, by virtue of use as a research site, teaching site, type locality, reference or benchmark site.
- C.2 Importance for information contributing to a wider understanding of the history of human occupation of Australia.

Criterion D: Its importance in demonstrating the principal characteristics of:

- (I) A class of Australia's natural or cultural places;
 - or
 - (II) A class of Australia's natural or cultural environments.
- D.1 Importance in demonstrating the principal characteristics of the range of landscapes, environments, ecosystems, the attributes of which identify it as being characteristic of its class.
 - D.2 Importance in demonstrating the principal characteristics of the range of human activities in the Australian environment (including way of life, philosophy, custom, process, land use, function, design or technique).

Criterion E: Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group

- E.1 Importance for a community for aesthetic characteristics held in high esteem or otherwise valued by the community.

Criterion F: Its importance in demonstrating a high degree of creative or technical achievement at a particular period

- F.1 Importance for its technical, creative, design or artistic excellence, innovation or achievement.

Criterion G: Its strong or special associations with a particular community or cultural group for social, cultural or spiritual reasons

- G.1 Importance as a place highly valued by a community for reasons of religious, spiritual, cultural, educational or social associations.

Criterion H: Its special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history

H.1 Importance for close associations with individuals whose activities have been significant within the history of the nation, State or region.

HOW PLACES ARE LISTED

Once nominations have been assessed, the Commission's technical staff recommend to the Commission whether or not a place qualifies for entry in the Register.

The decision on entry is taken by the Commission during its formal meetings which take place four to six times a year.

If the Commission decides that a nominated place satisfies the criteria for entry in the Register it must advertise its intention to register the place by public notices in the Commonwealth Gazette and in the press. Once places are advertised in this way, they are said to be in the Interim List of the Register of the National Estate.

Any person may object to, or comment on, a proposed listing for up to three months from the date of publication of these notices. Comments or objections should be sent in writing to the Commission at the address below.

The Commission is required to give due consideration to all objections. In most cases where the significance of the place has been questioned, an independent expert or group is engaged to reassess the place. Objectors are given an opportunity to state their case to these experts and to examine and comment on the assessor's report. The Commission considers all this information before making a final decision.

Where there have been no objections, or where the Commission decides that the objections have not been substantiated, then notices announcing the entry of places in the Register are published in the Commonwealth Gazette and the press. A place is entered in the Register when this notice is published.

EFFECTS OF REGISTRATION

Listing in the Register gives some protection to a place under Section 30 of the Australian Heritage Commission Act. This section comes into force when places are entered in either the Interim List of the Register, or in the Register itself.

It aims to ensure that the Commonwealth Government does not unnecessarily damage Australia's heritage. Under Section 30, Commonwealth ministers, departments and authorities are required not to take any action which would adversely affect a place in the Register, unless there is no feasible and prudent alternative. If there is no such alternative, then all reasonable measures must be taken to minimise any damaging effects.

Under Section 30, Commonwealth ministers, departments and authorities are also required to inform the Commission of any proposed Commonwealth action which might significantly affect a place in the Register. The Commission must be given a reasonable opportunity to consider and comment on the proposed action.

The provisions of Section 30 operate in many circumstances. Among these are Commonwealth decisions on the disposal or management of Commonwealth property, work done by Commonwealth employees, foreign investment in Australia, export licences, signing international treaties and providing Commonwealth funds for programs undertaken by other bodies. The Act does not however give the Commission any power of veto over a Commonwealth action which might damage a registered place. It is up to the Commonwealth authority proposing to take the action, or the Government, to decide whether it will proceed.

Section 30 binds only the Commonwealth Government. But Commonwealth decisions on matters such as those outlined above, may of course have indirect consequences for other bodies.

Listing a place in the Register does not however give the Commonwealth Government any rights to manage, acquire or enter private property. And it does not provide any direct legal constraints or controls over the actions of State or Local Government, or of private owners.

Listing a place in the Register thus does not mean that an owner is required to alter the way in which the property is managed or disposed of. Nor does it mean that owners are required to give public right of entry to listed places on private property.

A Register listing does mean however that a place has been recognised as part of Australia's natural or cultural heritage, and thus deserves to be conserved.

NOTIFICATION OF AUTHORITIES AND OWNERS

As already explained, anyone can nominate a place for the Register, and there are no requirements to consult or seek agreement from any other body before making a nomination. Provision is made for commenting on or objecting to proposed Register listings, following the public notices which enter places in the Interim List of the Register. This process is described above.

The Commission follows various other practices to keep government bodies and owners informed of the process of listing.

State and Territory governments are notified on a monthly basis of new nominations received by the Commission. It is explained at that time that the nominations have no special status and have not yet been considered by the Commission. The States are invited to comment on any matters relating to the national estate significance of the nominated places.

Prior to the Commission's public announcement of places entered in the Interim List of the Register, State and local governments are notified of the places relevant to them and, where ownership details can be obtained, private owners are also informed.

For further information about the work of the Australian Heritage Commission and the Register of the National Estate, contact:

The Director
Australian Heritage Commission
GPO Box 1567
CANBERRA ACT 2601

Phone: (06) 273 2042 or 271 2111

The Register of the National Estate at 30 June 1989

STATE		HISTORIC	ABORIGINAL	NATURAL	TOTAL
NSW	Reg	2324	143	266	2733
	IL	35	20	28	83
	Total	2359	163	294	2816
Vic	Reg	1362	92	168	1622
	IL	16	4	7	27
	Total	1378	96	175	1649
Qld	Reg	487	101	212	800
	IL	7	6	15	28
	Total	494	107	227	828
WA	Reg	717	67	194	9
	IL	8	0	11	19
	Total	725	67	205	997
SA	Reg	645	108	337	1090
	IL	4	7	8	19
	Total	649	115	345	1109
Tas	Reg	1071	51	151	1273
	IL	9	4	13	26
	Total	1080	55	164	1299
NT	Reg	76	73	46	195
	IL	6	1	7	14
	Total	82	74	53	209
ACT/J. Bay	Reg	81	9	24	114
	IL	11	0	3	14
	Total	92	9	27	128
External Territories	Reg	5	-	14	19
	IL	-	-	2	2
	Total	5	-	16	21
Totals	Reg	6768	644	1412	8824
	IL	96	42	94	232
Grand Total		6864	686	1506	9056

Reg = Registered (includes all places in this status group)

IL = Interim List (includes all places in this status group)

Background Notes

THE AUSTRALIAN HERITAGE COMMISSION ACT

WHAT DOES IT MEAN FOR COMMONWEALTH BODIES?

Many actions by Commonwealth Government bodies can affect Australia's National Estate. But often, if this is likely to be the case, Commonwealth organisations are unaware that they have legal obligations. This Background Note outlines the constraints on Commonwealth Ministers, Departments and Authorities under the Australian Heritage Commission Act.

THE AUSTRALIAN HERITAGE COMMISSION

The Australian Heritage Commission is the Commonwealth Government's advisor on the protection of Australia's National Estate.

The term 'National Estate' encompasses those places in the natural, historic or Aboriginal environment which the Commission believes should be conserved. It includes places which have aesthetic, historic, scientific or social significance, or other special value, for present and future generations.

The Commission began operation in July 1976, following the Australian Heritage Commission Act 1975, which went through Parliament with the support of all political parties.

A part-time Chairman and six part-time Commissioners, appointed by the Commonwealth Government make up the Commission. They are appointed for an initial term of up to three years. The Commission meets four to six times a year and is supported by technical, administrative and community relations staff based in Canberra.

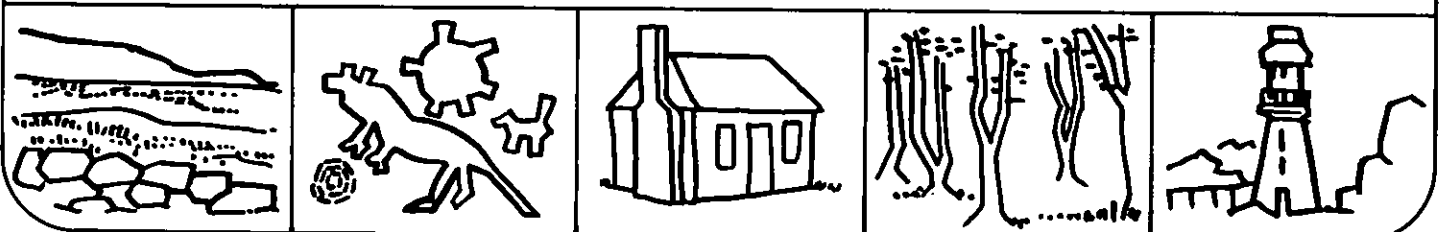
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- . preparing and maintaining a Register of National Estate places;
- . advising the Commonwealth Minister responsible for the Environment, on all matters relating to the National Estate;

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- . advising other Ministers and Federal Government authorities on Federal Government proposals which might affect the National Estate; and
- . developing programs and policies for research, professional training and public information and education.

As well as these functions, administration of the National Estate Grants Program was transferred to the Australian Heritage Commission in July 1989.

THE REGISTER OF THE NATIONAL ESTATE

The Register is the national inventory of places with national estate values. It alerts planners, decision makers, researchers and the community at large of the heritage value of these places. Compiling the Register is a continuing process, and many nominations await assessment. There are now over 8,800 places listed in the Register and more than 200 on the Interim List.

Listing in the Register gives some protection to a place under Section 30 of the Act. This Section, which is discussed in detail below, aims to ensure that the Federal Government does not unnecessarily damage Australia's heritage.

Section 30 however only binds the Federal Government, and listing a place in the Register does not provide any legal constraints or controls over the action of State or Local Government, or of private owners.

Nominations for the Register come from all levels of government, conservation, professional and other bodies and from individuals. To be nominated, a place must be in Australia or its territories, or its territorial sea, or continental shelf. Nominations undergo detailed assessment by Commission staff and, where appropriate, external specialists. The latter can include expert advisory panels in each State, and specialists from government, academic institutions or voluntary bodies.

Each place is examined on the basis solely of national estate value. This is measured against specified criteria which describe national estate values encompassing natural, historic or Aboriginal places. Full details of this process can be obtained from the Commission.

The final decision on whether a place has sufficient national estate value for listing in the Register is made by the Commission. Once a decision has been made to list a place, a public announcement is published in the Commonwealth Gazette and in major newspapers. The place is then on the Interim List of the Register.

Objections or comments on listing can be made for up to three months following interim listing. Where objections

are received which throw doubt on the national estate significance of a place, it will be reassessed by independent experts. A final decision on listing is then reached by the Commission and this is again advertised in the Gazette and the press.

Information on places in the Register is kept in a computer database. Details of specific places in the Register, or lists of registered places in particular local government regions, can be obtained from the Commission on request.

AUSTRALIAN HERITAGE COMMISSION ACT

Two sections of the Australian Heritage Commission Act impose obligations on Commonwealth Ministers, Departments and Authorities. One, Section 9, is fairly general; the other, Section 30, is central to Commonwealth government decision making and the protection of the National Estate.

Section 9 (2) requires all Commonwealth Departments and Authorities to give the Commission whatever assistance is reasonably practical in carrying out its functions.

This might include helping the Commission with:

- public information, education and training
- identifying the National Estate, especially that under Commonwealth control
- providing the Commission with advice concerning Departments' or Authorities' intentions on the future of registered places
- research related to the protection of the National Estate; and
- research related to other functions.

Section 30

Section 30 of the Australian Heritage Commission Act imposes several obligations on Commonwealth Ministers, Departments and Authorities to protect places in the Register of the National Estate. It comes into force where a place is either in the Register of the National Estate, or is on the Interim List of the Register. The Act requires:

- S30 (3) that before a Commonwealth Minister, Department or Authority takes any action which might significantly affect the national estate values of a place in the Register (or on the Interim List), the Commission is informed of the proposal and given reasonable opportunity to consider and comment on it.

- . S30 (1 & 2) that no action is taken by a Commonwealth Minister, Department or Authority that adversely affects a place in the Register unless there is 'no feasible and prudent alternative', and if there is no such alternative then all necessary measures must be taken to minimise the effects.

Advice provided by the Commission to Commonwealth Ministers and bodies under Section 30, is based on the Register's Statements of Significance. These are statements which are prepared for each place in the Register and which explain their significant national estate values.

However it is not the Commission which decides whether or not the Commonwealth will proceed with an action which will adversely affect a place in the Register. It is up to the Government, or the Commonwealth proponent of the action to take this decision. The Commission is only obliged to provide full advice on the impact of the proposed action on the national estate values of the place concerned.

What Commonwealth Actions?

Under the Act, making a decision; making a recommendation; approving a program; issuing a licence and granting permission; are all deemed to be taking 'action' for the purposes of Section 30. Such Commonwealth decisions might include;

- . granting approvals for export licences;
- . granting approval for foreign investment;
- . any decision on the management or disposal of Commonwealth property;
- . decisions involving work by Commonwealth employees, or contracts let by the Commonwealth ;
- . providing funds to other bodies to undertake programs;
- . signing international treaties.

More specific examples of matters brought to the Commission for advice under Section 30 of the Act include;

- . proposals to extend, alter or refurbish Commonwealth offices or buildings in the Register;
- . proposals to develop, extend or dispose of Commonwealth owned property adjacent to a registered place;

- . proposals by a Commonwealth Government Commercial Enterprise to be part of the redevelopment of an area or block containing registered buildings or places;
- . the possible impact on a registered place of vibrations from a RAAF air show;
- . an application to excavate an historic shipwreck;
- . management planning proposals for Commonwealth land containing registered places;
- . impacts of potential Telecom installations on places in the Register;
- . an application to export woodchips, which would involve intensive forestry harvesting of a national estate native forest;
- . an application to export veneer logs, which would involve forestry operations which could disturb national estate aboriginal sites;
- . an application to invest foreign funds in the demolition, or modification of registered buildings in order to amalgamate property for development or redevelopment;
- . activities by a foreign funded mining company where these might damage or have an impact on the national estate values of registered natural places or Aboriginal or historic sites;
- . an application to invest foreign funds in the development of marina which could potentially damage the Great Barrier Reef;
- . proposals by a Commonwealth Department to provide funds to a State or Local Government body for a project which could harm or have an impact on the national estate values of a registered place.

The examples listed above indicate just some of the range of matters which are encompassed by Section 30 of the Australian Heritage Commission Act.

What is an adverse or significant affect?

An action is considered to have an adverse affect on a place in the Register if it diminishes or destroys any of the national estate values which have led to its inclusion in the Register.

It is often more difficult to assess whether an action will affect the national estate values of a place in the Register to a significant extent. The Commission's manual however advises Commonwealth bodies to err on the side

of caution when assessing the potential impact of actions on registered places. It must be remembered here too that a 'significant extent' does not necessarily have to be something bad to warrant consideration under the Act.

In the case of the natural environment for example, almost all actions and decisions could affect a place to a significant extent. And in the case of all places in the Register, sale or transfer of ownership of a registered place, by, or to the Commonwealth Government, might affect a place to a significant extent, as would use of a Commonwealth national estate property or land by other agencies. Other actions which might be likely to affect registered places to a significant extent are listed below, separated into historic, natural and Aboriginal environments.

Historic Environment

- . restoring a building
- . altering the fabric of a building or replacing the fabric by another material
- . additions or new construction nearby
- . redesign and reconstruction of parts
- . painting unpainted surfaces
- . altering the use of a place or the intensity of an existing use
- . opening a place to the public
- . cleaning the building fabric; paint removal by mechanical, chemical or blasting methods; application of masonry 'preservatives'
- . demolishing or removing parts of a structure
- . excavating or removing old soil or footings
- . road or pathmaking; earthworks or landscaping; removing or planting vegetation
- . removing, changing or replacing machinery, drains etc.
- . removing the contents of a place, such as removing objects, machinery etc. to a museum
- . installing or improving services (e.g. air-conditioning, sewerage etc) or
- . discontinuing repairs and maintenance

Natural Environment

- . mining activities, including exploration
- . removing or introducing vegetation and animals, as through forest operations or clearing for urban development or agriculture
- . alterations to the hydrology as occurs through disturbance of catchment areas
- . alterations to the topography through activities such as earthworks, roadworks or landscaping
- . construction activities
- . any development in a wilderness area
- . decreasing personnel carrying out important tasks, such as rangers
- . actions which may lead to increased human visitation as would occur in altering public access
- . actions which may lead to changed land tenure or more intensive land use, such as an alteration from pastoral to agricultural use

Aboriginal Sites

- . demolishing or removing any part of the fabric of the site, or altering or cleaning the fabric of the site
- . destroying or removing any artefacts associated with the site
- . excavating, uncovering or exposing any part of the site (including anything which may cause erosion)
- . covering or concealing any part of the site
- . installations in or on the fabric of the site, such as notices, electric lighting etc.
- . additions to the site, or new construction nearby
- . road or pathmaking, earthworks or landscaping at or near sites
- . changes to the vegetation or hydrology of a place
- . discontinuing maintenance works, such as upkeep of fences to keep stock away

- . change in status of public access, such as a place being developed and publicised as a tourist destination
- . change in land use of the place or the area near it, such as changes from pastoral to industrial

FURTHER INFORMATION

Section 30 of the Australian Heritage Commission Act is binding on all Commonwealth Government Ministers and instrumentalities. However in the day-to-day business of government decision-making, it is not always immediately obvious where an obligation may arise under Section 30.

A considerable proportion of the Commission's technical staff's time is spent in providing advice on the National Estate and on Section 30 referrals. The Commission can provide assistance and advice to Departments and Authorities to help develop systems which should ensure that referral under Section 30 occurs smoothly and that the National Estate is thus more likely to be protected. Government and non-government contacts can be provided in all States, who can be used by Departments and Authorities for on-the-spot advice on conservation, management and other matters related to Section 30 of the Act. Commission staff are always ready to provide advice to Commonwealth government bodies on any aspects of this section of the Act.

For further information contact:

The Director
Australian Heritage Commission
GPO Box 1567
Canberra ACT 2601 Phone: (062) 73 2042

**LISTED NATIONAL ESTATE FORESTS IN AUSTRALIA:
DRAFT ESTIMATES**

Australian Heritage Commission

5 February 1990

1. FOREST VEGETATION IN AUSTRALIA

1.1 Attached are copies of 1:5 000 000 maps soon to be published by AUSLIG which show the distribution of forests in Australia in 1788 (Natural Vegetation) and in the mid-1980's (Present Vegetation). Forest types are indicated on the maps as follows:

HEIGHT CLASS:	T = Tall (>30m)
	M = Medium (10-30m)
	L = Low (<10m)
FOLIAGE COVER	4 = Closed Forest (>70%); includes rainforest
	3 = Open Forest (30-70%)
UNDERSTOREY	
SPECIES	M = Medium height trees
	L = Low height trees
	S = Tall shrubs
	Z = Low shrubs
	G = Tussock grasses

Thus "M3Z" refers to medium height open forest with a low shrub understorey; "L4G" refers to low closed forest with a grassy understorey. The map units also indicate the dominant trees types in forests, e.g. *Eucalyptus*, *Acacia*, *Casuarina*, Mixed Species, *Nothofagus*.

1.2 Preliminary figures from AUSLIG indicate that present forest cover in Australia is approximately 38.9 million ha.

2. OVERLAY OF NATIONAL ESTATE FOREST PLACES IN AUSTRALIA

2.1 The attached 1:5 000 000 overlay shows the general distribution of places which contain forests, which are either listed in the Register of the National Estate,

are in the Interim List or for which the Commission has made a decision to place on the Interim List (as at mid January 1990). The places include those whose forests are of national estate significance for their natural values as well as forested places whose known values are not related to forests (e.g. cultural significance).

The overlay is only indicative of the general location of national estate places. While the approximate boundaries of most very large places are shown on the map, the majority of places are indicated only by a spot (irrespective of their size).

2.2 Attachment A provides a list of national estate forest places for each state/territory as defined in para 2.1 above. Places marked on the overlay can be determined from these lists by the number in the column headed "No.". It should be noted that places which are located entirely within another national estate area are not shown on the map and thus are not numbered in these lists. The national estate status of each place is also provided in the lists.

2.3 It should be noted that the Commission has many nominations containing forests which are still undergoing assessment; these places are not shown on the map nor included in the lists at Attachment A.

3. DATA ON NATIONAL ESTATE FOREST PLACES IN AUSTRALIA

3.1 Preliminary estimates of the total area of national estate forests (i.e. registered, interim-listed or to be interim-listed) are provided in Table 1. It should be noted that these figures are draft estimates based on the information in Commission files; many of the estimates are very rough because of the lack of detailed information. It is intended that more accurate figures will be prepared for the Commission's submission to the Resource Assessment Commission inquiry into forests.

3.2 The draft figures indicate that approximately 8.4 million ha of forest occur in national estate places, of which about 53% is located in some type of conservation reserve.

3.3 It should be noted that all types of reserve have been included in the general conservation reserve category in Table 1; logging is permitted in some types of reserve in some states.

3.4 Based on the above estimates of total area of national estate forests (8.4 million ha) and total forests in Australia (38.9 million ha based on the AUSLIG map), it can be calculated that approximately 22% of Australia's forests are within the Register of the National Estate. It should be noted, however, that this figure is only very approximate, as the Commission does not have accurate figures on the exact proportion of forests in listed places, and the two figures are not directly comparable as they cover somewhat different areas.

TABLE 1. SUMMARY OF NATIONAL ESTATE FOREST PLACES IN AUSTRALIA

STATE	NO PLACES	TOTAL AREA (ha) ALL PLACES	AREA (ha) OF FORESTS IN ALL PLACES	AREA (ha) OF FORESTS PROTECTED
QLD	175	6,078,263	3,440,997 (57%)	1,042,902 (30%)
NSW	208	2,377,749	1,134,798 (49%)	941,974 (83%)
ACT	4	100,015	34,455 (35%)	33,455 (97%)
VIC	94	1,468,141	1,060,764 (72%)	892,119 (84%)
TAS	67	2,232,451	664,647 (30%)	192,415 (29%)
NT	17	4,084,349	1,463,380 (36%)	752,040 (51%)
SA	95	157,166	32,169 (21%)	21,472 (67%)
WA	53	2,250,609	612,513 (27%)	552,512 (90%)
TOTAL	713	18,665,352	8,443,744 (45%)	4,428,889 (53%)

NOTES ON TABLE 1.

1. Number of places (second column):

- Includes all places which are listed in the Register (Status 51, 63, 64), are on the Interim List (Status 61, 69, 83) or which the Commission has decided to place on the Interim List (as at mid January 1990). Further details of places by status are given in Table 2.
- Includes:
 - places which have been listed in the Register in part or wholly because of their forest values, and
 - places which contain forests, although their values may not be related directly to those forests (e.g. forested areas whose value is related to Aboriginal culture).

2. Total Area All Places (third column):

- Many national estate places overlap other places listed in the Register. Each figure in this column thus represents the total area covered by all places, allowing for this overlap, i.e. if one place occurs wholly within another area (e.g. Status 63, 64), only the area of the larger place has been included.

3. Area of Forest in All Places (fourth column):

- Many places listed in the Register contain a variety of vegetation types, and thus forests represent only a portion of the total registered area. Each figure in this column thus represents an estimate of the total area and proportion (%) of all places which is covered just by forests.
- Many of the places included in the table and shown on the overlay fall outside those areas mapped as forest on the 1:5 000 000 Present Vegetation map. This partly reflects the simplification which results in mapping at this scale, and the loss of forest cover since 1788.

4. Area of Forest Protected (fifth column):

- The tenure of forested areas listed in the Register of the National Estate include state forests, freehold land and various types of conservation reserve. A rough estimate of the total area and proportion (%) of national estate forests which is located within some type of conservation reserve is shown in the fifth column.

TABLE 2. STATUS* OF PLACES INCLUDED IN TABLE 1

STATUS*	5 1	6 1	6 3	6 4	6 7	6 8	6 9	8 3	Total
QLD	156	7	1	2	9	-	-	-	175
NSW	155	10	-	2	32	-	7	2	208
ACT	4	-	-	-	-	-	-	-	4
VIC	47	-	-	41	3	-	3	-	94
TAS	51	5	-	4	1	1	-	5	67
NT	14	1	-	-	2	-	-	-	17
SA	94	1	-	-	-	-	-	-	95
WA	45	8	-	-	-	-	-	-	53

***STATUS**

- 5 1 Registered
- 6 1 Interim List, objection outstanding
- 6 3 Registered: within registered area, not individually significant
- 6 4 Registered: significant within a registered area
- 6 7 Nomination to be entered on the Interim List
- 6 9 Interim List: to be entered in the Register
- 8 3 Interim List: decision to register in part and remove in part

INTRODUCTION

This nomination form comprises four sections:

1. pp 1-2 IDENTIFICATION SECTION - identifying name and location of the place
2. pp 3-10 DESCRIPTION SECTION - describing the characteristics of the place
3. pp 11-13 SIGNIFICANCE SECTION - establishing the reasons for entering the place in the Register
4. pp 14-15 ADDITIONAL SPACE - allowing for overflow of any responses in earlier sections.

Throughout the form, each pair of pages consists of the right hand page of questions and the left hand page of advisory notes intended to assist the nominator with those sections of the form. The importance of completing each question is indicated in the notes e.g. "Mandatory", "Optional but desirable". Emphasis should be placed on documenting those sites and areas which are or might be of significance. Additional descriptive data should be provided if readily available, but a nomination should not be delayed for lack of marginally relevant data.

Additional assistance is available through a Background Note and/or a person in your State or Territory who is experienced with the use of the form. Both are available by contacting the Commission.

NOTES TO PAGE 1.

1. IDENTIFICATION [Mandatory]

- 1.1 Current Name: the name of the place in current use.
- 1.2 Former or Alternative Name(s): any other name(s) currently or formerly used for the place.

2. LOCATION [Mandatory]

- 2.1 Address: For a place in an urban area, please specify the street address.
- 2.2 Otherwise, please provide the following
 - ° Name of nearest settlement, whether town, village or homestead;
 - ° Distance from the nearest settlement;
 - ° Direction from that settlement to the place nominated, (not vice versa).
- 2.3 Approximate area of the place in hectares.
- 2.4 Property details: if available, please list the title information.
It is desirable that title information include information generally included on cadastral maps, such as block and section or parish and portion (or equivalent) rather than Lands Dept Folio Nos. which generally are not mapped. For purposes of consultation with or advice to owners/lessees, it would be helpful to know of any other direct interest in the nominated lands, e.g. easements, exploration or mining leases, grazing leases or other tenements or covenants.
- 2.5 Description of boundary: the boundaries of places entered in the Register must be defined in words in sufficient detail to identify the place; please describe the boundary in terms of features occurring on published maps, preferably a single map series e.g. 1:100,000 topographic series. Question 18 requests that a copy of appropriate maps be provided.
- 2.6 Administrative location: please specify state and local government area; if a place overlaps administrative boundaries, give all states and local government areas in which the place falls.

3. NAME AND ADDRESS OF NOMINATOR [Mandatory]

This information is not normally made available on enquiry.

If you have no objection to your name or your organisation's name being released as the nominator, please indicate in the space provided. If, at any time, you wish to change your preference for confidentiality, please notify the Commission in writing.

NOTES TO PAGE 2.

4. OWNERSHIP OF THE PLACE [Optional, but desirable]

Please specify all relevant codes indicating tenure/ownership.

5. OWNERS OR LESSEES OF PLACE [Optional, but highly desirable]

This information is extremely valuable in enabling the Commission to notify owners of properties proposed for the Register and it is highly desirable that this information be provided.

If the names and addresses are not known, other address details, such as Property Name or Holding Name, may be extremely valuable.

6. PREVIOUS ASSESSMENTS [Optional, but desirable]

Has the conservation value of the place (or part of it) been assessed by another government or non-government agency, such as the National Parks and Wildlife Service or the National Trust? If so, please indicate what assessment has been made, the date of the assessment and the result.

INTRODUCTION TO DESCRIPTION SECTION

The purpose of this section is to elicit as much descriptive information as is necessary and/or available for the purposes of assessing the significance of the place and for the purposes of formulating advice under s. 30 of the Australian Heritage Commission Act.

Although only Q.7 in this section is mandatory, it is desirable that as much information as possible is provided. The amount of information appropriate will vary greatly depending on the size and complexity of the place and on the amount of information available. The form is designed to cover both small, relatively simple places as well as large and complex areas. It may be a good idea to look through the whole Section before any information is entered, to establish the best way of using the form for the place being nominated; please use what best suits the characteristics of the place.

For a small place, or one with restricted significance, e.g. a geological site or an isolated piece of remnant vegetation, there may be only a few entries in this Section. Large and complex areas however may have a great diversity of landscapes, ecosystems or plant communities, and in many cases this information is critical to the significance of the place. For such nominations, it may be necessary to complete most of the entries in the Description Section. It is desirable for the nominator of large or diverse places to complete a Subarea Supplement providing descriptive detail for major land systems, ecosystems, landscapes, catchments or particular cultural or natural sites within the nomination.

It is highly desirable for the coded information in Q.9 to be completed for all nominations. Information which directly relates to the localities and reasons for significance are of greatest importance in completing nomination. It is important that the information provided is accurate, even if that means some sections are left blank. Any footnotes or qualifications about the completeness of the information provided may be included at the end of the form under "ADDITIONAL SPACE". Other information is desirable since it serves to complete the description for the nominated place and may on occasion be instrumental in establishing further grounds for significance.

NOTES TO PAGE 3.

7. GENERAL DESCRIPTION [Mandatory]

Please include a summary description for the place as a whole.

If the place is relatively simple (e.g. geological site, endangered species habitat):

Please provide a description of the place. For example: "The area is characterised by a mosaic of low dense *Acacia* shrubland with small pockets (up to 0.5ha) of mid-height grasslands (generally about 0.6-0.8m high). Dominant shrubland species include *Acacia*, and *Hakea*, with occasional overtopping *Eucalyptus* The major grass species include *Eragrostis* and *Triodia* The area provides ideal habitat for the endangered Stippled Wren and for a variety of small mammal species, including"

If the area is more complex (e.g. extensive areas of diverse ecosystems):

Please identify and summarise the various land units or systems, landscapes, ecosystems, vegetation communities or catchments which comprise the place. For example:

"The area includes hilly granite country supporting a range of *Eucalyptus* forest types, dispersed occurrences of poorly drained swamps and heaths on sandstones at the lower margins of the steep country, *Eucalyptus* open woodlands on texture contrast soils of lower slopes, and the floodplain of the Strange River with deep alluvial soils."

It is highly desirable that a map showing the general location of these subareas be included with the nomination. This map may take the form of a transparent overlay or a simple sketch map.

If detailed information about the place is available, it is highly desirable also to answer Q.8.

NOTES TO PAGE 4.

8. DETAILED DESCRIPTION [Optional, but desirable where place is complex/diverse.]

Please describe, as far as possible, the various characteristics of the place. For large or diverse areas, a separate supplement to the nomination form is available to provide detailed information for each constituent subarea. A summary of this information should be included in response to Q.8. If information under the headings is covered adequately by the coded information in Q.9, this section may be omitted, but it should be borne in mind that while the place may be well known to the nominator, it may not be well known to the Commission, and descriptive information may therefore also be desirable. A summary of the type of information which can be included under Q.8 is given below. If you do not, or are unable, to fill in any section of Q.8 because information is **not available for [NA]** or **not relevant to [NR]** the place being nominated, please circle **NA** or **NR** as appropriate in the boxes provided under Q.8.

Geology: major and/or significant rock types which occur in the place, e.g. basalt, sandstone, serpentinite.

Geomorphology: major and/or significant types of topography and/or landform, e.g. rolling hills, tableland, coastal dune systems, submerged river valley, anticline, glacial lake.

Soils: major and/or significant soil types, e.g. cracking clays, siliceous sand, peat.

Vegetation formation/community: major and/or significant vegetation types, e.g. wet sclerophyll forest, low heath, including dominant species (if known).

Flora species: names of species, e.g. rare/uncommon, refugial, disjunct, primitive, spectacular, typical.

Fauna species: names of species, e.g. rare/uncommon, refugial, disjunct, primitive, spectacular, typical.

Natural processes: evidence of significant past or continuing processes, e.g. dune formation, coastal accretion, important nutrient cycling, speciation, succession, migration.

Natural features or sites: e.g. high biological diversity, pristine river system, waterfall, crater lake, research site, palaeological site.

Landscape character/type: e.g. natural forest landscape, pastoral landscape with significant natural features.

Visual attributes

Please identify or analyse the visual attributes of the place, either generally or from a typical or particular observation point, which should be indicated on a map. It may be helpful to refer to attributes such as those underlined below:

Landscape foreground: e.g. open eucalypt woodland, rolling wheat fields, low open grasslands;

Landscape middleground: e.g. historic township, river floodplain, tall eucalypt woodland;

Landscape background: e.g. forested hillsides, extensive wheatfields with timbered ridges, vivid blue tropical sea.

Landscape form/colour/texture: e.g.

Area 1: valley floor reflects human utilisation - straight lines of roads, fences, etc; generally bright green of crops/pastures, contrasting textures of crops, home paddocks, town and environs;

Area 2: more uniform colour and texture of eucalypts on rolling ridges.

Aesthetics: e.g. picturesque pastoral valley with historic town largely built in local stone, outstanding mountain backdrop at the head of the valley; visual attention is focussed on the clear waters of the lake in the middle reaches of the valley.

Features: e.g. very tall eucalypts, arboretum of native flora species occurring in the west of the state, open woodland influenced by grazing and burning, historic hamlet principally built in stone, representative features of wheat landscapes - silos, railhead, service town

Landscape history/land use/plantings: details of land grant and/or settlement history, historically significant land use, pioneering technology, plantings of arboreta, botanic gardens, memorial trees.

Aboriginal cultural sites or associations: e.g. carved trees, rock shelters, ochre or stone quarries, middens, fish traps, mythological or sacred sites.

Non-Aboriginal cultural sites or associations: e.g. significant buildings, bridges or other structures, sites of historic events, associations with historically significant people.

NOTES TO PAGE 5.

9. DESCRIPTION CHECKLIST - Natural Elements [Optional, but highly desirable]

The purpose of this section is to elicit as much information as possible about the place. In the case of some places, a great deal of information may have been collected in a systematic manner. In other cases, information on some attributes may be very sketchy. Please complete this section to the extent you are able.

For large or diverse areas, a separate supplement to the nomination form is available to capture detailed information for each of the constituent subareas. For example, an area which includes lowlands, escarpment and tablelands may have diverse grounds for significance and it may be desirable for the DESCRIPTION CHECKLIST to be completed for each major land system. The response to Q.9 should reflect the total of codes identified for any constituent subareas.

In addition to information you have about the place to be nominated, you may wish to check reference works on environmental description and classification and on particular attributes. The following suggestions may be helpful.

Environmental description and classification:

Most of the classifications used in the form are based on McDonald R.C., Isbell R.F., Speight J., Walker J. and Hopkins M.S. (1984). *Australian Soil and Land Survey - Field Handbook*. Inkata Press.

Key attributes:

Geology and geomorphology: Holmes A. (1970). *Principles of Physical Geology*. Thomas Nelson & Sons Ltd.

Geomorphology: Twidale, C.R. (1976). *Analysis of Landforms*. John Wiley & Sons.

Soils: Stace H.C.T., Hubble G.D., Brewer R., Northcote K.H., Sleeman J.R., Mulcahy M.J. and Hallsworth E.G. (1972). *A Handbook of Australian Soils*. Rellim Technical Publications.

Vegetation: Beadle, N. C.W. (1981). *The Vegetation of Australia*. Cambridge University Press.

Rainforests: Webb L.J. (1978). A general classification of Australian rainforests. *Australian Plants* 9, 349-363.

Wetlands: Pajmans K., Galloway R.W., Frith D.P., Fleming P.M., Haantjens H.A., Heyligers P.C., Kalma J.D. and Löffler E. (1985). Aspects of Australian Wetlands. CSIRO Tech. Memo No. 44.

9.1 ALTITUDINAL RANGE

Please give the altitude of the lowest and highest points within the place.

ALL OTHER ATTRIBUTES [9.2-9.15]

Please identify which environmental elements are Present and which are Significant against the Register criteria, by circling P or S throughout.

9.2 GEOLOGY

Please specify in the space provided the particular rock types and geological period (if known), e.g. Permian basalt, Devonian limestone, Ordovician shale. If possible, the rock type should be specified for all places of geological or geomorphological significance.

NOTES TO PAGE 6

9. DESCRIPTION CHECKLIST - Natural Elements (cont.). [Optional but highly desirable]

9.6 MAJOR/DOMINANT SOIL TYPES: Soil colour and contrast

Duplex soils: sharp contrast between top 10-15 cm (or so) and lower levels: please indicate colours, e.g. grey/red.

Gradational soils: gradual soil colour changes over the range: please indicate colours in the profile.

Uniform soils: fairly uniform colours throughout, e.g. black cracking clay, red earth.

9.7 VEGETATION CLASSIFICATION: STRUCTURAL FORMATIONS - Definitions

Closed forest	single stemmed woody plants, >2m, crowns overlapping
Open forest	single stemmed woody plants, >2m, crowns separated to touching
Woodland	single stemmed woody plants, >2m, crowns clearly separated
Open woodland	single stemmed woody plants, >2m, crowns well separated to isolated (i.e. 20% cover or less)
Mallee forest	>8m, multi stemmed woody plants (stems generally >100mm thick), crowns separated to overlapping, usually <i>Eucalyptus</i> sp. or <i>Acacia</i> sp.
Mallee woodland	>8m, multi stemmed woody plants (stems generally >100mm thick), crowns clearly separated, usually <i>Eucalyptus</i> sp. or <i>Acacia</i> sp.
Mallee shrubland	<8m, multi stemmed woody plants (stems generally <100mm thick)
Shrubland	woody plants <2m, multi stemmed at (or within 200mm of) base
Heathland	shrubs usually < 2m, commonly with ericoid leaves, usually nanophyll or smaller (see below)
Chenopod shrubland	xeromorphic single or multistemmed shrub, exhibiting drought or salt tolerance
Hummock grassland	xeromorphic grass in mound-like form, commonly <i>Triodia</i> sp., <i>Zygochloa</i> sp. or <i>Pletrachne</i> sp.
Tussock grassland	grass forming distinct tussocks
Sod grassland	short to medium height grass, forming tussocks close at base, forming interfacing leaf canopy
Sedgeland	erect, usually perennial herbaceous plants of the families: Cyperaceae or Restionaceae
Rushland	erect, usually perennial herbaceous plants, usually Juncaceae/Typhaceae families or <i>Loman</i> genus
Forbland	herbaceous or slightly woody annual or sometimes short-lived perennial plants
Other	Any other vegetation formation; please specify.

9.8 VEGETATION: Rainforest Types - Leaf sizes (L = Length; A = Area); Lianes (D = Diameter)

Nanophyll (L: <2.5cm; A: <225mm ²)	Microphyll (L: 2.5-7.6cm; A: 224-2025mm ²)	Robust (D: >5cm)
Notophyll (L: 7.6-12.7cm; A: 2025-4500mm ²)	Mesophyll (L: >12.7cm; A: >4500mm ²)	Slender (D: 1-5cm)
		Wiry (D: <1cm)

Key to Rainforest Types

A. Mesophyll & Notophyll leaves most common

1. Robust lianes, vascular epiphytes, plank buttresses and compound macrophylls common; stems 60-120cm thick
 - a. Deciduous emergents or canopy species rare or absent
 - i. Feather palms not prominent in canopy CMVF
 - ii. Feather palm trees prominent in canopy MFPVF
 - b. Deciduous and semi-evergreen emergents or canopy species conspicuous, tending to few dominant species
 - i. Mostly mesophylls SDMVF
 - ii. Mostly notophylls SDNVF
2. Robust lianes, epiphytes, plank buttresses not conspicuous; spur buttresses prominent; stems av. 60cm diameter
 - a. Deciduous emergents & canopy species rare; mostly mesophylls; palm trees not prominent in canopy MVF
 - b. Deciduous emergents & canopy species rare; mostly mesophylls; fan palms prominent in canopy MFAPVF

B. Notophyll and microphyll leaves most common

1. Robust and slender lianes, vascular epiphytes, plank buttresses and compound entire leaves prominent; trunks generally obscured by Aroids, stems diam. 60-120cm, irregular
 - a. Canopy level uneven, av. 21-45m, with emergents mostly evergreen CNVF
 - b. Canopy level even, av. 15-36m with common evergreen single species (*Araucaria*, *Agathis*) and occasional semi-evergreen species 36-51m ANVF
2. Robust lianes & vascular epiphytes inconspicuous in tree tops, slender and wiry lianes prominent in understorey, plank buttresses inconspicuous, simple toothed leaves prominent, tendency to single species dominance, stems regular size av. 60cm SNEVF
3. Robust lianes, vascular epiphytes & plank buttresses present but less conspicuous; tree crowns mostly evergreen but with a few semi-evergreen or deciduous species NVF
4. Robust & slender lianes generally present; wiry lianes generally conspicuous in understorey; vascular epiphytes & plank buttresses inconspicuous; feather palms generally conspicuous; canopy evergreen av. 20-25m. NVF
5. Robust, slender and wiry lianes and plank buttresses generally inconspicuous; simple entire leaves prominent; many semi-evergreen canopy species but few deciduous; commonly sclerophyllous emergents or co-dominants
 - a. Canopy level av. 10-20m. SSENVF
 - b. Canopy level av. 3-9m., generally even; canopy trees branch low down (shrub-like) SSENVT

Continued next page

NOTES TO PAGE 6 (cont.).

9. DESCRIPTION CHECKLIST - Natural Elements (cont.). [Optional but highly desirable]

9.8 VEGETATION: Rainforest Types (cont.)

Key to Rainforest Types (cont.)

C. Microphylls most common

1. Mossy and vascular epiphytes inconspicuous in canopy; robust lianes prominent; prickly dense understorey
 - a. Canopy uneven av. 9-15m, mixed (semi-)evergreen canopy & emergents; rare deciduous/conifers LMVF
 - b. Canopy uneven av. 9-15m, some deciduous & semi-evergreen species; frequent araucarian emergents to 21-36m AMVF
 - c. Canopy uneven av. 4-9m, mixed semi/evergreen&deciduous emergents to 9-18m; swollen stem common SEVT
 - d. Canopy uneven & discontinuous, av. 4-9m, almost all emergents deciduous, swollen stems may be common, many understorey species deciduous or semi-evergreen DVT
2. Mossy and vascular epiphytes usually present; robust lianes inconspicuous; slender & wiry lianes generally prominent & prickles absent or rare; plank buttresses absent, simple leaves with toothed margins common, strong tendency to single species dominance (*Nothofagus*, *Eucryphia*), tree ferns and ground ferns prominent
 - a. Canopy even except for sclerophyll emergents, tall av. 20-45m MFF
 - b. Canopy uneven, stunted av. 6-9m MFT

D. Nanophylls most common

1. Mossy epiphytes conspicuous; robust lianes, prickles & thorns absent or rare; plank buttresses absent; strong tendency to single species dominance (*Nothofagus*); tree & ground ferns prominent; floor often peaty & moss-covered; sclerophyll emergents generally present
 - a. Canopy level tall av. 18-40m., except for sclerophylls NFF & NMF
 - b. Canopy level stunted, uneven, often with sclerophylls, av. 6-9m. NFT & NMT

NOTES TO PAGE 7.

9.11 BIOCLIMATIC ZONE

Alpine zone	Areas above 1500m elevation and south of 30°S
(Sub)Antarctic zone	Areas south of 50°S
Arid zone	Areas receiving less than 250mm annual precipitation
Semi-arid zone	Areas receiving 250-500mm annual precipitation
Sub-tropical zone	Areas between 24°S and 30°S and receiving more than 500mm annual precipitation
Tropical zone	Areas north of 24°S and receiving more than 500mm annual precipitation
Temperate zone	Areas between 30°S and 50°S and not falling into Alpine, Arid or Semi-arid zones

9.12 WETLANDS:

Wetland environments by waterbody: these generally are well identified on topographic maps and can be identified from air photographs; see "Wetland environments by inundation regime" below for definition of P, S, I, E.

Lakes: >1m deep when full, vegetation confined to margins, inundation periods of at least several months [P, S, I, E];

Swamps: generally <1m when full but possibly deeper in places, dominated by emergent vegetation, possibly fed by groundwater but generally dependent on surface runoff for flushing or nutrient inflow [P, S, I or E];

Wetlands subject to inundation: water does not stay long enough for vegetation to develop [S, I or E];

Rivers and Creeks: channels of rivers and creeks [P, S, I or E];

Tidal flats: land subject to tidal inundation at least once a year (most tides [P]; spring tides[S]; rare inundation[E]);

Coastal water bodies: includes estuaries, inlets, coastal lagoons; excludes water bodies permanently cut off from the sea [Open to the sea: permanently [P], intermittently [I] or rarely [E]].

Wetlands environments by inundation regime:

Permanent [P]: permanent water but level may vary;

Seasonal [S]: water level varies markedly, dries up seasonally often on an annual basis;

Intermittent [I]: expected to hold water at least once a decade, possibly for several years, ± continuously;

Episodic [E]: occasionally holds water.

Wetland environments by water chemistry:

Merimictic lakes: highly stratified lakes with stagnant bottom layer of water, with very little biological activity.

Other thermally stratified lakes: all water bodies stratify thermally; use this code only for water bodies in which this characteristic is distinctive or significant.

Salinity regime: self explanatory, but if in doubt, please leave blank.

Wetland environments by landform origin: The classification is self explanatory, but if in doubt about origins, please leave blank.

NOTES TO PAGE 8.

9. DESCRIPTION CHECKLIST - Natural Elements (cont.). [Optional but highly desirable]

9.13 VEGETATION - Floristics

Please provide details of the major and/or significant vegetation types occurring in the area. Space is provided for five types. If more than five are to be described, please use the additional space at the end of this form and/or complete a supplement for one or more subareas within the nominated place. For instance, it may be appropriate to provide information separately in a Subarea Supplement for major land units based on topography, vegetation or other basis.

Area/Community Name: If you wish, you may designate a locality name for a particular subarea, e.g. based on catchment area or topographic unit. (Examples: escarpment rainforest; Cooper floodplain; Mt Black Tableland). You need not use a locality name if you do not want to. However, if land systems or other subareas are identified in Q.7 and/or mapped and/or a Subarea Supplement is completed, a common locality name will be needed for cross reference.

Community Type: Please identify the plant community, including its structural formation, using either the terms included in the checklist items 9.7 - 9.9 above or common terms such as Saltbush shrubland, Belah woodland, Wet Sclerophyll Forest, Subalpine woodland,

Dominant Species: Please list the prominent and/or predominant species in the tallest (or canopy) layer of the community. It is desirable for information about plant associations or alliances to be provided if available, e.g. *Eucalyptus fastigata* - *E. viminalis* alliance.

Understorey Species: Please list species dominant in the understorey.

Emergent Species: Please list any species which emerge above the canopy layer.

Indicator species/growth forms: Please list other significant flora species (e.g. rare species, disjunct species), or distinctive growth forms (e.g. mallee, vines, epiphytes, prostrate forms of generally erect species, buttress roots) etc.

Information source and reliability: Please indicate the source of floristic information and its reliability, e.g. professional, systematic survey; rapid field reconnaissance by competent botanist; brief visit by amateur naturalist. Where applicable, refer to published sources of information (e.g. Simpson, 1986), and include full details of the reference under Q.16.

NOTES TO PAGE 9.

10 DESCRIPTION CHECKLIST - Landscape and Cultural Elements [Optional but desirable]

The place being nominated may be natural in character with some cultural elements or it may be largely cultural in character. If the place is a small site, it may not be relevant to complete this section at all. Please provide what information you can on landscape and cultural items within the nominated place. It may be appropriate that a specialised Historic or Aboriginal nomination be completed if this is possible.

10.1 PERIOD OF ESTABLISHMENT OF CULTURAL ELEMENTS

For cultural elements, please specify the period of establishment. For parks, gardens, structures etc, specify the date of construction/establishment. For landscapes, specify the period in which the landscape took on the character for which it is being nominated. If there is a specific year or date which is significant please give it in the space provided.

10.2 LANDSCAPE CHARACTER SPECTRUM

If relevant, please indicate whether the area is, wholly or partly, of wilderness quality, of natural or near-natural character, mixed natural or cultural or predominantly cultural in character. Give an overall assessment of the character of the landscape.

10.3 LANDSCAPE AESTHETICS

If relevant, please analyse the aesthetic characteristics of the place. It may be helpful to use such terms as: colour, form, texture, contrast, diversity, unity, consistency, broad/narrow viewfield, foreground, middleground, background, discordant or conflicting elements, landscape feature.

10.4 LANDSCAPE HISTORY

If relevant, please identify important events, periods or land uses in the past. Such references might include: historic land grant; associations with early settlement of region, state or nation; pioneering land use or technology; associations with historically significant figures, sites of historic events, presence of historic structure or artefact in the landscape, historically documented land management practice.

10.5 LAND USE

Please indicate present land use. This may include one or more of the following: National Park (or equivalent reserve), recreation (active or passive), traditional Aboriginal land use, logging, mining, pastoral (improved or unimproved), agriculture, urban settlement.

10.6 LANDSCAPE DESIGN

If the place is or contains an element such a park, garden, botanic garden, arboretum, please provide whatever information is possible on the following: landscape designer, design style or tradition, particular design feature (e.g. lake, pool, waterfall, spectacular floral display, etc).

10.7 HORTICULTURE

Please indicate any plantings of horticultural interest e.g. early plantings of plants from a particular source or of a particular plant group, comprehensive plantings of particular genus, etc.

10.8 ABORIGINAL LANDSCAPE

Please indicate any item of Aboriginal heritage interest e.g. carved tree, rock art site, fish trap, bora ring, ochre quarry, midden or a natural feature believed to be (or have been) significant to Aboriginal people.

10.9 OTHER

Please indicate any other feature or site not included under any of the headings above.

INTRODUCTION TO THE SIGNIFICANCE SECTION

The purpose of this section is to enable the nominator to establish the grounds for the entry of the nominated place into the Register. The reasons advanced by the nominator should be based on the information in the Description Section and should address the Register criteria developed by the Commission. The Register criteria are summarised in the notes to page 12 and are available in their full form from the Commission on request.

NOTES TO PAGE 10.

11. HISTORIC SITES OR AREAS

Please circle P or S for any item present or believed significant. All items believed significant will be assessed within the context of similar historic items.

12. ABORIGINAL SITES OR AREAS

Please circle P or S for any item present or believed significant. All items believed significant will be assessed within the context of similar Aboriginal heritage items.

13. CONDITION AND INTEGRITY

[Optional but desirable]

13.1 CONDITION

"Condition" refers to the current state of the place relative to the values for which the place has been nominated. Condition reflects the cumulative effects of management and major environmental events. Indicators of condition may include the following:

- evidence of fire, flood, drought;
- the presence/absence of exotic species, effects of grazing;
- the degree to which the full complement of native species occur in their natural proportion and age classes;
- evidence of erosion caused or increased by direct or indirect human action;
- the presence/absence of roads, buildings or other structure;
- discordant structures in natural or cultural landscape;
- presence of planted crops, managed pastures;
- degree to which the character of a township is maintained.

For example, a wilderness area of highest integrity will be an area with few, if any, signs of human activity, that after disturbance will return to its natural state. In contrast, a cultural landscape of highest integrity will be an area in which all natural and cultural elements are consistent with the overall character of the place. In the case of a geological site, exposure in a road cut may enhance the significance of the place. The same road or road cut in a wilderness area would constitute a considerable loss of integrity.

13.2 EFFECT OF CONDITION ON VALUES

Indicate whether there has been any effect on values as a result of natural or human induced changes to the place. If the options provided are not adequate for the particular circumstances, please describe in the Comments section (See 13.5 below).

13.3 INTEGRITY

"Integrity" is an indicator of the likely long-term viability or sustainability, reflecting the present condition of the attributes of the place, the ability of the place to restore itself (or be restored) and the time frame likely for any restorative processes. The integrity of a place may be affected by internal and external factors, including:

- effects of influences from outside the place, e.g. downstream effects;
- size of the place and/or degree of fragmentation of vegetation or ecosystems into isolated areas;
- strength of natural restoration processes;
- the natural range of genetic variation.

13.4 PROGNOSIS

It is helpful in assessing current significance to have some indication of trends, i.e. whether the values of the place are deteriorating or improving. Thus, please indicate the likely future implications of condition and integrity on values. You may wish to use the comments section (11.5 below) to expand on the nature of any loss of significance and the anticipated prognosis. Similarly, you may wish to identify proposed actions which may affect the values of the place. It should be noted that the Commission does not have a management role in the restoration or rehabilitation of places.

13.5 COMMENTS ON CONDITION AND INTEGRITY

Please provide any other comment you think may be useful in assessing significance of the place. For instance, it would be helpful to know the source & date of assessment of condition, particulars of disturbance to the place, loss of vegetation cover through clearing, loss of water quality, grazing of natural vegetation by domestic stock.

14. SIGNIFICANT ELEMENTS & USES [Optional but desirable]

ATTRIBUTES 14.1: Please circle all items which contribute to the significance of the place.

NOTES TO PAGE 11.

15. SIGNIFICANCE AGAINST CRITERIA [Mandatory]

Information under this item is of critical importance in helping to determine whether the place merits inclusion in the Register, based on the Commission's criteria for significance. The chart overleaf sets out these criteria in schematic form. Information provided for this question should be based on data elements listed in response to Q.9-Q.12.

This question seeks specific information items which establish whether the place nominated is significant against the criteria. For guidance, some examples are set out below showing where some common or indicative items might fit. If **you are able**, please give an indication (in the left hand column of page 11) of the **relative importance** of any item listed for each criterion.

EXAMPLES ONLY

A IMPORTANT IN THE COURSE OR PATTERN OF AUSTRALIA'S NATURAL OR CULTURAL HISTORY

- A.1 Places indicative of past landform processes, e.g. entrenched meanders, drowned river valleys, biogeographically significant species; relict or disjunct communities or populations; refugia.
- A.2 Gene pool preservation; ongoing evolutionary processes; pristine catchments; cave landform development; river course changes; succession.
- A.3 Highly diverse flora or fauna assemblages or landscape types.
- A.4 Explorers gravesite; early land grant; sites associated with important scientific discoveries or interpretation.

B IMPORTANT IN ITS POSSESSION OF RARE, ENDANGERED OR UNCOMMON ASPECTS OF AUSTRALIA'S NATURAL OR CULTURAL HISTORY

- B.1 Rare flora; rare fauna; rare or uncommon community or association; rare or uncommon landform; areas of high wilderness quality; rare or uncommon landscape type.
- B.2 Evidence of early land management practice.

C IMPORTANT FOR ITS POTENTIAL TO YIELD INFORMATION WHICH WILL CONTRIBUTE TO AN UNDERSTANDING OF AUSTRALIA'S NATURAL OR CULTURAL HISTORY

- C.1 Important research sites, type localities, reference catchments.
- C.2 Archaeological sites.

D SIGNIFICANT IN DEMONSTRATING THE PRINCIPAL CHARACTERISTICS OF:

- (i) A CLASS OF AUSTRALIA'S NATURAL OR CULTURAL PLACES, OR
- (ii) A CLASS OF AUSTRALIA'S NATURAL OR CULTURAL ENVIRONMENTS

- D.1 Representative flora, landforms, landscapes, e.g. mulga sandplains, subalpine woodlands, tropical rainforests, volcanic plugs, glacial lakes, captured streams.
- D.2 Landscapes demonstrating principal characteristics of various land uses, e.g. sugar growing, pastoralism; example of landscape design places with long-term management practice and records.

E IMPORTANT IN EXHIBITING PARTICULAR AESTHETIC CHARACTERISTICS VALUED BY A COMMUNITY OR CULTURAL GROUP

- E.1 Natural or cultural landscape of aesthetic significance, Aboriginal art site.

F IMPORTANT IN DEMONSTRATING HIGH CREATIVE OR TECHNICAL ACHIEVEMENT AT A PARTICULAR PERIOD

- F.1 Places which represent high design achievement, e.g. in rock art, landscape design or architecture.

G IMPORTANT FOR STRONG OR SPECIAL ASSOCIATIONS WITH A COMMUNITY OR CULTURAL GROUP FOR SOCIAL, CULTURAL OR SPIRITUAL REASONS

- G.1 Sites of symbolic or sacred significance.

H IMPORTANT FOR SPECIAL ASSOCIATIONS WITH THE LIFE OR WORKS OF A SIGNIFICANT PERSON OR GROUP OF PERSONS OF IMPORTANCE IN AUSTRALIA'S NATURAL OR CULTURAL HISTORY

- H.1 Important collecting localities of historically significant figures, e.g. Banks, von Mueller; association with important settlers, community leaders.

Entries on page 11 should include **specific** items of significance, and reference made to relevant published sources of information (e.g. Simpson, 1986); full details of the references should be provided in Q.16. Some specific examples are shown below:

- A.1 Mt Warning is a volcanic plug remaining from erosion of a large shield volcano (Smith, 1984).
- B.1 Occurrence of rare plant species *Glycine latrobeana* (Leigh et al., 1989).
- B.2 1830's land grant reflected in holdings (Jones, pers. comm. 1989).
- C.1 Type locality for Corunna Conglomerate.
- D.2 Represents excellent example of late 19th century public gardens design, especially in layout and design of paths and ponds.
- E.1 Mt Warning is an outstanding landscape feature, focus of the upper Tweed Valley and visible over a large area of south-east Queensland and north-east NSW.
- H.1 Area includes collecting sites of von Mueller expedition of 1865.

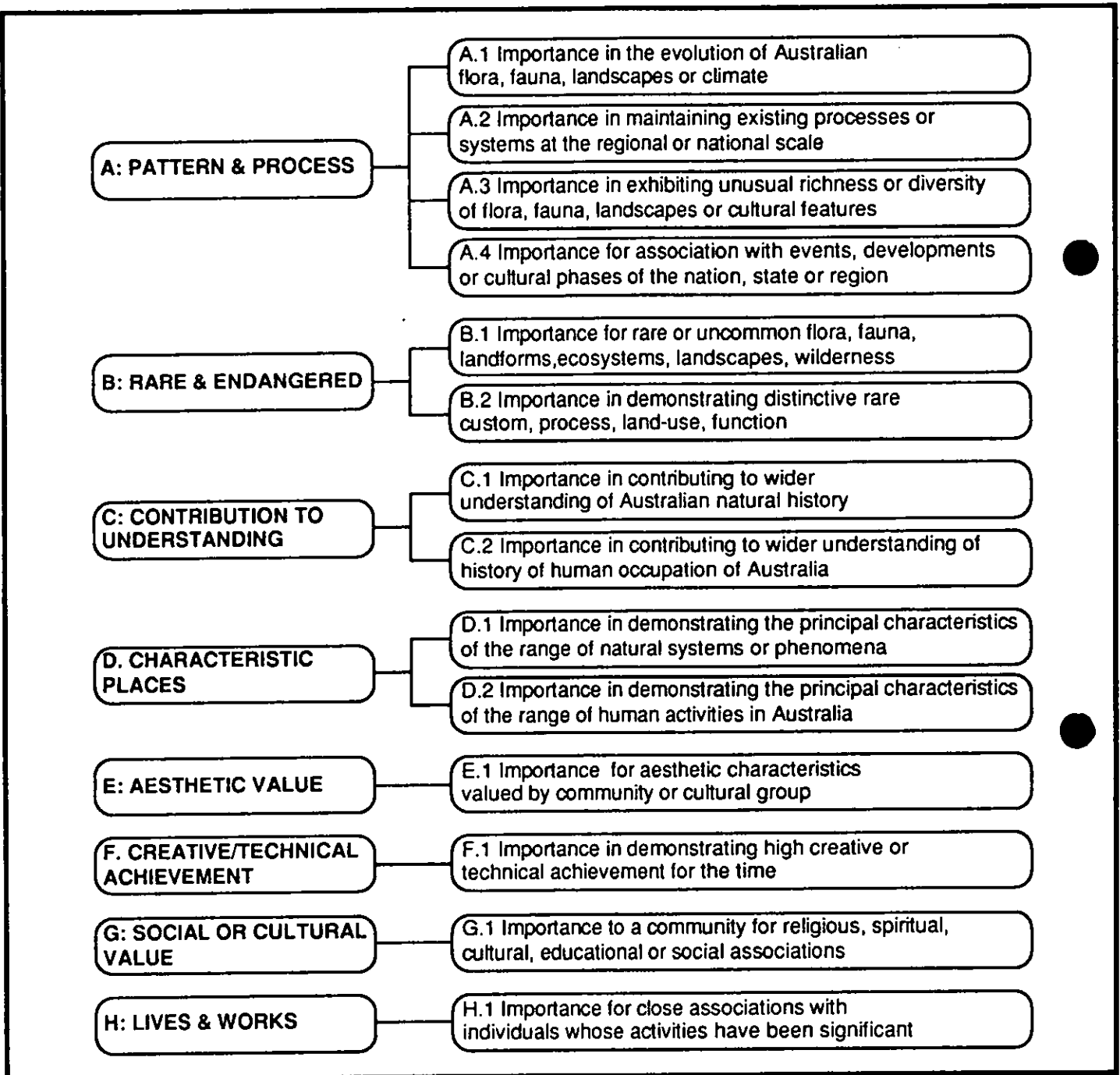
NOTES TO PAGE 12.

16. STATEMENT OF SIGNIFICANCE [Mandatory]

This should be a concise statement of why the place is thought sufficiently significant to merit registration, based on the data elements listed in Q.13. **A Statement of Significance must be included for the nomination to be assessed.**

Although considerable space is allowed for this question, particularly for large and complex places, the statement should be kept as concise as possible. The statement should address the criteria below and should reflect the relative merits of the the various significant elements of the place. If the significance of the place has been assessed or the nominator's claim for significance is directly supported by published or unpublished material, these assessments or references should be cited. The full space provided is likely to be required for a few places only.

CRITERIA FOR THE REGISTER OF THE NATIONAL ESTATE



NOTE:

The full text of the Register criteria are included in a Background Note on completing a nomination. Further details are included in the Application Guidelines for the criteria. Both documents are available from the Commission on request.

NOTES TO PAGE 13.

17. RATIONALE FOR THE PROPOSED BOUNDARY. [Optional but desirable]

17.1 THE BOUNDARY APPROXIMATES

Please indicate the major consideration(s) you had in mind in arriving at the boundary you propose to nominate. Tick in the relevant boxes.

Natural vegetation cover boundary: the present extent of natural vegetation.

Natural ecological boundary: the limit of a particular landscape type, geological formation, vegetation community, species habitat.

Water catchment boundary: the divide between river or stream catchments.

Visual catchment boundary: the limits to the viewfield from a point, line or area within the nomination.

Areas unified by common history: areas subject of a historic land grant; areas subject to particular significant and use, owned or developed by a significant individual or organisation.

View from line or point: similar to Visual catchment, but indicates a more specific viewing locality, e.g from the main street or from a point which has particular historic or social significance.

Line to include minimal area of specific site: line including a natural or cultural site, together with area for a buffer or to disguise a precise location. Justification for a buffer or disguise area should be included under Q.15.3 "Additional Comments on Boundaries" below.

Line to enclose site and its setting: line to include the setting of a site where such setting is integral to the significance of the site.

Line to include disparate significant elements: the nomination rests largely on its diversity or representativeness, and the boundary reflects this objective entirely or in large degree.

Elements in a certain condition: boundary based on assessment of condition of land, e.g. includes those lands unlogged in the last 50 years, or in wilderness condition, or ungrazed etc.

Other: specify any other rationale employed to draw the boundary.

17.2 THE BOUNDARY IS DRAWN TO

Please indicate the policy or criterion you adopted in relation to inclusions in and exclusions from the nominated area.

17.3 ADDITIONAL COMMENTS

Include additional comments you wish to make about the boundary, such as options considered, the need for areas such as buffer zones which are of lesser significance but which may warrant inclusion in the place.

18. BIBLIOGRAPHY [Optional but desirable]

Please list:

- ° known publications about the place which might assist in assessing significance;
- ° research or survey work carried out in/on the place or relevant to the place;
- ° research or survey work in progress.

Please use the following format for references: Author, (Date), Title, Publisher or Journal, e.g.

Holmes H. (1970) . Principles of Physical Geology. Thomas Nelson & Sons Ltd.

Webb L.J. (1978). A general classification of Australian Rainforests. Australian Plants 9, 349-363.

NOTES TO PAGE 14.

19. PERSONAL CONTACTS

[Optional but desirable]

Please provide name, address and phone number of people and/or organisations which have, or are likely to have, additional data or information about the place.

20. CHECKLIST OF ATTACHMENTS

[Mandatory]

All nominations **MUST** have:

- Location map;
- Boundary map;
- Photographs or slides, with captions and date.

It is highly desirable that other information relevant to the significance of the place be provided if it is available. Such material might include:

- Sketch map of major land units or landscape elements (for large, complex or diverse natural areas or landscapes);
- Species lists of flora and fauna (if readily available);
- Previous assessment reports;
- Copies of published articles relevant to the significance of the place.

For complex places, even very approximate sketch maps could be very helpful for documentation and evaluation purposes. Maps of the various units would be valuable in assessing nominations of places like the following examples:

- a natural area in an arid environment which might include such units as floodplain and channel country, Mitchell Grass plains, sandplain, sand dunes and playa lakes;
- a natural area in mountain country which might include such units as snow grass plains, sub-alpine woodland, montane forest communities and a lake system;
- a cultural landscape which might contain timbered ridges under natural vegetation cover, valley floors cleared for grazing, historic towns/villages, pioneer cemetery and a eucalypt still.

Similarly, assessment could be greatly assisted by a sketch map showing which areas have been grazed or burned or revegetated at particular times.

ADDITIONAL SPACE

Additional space is included to cater for any overflow of information from questions related to Description, Boundaries, Bibliography or Significance. Please indicate at the beginning of any section of text what type of entry follows. For example:

Q7. General Description (continued):

Q15. Significance against the Criteria (continued):

①

PREPARING A NOMINATION FOR THE REGISTER

To nominate a place for the Register of the National Estate a nomination form should be completed.

Nomination forms are used by the Commission to:

- (i) compile basic information about each nominated place; and
- (ii) present the information in a format suitable for entry into a computer data base.

The form is designed to be used for the whole range of items covered by the definition of the National Estate. It is a mechanism to standardise basic information, rather than being an attempt to limit the amount of information presented on a place. All relevant information should be provided, or cited as references.

There are three elements in any nomination which are essential if the place is to be entered in the Register:

- . precise identification of what is to be entered;
- . precise location of the place;
- . reasons why the place should be entered in the Register.

The Commission needs an accurate and comprehensive description of the place and reasons for significance which are supported by facts. Caution should be exercised in using superlatives.

The nomination should be supported by photographs and/or slides, a sketch plan and a map of the place appropriately identifying its location and boundary. A nomination received with all the requisite data and photographic evidence can be processed more speedily.

Instructions for completion of the nomination form are printed on the back of each page. The following notes provide more detailed advice.

NAME OF PLACE

The name given in the first line of the form should be the one that is most acceptable for publication. Use the most commonly used name of the place, unless there is a particular reason for not doing so. For buildings, the current name should be cited first, e.g. Historical Museum, former Police Station. For Aboriginal sites, Aboriginal names may be used and the common non-Aboriginal name also should be given on the form under 'other names'. The terms 'Aboriginal' or 'archaeological place', 'area', or 'sites complex' may also be used, and should be used if the areas nominated contain other elements which are not of National Estate significance (such as modern houses). If the place is already specially protected under state law as a gazetted 'reserve', 'Aboriginal area' etc, this should be incorporated into the name e.g.: Red Gorge Historic Reserve.

LOCATION OF PLACE

Sufficient information is essential to locate and identify the nominated place and to define its boundaries precisely.

Natural and Aboriginal Places

If the place is already a gazetted Reserve, the published boundaries of the Reserve will be used, unless it is considered that only a smaller area within the Reserve is of National Estate significance. In this and all other cases, the area being nominated must be defined precisely, according to the following guidelines:

- . use the largest scale map available;
- . attach a photocopy of the relevant part of this map to the nomination, with the area being nominated clearly marked;
- . describe this area in words in section 2(c) of the nomination forms, following the instructions on the facing page;
- . a precise grid reference may be given when the site is well-known and open to the public, but it is still necessary to describe the precise boundaries of the site to be included in the Register. In this situation, circles centred on the site, with a small radius such as 250m, have often been used;
- . in situations where it is undesirable to give the precise grid reference of the site, a larger circle or rectangle or irregular area may be used, not necessarily centered on the site but including it. It is desirable to include the precise grid reference of the site on the original nomination form and the attached map for

checking purposes, but this information will be kept confidential, and will not be included in the computer record or published Register;

several sites may be included in one nomination, if they are either close together and are contained within one nominated area, or are sites of the same type and are in the same general area - e.g. a series of engraving sites on one property, defined as a series of circles. However, if the sites are far apart or of different types, it is better to complete a separate nomination form for each one;

Boundaries may be described following landforms such as catchment boundaries and contours or features such as roads and power lines which are clearly marked on maps (See Diagram E)

Built Environment

The precise address is required in Section 2(b). If the nomination includes several structures under a joint listing e.g. a 'group' or precinct, a precise description of the boundary of the area listed is required. A map with the boundary of the area clearly marked should also be attached to the nomination together with a sketch plan identifying all elements within the area which are of national estate significance.

When nominating a group of buildings, a list of components should be included in section 2(c) e.g. 'Police Station and Court House Group' comprising: Police Station and lock-up, Court House, stone wall at rear and gateposts facing Smith Street.

Statement of Significance

Concise reasons should be given for inclusion in the Register. The categories of significance should be expanded upon and important historical connections or features such as the names of endangered plant species should be included.

Caution this part of the form should not include a description of the nominated site (see "description of place" on later page)

Name and Address of Nominator

Please sign and date the nomination form.

Bibliographic Material

Please list references in order of importance (only up to line 35 can be included in the computer record)

Copies of reference material should be included if possible. Other documents describing the place in more detail would also be appreciated. For example, National Trust listing sheets, Site record cards for Aboriginal places and for the natural environment flora and fauna lists, geological and geomorphological history or any information on scientific or educational use of sites.

Description of Place - Natural Environment

This section should not be completed for buildings nor for urban parks or individual trees unless nominated for natural significance.

Instructions on how to describe vegetation and landforms can be found on the back of Page 2 of the nomination form.

Description of Place - Cultural Environment

In section 7(a) circle appropriate box. Section 7(b) can only include 4 figures e.g. 1897, any other information on dates e.g. between 30000 $\pm$ 250 BP and 14000 $\pm$ 120 BP should be included in Section 7(e).

Description of buildings in 7(e) should include architectural details. Historical information should not be included in this section.

Aboriginal Secret/Sacred Sites

For these it is best to fill out two nomination forms - one containing only that information which can be made public in the computer record and Register book, and one giving more detailed information, especially about location, for the Commission's confidential files. (The public will not have access to these).

Indicate on any attached photographs of these sites whether they may or may not be published.

Supporting Documentation Maps and Plans

Plans:

As mentioned above, each nomination must be accompanied by a sketch plan of the place. It should:

- . identify all elements;
- . distinguish those elements of significance to the National Estate;

- show the boundary of the proposed listing where this is relevant; and
- bear the names of the place nominated.

The minimum requirement is shown on diagrams A and B. The standard to aim at is shown on diagram C.

Maps:

A map showing the location of the building(s) is required in areas covered by street directories. A photocopy of the relevant map with the boundaries of the place clearly marked is adequate.

For homesteads and other street uses outside areas covered by street directories a copy of a map showing the location should be included.

Natural Places

Diagram E provides an example of how boundaries can be described and marked on a map. Maps printed by National Mapping or State Government Authorities should be used.

Aboriginal Places

See instructions for natural places.

Photographs

Good photographs are an essential component of any nomination. The ideal photographs for a nomination would be:

- (a) one or more 25 x 20cm (or 20 x 15cm) black and white glossy enlargements, displaying good contrast; and
- (b) one or more 35mm colour transparencies, displaying good colour balance.

The Commission would prefer good quality photographs, of publishable standard, to be supplied at the time of nomination, but the Commission recognises that this is often not possible. Any clear colour or monochrome prints or slides are therefore acceptable, but not photocopies of photographs.

The Commission is compiling a colour slide collection including at least one photograph of each place. Monochrome photographs displaying good contrast are needed for publication of the illustrated Register.

Each photograph should be clearly marked with the name of the place, date of the photograph and name of the photographer (for accreditation). Slides should be marked on the border, and monochrome prints on the back, with a soft-tipped pen or pencil only.

The Commission will take due care to ensure that copyrights over photographs in its possession are maintained.

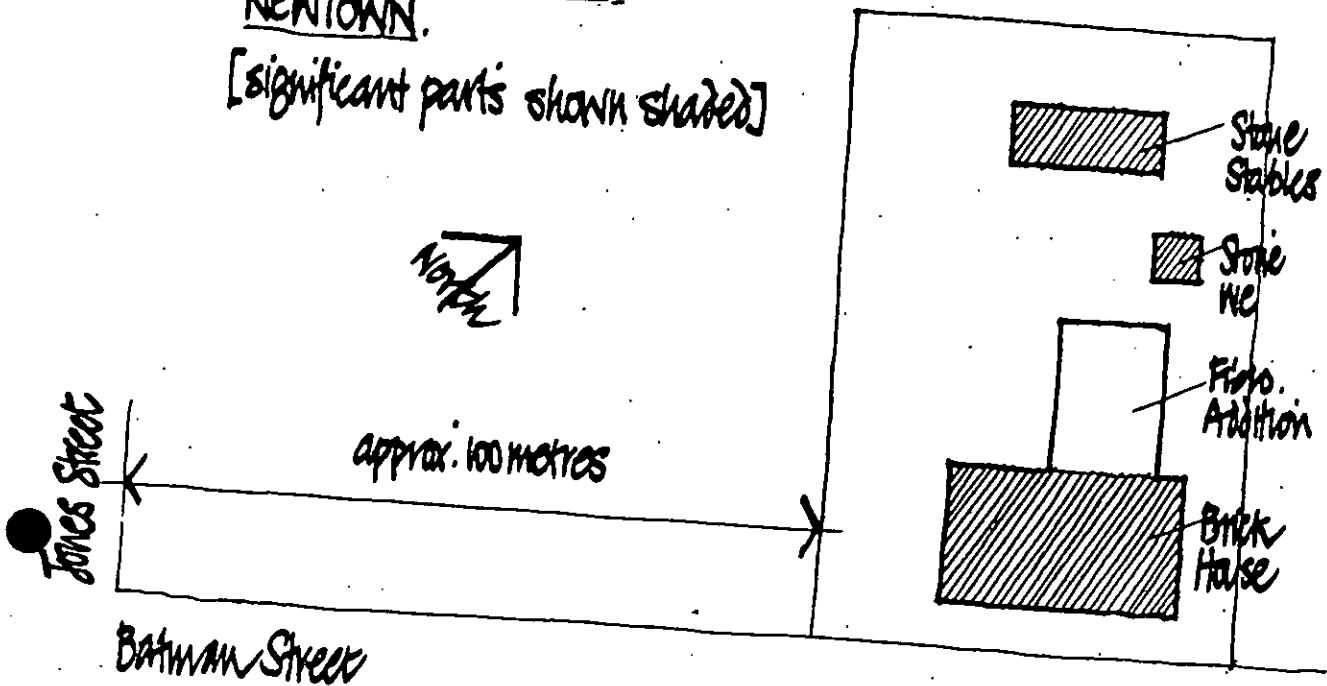
See Diagram D for instructions on the minimum photographic requirements for built environment nominations.

Australian Heritage Commission,
GPO Box 1567,
CANBERRA. A.C.T. 2601

Phone (062) 723966

- 7 -
 'A' Attachment to nomination
 of 39 BATMAN STREET
 NEWTOWN.

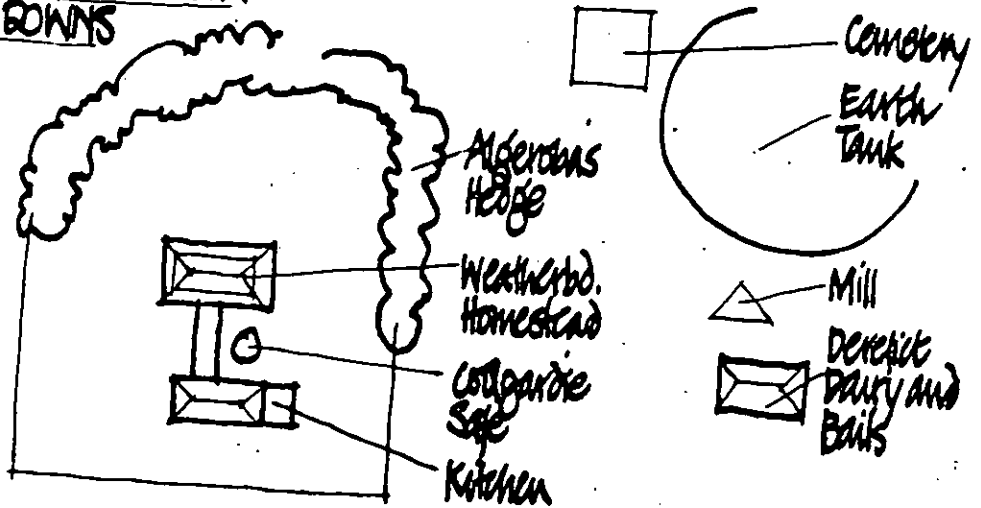
[significant parts shown shaded]



'B' Attachment to nomination
 of CORONA BOWNS
 MACULA.

[All items of
 significance]

□ Mobile WC,
 Timber and
 Ormonde



□ Stone Stables
 [dep. log and
 gal. iron]

□ Mobile
 Engine
 □ Stone
 Store.

□ 'Garden'
 Meat House.

Hands Quarters
 Pine.



Brick Oven.
 Shearer's Quarters
 Remains of
 Saw Mill

□ Wool Piles.
 Timber Framed Woolshed
 with 'edges' thatch.

HANNAN'S SHOP
FORMER STAR AND GARTER INN

STATUE OF
CAPT. JAMES COOK

VICTORIAN SHOPS
AND RESIDENCE

MEARS AVENUE

VICTORIAN
DUPLEX

HIGH STREET

FORMER
SUPERINTENDENT'S
COTTAGE

FORMER MAIN
BUILDING

HIGH CROSS
RESERVE

BELMORE
ROAD

STREET

CUTHILL

VICTORIAN
HOUSES

ROYAL
HOTEL

PRINCE OF WALES HOSPITAL

STREET

PRECINCT
BOUNDARIES

FORMER
OUTPATIENT'S
BUILDING

AVOCA

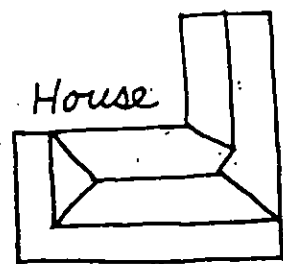
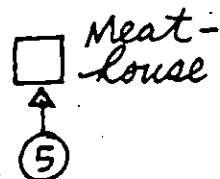
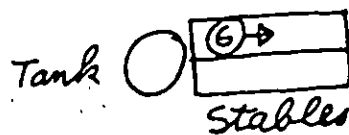
N



Minimum Photography

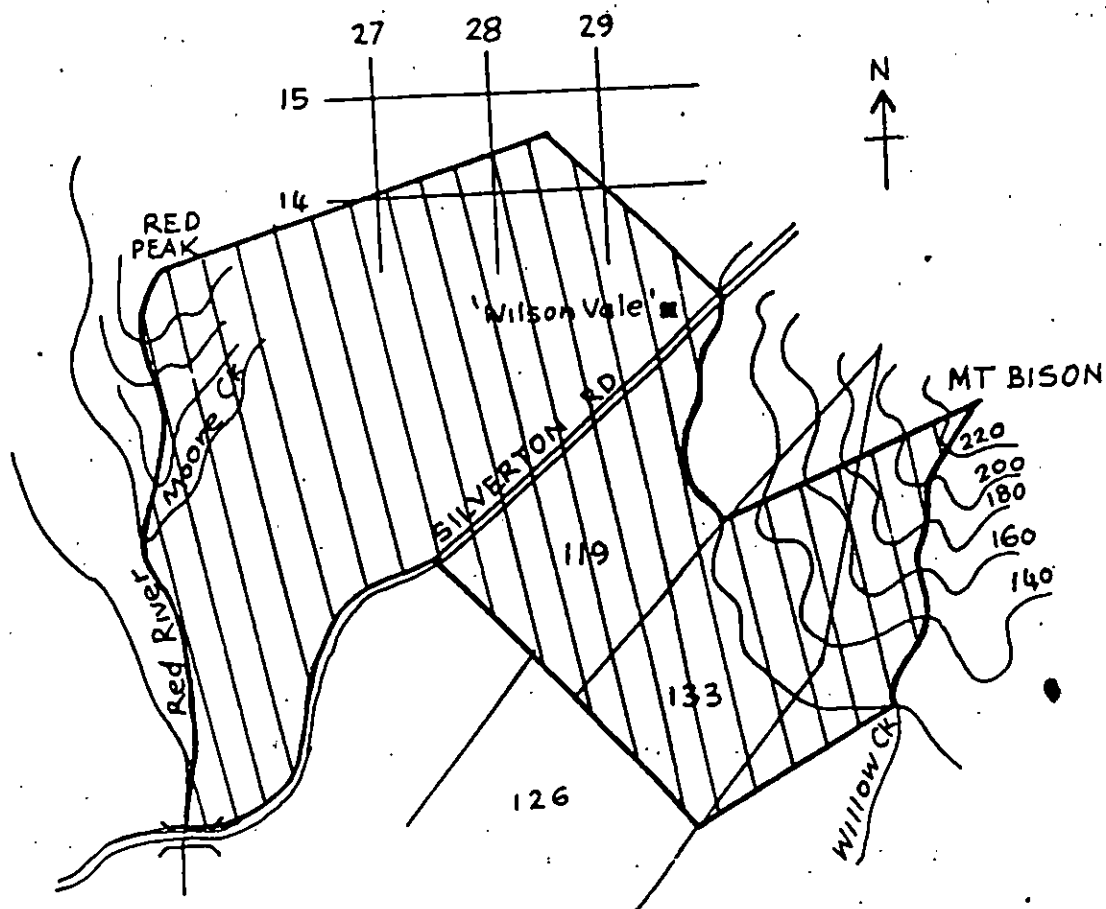
- ① } overall views
- ③ } overall views
- ② } Detail of significant
- ④ } exterior or interior
- ⑥ } features
- ⑤ View of other structures

③ ↘



← ④

↖ ①



"Bounded by lines commencing at the summit of Mt Bison; then via Willow Creek to its intersection with the 120 metre contour line; then direct to the north-east corner of section 126, Parish of Tullaroop; then north-west via the south-west boundaries of sections 133 and 119 to Silvertown Road; then generally south-west via the western side of that road to Red River; then upstream via that river to its confluence with Moore Creek; then generally north via the divide between that creek and Red River to Red Peak; then direct to Australian Map Grid point: 3721 - 'Mount Magnet' - 285145; then direct to the intersection of Silvertown Road and the 120 metre contour near 'Wilsonvale' homestead; then generally south via that contour to its intersection with the boundary between sections 119 and 133; then direct to the point of commencement."

**THE FUTURE FOR NATIVE FOREST
LOGGING IN AUSTRALIA**

**Judy Clark Consultancy Services
PO Box 140 Candelo 2550**

July 1991

Abstract

This Working Paper examines the outlook for native forest logging in Australia assuming no major changes in government policy or action.

The paper examines the three main sectors of the Australian native forest timber industry - sawmilling, pulp and paper, and exporting of woodchips. It concludes that the 1990's will be a period of unprecedented structural change in the Australian timber industry as:

- the displacement of hardwood by softwood in the sawntimber market accelerates,
- native forest woodchip exports face intense competition from the large overseas eucalypt pulplog plantation resource with its quality advantages, and
- significant expansion of the Australian pulp and paper industry occurs from processing the extensive softwood plantation resource, rapidly growing hardwood plantation resource and recycled waste paper.

The plantation resource presents opportunities for significant growth in the Australian timber industry during the 1990's. It will also have major implications for native forest based wood processors who will find it increasingly difficult to compete against the quality, uniformity and scale advantages of the plantation based industry.

The volume of sawlogs and pulplogs harvested from native forests in Australia is expected to remain high but then decline significantly during the 1990's.

The inevitable substantial shift of industry to plantations has environmental and economic attractions. The paper discusses policies that government could implement to facilitate the transition. These include corporatisation of crown plantations, implementation of proper financial standards for forest agencies and a firm commitment to encouraging the development of an efficient pulp and paper industry in Australia without the need for substantial and on-going subsidies.

This Working Paper is based on a seminar presented at the Centre for Resources and Environmental Studies at the Australian National University on 28 March 1991.

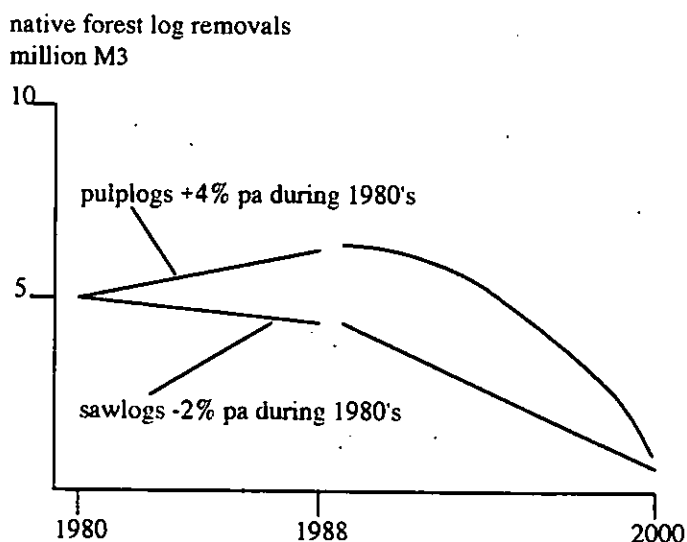
The views expressed in this paper do not necessarily reflect the views of the Centre for Resources and Environmental Studies or of any of its staff.

1. Introduction

The development of timber industry and forest policies by government requires, amongst other things, an appreciation of the outlook for the industry assuming there is no substantial change in government policy or action. Major shifts in wood supply and industry development are already underway and likely to accelerate during the next few years, regardless of government decisions.

During the 1980's, a combination of declining sawlog removals and significant growth in pulplog removals has resulted in pulplogs becoming the dominant commercial product from native forests (figure 1). Today, pulplogs account for about 60% of logs harvested from native forests, compared with 50% in the early 1980's; and the total amount of wood harvested from native forests is increasing as a result of pulplog harvesting (ABARE 1990).

Figure 1. Outlook for native forest logging



Source: ABARE: 1988 & 1990

This shift in the relative importance of sawlogs and pulplogs is likely to be accentuated during the first half of the 1990's but by the end of the decade, harvesting of sawlogs and pulplogs from native forests will decline significantly. This will be caused by the substantial completion of the Australian timber industry's shift to plantations and the erosion of Australia's dominance in the Japanese hardwood chip market by overseas eucalypt plantations.

This paper describes these major trends and points to some of the policy implications for governments. The purpose is to assist in the development of timber industry and forest policies. These policies should be developed after the community's expectations for native forests are articulated in a set of objectives. This paper deliberately avoids discussion of these objectives in order to highlight and clarify the changes already happening.

2. Hardwood sawmilling decline

Hardwood sawntimber production, in volume terms, will continue to decline during the 1990's due to the intensification of competition from softwoods, likely real price increases for hardwood sawlogs and declining hardwood sawlog quality. Regrowth forests are unlikely to alter this trend.

Softwood competition

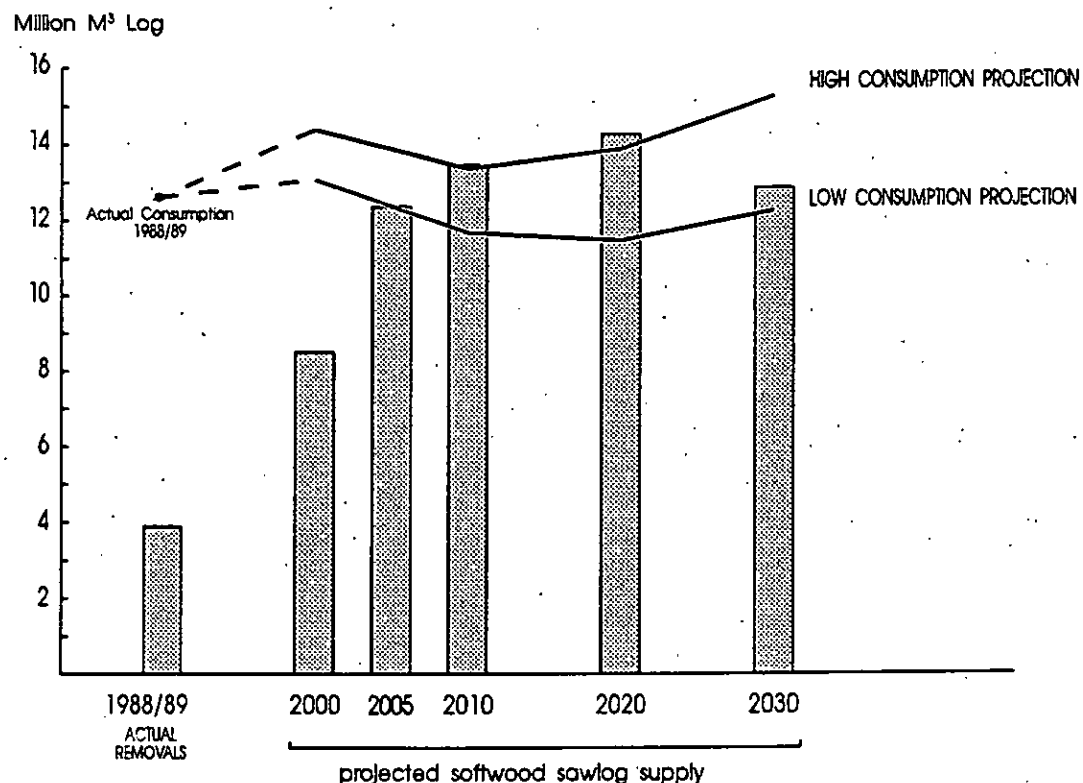
There are major growth opportunities for the softwood sawmilling industry based on the increasing softwood supply from maturing pine plantations in Australia.

Today softwood sawlogs account for 46% (3.8 million M3) of sawlogs harvested in Australia. By 2000, softwood sawlog supply will be at least doubled when the large areas of plantations established in the 1960's and 1970's mature (Victorian Government 1986, Cameron and Penna 1988). Figure 2 shows the significant growth in the projected softwood resource relative to domestic consumption of sawntimber.

Industry is already investing in softwood processing and new sawmills or major expansions will be constructed throughout Australia over the next five to ten years (see table 1). For example, a new mill opened outside Maryborough (near Fraser Is.) in 1990; another is being built in south western Victoria and a major expansion is proposed for northern Tasmania within five years.

Most of these softwood mills will have the capacity to process upwards of 300 000 M3 per annum taking advantage of the economies of scale that hardwood sawmills cannot match. About 1% of hardwood sawmills have a log throughput greater than 45 000 M3 per annum and there are no hardwood sawmills processing more than 100 000 M3 per annum (ABARE 1990). This will allow softwoods to continue to displace hardwoods in the sawntimber market. In addition, the Australian softwood plantation resource will enable industry expansion based on import replacement. Imports account for approximately 30% of the Australian sawntimber market and 80% of sawntimber imports are softwoods (ABARE 1990).¹

Figure 2. Australian softwood sawlog supply and projected consumption of sawlogs.



Source: ABARE 1989 & 1990, and Cameron and Penna 1988.

Note: The timing of the release of the bulk of the softwood resource is likely to be earlier than that shown in the figure. Most of the plantation yields have been estimated using 35 to 40 year rotations. For economic reasons, many plantations will be harvested five to possibly ten years earlier than previously considered. Softwood sawntimber will be able to meet most of Australia's sawntimber needs by the year 2000.

Table 1. Location of potential new or expanded softwood sawmills.

Northern Tas*	Gippsland*
Albury	Otways*
Bathurst	South Australia
Eden/Bombala*	NE Vic*
Central & South Coast Qld*	SW Vic
South West Western Aust*	

* Sites of controversy over the logging of native forests.

Note: The softwood plantations in the North East NSW are insufficient to enable a major sawmill expansion, but other industry opportunities using this resource are possible.

Location of mills is based on regional resource estimates by The Australian Forestry Council (Australian Forestry Council 1989). A detailed assessment of the plantation potential is the subject of a paper currently being prepared by the author.

The majority of Australia's softwood plantations were established by clearing native forests. Consequently there is a high correlation between the location of current hardwood sawmilling (and forest controversy) and the location of new softwood sawmills or mill expansions. This suggests that with skills upgrading, many hardwood sawmill employees and contractors will have the opportunity to shift into the expanding softwood industry within the region where they are currently employed.

The New Zealand radiata pine plantations are an additional source of softwood supply for the Australian market. They will also influence the structure and the growth of the Australian softwood industry.

Australia is New Zealand's 'second home' market for radiata pine sawntimber and has been targetted as a major market to export its surplus production. Supply from New Zealand's plantations is estimated to double during the 1990's and continue increasing early into the next century (Elliott 1982). New Zealand will have sufficient surplus to its domestic needs to supply all of the Australian sawntimber market (Leslie 1985).

The New Zealand plantation program was established earlier than Australia's and this will enable the New Zealand industry to become firmly established in the Australian market before the Australian industry embarks on its major expansion. The recent corporatisation of crown plantations in New Zealand is also likely to bring forward the processing of that resource as growers explore opportunities for realising early financial returns.

In Australia, the bulk of the softwood resource is likely to be released earlier than indicated in figure 2. Most of the plantation yields were estimated using 35 to 40 year rotations. Rotations of this length maximise annual increment but not necessarily growers' profits. From a financial perspective, growers and sawmillers must trade off additional log growth against delayed harvesting. Market developments, such as the early entry of competitors from New Zealand, will encourage earlier harvesting. Some companies are now aiming to manage plantations with a final clearfell at 25 to 30 years (Centre for Farm Planning and Land Management 1989, P 43). SEAS Sapfor considers that the Tasmanian Crown plantations should be managed on 28 year rotations to maximise structural grade output (P. Titz, Tasmanian Operations Mill Manager, personal communication and SEAS Sapfor 1990). Given that plantations will be harvested five to ten years earlier than previously estimated, softwood sawntimber will be able to meet most of Australia's sawntimber needs by the year 2000.

Table 2. Softwood as a percentage of total sawntimber consumed(a) - 1988/89.

SA	91%
Qld	69%
NSW	66%
Vic	59%
Tas	37%
WA	20%
Aust	61%

(a) includes stocks and imports

Source: ABARE 1990.

Hardwood royalties

Hardwood sawmillers are likely to experience real price increases for sawlogs during the 1990's and this will further erode the position of hardwoods in the sawntimber market.

Two factors underlie the pressure for price increases. First, it is widely recognised that the market value for sawlogs, particularly premium grade logs, is often not reflected in the royalty charged by forest agencies. The recent NSW Parliamentary Accounts Committee Report on the Forest Commission states:

'In view of the strong evidence from the market place that native timber prices are generally below what the market will bear, the Committee believes that the case for raising prices on native timber is overwhelming, despite protests from sawmilling proprietors.'

(NSW Public Accounts Committee 1990, p 79).

The second factor, which is probably the more significant, is the continuing loss making performance of some forest agencies selling wood from crown native forests. Even where operating surpluses are being achieved they are relatively small and profitability (return on equity) is very low. There is increasing pressure on state governments throughout Australia to operate their commercial activities on a commercially sound basis. Forest agencies are unlikely to be immune from these pressures and there is scope for considerable improvement in their financial performance. Implementation of proper financial standards for forest agencies will result in real price increases for native forest sawlogs and pulplogs.

Declining log quality

The quality (including size and uniformity) of sawlogs from native forests is declining. The timber industry, like all resource processing industries, has for economic reasons, harvested the highest quality stands first. Quality must decline (even for a supposedly renewable resource) if logging is not conducted at a sustainable level, as appears to be the case in many of Australia's native forests.

In Tasmania, for example, sawmillers that are further processing the resource through kiln drying are experiencing problems in getting sufficient volumes of suitable species, size and consistency in log quality. This is affecting the economic viability of further processing (K.J. Last, Managing Director Kauri Timber Co. Ltd. personal communication).

This trend of declining log quality is Australia-wide and will constrain growth in output of appearance grade sawntimber.

Regrowth forests

There is unlikely to be any large scale sawmilling development based on regrowth forests in the foreseeable future. Recoveries for select grade are considered by current processors of the resource to be too low. More growing years are required to provide logs of suitable size, clearwood, timber stability and homogeneity to support a significant appearance grade production industry (Gunnerson 1987). Early harvesting of regrowth forests, considered by many to be before trees are at least 80 years old, will result in a significant proportion of output being of structural grade rather than select grade and therefore in direct competition with softwoods.

Options for hardwood sawmillers

There will continue to be many mill closures. Some mills will shift from hardwood sawmilling and develop their interests in softwood (eg. Hyne and Sons operating at Maryborough Qld and currently sourcing hardwood logs from Fraser Island; Gunns Kiln-dried Timber Industries in Tasmania; and Bunnings Forest Products with substantial hardwood operations and three softwood processing facilities in Western Australia).

Small, green hardwood sawmills supplying local markets and which are isolated from softwoods because of transport distances are likely to remain viable.

Remaining mills face the choice of shifting into processing relatively low quality logs and producing large volumes of woodchips for export, or of entering the market for appearance grades of timber.

Exporting woodchips is highly profitable and more sawmillers will attempt to enter this part of the industry. For example, two of the main further processing sawmills in Tasmania are seeking to expand into processing low grade logs (estimated 10% sawntimber recovery) and most of the resource would be chipped for export (Gay 1990 and Last 1990). These types of proposals were introduced into Victoria by green sawmillers as part of the value added utilisation scheme and are flowing to other states as flitch mill operations or proposals to utilise low grade sawlogs. They represent the final stage of the traditional hardwood sawmilling industry. They are essentially woodchip producing operations which provide additional revenue to supplement declining hardwood sawntimber sales.

The sawntimber part of the operation (probably at best 10% of log throughput) will face problems competing against softwoods since most of the output can be readily substituted by softwood sawntimber products.

Hardwood sawmills with enough consistently high quality logs appear to have a future. To achieve this, some sawmillers are investigating mill 'amalgamations' with centralised further processing facilities. These have been investigated by industry since the early 1980's with, to my knowledge, no action. This suggests problems with the economics and uncertainty about the resource and long term markets for standard grade sawntimber which will always be a substantial by-product of this type of operation (Gunnensen 1987, p 10).

There are opportunities for labour intensive sawmilling using a varying log input (species, size and quality) to produce high value sawntimber for the appearance market. The increased cost associated with processing a variable log supply is offset by the higher returns from selling a higher value product. Due to the relatively small market for these products and the production techniques, mills are likely to be small scale but viable.

The erosion of traditional hardwood sawntimber markets by softwoods has focused attention on the opportunities for further processing hardwoods into appearance grade timbers. It is generally considered by industry that between six and ten percent of the hardwood sawlog resource is currently used for appearance purposes. Whilst demand for appearance grade hardwood sawntimber is likely to increase, the actual volume relative to today's sawlog cut will be small. The volume of consistent and high quality sawlogs will restrict the number of mills with high throughput of appearance grade sawntimber and the labour intensive nature of smaller mills processing a variable quality log resource will limit the volume of sawlogs harvested by this sector of the industry.

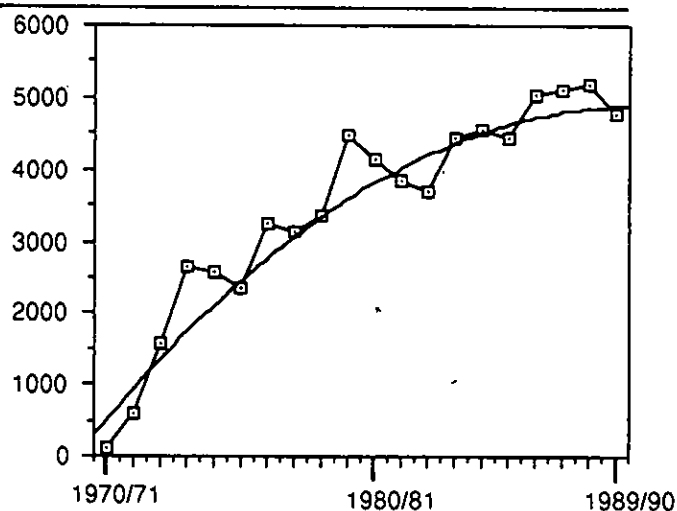
Market factors will also constrain industry activity. The Australian market for appearance grade sawntimber is limited because of the high value of these wood products. There is likely to be expansion into export markets which currently take only about 1% of hardwood sawntimber production (ABARE 1990). The complexities associated with marketing and distributing a specialised product into world markets will limit the volume of production.

3. Woodchip exports

Pulplogs are now the dominant product from native forest timber harvesting operations in Australia and their main use is as woodchips for export. In 1988/89, 45% of the harvested log volume was exported as chips (ABARE 1990 & 1991). Exports of native forest chips have increased by an average 11.8% per annum, in volume terms, since 1970/71 when this industry effectively commenced operations (see figure 3):2.

The volume of woodchips exported has plateaued and more recently declined. It appears that this reflects structural factors rather than short term demand and supply factors as discussed below.

Figure 3. Australian woodchip exports (000 tonnes)



Source: ABARE 1991 & previous issues.

Japan is the destination for most of Australia's exported hardwood chips. Although Japanese demand has steadily increased since 1986, Australia's share of this market has declined from 67% in 1986 to 45% in 1990 (Bills 1991). Japan has been shifting its source of supply, mainly to native forests in other countries, particularly the USA, Canada and Chile. This does not reflect an Australian supply constraint because quotas set by government have recently not been fully met.

The significant decline in Australia's share of the Japanese hardwood chip market can probably be attributed to the combination of price, quality and Japan's desire for diversity in sourcing hardwood chips. The latter factor is particularly important given the never-ending controversy surrounding the industry and continuing uncertainty about pulpmill developments which may reduce the available volume of chips for export.

Nevertheless, Australia remains the dominant source of overseas hardwood chips to Japan and there will continue to be pressure to increase the volume of woodchip exports while profits are still high (particularly in relation to other sectors of the hardwood industry) and before significant volumes of higher quality overseas eucalypt plantations come fully on stream.

Export woodchipping is a highly profitable business activity as demonstrated from the annual returns filed with Corporate Affairs by Harris Daishowa (Aust) Pty. Ltd.. The company recorded an after tax profit as a percentage of average shareholders funds for 1988 of 67%. This is about three times what would be considered an excellent return for any commercial business. Some of this extraordinary profit may have been eroded since 1988 by the recent fall in chip prices (Bills 1991).

The extraordinary profits associated with exporting woodchips have encouraged the sawmilling industry's shift into chip production. As well, private forest owners, particularly in Tasmania, are keen to log their forests while demand exists for their old growth resource and to supplement declining farm income.

The situation of extraordinary profits and high volumes of Australian native forest chip exports is likely to be short lived. There will be a large increase in world supply of hardwood chips and pulp over the next five to ten years as eucalypt plantations (seven million hectares) mainly in Brazil, South Africa, Portugal and Spain come fully into production (Brett 1990). The projected capacity of eucalypt pulp processing facilities in these countries could be about eight million tonnes by the early 1990's (Phillips 1988). The production of eight million tonnes of chemical pulp requires an estimated 24 to 28 million M3 of wood per annum, maybe less because of the relatively high pulp yields that some plantation grown trees are providing. Whilst the countries above are the main producers of eucalypt pulp traded on the world market, eucalypt plantations are also being established in South East Asia and China.

Of particular interest to Australia is the projected supply of eucalypt wood from overseas plantations, rather than actual pulp capacity. It is the potential of these plantations to supply eucalypt chips and pulp which is of major importance to Australian suppliers of hardwood chips.

There appear to be no published projections of pulplog supply from overseas eucalypt plantations. A rough order of magnitude can be simply calculated by applying an estimated mean annual increment of 15 M3/ha/annum to the seven million hectares of overseas eucalypt plantations to yield an annual pulplog supply of 105 million M3. Factors such as insect and disease damage and harvesting difficulties will reduce the actual yield whilst other factors such as the high annual increments (up to 70 M3/ha) in some plantations and high basic density resulting from intensive breeding programs (Phillips 1988) will increase the pulp producing capacity of overseas eucalypt plantations.

This growth in supply is significant when compared with projected growth in world demand for pulp. World wood pulp demand is projected to increase by about 46 million tonnes (equivalent to about 150 million M3 of logs) over the period 1988 to 2000 (Simons 1990c, p 11). Eucalypt pulp currently accounts for a small but growing proportion of world wood pulp production. As an indication of its significance, eucalypt pulp traded on the world market (as most is) accounted for about 12% of total traded wood pulp in 1985 and only 17% of world pulp production is traded on the world market (Figueiredo 1987). Thus the projected annual supply of 105 million M3 of eucalypt plantation pulplogs is likely to have a significant impact on the world pulp market during the 1990's. The resulting

highly competitive world market is likely to be characterised by increasing attention to quality and customer service, price competition and product substitution during the 1990's.³

There is little doubt that overseas eucalypt plantations will have enormous implications for Australia's native forests. Australia's current level of annual woodchip exports from native forests represents less than 5% of the projected annual pulplog supply from overseas eucalypt plantations. Even reducing this supply projection by 50% implies that Australia's current level of woodchip exports will still only represent about 10% of the pulplogs available from overseas plantations.

Plantations provide an economic and high quality resource which will be attractive to hardwood chip buyers. The Australian industry clearly understands these supply and quality issues. For example, the Private Forestry Council of Tasmania states that:

'It is imperative that as much of the remaining private old growth pulpwood resource as is available for sale is marketed over the next 15 years whilst market acceptance of this comparatively low commercial quality wood is relatively high. Quota restrictions on the harvesting of this resource must be lifted immediately.'

(Private Forestry Council of Tasmania 1990, p 12).

It should be noted that the 15 year time frame for logging available old growth native forests is probably a significant over-estimate. Five to ten years is more likely since the overseas plantations are already established and many are managed on short rotations.

Japanese and other buyers of woodchips will exploit this situation of rapidly expanding supply of hardwood chips over the next five to ten years. All sectors of the Australian native forest based industry will be trying to increase or maintain chip sales before the higher quality plantation resource comes fully on stream. Buyers are likely to put considerable pressure on Australian suppliers to reduce the price of native forest based export woodchips.

This downward pressure on woodchip prices is likely to be matched by increases in pulplog royalties and industry operating costs.

As the proportion of lower value logs in total volume sales of forest agencies increases, royalties must increase, all else held constant, to cover forest agency costs. In addition, forest agencies are likely to increase royalties as part of the general desire by state governments to improve the financial performance of their forest agencies. Industry calls for reductions in royalties to maintain competitiveness against other suppliers are unlikely to be acted upon.

The cost of logging native forests predominantly for export woodchips will increase as community pressure intensifies and companies are forced to spend more on public relations, government enquiries, and meeting more stringent logging standards etc.

Due to the high volume/low value nature of the export woodchip industry, a relatively small increase in unit costs and/or decrease in unit price for chips can significantly affect economic viability.

The 1990's is likely to be a period of marked reduction in the profitability of exporting woodchips from Australia's native forests and increased competition from the large and relatively high quality overseas eucalypt plantation resource. Under these conditions, the volume of Australian native forest chip exports is expected to decline significantly during the 1990's.

4. Australian pulp and paper production

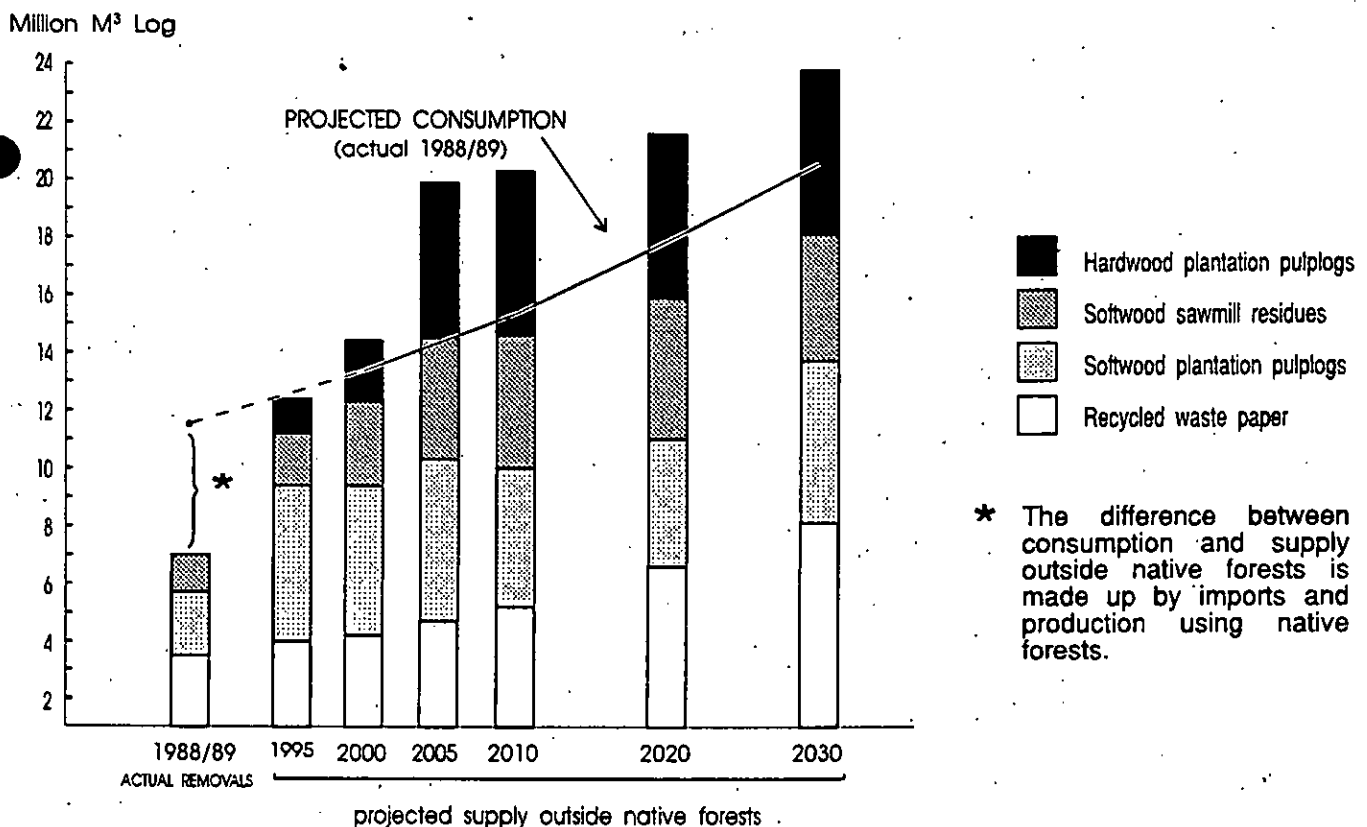
There will be significant growth in Australia's non

native forest fibre resource available for processing by the pulp and paper and wood based panels industry over the next 10 years (see figure 4). The three main non native forest sources of supply are softwood and hardwood plantations and recycled waste paper.

Waste paper

Waste paper suitable for recycling is an important and often under emphasised source of supply. It currently provides between 25 to 30% of the fibre input for paper manufacture in Australia. The contribution of waste paper is likely to be greater than that shown in figure 4 since the projection is based on ABARE's work of 1989, and assumes no recycled waste paper input in the manufacture of newsprint (ABARE 1989). Since that time ANM has announced its intention to establish a waste paper recycling and de inking plant by the mid 1990's to provide recycled paper for newsprint production and Visy Board has also announced its proposal to manufacture newsprint using recycled waste paper.

Figure 4. Projected pulplog and fibre supply, outside native forests compared with projected consumption of paper, paperboard and wood based panels (excluding ply and veneer).



Source: Consumption projections and projected use of recycled waste paper is based on ABARE 1989, softwood supply projections are based on Cameron and Penna 1988, and hardwood plantation pulplog supply projections are from Clark 1991. (Estimates of hardwood plantation yields have been revised upwards for the pre 1990 plantings.)

Softwood plantations

Softwood pulplogs and sawmill residues are projected to increase significantly through the 1990's and will be the major source of industry growth. Opportunities exist for new softwood based pulp mills, mill expansions and considerable development of the wood based panels industry.

Hardwood plantations

Australia's hardwood plantation resource of about 60 000 hectares is expanding by an estimated 16 000 hectares per annum (Clark 1991). This plantation development is concentrated in Tasmania (APPM, Forest Resources and ANM), Victoria (APM) and Western Australia (timber belt planting and Bunnings Treefarms). The industry began hardwood plantation programs in the late 1960's and decided to expand its plantings significantly from the late 1980's. It clearly sees that the future lies in company owned or controlled plantation feedstock, not native forests.

This plantation resource will provide a high quality pulplog feedstock particularly suited for the manufacture of quality printing and writing papers.

There are developing trends in the utilisation of high quality plantation feedstock in medium scale but efficient mills to produce printing and writing papers. Bleached chemi thermo mechanical (BCTM) pulp and paper mills, in particular, appear to have some economic and environmental attractions (Simons 1990a, p 122). The Australian eucalypt plantation resource is being established at a rate which would enable four such pulp and paper mills to be operational by the mid 1990's producing about 0.9 million tonnes of paper per annum. This is equivalent to nearly double the current level of printing and writing paper consumption in Australia, which puts some perspective on the processing potential of Australia's expanding eucalypt plantation resource.

In reality, it is unlikely that four medium scale mills such as BCTM pulp and paper mills will be constructed. Rather, the resource is likely to be used to supply a combination of new kraft pulp mill(s), smaller mills such as BCTM pulp and paper mills and as a quality feed stock for existing mills and mill upgrades.

Native forests

A large part of Australia's native forest resource now available for pulp production is mixed age, mixed species, cut-over native forest and will not provide premium grade pulpwood. The nature of the resource will affect pulp yield, quality and cost of production (Phillips 1988). This resource quality issue will place Australian processors at a disadvantage relative to its main competitors supplying pulp processed from eucalypt plantations.

Low royalties for native forest pulplogs may compensate for the raw material quality disadvantage. In Tasmania, pulp producers pay a royalty of no more than \$5.00 per tonne (Centre for International Economics 1990, p 44). This is a major subsidy to industry which would be removed if forest agencies were required to operate on a commercial basis.

Regrowth forests and thinnings are the other potential sources of pulplogs. To compete effectively with plantation-grown timber would require that the regrowth be managed on equivalent rotations (10 to 15 years). This would in turn require a major shift in the publicly-stated policies of forest agencies. Under intense community pressure, governments have committed themselves to maintain 'sawlog-driven' regimes for native forests with rotations of usually 80 to 150 years (see for example, Victorian Government 1986, P 33).

Industry development

Growth in the pulp and paper industry is likely to continue to be concentrated on smaller scale, mainly import replacement projects rather than the highly risky approach of large scale, single commodity production substantially for sale in a highly competitive world market (Clark and Blakers 1989). This is a continuation of the historical industry practice of delaying mill construction or rebuilding until domestic demand is sufficient to absorb the incremental output and replace imports that have built up in the interim. The effect on Australia's balance of payments will be positive and as figure 4 shows, the non native forest resource has the capacity over the 1990's to remove Australia's trade deficit in pulp and paper products through either import replacement or export.

5. Conclusions and policy implications

The 1990's will be a period of major structural change and growth in the Australian timber industry. These changes will result from the significant and maturing Australian softwood plantation resource, the establishment of short rotation eucalypt plantations in Australia and the competitive pressures that will result from overseas softwood and eucalypt plantations.

These changes in the timber industry's resource base will have major implications for all sectors of the Australian native forest based timber industry during the 1990's.

Hardwood sawntimber production is expected to continue declining but at an accelerating rate as the volume of Australian softwood sawntimber on the market increases. Overseas plantation grown softwoods, particularly from New Zealand, will

provide an additional source of competition for Australian sawmillers.

Growth in the volume of woodchips from Australia's native forests has plateaued and the late 1980's may have been the turning point in the volume of chips exported. Alternative sources of hardwood supply are becoming available from large eucalypt plantations established overseas which will provide an attractive, relatively high quality hardwood pulping resource for export chips or pulp and paper production. In the more immediate term, hardwood native forests in Chile, the USA and Canada are expected to continue to reduce Australia's share of the Japanese hardwood chip market.

Australia's eucalypt plantations are expanding steadily following the pulp and paper industry's assessment of the economic, quality and resource security attractions. This resource will be sufficient to enable the development of medium scale but competitive pulp and paper mills by the mid 1990's.

The volume of wood available for logging during the 1990's (mainly from plantations) will be significantly greater than is currently available. This provides opportunities for industry growth based on increasing domestic demand, import replacement and export. At the same time, native forest logging will decline substantially as plantations provide a more attractive source of supply for the sawntimber and pulp and paper industry in Australia and overseas.

This inevitable outcome has economic, environmental and social attractions. It presents government with essentially two approaches to timber industry policy - continue with business as usual in the knowledge that the timber industry will shift to plantations over time, or facilitate industry's shift to plantations and thus reduce the extent and intensity of native forest logging.

A policy of facilitating the shift would involve three major elements:

- corporatisation of crown plantations;
- improved financial performance of forest agencies;
- clear messages that pulp and paper projects must be economically viable without the need for significant or on-going subsidies.

Corporatisation of crown plantations

Corporatisation of crown softwood plantations would enable market factors to have a greater influence on the pricing of the resource and in particular, the timing of processing. Some forest agencies are managing plantations with rotations longer than industry requires. Many plantations are being managed to provide clearwood for appearance grade boards which results in lower yields and delayed sawlog supply compared with plantations managed to maximise sawlog yield for structural

applications (SEAS Sapfor 1990). There is doubt whether the market can absorb the volume of softwood boards for appearance applications that could be produced from Australian plantations.

Australian softwood sawmillers are keen to harvest the resource as early as possible in order to position themselves firmly in the domestic market before overseas supplies, especially from New Zealand, become more dominant in the market. Bringing Australian plantations on stream as soon as possible will enable an earlier return to plantation owners, which is attractive to managers operating under the clear commercial guidelines that corporatisation would require.

Without corporatisation it is likely that Australia will suffer a serious competitive disadvantage in the development and marketing of public sector softwood plantations compared with New Zealand, which has a large, nearly mature plantation resource that is now managed by commercial criteria.

Financial standards for forest agencies

The financial performance of Australian forest agencies managing native forests is poor. Historically they have been unable to cover their operating costs from revenue collected (ie royalties). More recently, some forest agencies selling wood from crown native forests have achieved relatively small operating surpluses, but they still do not pay any or sufficient dividends to the State from their commercial activities. In addition, forest agencies operate with considerable subsidies that are not available to their competitors (ie. private growers of wood). These include exemptions from local rates and charges, income tax and payment of lease fees for the commercial exploitation of native forests. The NSW Forestry Commission considers these subsidies to be important. In evidence to the NSW Public Accounts Committee's recent inquiry into the Forestry Commission, Assistant Commissioner Fisher stated *'We would be in difficulty if we had to pay tax'* and the Chief of the Marketing Division stated *'If we were a private sector company we would toss in the towel'* (NSW Public Accounts Committee 1991 p 26, 27).

The implementation of proper financial performance requirements for forest agencies and resulting increase in hardwood royalties has a number of attractions. It would reduce the volume of wood harvested from native forests, particularly of those products where price is an important variable, such as woodchips and structural timber products. It would encourage the sawmilling industry to shift into the production of higher value appearance products and away from direct competition with softwoods. Finally, it would remove the competitive disadvantage that plantation developers and companies processing plantation wood currently face.

Financial assistance for pulpmill projects

Excessive attention has been focussed on the development of large scale, native forest based pulp mills supplying commodity pulp substantially for export. These projects are risky (Clark and Blakers 1989) and it is highly likely that they will require government assistance, particularly during the inevitable downturns in the world pulp market for which the industry is renowned. The Forestry and Forest Products Industry Council recognises the financial problems facing exporters and has recommended that the Commonwealth Government develop a 'risk sharing support scheme' to encourage the pulp and paper industry enter export markets (FAFPIC 1990, p 15).

The main risk factor is the well known volatility in market pulp prices. For most overseas pulp and paper producers, revenue from export pulp sales is a relatively small proportion of total income. In times of over supply, these companies will sell their surplus pulp on the market even if the price only enables operating (or variable) costs to be recouped. This industry structure and marginal cost pricing results in a volatile market and inevitable speculative activity (Deslandes 1987). In contrast, pulpmill projects that depend mainly on export markets for the sale of output are highly vulnerable because prices, over the long term must cover both operating and fixed costs. Capital charges are the single most important cost item for a world competitive bleached hardwood kraft pulpmill, accounting for about 40% of the cost of production (Simons 1990b).

The relatively new world eucalypt pulp industry is structured differently to the world pulp industry, in that most eucalypt pulp production is traded rather than used in integrated pulp and paper mills. The industry is developing strategies to isolate itself from the volatility in the pulp market, but is not yet immune from market fluctuations. The most recent decline in market pulp prices was also reflected in eucalypt pulp prices which declined by 21% from mid 1989 to mid 1990 (Pulp and Paper International 1990, p 49).

If governments continue to under price the native forest resource and agree to provide subsidies for pulpmill proposals, large native forest based pulpmill projects are likely to continue to be proposed by industry. Meanwhile, industry growth opportunities resulting from the substantial increase in the non native forest resource go largely unrecognised. Softwood and hardwood plantations and recycled waste paper provide opportunities for new pulp and paper mills or mill upgrades and a major expansion of the wood based panels industry in the 1990's. The level of employment and output resulting from these projects would be significantly greater than that resulting from one or even two large scale native forest based pulp mills. Irrespective of the outcome

for native forest based pulpmills, processing the rapidly expanding eucalypt plantations, the major softwood plantation resource and recycled waste paper will be the major growth area for the Australian pulp and paper industry in the 1990's.

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1. Oregon from North America and New Zealand accounts for about 50% of sawntimber imports. Success in replacing this product will depend on Australian industry's ability to produce alternatives (laminated sections, gang nail plated lengths, products made by fibre reconstitution) at competitive prices and development of an effective marketing strategy.
2. This growth rate has been calculated by semi-logarithmic regression using annual data over the period 1970/71 to 1989/90.
3. The effect of the expanding eucalypt plantation pulplog supply on the world pulp and paper industry is a complex issue which has received relatively little attention in the industry literature. It is certainly an area which requires more detailed examination and discussion.

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REPORT TO THE PREMIERS ROUNDTABLE
ON THE ENVIRONMENT

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WORKING PARTY ON EUCALYPT PLANTATIONS

OCTOBER 1990

REPORT TO THE PREMIERS ROUNDTABLE ON THE ENVIRONMENT

WORKING PARTY ON EUCALYPT PLANTATIONS

1. INTRODUCTION

The Premier's Roundtable on the Environment requested, on 9th July, 1989, that a working party be established to investigate the feasibility of the introduction of eucalypt plantation sharefarming arrangements in N.S.W. Accordingly, a working party was set up comprising representatives of:-

The Nature Conservation Council of N.S.W.;

The Land Conservation Council of N.S.W.;

The Soil Conservation Service of N.S.W.;

The Forestry Commission of N.S.W.

The working party's report, which follows, arises from a series of meetings held between October, 1989 and March, 1990.

An issue of contention between some of the constituents of the working party has been the matter of whether eucalypt plantations should be considered to be a supplement to, or a replacement for forest resources derived from native forests in N.S.W. While this issue was not resolved by the working party, it did not hamper the achievement of firm conclusions and recommendations involving the technical nature of plantations in a sharefarming arrangement and the working party is pleased to report that it reached areas of agreement on most technical issues.

While it is recognised that the whole question of eucalypt plantations has assumed a political dimension in the overall forest debate, the working party has sought to address its brief in a dispassionate way so that the Roundtable can be given the benefit of a factual account of how it should proceed on this matter.

Throughout this report, the expression "plantation sharefarming schemes" is abbreviated to PSS. The term roundwood is taken to mean all logs or sections of logs of insufficient size or quality to be used for sawn timber or veneer. The major current use is for pulpwood, but other uses include posts, poles and reconstituted wood products.

This report is divided into the following sections.

1. Introduction.
2. Current plantation sharefarming schemes.
3. Key points of existing schemes relevant to N.S.W.
4. Objects of eucalypt plantation sharefarming schemes.
5. Assumptions for N.S.W. plantation sharefarming schemes.
6. Potential benefits and risks of PSS in N.S.W.
7. Availability of land suitable for PSS.
8. Suitability of Species.

9. Expected growth rates

10. Economic analysis

11. Commonwealth funds available

12. Recommendations

2. CURRENT PLANTATION SHAREFARMING SCHEMES

2.1 Victoria

2.1.1 A.P.M. Forests Farm Forestry Agreement

A.P.M. Forests began their incentive scheme for private woodlots, the Farm Forestry Agreement, in 1975. The initial Farm Forestry Agreement was for *Pinus radiata* but in April 1989 the scheme was broadened to include *Eucalyptus regnans*, *E. nitens* and *E. globulus* within the economic radius (maximum 110 km) of A.P.M.'s Maryvale mill in the Latrobe Valley. However, to date no eucalypt plantations have been established under this scheme.

A.P.M. Forests currently has 78 Farm Forestry Agreements (for pine) with landholders who have planted a total of 1 930 hectares, i.e. an average of 25 hectares per agreement holder. However a minimum recommended area is 6 hectares. This area is large enough in its own right to permit harvesting a total yield per operation of at least 500 cubic metres (e.g. a first thinning in 14 year old pine on an average soil type with an MAI of $17.5 \text{ m}^3/\text{ha}$).

The benefits of a Farm Forestry Agreement to farmers are:

- guaranteed market for pulpwood;
- good quality planting stock at cost (i.e. 48% cheaper than retail);
- pulpwood royalty rates for eucalypt identical to Government royalty for pine pulpwood (currently \$16.51/m³);
- A.P.M. Forests arranges all harvesting and transport of woodlot timber with experienced contractors.

An example of indicative costs and returns for private eucalypt plantations from both an average and good site in Gippsland is given in Appendix 1.

2.1.2 Department of Conservation and Environment Plantation Sharefarming Scheme

The Department of Conservation and Environment (DCE) in Victoria, formerly Department of Conservation, Forests and Lands, operates its PSS for both hardwood (eucalypt) and softwood (pine). However, no farmers have as yet entered into a plantation sharefarming agreement for eucalypts. This may be due to this scheme only having been in existence for less than twelve months and/or economic non-viability.

Under the PSS, participating farmers receive an agreed annuity, indexed for inflation, for the period of the venture (35 years for pine) and on completion a predetermined percentage of the net clearfall revenue. An example of returns per hectare for cleared moderately productive pasture land planted to pine is \$125 each year for 35 years or \$11 000 (in 1987 dollars) in 35 years time.

Combinations of annual and lump sum payments can be negotiated. DCE provides the resources to plant, harvest and market the timber and carries all risks of loss of plantations through natural causes. The farmer can earn extra income from doing contract work on the plantation.

Conditions attached to Plantation Sharefarming Scheme are:

- minimum area of 20 hectares;
- land located in north-east Victoria or south or central Gippsland and within 60 km of a major timber mill or within 30 km of large plantations;
- annual rainfall to exceed 700 mm;

- well drained soils 50 cm deep or more;
- slopes less than 20.

2.2 Tasmania

Tasmania has one major Government-run scheme and two company-run schemes. The Private Forestry Division of the Tasmanian Forestry Commission has available a Eucalypt Plantation Grant which is commonly offered in conjunction with the two company-run schemes. The usual breakdown of assistance is as follows:

- Company 40%
- Forestry Commission 30%
- Landholder 30%

2.2.1 Forestry Commission of Tasmania Schemes

(i) Eucalypt Plantation Grant

A grant of up to 50 percent of the costs of establishment of certain approved eucalypt species. Minimum area is 5 ha and maximum allowable cost is \$1 200 per ha. Between 1979 and 1986, 2 923 hectares were established at a unit cost of assistance of \$487 per ha.

(ii) Native Forest Restoration Grant

A grant towards the cost of regeneration treatment and the management of native forest logged for pulpwood and/or sawlogs. 290 hectares of eucalypts had been established under this scheme by 1986 at a cost to Government of \$84 680.

(iii) Individual Research Grant

A grant paid to an individual owner to cover the cost of an approved trial to establish trees or carry out improvements in native forest.

(iv) Treescape

A grant to establish amenity planting schemes on rural land for projects such as for shelter and erosion control and to arrest rural tree decline. This scheme began in 1982 and by 1987, 245 landholders had been granted \$141 300 under this scheme.

(v) Nursery Stock Grant

A rebate of 50 percent of the cost of plants for all approved schemes. This may be taken as the only form of assistance and has a ceiling of \$5 000 per year. Up to 1987, 259 hectares of eucalypts had been established at a cost to government of \$89 355 (i.e. \$345 per hectare).

Tasmanian Government Grants for private eucalypt establishment totalled \$1 722 240 for the period 1978/79 to 1986/87 (in 1987/88 dollars). In addition the Tasmanian Forestry Commission's Private Forestry Division expended \$4 642 560 from 1978/79 to 1986/87.

The Tasmanian Forestry Commission publication "Private Forestry in Tasmania 1978-88" (p 13) reports that:

"Response to the assistance schemes, and participation by the forest industry, has been far greater than expected Interest in the assistance schemes is still increasing. However, the Government's ability to keep pace with funding has declined since the cuts in Federal funding

to the State (Tas) commencing in 1986/87 a gap has opened up between the requests for assistance and the funds available. It is estimated that only 60% of the requests for assistance under the Eucalypt Plantation Grant will be funded by the State in 1988/89.

2.2.2 Forest Resources Limited

This company has a total of 6 000 ha of eucalypt plantation (2 400 ha on company land and 3 600 ha on private non-company land).

(i) Forest Resources Tasmanian Reforestation Environment Enrichment Scheme (Trees)

A grant of up to 50% of costs of establishing and protecting the plantation. Usually costs are split 3 ways:

Forest Resources Ltd.	40%
Forestry Commission	30% (reduced from 40% in 1987)
Landholder	30%

Forest Resources has right of first refusal on plantation timber. The scheme began in 1980 and by 1987 75 landholders had planted 2 879 hectares.

2.2.3 Australian Pulp and Paper Manufacturers (APPM)

APPM has established a total of 15 000ha of eucalypt plantation of which approximately 1 200ha is on private non-company land.

(i) APPM/Forestry Commission Joint Assistance Scheme

Establishment costs are shared:

- APPM	40%
- Forestry Commission	30%
- Landowner	30%

The landowner carries all maintenance costs. Seedlings and technical advice are provided. APPM has right of first refusal on plantation timber. This scheme began in 1986 and by 1987, 7 landholders had planted 210 ha.

(ii) APPM Joint Venture Scheme

This is a 30 year term scheme with the company being responsible for establishment (including seedlings), roading and firebreaks. The landowner contributes land, rates and fencing. The landowner must sign an undertaking (a Forestry right) to APPM Forest Products, which details the duration of the grant and the rights and obligations of both parties in relation to establishment and disposal of the wood. Land must be within 100 km of Wesley Vale or Burnie mills, with slope, at least 600mm rainfall and good site quality. Minimum area is 10-20 ha. This scheme began in 1986 and by 1987, 5 landowners had planted 48 ha.

Department of Conservation and Land Management (CALM) Hardwood Sharefarming Scheme

A pilot scheme was set up to grow plantations of *E. globulus* in sharefarming arrangements with farmers. To date 5970 hectares have been established under this scheme with 58 landholders with an average area per contract of 102 hectares.

Under this sharefarming scheme, interested farmers can lease their land to the Government for either 14 years (single crop rotation) or 26 years (two crop rotation) to grow *E. globulus* for the production of pulpwood.

Minimum areas for the scheme vary from 20 to 40 hectares depending on location and the growing cycle is 8 to 12 years depending on the growth rate of the trees.

Farmers are paid an annuity varying from \$65 to \$125 for leasing the land plus a residual amount at the end of the venture, based on the expected yield of timber from the site and the likely plantation costs. As an example, a farmer with loamy soils and 1 000 mm rainfall would receive a higher annuity than a farmer with sandy soil and 700 mm rainfall. The economic radius for the scheme is up to 140 km with an average of 100 km from established industry.

Annuities vary on the following basis:

Area	Annuity(\$/ha/year)
Peel/Harvey (deep grey sands/900mm rainfall)	\$ 65 - \$110
Wellington Catchment (sandy loams/650-800mm)	\$ 95 - \$125
Karri Loams (1100mm)	\$175 - \$210

From 1990 the W.A. Government has ceased direct funding of sharefarming arrangements. Future planting will be carried out by W.A. "Tree Fund" using funds from community and industrial sources.

2.3.1 West Australian Chip and Pulp (WACAP)

WACAP originally offered 4 joint venture tree-growing schemes. However, only Schemes 2 and 3 (as detailed below) have been taken up by farmers. WACAP began offering its schemes in 1982 and currently have 3 000 hectares of *E. globulus* established under their joint venture schemes with 150 farmers.

The economic radius is within 150 km of Bunbury or of Manjimup.

WACAP is aiming to produce or buy about 200 000 tonnes a year of *E. globulus* pulpwood produced on a 10 to 15 year rotation. This pulpwood is to be established on either clearfelled forest land or cleared farmland in areas receiving at least 800 mm rainfall south of Perth. WACAP expects that the average MAI will be 20 m³/ha over 15 years, with the better sites yielding an MAI of 30 m³/ha over 10 years. WACAP is encouraging a 45 year coppice system of 3 x 15 year rotations on average sites.

The WACAP schemes which have been taken up by farmers are:

(i) Plantations on Pasture: Scheme 2

The company supplies free initial advice and free *E. globulus* seedlings. Conditions are that:

- a working plan is to be drawn up and agreed to by both parties;

- legal agreement will be entered into giving WACAP the right of first refusal for the timber grown;
- the area must be greater than 5 hectares.

(ii) Plantations on Forested Sites: Scheme 3

The company provides initial advice, *E. globulus* seedlings and a market for the chipwood (for which it pays double the normal royalty). An additional condition to those for Scheme 2 is that a licence to clear must firstly be provided to WACAP (if the land is in a statutory clearing control zone) even though it is proposed to replant with trees.

WACAP also has a non-annuity scheme. WACAP was granted \$230 000 Commonwealth funds under the National Afforestation Program (NAP) in August, 1988 as part of a \$1 million NAP grant over 3 years. The aim of this grant was to establish large scale eucalypt plantations on previously cleared farmland in the south east of W.A.

WACAP is currently arranging this joint investor/farmer/WACAP funded scheme using NAP funds. It is proposing a 40 hectare minimum area. The only payment to the farmer with this scheme is the final payment which depends on the number of rotations (1 or 2) agreed upon by the participants and the degree of involvement in the work agreed to by the participating farmer. WACAP hopes to plant 3 500 hectares per annum under this scheme (J Sanders, WACAP pers. comm.).

2.4 New South Wales

There are no current schemes in N.S.W. It is worth noting that the N.S.W. Government instituted a pine/poplar farm woodlot loan scheme which operated from 1966 to 1985 peaking in 1972/74. About 3 000 ha of pine and 200 ha of poplars were established, comprising slightly over 1% and 12% respectively of the State's plantation area (Government and private).

It was not a plantation sharefarming (annuity) scheme as currently under consideration, but was based on interest-free and repayment-free loans until first returns. The farmer rather than the Government took the risks.

The scheme lapsed finally in 1985 for lack of farmer interest induced by escalating costs against fixed loan advances, demise of the "Pitt St farmer" and uncertain market prospects. Farmers in most cases were unable to sell the plantation products, particularly thinnings.

3. KEY POINTS OF EXISTING SCHEMES RELEVANT TO N.S.W.

- Schemes are for eucalypt roundwood with rotations of about 20 years.
- Those in W.A. and Victoria are annuity-based while Tasmanian schemes are grants against establishment costs.
- It is notable that the two W.A. schemes are for a single species (*E. globulus*) with a confined range of soils and climate and within 150 kilometres of a defined market. In contrast, N.S.W. has a wide range of soil types and topography.
- The W.A. CALM scheme has a remedial element for reclamation of land degraded through salinity and misuse incorporated as an objective.
- Tasmanian schemes, as for W.A., are for the limited conditions of two well understood species in favourable soils and climate and an assured market. Farmers are used to plantations as a source of industrial wood.
- Interest is lacking in the Victorian DCE eucalypt scheme, partly because it is new and poorly promoted and partly because the alternative scheme for pine is more economically attractive to farmers due to the high royalty rates for pine sawlogs compared to eucalypt roundwood. The Australian Forest Development Institute (private tree growers) has recently stated "....even short rotations for pulp have a difficulty of end royalty prices being too modest for an investor or a farmer to get seriously interested" (pers. comm. Hurditch).
- On the other hand interest appears to be gaining ground in some other states such as W.A. and Tasmania where economics are favourable, farmer familiarity more developed and there is a greater desire to plant species native to Australia.
- Tasmanian schemes took 10 years to gain acceptability whereas W.A. took 2 years albeit with more forceful promotion. This could augur well for N.S.W. if it proceeded to implement PSS.

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4. OBJECTS OF EUCALYPT PLANTATION SHAREFARMING SCHEMES

(a) On the far South Coast of N.S.W. there is a contention that the early development of eucalypt plantations could lead to at least part replacement of native forest timber as a roundwood supply source for the export chipmill at Eden.

There is not the land available in Crown ownership for this development and for a number of reasons outright purchase by the Crown of private farmland for plantations is unlikely to be as desirable a solution. Sharefarming is therefore seen as a possible alternative.

(b) The situation on the North Coast is less clear. The Brisbane woodchip export facility and the Kooragang Island woodchip export facility are primarily supplied from sawmill waste supplemented with harvesting and some silvicultural residues. Companies involved in these export woodchip operations currently utilize the full resource allowed under their export licenses.

The reconstituted forest product ("masonite") mill at Raymond Terrace is currently running at full capacity. Consequently current markets are fully met.

A considerable roundwood eucalypt resource already exists on Crown timber lands and private property on the North Coast in silvicultural thinnings from regrowth forests and from sawlog harvesting residues. However, a significantly increased harvest of roundwood from this resource may cause concern to sections of the community. While it is not envisaged that a PSS would completely replace current roundwood resources, it could either supplement any increased demand derived from expansion of existing markets or development of new ones, or provide a buffer of roundwood supply in the event of changes to land tenure or availability of current resources.

5. ASSUMPTIONS FOR N.S.W. PLANTATION SHAREFARMING SCHEMES

Having examined the schemes operating in other states and past N.S.W. schemes, the working party considers the following assumptions should form the basis of PSS in N.S.W.

(a) It is considered that any PSS in N.S.W. needs to be based on a system of advance annuities payable to the land owner if it is to have any chance of success. Deferring a proportion of revenues until clearfell is desirable for reasons discussed in 6.3.

(b) Due to the relatively long rotations for sawlog crops, it is considered that eucalypt plantations should initially be principally for roundwood. The economics should therefore be based on short rotations (circa 20 years) although over the longer term, there is potential for additional products such as veneer and sawlogs.

(c) The minimum sized block that should be considered is 10 hectares provided that within each locality such blocks can be aggregated into a harvestable unit of like age classes of no less than 40 hectares. This strategy is essential to ensure contractor harvesting is viable and is at reasonable cost having regard to the costs of landing logging machinery on site.

(d) Any development under PSS should be within 150 km of a market for the products. 150 km is estimated to be the current maximum economic trucking distance.

6. POTENTIAL BENEFITS AND RISKS OF EUCALYPT PLANTATION SHAREFARMING SCHEMES IN N.S.W.

The benefits of a hardwood plantation sharefarming scheme can be divided into the benefits of eucalypt plantations in general and the specific benefits that PSS have over alternative means of establishing eucalypt plantations.

6.1 General benefits of plantations on cleared land

6.1.1 Benefits to wood growers and users:

- Plantations have much higher growth rates than native forests. In N.S.W., native forest as a whole has an average MAI of several cubic metres of merchantable wood per hectare (certainly less than 5 m^3 per ha), although regrowth forest can have an average MAI of up to 10 m^3 per ha. In contrast, the range of MAIs for eucalypt plantations assumed in this paper is between 15 and 25 m^3 per ha.
- The layout of plantations in evenly spaced rows reduces harvesting costs compared with the irregular spacing in native forests.
- Plantations established on cleared land are generally in more accessible farmland areas than native forest.
- Plantation-grown wood has superior pulping qualities to the average native forest feed.
- Plantation-grown pulplogs have a greater wood yield and result in lower chemical processing costs than average native forest feed.
- Plantation-grown pulplogs are of more uniform age and size than native forest logs, permitting the benefits of greater consistency in harvesting and processing to be realised.
- Plantations provide the capacity to breed and select superlative provenances of eucalypt species that can only increase the superiority of plantation grown wood in the future. Further growth may be achieved by the use of fertilisers. There are also opportunities for further increasing the growth rates of plantations by new technologies such as inoculation of seedlings with ectomycorrhizal fungi in the nursery.

6.1.2 Environmental benefits:

- Planting native eucalypts can help reverse the loss of tree cover in this State due to clearing for agriculture or other purposes.
- Plantations can ameliorate dryland salinity problems when planted in recharge zones. Usually, however, dryland salinity degradation in N.S.W. is greatest in areas that are drier than would be considered for eucalypt plantations.
- Eucalypt plantations, like any tree plantations, can help prevent soil erosion.
- Tree plantations provide improved water quality in catchment areas.
- In areas that have suffered substantial tree decline, eucalypt plantations provide increased visual amenity.
- Eucalypt plantations provide wildlife habitat (to a greater extent than pine plantations).

6.2 Specific Benefits of Plantation Sharefarming Schemes:

- The Government or industry is not faced with a large upfront cost of land purchase. In areas suitable for hardwood plantations, land costs can exceed \$1 500 per ha. This is the same order of magnitude as all the remaining costs associated with establishment of the plantations (ground preparation, fencing, planting, silviculture, etc.). Therefore, the initial expenditures in the programme are approximately halved under PSS compared with land purchase options. However, entering into a PSS does commit Government or industry to annual payments over the life of the rotation.
- Opposition from the rural community to large scale purchase of farmland is avoided. In the north east of Victoria, farmers have objected strongly to the purchase of farmland by the government to establish pine plantations. There are a variety of socio-economic factors behind the farmers' opposition, including dislocation of families in the community, perceived benefits of agriculture relative to forestry, loss of services to the community and a perceived unfair advantage to the Government in making land purchases. Similar opposition to large scale government purchases for forestry have occurred in N.S.W. and Tasmania. Under PSS this opposition is avoided because PSS is a joint venture between the Government or industry and the farmers on voluntarily offered farmland that remains under farmer ownership and control.
- PSS involves active cooperation between farmers, government and industry. PSS in States such as W.A. and Victoria has been seen as one of the best vehicles for promoting the notion of trees as crops. Being a cooperative venture between Government, industry and the farming community, it represents the best means for overcoming farmers' perceptual difficulties with treating trees as crops. Reversal of the loss of tree cover in this State requires a different land ethic which incorporates trees as an integral part of each farming enterprise. If the financial benefits of tree plantations can be demonstrated in a joint venture between the farming community and Government, the likelihood of such an ethic being adopted by the farming community is much greater. With the alternative of Government or industry purchasing land, the opportunities for transfer of information and necessary changes in attitude are much reduced.
- PSS provides significant opportunities for on-farm income and employment. Therefore it tends to increase the profitability of diversified farming enterprises and makes some contribution towards arresting the problem of rural decline.
- Relatively small plantations established under PSS are more desirable from an ecological and aesthetic viewpoint than large continuous area of forests of one species. Although any plantation provides more habitat than cleared land, tree monocultures extending over thousands of hectares in any area are relatively undesirable from an ecological point of view because of their tendency to reduce floral and faunal diversity. Plantations in the order of 20-50 hectares dotted about the region or farmland area would contribute to greater ecological diversity. Similarly, from an aesthetic point of view, smaller plantations can be integrated into the landscape far more effectively than large areas of purchased land that have been planted entirely to one species.
- The opportunity exists to coordinate PSS with whole farm planning initiatives in the State. The N.S.W. Government, through the Soil Conservation Service, is initiating the preparation of individual property plans throughout the State. Discussions between extension officers and landholders will involve consideration of tree planting in many cases. Therefore the opportunity is created for systematic consideration of PSS by all landholders in suitable areas.

- The opportunity exists to coordinate PSS with the recently launched Statecare program and the Federal Landcare initiative. Under these programs, landholders are being encouraged to coordinate activities, including tree planting where appropriate, to reduce land degradation. This creates the opportunity for landholders in a Landcare group in suitable regions to plan their tree-planting activities together to produce a large enough area to qualify for PSS.

6.3 Risks of Plantation Sharefarming Schemes.

- They are untested in N.S.W. There are currently no PS schemes in N.S.W. for hardwoods. Indeed there are no active hardwood plantation schemes in N.S.W. on private land at all. Last year the Forestry Commission of N.S.W. established 136 hectares of eucalypt plantations. This contrasts with Tasmania, W.A. and Victoria where the following approximate private and public eucalypt planting rates are under way or planned:

Tasmania: Private - 3 000 - 4 000 ha p.a. currently being planted.

Public - As a result of recent Commonwealth State agreement, a large State program is intended.

WA: Private - 2 000 - 3 000 ha p.a. currently being planted.

Public - 5 000 ha p.a. currently being planted. (rate may decline).

Victoria: Private - 1 000 ha p.a. currently being planted.

Public - 4 000 ha p.a. to be commenced shortly.

- The untried nature of PSS in N.S.W. means that there are a number of technical and other risks. The growth rates of eucalypts established in the early years of the programme may not come up to expectation, resulting in undersupply to industry and potential overpayment by the government to PSS sharefarmers if PSS contracts are not reviewed during the life of the rotation. Because the N.S.W. farming community is not familiar with PSS, a considerable extension effort will be required by the Government and even this might not be as successful as anticipated, leading to underplanting and less resource being available to industry than was planned for.
- Eucalypt plantations established on farmland in N.S.W. have a poor history. The largest area of eucalypt plantations in N.S.W. consists of plantations purchased by the N.S.W. Government, through the Forestry Commission, from A.P.M. in the Coffs Harbour region. These were established in the 1960s on former dairyland and suffered a variety of insect attacks that led to poor structure and low growth rates in some cases. The legacy of this result is scepticism about the feasibility of eucalypt plantations in N.S.W. The extent to which modern silvicultural techniques can overcome earlier problems is a matter of some contention.
- Tree losses will occur through species/site incompatibility, disease, drought, insect/animal browse, fire and poor husbandry. Such losses compound the effects of lower than expected growth rates and reduce growth rate averages.
- If PSS is an activity to be undertaken by the Government, it will require considerable additional funding and training in order to be successful. The Forestry Commission, N.S.W. Agriculture and Fisheries and the Soil Conservation Service are not currently equipped or funded to carry out a PSS programme.

- While the roundwood market on the North Coast of N.S.W. where the best growing conditions for PSS exists is limited, it should be recognised that market development may follow establishment of PSS holdings of sufficient size, supplemented with other resources.
- The local amenity value and landscape enhancement value of rotation age eucalypt plantations could conceivably be so great that individual owners or communities could thwart final yield to Government irrespective of whatever legal protection is in place. This prospect of denial of clearfelling is real and there are instances of objection to harvesting of plantations. It would be exacerbated by ownership changes. Further, PSS based on a simple annuity system of payments to the farmer gives no financial incentive to the farmer to husband the timber crop. Such measures as maintaining fences to prevent stock browse, protection from fire and monitoring of health of the plantations are very much a matter of local involvement. To secure the financial involvement of the sharefarmer throughout the rotation to clearfall harvesting, a proportion of farmer payments should be withheld until harvest of the trees at the end of rotation.
- Sharefarmers may insist, as they are able to do in W.A. schemes, that the Government restores the property to a condition suitable for pastoral or cultivation use after clearfelling. Restoration to such use would reduce the annuity payable to the landowner (see Section 10.5).

7. THE AVAILABILITY OF LAND SUITABLE FOR PSS

The absolute minimum annual rainfall requirement for viable plantation establishment is considered to be 750 mm. At this lower level, reduced growth rates and greater frequency of failure at the seedling stage can be expected.

Suitable areas are essentially confined to on or east of the escarpment in a similar pattern to the natural occurrence of rainforest, wet eucalypt and (some) dry eucalypt forest types (see Appendix 2). Some higher plateau and tableland country within the above zones will be unsuitable because of difficulties of establishment and poor growth where low temperatures, exposure or perhaps poor soil types might be prevalent.

In areas closer to the coast, high quality agricultural land would not be available nor is all the land that formerly supported woodland necessarily suitable.

The economics of site preparation and cultural and harvesting activities associated with eucalypt plantations are closely dependent on mechanisation, for which slopes over 18 are limiting. For this and environmental reasons, slopes should rarely exceed this general level.

Having regard to these restrictions and criteria for suitability, land availability is considered to be less of a problem on the North Coast than the South Coast of N.S.W. One of the advantages of PSS over direct land purchases is that PSS land is potentially available through integration with other farming activities.

No attempt has been made to assess the availability in absolute terms.

Additional parameters that need to be taken into account when assessing land availability are:

- legality of access, namely use of road reserves and easements through properties.
- practical access within properties, such as crossing creeks and rivers and negotiating steep topography in an environmentally acceptable manner.
- ability of shire roads and bridges to cope with harvesting traffic.

8. SUITABILITY OF SPECIES

Victorian and Tasmanian plantation development is achieved with one or two well-understood locally occurring eucalypt species. W.A. projects on relatively confined ranges of climatic, topographic and site variables in the South West of the state, utilise a single Tasmanian species, *E.globulus*.

In comparison, N.S.W. with its wider range of site characteristics, has 15 or 20 eucalypt species potentially suitable for plantation development. However, their performance characteristics are understood to a lesser degree than the species used in other States. Factors such as provenance (i.e. seed source or parentage) will be important in adaptability to certain sites.

Species suitability will vary from north to south of the State, from coastal to tableland elevations and from lower to upper slope in the topographic profile.

Despite the complexity of species selection for N.S.W. sites, it is expected that the most suitable species can be predicted with a reasonable degree of confidence.

Nevertheless, some complete or partial failures resulting from species/site incompatibility must be expected. Rightly or wrongly the blame may be placed on the Government agency which provided advice and plantation design.

Guidelines for PSS development will therefore need to consider species suitability carefully.

9. EXPECTED GROWTH RATES

Growth and yield information for plantation eucalypts in N.S.W. is scant. While data exist, they are not extensively analysed and interpreted due to the limited research resources within the Forestry Commission being directed to other priorities in the past.

Forestry Commission experience generally indicates that the average productivity (expressed as MAI in volume) for roundwood rotations of plantation eucalypts is in the range of 10-20 m³ per ha. The South Coast is towards the lower end of the scale while the North Coast approaches the upper level.

Professor L.D. Pryor in his August, 1989 paper "An Assessment of the South East Forests Economic Package To Protect the National Estate and Jobs proposed by the South East Forest Alliance" states in respect of the South East "...the few existing plantations give a range according to site of from less than 8 m³ MAI to about 23 m³ with a general mean of probably not more than 12 m³." He further states "...with silvicultural improvements and genetic gain a general mean of somewhat more than 15 m³ seems feasible but considerable research development would be necessary to give the backing to achieve this in operations."

WACAP, from its current W.A. E.globulus plantings, expects an MAI of 23 m³ per ha, APPM, which is now planting eucalypts in northern Tasmania, expects an MAI of up to 30 m³ per ha.

The manager of Associated Forest Holdings, Tasmania, in a March 1990 media report, indicated that their substantial plantations up to 15 years old are producing at an MAI of 15 m³ per ha. He went on to add with techniques honed over the last 15 years "the company believes it can raise the MAI to around 20 m³ of wood per hectare for all new plantations."

Dr. J. Landsberg, consultant to the Federal Government Minister of Resources on the potential of hardwood plantations in the South East of N.S.W. states (pers. comm. Cameron) "...using modern silvicultural methods, it should be possible to grow eucalypts on plantations in the South east to achieve an average MAI of 20 m³ per ha."

Overseas, eucalypts are one of the most important plantation crops in the middle and lower latitudes with a total plantation area worldwide of 4.0 million ha in 1980 and approximately 7.0 million ha by the early 1990s. Growth rates are often higher overseas, due to the absence of controlling pests, with MAIs of 40-50 m³ per ha or higher achieved in some Brazilian plantations.

Translation of these results to N.S.W. is uncertain.

For the economic analysis below, MAIs of 15, 20 and 25 m³ per ha were tested. There will clearly be a range of growth rates depending on the species selected and interaction with climatic, edaphic and other physical and biotic factors which can only be partially modified by improvement of site factors through fertilisation, provision of drainage, cultivation etc.

10. ECONOMIC ANALYSIS

10.1 Costs

(i) Establishment

Derived largely from Forestry Commission experience with costs incurred in current National Afforestation Program projects in Coffs Harbour and Port Macquarie Regions, establishment costs were set at \$1 600 per ha.

Establishment costs cover fencing, roading, clearing of residual vegetation, scalping/ripping, burning piled vegetation, pre-planting weedicide, seedlings, planting, fertilising and fire trail construction.

(ii) Follow-up

After establishment in year 0, follow-up costs incurred in years 1 and 2 cover additional herbicide/weed control and insecticide treatments, with animal browsing control occasionally needed. Costs for these treatments were estimated at \$100 per ha for each year. Additional costs of \$75 per ha are incurred in year 1 to cover replanting of failed seedlings. Costs of replanting were assessed assuming that, on average, 10% of seedlings need to be replanted (an average over all blocks, with failure rates for individual blocks ranging from 0% to 75% or more).

(iii) Marketing and Supervision

As farmers have little or no experience in timber marketing, proper supervision of harvesting operations will be necessary to ensure satisfactory utilisation, to control forest condition after harvesting in the light of future management considerations and to provide proper accounting of output. Costs were estimated at \$50 per ha.

(iv) Annual

Annual costs were estimated at \$50 per ha up to year 9 and \$35 per ha from year 10 onwards. These costs cover road maintenance, fire protection and inspections. Fire protection costs are assumed to be lower from year 10 onwards due to increased resilience to damage.

(v) Sensitivity Analysis

Variation in all costs of +10% and -10% were examined. Results are indicated below.

10.2 Yields

Mean annual increments (MAIs) of 15, 20 and 25 m³ per ha were examined over a 20 year rotation. In addition, an MAI of 15 m³ per ha over 25 year rotation and an MAI of 25 m³ per ha over a 15 year rotation were also examined. The latter two rotation lengths were considered more indicative of likely management scenarios under the slowest and fastest growth rates.

10.3 Revenue

Current stumpage for roundwood from old growth logs in Eden Native Forest Management Area is about \$15/m³. Comparable rates on the North Coast are typically less than \$10/m³. Currently there are no pulpwood-only plantation operations in N.S.W. The tradeoff between high quality feedstock from roundwood plantations and higher proportions of bark with smaller piece size has resulted in higher prices for plantation grown pulp logs than for native forest

being anticipated in W.A. and Tasmania. Hence, a range of stumpage prices was examined, ranging from \$10/m³ to \$25/m³, in increments of \$5/m³.

10.4 Results

Table 1 below indicates annuities that could be paid to farmers each year starting in year 0 for the use of their land for 20 year eucalypt plantations for roundwood, subject to a Government or

industry organisation bearing all costs and receiving all revenue plus receiving a return on investment at the real interest rates indicated below. The real internal rate of return before any annuity is indicated, together with annuities payable if costs are increased by 10% or decreased by 10%.

Table 2 indicates annuities as per Table 1 for a 15 year rotation with an MAI of 25 m³ per ha and a 25 year rotation with an MAI of 15 m³ per ha.

Results from Table 2 cannot be compared directly with results from Table 1 since different time frames are involved.

TABLE 1

Farmer Annuities at Indicated Returns on Investment - 20 Year Rotation

MAI (m ³ per ha)	Royalty (\$/m ³)	Internal Rate of Return	Annuity Payable (\$/ha) given Real Rate of Return					
			0%		4%		5%	
			Base Costs Costs (+10%;-10%)	Base Costs Costs (+10%;-10%)	Base Costs Costs (+10%;-10%)	Base Costs Costs (+10%;-10%)	Base Costs Costs (+10%;-10%)	Base Costs Costs (+10%;-10%)
15	10	0.5	11	(-; 25)				
	15	2.9	83	(69; 96)				
	20	4.6	154	(141; 167)	18	(1; 35)	-	(-; 6)
	25	5.9	226	(212; 239)	65	(48; 82)	30	(12; 47)
20	10	2.2	59	(46; 72)				
	15	4.6	154	(141; 167)	18	(1; 35)	-	(-; 6)
	20	6.3	250	(236; 263)	81	(64; 98)	44	(26; 62)
	25	7.6	345	(331; 358)	143	(126; 160)	100	(82; 118)
25	10	3.5	107	(93; 120)	-	(-; 4)		
	15	5.9	226	(212; 239)	65	(48; 82)	30	(12; 47)
	20	7.6	345	(331; 358)	143	(126; 160)	100	(82; 118)
	25	8.9	463	(450; 477)	222	(204; 239)	170	(152; 188)

Note: Blank cell indicates no annuity payable.

TABLE 2

8. SUITABILITY OF SPECIES

Victorian and Tasmanian plantation development is achieved with one or two well-understood locally occurring eucalypt species. W.A. projects on relatively confined ranges of climatic, topographic and site variables in the South West of the state, utilise a single Tasmanian species, *E.globulus*.

In comparison, N.S.W. with its wider range of site characteristics, has 15 or 20 eucalypt species potentially suitable for plantation development. However, their performance characteristics are understood to a lesser degree than the species used in other States. Factors such as provenance (i.e. seed source or parentage) will be important in adaptability to certain sites.

Species suitability will vary from north to south of the State, from coastal to tableland elevations and from lower to upper slope in the topographic profile.

Despite the complexity of species selection for N.S.W. sites, it is expected that the most suitable species can be predicted with a reasonable degree of confidence.

Nevertheless, some complete or partial failures resulting from species/site incompatibility must be expected. Rightly or wrongly the blame may be placed on the Government agency which provided advice and plantation design.

Guidelines for PSS development will therefore need to consider species suitability carefully.

Former Annuities at Indicated Returns on Investment - 25 and 15 Year Rotations

MAI (m ³ per ha)	Royalty (\$/m ³) Return	Internal Rate of Costs	Annuity Payable (\$/ha) given Real Rate of Return					
			0%		4%		5%	
			Base	Costs	Base	Costs	Base	Costs
			(+10%;-10%)	(+10%;-10%)	(+10%;-10%)	(+10%;-10%)	(+10%;-10%)	(+10%;-10%)
1. 25 year rotation								
15	10	1.2	31	(20; 43)				
	15	3.1	103	(92; 115)				
	20	4.5	176	(164; 187)	17	(1; 32)	-	
	25	5.5	248	(236; 259)	59	(44; 74)	20	(3; 36)
2. 15 year rotation								
25	10	2.7	67	(57; 89)				
	15	6.0	184	(174; 206)	56	(41; 80)	27	(11; 52)
	20	8.2	302	(291; 323)	142	(127; 166)	106	(90; 131)
	25	10.0	419	(408; 441)	228	(213; 252)	185	(169; 210)

Note: Blank cell indicates no annuity payable.

10.5 Effect of Landuse Decision Following End of First Rotation

Whether the land is assumed to return to agriculture or continue as plantation has a significant effect on the annuities that can be offered. Under its PSS, W.A. CALM undertakes to restore the land to a state suitable for agriculture if the farmer wishes. The annuities they offer in this instance are considerably less than if the farmer signs up for two plantation rotations.

The economic effect of the farmer's choice in this regard is as follows:

(i) Land Reverts to Farming

It is presumed that this would require removal and disposal of tree stumps and all residual logging material. These costs are roughly estimated at \$1 000 per hectare on average. If the Government were to include this cost (which would be incurred at clearfall age) into the annuity calculation, the annuities paid in the first rotation would be reduced by the following amounts:

Rotation Length

Annuities (\$/ha) Equivalent to Additional
Clearfell Age Cost of \$1 000 per hectare
at Indicated Real Rate of Return

	0%	4%	5%
20 years (all MAIs)	\$48	\$31	\$28
15 years (MAI 25 m ³ /ha)	\$62	\$46	\$42
25 years (MAI 15 m ³ /ha)	\$38	\$23	\$20

(ii) Land Continues as Plantation

Because the fences and roads established at the beginning of the first rotation will still be in place at the beginning of the second rotation, the establishment costs for the second rotation will be correspondingly less. These cost savings are roughly estimated at \$300 per ha on average. As a result, the Government will be able to pay a higher annuity on the second rotation by the following amounts (all other factors being equal).

Additional annuity payable on second rotation (\$ /ha)

MAI	Royalty	Real Rate of Return		
		0%	4%	5%
15	10	15	—	—
	15	14	—	—
	20	15	21	—
	25	14	21	23
20	10	14	—	—
	15	15	21	—
	20	14	20	23
	25	14	21	23
25	10	14	—	—
	15	14	21	23
	20	14	21	23
	25	15	20	23

10.6 Discussion of Results

Based on the W.A. experience, an annuity of less than \$60 per ha is unlikely to generate much farmer response. In the absence of direct surveys of N.S.W. farmers, this figure will be used as the preliminary cut-off annuity. In the lower productivity areas, the government can recover its investment and offer an attractive annuity if the royalty is \$15/m³ or more. If the Government wishes to make a 4% real return on its investment, the royalty would need to be \$25/m³.

In the mid productivity areas, the government can recover its investment at all royalty levels. The royalty would need to be \$20/m³ or more in order to recover a 4% return and \$25/m³ for a 5% return.

In the high productivity areas, the government can recover its investment at all royalty levels. The royalty would need to be \$15/m³ or more in order to recover a 4% return and \$20/m³ or more for a 5% return.

Hence, a combination of any two out of the three factors of high royalty, high productivity and high return to the government will yield attractive annuities to farmers. The mid-point of the MAI and royalty ranges yields an annuity of \$50 per ha.

The decision of the farmer whether to sign up for one or two plantation rotations has a major effect on the annuity that can be offered. For example, assuming a MAI of 20 m³ per ha and a royalty of \$20/m³, the annuity that can be offered is \$50 per ha for a single rotation (assuming reversion to farmland) if the government requires a 4% return. If the farmer signs up for continuing plantation, the annuity would be \$81 per ha for the first rotation and \$101 per ha for the second rotation. Therefore, PSS should be designed to attract land for multiple plantation rotations.

Should some proportion of the annuity be deferred, as discussed in 6.3, a payment of \$33.25 per hectare can be made after clear felling for every dollar per hectare by which the annuity is reduced (at 4%).

11. COMMONWEALTH FUNDS AVAILABILITY

The Premier's Roundtable also included a brief to seek Commonwealth assistance to enable New-South Wales to undertake more work in relation to the possible establishment of further hardwood plantations.

National Afforestation Program (NAP) is a Commonwealth Government initiative which has provided funds for a number of years to State government and private agencies for afforestation projects (both pine and eucalypt).

For example, WACAP (a private corporation) has secured \$1 million of NAP funds for non-annuity type joint sharefarmer schemes. W.A. CALM has funded some of the research and development of its sharefarmer scheme with NAP funds.

The Forestry Commission of N.S.W. has NAP-funded eucalypt plantation projects totalling about 700 ha underway. These are restoring eucalypts to derelict former farm land now incorporated into several north coast State Forests.

It is understood that the NAP will cease with the current projects underway and that no new proposals are being accepted.

However, it is certain that recent Commonwealth Government announcements on conservation and environment will lead to fund availability to State-generated eucalypt plantation schemes. It is known from personal contact that the Department of Primary Industry and Energy would be receptive to eucalypt plantation funding proposals.

12. RECOMMENDATIONS

1. In view of Western Australian and Victorian annuity-based schemes and the apparent success of the Western Australian Scheme in getting trees in the ground under plantation sharefarming, the working group recommends the N.S.W. Government initiate discussions with the eucalypt roundwood industry and the farming community to establish annuity-based sharefarming agreements for eucalypt plantations for roundwood. The Government should recognise that there is an existing pulpwood market on the South Coast of N.S.W., whereas the roundwood market on the North Coast is limited.
2. Market development on the North Coast may follow establishment of PSS holdings of sufficient size, supplemented by other resources. Given that the best growing conditions for PSS are on the North Coast, the Government should facilitate the establishment of appropriate eucalypt roundwood markets in this Region, thereby reducing the market risks of PSS established there.
3. It is recommended that the N.S.W. Government should not accept a rate of return of less than 4% and that any financial subsidy necessary to provide annuities sufficient to attract potential sharefarmers be sought from the Commonwealth Government.
4. Should the Government determine to proceed with PSS, the existing interdepartmental "Trees on Farms" programme and Soil Conservation Service property plans should be used as vehicles for promoting any scheme to the rural community.
5. Given present commitment of State Government staff, resources and infrastructure to existing programmes, Government should give close attention to providing adequate infrastructure and funding for such a programme.

Possible options include:

- Creation of Private Forestry Division of Forestry Commission.
- Private sector coordination and management of the scheme.
- Creation of a new State Government Agency to develop, as commercial propositions, integrated programmes between agricultural and forestry sectors.

APPENDIX 1

Relative costs and returns for private Eucalypt plantations from both an average and good site in Gippsland are presented below. The internal rate return for eucalypts were estimated at 5.33% for the average site (MAI 17.6 m³ per ha) and 8.17% for the good site (MAI 29.8 m³ per ha).

COSTS	AVERAGE SITE MAI = 17.6 19.3	GOOD SITE MAI = 29.8 (Base Values) 32.8 (With Fert @ 5 years)
Land (\$/ha)	\$1000	\$1000
Clearing (\$/ha)	\$ 100	\$ 100
Establishment (\$/ha)	\$1200	\$1200
Maintenance (\$/ha)	\$ 27	\$ 27
Fertilizer @ 5 year (\$/ha)	\$ 198	\$ 198
RETURNS		
T1 14 years	88m ³ pulp	155m ³ pulp
T2 18 years	88m ³ pulp	155m ³ pulp
CF 25 years	307m ³ pulp	528m ³ pulp
TOTALS	48M ³ pulp = \$7666	838m ³ pulp = \$13827
IRR%	5.33	8.17
Actual Return (%)	12.83	15.67

FORESTRY COMMISSION OF N.S.W.

H.O. No. 3071

D. Hynd:JY Ext:557

Eucalypt Plantation Sharefarming
Report to Premiers Roundtable on
the Environment

Attached are 2 copies of the report by the Working Party which was set up in consequence of requests by the environmental delegates at the Premiers Roundtable conference on the environment in July 1989. Any extra copies required will need to be compiled locally. 846

The report was never presented to subsequent Roundtable meetings, as intended, since these lapsed when environmentalists withdrew their support.

After an hiatus, the report was launched by the Minister in Parliament on 17th October and at Coffs Harbour later the same day. An extract from Hansard is attached.

Although the Working Party was chaired by the Forestry Commission, its report is not a Commission document nor does it necessarily represent its views.

The Commission has however, agreed, at the Premier's request, to coordinate submissions and report on the major issues raised.

It is understood that some Regions have received enquires from the public, some in the mistaken belief from media reports that a sharefarming scheme is up and running.

Any scheme that might be implemented is probably going to depend for viability on a level of Commonwealth funding assistance and guidelines to be devised after submissions, now sought, are considered.

At this stage the Report is out for public comment and you should facilitate any received at your office to FOD. Mr. Hawkes is the contact officer.

R.O. 446

D.O.

Copy for your information, attention, report.

The District Forester

D.C. Workshops

The Forester Research

B. J. Salter,

Regional Forester

Per

G. A. KING

Acting Secretary

Per:

31st October, 1990

Regional Forester

PORT MACQUARIE

66.NOV.1990

EXECUTIVE SUMMARY

1. Eucalypt plantations offer certain physical and economic advantages, such as uniform wood quality, species selectivity, accessibility and better growth. There are also considerable environmental benefits, such as reversal of loss of tree cover, erosion and salinity mitigation and provision of wildlife habitat.

2. Additionally, there are specific benefits accruing from plantation sharefarming schemes (PSS), including avoiding the need for purchase of land and associated rural community opposition, supplementation of farm income and employment, integration with existing land management strategies (e.g. T.C.M., Statecare) and provision of a diversity of natural forest habitat in rural landscapes.

3. It needs to be recognised that there are also problems. Eucalypt plantations demand a high level of care during establishment and maintenance and losses from fire, drought, disease, browse and mismanagement must be anticipated. Some of these losses may be mitigated with experience while others will be on-going.

4. The State Governments of Western Australia, Victoria and Tasmania offer eucalypt plantation schemes to farmers as do corporations (who are product users) in these states.

5. While a successful start has been made in W.A. and Tasmania, those schemes in Victoria, both Government and corporation, are new and not yet taken up by farmers.

6. All are sharefarming schemes in a sense - those in W.A. and Victoria operate by way of annuities payable to farmers, while those in Tasmania are by grants for establishment costs.

7. All schemes are for short (about 20 years) rotation roundwood crops, since the economics of longer term crops such as sawlogs are not attractive. N.S.W. needs to adopt similar parameters for any scheme to be considered.

8. Schemes operate within a defined range of established markets. N.S.W. can offer immediate markets for roundwood at Eden but not elsewhere with any degree of certainty. Market development on the North Coast may follow establishment of PSS holdings of sufficient size, supplemented with other resources.

9. Schemes utilise one to three reasonably well understood species. The twenty or so potential species for N.S.W. are not as well understood for the broader range of climate, topography and soils likely to be encountered, but it is expected that the most suitable species can be predicted with a reasonable degree of confidence.

10. Growth rates expected in N.S.W. cannot be predicted with confidence but it is accepted that, for short rotations, they would fall within the range of 15 to 25 cubic metres per hectare per year depending on site.

11. The costs of establishing eucalypt plantations are expected to average \$1600/ha, with a further \$275/ha in years 1 and 2 for tending/replanting, annual maintenance of \$50/ha reducing to \$35/ha after 10 years, and \$50/ha at clearfelling for harvesting supervision.

12. An economic analysis shows that, at a real rate of return of 4% and over a 20 year rotation length, realistic annuities to farmers can only be paid where growth rates are high or where royalties are significantly higher than the highest pulpwood royalties currently obtained in N.S.W. The superior qualities of plantation-grown roundwood are likely to result in higher royalties than for native-forest-derived roundwood.

13. No schemes for Commonwealth funding assistance to States appear to be currently available. Nevertheless there are indications that the Commonwealth would be receptive to eucalypt plantation funding proposals.

14. In relation to eucalypt plantation sharefarming schemes, the Working Party recommends that:

- the Government initiates discussions with industry and the farming community to establish annuity-based schemes;
- the Government facilitates the development of appropriate roundwood markets on the North Coast;
- the minimum acceptable real rate of return be 4% and any subsidy necessary be sought from the Commonwealth Government;
- promotion occur through the "Trees on Farms" programme;
- the Government should provide additional infrastructure and funding for the programme.

THE FUTURE OF HARDWOOD PLANTATIONS IN NSW

(Adapted from a discussion paper by Dr. John I. Cameron, Resource Economist, ACF, June '89)

PLANTATIONS AIM TO

- protect native forest; and
- secure a source of supply to industry

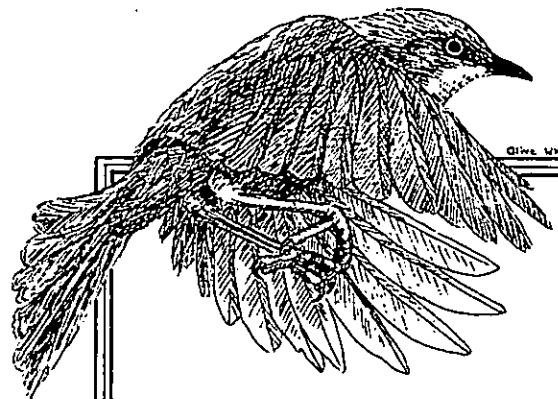
THE STRATEGY INVOLVES

- declaration of remaining unprotected high conservation forests as National Parks or Nature Reserves;
- the establishment of Eucalypt plantations on cleared lands;
- the provision of timber for industry from lower conservation value forests while plantations are maturing; and
- a transition to low intensity selective logging to produce high valued timber in the lower conservation value forests.

Refer to the Table below for:

- Major uses of Hardwood
- Current Sources; and
- Sources under the proposed Conservation Strategy (as per this report)

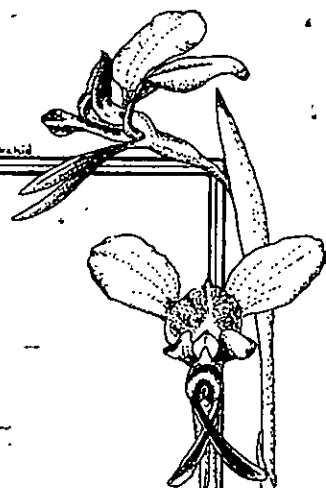
	Pulplog	Lower Quality Sawlogs	High Quality Sawlogs
<u>Use</u> →	Paper & paper products	House framing and general construction	Furniture veneer, mouldings, etc.
<u>Consumption in Australia 1986/87</u>	5,700,000m ³	4,200,000m ³ (estimated)	250-350,000m ³ (estimated)
<u>Current Source</u>	Intensive logging in native forest + sawmill residues + thinnings	Selective logging in native forest + some logs from intensive logging	Selective logging in native forest
<u>Interim under Conservation Strategy (next 20 - 30 years)</u>	Intensive logging in low conservation value native forest + thinnings + sawmill residues	Selective logging in native forest + pine logs + some logs from intensive logging	Selective logging in native forest
<u>Long term under Conservation Strategy</u>	Eucalypt plantations + thinnings + sawmill residue	Pine logs + selective logging in native forest + Eucalypt plantations (if necessary)	Long rotation selective logging in native forest



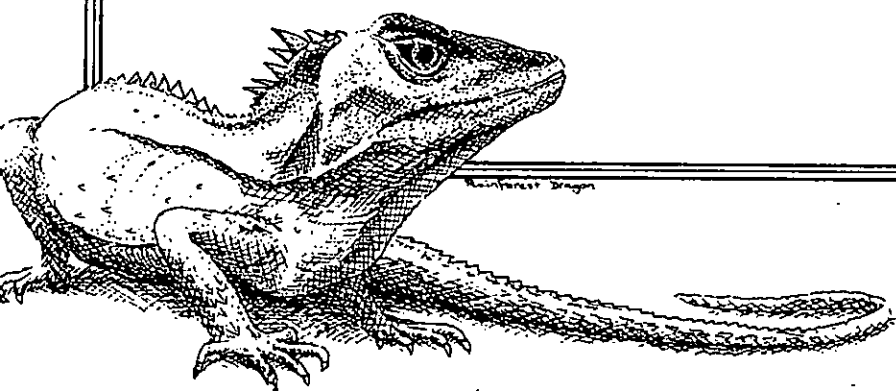
Olive Whistler

THE BIG SCRUB ENVIRONMENT CENTRE

88A Keen Street, Lismore 2480.
Phone (066) 21 3278



Pinky Orchid



Rainforest Dragon



Pink Fingers

THE PRINCIPAL BENEFITS OF THE STRATEGY ARE:

- a way to solve usage conflict over native forest areas
- it provides a secure supply of pulplogs and sawlogs for the industry (without the reliance on Native Forests)
- Eucalypts grow more rapidly in plantations
- it provides a superior quality feed to pulpmills
- plantation stock can reduce pulping costs and increase pulp and sawlog quality
- long term possibility of producing highly valued logs from 'mixed' species plantations
- it conserves the unprotected high conservation value native forests; and
- it expands the area of tree cover in the state.

DRAWBACKS INCLUDE:

- a high initial capital cost in comparison to dependence on native forests;
- an element of risk for successful growth rates in large scale plantations;
- it increases the competition for cleared high rainfall land.

RECOMMENDATIONS:

- that the NSW Government agree in principle to the plantation strategy and fund a number of technical studies aimed at providing a feasible timetable for hardwood plantations in the State;
- that the Government convene a panel to suggest areas for implementing a plantation sharefarming scheme in NSW;
- that the Government convene 2 economic studies
 1. To investigate the market for sawn timber in NSW to the year 2030; and
 2. To investigate log pricing mechanisms and the possibility of underpricing.
- It is understandable that the Forestry Commission, with poor results from some previous Eucalypt plantations and facing capital budgeting constraints, would be unenthusiastic about hardwood plantations. However, the increase in Eucalypt plantations in other states (by Government and industry), modern techniques and willingness of the Federal Government to provide financial assistance indicate that such constraints could be overcome.

PART 2

MAJOR ISSUES IN THE HARDWOOD PLANTATION STRATEGY

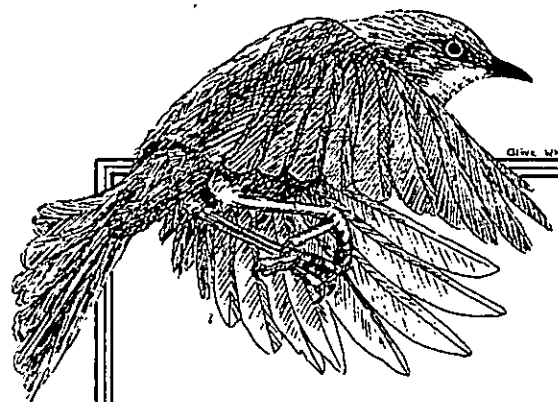
(a) AREA OF PLANTATIONS REQUIRED

(i) PULPWOOD

From 10,000 to 40,000 ha would be required to be planted over the next 20 years in the South-East. A similar area would be required in the north if a plantation based pulpmill or other roundwood industry were to be established. The exact amount would be dependent on the size of the mill, the degree of native forest thinnings contemplated and the use of sawmill residue.

(ii) SAWLOGS

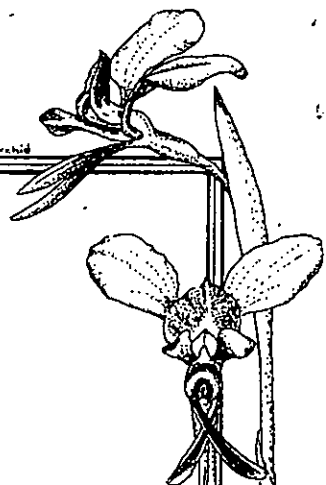
Any assessment of hardwood sawn timber production in the future must take into account the demand of sawn timber, declining availability of sawlogs from native forests and increasing availability of softwood sawlogs from pine plantations.



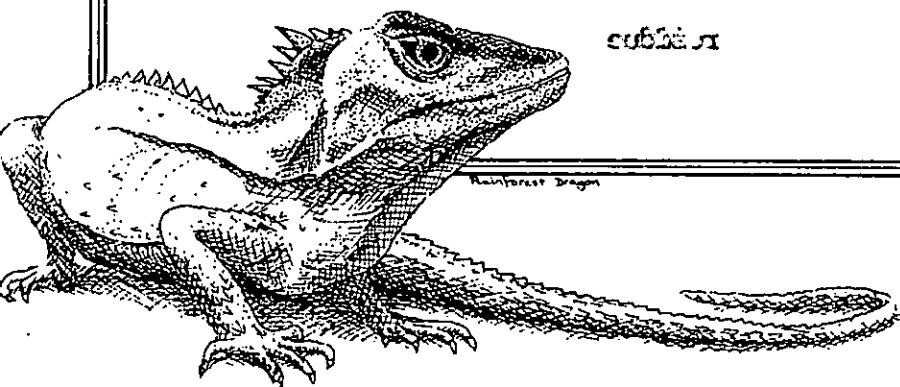
Olive Whistler

THE BIG SCRUB ENVIRONMENT CENTRE

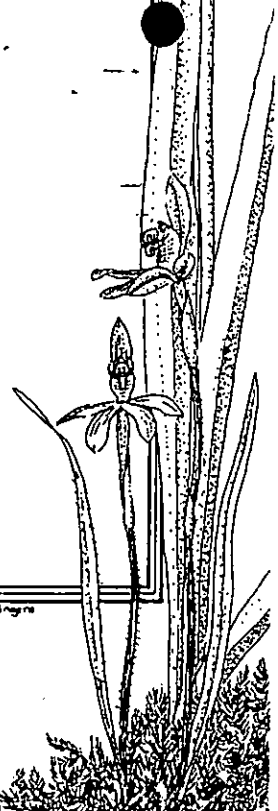
88A Keen Street, Lismore 2480.
Phone (066) 21 3278



Banksy Orchid



Rainforest Dragon



Snake Vine

There does not appear to be a necessity to establish plantations nationwide to provide lower quality sawlogs. Softwood availability is sufficient to completely replace the projected volume of native forest timber, although in practice pine cannot substitute for all uses of hardwood. It may be envisaged that 'high value' products be produced by long rotation selective logging in the native forests and not on hardwood plantations. However, regional circumstances may vary and plantation grown sawlogs might provide a transitional resource in the move towards the long-term solution of bulk sawlogs from pine plantations and specialty logs from native forests.

(b) THE AMOUNT OF SUITABLE LAND

The Australian Agricultural Consulting and Management Company (AACM) identified criteria for selecting suitable land for plantations in Australia. This included rainfall, soil, slope, climate and the distance from a suitable mill. Using a cutoff of 800mm rainfall / yr. they estimated an available area of 1,433,500 ha (high rainfall - cleared land). Not all this land was suitable because of soil, slope and climate constraints, however, at least 50,000 to 80,000 ha could be found within the high rainfall areas (nevertheless, the question of land availability still needs to be addressed).

(c) AVAILABILITY AND COST OF SUITABLE LAND

Land prices are often considered too high for plantation forestry purposes because of competing uses i.e. urban residentials, hobby farms, horticulture, prime dairying and cropping lands. Attention is therefore focussed on marginal farmland - former dairy and sugar cane lands mostly. Using the NSW Soil Conservation Services land capability classes, estimates of between 150,000 and 300,000 ha would be available (more than ample for the purpose).

Land that may not be for sale might be available for lease, plantation sharefarming or agroforestry. A university survey in the South East found many farmers reluctant to sell their land but who were, however, interested in the possibility of plantation sharefarming (Ison, 1989 - Hawkesbury).

(d) COSTS OF ESTABLISHING AND MAINTAINING PLANTATIONS

A comparison of three estimates. APPM is currently establishing 2,500 ha of eucalypt plantations per year in Northern Tasmania. Costs are in dollars per representative hectare (\$/ha)

Item	ACF estimate	NSWFC estimate	APPM estimate
Establishment	1,038	1,337	1,188
Follow-up Treatment	150	152	-
Marketing	0	384	0
Road Construction	86	56/yr (Counted in annual cost)	350
Annual Cost	50	119	20

Significant differences occur in the marketing, road and annual cost items.

ACF argues that marketing is inconsistent with plantation economics as the seller sells the wood uncut and the buyer is responsible for felling and hauling logs.

Road costs make up nearly half of the Forestry Commissions annual 'costs'. However, ACF argues that \$56 per year over a 60 year rotation seems unjustified.

(e) PLANTATION GROWTH RATES

Major differences in opinion exist between the ACF (through consultants AACM) and the Forestry Commission on growth rates for eucalypt plantations.

The NSWFC bases its calculations on (Coffs Harbour) plantations of *E. grandis* and *E. pilularis* that it bought from APM some years ago. However, these were subjected to severe insect attack as seedlings. More modern seedling care, treatments and selection processes now have ensured MAI's (Mean Annual Increments) of between 23 and 30 m³/ha/yr in other plantations (WA and Tas).

The ACF assumes a MAI of 20.3 m³/ha/yr (for a 30 year sawlog rotation with thinning at year 15), while the NSWFC still assumes between 8 and 11.7 m³/ha/yr.

(f) LOG PRICES

(i) PULPWOOD

The current pulplog royalty for Harris Daishowa is \$14 / tonne.
ACF assumed \$15 / m3 whereas NSWFC used \$10 / m3 in its plantation assessment.

(ii) SAWLOGS

ACF used \$27 / m3 but the NSWFC divided non-pulplog production into case, small, veneer and saw logs - providing a tonnage and a price for each. This is the preferable approach. Their range was \$11 to \$35 / m3.

(g) ECONOMICS OF EUCALYPT PLANTATIONS

Because the ACF assumes lower land and establishment costs, and higher growth rates and prices than the NSWFC it obviously concludes that eucalypt plantations are more economically feasible than the Commission does.

It is likely that most hardwood plantations established (in NSW) in the future would be for pulpwood production, and only a few (if any) would be considered necessary for lower quality sawlog production. As the NSWFC point out in their critique, the economics of eucalypt plantations established for pulpwood are much more favourable than longer rotation sawlog plantations.

(h) THE INTERIM

The NSWFC maintains that during the period of implementing 60 year plantation rotations the remaining unprotected native forests will need to be logged. In this period all remaining unprotected forests will be logged (leaving only National Parks or Nature Reserves).

The Commission maintains that either the conservation values of the logged forests will be maintained (in which point they argue - there is no point in ceasing native forest logging) or the forests will have been lost (in which case they say - the plantation strategy is too late).

This argument misses the main point of the strategy, which is to protect the remaining high conservation value forests immediately and replace intensive logging in the remainder of the forest with short (20 years) rotation pulpwood plantations.

The strategy applies only in its full form in the South East Forests - for the rest of NSW there is no necessity for 60 year rotation sawlog plantations. Again, any remaining unprotected high conservation value forests would be reserved from wood production, and if a plantation based roundwood industry or plantation grown sawlogs were deemed appropriate, plantations would be established.

In the interim, logging of the lower conservation value forests would continue.

In the South East it appears likely that (using this criteria) no more than 10% of the current state forests would become National Parks. It could also be argued that substantial income could be derived from nature-based recreation and tourism in and around the forests.

Item	ACF	NSWFC	Comment
Area of Plantation Required	50,000-80,000 ha (mainly pulplog)	250,000 ha (sawlog/pulplog)	NSWFC misunderstands plantation strategy; assumes complete replacement of native forest logging
Rotation period of plantations	20 yrs (pulplog)	60 yrs (high quality sawlogs)	NSWFC erroneously assumes produce high quality sawlogs on plantations
Availability of land	150,000-300,000 ha suitable	60,000 ha available	Differing rainfall cut-off. Difference between suitability and availability. Ignores contribution by sharefarming
Land purchase price (\$/ha)	1,200	1,700	Differing rainfall cut-off
Cost of establishment (\$/ha)	1,038	1,337	
Marketing (\$/ha)	0	384	Marketing costs should not be included
Plantation growth rates (m ³ /ha/yr)	16-20	7-12	FC very conservative due to past unrepresentative experience
Log prices: pulpwood (\$/m ³): sawlog	15 27	10 11-35	ACF closer to actual ACF higher than FC on average
% of current broadleaf State Forest converted to National Park	About 10%	100%	FC misunderstands plantation strategy

⊗ This table summarises the major elements of the ACF's Hardwood Plantation Strategy. It also makes a comparison with the NSW Forestry Commission figures.

Figures from: Cameron, J.I. & Penma, I.W. (1988) *The Wood and the Trees. A Preliminary Economic Analysis of a Conservation-Oriented Forest Industry Strategy*
ACF, Melbourne

and FAFPIC (1989) *The Role of Hardwood Plantations in Supplementing Australia's Forest Resource. Statement by Forestry and Forest Products Industry Council & Appendices.*

f. Log Prices

Pulpwood: ACF - \$15/m³

NSWSF - \$10/m³

Sawlogs: ACF: \$27/m³

NSWSF: divided non pulp log production

into case, small, veneer + sawlogs, providing tonnage and price for each.

g. Economics

As ACF assumes lower land + est costs, + higher growth rates + prices than the FC, it obviously concludes that euc. plantings are more economically feasible than the Commission does.

It is likely that most hardwood plantings est. in the future in NSW would be for pulpwood production, + only few (if any) would be considered necessary for lower quality sawlog production.

h. The Interim

FC maintains that during the period of implementing hardwood plantations (60yr rotations) the remaining unprotected native forest will need to continue to be logged. Either their conservation values will be maintained, in which there is no point in ceasing native forest logging, or they will have been lost, in which case the plantation strategy is too late. This misses the main pt of the strategy - that is to protect remaining high conserv. forests + replace intensive logging in the remainder of the forest with short (20 yrs) rotation pulpwood plantings. Applies in full to the SE forests; as for the rest of NSW there is no necessity for 60yr rotation sawlog plantings.

i) Mgt of Forest N.P.'s

Judging from ACF data, it appears unlikely that more than 100% of current SF would become N.P. Substantial y could be generated from nature-based recreation + tourism in the forests.

- Using NPWS budget, F.C. estimated a net cost of \$13/ha.

of land under NPWS control. Multiplied by 2,485,000 ha of current broadleaf S.F. yields about \$33 M. annual cost to NSW.

RECOMMENDATIONS

It is time the NSW Government gave serious attention to the hardwood plantations option.

In three other states major government and private hardwood plantation programs are underway due to the recognition of their major commercial and non-economic benefits.

The NSWFC differ in their opinions on market projections, the technical parameters of plantation establishment and growth, the ecological effects of intensive logging in native forest and the very nature of plantation strategies.

Technical questions to do with plantation parameters would seem best to be dealt with by Government commissioned studies:

Recommendation 1:

That the NSW Government agree in principle to plantation strategies.

That they commission a series of small independent technical studies including:

- The assessment of high rainfall cleared lands suitable for eucalypt plantations (800 and 1000 mm cutoffs)
- An assessment of the amount of private cleared land available for sale, lease or plantation sharefarming agreement and the availability of cleared public land;
- Collation of existing data on species and provenances most suited to growing conditions in each of the main potential plantation areas;
- A review of recent growth rates and projection of future achievable growth rates for the major plantation species in each area.

Following completion of the studies, the Government would release a feasible timetable for a hardwood plantation program for NSW.

Recommendation 2:

Plantation sharefarming is a promising means of expanding the plantation estate.

The Western Australian and Victorian Governments are vigorously promoting such schemes.

The NSW Government should convene a panel consisting of representatives from the NSWFC, the NSW Department of Agriculture, farmer organisations and other interested parties to review plantation sharefarming schemes in other states and make recommendations to the Government on the best means for implementation and promotion in NSW.

Recommendation 3:

The NSW Government commission an economic study from an independent consultant of the market in NSW for sawn timber to the year 2030, including a review and critique of forecasts of sawn timber demand, assessment of supply from domestic plantations and forests, and the potential for imported pine from New Zealand, Chile and elsewhere to penetrate the local market. The study would indicate the extent to which pine is likely to replace hardwood for basic construction purposes, and the need for further plantings of pine and eucalypt if the conservation-oriented plantation strategy were adopted.

Recommendation 4:

The NSW Government commission an independent consultant to report on whether significant underpricing of logs is taking place and to make recommendations on changes in log pricing mechanisms, including ways to use pricing to facilitate the transition to higher value uses of hardwood logs.

Eucalypt Plantations - Briefing Paper

The Problem

Over half the original native forest areas in Australia in 1788 have been subsequently cleared or severely modified. 12% of the remaining forest is in national parks and reserves, some of which can be logged. Many forest types are unprotected.

Demands on the native forest for wood production have increased significantly with the advent of the woodchip export industry. In less than twenty years, Australia's woodchip exports have grown to almost 5 million tonnes per year. The forest services are clearfelling most areas on ever shortening rotation periods, down to 40-60 years in some areas. Large areas of native forest are being converted into virtual tree-farms, using a few selected sub-species for wood production.

The ecological effects of these developments have been profound. Eucalypt forests generally take more than 150 years to mature in ecological terms, so short rotations mean loss of habitat (such as tree hollows) and biological impoverishment. If, as planned, most of the remaining loggable old growth forests are converted to regrowth over the next three to four decades, Australia faces the loss of a gene resource of immense value. To ensure the capacity of forests to adjust to change (particularly in view of the global warming expected because of the greenhouse effect), larger contiguous areas of ecologically mature forests must be conserved.

Yet demands for greater wood production will continue. There are half a dozen export pulpmill proposals in Australia now, each of which would consume between 1.0 and 1.5 million tonnes of pulpwood, largely from the native forest. At the same time the value of intact native forests for wilderness preservation, biological diversity and abundance recreation, catchment water quality and other conservation values is receiving greater recognition by the public each year.

The Solution

The Australian Conservation Foundation (ACF) in its publication "The Wood and the Trees" has called for the establishment of 10,000 hectares of new eucalypt plantations a year on already cleared agricultural land. When harvested (15+ years for pulpwood, 30+ years for sawn timber), these trees would produce sufficient wood to produce the bulk of the country's future hardwood needs. Logging in the native forest would then be restricted to long rotation selective logging for the low volume high value use of timber such as furniture making and veneers. The ACF plan calls for woodchip export schemes to be phased out and replaced by export pulpmills where environmentally acceptable sites can be found. Pulp export approval for these mills would be conditional upon the establishment of sufficient plantations at the outset of the project to fully supply the mill.

Under this plan, in the long run, native forest logging would be reduced to around one-tenth of its current level, with no clearfelling. The primary aim is to conserve the values of undisturbed native forest that are rapidly depleted, but there are other benefits as well. Planting trees on already cleared land will alleviate salinity and soil acidity problems, reduce soil erosion, increase water quality and provide wildlife habitat. It will also make a contribution towards alleviating the greenhouse effect by absorbing carbon dioxide from the atmosphere.

There are several advantages to the forestry and forest product industries of growing wood on plantations. There are reduced harvesting, transport and operating costs for many mills. For all producers, there is the opportunity to improve the plantations stock by selective breeding, and to determine the best stock to plant for the desired end-use of the wood.

According to the ACF economic analysis, the initial cost of setting up the plantations (\$1,000-\$1,500 per hectare plus land costs) is more than recouped by the subsequent benefits of growing wood on plantations. Over the long term, there is most probably a net economic benefit to the country in producing most hardwood on plantations as opposed to continuing to cut it from the native forest.

This solution looks only at the supply side of the problem - how to produce alternative sources of wood. There are other solutions promoted by the conservation movement that address the demand side of the problem. The demand for wood resource can be reduced by increasing recycling rates, particularly for paper. More fundamentally, the demand for wood products that have low social usefulness, such as paper for 'junk mail', can be directly reduced.

Technical Issues

1. Can sufficient high quality cleared land be found to establish the plantations?

At most about 400,000 hectares of greater than 800 mm rainfall land within economic haulage distance from mills or markets is required - less than half the size of the current softwood plantation estate. There is ample such suitable land, but some will not be available because of other competing uses. The ACF study made the preliminary assessment that at a price of \$1,200/hectare, more than enough land would be available in each area. The issue of local farmer opposition to tree plantations needs to be carefully addressed. A well-managed plantation scheme should increase local income and employment. There may be less opposition to eucalypts as a native species than there has been to pine.

2. Can decent sawn timber be produced from plantation-grown eucalypts?

Research into eucalypt and other native hardwood plantations has been minimal in this country compared with our research into pines; or indeed eucalypt research in other countries. Therefore, there can be few definitive answers. However, CSIRO and other research to date has indicated there should be no difficulty in producing adequate quality structured timber. However, the necessity to produce large quantities of this timber is questionable since an oversupply of pine timber of this grade is expected after the year 2000:

The ability to produce high quality sawn timber from plantations is unknown. One of the unresolved issues is whether it is possible to reduce the knots in plantation-grown hardwoods by pruning and other methods. A related issue is whether it is feasible to grow rainforest and cabinet timbers on mixed species plantations to replace the species that have virtually disappeared from the native forests through excessive logging.

3. What should be done in the interim before plantations come on stream?

ACF calls for several stage process:

- Identification of Australia's high conservation value forests on a consistent nation-wide basis.
- Making public the forest services' forward plans for wood production from the native forests, by forest area by year.

- Arriving at a forest plan which seeks to log low conservation value forests with minimum disruption to the industry in the interim until the plantations come on stream (15 to 30 years, depending on location and type of plantation).

Political Issues

1. What has been the response of government and industry to the plantation strategy?

The Federal Government has received the plan well, several Ministers have called for increased hardwood plantations for reafforestation and wood production purposes. CSIRO has been given increased funding for eucalypt plantation research. Industry response has been mixed, ranging from the predictable opposition of the industry public relations arm to an interest in further discussion by some companies already planting eucalypts.

2. How will the strategy be pursued at the national level?

The most important forum will be the Forest Accord process. Although initial discussions may be at the federal level, any agreement will only be workable if it involves discussions between state and regional conservation, union and other groups. ACF will be pressing for adoption of its plantation, woodchip phaseout and interim forest plan approach.

3. What is the NSW Government attitude towards plantations?

The current State Government has stated several times its "commitment to increasing the rate of plantation cultivation of Australian native hardwood species by both the Forestry Commission and private forestry companies" (letter to TEC 11/2/88). So far we have seen no evidence of such an increase. The NSW Forestry Commission, unlike most other state forest services, is ideologically opposed to large scale eucalypt plantations for wood production.

4. What is the relevance of the plantation strategy at the local political level?

Arguments against the establishment of more conservation reserves in an area on the grounds of industry's long-term need for wood can be countered by the plantation alternative. Local government authorities, and the public need to be made aware of the benefits of the plantation approach by local groups.

Possible Items for Letterwriting and Other Campaigns

To Federal, State, Local Politicians: Given the benefits to the community and to industry, do they support the establishment of hardwood plantations on cleared land for wood production?

To NSW Coalition MPs: Given their party's commitment to native hardwood species plantation establishment, urge them to take action.

To NSW Forestry Commission: Victorian, WA and Tasmanian forest services are all planting substantial areas under native hardwoods. Urge them to reconsider their opposition and commence a planting program.

To Harris Daishowa: Object to only token consideration of plantation alternative in EIS. Call for serious study.

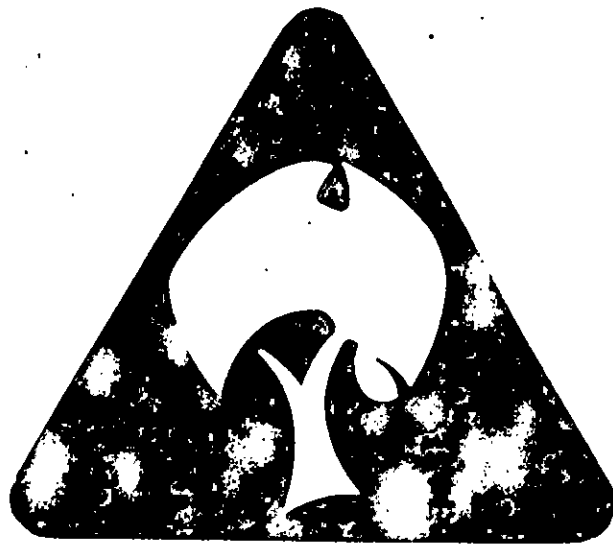
To Federal Government: Deplore the lack of funding for the Australian Heritage Commission's old growth forest survey. Call for major new funding for identification of Australia's high conservation value forests.

To Federal Government: Deplore the lack of funding for research into eucalypt plantations. Call for major new funding for studies of the growing of eucalypts and other native hardwoods on plantations and the utilisation of plantation-grown hardwoods.

To NSW Forestry Commission: Call for publication and promulgation of management plans and other forward plans for logging by forest area by year. This is to enable identification of possible conflict with high conservation value forests ahead of time, and so increase the opportunity for resolving the conflict.

Trees By The Million

- Greening NSW-



The Greening Projects

Document 3

Greening Australia NSW

July 1989

Tree Planting Centres

Aim:

To provide a source of advice and support for people and groups wishing to carry out tree-planting, land and tree regeneration projects

Description:

The role of the Tree Planting Centres is straightforward. They provide a place to which any person or group wanting to plant trees can turn for information, advice and assistance on how their project can be carried out. Each Centre will have information, educational resources, some tree planting equipment, and access to seedlings. It will assist in finding the answer to any tree-planting problem that might be holding up a project, provide advice about which species to plant for particular purpose and how to regenerate existing local native species. Each Centre will need a mini-bus to transport volunteers and materials to tree planting sites.

Initially, two Tree Planting Centres are planned - one in Western Sydney to act as a focus for urban projects, and one in Bathurst as a centre for rural activity throughout NSW.

Rationale:

Farmers, community groups, and concerned citizens are increasingly willing to plant trees. Many people have been persuaded by news of environmental crises that it is time to do something, but they do not know how to go about it. The Tree Planting Centres are designed to capture enthusiasm and turn good intentions into effective projects.

At present, Greening Australia is able to fulfill this role in a modest way through our office with the Soil Conservation Service, and through our Farmer Tree Group project. We already receive dozens of calls for assistance, seeking help in planning projects, finding materials, getting sponsorship, and selecting trees. The Tree Planting Centres will be a place to go for advice and support, a place that makes projects happen.

Budget:

Each Tree Planting Centre would need two staff - an information officer who is always there to answer inquiries and sell resources, and a field officer who works with community tree-planting groups to help them plan projects and implement them successfully. With salaries and overheads, each would cost about \$130,000 annually to run. Establishment costs for building, altering or refurbishing premises would cost between \$20,000 and \$100,000.

The Clearinghouse

Aim:

To collect and distribute a range of existing information and educational resources, publish a newsletter, and develop a computerised database of information on trees, indigenous species, special uses of trees in whole farm planning and for particular local conditions.

Description:

The Clearinghouse will be a central point for information and resource material collection and distribution. The database on trees will be created from information already available from a variety of sources. Videos, posters, brochures, and other materials, particularly those developed by Greening Australia in other states will be made available. A newsletter is a natural spin off from this project. Information and materials will be available on request to any tree planting group or individual.

Resources will be collected so that groups planning tree planting projects will be able to reduce time spent in research about trees, and have easy access to promotional materials.

Rationale:

There is much valuable information on tree planting but it is spread across hundreds of books, journal articles, and leaflets. To save every tree planting group having to waste time searching for the right information for their situation, we want to 'sort and sift' this material, extend our library and develop the computerised information system that allows us to find rapidly the information that people need.

We want to make these and other resources more available to groups, to make their project easier to get underway. This will mean one less burden for the tree planters, who might otherwise skip the research phase of their project and end up losing too many trees.

With such an information base, our Tree Planting Centres can provide valuable support at minimal cost. A regular newsletter will keep members and active groups in touch with what is being done nationally.

Budget:

We estimate that setting up the database and acquiring the referenced material will cost \$25,000 in staff time. The newsletter will cost \$10,000 in staff time, \$5,000 in publication and distribution costs.

The Tree Directory

Aim:

Tree planting requires equipment, trees, and advice. The Directory which we are preparing is designed to tell tree planters where they can get these sources and supplies, regardless of where they live.

Description:

Among the information in The Tree Directory would be:

- lists of experts such as government field officers, nurserymen, and knowledgeable amateurs;
- lists of equipment suppliers and their prices;
- lists of accredited nurseries and tree providers;

Rationale:

This project is designed so that tree planting is not hampered by an apparent unavailability of local sources for the materials used.

Budget:

The project is estimated to cost \$10,000 in staff time for preparation, and \$5,000 for publication.

The Tree Group Manual

Aim:

To provide organisational and planning advice for tree planting groups such as Trees of Farms and Landcare groups.

Description:

From our Trees on Farms Project, and similar projects in other States, much has been learnt of the do's and don'ts of having an effective tree planting group, and conducting a tree planting project. We are consolidating this experience in a Tree Group Manual.

The Manual will include such necessary tools for groups as:

- advice on how to start and develop a tree planting group,
- a sample constitution and simple organisational rules,
- a guide to planning a tree planting project, covering matters such as selection of the site and the trees, the preparatory work, and tree maintenance,
- advice on fund raising, volunteer enlistment and publicity.

Rationale

Many tree planting activities occur best through group activities, where members encourage and assist each other. This is true both for community tree planting projects, and for landholder groups such as Farmer Tree Groups. The Tree Group Manual is designed to make the task of conducting group activities as easy as possible, so that energy can be directed towards planting trees rather than debating constitutions.

Budget:

We estimate that completion of this Manual, beyond work already completed, will cost about \$10,000 in staff costs. Publication is estimated to cost \$5,000.

The Sponsor Matching Service

Aim:

To provide a means whereby sponsors for community projects can be found, and equally where interested sponsors can identify projects suitable for their assistance.

Description:

Resources that tree planting groups usually need are money and materials - ground must be prepared and trees generally have to be bought for about one dollar each, and require fencing, tree guards and mulch for initial survival.

Greening Australia has found that many companies are interested in sponsoring projects, especially in their own communities, but have never been approached. Businesses may be willing to provide funds, or possibly equipment or materials.

The Matching Service is being developed to make it easy for groups and sponsors to get together to get a project underway. We are designing standard agreements and procedures so that a willingness to cooperate can rapidly be turned into a concrete agreement.

Rationale:

This project is another in this suite of activities aimed at making good intentions become good projects as easily as possible. Because Greening Australia NSW can tap into the best expertise available, it can help corporate sponsors locate projects which are both useful and visible.

Budget:

The Matching Service is already available to any group wanting help in attracting sponsorship, and to any corporation or group wishing to sponsor tree planting projects of any scale. We believe that the fairest means of paying for this service is through a user fee, and would seek about 5% of the value of any project sponsorship arrangement we negotiate. This money would be used to cover our costs in developing projects to sponsorship stage, and in approaching sponsors.

Because there is already a huge demand for assistance with tree planting projects in the community our target is \$100,000 in the first year, growing to \$300,000 by the third year.

Whole Farm Planning Manual

Aim:

Our aim in this project is to produce easy-to-use materials which can aid farmers in applying whole-farm planning methods in their land management, and to design training methods which farmers will find appealing and useful.

Description:

The Whole Farm Planning Manual is seen as a tool that could be used by the Farm Tree Group development workers and by the field officers of government agencies. It could be used with individual farmers or preferably with groups of farmers. It would explain what whole farm planning involves, and show how farmers can undertake whole farm planning on their land.

Rationale:

The approach that is rapidly gaining acceptance as the basis for a sound and sustainable agricultural economy is whole farm planning, where farmers take into account their land capabilities, climate, and topography in determining the best long-term uses. Farms planned according to this method use trees sensibly to maximise productivity and protect and restore the land.

Farmers need to consider land management and farm planning techniques to arrive at an informed decision to plant the right trees in the right places. They can maximise the multiple benefits of tree establishment, such as windbreak/wildlife habitat/erosion control in one planting. Whole farm planning provides a framework for cost benefit analysis of changes to land and farm enterprise management.

Whole farm planning is a technique can be used with guidance by any farmer. It works best when the farmers plan their own land with advice, and where implementation of the plan is supported by a local self-help group of farmers, possibly assisted by tree planting volunteers. These are the type of group our Farmer Tree Group workers would be assisting. This project provides an important tool for rural tree planting and land restoration, by complementing the work being done in the field by officers of the Soil Conservation Service and the Interdepartmental Trees on Farms Program.

Budget

\$20,000 for staff time to complete the manual, publication and distribution.

Farmer Tree Groups

Aim:

To encourage and assist farmers and graziers in planting trees on their land as part of a planned approach to land management.

Description:

Farmer Tree Groups is a method of encouraging farmers to act on land degradation that has been proven to work. These are local voluntary groups of farmers who meet regularly to support each other's tree planting projects. They are effective because greening a farm takes many years for farmers, particularly for those already stretched to maintain economic viability. Farmer Tree Groups provide a system of advice and encouragement by their fellow farmers to help maintain enthusiasm over time.

At present, Greening Australia has one Farmer Tree Group Development Officer serving the entire state, funded jointly with the NSW Farmers Association and NSW Agriculture & Fisheries. Fifteen Farmer Tree Groups across the State are supported, and more are being formed every month. The workload of one development worker for all of rural NSW is impossible.

We are seeking to establish a network of ten Farmer Tree Group Development Officers with one in every major agricultural centre. These officers would work in conjunction with field officers of the Soil Conservation Service, NSW Agriculture and Fisheries and the Forestry Commission. These field officers provide advice and expertise - we would complement this by providing organisational and support assistance so that Farmer Tree Groups can fully use their expertise.

Farmer Tree groups have been assisted in whole farm planning by workshops run by our Farmer Tree Development Officer. These workshops use a local farm as a case study so farmers learn about the processes of planning from looking at land contours, aspect and soil types to how trees can be planted to best advantage. Farmers are then more keen and better skilled in undertaking their own whole farm plans, with assistance from relevant government field officers in providing information about their own properties, treatments for soil erosion, ground water problems and so forth.

Rationale:

The farmers and graziers of NSW must have more support and assistance if they are expected not only to maintain their business, but also to restore and improve their land and its trees. Pamphlets and field officers can provide advice to farmers, but more concerted action is needed if they are to be persuaded to act on their own land.

Farmer Tree Group Development Officers work most effectively if they are seen as part of the non-government support for farmers. We see them based in country towns with appropriate non-government groups which can provide local support and management. Nonetheless, it is unrealistic to expect local communities to be able to fund them.

Budget:

Each Farmer Tree Group development worker costs \$50,000 annually for salary and on-costs. Each will need a vehicle. Our budget plans for two workers initially, growing to ten workers over three years.

Farm Tree Economics Project

Aim:

To investigate and publicise the economic benefits to farmers of tree planting and whole-farm planning, as a means of encouraging rural tree planting.

Description:

Greening Australia seeks to examine the effects of trees and greening on farm economics, and to provide the results of that research in a form that is useful to farmers in their financial planning. This project involves a review and compilation of relevant research and consultation with end users of timber. Trees can have a number of significant economic benefits - as shelter for stock, as cash crops, as a source of timber, and as a means of increasing land productivity and property values. Trees are similarly an investment that requires some capital and maintenance costs.

Rationale:

A sensible way of persuading farmers to green their land is to show how it can be financially rewarding. There is a critical need to examine and publicise how trees can become part of the farm's economic operations.

Budget:

We estimate that this research project would cost \$15,000. Publication of a summary version suitable for wide distribution would cost a further \$5,000.

The Greener Council Awards

Aim:

To encourage the 175 Local Government Councils across NSW to undertake tree planting and land management projects in their municipalities and shires, and to support community tree planting projects.

Description:

The Awards are being designed to be made annually, for Councils which make an outstanding contribution towards the greening of their community. We are seeking sponsorship for the Awards, and will discuss their operation with Local Government bodies before proceeding.

Rationale:

The Awards will encourage recognition of the many valuable ways in which Councils are already involved in greening their communities. Councils are, after all, the managers of parks and gardens, and frequently the trustee of public lands such as nature reserves, regional open space, and greenbelts. Councils can also provide a stimulant and support to community tree planting projects.

Budget:

The operation of the Awards would be conducted by Greening Australia NSW staff, with an independent judging panel. The size of the Awards depends upon sponsorship. Our target is \$20,000 per year to promote the awards so that Councils gain publicity for their efforts, and further funds for the awards themselves.

Local Tree Audits

Aim:

To improve the capacity of Local Councils to look beyond the lands under their direct control, and to start developing a more significant role in planning, coordinating and stimulating the greening of their council area.

Description:

We aim to develop into a "kit" form a technique we call "tree audits". This would enable councils to assess the extent of tree decline and land degradation in their area, identify major blight areas, and develop appropriate local plans to rejuvenate these.

Tree Audits will be a standardised procedure which a Council can conduct efficiently and rapidly in order to gain an appreciation of their local degradation problems and tree planting opportunities. Data from Tree Audits will be similar across Councils, allowing a State-wide appreciation of problems and opportunities.

Rationale:

The scale of land restoration which is required to deal with problems in NSW is so large that no concerted program could be managed from Sydney. Local Councils can play a crucial role, and fulfil their charter as a third level of government. Basic mapping information about land degradation is already available from the Soil Conservation Service. Local Councils can accept a planning, stimulating, coordinating and monitoring role, making sure that land restoration and tree planting is underway in their area.

Budget:

Developing a Tree Audit Kit which is useful yet efficiently implemented will cost about \$30,000 mainly in staff and consultant's time. Promoting and facilitating use of the Kit will require about \$10,000 over a year.

Corporate Greening

Aim:

This project aims to preserve indigenous species in the Sydney area by establishing local native vegetation on manufacturing sites.

Description:

Greening Australia will identify treeless industrial sites where the owners could reestablish native vegetation without disrupting the operations of their business. Ideally, this would be in corners or along edges of blocks where adjoining land owners can each contribute a small portion of their land, yet together have enough to allow a miniature urban forest.

We will prepare a "greening plan" for the area, and approach companies with the plan and a proposal for its implementation. Tree planting could be undertaken for a fee, or in some cases local residents and workers may conduct a voluntary initiative which Greening Australia NSW would support. The tree planting can both provide important native vegetation and ecosystems, and promote the companies as good citizens.

Rationale:

Private enterprise plays a central role in our economy. We want it to have a commensurate responsibility for the greening of Australia. We designed this project to encourage all businesses to ensure that their own land is green. Considerable awareness of the importance, role and uses of trees would result from a concerted effort by companies to ensure that their office and factory sites were sensibly planted with trees.

Budget:

This project would work best with a full-time organiser who would help plan and organise the plantings. To fund the worker, we would seek contributions to our costs from businesses participating in and benefiting from greening projects. Over a year, contributions or fees-for-service of \$50,000 would be required if a full-time worker were to be engaged. Our aim is to generate \$50,000 worth of projects in the first year, and \$100,000 in the second.

School Shadehouses

Aim:

The School Shadehouses Project is designed as an educational and practical approach that makes children aware of the importance of trees, while also assisting native tree planting.

Description:

Schools can undertake a variety of tree-related activities that serve the twin benefits of educating our young by practical activity, and serving the broader community by getting trees planted. Projects that are known to work include local tree plantings (most schools need more trees to prevent excessive sun exposure), shadehouse projects (where seedlings are raised from seed for tree plantings), and tree planting excursions.

Shadehouses are a project that combines all of these activities. The idea is that children collect seeds from native plants suitable for an area they wish to green. In school shadehouses, they nurture the seeds into seedlings and young trees, then in an activity day plant these in the chosen area. The school P&C and other local groups could become involved in the tree planting, its preparation and maintenance.

This project aims to support and encourage schools and P&C's to undertake shadehouse or other tree planting projects.

Rationale:

Schools must play a significant role in a comprehensive and long-term greening strategy, because we cannot allow our future generations to have the same short-sighted attitude to our environment as we have shown in the past. Children can undertake many activities useful for tree planting, and at the same time learn to appreciate and understand our natural environment.

Rotary has recognised the significance of school initiatives on trees and launched a shadehouse project with resource material. However, because there are hundreds of schools in NSW and not all will have a local Rotary group to assist them, we seek to engage a full-time resource worker to visit and assist schools in greening efforts.

Budget:

Many of the support services required to assist schools would be provided by other projects, such as resource material and advice. For this project, we seek the costs of a full-time educational officer and schools organiser, requiring \$50,000 annually with support costs.

Greening the Banks

Aim:

To address by suitable tree plantings the erosion problems of river banks which are collapsing into the river, starting with the Hawkesbury River.

Description:

The Upper Hawkesbury River has had substantial portions of its banks cleared of trees, and the resulting erosion of the banks particularly in floods causes both loss of soil and siltation of the river. Much of the land fronting the river is in private hands, and so persuasion is necessary to get trees put back on the banks.

We will consult with local owners and groups to become more informed of current status of river management, and seek that any river management plans incorporate tree planting. With community tree-planting groups such as Men of the Trees, we would encourage and assist landowners to cooperate in Greening the Banks.

Rationale:

River banks are important places for trees because their roots bind the bank together, and thus minimise soil erosion and river siltation. We aim to develop techniques for working with landowners along river banks in projects which put trees on banks. Early projects should also increase awareness and stimulate other tree planting activity.

Budget:

We are currently conducting preliminary investigations to refine the project. When the Sydney Tree Planting Centre and the other resourcing projects are established, organisational capabilities will be largely in place. For this project, then, sponsorship is sought for the costs of earthworks and trees. The more sponsorship available, the easier it will be to persuade landowners to green their banks- we are seeking \$10,000 initially and \$20,000 in a full year.

Greening the Grey

Aim:

To complement the State Government's announced program for greening of 20 areas of Sydney, by encouraging sponsorship and community activity on these sites.

Description:

Greening Australia NSW has been involved in helping diverse urban greening projects, including the Tregear Reserve project of Greening Blacktown (assisted by our grant). We have been working with the NSW Department of Environment on the greening of Sydney Park. This work can be usefully extended by cooperating with the NSW Government's Greening the Grey campaign.

The support infrastructure provided by other projects in our strategy can be of great benefit to this campaign. We will work with the Department of Environment to identify ways in which our role of catalysing and supporting community effort can be useful to making Greening the Grey popular and cost-effective.

Rationale:

Urban areas are important to any comprehensive greening strategy because they illustrate the beauty and power of trees to millions of people who could remain unaware of the land degradation problems of rural areas. Because the NSW Government has taken an initiative in this area, we would seek to cooperate to ensure maximum success and maximum community involvement. The benefits of our approach will be that tree planting is cheaper and more appreciated if done by rather than for the local community.

Budget:

To provide the greatest support for the Government's program, we would seek to mobilise community support and action from residents and businesses near the grey area. In each area, we would work to establish a greening group which could take part in the planning and work on the Greening the Grey project. To cover 20 areas in the Government's Program over the next few years, we seek \$50,000 annually to employ a full-time community catalyst. For the initial Greening the Grey project on Hawthorne Canal, we could undertake community organization for 10% of the \$200,000 budget.

Corridors of Green

Aim:

To develop corridors of trees and bush along roads and railway lines by preserving existing remnant vegetation and planting trees, so as to increase awareness of the importance of greening, and to provide habitats for native wildlife.

Description:

Western Australia has given us a lead in developing corridors of green along the sides of major roads through the countryside. In Victoria, a massive project to improve the use of 1700 kilometers of now-abandoned railway lines is underway with the sponsorship of Alcoa. Old stock routes often contain the last substantial remnants of indigenous vegetation and are important to preserve. These corridors have numerous invaluable benefits. They provide beauty, protect road verges, provide wind breaks, allow wildlife some habitats, and encourage tree consciousness. They use wasted land in its most effective way.

We aim to work with the Road and Traffic Authority and the State Rail Authority to initiate a number of pilot corridors of green. We would ask that they identify appropriate sites for which we could plan a revegetation scheme. We will help encourage community effort so that the cost of greening is reduced, and the benefits better publicised and appreciated. We would seek corporate sponsorship through our Sponsor Matching Service.

Rationale:

Land beside roads and railways amounts to an enormous area which can be particularly useful to animals and birds by connecting scattered areas of forests with corridors of native vegetation. Use of these corridors for trees meets environmental and aesthetic needs, without competing with economic needs

Budget:

We estimate that this work will require only a part-time person in the initial year while suitable sites are identified with the relevant authorities, and then a full-time person would then be engaged to organise local communities to work in conjunction with the authorities and paid workers to green the corridors. We estimate costs of \$10,000 in the first year, and \$50,000 thereafter.

Sydney Park

Aim:

To demonstrate the benefits of community tree planting by organising community participation in the tree planting of the new Sydney Park in St Peters

Description:

Sydney Park is a Bicentennial Park established on a disused quarry in the inner Sydney suburb of St Peters. The park has a variety of complex problems including the past dumping of toxic and other wastes, and these must be resolved before tree planting can occur. Early attempts at tree planting were defeated as the trees were killed by methane gas seeping from buried wastes.

Once the site problems are resolved, Greening Australia will organise the local community and other volunteers to assist with the landscaping of the park.

The NSW Minister for the Environment has committed \$20,000 to Greening Australia NSW for the work of organising the tree planting.

Rationale:

Community tree planting is being used in this park because this will encourage community ownership of the park, and thus encourage local care for the park.

Budget:

\$20,000 has been committed for this project.

Demonstration Farms

Aim:

To establish a number of model farms where Whole Farm Planning techniques are used in conjunction with tree planting in order to preserve and restore the land and native vegetation.

Description:

The model farms would be based on the Potter Farmland method which has been successfully implemented in Victoria. The farms would be selected to cover a variety of situations such as usage, native vegetation, and the nature of soil erosion and land degradation problems.

The farms selected would be ones where the owner is prepared to enter into an agreement with Greening Australia allowing use of the farm for educational purposes in return for assistance with the whole farm planning and tree planting. The farmer would be expected to meet some of the costs of the farm improvements, but some assistance would be given in order to accelerate implementation of the farm plan for demonstration purposes.

Rationale:

Experience has shown that farmers are most easily persuaded to change their farming practices when they can see alternative farm methods being successfully implemented by their fellow farmers

Budget:

We are seeking \$16,000 to meet costs associated with the planning of four initial demonstration farms, and \$10,000 annually for three years to plant and maintain trees

Greening Australia NSW *Subscription Form*

*Yes, we want to help with the
Greening of NSW*

1. We want to join Greening Australia

Please find enclosed our subscription fee
\$20 pa (individual), \$100 pa (corporate)

☐

2. We want to do volunteer tree planting

Please let us know a group we can join

☐

*3. We want to do tree planting on some land in our
area.*

Please help us get it going

☐

4. We want to give a donation

Please find enclosed a donation of \$.

.....

Name:

Address:

Phone:

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.....
Name:

Address:

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NSW FOREST REVIEW AND STRATEGIES
FOR NATIONAL CAMPAIGN
FINAL DRAFT February 1991

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FOREST SUMMIT

c/ TEC
18 Argyle St. Sydney 2000

1. THIS IS THE DECADE TO SET THE AGENDA FOR A SUSTAINABLE FUTURE

1.1. As we enter the nineties, there is the necessity and opportunity to address the future for our native forests on a comprehensive basis. NSW has been the scene of some very significant conflicts over logging, in most parts of the state.

We have reached a point where it is paramount to identify the common elements in these disputes and address them in a more coordinated way at state and national levels for maximum effectiveness. This has been building up over the last few years through evolution of the regional NEFA and SEFA groupings; Forest Summit meetings; the Australian East Coast Forest Conference held in Brisbane in March 1990 and the Forest Forum held in Newcastle, in the same year.

Meanwhile the Forest Industry, under pressure from the growing conservation imperative, has reorganised itself onto a more effective and flexible political footing and geared up for a strong pro-development campaign.

1.2 THIS PAPER is the outcome of pre-meeting research and the State Forest Meeting held on 12 January in Sydney, attended by 30 campaigners representing a wide range of views and experience in NSW Forest issues. The paper:

- (i) provides a synopsis of the key issues as perceived by Forest Campaigners as background for a state review and the NATIONAL FOREST STRATEGY MEETING to be held in Canberra on the 9/10/11 February 1991;
- (ii) identifies common elements relevant to NSW in the context of a national strategy; and
- (iii) flags those elements of strategy which require further discussion.

2. OVERVIEW

2.1 THE GLOBAL CONTEXT

There is a growing world-wide awareness of the life-threatening damage to our planet caused by the activities of the increasing numbers of humans and application of inappropriate technology around the globe. Greenhouse, ozone-layer depletion, acid rain and loss of biological diversity are now familiar terms; and more recently the environmental damage of modern warfare is again being recognised.

However, while the urgency is recognised, the economic conservatism which is also growing makes it increasingly difficult to have an effective political impact on the causes of this degradation. The 'state of the economy' has become paramount, as concerns are voiced over the economic downturn. Further there is the fundamental debate about whether traditional economic growth as opposed to more qualitative development paths will provide the resources and solutions to facilitate environment protection.

2.2 THE NATIONAL LEVEL

Within Australia the Federal Labour government is struggling to retain credibility and coherence. A change of government is likely at the next election (not obligatory until 1994). The likelihood is that the next Liberal Government will be in the Greiner mould with a similar National Party influence on policies. The general and concerted attack from industry on environmental legislation will continue along with their campaigns to make themselves more environmentally acceptable.

There is a lack of political will by governments to apply their existing powers to effectively protect the environment and in fact the embracing of the 'new federalism' by Labor and Liberal Governments threatens the tyranny of the lowest common denominator. Also recent Federal Court decisions about enforcing application of current environmental legislation and powers has led to doubts about the adequacy some federal environment legislation.

2.3 NEW SOUTH WALES

2.3.1. The GREINER GOVERNMENT appears assured of a second term, with prospects of a younger and more dynamic National Party leader after the election.

The election is due in 1992 but may well be called in the first half of 1991 with the ALP at a low ebb in the polls.

The present (NP) Minister for Forests and Lands, Garry West, who replaced Ian Causley in July 1990, is not burdened with the same old connections and traditions. His style is different, but he is still reliant on the Forestry Commission for advice. Environment Minister, Tim Moore is unable to obtain Cabinet agreement for legislation that significantly improves the prospects for government intervention to protect the environment. There is also an 'unspoken' agreement in the Government that as little as possible state forest is made into national park.

2.3.2. THE PUBLIC ACCOUNTS COMMITTEE (PAC) OF THE N.S.W. PARLIAMENT released the Report of its inquiry into the Forestry Commission in December, 1990 which attacked the Commission's structure, operation, skills and attitudes.

The Report recommends major changes to the Forestry Act, 1916 and the adoption by the Commission of a 'healing role' to the present entrenched disputes. The Report vindicates the criticisms of the Commission made by environment groups.

2.3.3. The FORESTRY COMMISSION is under considerable pressure in the light of the PAC's stringent criticisms, the Resource Assessment Commission's NSW Hearings and several cases brought before the Land and Environment Court, notably the North Washpool case.

Dr Hans Drielsma, was appointed Commissioner for Forests last year, following the death of Wal Gentie and the Assistant Commissioner position remains vacant. The new Commissioner while hardline, is not an identical copy of the seige-driven Gentie.

Minister West is talking of 'corporatisation' of the Commission, which may address some of the economic, management and marketing inadequacies identified by the PAC, but would not necessarily establish ecologically sustainable forest practices. Indeed, the Government is still believed to support amending the Environmental Planning & Assessment Act, 1979 to exclude the Forestry Commission from the requirement to produce Environmental Impact Studies prior to logging, despite the PAC recommendation that the Forestry Act 1916 be amended to bring it into line with the EP&A Act.

2.3.4. The LABOR OPPOSITION continues to evade facing up to the difficult issues of achieving modern competent forest management, due to fear of organised labour. Their former Minister and now Shadow Minister for Forests, Jack Hallam is very close to the Forestry Commission and hostile to criticisms of the Commission made by environment groups. Hallam's continuing poor performance as Shadow Minister is one reason why the Carr Opposition appears so lacklustre to forest protection groups.

2.3.5. THE FORESTS are greatly reduced in extent with much of the more fertile soil areas cleared for farming and settlement. Timber extraction continues from private as well as public land. The State Forests include rainforest areas, some still subject to logging, the coastal and escarpment eucalypt forests harvested for woodchips and sawlogs, the Red Gum forests of the major west-flowing river systems, and Cypress Pine, some box and other communities.

Native forest is still being cleared for pine plantations and of the pine plantations in the north, Bathurst, Oberon and south-east, some are now coming into second rotation. Hardwood plantations are very limited in extent, with the Forestry Commission having established very poorly designed experiments that only serve to justify their low esteem in the Commission's eyes.

2.3.6. WOODCHIPPING is a driving element of timber harvesting in the south east area (1 mill tonnes p.a. exported to Japan by Harris Daishowa); while significant extensions of woodchip sources have been permitted for Sawmills Export (Boral) through Newcastle and for Brisbane Forest Products through Brisbane. Hardwood chips also go to Korea. An international scale (Kraft) pulp mill has been proposed for the Clarence Valley but the scheme was placed on hold prior to the election as a result of public concern over pollution.

While woodchipping is increasing, hardwood sawlogging is expected to decline and pine rapidly take over traditional hardwood markets.

2.3.7. FOREST CAMPAIGNS have been conducted with remarkable tenacity and some great successes over the last 20 years, with a big proliferation of local groups.

More local groups made submissions to the Resource Assessment Commission from NSW than from any other state. Two

major informal groupings, the North East Forest Alliance (NEFA) and the South East Forest Alliance (SEFA) have emerged in the second half of the last decade as local forest campaign groups perceived the added strength of linking together for greater effectiveness. Updated reports submitted by some groups on current activities are available.

3 RECOGNISING PLAYERS ON THE SCENE

The major industry and political players in the debate have changed and grown in strength in recent years. It is important to recognise them and plan accordingly.

3.1 THE TIMBER INDUSTRY

3.1.1 THE FOREST PRODUCTS ASSOCIATION (FPA) is the big end of the timber industry - big mill owners and operators who have Crown licences such as HARRIS DAISHOWA (Eden Woodchips, potential interest in north), SORAL (woodchipping mill, Newcastle), and ADELAIDE STEAM (owners of Duncans Sawmills).

The smaller end of the industry (the diminishing number of smallscale sawmillers; specialty timber getters and users; timber hauliers and other contractors and subcontractors) is not represented by the FPA.

Employers have invested years in keeping their workforce un-unionised. The FPA has sought to portray the environment movement as being responsible for job losses as a consequence of the withdrawal of timber resources in the 1982 Rainforest Decision. In reality huge job losses have resulted from the introduction of new technologies, centralising and conglomeration of mills, difficult economic circumstances and poor management. The FPA are anti-NPWS and National Parks: their classic quote is 'If the greenies get this National Park then we'll go broke and have to sack thousands of staff.'

Many FPA heavies are also prominent in the smaller country centres where their mills are located and in the National Party. FPA members have historically had a major influence on Ministers holding resource portfolios since they have been the major clients of the Forestry Commission. The FPA agenda is guaranteed unfettered access to the State Forests at the lowest possible prices for as long as the old growth lasts (7-10 years on one estimation).

FPA members link into the national forest industry bodies, are well financed and are aggressive in defending their perceived 'birthright' - access to the forests their fathers felled.

FPA is expected to unleash a new major publicity campaign in early 1991 to regain the impetus they lost briefly following the Washpool Interlocutory Judgment, PAC report and RAC cross-examination.

3.1.2. FORESTS AND FOREST PRODUCTS INDUSTRY COUNCIL (FAFPIC) was formed in 1984 as part of the consultation process to advise the Federal Government on the development of economic and industry policy. Several such councils were established as an outcome of the Accord, and act to support the Australian Manufacturing Council.

FAFPIC is comprised of representatives of industry management, Forest Services, forest growers, CSIRO, Department of Industry Technology and Commerce, and Department of Primary Industry. In addition, it has one academic forest economist. FAFPIC has generated a Strategic Plan for the industry which opposes:

- § the creation of parks and reserves containing commercial stands of timber;
- § more environmentally sensitive forest management plans;
- § the phasing out of clearing native forest for pine plantations.

The Plan argues for:

- § long term tenure for large volume public wood supplies;
- § royalties which are 'not too high';
- § less stringent logging prescriptions and lower logging costs;
- § large government assistance for plantation expansion;
- § a variety of other public financial support;
- § removal of inhibitions to rationalisation;
- § large scale wood processing plants;
- § general encouragement for greater domestic consumption and export sales.

While guarantees are sought to protect industry's private interests, the industry in turn is not able to guarantee protection and provision of the broader public interests and benefits, such as greater employment and environmental protection. (Australia's Timber Industry: Promises and Performance ACF 1987)

3.1.3. FOREST INDUSTRY CAMPAIGN ASSOCIATION (FICA) is an off-shoot from FAAPIC and is the agency responsible for accumulating funds and producing television, newspaper and other advertisements promoting the industry message and defending the industry from the criticisms of the environmental movement. It is funded and supported by FAAPIC.

3.1.3. NATIONAL ASSOCIATION OF FOREST INDUSTRIES (NAFI) was formed in 1986-87 and is very closely linked to the FAAPIC. It is the industry (bosses) organisation and acts as a lobby group and a co-ordinator of the FICA media campaign.

3.1.4. NSW LOGGING ASSOCIATION was formed in May 1990 and is the combined voice of logging contractors in NSW. It aims to act as a lobby group, and as a spokesperson for loggers and to promote forest products.

3.1.5 AUSTRALIAN LOGGING COUNCIL (ALC) was formed in 1986 as a national body to provide an umbrella for all logging and associated activities. It grew from the Tasmanian Logging Association Ltd and is the national voice for the logging contractors. ALC kick started the NSWLA with a grant of \$10,000.

3.2 THE FOREST PROTECTION SOCIETY (FPS) was apparently founded by Robyn Loydell. It might be better named the Forest Industry Status Quo Protection Society, since it aims to defend the status quo against our campaigns.

Based on a generally poorly educated rural timber worker and mill staff membership, the FPS also signs up Forestry Commission staff, log haulers and local community members likely to be affected by changes in timber industry employment e.g. shop owners.

The FPS has become a vehicle for concerned family members of timber industry workers, notably wives, to give vent to their anxieties about their families futures if current employment is not maintained. Much of their campaigning is very emotional and intimidatory and ignores any factor other than their economic survival.

Their classic quotes are "We're just doing what our fathers and grandfathers did. We have a right to our forests and our jobs." "If you try to stop us, then you will have to deal with a very angry local population." and "If we lose our jobs, the impacts on the local community will be enormous, shops will close, crime will rise and our kids will be condemned to the dole."

The Forest Protection Society started on the South Coast but has spread to other locations in NSW. It is believed that the FPA has made significant grants to FPS to fund their activities but the FPS has eschewed the 'bosses' from prominent positions within their organisation. The FPS is a separate organisation with aims which may not always co-incide with the aims of the FPA. If (perhaps in ideal conditions) FPS can be made to see that the threat to their jobs comes from their bosses, they may at times consider allying themselves with environmentalists.

The FPS is expected to participate in the splurge of publicity in early 1991 along with the FPA and will provide the mass action, grass roots activities.

3.3 THE INSTITUTE OF FORESTERS AUSTRALIA (IFA) is the professional body for qualified foresters and operates as a vehicle for individual foresters to express opinions outside the limitations of the public service role of Forestry Commission. IFA has adopted some progressive policies, including the right of public participation in public forest management, but opposes the reservation of large areas of forest and the production of replacement sawlogs from plantations. The IFA has had no success in achieving public participation within forest management or indeed significantly influenced government policy.

Drielsma and other senior staff within the Commission have been active within IFA in the past, possibly as a means for gaining prominence and influence within the Commission. The position of Secretary and Chief Inspector is required by the Act to be a Forester, and the same requirement is applied, without legal basis, to most, if not all, senior positions within the Commission.

3.4 THE AUSTRALIAN TIMBER WORKERS UNION (NSW BRANCH) (ATWU-NSW) has been recently undergoing a radicalisation, overhauling sixty years of conservatism and subservience to the industry bosses.

Changes in union structure mean that the Australian Timber Workers Union will be amalgamated into a mega-industry based-union, (Construction, Forestry, Mining and Energy Union - CFMEU) which will represent workers in these areas, from raw material extraction through processing to end use of those products. The BWU, ETU, MU and FEDFA will link up with the ATWU over the next 3-5 years. It is planned that the new mega-union will have a conservation committee operating across all the above divisions.

In the transition, the NSW branch of the ATWU plans to educate and lead its members to new understandings about their work and its broader context, breaking down some of the ignorance and isolation which was perpetuated under the previous administration. The ATWU has actively sought dialogue and co-operation with NEFA and has promised to exchange information and co-operate on campaigns of mutual concern. They support plantations and new National Parks but are concerned about our agenda for ending the logging of old growth forests. They are open to be convinced about alternative resources being available.

The ATWU does not represent small sawmill operators who are tiny, isolated businesses, often a family or partnership operation. ATWU NSW accepts that major restructuring is required to achieve competent forest industries, and that some jobs in some areas may have to go. ATWU has offered to develop a model mill operation, worker owned and operated and is actively canvassing for support for this. ATWU is definitely 'anti-bosses' (FPA) and is keen to break the political stranglehold which mill owners have had for so long.

ATWU has a fair political clout, having access to the Federal Government through ACTU. They have had direct discussions with Hawke, Kerin and Griffiths. In NSW, ATWU has had dialogue with Greiner and has indicated to Greiner and West that they support new National Parks, plantations etc, and are keen to develop further dialogue with environmentalists. A further meeting between NEFA and ATWU NSW is scheduled for early March 1991. Earlier meetings between SEFA and the union gave some hope but this fizzled to nothing.

3.5 THE MEDIA

This key player is in fact many players. Local media perform different functions, with different priorities, to the Sydney and national media.

Local media are eating up stories, regarding forest issues, since it is of direct interest and relevance to local people, since it is 'real' news (with constant up-dates needed) and since it sells papers! Many local journalists have a personal interest in and sympathy for forest protection and have been very helpful in spreading our message. The FPA and FPS are also getting a fair go in local media to balance the debate, but often, perhaps because of poor spokespeople, they come across in a damaging rather than positive manner when they are reported.

State and National media seem to be tired of forest stories and are resistant to attempts at continuing coverage. The details and dimensions of many stories are often seen to be too localised and/or minor to be reported. This part of the media appear to be only interested in the big stories, or those with damaging political connotations.

3.6 NSW POLITICAL PARTIES

3.6.1. THE AUSTRALIAN DEMOCRATS are wholly on-side and their two MP's, Lis Kirkby and Richard Jones have been extremely helpful. They are prepared to further our forestry agenda in the Parliament through Questions, Speeches and media releases.

3.6.2. THE LABOR PARTY has been schizophrenic in its attitude to the forestry debate. The Leader of the Opposition, Bob Carr is on-side and has pursued forestry questions in Parliament. However, he has been less than 'correct line' over the Washpool dispute and appears to be ham-strung by previous decisions of the Wran Government on rainforests.

Carr is influenced by 'heavies' in the NSW Right, many of whom are still seething from the 1988 NSW election result. The lack of our support for the Unsworth Government despite its position on the South East forests is still held against us and they focus on the loss of seats and ultimately the government benches in the 1990 State election. NSW ALP Branch President Terry Sheahan (and ex-Attorney General) who lost his seat is said to be still particularly bitter.

Shadow Minister for Forests, Jack Hallam was and still is an apologist for the Commission. As a right winger, he is hostile to the environment movement and has chosen to interpret the Wran Government Rainforest Decision, (made when he was an MP but not Minister), in a way which favours the industry and the Commission. His

continuance as Shadow Minister is one of the main reasons the Opposition is performing so poorly and he remains an obstacle to obtaining sensible policies from the ALP.

Shadow Minister for the Environment, Pam Allan has recognised the groundswell of support for a satisfactory resolution to forestry conflicts and is valiantly trying to turn the ALP around. She does not have a legacy of bitterness from the previous years and is an original thinker with good personal and media presence. The ALP forestry policy is technically outside her portfolio, but is clearly linked to her portfolio areas through National Parks and endangered species issues. Pam has some good support from the new younger MP's but has to confront entrenched hostility among the 'old guard' who appear to have significant influence on Carr.

Pam is on the Left in the ALP and her push for up-dating the ALP position on forestry poses a danger that forestry issues may fall foul of intra-party factional politics. We must avoid the situation of forestry and environment issues becoming the province of the Left alone. However, recently Carr has expressed interest in a Forestry Commission reform policy.

3.6.2. THE NATIONAL PARTY has long had direct links with rural industries, particularly the timber industry. These industry operators hold influential positions within the National Party and within rural communities. With the dumping of Causley as Minister for Forests, the industry had a serious setback, but they have renewed their pressure on the new National Party Minister Garry West. Nevertheless, Causley is still a strong anti-environmentalist force in Cabinet.

West is not seen as a strong man, or a politically adept head cruncher. His ability to control or direct the industry and the Forestry Commission is seriously doubted. He professes an independence from the Commission and industry but has yet to demonstrate this.

His appointment by Greiner may represent a deliberate softer approach to forestry issues; an attempt at distancing forestry from allegations of corruption which have plagued the Nationals and particularly Causley; or an imposition on the Premier by the Nationals who effectively control the portfolio under the Coalition agreement. Wal Murray's National Party will not support positive changes to the industry or to the Commission in the short term because it conflicts with their agenda.

3.6.3. THE LIBERAL PARTY appear to have no entrenched interest in the portfolio as the Nationals do, and seem to want the issue resolved and/or the heat taken out of forestry politics, but with as little impact on timber industry supplies.

They have been seriously embarrassed by Causley and the Commission's bull headed stance, and may respond positively if approached carefully. The major danger from the Liberals appears to be their agenda of 'dry economic rationalism' and the consequences of having dollar values driving the forest management debate, (although in terms of making the industry pay its way there may be some positive benefits). Nevertheless, when it came to the crunch Greiner imposed a minimal timber loss solution (10%) on the south east forests.

3.6.4. INDEPENDENT M.P.'s

The independents have been very interested in forestry issues with all seven giving unanimous support to the south east forest campaign. Clover Moore, Robyn Read, John Hatton and Dawn Fraser have been particularly helpful.

Mrs Marie Bignold, Call to Australia Party (CIA), while not an Independent, has exercised her vote in the Upper House independently from the other CIA members Fred and Elaine Nile. Mrs Bignold's vote has been crucial in defending the EPA Act from unworthy amendments.

4 KEY ELEMENTS FOR FOREST CAMPAIGN STRATEGY

In order for any strategy to be effective and relevant it needs to be integrated into the prevailing social, economic and political conditions. The themes and language used need to communicate to the various social groupings in society and generate political momentum. A knowledge of the wider socio-political environment also gives an ability to avoid mistakes that 'rose-coloured' or 'myopic' perspectives can cause.

4.1 CAPTURING THE POLITICAL AGENDA

In the next decade four key themes will emerge on the political agenda:

A. The global view of environmental issues ie. everyone is concerned, it affects them and they going to want a say in decisions even more so than now.

It has now become apparent to business and government that the environment is now an enduring issue with major political impacts. While the heat in the issue may go through cycles it will stay at the top of the agenda along with economic concerns.

The environment movement therefore needs to be aware of the wider economic and social movements that will affect forest protection. Such wider parameters can adversely impact on our activities as well as offer opportunities. Examples are the oncoming surplus of pine, the growing pressure to preserve biodiversity and ethic of landcare.

There is the potential for the forest issue to drop off the agenda as the very big issues such as population, climate change and economic recession issues take over public emotions. If this is correct then the current trough in political support for forest protection may turn into a downward spiral.

A key challenge is to produce 'Greenprints' that satisfy the wide spectrum of social interests that are now mobilised to respond to the environmental crisis. We need to speak to opinion leaders and a diverse range of community groups, in their language, to communicate our concerns.

In response to the global nature of environmental issues, industry is attempting to take over the ecologically sustainable development (ESD) debate by using environmentally friendly language to justify their programs and at the same time reinforce their image with traditional economic promises. It is quite clear that industry has attempted to mobilise opinion leaders to support their stand, using expert advice and massive resources.

We must counter this. To succeed we need to blend our ideas, words and actions into the ideas, language and behaviour of the broad mass of people. While people are broadly receptive, they may not necessarily have changed their economic or political behaviour.

A.1 Coalitions

An associated concern is the question of alliances or forest summits. Some groups are sceptical of their value and this directly relates to national and state conferences.

If we are to appeal to a wider set of social groups then it is logical to involve those groups in the campaigns. Local environment groups are also touching points for a wider social audience. Another fundamental reason for coalition or alliances is that they empower local community groups which are faced with the growing resources devoted by industry to winning the issues.

SEFA empowered local south coast groups because it gave them direct access to the resources and contacts of the 'peak' groups. NEFA, established as an alliance of forest activists in the NE of NSW has been very effective in making a broad and concerted approach to the issues, despite having no paid staff and very little money.

B The rise of Liberal/National Governments and their devotion to economic rationalism, which can support our arguments against continued subsidies of the native forest timber industry. However, the National Party interests strongly favour continued subsidy efforts. The resulting decisions are portrayed as 'pale green' in contrast to the demands of green 'extremists'. Greiner's south east approach clearly put timber interests first.

The political implementation of our agenda has run into serious snags recently. There are those who have lost faith in the ability of the major parties to ever take the measures required to readdress the looming environmental catastrophe and who see green politics as our only hope.

It will be difficult to steer a clear course of action between those who want a mass green political movement or wider independent process; and those who regard economic divisions in society as the crux of political parties with the continuation of Liberal/Labor.

The problem is unlikely to be resolved in the next ten years. Further, the judgment needs to be made as to whether the angst and resources devoted to deciding or trying to generate a consensus are worth the effort. The process is most likely to be incremental rather than a big launch off into a wide, new green political world.

C. There is increasing talk of 'mediation processes' by Liberal and Labor parties. In February Greiner and Boss are hosting a large public interest conflict conference. In NSW the Minister for State Development, John Hannaford, is actively investigating 'mediation' as a way of avoiding traditional legal procedures and the resulting 'disinvestment' by industry.

A distinction needs to be made between 'dialogue' and 'mediation'. Dialogue can serve to depersonalise conflict, provide information and a clear statement of issues concerning both parties. It may lead to mediation.

However, mediation is a far more serious prospect that is intended to result in compromise. Environmental mediation is in its infancy in Australia and deep consideration must be given to its ramifications and parameters. It may be possible to improve existing legal structures and public involvement processes as an alternative. Nevertheless, mediation has always been a part of conflict resolution and has appeared in various forms over the years.

Environmentalists are becoming increasingly aware of the pitfalls and NSW peak groups are preparing a guide to mediation. Industry and government are promoting some recent examples but if these are their model, then it is clear that their agenda is to dull and restrain public campaigning. In essence we are still faced with industry and government controlling the agenda and information flow. No real sharing of power over decisions is yet to emerge.

Preconditions to involvement in mediation should be:

- i) Will mediation result in a better decision about environment protection than other courses of action?
- ii) Will additional strategic economic and environmental information be generated?
- iii) Will real power be shared?

Despite the popularity of mediation there is no case to abandon the confrontation line. Even if dialogue and mediation occur they should not impair or reduce other campaigning. However, an effort needs to be made to prevent the impression that confrontation is the sole strategy. Our opponents and politicians who have a keen sense of community feeling are capitalising on what they perceive as a community desire to end confrontation in the forest.

D. Changing community attitudes. Opinion polls show very strong support for native forest protection and most people (nearly 62 per cent) put protection of the environment above economic growth (Saulwick 26/12/1990). Young people are by far the strongest supporters, they have or are passing through a more enlightened educational system and can be expected to be a major source of political support as they get older.

All this does not necessarily mean the community is outraged by the recent decision of the south east forests example. It was portrayed as a compromise, appeared to be green and to end the confrontation. There are suggestions that the community do not like protracted confrontation and this conservative aspect of public opinion may be reinforced in times of economic stress.

Community attitudes also play a role in what products are in demand. Community behaviour is changing in this regard and environmentally friendly products and recycling are more popular. Nevertheless, the market is 'soft' because of the lack of credibility of industry claims to be environmentally friendly.

4.2 CONTROLLING FOREST 'EXPLOITERS'

Forest exploiters utilise a large array of tools to retain access to resources - legal, political, economic and social. They have captured the NSW Forestry Commission; developed close relationships with major players in the political parties; have links with local council and economic patronage systems; and are seen as an integral part of the Australian pioneer mythology.

In the past they have had a cosy resource security arrangements which only in recent times have been upset by the environmental movement as campaigns and legislation made inroads into forest areas. However, little impact has been made on the deeper underpinnings of the forest exploitation system, in particular the key bureaucracy and economic myths that accompany the timber industry.

4.2.1 RESOURCE SECURITY - Federal

National forest industry groups are currently pushing for special legislation, complementary at both state and federal level, to guarantee security of access to timber resources (resource security via contracts). It is the resurgence of an old arrangement disrupted by our efforts. If you have an agreement then it is easier to get the legal and political forces to follow when forest exploitation is challenged at a later date.

New Federal proposals are still on the agenda. If a proposal for a specific resource development project is brought forward by a State Government seeking Commonwealth action to assist security of wood resource for that project, it is to be given prompt consideration.

The Government has the RAC and ESD processes looking at these issues in a long-term context, but these processes do not prevent the Government dealing with individual resource development proposals if brought forward, the government claims.

The proposal, being pushed by the industry ministers, is 'disguised protectionism' since it removes timber production from the market and public interest forces; quarantines the existing industry operators from future factors, such as the coming on-line of bulk plantation pine; and 'locks in' the existing inefficiencies and inequities.

The serious consideration given to the proposal by Federal Cabinet is surprising since the resource security proposal is counter to the Australian government's public position on reducing protectionism and increasing free trade espoused in the latest round of the General Agreement on Trade and Tariffs (GATT) discussions.

The government's consideration is also surprising since the industry's position is that unless it gets the resource security legislation it wants, it will withhold re-investment (variously quoted as \$1.3 billion, \$2 billion or \$5 billion). This attempt at 'blackmail' ought to be resisted by government on an 'in principle' basis, just as it resists stand over tactics by unions, employer groups or other nations.

One other surprising component of the industry push is the industry's apparent unwillingness to guarantee re-investment even if the resource security legislation is introduced!

Aside from the likelihood that most of the investment will require huge capital purchases off-shore, blowing out import flows - the proposal will mitigate against developing a transition strategy and constrain restructuring.

Resource security legislation, would pre-empt the National Forest Inventory currently being prepared and the report of the Resources Assessment Commission's (RAC) Forest and Timber Inquiry. It would also pre-empt the processes set in train focussing on Ecologically Sustainable Development (ESD). All these federal government initiatives are expected to accumulate and generate much needed information relevant to decision making about future management of native forests in Australia.

In addition, the proposal would seek to over-ride ongoing environmental assessments undertaken by the Australian Heritage Commission (AHC) under its Act or by other agencies under the Environmental Protection (Impact of Proposals) Act 1974.

Delaying Cabinet's further consideration of this proposal is essential, in order to allow time for the 'in train' processes to be completed. In particular, the RAC report and a national pulp mill policy with attendant environmentally acceptable standards, are important elements.

4.2.1.2 NSW

In NSW, industry lobbyists are pursuing 'watertight' long-term timber supply agreements of 20 years (or more) duration.

These agreements negotiated by the Forestry Commission and based on the situation at present, (massive subsidies, underpriced resource, little regard for environmental protection etc) are intended to entrench the status quo to such an extent that future governments would be unable to review or alter them without huge compensation payments being made. The effect on eis requirements under the EPA Act need to be further investigated.

Already one such 20 year agreement, with Harris Daishowa, was made by ex-Minister Causley and other industry groups are pressing for contracts at the conclusion of current negotiations in the south east.

4.2.2 HARVESTING CONTROLS

The Public Accounts Committee reports some doubt on the ability of the Forestry Commission to adequately control harvesting and enforce quotas.

The key problem is the multiple-use philosophy of the Commission as it is implemented by the one forester. A conflict of interest occurs and inevitably a lack of balance results. Additional issues are the lack of an independent audit of harvesting and public enforcement provisions by way of the courts.

4.2.3 PRIVATE LAND

The continued clearance of private land, particularly land with high conservation values, is another major concern. The NSW government, under pressure from the National Party, is unwilling to interfere in the activities of private landholders, by way of conservation orders. The only agency with comprehensive statutory powers, the Soil Conservation Service, is grossly underfunded, politically conservative and staffed by workers with limited qualifications and experience.

In general there are too few avenues to protect trees on private land and the 'profit a prendre' system is leading to serious degradation. Further proposed intensive logging projects inevitably include large tracts of private forests and just as inevitably the associated calls by the community to control logging of private lands go unheeded. NSW has a long history in this regard, including complaints from landowners whose land has been logged.

In recent times there have been studies of improved Tree Protection Orders, a state environmental planning policy on tree protection proposed and Threatened Species legislation developed.

4.2.4 DISCUSSION

The main emphasis should be on creating a new agenda for forest protection - 'so little left and so little time to protect it' AND that this situation has been brought about by the current system of forest control.

More information on resource security should be disseminated amongst grassroots environment groups and the community. Resource security legislation is really destruction guarantee legislation and it is essential that there is general community understanding that genuine resource security for industry lies with plantations.

Further, the control of forest exploiters and move to ecologically sustainable forest conservation can be enhanced if there is:

- 1. wide agreement in the environment movement on the key themes;
- 2. there is sufficient predictability for industry, through transition strategies tied to sunset clauses and the development of plantations, to allow for forward planning and appropriate investment;
- 3. deepening community understanding of the wide range of forest values other than timber and that there are economic values for the non-timber values eg water, tourism. (It is recognised that caution needs to be exercised when pushing this point because it could expand pressure on forests rather than ensure protection.)

4.3. PROTECTING HIGH CONSERVATION VALUE FORESTS

When settlement of New South Wales by Europeans began some two hundred years ago over 50% of the State was native forest and woodland, evolved over the eons of pre-history and modified over the last forty thousand plus years by aboriginal occupation. Since then 50% of eucalypt and 75% of rainforest has been cleared for agriculture, settlement and to obtain timber. Pastoralism, public works, burning and logging regimes have substantially modified much of what remains. Less than 5% is considered to remain as 'wilderness'.

Today, of the estimated remaining 15 m ha of native forest cover, some 3.6mill ha is vested in the Forestry Commission; about 3mill ha (much of it being the left over and the least potentially 'productive' land such as stony mountain tops, steep gullies etc.) is vested the National Parks and Wildlife Service predominantly for conservation purposes and the remainder is held by other public authorities for water catchment, crown land and private use.

4.3.1 OLD GROWTH CONVERSION

It is now apparent even to government that old growth forests are being dramatically changed by modern day logging techniques. Non-wood values are being lost. According to the Public Accounts Committee:

'One could easily obtain the impression from the Commission's public relations efforts that the State's harvested forests retain their basic character and composition despite being logged. The notion of sustained yield is often thought to imply that the forest's essential features do not change in the average, in the long run. However, one must be absolutely clear about the fact that sustained yield only means that the same volume of timber can be extracted each rotation, in perpetuity...society should be presented with a candid assessment of the status of sustained yield efforts and a true picture of how the policy affects other public values of the forest. For example the trend toward smaller trees is well known to foresters, but not at all well publicized by the Commission.' (pp62-63)

4.3.2 FOREST TYPE AND USES

Native forest and woodland types used as a timber resource in NSW:

- 1 riverine - Red Gum Forests of major river valleys. Current uses: fence posts, some construction, railway sleepers, firewood.
 - 1 western low rainfall, mostly central west - cypress pine, box, some blackbutt etc. Current uses: fence posts, some construction, railway sleepers, firewood.
 - 1 escarpment sclerophyll, predominantly eucalypt, with considerable variation from low to high rainfall, low to high nutrient soils. Current uses: construction sawlogs, woodchipping, some specialty timber, firewood.
 - 1 rainforest - (using Ecol.Soc definition this includes bushbox: littoral rainforest is a subset). Current uses: sawlogs for construction; specialty v/a; veneer; 'waste' may be chipped for pulp.
 - 1 mangrove - there has been some suggestions these could be chipped for pulp.
 - 1 plantations planted on cleared land, either specifically cleared for the purpose or on existing (cleared in previous historic times for agriculture etc) land. Despite claims by the Forestry Commission that native forest is no longer cleared for pines, there have been a number of recent examples of this occurring. Regeneration native forest that is cut for a second or even third time will, depending on management practices, come close to a form of plantation.
- Native: includes both softwood (hoop pine) and hardwood. Uses: construction especially if further processed, paper pulp (with pulp mill implications).
- Exotic: mostly *Pinus radiata*. Uses: construction- sawlogs, in composite and other value added products; newsprint pulp, there are also a few special purpose plantings, such as Poplar for matchwood.

4.3.3 DEFINITIONS

An acceptable understanding of what is meant by High Conservation Value Forests is needed and various proposals have been put forward. (While old growth forests are a high priority for preservation, this is most emphatically not all that is included within the term high conservation value).

Old Growth Forests:

- a) native forests which contain a substantial proportion of old, mature trees. Such forests are generally characterised by a high level of ecological complexity and biological diversity and have high habitat potential for wildlife. (from Draft 4 of Native Forest Policy for NSW, Jeff Angel, TEC March 1990)
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This term carries inherent value judgements and hence there is even more difficulty in arriving at a universally agreed definition. The values, considered with respect to National Estate and World Heritage listing, such as ecological significance, uniqueness, wilderness, historic and cultural values, are those most commonly taken as the measuring stick by forest campaigners.

Areas of disturbed forest that include rare and endangered species, may also be considered to be of high

conservation value.

OPTIONS:

- 1 High Conservation Value Forests are areas with a prodigious diversity of native flora and fauna and of specialised habitats. These areas contain rare and endangered plant and animal species. High Conservation Value Forests are of such dimensions that the species and habitats within are being sustained. The perimeters of these areas are designed to provide for potential future scientific requirements. (proposal by John Macdonald)
- 2 Indigenous native forests which should be retained intact for scientific, cultural and aesthetic reasons (Anne Reeves suggestion)

4.3.4 RESEARCH

A better understanding of the forest estate, including support for basic independent research for data collection, protected land mapping and management options, is a necessity. The information is useful in predicting where conservation conflicts can occur and thus can play a role in planning campaigns and transition planning.

4.3.5 PROTECTION MECHANISMS

The utility of existing and new mechanisms for protection at national, state and local level need to be fully explored. For example national estate listing appear to have run out of steam in terms of their impact on government thinking.

Mechanisms for protection which have been considered are:

a) At state level -

(i) existing mechanisms: primarily under NPWS through National Park/Nature Reserve dedication as tenured reserves. Flora Reserves under Forestry Act also tenured, but at present usually of minimal size and under different management regime.

Other Crown land holdings - eg water catchment - with potential for greater emphasis on conservation in management.

Forest in private ownership, and under the profit a pendre system and on some leasehold is particularly vulnerable and some is of considerable importance for bio-diversity conservation.

Application of other legislation - eg Soil Conservation Act 'protected lands'; EP&A Act for EIS presently inadequately applied; the potential of SEPPs (State Environmental Planning Policies). The Wilderness Act has proved a paper tiger in face of political inaction and/or opposition.

(ii) possible new options: Vegetation Clearance/ Fauna & Flora Guarantee legislation etc has been invoked interstate and Victoria appears to provide the best model so far as it can be used with respect to control over private land. There have been proposals for a Wild Rivers Act, and the Threatened Species Act proposal (which has clearly run into profound difficulty being apparently 'stuck' at Cabinet level despite Minister of Environment's previously stressed commitment to getting this up).

b) At National (and International) level:

i) existing mechanisms : National Estate and World Heritage Listings are moral rather than actual inhibitions as they do not restrict state activities unless constitutional powers are directly invoked. Export control is a traditional but inadequate method (as for woodchips at present). At present there is an outstanding lack of political will to invoke these for conservation purposes.

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(ii) possible new options: There are moves to get up a BIODIVERSITY Convention in the lead up to the UN CED conference to be held in Brazil in 1992. Federal treaty powers would then be available for habitat protection.

4.4 TRANSFORMING THE FORESTRY COMMISSION

Local and regional campaigns have increasingly identified the Forestry Commission as a major player and chief villain in forest disputes, due to their unwillingness to release crucial information, their opposition to any new National Parks; negative response to wildlife conservation issues; economic mismanagement; lack of consultation and their promotion of propaganda sympathetic to the industry's position.

The all-party Public Accounts Committee of NSW Parliament has recommended a series of changes to the Forestry Commission's operation (see recommendations 1-24, 55, 58, 60-62, 65-68, 73-79), structure (recommendations 25, 50, 52, 53, 56, 57, 59, 63) and its legislation, the Forestry Act, 1916 (recommendations 69-72) after making damning criticisms of almost every level of the Forestry Commission's activity.

The PAC Report follows five years of critical evaluation of the Act in reports including Peter Prineas (1985) 'A Review of the Forestry Act, 1916 with Recommendations for Reform', (Total Environment Centre, and Sen Boer and Brian Preston, 1987) 'Forestry - Reform and Regeneration?', (Environmental Planning Journal - June 1987).

Many people believe that the time is now ripe for a major push to totally transform the Commission into a competent, modern and multidisciplinary forest management agency.

When a request for major amendments or a new Act was recently put to the Minister Barry West, the Minister said that it was too late in the Government's term to contemplate changes to the Forestry Act, 1916. He expressed the view that the move towards 'corporatisation' would be sufficient to achieve the desired changes to the Commission's structure and operations.

The Environmental Defenders Office (EDO) is holding a special seminar on 16 March for the transformation of the Commission.

4.4.1. ENVIRONMENT MOVEMENT VIEWS

It is agreed that major changes to the current objectives and 'mission statement' of the FCNSW are essential. A new Act is preferable than amendments to the Forestry Act 1916. The new Minister for Forests' view that 'corporatisation' would 'do the job' is not accepted, rather that 'corporatisation' is too little too late. Fundamental change is required.

The term 'reform' should be avoided since it implies a level of re-organisation which is too minor, and further, it is likely that the Government or the Commission will undertake inconsequential reforms which achieve nothing except public relations escape routes. Total transformation is required! There is good deal of interest in creating two bodies - one to exploit the forests and another to be custodian of the native forests as a barrier between the Commission and the forests.

At present there is a lack of detailed understanding of the deficiencies of the current Act and the proposals made by Prineas, and Boer and Preston and the broader forestry campaign groups. Further papers are being prepared in NSW.

4.4.2 ESSENTIAL ELEMENTS

1 The NSW Forestry Act and administration of the NSW Forestry Commission will be reformed to give priority to:

- 1 conservation goals through environment protection plans;
- 1 transition plans for timber getting currently based on native forests, to plantations;
- 1 transfer of lands to the National Parks and Wildlife Service;
- 1 improved environmental research, and;
- 1 improved methods of public participation in the management of native forests.

2 The Commission shall be charged with transferring timber getting operations from native forests to pine and hardwood plantations as expeditiously as possible by the development of transition plans and financial assistance derived from its revenue surplus.

3 The Commission shall be directly involved in the management of native forests in private hands by the development of management plans and imposition of environmental standards at least equivalent to its own.

4 The Commission shall ensure the efficient use of timber and arrangements to achieve this, in the forest

and the mill, will be reflected in timber supply agreements and licences.

5. The Commission shall charge royalties that reflect the real social, economic and environmental costs of timber from the state's native forests and plantations.
6. The environmental standards used by the Commission to control logging, guidelines in the preparation of management plans, public involvement and research will be subject to independent review by the proposed Environment Protection Authority and open for public and scientific comment.
7. Where native forests are logged they will be done so on an environmentally sustainable basis that ensures the retention of species diversity and habitat to ensure the continuation of all flora and fauna species for all time.
8. Third party rights shall be afforded in the Forestry and other relevant Acts, to allow the restraint or remedy of a breach of the Forestry Act or environmental regulations by any person or group of persons, whether incorporated or unincorporated.
9. Management plans, environmental and logging codes and agreements or licences to supply timber shall be publicly reviewed every 5 years and be supplied to any person free of charge, upon request.
10. The native forest lands controlled by the NSW Forestry Commission shall be vested in a Forest Conservation Council, which shall decide which forests will be allocated to timber production and under what logging regimes. It shall commission independent scientific advice as to the conservation of forests communities and environmentally sustained yields in NSW and provide lands for dedication as national parks and nature reserves.

The EDO Seminar and resulting papers on March 16 1991 should help to flesh out some of the issues.

4.5 TRANSITION ARRANGEMENTS

Transition arrangement occur in forest disputes in a de facto or planned way. If it takes up to 10 years to save an area and there has not been a comprehensive moratorium then the forest logged in the interim was the transitional forest. If the transition is planned then external monitoring and review is more organised.

Up until now, our efforts in addressing transition strategies have been focused on a 'go it alone' approach designed to counter the industry's proposals for future forest industry operation. The Peace Plan developed for the south east included many valuable components: plantations, demand reduction, alternative fibre sources, re-defined forest economics which recognise ecological value, down stream processing, operator buy-outs etc.

Unfortunately, the Peace Plan failed to achieve its goal and industry, unions and government proceeded to focus on their agenda, not ours. None of the time, effort or money invested in the transition arrangements brought the situation one step closer to achieving a transition away from the status quo. In essence we were unable to control the political agenda in order to control the transition agenda. (The only official avenue presented for this was the inadequate Regional Consultative Committee)

4.5.1 TRANSITION ELEMENTS

A goal shared by most groups within the conservation movement is that a plantation based resource should replace the present native forest resource. There is also agreement that demands for the present uses of hardwoods should be reduced and intensive logging rapidly eliminated.

The question then arises as to what strategies should be adopted while the plantation timber's mature.

One of the most common solutions is to acknowledge that there will have to be some continuation of logging in some native forests. However, the selection of these areas is of crucial importance so as to protect high conservation forest.

The management of the logging of the areas selected as transition areas is also crucial in terms of maximising the retention of the native characteristics of the native forests which are selected for logging.

The workshop on Transition Strategies at the NSW State Summit addressed the issues on more holistic lines, seeing the necessity for the environment movement to come up with a total environment plan for the State of NSW, and within that, a transition strategy for forests. The group saw the strategies being essentially, ongoing dynamic planning, with two way communication between the environment groups and other groups and power brokers in the community.

A crucial element of any transition strategy is to have all the environmental and economic information. Continued attempts by the environment movement to develop transition strategies can easily be subject to the criticism by other players since we are not in possession of all the relevant facts (and neither are they). To a great extent the RAC Inquiry and ACF submission have attempted to address the problem of information and issues, within an overall perspective. Its report will no doubt stimulate a burst of transition plans.

An indepth assessment of how to establish a transition strategy; the acceptable pre-conditions and effects on general campaigning needs to be undertaken.

5. FUNDAMENTAL STRATEGIES

While we can think of many strategies in the forest; media campaigns and other programs the first step is to lay the foundations. The following cornerstones can be identified:

- i) understanding - the environment movement as a whole must understand the primary forces arraigned against forest protection. That is the economic and social demands and power relationships. When this understanding is obtained then people know what to attack and have the confidence to tackle what may initially seem to be insurmountable and mysterious odds.
- ii) There is also an increased need for an appreciation of the ecological principles on which rest forest protection concerns.
- iii) talking with one voice - the value of this is that in every part of the state and nation where there is a forest conflict the credibility of the industry and government authorities are being attacked. This can only demoralise the opposition and demonstrate our strength.

In essence local campaigns are overlayed with new themes. For example the economic failures of the industry and the inadequacies of the Forestry Commission as exposed in authoritative reports can be echoed in every locality. In order for this to occur local groups need to be supplied with concise information, ideas and encouraged to use it.

A further advantage is that a feeling of common purpose is generated as opposed to each group solely talking about its issue and feeling isolated. The focus of groups is changed and empowered by knowing they are widely supported.

It is thus important to identify what can be done in common and to provide networking systems.

6. APPENDICES

(further reading and summary of forest conflicts in preparation)

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(ii) possible new options: There are moves to get up a BIODIVERSITY Convention in the lead up to the UN CED conference to be held in Brazil in 1992. Federal treaty powers would then be available for habitat protection.

It is now apparent even to government that old growth forests are being dramatically changed by modern day logging techniques. Non-wood values are being lost. According to the Public Accounts Committee:

'One could easily obtain the impression from the Commission's public relations efforts that the State's harvested forests retain their basic character and composition despite being logged. The notion of sustained yield is often thought to imply that the forest's essential features do not change in the average, in the long run. However, one must be absolutely clear about the fact that sustained yield only means that the same volume of timber can be extracted each rotation, in perpetuity...society should be presented with a candid assessment of the status of sustained yield efforts and a true picture of how the policy affects other public values of the forest. For example the trend toward smaller trees is well known to foresters, but not at all well publicized by the Commission.' (pp62-63)

4.3.2 FOREST TYPE AND USES

Native forest and woodland types used as a timber resource in NSW:

- \$ riverine - Red Gum Forests of major river valleys. Current uses: fence posts, some construction, railway sleepers, firewood.
 - \$ western low rainfall, mostly central west - cypress pine, box, some blackbutt etc. Current uses: fence posts, some construction, railway sleepers, firewood.
 - \$ escarpment sclerophyll, predominantly eucalypt, with considerable variation from low to high rainfall, low to high nutrient soils. Current uses: construction sawlogs, woodchipping, some specialty timber, firewood.
 - \$ rainforest - (using Ecol.Soc definition this includes bushbox: littoral rainforest is a subset). Current uses: sawlogs for construction; specialty v/a; veneer; 'waste' may be chipped for pulp.
 - \$ mangrove - there has been some suggestions these could be chipped for pulp.
 - \$ plantations planted on cleared land, either specifically cleared for the purpose or on existing (cleared in previous historic times for agriculture etc) land. Despite claims by the Forestry Commission that native forest is no longer cleared for pines, there have been a number of recent examples of this occurring. Regeneration native forest that is cut for a second or even third time will, depending on management practices, come close to a form of plantation.
- Native: includes both softwood (hoop pine) and hardwood. Uses: construction especially if further processed, paper pulp (with pulp mill implications).
- Exotic: mostly *Pinus radiata*. Uses: construction- sawlogs, in composite and other value added products; newsprint pulp, there are also a few special purpose plantings, such as Poplar for matchwood.

4.3.3 DEFINITIONS

An acceptable understanding of what is meant by High Conservation Value Forests is needed and various proposals have been put forward. (While old growth forests are a high priority for preservation, this is most emphatically not all that is included within the term high conservation value).

Old Growth Forests:

- a) native forests which contain a substantial proportion of old, mature trees. Such forests are generally characterised by a high level of ecological complexity and biological diversity and have high habitat potential for wildlife. (from Draft 4 of Native Forest Policy for NSW, Jeff Angel, TEC March 1990)
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Areas of disturbed forest that include rare and endangered species, may also be considered to be of high

4.2.2 HARVESTING CONTROLS

The Public Accounts Committee reports some doubt on the ability of the Forestry Commission to adequately control harvesting and enforce quotas.

The key problem is the multiple-use philosophy of the Commission as it is implemented by the one forester. A conflict of interest occurs and inevitably a lack of balance results. Additional issues are the lack of an independent audit of harvesting and public enforcement provisions by way of the courts.

4.2.3 PRIVATE LAND

The continued clearance of private land, particularly land with high conservation values, is another major concern. The NSW government, under pressure from the National Party, is unwilling to interfere in the activities of private landholders, by way of conservation orders. The only agency with comprehensive statutory powers, the Soil Conservation Service, is grossly underfunded, politically conservative and staffed by workers with limited qualifications and experience.

In general there are too few avenues to protect trees on private land and the 'profit a prendre' system is leading to serious degradation. Further proposed intensive logging projects inevitably include large tracts of private forests and just as inevitably the associated calls by the community to control logging of private lands go unheeded. NSW has a long history in this regard, including complaints from landowners whose land has been logged.

In recent times there have been studies of improved Tree Protection Orders, a state environmental planning policy on tree protection proposed and Threatened Species legislation developed.

4.2.4 DISCUSSION

The main emphasis should be on creating a new agenda for forest protection - 'so little left and so little time to protect it' AND that this situation has been brought about by the current system of forest 'control'.

More information on resource security should be disseminated amongst grassroots environment groups and the community. Resource security legislation is really destruction guarantee legislation and it is essential that there is general community understanding that genuine resource security for industry lies with plantations.

Further, the control of forest exploiters and move to ecologically sustainable forest conservation can be enhanced if there is:

- ‡ wide agreement in the environment movement on the key themes;
- ‡ there is sufficient predictability for industry, through transition strategies tied to sunset clauses and the development of plantations, to allow for forward planning and appropriate investment;
- ‡ deepening community understanding of the wide range of forest values other than timber and that there are economic values for the non-timber values eg water, tourism. (It is recognised that caution needs to be exercised when pushing this point because it could expand pressure on forests rather than ensure protection.)

4.3. PROTECTING HIGH CONSERVATION VALUE FORESTS

When settlement of New South Wales by Europeans began some two hundred years ago over 50% of the State was native forest and woodland, evolved over the eons of pre-history and modified over the last forty thousand plus years by aboriginal occupation. Since then 50% of eucalypt and 75% of rainforest has been cleared for agriculture, settlement and to obtain timber. Pastoralism public works, burning and logging regimes have substantially modified much of what remains. Less than 5% is considered to remain as "wilderness".

Today, of the estimated remaining 15 m ha of native forest cover, some 3.6mill ha is vested in the Forestry Commission; about 3mill ha (much of it being the left over and the least potentially 'productive' land such as stony mountain tops, steep gullies etc,) is vested the National Parks and Wildlife Service predominantly for conservation purposes and the remainder is held by other public authorities for water catchment, crown land and private use.

4.3.1 OLD GROWTH CONVERSION

4.2.1 RESOURCE SECURITY - Federal

National forest industry groups are currently pushing for special legislation, complementary at both state and federal level, to guarantee security of access to timber resources (resource security via contracts). It is the resurgence of an old arrangement disrupted by our efforts. If you have an agreement then it is easier to get the legal and political forces to follow when forest exploitation is challenged at a later date.

New Federal proposals are still on the agenda. If a proposal for a specific resource development project is brought forward by a State Government seeking Commonwealth action to assist security of wood resource for that project, it is to be given prompt consideration.

The Government has the RAC and ESD processes looking at these issues in a long-term context, but these processes do not prevent the Government dealing with individual resource development proposals if brought forward, the government claims.

The proposal, being pushed by the industry ministers, is 'disguised protectionism' since it removes timber production from the market and public interest forces; quarantines the existing industry operators from future factors, such as the coming on-line of bulk plantation pine; and 'locks in' the existing inefficiencies and inequities.

The serious consideration given to the proposal by Federal Cabinet is surprising since the resource security proposal is counter to the Australian government's public position on reducing protectionism and increasing free trade espoused in the latest round of the General Agreement on Trade and Tariffs (GATT) discussions.

The government's consideration is also surprising since the industry's position is that unless it gets the resource security legislation it wants, it will withhold re-investment (variously quoted as \$1.8 billion, \$2 billion or \$5 billion). This attempt at 'blackmail' ought to be resisted by government on an 'in principle' basis, just as it resists stand over tactics by unions, employer groups or other nations.

One other surprising component of the industry push is the industry's apparent unwillingness to guarantee re-investment even if the resource security legislation is introduced!

Aside from the likelihood that most of the investment will require huge capital purchases off-shore, blowing out import flows - the proposal will mitigate against developing a transition strategy and constrain restructuring.

Resource security legislation, would pre-empt the National Forest Inventory currently being prepared and the report of the Resources Assessment Commission's (RAC) Forest and Timber Inquiry. It would also pre-empt the processes set in train focussing on Ecologically Sustainable Development (ESD). All these federal government initiatives are expected to accumulate and generate much needed information relevant to decision making about future management of native forests in Australia.

In addition, the proposal would seek to over-ride ongoing environmental assessments undertaken by the Australian Heritage Commission (AHC) under its Act or by other agencies under the Environmental Protection (Impact of Proposals) Act 1974.

Delaying Cabinet's further consideration of this proposal is essential, in order to allow time for the 'in train' processes to be completed. In particular, the RAC report and a national pulp mill policy with attendant environmentally acceptable standards, are important elements.

4.2.1.2 NSW

In NSW, industry lobbyists are pursuing 'watertight' long-term timber supply agreements of 20 years (or more) duration.

These agreements negotiated by the Forestry Commission and based on the situation at present, (massive subsidies, underpriced resource, little regard for environmental protection etc) are intended to entrench the status quo to such an extent that future governments would be unable to review or alter them without huge compensation payments being made. The effect on eis requirements under the EPA Act need to be further investigated.

Already one such 20 year agreement, with Harris Daishowa, was made by ex-Minister Causley and other industry groups are pressing for contracts at the conclusion of current negotiations in the south east.

C. There is increasing talk of 'mediation processes' by Liberal and Labor parties. In February Greiner and Boss are hosting a large public interest conflict conference. In NSW the Minister for State Development, John Hannaford, is actively investigating 'mediation' as a way of avoiding traditional legal procedures and the resulting 'disinvestment' by industry.

A distinction needs to be made between 'dialogue' and 'mediation'. Dialogue can serve to depersonalise conflict, provide information and a clear statement of issues concerning both parties. It may lead to mediation.

However, mediation is a far more serious prospect that is intended to result in compromise. Environmental mediation is in its infancy in Australia and deep consideration must be given to its ramifications and parameters. It may be possible to improve existing legal structures and public involvement processes as an alternative. Nevertheless, mediation has always been a part of conflict resolution and has appeared in various forms over the years.

Environmentalists are becoming increasingly aware of the pitfalls and NSW peak groups are preparing a guide to mediation. Industry and government are promoting some recent examples but if these are their model, then it is clear that their agenda is to dull and restrain public campaigning. In essence we are still faced with industry and government controlling the agenda and information flow. No real sharing of power over decisions is yet to emerge.

Preconditions to involvement in mediation should be:

- i) Will mediation result in a better decision about environment protection than other courses of action?
- ii) Will additional strategic economic and environmental information be generated?
- iii) Will real power be shared?

Despite the popularity of mediation there is no case to abandon the confrontation line. Even if dialogue and mediation occur they should not impair or reduce other campaigning. However, an effort needs to be made to prevent the impression that confrontation is the sole strategy. Our opponents and politicians who have a keen sense of community feeling are capitalising on what they perceive as a community desire to end confrontation in the forest.

D. Changing community attitudes. Opinion polls show very strong support for native forest protection and most people (nearly 62 per cent) put protection of the environment above economic growth (Saulwick 26/12/1990). Young people are by far the strongest supporters, they have or are passing through a more enlightened educational system and can be expected to be a major source of political support as they get older.

All this does not necessarily mean the community is outraged by the recent decision of the south east forests for example. It was portrayed as a compromise, appeared to be green and to end the confrontation. There are suggestions that the community do not like protracted confrontation and this conservative aspect of public opinion may be reinforced in times of economic stress.

Community attitudes also play a role in what products are in demand. Community behaviour is changing in this regard and environmentally friendly products and recycling are more popular. Nevertheless, the market is 'soft' because of the lack of credibility of industry claims to be environmentally friendly.

4.2 CONTROLLING FOREST 'EXPLOITERS'

Forest exploiters utilise a large array of tools to retain access to resources - legal, political, economic and social. They have captured the NSW Forestry Commission; developed close relationships with major players in the political parties; have links with local council and economic patronage systems; and are seen as an integral part of the Australian pioneer mythology.

In the past they have had a cosy resource security arrangements which only in recent times have been upset by the environmental movement as campaigns and legislation made inroads into forest areas. However, little impact has been made on the deeper underpinnings of the forest exploitation system, in particular the key bureaucracy and economic myths that accompany the timber industry.

In the next decade four key themes will emerge on the political agenda:

A. The global view of environmental issues ie. everyone is concerned, it affects them and they going to want a say in decisions even more so than now.

It has now become apparent to business and government that the environment is now an enduring issue with major political impacts. While the heat in the issue may go through cycles it will stay at the top of the agenda along with economic concerns.

The environment movement therefore needs to be aware of the wider economic and social movements that will affect forest protection. Such wider parameters can adversely impact on our activities as well as offer opportunities. Examples are the oncoming surplus of pine, the growing pressure to preserve biodiversity and ethic of landcare.

There is the potential for the forest issue to drop off the agenda as the very big issues such as population, climate change and economic recession issues take over public emotions. If this is correct then the current trough in political support for forest protection may turn into a downward spiral.

A key challenge is to produce 'Greenprints' that satisfy the wide spectrum of social interests that are now mobilised to respond to the environmental crisis. We need to speak to opinion leaders and a diverse range of community groups, in their language, to communicate our concerns.

In response to the global nature of environmental issues, industry is attempting to take over the ecologically sustainable development (ESD) debate by using environmentally friendly language to justify their programs and at the same time reinforce their image with traditional economic promises. It is quite clear that industry has attempted to mobilise opinion leaders to support their stand, using expert advice and massive resources.

We must counter this. To succeed we need to blend our ideas, words and actions into the ideas, language and behaviour of the broad mass of people. While people are broadly receptive, they may not necessarily have changed their economic or political behaviour.

A.1 Coalitions

An associated concern is the question of alliances or forest summits. Some groups are sceptical of their value and this directly relates to national and state conferences.

If we are to appeal to a wider set of social groups then it is logical to involve those groups in the campaigns. Local environment groups are also touching points for a wider social audience. Another fundamental reason for coalition or alliances is that they empower local community groups which are faced with the growing resources devoted by industry to winning the issues.

SEFA empowered local south coast groups because it gave them direct access to the resources and contacts of the 'peak' groups. NEFA, established as an alliance of forest activists in the NE of NSW has been very effective in making a broad and concerted approach to the issues, despite having no paid staff and very little money.

B The rise of Liberal/National Governments and their devotion to economic rationalism, which can support our arguments against continued subsidies of the native forest timber industry. However, the National Party interests strongly favour continued subsidy efforts. The resulting decisions are portrayed as 'pale green' in contrast to the demands of green 'extremists'. Greiner's south east approach clearly put timber interests first.

The political implementation of our agenda has run into serious snags recently. There are those who have lost faith in the ability of the major parties to ever take the measures required to readdress the looming environmental catastrophe and who see green politics as our only hope.

It will be difficult to steer a clear course of action between those who want a mass green political movement or wider independent process; and those who regard economic divisions in society as the crux of political parties with the continuation of Liberal/Labor.

The problem is unlikely to be resolved in the next ten years. Further, the judgment needs to be made as to whether the angst and resources devoted to deciding or trying to generate a consensus are worth the effort. The process is most likely to be incremental rather than a big launch off into a wide, new green political world.

continuance as Shadow Minister is one of the main reasons the Opposition is performing so poorly and he remains an obstacle to obtaining sensible policies from the ALP.

Shadow Minister for the Environment, Pam Allan has recognised the groundswell of support for a satisfactory resolution to forestry conflicts and is valiantly trying to turn the ALP around. She does not have a legacy of bitterness from the previous years and is an original thinker with good personal and media presence. The ALP forestry policy is technically outside her portfolio, but is clearly linked to her portfolio areas through National Parks and endangered species issues. Pam has some good support from the few younger MP's but has to confront entrenched hostility among the 'old guard' who appear to have significant influence on Carr.

Pam is on the Left in the ALP and her push for up-dating the ALP position on forestry poses a danger that forestry issues may fall foul of intra-party factional politics. We must avoid the situation of forestry and environment issues becoming the province of the Left alone. However, recently Carr has expressed interest in a Forestry Commission reform policy.

3.6.2. THE NATIONAL PARTY has long had direct links with rural industries, particularly the timber industry. These industry operators hold influential positions within the National Party and within rural communities. With the dumping of Causley as Minister for Forests, the industry had a serious setback, but they have renewed their pressure on the new National Party Minister Garry West. Nevertheless, Causley is still a strong anti-environmentalist force in Cabinet.

West is not seen as a strong man, or a politically adept head cruncher. His ability to control or direct the industry and the Forestry Commission is seriously doubted. He professes an independence from the Commission and industry but has yet to demonstrate this.

His appointment by Greiner may represent a deliberate softer approach to forestry issues; an attempt at distancing forestry from allegations of corruption which have plagued the Nationals and particularly Causley; or an imposition on the Premier by the Nationals who effectively control the portfolio under the Coalition agreement. Wal Murray's National Party will not support positive changes to the industry or to the Commission in the short term because it conflicts with their agenda.

3.6.3. THE LIBERAL PARTY appear to have no entrenched interest in the portfolio as the Nationals do, and seem to want the issue resolved and/or the heat taken out of forestry politics, but with as little impact on timber industry supplies.

They have been seriously embarrassed by Causley and the Commission's bull headed stance, and may respond positively if approached carefully. The major danger from the Liberals appears to be their agenda of 'dry economic rationalism' and the consequences of having dollar values driving the forest management debate, (although in terms of making the industry pay its way there may be some positive benefits). Nevertheless, when it came to the crunch Greiner imposed a minimal timber loss solution (10%) on the south east forests.

3.6.4. INDEPENDENT M.P.'s

The independents have been very interested in forestry issues with all seven giving unanimous support to the south east forest campaign. Clover Moore, Robyn Read, John Hatton and Dawn Fraser have been particularly helpful.

Mrs Marie Bignold, Call to Australia Party (CTA), while not an Independent, has exercised her vote in the Upper House independently from the other CTA members Fred and Elaine Nile. Mrs Bignold's vote has been crucial in defending the EP&A Act from unworthy amendments.

4 KEY ELEMENTS FOR FOREST CAMPAIGN STRATEGY

In order for any strategy to be effective and relevant it needs to be integrated into the prevailing social, economic and political conditions. The themes and language used need to communicate to the various social groupings in society and generate political momentum. A knowledge of the wider socio-political environment also gives an ability to avoid mistakes that 'rose-coloured' or 'myopic' perspectives can cause.

4.1 CAPTURING THE POLITICAL AGENDA

Changes in union structure mean that the Australian Timber Workers Union will be amalgamated into a mega-industry based- union, (Construction, Forestry, Mining and Energy Union - CFMEU) which will represent workers in these areas, from raw material extraction through processing to end use of those products. The BMU, ETU, MU and FEDFA will link up with the ATWU over the next 3-5 years. It is planned that the new mega-union will have a conservation committee operating across all the above divisions.

In the transition, the NSW branch of the ATWU plans to educate and lead its members to new understandings about their work and its broader context, breaking down some of the ignorance and isolation which was perpetuated under the previous administration. The ATWU has actively sought dialogue and co-operation with NEFA and has promised to exchange information and co-operate on campaigns of mutual concern. They support plantations and new National Parks but are concerned about our agenda for ending the logging of old growth forests. They are open to be convinced about alternative resources being available.

The ATWU does not represent small sawmill operators who are tiny, isolated businesses, often a family or partnership operation. ATWU NSW accepts that major restructuring is required to achieve competent forest industries, and that some jobs in some areas may have to go. ATWU has offered to develop a model mill operation, worker owned and operated and is actively canvassing for support for this. ATWU is definitely 'anti-bosses' (FPA) and is keen to break the political stranglehold which mill owners have had for so long.

ATWU has a fair political clout, having access to the Federal Government through ACTU. They have had direct discussions with Hawke, Kerin and Griffiths. In NSW, ATWU has had dialogue with Greiner and has indicated to Greiner and West that they support new National Parks, plantations etc, and are keen to develop further dialogue with environmentalists. A further meeting between NEFA and ATWU NSW is scheduled for early March 1991. Earlier meetings between SEFA and the union gave some hope but this fizzled to nothing.

3.5 THE MEDIA

This key player is in fact many players. Local media perform different functions, with different priorities, to the Sydney and national media.

Local media are eating up stories, regarding forest issues, since it is of direct interest and relevance to local people, since it is 'real' news (with constant up-dates needed) and since it sells papers! Many local journalists have a personal interest in and sympathy for forest protection and have been very helpful in spreading our message. The FPA and FPS are also getting a fair go in local media to balance the debate, but often, perhaps, because of poor spokespeople, they come across in a damaging rather than positive manner when they are reported.

State and National media seem to be tired of forest stories and are resistant to attempts at continuing coverage. The details and dimensions of many stories are often seen to be too localised and/or minor to be reported. This part of the media appear to be only interested in the big stories, or those with damaging political connotations.

3.6 NSW POLITICAL PARTIES

3.6.1. THE AUSTRALIAN DEMOCRATS are wholly on-side and their two MP's, Lis Kirkby and Richard Jones have been extremely helpful. They are prepared to further our forestry agenda in the Parliament through Questions, Speeches and media releases.

3.6.2. THE LABOR PARTY has been schizophrenic in its attitude to the forestry debate. The Leader of the Opposition, Bob Carr is on-side and has pursued forestry questions in Parliament. However, he has been less than 'correct line' over the Washpool dispute and appears to be ham-strung by previous decisions of the Wran Government on rainforests.

Carr is influenced by 'heavies' in the NSW Right, many of whom are still seething from the 1988 NSW election result. The lack of our support for the Unsworth Government despite its position on the South East forests is still held against us and they focus on the loss of seats and ultimately the government benches in the 1988 State election. NSW ALP Branch President Terry Sheahan (and ex-Attorney General) who lost his seat is said to be still particularly bitter.

Shadow Minister for Forests, Jack Hallam was and still is an apologist for the Commission. As a right winger, he is hostile to the environment movement and has chosen to interpret the Wran Government Rainforest Decision, (made when he was an MP but not Minister), in a way which favours the industry and the Commission. His

While guarantees are sought to protect industry's private interests, the industry in turn is not able to guarantee protection and provision of the broader public interests and benefits, such as greater employment and environmental protection. ('Australia's Timber Industry: Promises and Performance' ACF 1987)

3.1.3. FOREST INDUSTRY CAMPAIGN ASSOCIATION (FICA) is an off-shoot from FAFPIC and is the agency responsible for accumulating funds and producing television, newspaper and other advertisements promoting the industry message and defending the industry from the criticisms of the environmental movement. It is funded and supported by FAFPIC.

3.1.3. NATIONAL ASSOCIATION OF FOREST INDUSTRIES (NAFI) was formed in 1986-87 and is very closely linked to the FAFPIC. It is the industry (bosses) organisation and acts as a lobby group and a co-ordinator of the FICA media campaign.

3.1.4. NSW LOGGING ASSOCIATION was formed in May 1990 and is the combined voice of logging contractors in NSW. It aims to act as a lobby group, and as a spokesperson for loggers and to promote forest products.

3.1.5 AUSTRALIAN LOGGING COUNCIL (ALC) was formed in 1986 as a national body to provide an umbrella for all logging and associated activities. It grew from the Tasmanian Logging Association Ltd and is the national voice for the logging contractors. ALC kick started the NSWLA with a grant of \$10,000.

3.2 THE FOREST PROTECTION SOCIETY (FPS) was apparently founded by Robyn Loydell. It might be better named the Forest Industry Status Quo Protection Society, since it aims to defend the status quo against our campaigns.

Based on a generally poorly educated rural timber worker and mill staff membership, the FPS also signs up Forestry Commission staff, log haulers and local community members likely to be affected by changes in timber industry employment e.g. shop owners.

The FPS has become a vehicle for concerned family members of timber industry workers, notably wives, to give vent to their anxieties about their families futures if current employment is not maintained. Much of their campaigning is very emotional and intimidatory and ignores any factor other than their economic survival.

Their classic quotes are "We're just doing what our fathers and grandfathers did. We have a right to our forests and our jobs." "If you try to stop us, then you will have to deal with a very angry local population." and "If we lose our jobs, the impacts on the local community will be enormous, shops will close, crime will rise and our kids will be condemned to the dole."

The Forest Protection Society started on the South Coast but has spread to other locations in NSW. It is believed that the FPA has made significant grants to FPS to fund their activities but the FPS has eschewed the 'bosses' from prominent positions within their organisation. The FPS is a separate organisation with aims which may not always co-incide with the aims of the FPA. If (perhaps in ideal conditions) FPS can be made to see that the threat to their jobs comes from their bosses, they may at times consider allying themselves with environmentalists.

The FPS is expected to participate in the splurge of publicity in early 1991 along with the FPA and will provide the mass action, grass roots activities.

3.3 THE INSTITUTE OF FORESTERS AUSTRALIA (IFA) is the professional body for qualified foresters and operates as a vehicle for individual foresters to express opinions outside the limitations of the public service role of Forestry Commission. IFA has adopted some progressive policies, including the right of public participation in public forest management, but opposes the reservation of large areas of forest and the production of replacement sawlogs from plantations. The IFA has had no success in achieving public participation within forest management or indeed significantly influenced government policy.

Drielsma and other senior staff within the Commission have been active within IFA in the past, possibly as a means for gaining prominence and influence within the Commission. The position of Secretary and Chief Inspector is required by the Act to be a Forester, and the same requirement is applied, without legal basis, to most, if not all, senior positions within the Commission.

3.4 THE AUSTRALIAN TIMBER WORKERS UNION (NSW BRANCH) (ATWU-NSW) has been recently undergoing a radicalisation, overhauling sixty years of conservatism and subservience to the industry bosses.

major informal groupings, the North East Forest Alliance (NEFA) and the South East Forest Alliance (SEFA) have emerged in the second half of the last decade as local forest campaign groups perceived the added strength of linking together for greater effectiveness. Updated reports submitted by some groups on current activities are available.

3 RECOGNISING PLAYERS ON THE SCENE

The major industry and political players in the debate have changed and grown in strength in recent years. It is important to recognise them and plan accordingly.

3.1 THE TIMBER INDUSTRY

3.1.1 THE FOREST PRODUCTS ASSOCIATION (FPA) is the big end of the timber industry - big mill owners and operators who have Crown licences such as HARRIS DAISHOWA (Eden Woodchips, potential interest in north), BORAL (woodchipping mill, Newcastle), and ADELAIDE STEAM (owners of Duncans Sawmills).

The smaller end of the industry (the diminishing number of smallscale sawmillers; specialty timber getters and users; timber hauliers and other contractors and subcontractors) is not represented by the FPA.

Employers have invested years in keeping their workforce un-unionised. The FPA has sought to portray the environment movement as being responsible for job losses as a consequence of the withdrawal of timber resources in the 1982 Rainforest Decision. In reality huge job losses have resulted from the introduction of new technologies, centralising and conglomeration of mills, difficult economic circumstances and poor management. The FPA are anti-NPWS and National Parks: their classic quote is 'If the greens get this National Park then we'll go broke and have to sack thousands of staff.'

Many FPA heavies are also prominent in the smaller country centres where their mills are located and in the National Party. FPA members have historically had a major influence on Ministers holding resource portfolios since they have been the major clients of the Forestry Commission. The FPA agenda is guaranteed unfettered access to the State Forests at the lowest possible prices for as long as the old growth lasts (7-10 years on one estimation).

FPA members link into the national forest industry bodies, are well financed and are aggressive in defending their perceived 'birthright' - access to the forests their fathers felled.

FPA is expected to unleash a new major publicity campaign in early 1991 to regain the impetus they lost briefly following the Washpool Interlocutory Judgment, PAC report and RAC cross-examination.

3.1.2. FORESTS AND FOREST PRODUCTS INDUSTRY COUNCIL (FAFPIC) was formed in 1984 as part of the consultation process to advise the Federal Government on the development of economic and industry policy. Several such councils were established as an outcome of the Accord, and act to support the Australian Manufacturing Council.

FAFPIC is comprised of representatives of industry management, Forest Services, forest growers, CSIRO, Department of Industry Technology and Commerce, and Department of Primary Industry. In addition, it has one academic forest economist. FAFPIC has generated a Strategic Plan for the industry which opposes:

- ‡ the creation of parks and reserves containing commercial stands of timber;
- ‡ more environmentally sensitive forest management plans;
- ‡ the phasing out of clearing native forest for pine plantations.

The Plan argues for:

- ‡ long term tenure for large volume public wood supplies;
- ‡ royalties which are 'not too high';
- ‡ less stringent logging prescriptions and lower logging costs;
- ‡ large government assistance for plantation expansion;
- ‡ a variety of other public financial support;
- ‡ removal of inhibitions to rationalisation;
- ‡ large scale wood processing plants;
- ‡ general encouragement for greater domestic consumption and export sales.

The present (NP) Minister for Forests and Lands, Garry West, who replaced Ian Causley in July 1990, is not burdened with the same old connections and traditions. His style is different, but he is still reliant on the Forestry Commission for advice. Environment Minister, Tim Moore is unable to obtain Cabinet agreement for legislation that significantly improves the prospects for government intervention to protect the environment. There is also an 'unspoken' agreement in the Government that as little as possible state forest is made into national park.

2.3.2. THE PUBLIC ACCOUNTS COMMITTEE (PAC) OF THE N.S.W. PARLIAMENT released the Report of its Inquiry into the Forestry Commission in December, 1990 which attacked the Commission's structure, operation, skills and attitudes.

The Report recommends major changes to the Forestry Act, 1916 and the adoption by the Commission of a 'healing role' to the present entrenched disputes. The Report vindicates the criticisms of the Commission made by environment groups.

2.3.3. The FORESTRY COMMISSION is under considerable pressure in the light of the PAC's stringent criticisms, the Resource Assessment Commission's NSW Hearings and several cases brought before the Land and Environment Court, notably the North Washpool case.

Dr Hans Drielsma, was appointed Commissioner for Forests last year, following the death of Wal Gentie and one Assistant Commissioner position remains vacant. The new Commissioner while hardline, is not an identical copy of the seige-driven Gentie.

Minister West is talking of 'corporatisation' of the Commission, which may address some of the economic, management and marketing inadequacies identified by the PAC, but would not necessarily establish ecologically sustainable forest practices. Indeed, the Government is still believed to support amending the Environmental Planning & Assessment Act, 1979 to exclude the Forestry Commission from the requirement to produce Environmental Impact Studies prior to logging, despite the PAC recommendation that the Forestry Act 1916 be amended to bring it into line with the EP&A Act.

2.3.4 The LABOR OPPOSITION continues to evade facing up to the difficult issues of achieving modern competent forest management, due to fear of organised labour. Their former Minister and now Shadow Minister for Forests, Jack Hallam is very close to the Forestry Commission and hostile to criticisms of the Commission made by environment groups. Hallam's continuing poor performance as Shadow Minister is one reason why the Carr Opposition appears so lacklustre to forest protection groups.

2.3.5. THE FORESTS are greatly reduced in extent with much of the more fertile soil areas cleared for farming and settlement. Timber extraction continues from private as well as public land. The State Forests include rainforest areas, some still subject to logging, the coastal and escarpment eucalypt forests harvested for woodchips and sawlogs, the Red Gum forests of the major west-flowing river systems, and Cypress Pine, some box and other communities.

Native forest is still being cleared for pine plantations and of the pine plantations in the north, Bathurst, Oberon and south-east, some are now coming into second rotation. Hardwood plantations are very limited in extent, with the Forestry Commission having established very poorly designed experiments that only serve to justify their low esteem in the Commission's eyes.

2.3.6. WOODCHIPPING is a driving element of timber harvesting in the south east area (1 mill tonnes p.a. exported to Japan by Harris Daishowa); while significant extensions of woodchip sources have been permitted for Sawmillers Export (Boral) through Newcastle and for Brisbane Forest Products through Brisbane. Hardwood chips also go to Korea. An international scale (Kraft) pulp mill has been proposed for the Clarence Valley but the scheme was placed on hold prior to the election as a result of public concern over pollution.

While woodchipping is increasing, hardwood sawlogging is expected to decline and pine rapidly take over traditional hardwood markets.

2.3.7. FOREST CAMPAIGNS have been conducted with remarkable tenacity and some great successes over the last 20 years, with a big proliferation of local groups.

More local groups made submissions to the Resource Assessment Commission from NSW than from any other state. Two

1. THIS IS THE DECADE TO SET THE AGENDA FOR A SUSTAINABLE FUTURE

1.1 As we enter the nineties, there is the necessity and opportunity to address the future for our native forests on a comprehensive basis. NSW has been the scene of some very significant conflicts over logging, in most parts of the state.

We have reached a point where it is paramount to identify the common elements in these disputes and address them in a more coordinated way at state and national levels for maximum effectiveness. This has been building up over the last few years through evolution of the regional NEFA and SEFA groupings; Forest Summit meetings; the Australian East Coast Forest Conference held in Brisbane in March 1990 and the Forest Forum held in Newcastle, in the same year.

Meanwhile the Forest Industry, under pressure from the growing conservation imperative, has reorganised itself onto a more effective and flexible political footing and geared up for a strong pro-development campaign.

1.2 THIS PAPER is the outcome of pre-meeting research and the State Forest Meeting held on 12 January in Sydney, attended by 30 campaigners representing a wide range of views and experience in NSW Forest issues. The paper:

- (i) provides a synopsis of the key issues as perceived by Forest Campaigners as background for a state review and the NATIONAL FOREST STRATEGY MEETING to be held in Canberra on the 9/10/11 February 1991;
- (ii) identifies common elements relevant to NSW in the context of a national strategy; and
- (iii) flags those elements of strategy which require further discussion.

2. OVERVIEW

2.1 THE GLOBAL CONTEXT

There is a growing world-wide awareness of the life-threatening damage to our planet caused by the activities of the increasing numbers of humans and application of inappropriate technology around the globe. Greenhouse, ozone-layer depletion, acid rain and loss of biological diversity are now familiar terms; and more recently the environmental damage of modern warfare is again being recognised.

However, while the urgency is recognised, the economic conservatism which is also growing makes it increasingly difficult to have an effective political impact on the causes of this degradation. The 'state of the economy' has become paramount, as concerns are voiced over the economic downturn. Further there is the fundamental debate about whether traditional economic growth as opposed to more qualitative development paths will provide the resources and solutions to facilitate environment protection.

2.2 THE NATIONAL LEVEL

Within Australia the Federal Labour government is struggling to retain credibility and coherence. A change of government is likely at the next election (not obligatory until 1994). The likelihood is that the next Liberal Government will be in the Greiner mould with a similar National Party influence on policies. The general and concerted attack from industry on environmental legislation will continue along with their campaigns to make themselves more environmentally acceptable.

There is a lack of political will by governments to apply their existing powers to effectively protect the environment and in fact the embracing of the 'new federalism' by Labor and Liberal Governments threatens the tyranny of the lowest common denominator. Also recent Federal Court decisions about enforcing application of current environmental legislation and powers has led to doubts about the adequacy some federal environment legislation.

2.3 NEW SOUTH WALES

2.3.1. The GREINER GOVERNMENT appears assured of a second term, with prospects of a younger and more dynamic National Party leader after the election.

The election is due in 1992 but may well be called in the first half of 1991 with the ALP at a low ebb in the polls.

NOT FOR PUBLIC DISTRIBUTION

**NSW FOREST REVIEW AND STRATEGIES
FOR NATIONAL CAMPAIGN
FINAL DRAFT February 1991**

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FOREST SUMMIT

c/ TEC
18 Argyle St, Sydney 2000

The Wood
And
The Trees

PART-1

12.

A
Preliminary
Economic
Analysis
Of A
Conservation-
Oriented
Forest
Industry
Strategy

By

Dr John I Cameron
Consulting Resource Economist

Ian W Penna
Senior Research Officer
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May 1988



Australian
Conservation
Foundation

EXECUTIVE SUMMARY

i. A Conservation-Oriented Forest Industry Strategy

In this report, the Australian Conservation Foundation (ACF) presents the results of a preliminary economic evaluation of a conservation-oriented forest industry strategy for Australia. The key elements of the strategy are:

- (i) The establishment of sufficient eucalypt plantations on previously cleared land to produce nearly all the timber industry's expected hardwood (eucalypt) needs in the future.
- (ii) The phasing out of the majority of logging from native forests over the next 15-30 years, thereby protecting the very significant but rapidly depleting biological, genetic, wilderness, water catchment, recreation and other non-wood values of Australia's native forests.
- (iii) A much reduced level of native forest logging outside enlarged protected areas (National Parks, Nature Reserves, Wilderness Areas and World Heritage properties) to provide relatively small volumes of very high quality saw, veneer and specialty logs for high value-added manufacturing (furniture, cabinet veneers, decorative architectural work, crafts, etc.). The planned cutting cycles for these forests would be of the order of several centuries, enabling the restoration of most ecological values between cutting periods.

The potential for a significant increase in the rate of paper recycling in Australia to reduce the need to log native forests or establish plantations is also examined.

ii. Plantation Forestry in Australia

Plantations in Australia are of increasing importance to industry and government.

Softwood (pine) plantations currently total 830,000 hectares in area and are being established at the rate of 30,000 hectares per annum. Pine sawlogs today account for 52% of sawlog consumption in Australia, having risen from 39% of the market in 1977, and are expected to capture the bulk of the sawlog market by 2005. Enough softwood will be available after 2005 to supply the entire market.

The Commonwealth funded a significant proportion of the establishment and maintenance costs of these plantations. Between 1966-67 and 1980-81, assistance to the States totalled \$238.13 million (1986-87 dollars), an average of \$15.87 million per year.

Eucalypt (hardwood) plantations are just being established on a large scale in Australia, although there has been significant plantation development in Brazil, Spain, Portugal and Africa.

The current eucalypt plantation estate totals 60,000 hectares, with an establishment rate approaching 7,000 hectares per annum nationally. From published information it is possible to infer a national establishment rate of 8,000-10,500 hectares each year by 1990. Presently producing approximately 2% of

Figure A: Australia: Total Sawn Timber Consumption
- Actual and Forecast 1950-2030

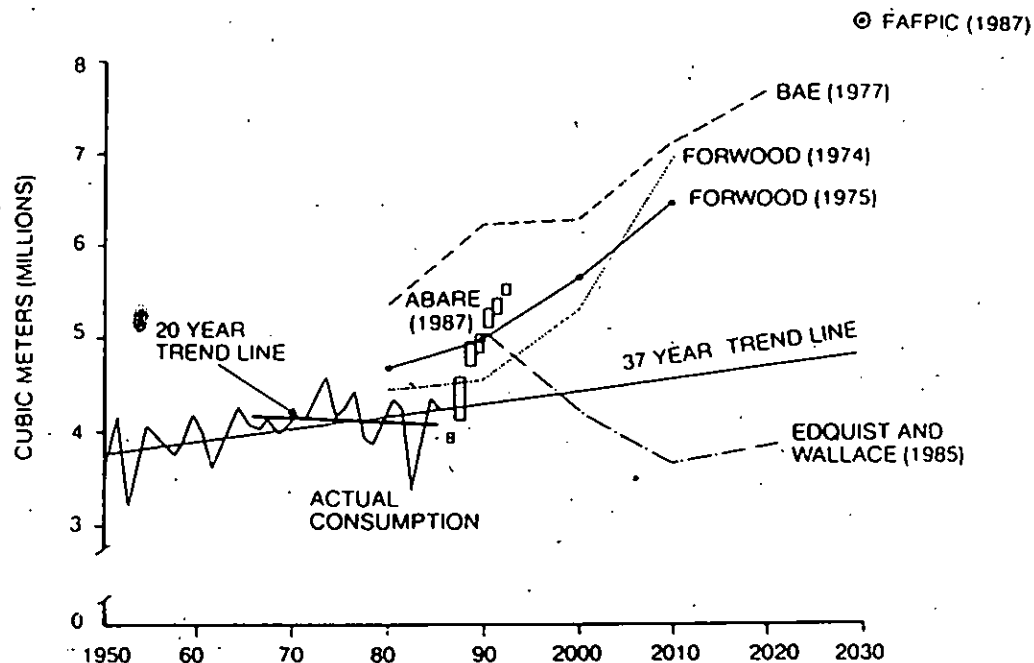
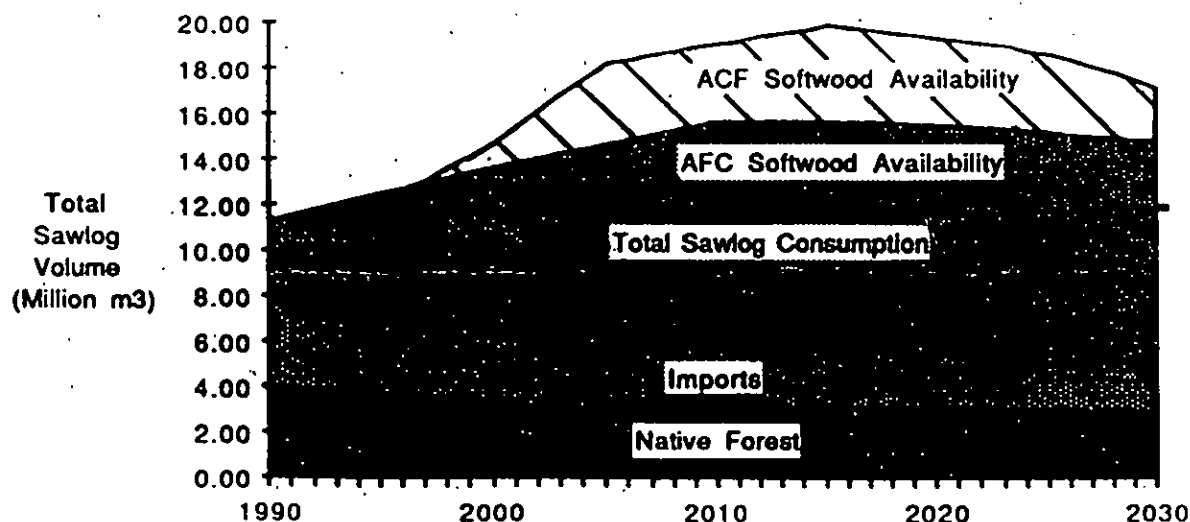


Figure B: Softwood and Native Forest Sawlog Availability in Australia, 1990-2030



Note: This figure indicates the availability of sawlogs from native forests and softwood plantations estimated by the ACF and derived from Australian Forestry Council (AFC) statistics. The import volumes are those assumed in this study.

the current hardwood pulplug demand, existing and planned plantations are expected to supply at least half of the hardwood pulplug demand by 2010.

As a consequence of the multiple benefits of eucalypt re-forestation, including the creation of a wood resource base, amelioration of erosion, salinity and land degradation, and improving water supply and wildlife habitat, state governments have begun to provide a range of fiscal incentives for the establishment of private eucalypt plantations. Schemes attractive to rural landholders and farmers such as plantation sharefarming, agroforestry, leaseback and direct grants have been developed. Some state governments are establishing their own eucalypt plantation and agroforestry programs.

A nationally co-ordinated approach to the hardwood plantation program is needed to ensure the most efficient allocation of resources and to help avoid the problems encountered in the softwood program.

iii. Future Timber Demand and Supply

Demand for timber in Australia may be divided into sawlogs and pulplogs, and each of these may be further subdivided into hardwood (eucalypt) and softwood (pine). This study has focussed primarily on the hardwood component of demand and supply. DEFN

Sawn timber consumption has been relatively stagnant since the late 1960s despite optimistic industry forecasts for rapid growth (Fig. A). In 1985-86 consumption was 4.2 million cubic metres. Owing to the extreme range of forecasts available, the ACF has used the average linear trend for the period 1950-1986 to forecast demand in 2030 at 4.8 million cubic metres. (This forecast could be viewed as optimistic in light of the observation that the 20-year trend (1967-1986) indicates an overall decline in demand.) In contrast the Forest and Forest Products Industry Council (FAFPIC) Growth Plan envisages, with little justification, a virtual doubling in consumption to 8.4 million cubic metres per annum by 2030.

There is high substitutability between pine and eucalypt sawn timber as evidenced by the continuing inroads made by pine into the housing construction market. ACF has calculated its own pine plantation sawlog availability estimates based on explicit assumptions of management regimes as an alternative to older forecasts, such as those done by the Australian Forestry Council (AFC). These forecasts are shown in Figure B with forecast native forest and imported sawlog availability. Even the lower AFC forecast shows that by 2005, enough domestic softwood could be available from softwood plantations to supply the whole market completely, with over-supply developing thereafter. Additionally, a large supply of softwood sawlogs will enter the market from New Zealand in the 1990s, and could have a significantly depressing effect on the local sawlog market.

The supply and demand situation for pulplogs is substantively different from the sawlog market. There is lower substitutability between hardwood and softwood, and domestic demand for hardwood pulplogs is expected to double by 2020 from 2.5 million cubic metres per annum to 5 million cubic metres per annum. This growth in domestic demand for hardwood pulplogs is driven by forecast rising demand for paper (Fig. C).

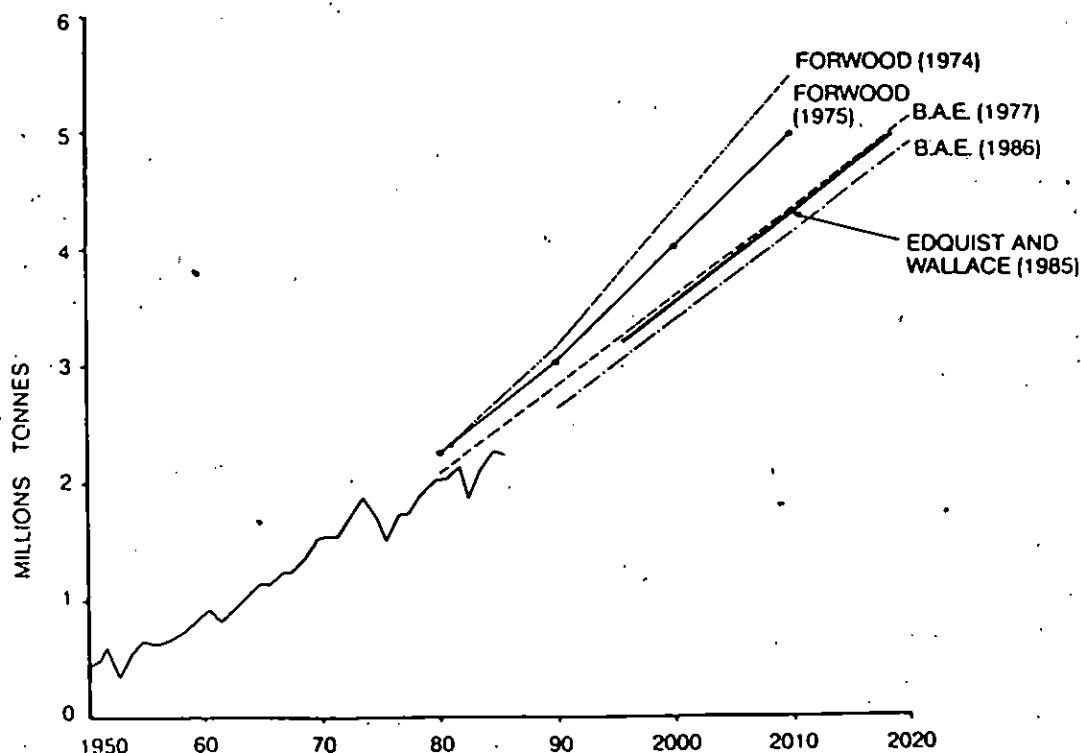
For the purposes of this study the ACF has assumed the 1986 Bureau of Agricultural Economics (BAE - now ABARE ; Australian Bureau of Agricultural and Resource Economics) forecast for paper demand, which is significantly above the 1950-87 average trend.

iv. Hardwood Plantation Strategies for Australia

Two plantation strategies were examined - a 30 year mixed sawlog/pulplog program/(Base Case) and a 15 year pulplog program (Alternate Case). Common to each strategy were the assumptions that:

- (i) By 2005 continuation of existing hardwood plantation programs will have produced at least 105,000 hectares of plantations.
- (ii) The level of sawn timber imports declines both in relative and absolute volume terms over the study period. (This assumption is optimistic given the very high volumes of cheap New Zealand sawlogs that will be entering the market from the 1990s onwards).
- (iii) Residual production of sawlogs from the native forest would be for high value purposes, managed on rotation periods of several centuries.
- (iv) → Export woodchip licences would be phased out over 20 years between 1990 and 2010.

Figure C: Australia: Total Paper Consumption 1950-2030
- Actual and Forecast



The Base Case plantation strategy involves phasing out the majority of hardwood pulplog production from native forests by 2005 and sawlog production by 2020. This would require 10,000 hectares of eucalypt plantations to be planted each year for 30 years from 1990 to 2020, which would bring the hardwood plantation estate to a total of 405,000 hectares. This case maintains hardwood sawlog production indefinitely. Figures D and E show the overall impact of this strategy (see Chapter 8 for a detailed description of the figures).

The Alternate Strategy removes most sawlog and pulplog harvesting from native forests by 2005 and requires the planting of 10,000 hectares of pulplog plantations per year between 1990 and 2005, producing a total plantation area of 255,000 hectares. The large available volumes of softwood sawlogs and the high substitutability between hardwood and softwood sawlogs enable softwoods to replace most current uses of hardwood sawlogs.

The Preferred Conservation Option (Figures F and G) involves two modifications to the Alternate Strategy:

- (i) Earlier phase out of existing woodchip licences (2000), reducing the area of native forest cut before 2005.
- (ii) Improvement in the paper recycling rate from the current 30% to approximately 50% over a ten year period (1990-2000). This has the effect of substantially reducing domestic demand for pulplogs. Every 1% improvement in recycling of paper could save about 65,000 cubic metres of pulplogs each year.

In both the Alternate and Preferred Conservation cases (and irrespective of the paper recycling improvements envisaged in the Preferred Conservation Option), a very large excess volume of hardwood pulplogs is evident after 2005. This could be used for export as pulp or paper. Similarly, there is likely to be a large surplus of softwood sawlogs available after the mid-1990s.

A measure of the relative impact on native forests of a business-as-usual approach to native forest logging and the various plantation-based strategies considered in this report is gained from an analysis of the total cumulative log production from the native forests under each case for the period 1990-2030 (Figures H and I).

The options examined in this study for replacing native forest logging with plantation hardwood forestry are meant to be indicative only. There are many other ways of achieving the same conservation objectives.

v. Economics of Hardwood Plantations.

ACF commissioned a consulting report from Australian Agricultural Consulting and Management Pty. Ltd. (AACM) on hardwood plantations in Australia. AACM provided the establishment costs and expected yields for a range of management regimes for both pulplog and pulp/sawlog plantations. These estimates form the basis of the analysis of plantation economics used in this study.

The future prices of sawlogs and pulplogs are important factors in evaluating the cost and benefits of different wood supply strategies. As no published price forecasts are available, the ACF has made estimates based on analysis of the market and recent actions of the state forest services.

Despite the anticipated decline in eucalypt sawlog consumption, stumpages or royalties for hardwood sawlogs and pulplogs are expected to continue to rise at greater than the rate of inflation for the next 5 to 10 years. Historically, state

Figure D : Base Case Plantation Strategy - Total Sawlog

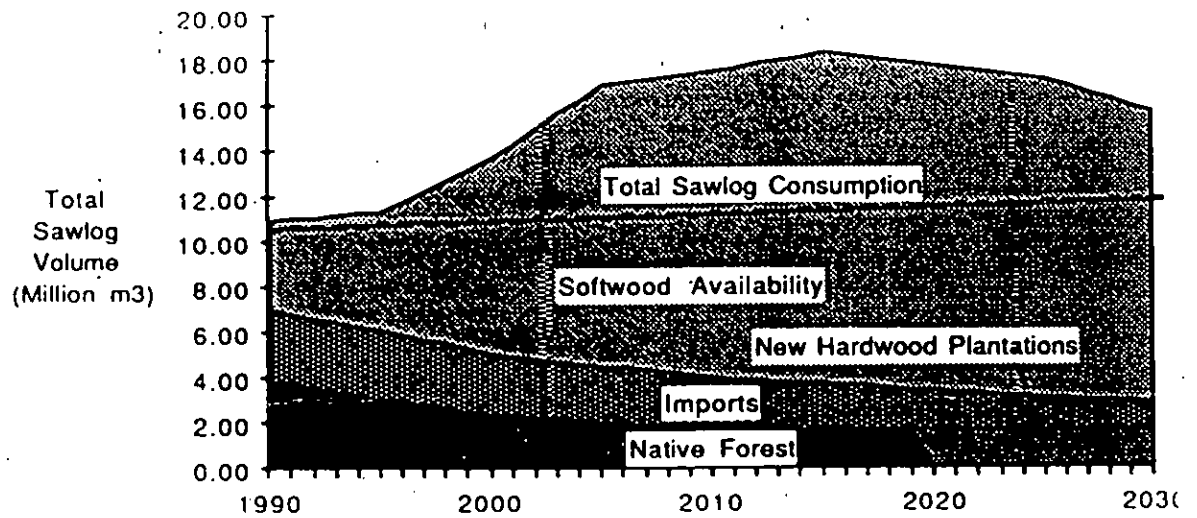
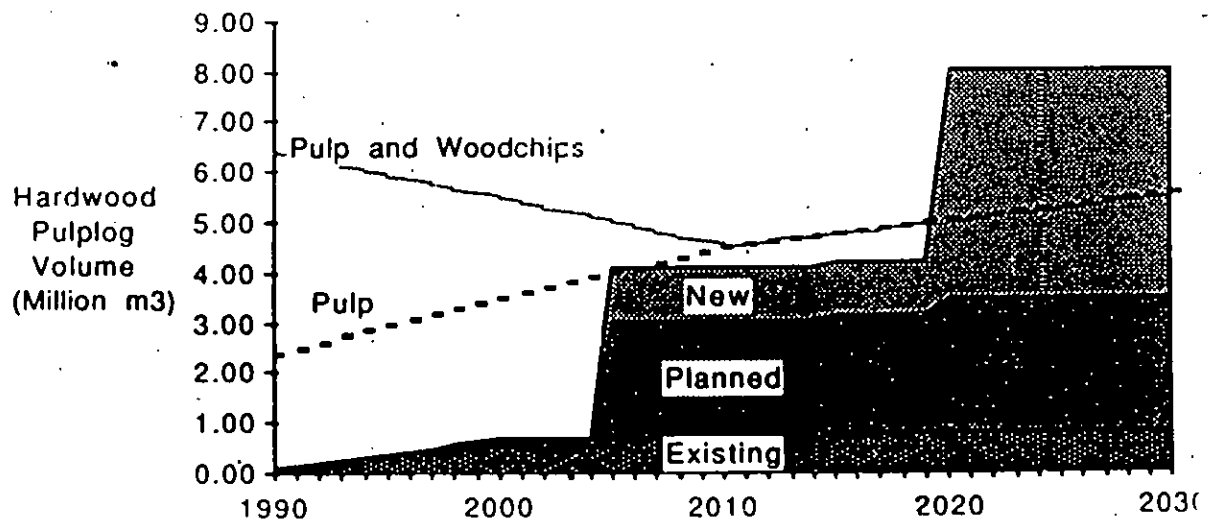


Figure E : Base Case Plantation Strategy - Hardwood Pulplog



forest services have underpriced native forest logs relative to what may be considered a 'market price', and will be under pressure to continue real price increases in order to offset their deficits. Large inequities exist between states, which have created disincentives to invest in plantations and relatively wasteful use of trees, logs and processing residues in some states.

Using these log price forecasts, the net present value (NPV) of hardwood plantations at a 5% real discount rate exceeds that of native forest timber production viewed on a long-term basis. The primary reason for this result is that the cost of purchasing land and establishing a plantation (around \$2250 per hectare) is more than offset by the far greater growth rates of plantation trees, and earlier financial return.

A further factor which tilts the economic balance in favour of plantations is the higher value which is given to pulpwood obtained from plantations over native forest supplies. At present, a premium of up to \$8 per cubic metre over average native forest feed is paid for some eucalypt plantation pulplogs because of lower harvesting costs, greater uniformity and superior quality.

The overall costs of a hardwood plantation program similar to that described in the Base or Alternate options (a planting rate of 10,000 hectares per annum) would be in the range \$12-25 million per year for 30 or 15 years respectively. For the Alternate or Preferred Conservation Option the total cost of establishing and maintaining an extra 150,000 hectares of plantations would range from \$180 to \$375 million, and for the Base Case from \$360 to \$750 million for the 300,000 hectares established.

Under the worst economic case for the government, in which all the land required was bought outright, the annual outlay would be \$25 million per year for 30 years. This outlay would yield a positive net present value advantage over native forest timber production of around \$350/hectare at a 5% discount rate. It is extremely unlikely that a government would purchase all the necessary land itself when there are many other less expensive, more profitable and desirable alternatives.

vi. Benefits of Hardwood Plantations.

Hardwood plantation-based forestry would benefit wood production economics in a number of ways; growth rates are up to 3 times those of the native forest, logging and transportation costs are reduced, and processing costs are reduced owing to the greater uniformity of quality obtained from plantations.

capacity to breed and select superlative provenances of tree species, thereby potentially increasing growth rates and other desirable qualities, is particularly important. Within individual species of eucalypts there is often wide genetic variation in growth rates and wood quality. For example it has been discovered that a provenance of Eucalyptus globulus that grows in the Henty River region of Tasmania has properties that allow the saving of \$11 per cubic metre in chemicals over average native forest pulpwood in the manufacture of pulp. (Selective breeding for plantations is, however, contingent upon the availability of the diversity of the wild eucalypt gene pool in native forests).

Environmental benefits of plantations include reduction in erosion and salinity problems, and improved water quality, visual amenity, wildlife conservation and land values.

There are socio-economic benefits and costs arising from a move to hardwood plantations. Labour productivity and skill levels would increase in the industry and there would be a contribution to employment stability. Higher wages and safer working conditions could be expected.

However, productivity improvements would cause a marginal increase in the industry's rate of employment loss 15 to 30 years hence. There will be dislocations in regions heavily dependent on native forests if no alternative wood supply or employment can be generated. This is particularly so in the case of the Alternate Strategy.

These effects are counterbalanced by the substantial economic and environmental benefits to rural communities where hardwood plantations are established. Innovative share-farming and leaseback schemes now being offered around Australia improve on-farm income and employment opportunities. Income averaging arrangements in these schemes could provide a substantial benefit to rural areas subject to the vicissitudes of large commodity demand and price fluctuations.

Hardwood plantation programs could help address soil degradation, catchment salination and water pollution problems. Although the use of plantations in such circumstances is unlikely to be optimal for wood production alone, it is likely that multiple economic benefits would be obtained from improved land productivity, improved water quality (with important economic implications for the future of horticulture and irrigation areas), protection of fisheries and important tourist and recreational areas. A careful systems approach would be needed to optimise the location, area and species used in hardwood plantations in order to achieve these multiple benefits.

vii. Feasibility of a Hardwood Plantation-Based Strategy

The feasibility of supplying hardwood needs from plantations was examined. The availability of land and the feasibility of using plantation logs for pulp and sawn timber, including veneer and high quality timber was considered. The prospects for locating plantations within economic distances of existing and proposed pulpmills and sawmills were also examined.

AACM estimated that nearly ten million hectares of cleared land in Australia would be suitable for hardwood plantations using a rainfall threshold of 800 mm per annum and excluding land that is too isolated from commercial infrastructure or climatically otherwise unsuited. At most, less than 6% of this land would need to be planted. A preliminary survey by the ACF indicates that on a regional basis sufficient areas would be available to provide the volumes of wood necessary to replace existing native forest resources for large pulp and sawmills.

Many different land ownership and management regimes are available for the establishment of plantations. These include government purchase of cleared private land, leasing land, using degraded Crown land, industry-established plantations, company-farmer joint ventures, plantation sharefarming and agro-forestry. The economics of plantation or agro-forestry compare favourably with existing farm activities for individual landholders.

The anticipated effect of a plantation strategy on the pulplog industry is uniformly positive with reduced harvesting, transport and operating costs, the opportunity for substantial cost reductions, and yield and quality improvements through selective breeding.

Although uncertainties exist in relation to knotting, heartrot, drying and the production of veneer quality logs, the opinion expressed by some elements of the timber industry that structural grade sawn timber cannot be economically extracted from young eucalypt plantation-growth logs is not supported by the available evidence. Work done at CSIRO and other institutions has shown that plantation-grown eucalypts can produce satisfactory structural grade timber, and that plantations can be expected to produce larger and higher quality logs than regrowth native forests. In South Africa successful breeding programs have shown that it is possible to reduce growth stresses from Eucalyptus grandis by selection. In this context it is important to note that under existing plans, by 2020 when 30 year-old plantation sawlogs become available, the sawmill industry would be largely based on regrowth logs from native forests.

The sawlog industry would benefit in the long term from a plantation strategy. The 'high value' approach which has been heralded by industry observers as the saviour of hardwood sawmilling is enhanced by the plantation strategy. Quality control in the growing, selection and breeding of desirable sawing and appearance characteristics would be feasible in a plantation program, and would provide the industry with a high quality resource capable of being processed efficiently to a high standard. The possibility of growing cabinet timber species and feature timber varieties in plantations holds a great deal of promise. Under the ACF's proposed hardwood plantation strategy, limited volumes of sawlogs for high quality sawn timber would be obtained from the native forests whilst the uncertainties around production of appearance grade sawlogs from plantations are resolved.

Historically the reasons for the lack of investment in sawlog hardwood plantations seem to have more to do with the 25-30 years required to grow sawlogs, the lack of financial resources available to (generally small) sawmilling companies and the availability of underpriced logs supplied by state forest services than the supposed limitations of eucalypt plantations for sawlog production.

viii. Interim Strategy

The plantation strategy places the immediate logging-conservation conflict in a new light. If most of the native forests are only to be logged for another 15-30 years, the long-term management of native forests for wood production is no longer a suitable goal. The focus of the forestry debate would shift to the question of how to effect the transition by the timber industry from native forests to plantations with the least long-term loss of non-wood values, minimal regional dislocation and loss of employment in the industry.

An interim strategy necessarily involves:

- (i) The identification of areas of high conservation value that are currently unprotected so that they may be excluded from wood production.
- (ii) The identification of forest areas whose use for wood production would not unduly prejudice the achievement of the long-term conservation objectives and are of sufficient size to provide pulplogs for 15 years and sawlogs for 15-30 years.

Insufficient information exists at present to enable all forest areas of high conservation value to be identified.

A preliminary assessment of the feasibility of devising an interim strategy suggested that in NSW and Tasmania large wood resources exist outside known

(unprotected) areas of high conservation value. Insufficient information was available for Queensland. Potential problems may exist in Victoria and Western Australia where there are areas of high conservation value and high wood value with limited opportunities for replacement.

ix. Conclusions and Recommendations

This study has revealed that, on the basis of available data, there is likely to be a net economic benefit in the long-term to Australia from a strategy based on the supply of hardwood from eucalypt plantations over continued large-scale and intensive logging of native forests. The costs of establishing sufficient additional hardwood plantations would only be between \$12 and \$25 million per annum for 15 to 30 years. Accordingly the ACF is recommending that:

- (i) The Federal Government give serious consideration to the establishment of a national hardwood plantation scheme similar to the existing softwood plantation program. The following studies need to be carried out;
 - (a) The availability of cleared land
 - (b) An inventory of eucalypt plantations in Australia with CSIRO conducting sawmill and veneer tests on those logs of sawmill size not already tested
 - (c) The ability to use the large genetic diversity of eucalypts to produce varieties suitable for plantation saw and pulp logs
 - (d) A market study of the 'high value' prospect
 - (e) A study of the non-wood economic values of undisturbed native forests
 - (f) An inventory of state forests and review of logging plans for the next ten years.
- (ii) The state governments review log royalty prices to reflect the price of alternatives in the market place.
- (iii) The Federal Treasurer implement the recommendations of the House of Representatives Standing Committee on Environment and Conservation to review taxation disincentives, and introduce incentives for plantation establishment on previously cleared agricultural land.
- (iv) The highest priority (funding) be given to expanding the Australia Heritage Commission's project to identify old-growth eucalypt forest to identify those forests that are particularly important to the conservation of wilderness, biological diversity, water catchment, recreation and the other non-wood values.
- (v) With regard to the various export pulpmill proposals currently before State and Federal Governments, permission be given to export only under the following conditions;
 - (a) Export pulp or paper products, not woodchips
 - (b) A plantation program sufficient to supply the complete needs of the mill in the future be established prior to construction
 - (c) Logging of native forest for pulplogs on an interim basis only occur after all other resources (sawmill wastes etc.) have been used, not involve any forests identified in the expanded AHC

PAPER ON STATE AND NATIONAL FOREST STRATEGY
FOR INTERNAL CIRCULATION AND USE ONLY

Memo to:

Jeff Angel (TEC),
Sue Salmon (ACF NSW),
John Corkill (NEFA),
Anne Reeves (c/- Forest Summit, ACF NSW)
Sandra Heilpern (NCC)
Val Atkinson (CANOPY CTTEE), % TEC
Sid Walker (CCSER & C),
John MacDonald (SEFA)
Wendy Faulconer (c/- A Steed, Big Scrub EC)
AJ Brown (TWS Sydney)

Attached is Draft Paper as reworked after Sydney Forest Forum meeting on Saturday 12 January 1991.

It still needs polishing before sending off for wider circulation as a background paper for national meeting Feb 9, 10, 11 in Canberra.

This MUST be completed by if not before 25 Jan.

PLEASE RETURN ANNOTATED COPY TO ANNE REEVES, c/- ACF SYDNEY ASAP.

+ cc → Jane Elvy / John Cameron

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summary of contents:

- 1 THIS IS THE DECADE TO SET THE AGENDA FOR A SUSTAINABLE FUTURE
- 2 OVERVIEW
- 3 RECOGNISING PLAYERS ON THE SCENE
- 4 KEY ELEMENTS FOR FOREST CAMPAIGN STRATEGY
 - 4.1 Capturing the Political Agenda
 - 4.2 Controlling Forest "Developers"
 - 4.3 Protecting High Conservation Value Forests
 - 4.4 Transforming the Forestry Commission
 - 4.5 Transition Arrangements
- 5 STRATEGIES
- 6 TECHNIQUES
- 7 APPENDICES (to be added)

1. THIS IS THE DECADE TO SET THE AGENDA FOR A SUSTAINABLE FUTURE

- 1.1 As we enter the nineties, we have the opportunity to address the future for our native forests on a comprehensive basis.
NSW has been the scene of some very significant conflicts over logging, mostly focussed on particular areas and regions; however the underlying problems have much in common.
NOW we need to identify these common elements, and address them in a more coordinated way at state and national levels for maximum effectiveness.
We have been building up to this over the last few years through evolution of the regional NEFA and SEFA groupings; Forest Summit meetings; the Australian East Coast Forest Conference held in Brisbane in March 1990 and the Forest Forum held in Newcastle.
Meanwhile the Forest Industry, under pressure from the growing imperative for conservation, has geared up for a strong pro-development campaign.
- 1.2 THIS PAPER
is the outcome of a State Forest Meeting held on 12 January in Sydney, attended by 30 campaigners representing a wide range of views and experience in NSW Forest issues. The paper:
- (i) provides a synopsis of the key issues as perceived by Forest Campaigners as background for the NATIONAL FOREST STRATEGY MEETING to be held in Canberra
 - (ii) identifies elements of common understanding relevant to NSW in the context of a national strategy; and
 - (iii) flags those elements of strategy which require further discussion.

2 OVERVIEW

2.1 THE GLOBAL CONTEXT

There is a growing awareness world-wide of the life-threatening damage to the resulting from the activities of the increasing numbers of humans around the globe. Greenhouse, ozone-layer depletion, acid rain and loss of biological diversity are now familiar terms.

However, while the urgency is there, the worldwide growing economic conservatism makes it increasingly difficult to make an effective political impact on the causes that produce this degradation. The 'state of the economy' has become paramount, as concerns are voiced over the economic downturn which is referred to as a recession in Australia.

2.2 THE NATIONAL LEVEL

Within Australia the Federal Labour government is struggling to retain credibility and coherence. A change of government is anticipated at the next election (not obligatory til 1994). The likelihood is that the next Liberal Government would be expected to be in the Greiner mode with a similar National Party influence on policies.

There is a general and concerted attack from industry on environmental legislation.

There is a lack of political will to apply their existing powers to protect the environment.

There are problems in the Federal Court in enforcing application of these powers.

2.3 NEW SOUTH WALES

2.3.1. The GREINER GOVERNMENT appears assured of a second term, with prospects of a younger and more dynamic National Party leader to maintain a strong coalition team in the next state election. This election is due in 1992 but may well be called in 1991, depending on what seems opportune following redistribution. The present (NP) Minister for Forests and Lands, Garry West, who replaced Ian Causley in July 1990, is not burdened with the same old connections and traditions. His style is different, but he is still reliant on the Forestry Commission for advice.

2.3.2. THE PUBLIC ACCOUNTS COMMITTEE OF THE N.S.W. PARLIAMENT released the Report of its Inquiry into the Forestry Commission in December, 1990 which attacked the Commission's structure, operation, skills and attitudes. The Report recommends major changes to the Forestry Act, 1916 and the adoption by the Commission of a 'healing role' to the present entrenched disputes. The Report vindicates the criticisms of the Commission made by environment groups.

2.3.3. The FORESTRY COMMISSION is under considerable pressure in the light of the PAC's stringent criticisms, the Resource Assessment Commission's NSW Hearings and several cases before the Land and Environment Court, notably the North Washpool case. Dr Hans Drielsma, was appointed Commissioner for Forests last year, following the death of Wal Gentle and one Assistant Commissioner position remains vacant.

Minister West is talking of 'corporatisation' of the Commission, which may address some of the economic, management and marketing inadequacies identified by the PAC, but would not necessarily establish ecologically sustainable forest practices. Indeed, the Government is still believed to support amending the Environmental Planning & Assessment Act, 1979 to exclude the Forestry Commission from the requirement to produce Environmental Impact Studies prior to logging, despite the PAC recommendation that the Forestry Act 1916 be amended to bring it into line with the EPA Act.

2.3.4. The LABOR OPPOSITION continues to evade facing up to the difficult issues of achieving modern competent forest management. Their former Minister and now Shadow Minister for Forests has been very close to the Forestry Commission and is hostile to criticisms of the Commission made by environment groups. Hallam's continuing poor performance as Shadow Minister is one reason why the Carr Opposition appears so lack lustre.

2.3.5. THE FORESTS are greatly reduced in extent with much of the more fertile soil areas cleared for farming and settlement. Timber extraction continues from private as well as public land. The State Forests include Rainforest areas, some still subject to logging, the coastal and escarpment eucalypt forests harvested for woodchips and sawlogs, the Red Gum forests of the major west-flowing river systems, and Cypress Pine, some box and other species. Native forest is still being cleared for pine plantations and of the pine plantations in the north, Bathurst, Oberon and south-east, some are now coming into second rotation. Hardwood plantations are very limited in extent.

2.3.6. WOODCHIPPING is a driving element of timber harvesting in the Eden area (1 Mill tonnes p.a. exported by Harris Daishowa); while large increases in and significant extensions of woodchip sources have been permitted for Sawmillers Export (Boral) through Newcastle and for Brisbane Forest Products through Brisbane. Hardwood chips also go to Korea. An international scale (Kraft) PULPMILL has been proposed for the Clarence Valley but the scheme was placed on hold prior to the election as a result of public concern over pollution.

2.3.7. FOREST CAMPAIGNS have been conducted with remarkable tenacity and some great successes over the last 20 years. More local groups made submissions to the Resource Assessment Commission from NSW than from any other state. Two major informal groupings, the North East Forest Alliance (NEFA) and the South East Forest Alliance (SEFA) have emerged in the second half of the last decade as local FOREST CAMPAIGN GROUPS perceived the added strength of linking together for greater effectiveness. Updated reports submitted by some groups on current activities are appended (Appendix 1).

3 RECOGNISING PLAYERS ON THE SCENE

3

Who
What
How interlinked
Their agendas
their resources and possible strategies

3.1 THE TIMBER INDUSTRY

3.1.1 THE FOREST PRODUCTS ASSOCIATION (FPA)

This is the big end of the timber industry - big mill owners and operators who have Crown sawmill licences such as HARRIS DAISHOWA (Eden Woodchips, potential interest in north), BORAL (woodchipping mill, Newcastle), and ADELAIDE STEAM (owners of Duncans Sawmills). The smaller end of the industry: the diminishing number of smallscale sawmillers; speciality timber getters and users; timber hauliers and other contractors and subcontractors; are not represented by the FPA.

The FPA are the bosses who have succeeded for sixty years in keeping their workforce un-unionised. The FPA has sought to portray the environment movement as being responsible for job losses as a consequence of the withdrawal of timber resources in the 1982 Rainforest Decision. In reality huge job losses have resulted from the introduction of new technologies, centralised and conglomeration of mills, difficult economic circumstances and poor management.

The FPA are anti-NPWS and National Parks: their classic quote is "If the greenies get this National Park then we'll go broke and have to sack thousands of staff."

Many FPA heavies are also prominent in the smaller country centres where their mills are located and in the National Party. FPA members have historically had a major influence on Ministers holding resource portfolios since they have been the major economic users of the forests.

The FPA agenda is to be guaranteed continued unfettered access to the State Forests at the lowest possible prices for as long as the oldgrowth lasts (7-10 years on one estimation).

FPA members link into the national forest industry bodies, are well financed and are aggressive in defending their perceived 'birthright' - access to the forests their fathers felled.

FPA is expected to unleash a new major publicity campaign in early 1991 to regain the impetus they lost briefly following Washpool Interlocutory Judgement PAC report and RAC cross-examination.

3.1.2. FORESTS AND FOREST PRODUCTS INDUSTRY COUNCIL (FAFPIC)

FAFPIC was formed in 1984 as part of the consultation process to advise the Federal Government on the development of economic and industry policy. Several such councils were established as an outcome of the Accord, and act to support the Australian Manufacturing Council. FAFPIC is comprised of representatives of industry management, Forest Services, forest growers, CSIRO, Department of Industry Technology and Commerce, and Department of Primary Industry. In addition, it has one academic forest economist.

FAFPIC has generated a Strategic Plan for the industry which opposes:

- the creation of parks and reserves containing commercial stands of timber;
- more environmentally sensitive forest management plans;
- high royalties;
- the phasing out of clearing native forest for pine plantations.

The Plan argues for:

- long term tenure for large volume public wood supplies;
- royalties which are 'not too high';
- less stringent logging prescriptions and lower logging costs;
- large government assistance for plantation expansion;
- a variety of other public financial support;
- removal of inhibitions to rationalisation;
- large scale wood processing plants;
- general encouragement for greater domestic consumption and export sales.

While guarantees are sought to protect industry's private interests, the industry in turn is not able to guarantee protection and provision of the broader public interests and benefits, such as greater employment and environmental protection."

(from 'Australia's Timber Industry: Promises and Performance' ACF 1987)

3.1.3. FOREST INDUSTRY CAMPAIGN ASSOCIATION (FICA)

4

This organisation is an off-shoot from FAFPIC and is the agency responsible for accumulating funds and producing television, newspaper and other advertisements promoting the industry message and defending the industry from the criticisms of the environmental movement. It is funded and supported by FAFPIC.

3.1.3. NATIONAL ASSOCIATION OF FOREST INDUSTRIES (NAFI)

NAFI was formed in 1986-87 and is very closely linked to the FAFPIC. It is the industry (bosses) organisation and acts as a lobby group and a co-ordinator of the FICA media campaign.

3.1.4. NSW LOGGING ASSOCIATION

This body was formed in May 1990 and is the combined voice of logging contractors in NSW. It aims to act as a lobby group, and as a spokesperson for loggers and to promote forest products.

3.1.5 AUSTRALIAN LOGGING COUNCIL

The ALC was formed in 1986 as a national body to provide an umbrella for all logging and associated activities. It grew from the Tasmanian Logging Association Ltd and is the national voice for the logging contractors. ALC kick started the NSWLA with a grant of \$10,000!

3.2 THE FOREST PROTECTION SOCIETY (FPS)

This organisation, apparently founded by Robyn Loydell, might be better named the Forest Industry Status Quo Protection Society, since it aims to defend the status quo against our campaigns.

Based on a generally poorly educated rural timber worker and mill staff membership, the FPS also signs up Forestry Commission staff, log haulers and local community members likely to be affected by changes in timber industry employment e.g. shop owners. The FPS has become a vehicle for concerned family members of timber industry workers, notably wives, to give vent to their anxieties about their families futures if current employment is not maintained. Much of their campaigning is very emotional and intimidatory and ignores any factor other than their economic survival.

Their classic quotes are *"We're just doing what our fathers and grandfathers did. We have a right to our forests and our jobs."* *"If you try to stop us, then you will have to deal with a very angry local population."* and *"If we lose our jobs, the impacts on the local community will be enormous, shops will close, crime will rise and our kids will be condemned to the dole."*

The Forest Protection Society started on the South Coast but has spread to other locations in NSW.

It is believed that the FPA has made significant grants to FPS to fund their activities but the FPS has eschewed the 'bosses' from prominent positions within their organisation. The FPS is a separate organisation with aims which may not always co-incide with the aims of the FPA. Since the organisation is not homogenous the FPS can be and has been infiltrated by environmentalists. If FPS can be made to see that the threat to their jobs comes from their bosses, they may be forced to ally themselves with environmentalists.

The FPS is expected to participate in the splurge of publicity in early 1991 along with the FPA and will provide the mass action, grass roots activities.

3.3 THE INSTITUTE OF FORESTERS AUSTRALIA (IFA)

This is the professional body for qualified foresters and operates as a vehicle for individual foresters to express opinions outside the limitations of the public service role of Forestry Commission. IFA has adopted some progressive policies, including the right of public participation in public forest management, but opposes the reservation of large areas of forest and the production of replacement sawlogs from plantations. The IFA has had no success in achieving the public participation within the workplace.

Drielsma and other senior staff within the Commission have been active within IFA in the past, possibly as a means for gaining prominence and influence within the Commission. The position of Commissioner is required by the Act to be a Forester, and the same requirement is applied, without legal basis, to most, if not all, senior positions within the Commission.

3.4 THE AUSTRALIAN TIMBER WORKERS UNION (NSW BRANCH) (ATWU-NSW)

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This union has been recently undergoing a radicalisation, overhauling sixty years of conservatism and subservience to the industry bosses.

Changes in union structure mean that the Australian Timber Workers Union will be amalgamated into a mega- industry based- union, (Construction, Forestry, Mining and Energy Union - CFMEU) which will represent workers in these areas, from raw material extraction through processing to end use of those products. The BWIU, ETU, MU and FEDFA will link up with the ATWU over the next 3-5 years. It is planned that the new mega-union will have a conservation committee operating across all the above divisions.

In the transition, the NSW branch of the ATWU plans to educate and lead its members to new understandings about their work and its broader context, breaking down some of the ignorance and isolation which has been perpetuated under the previous administration. The ATWU has actively sought dialogue and co-operation with NEFA and has promised to exchange information and co-operate on campaigns of mutual concern. They support plantations and new National Parks but are concerned about our agenda for ending the logging of old growth forests. They are open to be convinced about alternative resources being available.

The ATWU does not represent small sawmill operators who are very small, isolated business often a family or partnership operation. ATWU NSW accepts that major restructuring is required to achieve competent forest industries, and that some jobs in some areas may have to go. ATWU has offered to develop a model mill operation, worker owned and operated and is actively canvassing for support for this. ATWU is definitely 'anti-bosses' (FPA) and is keen to break the political stranglehold which mill owners have had for so long.

ATWU has a fair political clout, having access to the Federal Government through ACTU. They have had direct discussions with Hawke, Kerin and Griffiths. In NSW, ATWU has had dialogue with Greiner and has indicated to Greiner and West that they support new National Parks, plantations etc are keen to develop further dialogue with environmentalists. A further meeting between NEFA and ATWU NSW is scheduled for early March 1991.

The union appears to have access to significant funds.

3.5 THE MEDIA

This key player is in fact many players. Local media perform different functions, with different priorities, to the Sydney and national media.

Local media are eating up stories, regarding forest issues, since it is of direct interest and relevance to local people, since it is 'real' news (with constant up-dates needed) and since it sells papers! Many local journalists have a personal interest in and sympathy for forest protection and have been very helpful in spreading our message. The FPA and FPS are also getting a fair go in local media to balance the debate, but often, perhaps because of poor spokespeople, they come across in a damaging rather than positive manner when they are reported.

State and National media seem to be tired of forest stories and are resistant to attempts at continuing coverage begun locally at the state/national level. The details and dimensions of many stories are often seen to be too localised and/or minor to be reported. These media appear to only be interested in the big stories, or those with damaging political connotations.

3.6 NSW POLITICAL PARTIES

3.6.1. THE AUSTRALIAN DEMOCRATS are wholly on-side and their two MP's, Lis Kirkby and Richard Jones have been extremely helpful. They are prepared to further our forestry agenda in the Parliament through Questions, Speeches and media releases.

3.6.2. THE LABOR PARTY has been schizophrenic in its attitude to the forestry debate. The Leader of the Opposition, Bob Carr is on-side and has pursued forestry questions in Parliament. However, he has been less than 'correct line' over the Washpool dispute and appears to be ham-strung by previous decisions of the Wran Government, of which he was a part.

Carr is influenced by 'heavies' in the NSW Right, many of whom are still smarting from the 1988 NSW election result. The Unsworth Government's lousy position on the South East forests was seen to be

unworthy of support and the Government lost several seats and ultimately the government benches as a result. Several current and former MP's blame the environment movement for their loss of power because they believed they had done enough for the environment to 'deserve' re-election. NSW ALP Branch President Terry Sheenan (and ex-Attorney General) is said to be still particularly bitter.

Shadow Minister for Forests, Jack Hallam was a hopeless apologist for the Commission when he was the Minister and is an even more discredited apologist now he is the Shadow Minister. As a Right winger, he is hostile to the environment movement and has chosen to interpret the Wran Government Rainforest Decision, made when he was an MP but not Minister, in a way which favours the industry and the Commission and which attempts to frustrate us. His continuance as Shadow Minister is one of the main reasons the Opposition is performing so poorly and he remains an obstacle to achieving sensible policies from the ALP.

Shadow Minister for the Environment, Pam Allan has recognised the groundswell of support for a satisfactory resolution to forestry conflicts and is valiantly trying to turn the ALP around. She does not have a legacy of bitterness from the previous years of campaigning and is an original thinker with good personal and media presence. The ALP forestry policy is technically outside her portfolio, but is clearly linked to her portfolio areas through National Parks and endangered species issues. Pam has some good support within new younger new MP's but has to confront entrenched hostility among the 'old guard' who appear to have captured Carr.

Pam is on the Left in the ALP and her push for up-dating the ALP position on forestry poses a danger that forestry issues may fall foul of intra-party factional politics. We must avoid the situation of forestry and environment issues becoming the province of the Left alone.

- 3.6.2. THE NATIONAL PARTY has long had direct links with rural industries, particularly the timber industry. These industry operators hold influential positions within the National Party and within rural communities. With the dumping of Causley as Minister for Forests, the industry had a serious setback, but they have renewed their pressure on the new National Party Minister Garry West.

West is not seen as a strong man, or a politically adept head cruncher. His ability to control or direct the industry and the Forestry Commission is seriously doubted. He professes an independence from the Commission and industry but has yet to demonstrate this.

His appointment by Greiner may represent: a deliberate softer approach to forestry issues; an attempt at distancing forestry from allegations of corruption which have plagued the Nationals and particularly Causley; or an imposition on the Premier by the Nationals who effectively control the portfolio under the Coalition agreement. The Nationals will not support major changes to the industry or the Commission in the short term because of the dynamic political consequences.

- 3.6.3. THE LIBERAL PARTY appear to have no entrenched interest in the portfolio as the Nationals do, and seem to want the issue resolved and/or the heat taken out of forestry politics. They have been seriously embarrassed by Causley and the Commission's bull headed stance, and may respond positively if approached carefully. The major danger from the Liberals appears to be their agenda of 'dry economic rationalism' and the consequences of having dollar values driving the forest management debate.

- 3.6.4. INDEPENDENT M.P.'s

The independents have been very interested in forestry issues with all seven giving unanimous support to the south east forest campaign (according to Jim Collins). Clover Moore, Robyn Read, John Hutton and Dawn Fraser have been particularly helpful.

Mrs Marie Bignold, Call to Australia Party, while not an Independent, has exercised her vote in the Upper House independently from the other CTA members Fred and Elaine Nile. Mrs Bignold's vote has been crucial in defending the EP & A Act from unworthy amendments.

4 KEY ELEMENTS FOR FOREST CAMPAIGN STRATEGY

4.1 CAPTURING THE POLITICAL AGENDA

In the next decade four key themes will emerge on the political agenda:

1. The global view of environmental issues. It has now become apparent to business and government that the environment is now an enduring issue with major political impacts. While the heat in the issue may go through cycles it will stay at the top of the agenda along with social welfare and economic concerns.

The environment movement therefore needs to be aware of the wider economic and social movements that will affect forest protection. Such wider parameters can adversely impact on our activities as well as offer

opportunities. Examples are the oncoming surplus of pine, the growing pressure to preserve biodiversity and ethic of landcare.

There is the potential for the forest issue to drop off the agenda as the very big issues such as population, climate change and economic recession issues take over public emotions. If this is correct then the current trough in political support for forest protection may turn into a downward spiral.

A key challenge is to produce 'Greenprints' that satisfy the wide spectrum of social interests that are now mobilised to respond to environmental crisis. We need to speak to opinion leaders and a diverse range of community groups, in their language, to communicate our concerns.

In response to the global nature of environmental issues, industry is attempting to take over the ecologically sustainable development (ESD) debate by using environmentally friendly language to justify their programs and at the same time reinforce their demands with traditional economic promises. It is quite clear that industry has attempted to mobilise opinion leaders to support their stand, using expert advice and massive resources.

We must counter this. To succeed we need to blend our ideas, words and actions into the ideas, language and behaviour of the broad mass of people. People are broadly receptive, but may not necessarily have changed their economic or political behaviour.

An associated concern is the question alliance or forest summits. Some groups are sceptical of their value and this directly relates to national and state conferences.

If we are to appeal to a wider set of social groups then it is logical to involve those groups in the campaigns. A fundamental reason for coalition or alliances is that they empower local community groups. SEFA empowered local south coast groups because it gave them direct access to the resources and contacts of the 'peak' groups. To work in isolation of the grass roots is to disempower the hundreds of community groups involved in environmental issues.

2. The rise of Liberal/National Governments and their devotion to economic rationalism, which can favour us as the native forest timber industry is heavily subsidised. However, the National Party interests strongly favour continued subsidy efforts. The resulting decisions are portrayed as 'pale green' in contrast to the demands of green 'extremists'.

The political implementation of our agenda has clearly run into serious snags recently. It will be difficult to steer a clear course of action between those who want a mass green political movement or wider independent process; those who regard economic divisions in society as the crux of political parties and apathy.

The problem is unlikely to be resolved in the next ten years. Further, the judgement needs to be made as to whether the angst and resources devoted to deciding or trying to generate a consensus are worth the effort. The process is most likely to be incremental rather than a big launch off into a wide, new green political world.

3. There is Increasing talk of 'mediation processes' with Liberal and Labor parties. In February Greiner and Goss are hosting a large environmental mediation conference. In NSW the Minister for State Development, John Hannaford, is actively investigating 'mediation' as a way of avoiding traditional legal procedures and the resulting 'disinvestment' by industry.

A distinction needs to be made between 'dialogue' and 'mediation'. Dialogue can serve to depersonalise conflict, provide information and a clear statement of issues concerning both parties. It may lead to mediation.

However, mediation is a far more serious prospect that is intended to result in compromise. Environmental mediation is in its infancy in Australia and deep consideration must be given to its ramifications and parameters. It may be possible to improve existing legal structures and public involvement processes as an alternative. Nevertheless, mediation has always been a part of conflict resolution and has appeared in various forms over the years.

Environmentalists are becoming increasingly aware of the pitfalls. NSW peak groups are preparing a guide to mediation and have yet to find any current offers acceptable. Industry and government are promoting some recent examples but if these are their model, then it is clear that their agenda is to dull and restrain public campaigning. In essence we are still faced with industry and government controlling the agenda and information flow. No real sharing of power over decisions is to emerge.

Preconditions to involvement in mediation should be:

- i) Will mediation result in a better decision about environment protection than other courses of action?
- ii) Will additional information on the values of the environment be generated?
- iii) Will real power be shared?

Despite the popularity of mediation there is no case to abandon the confrontation line. Even if dialogue and mediation occur they should not impair or reduce other campaigning. However, an effort needs to be made to prevent the impression that confrontation is the sole strategy. Our opponents and politicians who have a keen sense of community feeling are capitalising on what they perceive as a community desire to an end to confrontation in the forest.

4. Changing community attitudes. Opinion polls show very strong support for native forest protection and most people (nearly 62 per cent) put protection of the environment above economic growth (Saulwick 26/12/1990). Young people are by far the strongest supporters, they have or are passing through a more enlightened educational system and can be expected to be a major source of political support as they get older.

All this does not necessarily mean the community opposes the recent decision of the south east forests for example. It was portrayed as a compromise, appeared to be green and to end the confrontation. There are suggestions that the community do not like protracted confrontation and this view may be more prevalent in times of economic stress.

Community attitudes also play a role in what products are in demand. Community behaviour is changing in this regard and environmentally friendly products and recycling are more popular. Nevertheless, the market is 'soft' because of the lack of credibility of the claims to be environmentally friendly.

Capturing the political agenda will require redirected strategies at the four above themes.

4.2 CONTROLLING FOREST 'DEVELOPERS'

The current push by the national forest industry groups for special legislation, complementary at both state and federal level, to guarantee security of access to timber resources (resource security via contracts) is only one of a number of activities which needs to be controlled.

This latest industry push (for "resource security") has only been deferred by Federal Cabinet, with the following statement being made after the Cabinet meeting:

"Cabinet held a wide-ranging discussion and will look at these issues further in the New Year.

If a proposal for a specific resource development project is brought forward by a State Government seeking Commonwealth action to assist security of wood resource for that project, it would be given prompt consideration.

The Government has the RAC and ESD processes looking at these issues in a long-term context, but these processes do not prevent the Government dealing with individual resource development proposals if brought forward."

It is likely that the proposal will be re-considered by Federal Cabinet early in 1991 when the industry renews its lobbying efforts.

The resource security proposal was developed by Minister for Industry and Technology, John Button, and industry and was originally intended to over-ride the Australian Heritage Commission (AHC) powers. A sanitised version of the proposal was circulated to other ministers and industry lobbying began.

The proposal is 'disguised protectionism' since it removes timber production and use from the market forces, quarantines the existing industry operators from future influencing factors, such as the coming on line of bulk plantation pine and 'locks in' the existing inefficiencies and inequities.

The serious consideration given to the proposal by Federal Cabinet is surprising since the resource security proposal is counter to the Australian government's public position on reducing protectionism and increasing free trade espoused in the latest round of the General Agreement on Trade and Tariffs (GATT) discussions.

The government's consideration is also surprising since the industry's position is that unless it gets the resource security legislation it wants, it will withhold re-investment (variously quoted as \$1.8 billion, \$2 billion or \$5 billion). This attempt at 'blackmail' ought to be resisted by government on an 'in principle' basis, just as it resists stand over tactics by unions, employer groups or other nations.

One other surprising component of the industry push is the industry's apparent unwillingness to guarantee re-investment even if the resource security legislation is introduced!

Aside from the likelihood that most of the investment will require huge capital purchases off-shore, blowing out import reduction targets, the proposal will mitigate against developing a transition strategy, prevent restructuring and stall the introduction of value added processing.

Resource security legislation, would pre-empt the National Forest Inventory currently being prepared and the report of the Resources Assessment Commission's (RAC) Forest and Timber Inquiry. It would also pre-empt the processes set in train focussing on Ecologically Sustainable Development (ESD). All these federal government initiatives are expected to accumulate and generate much needed information relevant to decision making about future management of native forests in Australia.

In addition, the proposal would seek to over-ride ongoing environmental assessments undertaken by the AHC under its Act or by other agencies under the Environmental Protection (Impact of Proposals) Act 1974.

Delaying Cabinet's further consideration of this proposal is essential, in order to permit the 'in train' processes time to complete their processes and report. In particular, it is essential that RAC report and a national pulp mill policy with attendant environmentally acceptable standards are adopted before any pulp mill can be put in place.

In NSW, industry lobbyists are pursuing 'watertight' long-term timber supply agreements of 20 years (or more) duration. These agreements negotiated by the Forestry Commission and based on the situation at present, (massive subsidies, underpriced resource, nil regard for environmental protection etc) would entrench the status quo in enforceable contracts to such an extent that future governments would be unable to review or alter them without huge compensation payments being made. Any of these agreements, greater than 5 years duration, require the approval of the Minister, who seems dubious about rushing into contractual arrangements early in his term.

Already one such agreement, with Harris Daishowa, was made by ex-Minister Causley and other industry groups are pressing for the conclusion of current negotiations.

The failure of many operators to harvest within licence conditions, and the abrogation by the Forestry Commission, of its responsibility to ensure that harvesting conditions are met, is another area of concern.

The continued clearance of private land, particularly land with high conservation values such as Antarctic Beech forest, is another major concern. The NSW government, under pressure from the National Party, is unwilling to interfere in the activities of private landholders, and the only agency with statutory powers, the Soil Conservation Service, is grossly underfunded, politically conservative and staffed by workers with limited qualifications and experience.

Key Questions which need attention include:

- *How can we oppose or frustrate industry demands for secure access to forest resources, which pre-empt intrain process which are attempting to deal with our agenda?*
- *In what ways can we expose the madness of re-investment in the 'status-quo' timber industry when major restructuring is required now to achieve modern competent forest management and economically viable forest industries?*
- *How can we convince Minister West that new long-term timber supplies in NSW are dangerous and likely to significantly undermine the ability of future governments to control and direct restructuring and re-organisation within NSW timber industry?*
- *How is harvesting within conditions to be achieved?*
- *Do harvesting conditions need review?*

Summary of Workshops

Partly, discussions in the Forest Summit Workshop sessions "Controlling Forest Developers" focussed on recapturing the political agenda on resource security. It was generally agreed that we needed to replace resource security as the main environmental agenda item which it has become, with a new call for protection. This should not totally exclude presenting our position opposing resource security legislation given the extremely strong ecological and economic reasons against industry securing long-term access and given it is the greatest threat to forest protection.

The main emphasis should be creating a new agenda for forest protection - so little left and so little time to protect it.

General agreement is that more information on resource security should be disseminated amongst grassroots environment groups once that the community needs to be educated to the threats posed by industry calls for resource security. Resource security legislation is destruction guarantee legislation and is essential that there is general community understanding that resource security for industry lies with plantations.

In part, the agenda on forest protection will be regained if there is:

- wide agreement in the environment movement on the key themes;
- broad community understanding of the real threat to forest protection posed by resource security;
- there is predictability for industry through transition strategies tied to sunset clauses and the development of plantations;
- deepening community understanding of the wide range of values other than timber and that there are economic values for the non-timber values eg water, tourism. It was recognised that caution needs to be exercised when pushing this point because it could expand pressure on forests rather than ensure protection.

What Is Needed?

A decision on exactly what themes/key elements/new agenda will place forest protection at the forefront of the agenda. General consensus that how little time is left should be focus.

Further information distributed on economic ramifications of resource security. (ACF to have response prepped in mid February.)

Further consideration on transition strategy if specific resource security proposal effects NSW.

Private Land

Resource exploitation on private land raised as an important issue not adequately addressed. Very ineffective protection mechanisms highlighted.

No satisfactory inventory of high-conservation value forests exists for private land.

Pressure on Private Land

In the South East, private land is woodchipped because landholder gains greater and faster returns from Harris Daishowa.

Timber rights (Crown timber rights) retained by The Forestry Commission for ten years after land freeholded with positive encouragement to exploit these rights for economic gain.

Development creating significant pressure for land clearance and tree preservation orders are totally inadequate.

The current avenues for control:

- tree preservation orders
 - soil conservation service
 - covenants?
- do not work.

1. Knowledge of corporations, developers responsible for private land clearance. (Forestry Commission, Timber Top Pty Ltd, Tumut where private land is being cleared for pine plantations, Boral Pty Ltd)
2. Improved State-wide environment network links to draw attention to private land clearance.
3. Endangered Species legislation in place to prevent clearance on private land.
4. Decision by environment movement as to whether:
 - i) State Environment Planning Policy on Tree Clearance which would make tree preservation orders enforceable; or
 - ii) Native Vegetation Clearance Control legislation would most effectively control clearance on private land.

Other solutions to address private land clearance include:

- transformed Forestry Commission addressing problem of private land clearance;
- education for the community, Total Catchment Management Committees and local councils;
- draw links to other environmental issues ie land degradation/landcare, greenhouse.

4.3. PROTECTING HIGH CONSERVATION VALUE FORESTS

(this section subject to further re-finement)

Background

Native forest and woodland types used as a timber resource in NSW

- riverine - Red Gum Forests of major river valleys
uses: fence posts, some construction, railway sleepers, firewood
- western low rainfall, mostly central west - cypress pine, box, some blackbutt etc.
uses: fence posts, some construction, railway sleepers, firewood
- escarpment sclerophyll, predominantly eucalypt, with considerable variation from low to high rainfall, low to high nutrient soils
uses: construction sawlogs, woodchipping, some speciality timber, firewood
- rainforest - (using Ecol.Soc definition this includes bushbox: littoral rainforest is a subset)
uses: sawlogs for construction, speciality va, veneer 'waste' may be chipped for pulp
- mangrove - there has been some suggestions these could be chipped for pulp

Plantations are usually considered to be purpose planted on cleared land, either specifically cleared for the purpose or on existing (cleared in previous historic times for agriculture etc) land. Regeneration native forest that is cut for a second or even third time will, depending on management practices, come close to a form of plantation.

- native: includes both softwood (hoop pine); and
eucalypts and could include some Acacias and some others eg silkyoak
uses: construction especially if further processed, paper pulp (with export of pulp mill implications)
- exotic mostly Pinus radiata
uses: construction- sawlogs and processed; newsprint pulp

Agreements:

The definition suggested for old growth forests has been "all forests minimally disturbed by activities European settlers". Old growth forests are a high priority for exclusion from further timber extraction, but this is most emphatically not considered what is to be included within the term high conservation value. There are other values, such as those considered with respect to National Estate and World Heritage listing, such as uniqueness, historic and cultural value, wilderness value, which are also relevant. There are also areas of disturbed forest that includes rare and endangered species, and indeed whose survival may depend on the protection of such areas.

- need for definitions (John Macdonald is working on this - not yet received)
- support for more and better coordination of research - note various approaches currently under way with respect to data collection, which also relates to purpose, ie bio-diversity and management for ecological sustainability as compared with industry driven research for maximum profitability.

what is needed

- better understanding of the forest estate, support for basic independent research for data collection and management options
- better understanding of how to relate information base to interpretations and application through (a) existing and (b) new mechanisms at national, state and local level.

The discussion of mechanisms and strategies for putting these in place interconnects with the discussion under 4.2

Mechanisms for protection which were considered within the workshops included:

At state level

(i) existing mechanisms: primarily under NPWS through National Park/Nature Reserve dedication as tenured reserves. Flora Reserves under Forestry Act also tenured, but at present usually of minimal size and under different management regime. There are other Crown land holdings - eg water catchment - with potential for greater emphasis on conservation in management. Forest in private ownership, and under the profit a prendre system and on some leasehold is particularly vulnerable and some of considerable importance for biodiversity conservation. Application of other legislation - eg soil conservation Act on clearance; EP&A Act for EIS presently inadequately applied. The Wilderness Act has proved a paper tiger in face of political inaction and/or opposition.

(ii) possible new options: Vegetation Clearance/ Fauna & Flora Guarantee legislation etc has been invoked interstate. Victoria provides best model so far as it can be used with respect to control over private land. There have been proposals for a Wild Rivers Act, and the Endangered Species Act proposal has clearly run into profound difficulty being apparently 'stuck' at Cabinet level despite Min of Environments previously stressed commitment to getting this up.

At National (and International) level

(i) existing mechanisms are National Estate and World Heritage Listings are moral rather than actual inhibitions as do not restrict State activities unless export is involved (as for woodchips at present); furthermore recent events have shown outstanding lack of political will to invoke these for conservation purposes. With the rising interest (which we have pushed) for value adding export restrictions would be limited only to timber not used for internal consumption; our push for 'import replacement' level of timber getting would make this restriction mechanism irrelevant. There is also the CITES treaty covering trade in endangered species. Further work could be done to identify and explore other existing controls.

(ii) possible new options: There are moves to get up a BIODIVERSITY Convention in the lead up to the UN CED conference to be held in Brazil in 1992. The next CONCOM meeting in Australia is due to devote time particularly to endangered species issues. These and other avenues must be part of the battery of tools in the overall campaign.

4.4 TRANSFORMING THE FORESTRY COMMISSION

4.4.1 BACKGROUND

Local and regional campaigns have increasingly identified the Forestry Commission as a major player and chief villain in forest disputes, due to their unwillingness to release crucial information, their opposition to any new National Parks, their economic mismanagement and their promotion of propaganda sympathetic to the industry's position.

The all-party Public Accounts Committee of NSW Parliament has recommended a series of changes to the Forestry Commission's operation (see recommendations 1-24, 55, 58, 60-62, 65-68, 73-78), structure (recommendations 25, 50, 52, 53, 56, 57, 59, 63) and its legislation, the Forestry Act, 1916 (recommendations 69-72) after making a series of damning criticisms of almost every level of the Forestry Commission's activity.

Following five years of critical evaluation of the Act in papers, prepared by Peter Prineas (1985) "A Review of the Forestry Act, 1916 with Recommendations for Reform", Total Environment Centre, and Ben Boer and Brian Preston, (1987) "Forestry - Reform and Regeneration?", Environmental Planning Journal - June 1987, which identified the problem areas and issues in the Commission's structure and operation, many people

believe that the time is now ripe for a major push to totally transform the Commission into a competent, modern and multidisciplinary forest management agency.

When a request for major amendments or a new Act was put to the Minister Garry West, the Minister said that it was too late in the Government's term to contemplate changes to the Forestry Act, 1916. He expressed the view that the move towards 'corporatisation' would be sufficient to achieve the desired changes to the Commission's structure and operations.

The Environmental Defenders Office (EDO) has offered to host a special seminar in early March on objectives for the transformation of the Commission.

4.4.2. AGREEMENTS

It was agreed that major changes to the current objectives and 'mission statement' of the FCNSW is essential.

It was agreed that a new Act was preferable rather than amendments to the Forestry Act 1916. The new Minister for Forests' view that 'corporatisation' would "do the job" was not accepted, and it was agreed that 'corporatisation' would come too late and not go nearly far enough in achieving fundamental change.

It was agreed that the term 'reform' should be avoided since it implied a level of re-organisation which is too minor for what is required, and further, it's likely that the Government or the Commission will undertake inconsequential reforms which achieve nothing except public relations escape routes. Total transformation is required!

It was agreed that there is a lack of detailed understanding of the deficiencies of the current Act and the proposals made by Princeas and Boer and Preston within broader forestry campaign groups. People attending the Summit agreed to obtain and read these two papers as an essential prerequisite to further discussion of the shape of a new forestry agency.

General support was given to the idea of the environmentalists getting their ideas together, possibly via the EDO seminar process and then entering into consultation with other groups such as the unions, the broader community and the industry(?)

It was recognised that any new forest management agency structure would have to focus on both economic and ecological aspects.

It was also agreed that a more recent paper needs to be drafted on options for a new forest management agency structure to bring the topic up-to-date with recent ideas including the PAC recommendations. John Corkill and Jeff Angel agreed to co-ordinate the production of such a discussion paper.

It was agreed that in proceeding with Forestry Commission transformation in this direction, we gain the advantage of removing or distracting one of the major opponents to our agenda of protecting high conservation forests and a main player who is attempting to control the agenda, and failing to control forest developers.

It was also agreed that in the current political climate, particularly following the Public Accounts Committee's damning Report, no-one (not even their mates in the industry) will defend the Commission, leaving the Commission to defend itself.

4.4.3 FOR FURTHER DISCUSSION

- * What do we want in a new modern, multi-disciplinary forest management agency?
- * Are there models for such a transformation elsewhere? Are they relevant to 1990's in NSW?
- * Are there principles which would inform the transformation of the Commission? What are these?
- * What other Acts would require consequential amendments and/or introduction in order to achieve a wholistic review of forest management and protection?
- * Are we clear what these consequential amendments ought to be? How can we clarify these?
- * How can we achieve a new Forestry Act without compromising the current EPA Act?
- * How urgent is Forestry Commission transformation?
- * Is transformation of the Commission an issue which has election possibilities? What are these possibilities?
- * How do we best use the PAC Report And Recommendations?

(Noting there are 'holes' in the report, eg re woodchipping
profit a prendre on private lands
crown sawlog lease arrangements)

* What do we do about ensuring these issues are not overlooked?

A proposal for achieving a new Act quickly, which needs discussion follows:

The NSW environment movement would assemble an analysis of what would be required in a new forestry Act, as the framework for discussion within environment groups, possibly via the EDO seminar. This framework could then be refined and referred to Democrat MLC, Richard Jones, for drafting into a Private Members Bill or minority party Bill. This process would require several drafting stages before an advanced Bill was complete. Jones has agreed in principle to request parliamentary counsel to prepare such a Bill.

The Bill could be circulated to other interest groups e.g. timber workers union, opposition parties, etc for comment before being introduced into the NSW Upper House. A timetable which was tight might enable a draft Bill to be prepared before the calling of the next NSW election, allowing the opportunity to question state election candidates on their support for the Bill.

Also needing discussion in this process is the possibility of constructing two separate bodies within an new forest management agency: one to be the owner/custodian of state forest and Crown timber lands and overall policy maker, the other to be the exploiter/developer which would need the approval of the owner before any activity could be commenced.

The role of 'watchdog' also needs discussion, regarding its place in a new agency. One view is that only a vigilant public could effectively play this role. Another view is that the government must enforce its laws and construct trustworthy agencies, i.e. it should not be left to the public.

4.4.4. ADDITIONAL INFORMATION NEEDED

- * copies of the two papers referred to above, broadly circulated;
- * an options paper which discusses these papers and updates the views expressed within them;
- * information on the likely timing of the next state election;
- * information from WA and Queensland on the pitfalls associated with amalgamating Forestry Commission with National Parks agencies, so that we can prepare likely arguments.

4.5 TRANSITION ARRANGEMENTS

Up til now, our efforts in addressing transition strategies has been focussed on a 'go it alone' approach designed to counter the industry's proposals for future forest industry operation.

The Peace Plan developed for the south east included many valuable components : plantations, demand reduction, alternative fibre sources, re-defined forest economics which recognise ecological value, down stream processing, operator buy-outs etc.

(Many of these components are applicable elsewhere in NSW and Australia but have not been sufficiently developed in broader contexts. Others such as plantations have much greater possibilities in the north east of NSW and Queensland than in the south east of NSW, Victoria or Tasmania.)

Unfortunately, the Peace Plan failed to achieve its goal, and industry, unions and government proceeded to focus on their agenda, not ours. None of the time, effort or money invested in the transition arrangements brought the situation one step closer to achieving a transition away from the status quo.

On key criticism which we make of the Commission and the industry in their proposals for forest management and development is that these players DO NOT KNOW WHAT THEY ARE TALKING ABOUT BECAUSE OF THE ABSENCE OF A BROAD RANGE OF RELEVANT INFORMATION. Continued attempts by the environment movement to develop transition strategies could easily be subject to the same criticism by these other players since we are not in possession of all the relevant facts either.

Key questions about how to proceed in search of transition arrangements include:

- * Do we continue to work up transition strategies as a 'go it alone' project or do we seek alternative strategies?
- * Do we want to participate in a process for arriving at transition strategies which includes dialogue with other affected parties, such as industry and unions?

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- * What are acceptable pre-conditions to our participation in such a process?
 - * What are our 'bottom lines'? and how do we arrive at these?
 - * What, if any, other models are available to pursue transition strategies?
 - * How urgent is the development of transition strategies? What factors may influence timing?
 - * How do we deal with demand assessment.
 - * What roles do/should plantation options play?
 - * What incentives could/should be invoked?

5 NATIONAL AND STATE STRATEGIES

While we can think of many strategies in the forest, media and other programs the first step is to lay the foundations. Two themes can be identified:

i) understanding - the environment movement as a whole must understand the primary forces arraigned against forest protection. That is the economic and social demands and power relationships. When this understanding is obtained then people know what to attack and have the confidence to tackle what may seem to be insurmountable and mysterious odds.

This paper has attempted to identify and expose some of the main forces opposing us.

ii) talking with one voice - the value of this is that in every part of the state and nation where there is a forest conflict the credibility of the industry and government authorities are being attacked. This can only demoralise the opposition.

In essence local campaigns are overlayed with new themes. For example the economic failures of the industry and the inadequacies of the Forestry Commission as exposed in authoritative reports can be echoed in every locality. In order for this to occur local groups need to be supplied with concise information, ideas and encouraged to use it.

A further advantage is that a feeling of common purpose is generated as opposed to each group solely talking about its issue and feeling isolated. The focus of groups is changed and empowered by knowing they are widely supported.

It is thus important to identify what can be done in common and to provide networking systems.

FOR FURTHER REFERENCE:

- Resources Assessment Commission - Australian Forest and Timber Resources - Background paper for Inquiry; also submission and transcripts (available for perusal and purchase from RAC Offices and at ACF Melbourne by appointment)
- ACF - Ecol Sus Devel (\$10, plus postage - from ACF outlets)
- ACF's RAC 4 Submission (\$10, plus postage - from ACF outlets)
- Dr J Kirkpatrick - "Australian Forests" paper for ACF 1988 National Conference
- Canopy Committee - outline of forestry history in NSW, an ngo perspective (4 pp)
- Forest Foundation proposal (Trevor Corliss) (15 pp)
- Washpool Interlocutory findings (1990)
- Public Accounts Committee Inquiry - a commentary from NSW Forest Summit groups Mediation - What is it and how to respond to it
- 24 Forest Myths - issued by ACF Melbourne (pp)
- Boer & Preston Paper on Reform of FC
- Peter Prineas paper on Forestry Reform
- EDO paper on legal aspects SE Forests (4pp)
- SEFA - A Glossary of Forest Terms
- Dailan Pugh for NEFA - a (draft) paper on Forestry - a NSW perspective
- NSW Forest Summit papers - reports and proposals 1988 - 1990
- SEFA - numerous reports, media kit etc
- Prospectus for Great Escarpment National Park - SE Region
- SEFA - SE Forest Report series
- CCSER&C - THE PENULTIMATE TIMES November 1991

Comb Env Gps Tasmanian Forest Strategy

numerous articles in newsletters and journals and special publications of environment groups and alliances, for both general and area specific information
also State and Federal Government publications, including Forestry Commission Act and FC Annual Reports, papers and publicity material; the Australian Heritage Commission Newsletter etc.
now 'classic texts' eg Fight for the Forests, The Wood & the Trees, and new books etc coming out such as Fighting for the Forests.

(the reading list grows every day - a lot of trees pulped for this!)
please add any vital texts you are aware of

SECTION A

Forestry Working Group

Conservation Council of the South East Region & Canberra

Draft Policy

on

Australia's forests and woodlands

&

Australia's wood and wood products industry

May 1990

Please note:

- (1) Unless otherwise stated, this policy document refers to the whole of Australia; no attempt has been made here to regionalise the policies for the ACT or the south east of New South Wales.
- (2) It is intended that a process of developing regional policy will follow. The Forestry Working Group aims to undertake this work, in conjunction with other conservation groups in the south east of Australia. However, we believe that the first step is to develop a comprehensive, continent-wide policy for the conservation and management of Australia's forests, as well as a national policy to guide the restructuring of Australia's wood and wood products industry. This document is offered as our initial input into that process.
- (3) An additional task to be undertaken in order complete this policy is the preparation of a glossary of terms. This is particularly important with regard to terms such as 'old growth forest' for which there is at present no widely accepted definition.
- (4) A shorter version of this document has been prepared, containing policies without explanatory notes.

1. PRINCIPLES

This policy document rests on a number of guiding principles:

1.1 Forests are an essential component of the biosphere. Worldwide, human activity has caused massive deforestation. Loss of forest cover has been exceptionally and disastrously rapid in recent decades, to the detriment of the planet's biological diversity, soils, water systems, atmosphere and climate. The impact on forest-dwelling native peoples has also been severe.

1.2 Clearing or degradation of native forests is of particular significance. It is estimated that native forests - most notably the tropical rainforests - are the habitat of more than half of all species on earth and mismanagement of these forests is currently the major cause of extinctions on the planet.

1.3 Native forest management should be ecologically sustainable in terms of the full range of values contained within the forests. Every effort should be made to ensure the survival of all species native to these forests. Where ecological sustainability is in doubt, forest management should err on the side of caution.

1.4 Worldwide, a major afforestation program is needed, to achieve both global and regional ecological objectives. Overall, we must aim for a significant increase in the total area of forests and woodlands. In general, preference should be given in afforestation programs to flora native to the regions in question.

1.5 Wood is potentially a renewable resource. Economic usage of forest products - particularly wood - is acceptable and to be encouraged, subject to stringent environmental safeguards. All aspects of the utilisation cycle should be ecologically sustainable: large-scale wood extraction should therefore be confined to plantations, processing of wood and wood products must not pollute or use excessive energy, consumption should be moderate and recycling maximised.

1.6 Within Australia, although all governments, industry and the community as a whole share responsibility for the health of the environment, the Commonwealth Government has a key role to play. It should devise, co-ordinate, resource, monitor and enforce a comprehensive program to achieve sustainability in forest management and in our utilisation of wood products. Implementation of such a program is intrinsically worthwhile, but may also serve as a positive model for the international community as a whole.

2. NATIVE FORESTS

2.1 POLICY OBJECTIVES

2.1.1 TO CONSERVE BIOLOGICAL DIVERSITY

To ensure that all species, and communities of species, indigenous to native forests are fully conserved, and remain free to continue their evolutionary development in the wild.

2.1.2 TO RETAIN GENERAL ECOLOGICAL BENEFITS

To ensure that native forests continue their crucial biospheric role, conserving soils, maintaining regular high-quality waterflows in creeks and rivers, purifying and modulating the composition of the atmosphere and enhancing the stability and quality of microclimates and the climate as a whole.

2.1.3 TO SAFEGUARD AESTHETIC, CULTURAL AND HERITAGE VALUES

To ensure the undisturbed preservation of native forests of high aesthetic value, wilderness value, important cultural value or significance to Aboriginal people.

2.1.4 TO PROVIDE A SUSTAINABLE YIELD OF FOREST PRODUCTS

To ensure that the forest industries, including - but not confined to - extractive forestry, operate within the above constraints, and that insofar as native forests are utilised as a resource-base it is on a sustainable yield basis.

2.2 POLICIES - RESERVES

2.2.1 'Reserves' are areas set aside from extractive industry where conservation of natural and heritage values is the over-riding management priority. As a general principle, native forest reserves should be sufficiently widespread, and have appropriate boundaries and management regimes, to achieve the objectives defined in 2.1.1., 2.1.2 and 2.1.3.

2.2.2 The current level of knowledge about Australia's native forests is inadequate. They should be surveyed to compile a complete inventory of the biodiversity contained within them. The ecology of each native forest species, alliance and community must be studied, so that management prescriptions to conserve each in full can be determined on a firm scientific basis.

2.2.3 To this end, a survey of native forests should be urgently undertaken, under the auspices of the Commonwealth Government and as part of the larger task of compiling an

inventory of all this continent's natural habitats and the species contained within them. The survey process should be open to public input and scrutiny, and should focus on ecological and heritage - not economic - values. Adequate access must be granted to the surveying body to complete its task, irrespective of land ownership.

The survey should be carried out by an instrumentality answerable to the Federal Environment Minister. Given adequate resources, the Australian Heritage Commission (AHC) would be competent and suitable to carry out the task.

2.2.4 This survey should identify and define the boundaries of native forest areas of high conservation significance, irrespective of current land tenure, including:

- All old-growth native forests.
- All rainforests.
- All native forest wilderness areas.
- All native forests identified as habitats of rare, threatened or endangered species.
- All native forests containing representative samples of uncommon floral associations.
- All native forest areas of special cultural significance, and in particular sites of significance to Aboriginal people.
- All native forest areas of notable archaeological significance.
- All native forest areas of notable geological significance.
- All native forests of high visual and aesthetic appeal.
- All native forests which constitute important strategic buffers for - or links between - adjoining areas of high conservation value.
- All native forests vital for the protection of adjacent water-courses.

2.2.5 There should be an immediate moratorium on logging, mining, roading and other potentially damaging activity within the areas defined in 2.2.4. All these areas, where publicly owned, should ultimately be reserved on a permanent basis, except where it can be proven to the satisfaction of the Federal Environment Minister (and in accordance with advice received from the body undertaking the native forest survey) that reservation is unnecessary to achieve the objectives defined in 2.1.1., 2.1.2 and 2.1.3.

2.2.6 Conserving native forest species, communities and alliances in the long-term may necessitate reserves more extensive than the areas where they are currently found. Given the prospect of climatic change, wherever possible native forest reserves should be connected by forested links and include altitude gradients within their boundaries. Where forest types exist only in damaged or modified form, restoration programs should be undertaken. As a further aide to conservation of native species, control and eradication of exotic species (including feral

animals) should be carried out when necessary and achievable.

2.2.7 All native forest reserves should be managed by statutory bodies - Commonwealth or State - whose primary and over-riding objective is conservation management. Reserves should not be managed by agencies dedicated to `multiple-use` management. In some cases, joint State/Commonwealth management may be appropriate, in others special management authorities may be set up to secure the participation of the local Aboriginal community in reserve management. All management bodies must be adequately resourced to carry out their work which should include research, management and public education. They should be primarily responsible to the Environment Minister, at State and/or Federal level as applicable.

2.2.8 Although all forms of extractive industry should be banned in reserves, some low-key human uses, notably recreation, are often acceptable and may be encouraged. In such cases, reserve management bodies should provide suitable facilities, within and adjacent to reserves, to cater for visitors. However, human usage should never be allowed to degrade values for which the area was reserved.

2.2.9 Where an area of privately owned native forest merits reservation on the basis described in 2.2.5, standards of forest management and conservation must be no less stringent than those applied to equivalent public land. Ownership may remain in private hands, but management practices and any proposed development must be authorised by the same body which manages the region's reserved public native forests, which should have adequate powers of inspection and enforcement. If these conditions are unacceptable to landowners, the land should be purchased at a fair price and revert to public ownership.

2.2.10 An adequate legislative basis should be in place to facilitate implementation of these policies at Federal level. This should include:

- Protection of Biodiversity / Endangered Species legislation.
- Wilderness Protection legislation.
- National Estate Protection legislation.
- Native Forest Inventory legislation.
- Wilderness Inventory legislation.

Complementary legislation should be also enacted at State level. The Federal Government should support - and help co-ordinate and integrate - State-based conservation initiatives, and exercise powers of over-ride only in cases where it judges these initiatives inadequate for the purpose of conservation.

2.3 POLICIES - MANAGEMENT OUTSIDE RESERVES

2.3.1 The procedures described in 2.2 would distinguish between two categories of Australia's native forests: areas to be included within reserves, and areas not currently required for reservation. The latter areas may be managed for multiple use, including extractive forestry, subject to the following constraints:

- Management prescriptions must be implemented and enforced to ensure that the objectives defined in 2.1.1., 2.1.2 and 2.1.3 are not compromised.
- No native forests should be cleared or deliberately converted to other forms of vegetation.
- Extraction of wood and other forest products should be on a sustainable yield basis in accordance with the policy objective defined in 2.1.4.
- Bearing in mind the high level of current ignorance of many aspects of forest ecology, management practices - particularly in relation to extractive forestry - should err on the side of caution.

2.3.2 Research into ecologically sustainable management of Australia's native forests, particularly where extractive forestry is permitted, is still at an early stage. The Commonwealth Government should co-ordinate a national research program to facilitate better understanding of this subject, involving all relevant government bodies such as the AHC, the CSIRO, State Forestry Commissions, as well as relevant research teams in academia and within the timber industry. The results of all investigations into this topic must be public information, and should be trialled and implemented as appropriate.

2.3.3 Research should be directed towards ensuring ecological sustainability, but also towards ways to maximise the economic return on all resources extracted from native forests. In general, because ecological sustainability demands sensitive and expensive management practices, only the extraction of high-value forest products, such as speciality timbers for veneers or furniture-making, can be justified on economic grounds. High-value utilisation of forest products should therefore be given research priority, as well as means of adding value to wood extracted as a by-product of operations of silviculturally motivated operations.

2.3.4 At present, the great majority of wood extracted from Australia's native forests is processed into relatively low-value hardwood sawlogs, or into the lowest value forest product: woodchips. The hardwood sawlog industry has overcut its resource over the last few decades, and frequently fails to operate on a sustained yield basis, quite apart from considerations of ecological sustainability. The woodchip industry uses a rising proportion of wood derived from native forests, yet achieves a very poor rate of return and level of employment in relation to the vast tonnages it extracts. These industries represent inappropriate uses of native forests and in both cases quotas should be reduced rapidly. In the long-term, pulpwood from native forests

should be derived only from silvicultural thinnings in regrowth forests or genuine sawmill waste from a scaled-down hardwood sawlog industry.

2.3.5 A continuing 'trade-off' between ecological sustainability and economic demands is unacceptable, even in multiple use forests. All aspects of native forest management must be regulated and supervised to ensure ecological sustainability, including road construction, the quantity, age and varieties of wood harvested, methods of removing timber from the forest, and other practices such as the application of artificial fire regimes. Ecologically unsustainable practices, such as clearfelling, virtual clearfelling and frequent burning of understorey, must be discontinued without delay.

2.3.6 After a short phase-out period, wood extraction from native forests should be limited to long-rotation selective logging and removal of silvicultural thinnings from regrowth forests. During the phase-out period for the sawlog and woodchip industries as presently constituted, any intensive logging which is permitted in native forests should occur only in areas which have been assessed as having the lowest conservation value. The conservation movement, and conservation-oriented government bodies, should be consulted in choosing these locations, and as additional information becomes available from the processes described in 2.2.3 and 2.2.4, some revisions may be necessary.

2.3.7 Management of public native forests outside reserves should be conducted by government bodies competent to oversee multiple use management of these forests. Major management objectives, such as ensuring ecological sustainability, sustainable resource extraction and recreational use, should be adequately balanced in both their charters and management structures. These bodies should operate openly and encourage public participation in their planning processes.

State Forestry Commissions may be suitable authorities to carry out this task, but in most cases they would need to undergo significant reform, to ensure that they operate in an open, accountable manner, and manage for true multiple use (a dominant wood production ideology must be avoided). Whichever bodies are ultimately assigned responsibility for managing unreserved native forests, they will need to liaise closely with each other, as well as with the government bodies responsible for managing native forest reserves.

2.3.8 Wood extraction from native forests should not be favoured over other potential forest uses, or other sources of wood resource, by public subsidy. For instance, the maintenance of public roads which are subjected to heavy demands by the timber industry, and the employment of Forestry Commission workers to construct forest roads, are both subsidies to the timber industry, which should be acknowledged and quantified. In the past they have often been disguised.

Areas should not be logged unless returns from wood sales, under honest and realistic accounting procedures, indicate a profit for the public purse, after all applicable costs of management, research and extraction have been taken into account. Given competing demands

for the wood resource from native forests, the associated potential to diversify regional employment and the desirability of maximising public revenue timber, sales should be by competitive bidding for wood lots of a variety of sizes.

2.3.9 Within unreserved areas of native forest which are privately owned, standards of forest management and conservation must be no less stringent than those applied to equivalent public land. Ownership may remain in private hands, but management practices and any proposed development must be authorised by the same body which manages the region's public native forests for multiple use. This should have adequate powers of inspection and enforcement. If these conditions are unacceptable to landowners, the land should be purchased at a fair price and revert to public ownership.

3. AFFORESTATION AND PLANTATIONS

3.1 POLICY OBJECTIVES

3.1.1 TO INCREASE OVERALL TREE COVER

To reverse the progressive deforestation of this continent over the last two centuries by an afforestation program designed to achieve local ecological objectives such as soil stabilisation, microclimate enhancement, desalinisation and provision of habitat, as well as to play a part in a global afforestation program to help combat global warming.

3.1.2 TO REVEGETATE WITH NATIVE FLORA

To favour the use of local native genetic stock in afforestation programs, recognising the generally superior adaptive qualities of local provenances and the better habitat which they provide for native fauna.

3.1.3 TO GENERATE A SUSTAINABLE WOOD SUPPLY

To grow, as rapidly as possible, a sustainable wood supply within plantations and agroforestry developments, which includes sufficient suitable varieties of timber to satisfy the great majority of Australia's requirements, as well as a modest surplus to cover contingencies and some export.

3.2 POLICIES

3.2.1 It has been estimated that, since European settlement, the Australian continent has lost three trees out of every four which were previously standing. Many areas are now suffering the ill-effects in the form of salination, soil erosion, reduced precipitation, siltation and irregular waterflow in creeks and rivers. A massive afforestation program should be undertaken to combat these problems and help restore the quality of this continent's environment, as well as meeting this country's responsibility to participate in a global program to help stabilise the level of atmospheric carbon-dioxide in the coming decades and thus counter predicted global warming.

3.2.2 Afforestation is particularly vital on large areas of denuded and rapidly degrading agricultural land, as scarcity of trees is a major factor in the declining natural fertility of many areas currently under crops or grazed by livestock. The Landcare Program, which was proposed jointly to the Commonwealth Government by the National Farmers Federation and the Australian Conservation Foundation, is a welcome new development. It should be stepped up throughout the coming decade, and its funding increased. The goal must be optimisation of tree-cover within the context of a restructured agricultural sector capable of ecological sustainability. Recent upgrading of Greening Australia, to increase its effectiveness as a vehicle to facilitate widespread community participation in afforestation work, is also worthy of support and should be continued.

3.2.3 These measures are, however, still being counteracted by large scale deforestation in certain areas. Large-scale clearing of woodlands, especially brigalow scrub, continues. To reverse this process, all subsidies and financial enducements which encourage further clearing must be ended forthwith. Appropriate legislation should be enacted at State and/or Commonwealth level to halt deforestation, through direct regulation where necessary. The role of local government in preventing deforestation through such mechanisms as tree preservation orders should also be strengthened.

3.2.4 Australia should progress as quickly as possible to overall self-sufficiency in its softwood and hardwood requirements for both sawn timber and pulpwood. These resources should be derived almost entirely from plantations and agroforestry projects, so that in the long-term only small quantities of timber is extracted from native forests for high-value uses, and imports of unprocessed timber are reduced to very low levels. This policy necessitates a significant expansion in certain aspects of plantation forestry within Australia. New plantations should never replace existing native forests or woodlands, but should be located on previously cleared land.

3.2.5 At present, Australia's plantation forestry is dominated by pines, although in recent years there has been a significant increase in plantings of native eucalypt plantations (the ratio of softwood to hardwood plantations is currently about 12:1). Rapid growth rates have been achieved for exotic softwoods, and the timber industry has historically viewed native hardwoods

species to be unsuitable for plantations within Australia, partly because of resource competition from native forests, and partly because of problems experienced with pest infestation where experimental monocultures of native trees have been grown.

This imbalance is no longer appropriate. There are serious doubts about the long-term ecological consequences of pine monocultures, and more immediate concerns that Australia will experience a glut in exotic softwoods in the coming decade as countries such as New Zealand and Chile realise their full softwood potential. Moreover, native forests can no longer be viewed as a cheap, inexhaustible timber resource, and difficulties previously encountered with native hardwood plantations are not insuperable, although there is an urgent need for more research and experimentation. In general, Australia should increase the area allocated to native hardwood plantations, while the area planted with exotic softwoods should not expand further.

3.2.6 There should be government programs at Commonwealth and State levels to increase the area of native hardwood plantations under public ownership and encourage plantings of native hardwoods as a harvestable crop on private land. In the latter case, plantation share-farming as pioneered by the West Australian Government appears to offer the most promising model, and similar schemes should be implemented in other States. In addition, many high quality sources of wood, particularly for ultimate use as sawlogs, can be grown in agroforestry schemes which do not entail large unbroken stands of trees and enable farmers to continue deriving annual yields from crops or livestock while the trees grow to maturity. Current government schemes to encourage agroforestry, such as the Commonwealth 'Trees on Farms' program, are welcome but insufficient. They should be extended and allocated more funds.

3.2.7 Native hardwood plantations may be grown as a source of pulpwood, sawlogs, or both. The former yields a more rapid harvest (10 to 20 years), while sawlogs take longer to grow and difficulties have been experienced in processing young eucalypts into good quality sawlogs. However, experimentation to date into design of native hardwood plantations in Australia has concentrated on monocultures of fast-growing species. These often require significant inputs of fertilisers and pesticides, raising questions about their long-term sustainability and deleterious impact on the adjacent environment.

A research program should be instigated, funded and co-ordinated by the Commonwealth Government to investigate the economic and ecological feasibility of mixed-species plantations, employing understoreys of native flora to help maintain soil fertility and control pests. Plantations such as these may offer the best hope as an ecologically sustainable source of native hardwoods.

3.2.8 Over half of all removals from native forests are currently used for pulpwood. Despite claims that the industry is 'sawlog driven', it is clear that these large pulpwood industries, either for export or for domestic processing into pulp and paper, have developed a considerable momentum of their own. Rapid phase-out of large scale extractive forestry from native forests, as envisaged in 2.2.5 and 2.3.4, would entail a swift reduction in available pulp resource, and while export contracts can be cancelled, it is desirable for Australia to attain overall self-

sufficiency in pulpmill feedstock.

For this reason, in addition to an expansion of hardwood plantations to provide eucalypts for pulp feedstock, annual crops should be investigated as a potential source of pulp. Projects currently underway or at planning stage to utilise 'wastes' such as cotton linters, wheatstraw or bagasse should be supported. The Commonwealth should also take immediate action to fund and co-ordinate a program of research into the use of other annual crops specifically for use as a pulpmill feedstock, including kenaf and hemp, with a view to commercial production in the short-term subject to economic and ecological considerations.

3.2.9 Large quantities of firewood should not be extracted from native forests, except where silvicultural thinnings find no market as pulpmill feedstock. Encouragement should be given to growing firewood in plantations or small woodlots, employing sustainable silvicultural techniques and keeping extraction at sustainable levels. Extensive use of firewood as a fuel is acceptable only in the context of an afforestation program which increases the nett tree biomass each year, and should also be subject to stringent air pollution standards in densely settled areas.

4. THE WOOD & WOOD PRODUCTS INDUSTRY

4.1 POLICY OBJECTIVES

4.1.1 TO SATISFY DEMAND FOR WOOD AND WOOD PRODUCTS

To satisfy demand for wood and wood products within Australia without the need for large-scale imports. 'Demand' is used here in its usual economic sense, although it is recognised that demand will change in future years, and must be modified and reduced through education and government action. A consequence of achieving this objective will be reduction, and potentially elimination, of the severe balance of trade deficit currently incurred by this sector.

4.1.2 TO STABILISE EMPLOYMENT LEVELS

To avoid further decline in employment levels in the industry as a whole, and possibly, on balance, to expand employment, while recognising that certain sectors will contract as part of an overall pattern of change.

4.1.3 TO OPERATE IN AN ECOLOGICALLY SUSTAINABLE MANNER

To ensure that all aspects of wood and fibre extraction, as well as processing, usage and disposal are ecologically sustainable. By extension, this principle should be extended to all wood and fibre products imported from overseas.

4.1.4 TO OPERATE PROFITABLY

To achieve the above objectives while operating at a high level of efficiency, and within an overall economic framework which permits of profitability, and obviates the need for long-term large-scale subsidy or tariffs.

4.2 POLICIES

4.2.1 To achieve the above policy objectives, the wood and wood products industry must undergo a major and rapid program of restructuring. This program should be planned, and its execution co-ordinated, by the Commonwealth Government, which must use all available powers of persuasion and inducement over industry and State Governments, and make use of direct regulation where voluntary compliance is denied.

The most appropriate instrumentality to advise the Federal Government on such a restructuring program seems to be the Resources Assessment Commission (RAC). From an early stage, the Inquiry into Australia's Forest and Timber Resources should adopt policy objectives for the wood and wood products industry such as those outlined in 4.1. The major period during which the RAC is investigating the industry could then be devoted to producing a detailed and fully costed restructuring program, ready for implementation on completion of the inquiry.

4.2.2 The Forest & Forest Industry Council (FAFPIC) and other industry bodies have proposed the expansion of resource extraction from native forests as well as plantations, and the development of several massive 'world-scale' processing projects (particularly bleached kraft eucalypt pulpmills). They appear to see this as the best strategy to correct the current imbalance between imports and exports in the wood and wood products sector. This overall approach must be rejected. On economic and ecological grounds, the best strategy to stabilise the balance of trade in this sector of the economy is systematic import replacement, accompanied by a general reduction in consumption levels and greatly increased paper recycling.

4.2.3 Necessary changes in patterns of resource extraction have already been discussed. It is also vital that the industry adopts the principle of ecological sustainability in all its processing operations. This would entail stringent guidelines for new processing projects, and drastic modification or closure of some existing projects, such as the pulpmill at Burnie in Tasmania. As a general principle, no processing plant should continue in operation unless it can be demonstrated, to the satisfaction of both State and Federal Environment Ministers, that it does not cause progressive environmental degradation through an incremental build-up of pollutants in the atmosphere or receiving waters.

Major new processing projects should be governed by Commonwealth guidelines, although the relevant State Government should also retain a right of veto. The guidelines must ensure 'cradle to grave' ecological sustainability, and be accompanied by independent baseline studies and full

powers of inspection and enforcement by the appropriate regulatory authority. Given current technologies, the necessary standards cannot be met by kraft bleaching mills, and no new pulpmills of this type should be built unless and until they can do so.

4.2.4 The hardwood sawlog industry must be scaled down swiftly for ecological reasons. However, it should be recognised that because of past unsustainable cutting rates, significantly reduced quotas in coming years are inevitable. An expansion in the available domestic softwood resource can make up for some of the shortfall, where substitution of softwood for hardwood is possible. The need for new softwood mills will provide a sectoral opportunity for growth in employment and output during the next few decades.

New technologies are being developed, such as scrimber and glue lamination, for generating structural and even cabinet quality timber from young eucalypts and pine or eucalypt woodchips. Research into these technologies should be intensified, and government seed money provided to commence commercial operations where adequate resource exists and the projects can be justified as long-term economic investments. Research and development efforts should also be directed to finding suitable replacements for structural timbers which are currently imported, as there are strong ecological and economic advantages in reducing these imports.

4.2.5 The export wood chip industry should be phased out rapidly. All licences should be terminated by 1995 at the latest, and quotas should be reduced significantly before then. This will reduce the pressure on native forests, and free up the limited quantities of pulpwood which can be extracted from native forests on an ecologically sustainable basis for processing within Australia. There should be no attempt to grow hardwood plantations to replace exported woodchips currently derived from native forests. Instead, all significant new plantations grown to generate pulpwood should be sited in ecologically acceptable and economically viable locations. The resource derived from them should be processed within Australia, in small or medium-scale pulp and paper mills.

4.2.6 The rate of paper recycling is dismally low. Concerted government action, as part of an overall strategy for the wood, wood products and fibre industry (as described in 4.2.1), is needed to secure a significant increase in paper and paper products recycling. Estimates vary as to the maximum achievable target. In the absence of better information, interim targets should be set at 50% by the year 1995 and 70% by 2005. When recycling is not possible in Australia, excess recyclable paper and paper products should be exported to countries where a market does exist for it.

To achieve higher recycling rates (not only for paper, but also in relation to other 'recyclables' such as glass, metals and plastics), the Commonwealth should support, resource and help co-ordinate State and local government recycling programs and initiatives. The Commonwealth should ensure that sufficient funds are available, at the appropriate level of government, to establish new infrastructure for recycling, and to carry out complementary public education programs. This strategy will have considerable social - as well as ecological - benefits, as there

are substantial prospects for expanding employment in the recycling industry.

A major increase in the overall recycling rate, however, is only part of the solution. It is also desirable, for instance, to recycle high quality writing and computer papers separately from lower grade paper, to obviate the need for virgin feedstock whenever possible. Increases in paper recycling on this scale will need to be integrated into a general program of industry restructuring, so that processing plants can take advantage of the increase in recycled feedstock. Likewise, patterns of demand will need to adjust to larger quantities of recycled paper on the market, including increasing amounts of partially de-inked or unde-inked paper.

4.2.7 To complement a comprehensive restructuring program for the wood, wood products and fibre industry, the Commonwealth Government should adopt a taxation strategy which achieves the following objectives:

- A general reduction in demand for wood and fibre products.
- Selective modifications in demand, such that products which are more 'environmentally friendly' are favoured (eg. recycled paper and structural timber derived from thinnings).
- Similar demand modification for imported wood and fibre products.
- Generation of additional government revenue to support the large-scale industry restructuring program envisaged in this policy.

A suitable government inquiry process, such as the RAC Australian Forest and Timber resources Inquiry, should investigate suitable fiscal measures to achieve these objectives. One possibility is the introduction of a new, selective consumption tax, to be levied on wood and fibre products, and adjusted to favour the purchase of more 'environmentally friendly' products at the expense of other products which impose a heavier burden on the environment. Care must be taken that non-wood products are not favoured at the expense of wood products, when the environmental load which they impose is even higher (eg. structural steel as opposed to plantation-grown sawn timbers). It would also be important to not to increase the cost of domestic goods to the advantage of imports. For these reasons, a selective consumption tax of this nature would probably need to apply to both imported goods, as well as domestic goods, and should be introduced only after a comprehensive review of the prospects for employing taxation policy to achieve environmental goals.

4.2.8 The wood and wood products industry has experienced significant decline in overall employment levels over recent decades, despite record rates of resource extraction. This has been caused mainly by the introduction new technologies which favour large-scale production. These technologies tend to lead to an increase in capital intensity, and a decrease in the labour intensity. Employment in the industry can and should be stabilised, but not at the expense of the environment.

A restructuring program, and systematic import replacement strategy, as outlined above, provides many opportunities for increased labour intensity in certain sectors through greater

value-adding, without diminishing the overall efficiency of the industry. Thus in spite of significant overall reductions in cutting rates from native forests, stabilised employment should be achievable. Opportunities for sectoral expansion of employment also exist in general afforestation work, an expanded hardwood plantation scheme, a new fibre industry based on annual crops, and growth of tourism in areas containing native forests.

An employment strategy for the industry should also seek to reduce the unacceptably high accident rate, particularly in the wood extraction sector. This is likely to occur as native forest logging is reduced, as health and safety standards in plantation forestry are generally superior. In addition, there should be an affirmative employment strategy to increase the proportion of female and Aboriginal employees, who are currently under-represented in the industry, particularly in bush work. Those employed in wood extraction should be paid by the hour, not on a piece-work basis, to encourage adoption of higher environmental and safety standards. Unionisation should be encouraged in all sectors of the industry.

4.2.9 Recognising that all major environmental issues are ultimately global in nature, and that the threat to forests outside Australia is often more severe than within this continent, the Commonwealth Government should adopt policies which positively contribute to higher standards of forest management - in general terms to the achievement of goals similar to those outlined in this policy statement - throughout the world. The greatest concern is the fate of the tropical rainforests, which are being cleared and degraded at an appalling rate. Australia must take a leading role in creating the international political and economic climate in which this destruction can be stopped. To this end, the Commonwealth Government should:

- Ban the import of all unprocessed tropical timbers, and use fiscal and other measures to discourage all tropical timber imports, except in cases where the exporting country can demonstrate that the timber is sustainably grown in plantations. Consideration could be given to a suggestion by European Parliamentarian Muntingh (as adopted by the World Wide Fund for Nature) to institute a quota system for tropical timber imports, whereby countries with poor rainforest management would be assigned a zero quota.
- Enact legislation to ban all Australian companies from engaging in the tropical timber industry or trade overseas (once again, unless sustainable plantation forestry is the source of timber).
- Urgently increase aid to countries with tropical rainforests inside their boundaries, conditional upon satisfactory management programs for the rainforests, and develop aid programs to help these countries manage their forests and other natural resources in an ecologically sustainable manner.
- Ensure that high ecological standards are adopted in all bilateral aid projects in which Australia is the donor nation.
- Exercise to the full Australia's influence in the International Monetary Fund, the World Bank and other multilateral banks and the international community in general, to cease funding of projects which destroy native forests and other important ecosystems and

which support ecologically sustainable projects.

- Exercise to the full Australia's influence in the international community to develop a just economic framework within which the developing world is not pressured to exploit its natural resources in an ecologically unsustainable manner, and is assisted in a comprehensive program of genuinely sustainable development.

To whom it may concern.

22.6.90

My task was to come up with a framework upon which to hang our forest policies. Once I commenced this I realized that I had taken on more than I thought. The major divergence from previous drafts is the inclusion of rationalizations for, and background information on, policies. Policies represent what we need to achieve and no attempt has been made to outline or determine strategies to be employed to achieve policy objectives.

Because of the massive overhaul required with this approach this draft is still incomplete. An attempt has been made to make the specific policies as comprehensive as possible but the introduction and background information is still incomplete and being worked on.

As well as suggested alterations to policies I would appreciate additional information to include in preambles (referenced if possible). The summary will be prepared once the policy is complete.

Please return any comments to D. Fugh PO Box 7 Bonalbo NSW 2470 (asap)

Dailan Fugh

DAILAN'S FOREST
POLICY NSW
1st Draft.
22.6.90.

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NEW SOUTH WALES

FORESTS AND WOODLANDS POLICY - Draft

South East Forest Alliance & North East Forest Alliance

Summary

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1. INTRODUCTION

1.1 State of Forests and Woodlands

1.1.1 At the time of European settlement an estimated 77-88% of NSW was covered with forests, woodlands and tall shrubs. By 1921 at least half of this area had been ring-barked or cleared, at a rate which for the previous 28 years had averaged 2,515 hectares per day. By 1980 the area of forests being ring-barked or partially cleared had been reduced though had still averaged 1,183 hectares per day for the previous eight years, and there is no sign of it abating (Reed and Lunney, 1990).

The arid woodlands and riverine forests of the western plains have mostly been highly modified by grazing, burning and settlement. Some three quarters of the central and eastern provinces of NSW have been cleared of native vegetation, with clearing most extensive on the tablelands and western slopes.

Along the coast, most clearing has been focused on the major valleys and fertile soils. The remnant lowland coastal forests are on the rougher country and poorer soils. Loggable lowland forests have historically been heavily logged, with unwanted trees often poisoned, and are now primarily regrowth and often virtually devoid of old growth trees. Remnant lowland forests are still being cleared for agriculture, settlement and developments.

The forests on the rugged and less accessible terrain of the Great Dividing Range and associated ranges (herein referred to as the Great Escarpment) are the most extant and include the least modified ecosystems in NSW. The unlogged old growth rainforests and eucalypt forests, which have escaped grazing and too frequent burning, represent most of the truly pristine ecosystems remaining.

The Forestry Commission considers that there are some 14,959,000 hectares of forested land remaining in NSW (Department of State Development, 1989), which is almost 19% of the State. For this figure to be accurate it must be assumed to include forests and all woodlands, though their figures are suspect.

There are in the order of 810,000 hectares of rainforests in NSW, some 350,000 hectares of this is dominated by eucalypts. The majority of these stands have been severely degraded, often involving clearfelling and burning. Despite NSW having one of the worst histories of rainforest abuse in the world, roading and logging of the few remaining pristine rainforests continues. Logging is still planned for part of the largest unlogged stand of remaining rainforest (North Washpool).

Of the Great Escarpment's eucalypt forests, less than 5% of those on better soils and moderate slopes (less than thirty degrees) remain as old growth. They are the optimum habitat for many species. These irreplaceable natural forests are being destroyed at an exponential rate and will be eliminated from most remaining regions by the end of this decade.

Wilderness Areas represent large natural areas that are essentially unmodified by humans. Such extensive areas are essential to maintain genetic diversity and allow for continued survival and evolution of many native species. XX forested Wilderness Areas have been identified in NSW: logging and roading are currently occurring in, or are planned for XX Wilderness Areas (Washpool, Guy Hawkes, Bindery.....); Crown leasehold land has recently been converted to freehold in XX areas (Deua, Oxley,.....) and other areas are being threatened by mining,

The forests and woodlands are suffering daily degradation as; more are cleared with poisons and machinery for grazing, agriculture, exotic pines and developments; logging and woodchipping convert old growth forests to regrowth; repeated fires and stock simplify and degrade the understorey; and yet more populations of native species are pushed towards extinction.

1.2 Extinction is forever

1.2.1 Since European settlement of Australia, seventeen mammals, three birds and one species of lizard are known to have become extinct. Of the remaining 1,600 species of terrestrial vertebrates, nearly 300 are considered endangered (Recher and Lim, 1990). This loss and endangering of species is the result of a combination of factors including habitat modification and fragmentation, over-exploitation, exotic diseases, the effects of pesticides, competition with introduced herbivores and predation by foreign predators (Ibid). To date, most extinctions have been in the fragile, drought prone and woodlands, shrublands and grasslands.

Relative inaccessibility and the inherent stability of forests has better enabled their dependent fauna to survive European settlement. However, current management methods threaten the survival of many forest species, particularly those for which rainforest and/or old growth forests are their optimal habitat.

The way things are going, it is predicted that Australia will experience continued loss of mammals, accelerated losses of bird species paralleling the earlier mammal extinctions and similar declines in reptiles and amphibians (Ibid). We have a responsibility now to ensure that as many native species as possible survive at adequate numbers throughout their ranges and be allowed to continue evolutionary development in the wild.

Of the, at least, 100 native mammals that occurred in NSW in 1788, six have become extinct nationwide, sixteen have apparently become extinct in NSW and five are considered to be in imminent danger of extinction- with logging and associated activities threatening two of these (Long-footed Potoroo and Hastings River Mouse).

A further fifteen mammals are listed on Schedule 12 of the National Parks and Wildlife Act (1974) as vulnerable, rare or threatened and eleven species as fauna of special concern. Of these, some fourteen species are likely to be adversely affected by logging and clearing of forests.

Of the 334 species of terrestrial birds native to NSW one species is known to have become extinct Australia wide, nine species are presumed extinct in NSW and six species are considered in imminent danger of extinction (Recher, pers. comm.) - with logging and associated activities threatening two of these (Coxen's Fig Parrot and Regent Honeyeater).

A further 51 species are listed on Schedule 12 as vulnerable, rare or threatened and XX species as fauna of special concern. Of these, some XX are likely to be adversely affected by logging and clearing of forests.

As yet no species of reptile or amphibian are known to have become extinct within NSW. Schedule 12 lists nine species of reptiles as being vulnerable, rare or threatened, and twelve frogs as protected amphibians.

Old growth trees (i.e. past maturity, usually at least 100-200 years old) provide a number of resources not offered by, or in lesser quantities in, regrowth trees. These include hollows for denning and nesting, abundant flowers and fruits, large trunks for foraging, stable and high nest platforms and large logs on the ground.

Twenty five mammals (most possums, gliders, phascogales and many bats) and forty birds (most owls, cockatoos, corellas, lorikeets, parrots, rosellas, kingfishers and tree-creepers) are likely to be adversely affected by integrated logging or clearing of eucalypt woodlands and forests in NSW due to a reduced number of tree hollows (NPWS, 1990). Many snakes, lizards and invertebrates, and a number of frogs and small mammals are likely to be adversely affected by the loss of large logs also associated with clearing and integrated logging.

1.2.2. There are approximately 6,000 species of vascular plants native to NSW of which 529 are considered rare and threatened. Of these, 18 are presumed extinct, 60 are considered endangered, 160 are considered vulnerable, 270 are rare and 21 species are of unknown status (Benson, 1989).

The coast, alps and tablelands of eastern NSW have the highest species diversity and encompass 84% of the rare and endangered plants. However, 40% of registered plants from the western plains are classed as endangered or vulnerable, and 44% of all vulnerable plants in NSW occur on the western slopes and eastern plains (Ibid).

Fourteen percent of rare and threatened plants occur in rainforest, 30% in the coastal zone (outside rainforest), 34% on the tablelands, 6% above the treeline in Kosciusko National Park, 8% on the western slopes and eastern plains, and 8% on the western plains (Ibid).

There are 432 plant associations recognised in NSW. Of these, 57 are rainforest, 157 eucalypt forests on the coast and tablelands, 41 ironbark forests and woodlands and Box woodlands, 3 River Oak forests, and 17 inland forests, woodlands and shrublands dominated by acacias, casuarinas or rainforest genera. Of these associations, 10, 26, 19, 1 and 8 respectively are considered endangered or vulnerable (out of a total of 111) (Ibid).

1.3 Cultural Values

There are many places of spiritual and cultural significance to Aboriginal people within the remaining forests and woodlands. Often these people do not want or are unable for cultural reasons to divulge the exact locations of these sites to people not from their tribe. There have been a number of instances in recent years where such places have been damaged or destroyed in logging operations.

Similarly, there are Aboriginal sites of archaeological value, but unknown to living Aboriginals, which need to be identified and protected before any activity is allowed to destroy them. Because of lack of investigation such sites are being destroyed.

While the predominantly European people have not inhabited Australia for long, there are still a number of historical and cultural sites of significance that warrant preservation.

Similarly, places of outstanding scenic and aesthetic value need to be preserved for future Australians to experience and appreciate.

1.4 Policy Objectives

- * To conserve biological diversity:

To ensure that all species and communities of species indigenous to native forests are fully conserved and remain free to continue their evolutionary development in the wild.

- * To retain general ecological benefits:

To ensure that native forests continue their crucial biospheric role, conserving soils, maintaining regular high quality waterflows in creeks and rivers, purifying and modulating the composition of the atmosphere and enhancing the stability and quality of microclimates and the climate as a whole.

* To safeguard aesthetic, cultural and heritage values .

To ensure the undisturbed preservation of native forests of high aesthetic value, wilderness value, important cultural value or significance to Aboriginal people.

* To provide a sustainable yield of forest products

To ensure that the forest industries, including- but not confined to- extractive forestry, operate within the above constraints, and that insofar as native forests are utilised as a resource base it is on a sustainable yield basis.

1.5 Definitions

(Native?) Forest: Native vegetation dominated by trees whose crowns generally touch or overlap and whose bole length is usually greater than the crown depth.

(Native?) Woodlands: Native vegetation dominated by trees whose crowns are generally separated and bole lengths are usually less than crown depths.

Rainforests: Closed, broadleaved forest vegetation, with a continuous tree canopy of variable height, and a characteristic diversity of species and life forms. Ecologically, includes transitional and seral communities with sclerophyll emergents that are of similar botanical composition to mature rainforests in which sclerophylls are absent. (Ecological Society of Aust.).

Old growth trees: Trees which has attained maximum height and crown width (maturity).

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Eucalypts are usually over 150 - 200 years old and have begun to shed major branches.

Old growth forest: Unlogged or lightly selectively logged forest which retains a natural density of old growth trees.

(???) Natural: Pertaining to the species composition, community structure and scenery being in their original (pre-European) state.

(???) Conservation: The long term retention of natural communities under conditions which provide the potential for continuing evolution.

Optimal habitat: A habitat that is of a quality that enables fecundity and/or population density of a species to be maximised.

Sub-optimal habitat: A habitat of a lower quality where a species can still survive and reproduce.

Marginal habitat: A habitat where a species can exist but not reproduce.

Sensitive species: Species affected detrimentally by forest operations (fire management, logging, silvicultural treatment, grazing or other activities).

Reserves: National Parks and Nature Reserves

Sustainable: The use of a resource at a rate and in a manner that can be sustained indefinitely without causing significant environmental degradation of the resource.

Clearfelling: The removal of over 80% of the natural canopy cover.

2. RESERVES

2.1. Background

In 1989 there were approximately 3.74 million hectares of Reserves in NSW, which represents some 4.7% of the State area of 80 million hectares.

There are estimated to be 14,959,000 hectares of forested land in NSW, of which some 15% is in Reserves, 50% on Crown lands available for wood production, and 35% is on private lands (Department of State Development, 1989). The forests and woodlands of the Northern Tablelands and Western Slopes are particularly poorly conserved, with only 5% and 4% reserved in the Dubbo and Glen Innes Regions respectively.

Most of the forests within existing Reserves are on relatively poor soils, on steep unloggable country or have already been logged. Those forests which occur on higher nutrient soils and on

gentler topography are generally conserved only poorly or not at all.

Of NSW's 529 listed rare and threatened plants, some 258 are considered to be reasonably well conserved, while 150 species are not found in any Reserve or Forestry Commission Flora Reserve, and 89 of these are either vulnerable or endangered (Benson, 1989).

Of NSW's 432 listed plant associations, only 42% are considered to be adequately represented in Reserves. Of the 258 forest and woodland associations recognized by Benson (1989), 41% are considered to be adequately represented in Reserves, 40% inadequately reserved and 19% unrepresented in Reserves (ibid). This excludes the inland forests and woodlands dominated by acacias, casuarinas and rainforest genera, none of which are adequately reserved. Of the inadequately reserved forest and woodland associations, some 113 are likely to be most affected by logging and clearing.

Forests and woodlands most poorly conserved or at risk are: Ironbark forests and woodlands, Box woodlands, Eucalypt forests of the highlands, and subtropical and dry rainforests (ibid).

Margules (1989) notes that nearly 45% of the total Macleay Valley wetlands is needed to represent all species at least once, and in South Australian croplands, almost 70% of all remaining vegetation (which is less than 30% of the original vegetation) is required to be reserved if all vegetation alliances are to be represented at least once.

Davey (1989) notes that Lyon suggests the figure of 500 breeding individuals for maintenance of an evolutionary viable population, though considers that it relates to an ideal mating population. He suggests that a population of 5,000 Greater Gliders proposed by Tindale-Biscoe and Calaby as a long term viable population may well be realistic. As it is imperative that every population of a species effectively isolated by unsuitable habitat and barriers be maintained at viable levels if possible, there is a need for accurate predictions of population sizes.

Using Ln's estimations, Mackowski (1986) considers that an unfragmented area of 15,000 hectares of suitable habitat should support a minimum effective population of Yellow-bellied Gliders. Yellow-bellied gliders are dependent upon hollows and show a preference for foraging on old growth trees. Their ability to disperse through regrowth forests needs assessment.

Sooty Owls are also dependent upon hollows and show a preference for old growth forests. They require territories of at least 300 ha per pair, or 75,000 ha of suitable habitat to maintain a population of 500 individuals.

There has generally been no adequate assessment of the conservation status of NSW's fauna. From the limited data available it is evident that many populations of animals of forests and woodlands are inadequately represented in reserves. This includes the endangered Double-eyed Fig Parrot, Marbled Frogmouth, Long-footed Potoroo, Hastings River Mouse, and of particular community concern, the Koala.

2.2 Reserve Policies- Public Lands

2.2.1 Reserves should encompass all native vegetation of high conservation significance, irrespective of current land tenure, including:

- All rainforests, old growth forests and wilderness areas
- All habitats of or necessary for rare or endangered species
- Large representative samples of all natural land systems, plant associations and faunal communities within each region
- Viable populations of all native species, throughout their natural ranges, including all optimal and critical habitat sensitive species
- All forests which constitute inholdings in, strategic buffers for, or necessary links between areas of high conservation significance
- All forest areas of notable cultural significance or aesthetic value

2.2.2 Wherever possible, Reserves should be of sufficient size to be able to maintain populations of flora and fauna which are effectively isolated by unsuitable habitat or dispersal barriers, at sufficient sizes to maintain genetic fitness and allow for continued evolution. This will necessitate the reservation and revegetation of strategic areas.

Wherever possible, Reserves should encompass altitudinal and latitudinal gradients and be linked by effective corridors for the dispersal of species - in particular those predicted to be adversely affected by future climatic changes.

2.2.3 There should be a moratorium on any activity likely to cause degradation of any of the values in 2.2.1, or any other natural values, in any areas proposed for Reserve status until the National Parks and Wildlife Service has made a complete and thorough assessment and determined its eligibility for Reserve status. Any department, organization or individual may propose an area of native vegetation, irrespective of land tenure, for Reserve status.

2.2.4 All Reserves should be managed by the National Parks and Wildlife Service (NPWS) with the primary and over-riding objective of maintaining biodiversity and ecosystems in natural states. The NPWS must be adequately resourced to carry out their work, which should include research, acquisition, management, rehabilitation, public education and conservation activities outside Reserves.

Reserves, or parts thereof, of National estate or World Heritage value should be managed in co-operation with a Commonwealth statutory body whose primary and over-riding objective is conservation management. In some cases special management authorities may be set up to secure

the participation of the local Aboriginal community in Reserve management.

For public lands, all areas fulfilling the criteria in 2.2.1. should be gazetted as National Parks or nature reserves.

2.2.5 Real public participation in the management of Reserves should be encouraged by the establishment of independent District Advisory Committees and public participation in the preparation of detailed Plans of Management. No new works should be allowed in Reserves until a publically agreed Plan of Management has been prepared and adopted.

Plans of Management should include detailed documentation of geology, flora, fauna, archaeological sites, management strategies, and details of and justifications for proposed developments and their impacts. All information relevant to management of Reserves should be freely available to assist informed public participation.

2.2.6 All existing and proposed developments in and unnatural disturbances to Reserves must be subject to rigorous assessment and if found to have an unacceptable environmental impact, or be unjustifiable, prohibited or removed. No developments should be allowed in Nature Reserves or Wilderness Areas. No development or management practice can compromise any of the values in 2.2.1.

2.2.7 All forms of extractive industry, stock grazing and any other activity likely to degrade any of the values in 2.2.1. should be banned in Reserves. Passive recreation, including visitor facilities, may be allowed within Reserves provided they are subject to rigorous environmental assessment, are detailed in Plans of Management and don't unacceptably degrade natural values.

Access to Reserves, or parts thereof, may be restricted to protect localities of rare and endangered species, sensitive ecosystems and sites of significance to Aboriginal people, or where the proposed or existing usage is considered to be detrimental to natural values.

Private enterprises directly benefiting from tourism associated with Reserves should contribute to their maintenance and upkeep. Privatisation of areas or facilities in Reserves should not be permitted.

2.2.8 No Crown Lands with significant areas of native vegetation should be converted to freehold until adequate mechanisms are established to ensure the maintenance of native vegetation cover and biodiversity. Any lands fulfilling one or more of the criteria in 2.2.1. or necessary for the maintenance of an effective Reserve system must be retained under Crown control.

2.2.9 The control and eradication of exotic species should be undertaken where feasible. The use of chemicals to control any species of plant or animal should not be permitted.

2.3. Reserve Policies.- Private Lands

2.3.1. Private lands fulfilling the criteria for Reserve status may remain in private ownership, but management practices and any proposed developments must be authorised by the NPWS, which should have adequate powers of inspection and enforcement. Such lands must be encompassed by legally enforceable Conservation Agreements under the control of the NPWS. Management must be no less stringent than that of public Reserves.

If these conditions are unacceptable to landholders, the land should be purchased at a fair price and included in the public Reserve system. Funding for such purposes must be made available. If necessary, qualifying areas must be protected by Interim conservation Orders, Interim Protection Orders or Permanent Conservation Orders and given high priority for purchase.

3. MULTIPLE USE FORESTS

3.1 Background

Of the estimated 14,959,000 hectares of forested land in NSW, some 50% is on Crown lands available for wood production and 35% on private lands, mostly available for wood production (Dept. of State Development, 1989)

The Forestry Commission (FC) is charged with the management of Crown lands for multiple purposes. Multiple purposes include timber production, grazing, beekeeping, recreation and flora and fauna conservation. Timber production is perceived by the FC as the over-riding purpose and all other uses are largely subordinate to it.

The Forestry Commission is supposed to manage public forests for the benefit of the public. They have free use of a public resource and public land, and yet still need public subsidies to keep going.

In the four financial years 1984/85 to 1988/89, the FC allowed annual averages of 1,503,000 cubic metres of sawlogs, 1,163,000 tonnes of woodchips and 224,000 cubic metres of other timber products to be removed from publically owned native forests at an average annual loss of \$1,750,000 on revenue from forest operations (Annual Reports of the Forestry Commission of NSW). This represents a direct subsidy of some 61 cents per cubic metre/tonne of timber removed.

In addition to direct financial costs there are also immense environmental costs. Management of Crown timber lands for multiple uses is causing :

- degradation of forest structure
- decreases of old growth trees and later successional species
- simplified overstories and understories
- increases in exotic, fire adapted and early successional plants
- reductions in some populations of endangered species
- reductions in populations of animals preferring/ requiring mature forest, tree hollows, large logs, rainforest, stable microclimates and some specialized food sources

- increases in exotic predators and fauna preferring more open habitats
 - degradation of soil structure and stability
 - altered streamflows and degraded water quality
 - nutrient losses
- and many other adverse impacts (Pugh, 1990).

The Forestry Commission admits that many Management Areas are not being logged on a sustained yield (by their definition) basis; for example, seven out of nineteen Management Areas on the North Coast (Curtin et al, 1987). Of those areas claimed to be managed on a sustained yield basis, a number of the Annual Management Reports note that projected yields are not being obtained and predict possible shortfalls.

3.2 Multiple Use Policies - Public lands

3.2.1 Forests outside Reserves which don't fulfil the criteria for reservation, may be managed for multiple uses, including extractive forestry. All multiple use forests should be managed by the Forestry Commission. Management must aim at maintaining the full diversity of forest dependent species throughout the forest estate, maintaining an acceptable canopy cover and natural species composition, minimising environmental impacts of activities, sustainable usage and realizing a real profit from any extractive industries.

3.2.2 Plans of Management for multiple use forests should include detailed documentation of geology, flora, fauna, archaeological sites, details of management strategies for proposed and existing activities and full assessments of their environmental, social and economic impact.

Public participation should be encouraged by the establishment of independent District Advisory Committees and public participation in the preparation of Plans of Management. All information relevant to management of multiple use forests should be freely and readily available to assist informed public participation.

3.2.3 All existing and proposed activities in multiple use forests must be subject to rigorous assessment and, if found to have an unacceptable environmental impact, be modified or prohibited. Comprehensive and detailed surveys of any areas to be affected by activities must be carried out.

Timber extraction, grazing, mining, tourism, beekeeping, animal collection for scientific purposes, seed and plant collection, and other uses may be allowed subject to strict monitoring and control to assess and minimize environmental degradation.

3.2.4 After a short phase out period, wood extraction from forest should be limited to long rotation, selective logging and removal of silvicultural thinnings from regrowth forests.

Areas should not be logged unless returns from wood sales, under honest and realistic accounting procedures, indicate a profit for the public purse after all applicable costs of management, research, extraction and environmental damage have been taken into account.

3.2.5 Logging operations should be excluded from:

- Reserves and any other areas fulfilling one or more of the criteria in 2.2.1.
- slopes over 25 degrees
- within 40 metres of any watercourse or drainage line
- catchments of major water storages
- wildlife movement corridors
- areas that have not been subjected to thorough floral, faunal, archaeological and geological surveys.

3.2.6 Logging operations should aim at retaining, maintaining and/or restoring throughout logging areas:

- natural native species diversity and composition
- adequate numbers of evenly distributed hollow-bearing trees and their potential replacements
- adequate numbers of large logs on the ground
- natural understories
- stream quality
- a minimum of 50% canopy cover.

3.2.7 Those responsible for deciding which specific tree to fell, and those charged with extraction, must be trained in and fully conversant with flora and fauna management and mitigation of environmental impacts of extraction. Any person found to have caused a breach of harvesting regulations should be severely penalized. Deliberate, blatant and repeated breaches should result in the disqualification of the person responsible.

3.3 Multiple Use Forest Policies- Private Lands

3.3.1 Controls must be enacted to ensure that private lands encompassing native vegetation but not fulfilling the requirements for Reserve status are not subject to clearing and are managed to maintain an acceptable cover of native vegetation.

Forests to be managed for timber production should be under the control of the Forestry Commission and subject to the same management constraints. The FC must have adequate must have adequate powers of inspection and enforcement.

Significant penalties must be imposed on landholders who, despite warnings and advice, do not obey environmental protection requirements. Where there are frequent or significant breaches, or where conditions are unacceptable to landholders, the land should be purchased at a fair price and reverted to public ownership.

4. TIMBER INDUSTRY

4.1 Background

Timber production should be moved from dependence on native forests to hardwood and softwood plantations established on formerly cleared land in accordance with the proposals detailed in Cameron and Penna (1988).

"The supply of plantation-grown sawlogs and pulplogs in Australia will increase significantly in the next 15 years. By 2005, pulpwood supplies from existing and already planned plantations (softwood and hardwood) will more than double. They would then meet about 75% of total projected demand for paper, paperboard, poles and posts (compared with about 47% currently). Including paper recycling at its current rate, these plantations could meet 101% of projected demand by 2005 compared with 72% today. In the same period, sawlog supply from softwood plantations will more than treble, meeting 97% of projected demand in 2005 (compared with about 33% today)." (Clark and Blakers, 1989, page 3)

4.2 Timber Industry - Policies

4.2.1 Encouragement and assistance should be given to decentralized, localized industries that produce value-added wood products. Preference should be given to industries generating high employment to resource ratios and producing minimal environmental impacts. All industries must use resources on a sustainable basis.

4.2.2 Royalties charged for timber from public lands must at least represent the true economic and environmental costs of establishment, management and harvesting and should represent the highest value obtainable in the most environmentally acceptable manner.

4.2.3 The NSW Government should discourage the use of domestic and imported rainforest and old growth timbers, while promoting and favouring recycled and locally produced value-added products.

Preferential treatment should be given to pulp and paper industries aimed at import replacement, utilizing recycled, crop and plantation fibre feedstock, and producing minimal pollution. Only genuine sawmill residues and plantation timbers should be considered as acceptable pulpwood feedstock, and then only when there is not the possibility for using such timber for industries with higher employment to resource ratios.

4.2.4 Plantations should only be established on already cleared land, with preference given to mixed plantations of local native genetic stock.

The Government should promote and encourage share-farming and agro-forestry schemes to establish harvestable crops of native hardwoods on private lands.

4.2.5 The Government should give incentives for research into and the design and manufacture of buildings, furniture and other wood products utilizing timber products from smallwood in the most resource efficient and 'environmentally friendly' manner.

4.2.6 The export of woodchips or pulp should not be allowed. Only value-added wood products, processed to the maximum extent possible, should be considered for export.

5. ATMOSPHERIC POLLUTION

5.1 Atmospheric Pollution - Background

The buildup of atmospheric carbon, the Greenhouse Effect, is expected to cause major environmental change with altered rainfall and temperature regimes and intensification of climatic extremes. Plants and animals unable to migrate as suitable climatic regions shift will come under increasing stress, which will be aggravated by habitat degradation, ultra-violet radiation (ozone depletion) and pollution (eg. acid rain).

Forests, and old growth forests in particular, are significant storehouses of carbon. Young trees actively take up carbon dioxide and store carbon in tissue. Once maturity is reached the rates of carbon storage and release begin to equalize as decay sets in. As it is not until maturity that maximum storage is achieved, the conversion of old growth forests to regrowth increases atmospheric carbon.

American research (Harmon et al, 1990) has found that the conversion of old growth to younger forests reduces carbon storage by 305 tonnes per hectare in one 60 year rotation (this includes allowing for off site 'storage' in structures). Harmon et al conclude that old growth forest conversion appears to account for a noteworthy 2% of the total carbon released because of land

use changes in the last 100 years.

Of each tree harvested, some 55% (roots, butts, defective trunks, branches, bark and foliage) remains in the forest or is burnt. A further 20% or more may end up as waste in processing. In the 1987/88 financial year 2,229,000 cubic metres net of sawlogs, sleepers, poles, fencing, mining timber, etc were obtained from NSW's forests. After allowance for energy required to mill the timber it is apparent that in excess of 1,846,000 tonnes of carbon is released into the atmosphere annually in NSW just in producing the above products.

In addition, over 1,322,000 tonnes of woodchips were obtained in the same year, primarily for paper production, most of which is for very short term uses and so rapidly releases its carbon component. It is evident that the forest industries are significant contributors to the Greenhouse Effect.

Climate is an important variable in determining the broad range limits of species, particularly vertebrates. Gross climatic change induces changes in faunal distributions such that the continued survival of species may depend on their capacity for dispersal (Mansergh and Bennett, 1989).

Evidence is that climatic change will be erratic and rapid with those species most at risk being; genetically impoverished and/or localized populations; poor dispersers and annual plants; specialized species, especially those dependent on mature vegetation or reliant on symbiotic relationships; peripheral- disjunct populations; coastal species; and Montane and alpine species (ibid).

"The actual future faunal distributions will be modified by a range of interacting factors including habitat fragmentation, absence of critical resources (eg. nest hollows) and introduced plants and animals (eg. weeds, feral predators)". (Mansergh and Bennett, 1989)

5.2 Atmospheric Pollution - Policies

5.2.1 To ameliorate the effect of climatic change it is important to establish an adequate Reserve system maintained in as healthy condition as possible to adapt to and resist impacts resultant from climatic change. The Reserve system should be designed to incorporate large areas with altitudinal and latitudinal gradients and viable corridors to allow for dispersal of plants and animals.

Major conservation areas should be linked by regional corridor systems and no further fragmentation and clearing of native vegetation should be allowed. In many areas corridors will need to be established.

5.2.2 Conservation strategies should be designed and implemented to enhance the survival of species expected to be disadvantaged by the combined impacts of global warming, UV radiation and pollution.

5.2.3 A plantation strategy, coupled with retention of old growth forests, reduced burning frequencies and the promotion of recycling and long-life timber products, should be introduced to make forest industries net consumers of atmospheric carbon.

6. RESEARCH

6.1 Background

Our knowledge of natural ecosystems in Australia is extremely limited. Very little research into individual species and their conservation requirements has been undertaken, let alone into how these components interrelate to form complex ecosystems.

To date only 4% (20 species) of the listed rare or threatened plants have been thoroughly surveyed in NSW. Endangered plants and plant associations require more detailed research and special management if they are to survive the next few decades (Benson, 1989).

There has been negligible quantifiable research into the impacts of roading, logging, repeated burning, grazing, recreation and other multiple uses upon forests and woodlands. As noted by Davey (1989) the knowledge necessary to make a sound prediction on the consequences of forest operations upon wildlife does not yet exist. This problem is exasperated by the Forestry Commission's unwillingness to conduct adequate surveys prior to undertaking activities within areas, and there being no adequate requirements for surveys on private lands.

It is imperative that standardized and co-ordinated inventory programmes be instigated on a regional basis throughout NSW to enable an adequate data base to be established and used as a basis for deciding management options.

"Emphasis should be on research into sensitive species and indicator species that are dependent upon forest. Research should be aimed towards understanding the inter-relationships between the particular species and their forest habitats with the goal of providing management strategies that can be implemented around them." (Davey, 1989)

Mansergh and Bennett (1989) recommend a comprehensive climatological study of the entire floral and faunal complement at a state and regional level to determine responses to the predicted global warming.

6.2

Research - Policies

As a matter of urgency, comprehensive co-ordinated and standardized flora, fauna and archaeological surveys must be undertaken throughout forests and woodlands to establish an adequate data base. Special emphasis should be on endangered, sensitive and indicator species.

Establish research programs into the impacts of roading, logging, burning frequencies, grazing, tourists, climatic change and other disturbances on forests and woodlands.

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DRAFT 4

MARCH 1990

PREPARED FOR COMMENT BY JEFF ANGEL,
TOTAL ENVIRONMENT CENTRE
FOR THE FOREST SUMMIT

Note: There is some confusion as to whether to include woodlands and mangroves specifically. Although they would be covered by the same philosophy in the Policy, there is a view that by including them we inflate the amount of native forest remaining and this falls into the hands of the timber lobby who like to say we are exaggerating the amount of native forest left. Perhaps a separate short policy should be drawn up, where this one does not cover specific woodland and mangrove issues.

NATIVE FOREST POLICY FOR NEW SOUTH WALES

DEFINITIONS

Native Forests: Natural ecosystems in which trees comprise a major proportion of the biomass, which have evolved from the pre-human biosphere without being subjected to clearance or other drastic human intervention. The term is used to include native forests.

Old-growth native forests: Native forests which contain a substantial proportion of old, mature trees. Such forests are generally characterised by a high level of ecological complexity and biological diversity and have high habitat potential for wildlife.

Plantations: Large stands of trees planted by humans with timber production as the primary objective.

Agroforestry: A land management practice which combines cultivation and harvesting of trees with other agricultural pursuits, to diversify agricultural production and/or promote sustainable production.

Rainforest:

AIMS

Conservation of Biological Diversity

To ensure that all indigenous species inhabiting native forests are able to survive and continue their evolutionary development in the wild.

Protection of Heritage

To protect all wilderness areas, old growth forests and other sites of important natural and cultural significance.

Development of a Sustainable Economy

To foster a sustainable economy which caters for present and future human generations, including wood and wood products, without degrading the environment and reducing biological diversity

1. CONSERVATION OF NATIVE FOREST ECOSYSTEMS

Throughout the world forest cover has shrunk dramatically over the last few thousand years as human populations have grown and become more environmentally destructive. Forest destruction has accelerated during this century and the consequent soil erosion, loss of biological diversity and changes to the planet's atmosphere and climate are major factors contributing to the growing global environmental crisis.

The original forest ecosystems of NSW have declined dramatically in the last 200 years. More than 15 million hectares - or 20% of the state - was forested prior to European settlement, yet since 1788 between 60% and 80% has been cleared or severely modified.

At present, only about half of the state's plant communities are adequately conserved in national parks and nature reserves, whilst much of the remainder is being cleared, intensively logged, burnt, grazed or invaded by weeds so that their inherent structure is radically changed.

Wilderness and undisturbed water catchments continue to recede and are polluted by toxic chemicals, urban run-off and sewage. Less than 5% of NSW is left in a wilderness state, and includes much of the remnant old growth forest. Contrary to public statements all NSW rainforest is not saved and some types are inadequately preserved.

As the community rapidly develops a greater awareness about the importance of retaining the natural environment and keeping it clean, the values of old growth native forests and intact forest ecosystems, as reflected in their contribution to stabilising the world's climate; holding a massive gene pool for utilisation by future generations; and sheer beauty will be greatly treasured.

New initiatives by government and the community are needed to ensure the survival of the native forests and their environmental integrity.

Fundamental Statements

1. The high conservation values of old growth forest and rainforest should be recognised and logging should cease in these areas.
2. The best form of protection for old growth forests and rainforests is through national parks and nature reserves and wilderness areas declared under the NSW Wilderness Act.
3. Management of native forests should ensure maintenance or restoration of a full diversity of age class structure of forest types and their dependent species in order to protect biodiversity.
4. There should be continued and increased independent research into the environmental values of native forests.
5. Governments should recognise all remaining native vegetation is essential habitat and a precious resource for maintenance of Australian flora and fauna.

Policies:

- a) All old growth forests and inadequately conserved forest types should be preserved and managed for protection of their high conservation and wilderness values, through a system of national parks and nature reserves.
- b) Design of reserves should take into account forested corridors in view of the urgent requirements for species survival threatened by the Greenhouse Effect
- c) State forest required for national parks or nature reserves should be transferred free of charge to the National Parks and Wildlife Service (NPWS).
- d) Adequate funding must be provided to acquire private forest lands, where necessary, and to enable management of national parks and nature reserves to preserve or rehabilitate their high conservation values as a highest priority.
- e) An urgent independent inventory by the Australian Heritage Commission of the remaining old growth forests and rainforests should be carried out to assess their distribution, extent and the conservation requirements of dependent fauna.
- f) While the inventory is being undertaken there should be a moratorium on logging, burning, roading, mining and grazing.
- g) The old growth forests and rainforests be inscribed on the Register of the National Estate and where appropriate on the World Heritage List.
- h) All logging programs should be controlled by publicly available and enforceable management plans that protect all environmental values of native forest.
- i) The NSW Government ban the use of old growth and wilderness timbers in government projects and encourage the private sector to do the same.
- j) Recreational use of native forests should be managed to be compatible with their high conservation values.

2. ENVIRONMENTALLY SUSTAINABLE USE OF NATIVE FORESTS

Timber extraction from native forests, where permitted, must be carried out on a truly sustainable basis, both in terms of wood production and non-wood values.

The bulk use of native forest in south east NSW is for woodchips and as such an intensive logging regime is used. In the north of NSW the forests are being managed to 'maximum utilisation' and transitional rainforest communities heavily logged. Further, woodchip extraction is growing.

It is essential that native forests are relieved of the pressure generated by intensive logging regimes.

The timber industry has been established and sustained through low royalties which deflect market interest away from establishing hardwood plantations. For example hardwood royalties do not reflect the cost of actually establishing trees, harvesting and the non-wood values of native forests. In general the amount of timber extracted from native forests since WWII has almost doubled while employment has dropped sharply.

At the same time supplies of hardwood sawlogs are decreasing and will do so into the next century. It is expected that much of the lower value end of the sawlog market (eg building timber) will be replaced by pine from domestic and overseas plantations over the next 20 years. Realistic estimates of timber demand indicate that more than enough pine is already planted or planned to supply these needs at a national level in the future, although there may be a need for additional regional hardwood plantations for timber. Further, arguments about self sufficiency become corrupted at state level as the viability of interstate trade is not recognised. Thus each state strives for internal self sufficiency in timber, when the national supply should be the only criteria.

The native forest timber industry is not presently on a true sustained basis in NSW and is struggling towards a regime to sustain wood products only, rather than to sustain all environmental values, including a full diversity of age classes.

Fundamental Statements

1. The forest industries should be ecologically sustainable.
2. Royalties for timber and pricing of forest products should reflect the real environmental, social and economic costs of extraction and manufacture.
3. The highest value use of the timber resource should be recovered before lower value products such as woodchips are allowed.
4. Downstream processing of forest products based on Australian resources should occur in Australia.
5. Pulp and paper production should be derived from plantations rather than native forests, with the exception of sawmill residue and efforts made to use other fibre materials.
6. Recycling of timber and paper products should be greatly expanded to reduce the demand on forest resources for paper, pulp and other timber products.
7. Where possible, transitional arrangements should be made to protect jobs when forest is transferred to national parks and nature reserves.

Policies:

- a) Logging proposed for old growth forests and rainforests should be removed to lesser conservation value areas (and their biodiversity retained) as a matter of high priority and industry assisted to use alternative timber resources such as plantations, in the longer term.
- b) Logging activities for woodchips should, in the short term, rely on lower conservation value forests at a reduced scale of logging intensity, thinnings of regrowth in previously clearfelled areas and sawmill waste, while eucalypt plantations or other sources are established. Intensive logging should be phased out as soon as possible.
- b) Lower conservation value native forests should be logged on a long rotation selective regime (100-150 years) to supply specialty sawlogs to supplement the plantation resource.
- c) No timber suitable for sawntimber should be used for woodchips and government should ensure that the best available technology (eg scissor, glue lamination, flitch) is used in timber mills to access this timber and produce high value products.
- e) Consumers should be encouraged to substitute alternative forest products, such as composite timbers, derived from lower value forests for forest products extracted from high conservation value forest.
- f) Public and private research technology that maximises wood recovery and value added products and high yielding eucalypt species for plantations should be increased.
- g) Government should recognise that restructuring of the hardwood timber industry is inevitable as pine comes onto the market and establish a planned program of value-added activities that will direct hardwood to its highest value use and protect employment.
- h) No additional areas of pine should be established on vegetated land.
- i) Hardwood plantation establishment should only occur on already cleared land, excluding environmentally valuable woodland. Schemes such as sharefarming and agro-forestry should be actively encouraged.

- j) Hardwood forest on private land should be protected from total clearance. To achieve this, government regulation and economic initiatives should be introduced to ensure the retention of future sawlogs and environmental values.
- k) Royalties should be adjusted so that the establishment of plantations is not discouraged because of the subsidy to native timber extraction.
- l) The conservation movement recognises the benefits of workers to be unionised and receive the best possible working conditions.
- m) Estimates of timber resources should be independently audited and made publicly available.
- n) Whilst self sufficiency in timber products at a national level is laudable, it should be based on plantations.

3. MANAGEMENT OF NATIVE FORESTS

The past decade has seen prolonged and polarised public debates about the future of native forests. A major reason for this has been the unwillingness of those who control state forests to share decision making or to make real and publicly acceptable attempts to ensure long term survival of all environmental values.

Proposals that suggest changed logging timetables, new national parks and environmental impact assessment have met stiff resistance due to an inflexibility on the part of the NSW Forestry Commission, trade unions and industry. At the same time the general community's demand for change in how native forests are managed has not abated, but rather increased. In the middle, timber workers and small towns have been torn by the political fight. However, once a decision has been made to protect forest it has been found that industry can use alternatives suggested.

Fundamental Statements

1. The NSW Forestry Commission does not take proper account of legitimate public concerns about forest management.
2. The Forestry Act and the Commission require major reform to improve public involvement and separate the functions of environmental assessment and monitoring from supervision of timber extraction.
3. Forest management should be aimed at preserving the full complement of environmental values and minimising land degradation.

Policies:

- a) The NSW Government recognise that wide ranging and meaningful public involvement in decisions about the future of native forests can prevent damaging and polarised public debate.
- b) All management plans for native forests should be publicly reviewed (using the same process as for national parks) over a five year period and preceded by an independent environmental and timber resources study.
- c) Environmental impact statements should be prepared for forestry activities likely to significantly affect the environment. As an aid to this the Government should prepare a schedule of controversial areas and publish for public comment all environmental reviews, including an independent pre-logging environmental survey prepared under S111 of the Environmental Planning and Assessment Act.
- d) There should be a separation of the environmental regulation and timber extraction activities of forestry management, with independent monitoring and review of environmental practises and regulations; third party enforcement of the regulations and independent assessment of proposed logging activities.
- e) An unambiguous and binding 'forest practices code' that is enforceable through third party rights in the Land and Environment Court is needed.
- f) The NSW Forestry Commission to be assisted by an Advisory Committee comprised of timber industry, union, scientist and bona fide environment group representatives and chaired by an independent person.
- g) All timber licences and long term wood supply agreements to be available for public inspection free of charge.
- h) The National Parks and Wildlife Service should be afforded first choice of any crown lands proposed for conversion to state forest or leasehold.

- l) All developments (eg cropping, subdivision) that are likely to have a significant impact on tree cover should be first assessed by an independent and public environmental impact statement.
- j) Local and regional environmental plans should contain strict rules to avoid tree loss and encourage tree planting, in sympathy with the remnant ecosystems.
- k) Plans of management for parks and reserves should prevent tree loss and introduction of activities that would damage the natural environment in any way; and encourage regeneration.

4. PULP AND PAPER PRODUCTION

In recent years the establishment of pulp mills has received attention from governments seeking to add value to timber resources and reduce the balance of payments deficit in regard to wood products. At the same time local communities have been concerned about water pollution, the turning over of native forest to intensive logging regimes and the loss of future sawlogs. A further factor only recently emerging is the push to increase the supply of recycled paper.

On broader level the clearfelling of forests to supply woodchips, accompanying burning regimes and the disposal of paper products liberates large amounts of carbon dioxide into the atmosphere. At a time when the globe is on an environmental precipice the introduction of such large quantities of carbon dioxide should be resisted and maximum recycling put in place.

Fundamental Statements

- 1. Export woodchipping should end by 1995 and domestic value-added industry developed.
- 2. Current pulp and paper technology requires significant improvement to avoid damaging pollution.
- 3. Demand and resource projections should anticipate a major market for recycled paper.

Policies:

- a) Pulp and paper mills should only be based on plantations and recycled paper, thinnings from already established plantations and regrowth thinnings from previously clearfelled forest. Such sources must be specified in the enabling legislation and contract, in addition to financial contributions to plantation establishment by the companies involved.
- b) There should zero release of effluent that would harm the environment.
- c) Government should specify 100% recycled paper that is neither deinked or bleached, in their paper procurement policies.

5. GLOBAL ISSUES

On a worldwide level forests are disappearing at an alarming rate. Some developing nations will become net timber importers after the year 2000 and an enormous amount of plant and animal species will become extinct. Consumption by the developed countries and the international credit system encourages developing countries to eliminate their forests for foreign exchange. The loss of more forest has very serious implications for the world's climate and human civilisation.

Policies:

- a) The NSW Government ban the use of imported rainforest timbers in government construction projects and facilities and encourage the private sector to follow suit.
- b) Support be given to the swapping of loans for intact natural environments in developing countries along with aid for environmentally sustainable projects.
- c) The Australian woodchip industry be based on plantations and value-added exports so that overseas markets are supplied from plantations rather than pristine forest in developing countries.
- d) There be a general and massive increase in tree cover through government and privately funded projects.

@ Lyndall McCormack

PAP OR POP?
AN ECONOMIC CRITIQUE OF THE ACF
TIMBER INDUSTRY ANALYSIS

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An Academic Appraisal of the ACF Report
Dr Neville R. Norman

Appendix: The FAFPIC Plan

Forest Industries Campaign Association
932 Swanston St, Carlton, Vic. 3053
May 1988

FOREWORD

The Future of the Forest Industries - a Comparative Analysis

Over the past five years the forest industries have been developing a positive industry growth plan with the co-operation of both trade unions and government.

The plan, based on the first full national survey of Australia's forest resources, sets out the unique opportunities open to the forest industries to expand forests, create new jobs and make a significant contribution to Australia's balance of payments problems - without environmental deficits.

The growth plan, which concentrates on the future of the forest industries, was released by the Forestry and Forest Products Industry Council in February 1988. (See Appendix)

Against this background, the Australian Conservation Foundation (ACF) released its historical analysis of the industry in November 1987, "Australia's Timber Industry: Promises and Performance".

Like a number of other documents put forward by the ACF in recent years, the "Promises and Performance" is superficial and misleading.

Nevertheless, the unique mix of "pop-economics" and "pop-ecology" contained in the report has been widely circulated among the media and politicians.

As a result, the Forest Industries Campaign Association (FICA) asked Dr Neville Norman, Reader in Economics at Melbourne University to provide an assessment of "Promises and Performance", the results of which forms this report.

What is clear from Dr Norman's paper is that while the ACF report claims to be an economic analysis, there is in fact little economics contained in it.

"Promises and Performance" makes little reference to economic theory; does not provide empirical evidence to support its conclusions; and is based on a purely retrospective view of the industry.

Such fundamental shortcomings have inevitably led the ACF to incorrect conclusions about the industry.

Indeed, under the guise of an economic analysis, the report is an exercise in justifying the ACF's own views about the industry. This has been done by juxtaposing selected industry statistics against the ACF's preconceptions of the industry economics and forest ecology, a contrived mix of fact and fiction.

The conclusion of the report, that the industry has not fulfilled its economic promises, is nonsense.

More importantly though, the report ignores the industry's enormous potential.

It is this potential that the FAFPIC Growth Plan details, setting out the means by which the constructive co-operation of business, trade unions and government can bring about massive benefits to the entire Australian community.

THE NORMAN ANALYSIS - SUMMARY

In a recent strongly-worded report, the Australian Conservation Foundation (ACF) has called into question not directly the environmental impact of the forestry and forest products industries, but rather their economic contribution.

The ACF report may be described by its brief title "Promises and Performance" (PAP hereafter), and this indeed gives the clue to the main theme that the ACF adopts.

In essence, the ACF's central argument in PAP is that the forest industries have responded to environmental arguments by offering various promises of good economic performance - and notably promises to expand employment in the industries concerned - and yet they have failed to deliver these "promises".

The central findings of this review of the PAP document of the ACF are as follows:

- a. There is no evidence that the industry did make job promises; to base so much of the report on the simple supposition that it did is probably misleading from the start.
- b. A simple policy goal, such as protecting and expanding jobs in a single industry, is likely to conflict with resource allocation and efficiency objectives that are identified with national living standards directly; it is also most unlikely to be endorsed as a useful criterion of "economic performance" by any reputable economist.
- c. The ACF document completely overlooks the efficiency contribution, which is in conflict with the ACF's approach, this is clearly explained in central references which the ACF itself cites, but plainly has not heeded, in its own PAP document.
- d. Crude causal inferences involving economic variables are drawn in the PAP document; they deserve to be identified and challenged.

Despite the full title of PAP - which encompasses "economic analysis" - there is much material contained in the report that is not economics. Many suggestions or assertions play on emotion but lack support from economic analysis.

The central point of the ACF submission - that there has been a decline in jobs and a failure of "value added" industry growth - even if true is substantially irrelevant and misleading to the task of gauging the industry's economic contribution.

Key flaws in the ACF case are:

Even on the ACF's own numbers logging output per person has risen by 92% in the 15 years to 1984-85, a (labour) productivity growth rate of 4.5% per annum, about double that achieved by our economy over this period.

To focus on jobs in the industry alone and to ignore the economic efficiency effects, which is exactly what the ACF submission does, gives the wrong answers, ignores the economic contribution and is potentially extremely unrealistic on its own terms and implications.

There is no sound economic evidence that, as a general proposition, increased industry concentration (through amalgamation or otherwise) worsens economic performance, despite the appeal to simple intuition that it will.

Rising capital intensity does not necessarily diminish national job prospects.

There is no reason why, in a multilateral trading system, product and country trade balances should be zero (as the ACF suggest). It is healthy that they differ, especially where natural advantages lie with other countries.

The ACF argues that forest resources are to be treated as non-renewable, like mineral resources. This is not the assumption made in economic analysis where "trees" are treated as "renewable after some cost and delay". In short trees grow again.

Meeting a jobs only target within the industry would mean turning a blind eye to productivity increasing investment that is in the national economic interest for an industry to adopt.

Such an analysis also makes no explicit allowance for the impact on production and plant-capacity (investment) decisions in the industry of environmental restrictions, or perhaps more significantly the threats that environmental lobbies and prospective official restrictions can have.

To the extent that they have any impact at all, then:

- (i) current production;
- (ii) investment in plant capacity; and
- (iii) levels of technology embodied therein

will each be curtailed.

Accordingly, to this extent, both the jobs and efficiency contributions overall of the industry's economic activities will be damaged.

The logic that supports this argument is not simply the blunt effect of environmental restrictions themselves, but also the expectational risk effects of the mere presence of environmental lobbies on investment in the industry.

In the economic analysis of the business investment decision, especially in the face of policy uncertainties and market risk, this result follows except in the extremely off case of negative risk aversion propensities of the investor.

Yet it cannot be denied that the extent and timing of the industry investment programme has been affected by the risk allowances that have to be made in these investment decisions for prospective further environmental-based restraints on the prime materials supplies.

It is difficult to source evidence for this, for it requires access to the confidential planning documents of individual business enterprises. But the author can state from direct contact with many of the companies involved that this is the case.

At the public level, reports have already emerged. Thus in The Australian (2 April 1987, p12) there are reports that Australian Newsprint Mills (ANM) had deferred its decision on investment worth \$500m pending decisions on the Lemonthyme and Southern Forests, and also that Associated Pulp and Paper Mills (APPM) reported worries from their Japanese joint venturers regarding "the inability of the Tasmanian and Federal Governments to agree on the use of the resource base".

Overall, the economic content of the ACF report is rather shallow, and it omits major or contradictory considerations - such as the national efficiency issue - in a way that must be either incompetent or designed to mislead.

It is perhaps understandable however that if the quality of the political and policy debates in Australia is so poor that readers of the PAP report are blinkered to the performance measures it sets out, that the ACF should seek to pander to these fallacies.

This rebuttal is not designed to force the significance of the economic arguments as against the environmental, for that is not the task of an economist to do. But it is to contend and to explain why the economic significance and contribution of the forest and forest products industries is badly and misleadingly represented in the ACF approach.

It is possible that the environmental cause has been responsibly and persuasively represented by the ACF. The same cannot be said for their economic arguments.

The Economic Contribution Of The Forest Products Industry

**AN ACADEMIC APPRAISAL OF
THE ACF REPORT**

By Dr Neville R. Norman,
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The University of Melbourne

In a recent strongly-worded report*, the Australian Conservation Foundation (ACF) has called into question not directly the environmental impact of the forestry and forest products industries, but rather their economic contribution.

The ACF report may be described by its brief title "Promises and Performance" (PAP hereafter), and this indeed gives the clue to the main theme that the ACF adopts.

In essence, the ACF's central argument in PAP is that the forest industries have responded to environmental arguments by offering various promises of good economic performance - and notably promises to expand employment in the industries concerned - and yet they have failed to deliver these "promises".

The central findings of this review of the PAP document of the ACF are that:

- a. There is no evidence that the industry did make job promises; to base so much of the report on the simple supposition that it did is probably misleading from the start.
- b. A simple policy goal, such as protecting and expanding jobs in a single industry, is likely to conflict with resource allocation and efficiency objectives that are identified with national living standards directly; it is also most unlikely to be endorsed as a useful criterion of "economic performance" by any reputable economist.
- c. The ACF document completely overlooks the efficiency contribution, which is in conflict with the ACF's approach, even though this is clearly explained in central references which the ACF itself cites - but plainly has not heeded - in its own PAP document.
- d. Crude causal inferences involving economic variables are drawn in the PAP document; they deserve to be identified and challenged.

* Australia's Timber Industry: Promises and Performance - An Analysis of the Economics and Dynamics of the Australia Forestry and Forests Products Industry; Australian Conservation Foundation, 1987.

Despite the full title of PAP - which encompasses "economic analysis" - there is much material contained in the report that is not economics. Many suggestions or assertions play on emotion but lack support from economic analysis.

The present work is no more than an economist's review of what purports to be the economic arguments or contentions in the ACF report, which may briefly and without loss of much detail be stated as follows:

1. the contribution of the industry to the economy through "value added" has stagnated;
2. employment and job prospects have declined;
3. like mining, the resource involved depletes;
4. industry profitability has fluctuated between companies and regions, forcing amalgamations;
5. the resulting concentration of industry causes problems for the economy;
6. imports of forest products exceed the exports thereof, creating economic damage through an unfavourable [external] trade balance;
7. the rising capital intensity and foreign ownership of the industry give grounds for concern; and,
8. government forest services spend more than they earn, being thus a drain on budgets.

I. THE SO-CALLED PROMISES

In the PAP document there is persistent reference to "economic promises made by the industry" (p3). To document this further:

"the promise and expectation of increased employment ... " (p4)

"promises of major economic benefits similar to those of the sixties and seventies continue to be made ... " (p4)

"flawed strategies and involved promises pursued by the industry through the FORWOOD - forestry planning conference in 1974 ... superficial industry economic claims ... " (p4)

"promises of increased employment have not materialised ... " (p17)

"industry planners and proponents promised ... job opportunities would be greatly expanded ... " (p73).

Thus the image is very firmly created that the industry gave firm undertakings, most especially to increase the number of jobs provided by it.

This maxim, once asserted in this manner, is then elevated to be the main test by which "economic performance" of the industry is judged, it is uplifted to the main title of PAP, and it forms the most direct attack of the ACF in conjunction with the uncontested fact that employment in the industry HAS declined.

But this author is, however, quite unable to find in the references cited in PAP any such undertakings or even indications relating to jobs, and inquiries within the industries have produced no documents or recollections even remotely consistent with the ACF's assertion of job promises.

The PAP document cites the report of the FORWOOD conference, held in 1974, with the implication that contained therein are the job promises. But FORWOOD is, rather, an indicative planning document - a catalogue of actions that government and the industry should undertake. It has product forecasts, but neither job forecasts nor undertakings.

Nor does the more recent Forestry and Forest Products Industry Council (FAFPIC) Strategic Plan contain any.

Nor does the ACF provide a single citation for its persistent and central assertion that job promises were given, apart from the reference to "significant employment" culled from a photocopied sheet issued by the Victorian Sawmillers Association in 1976 (PAP p73). Nor does this amount to a promise of increased jobs.

It would thus seem that no such "promise" concerning jobs has been given by the industry, and as the section below indicates, it would have been inappropriate from an economic viewpoint to have done so.

Indeed, meeting a jobs target within the industry would have meant turning a blind eye to productivity-increasing investment that it has been in the national economic interest for the industry to adopt.

Even in the PAP document itself there are passages inconsistent with the simple-minded thrust that job promises were given and then not honoured. Thus at page 14 it states that "the industry is not able to guarantee ... greater employment". And at pp74, 78, 82, 84 and 85 PAP summarises FORWOOD and FAFPIC, but is unable to cite any job promises.

Not only were the promises of increased employment apparently not made, but the fact that the industry did not meet this ACF-inserted test has been a by-product, as this report will show, of the industry making its contribution to our national economic progress.

Indeed, the ACF at no stage mentions or seems aware of the "efficiency" contribution of the industries, yet on their own numbers (PAP p4), [logging] output per person employed rose by 92% in the 15 years to 1984-85, a [labour] productivity growth rate of 4.5% per annum, about double that achieved by our economy overall over this period.

This efficiency contribution of the industries is completely overlooked in the PAP document.

Elsewhere in the ACF's report there are suggestions or assertions that play on emotion and lack support from economic analysis.

For instance, there is no sound economic evidence that, as a general proposition, increased industry concentration (through amalgamation or otherwise) worsens economic performance, despite the appeal to simple intuition that it will. And rising capital intensity in industry does not necessarily diminish national job prospects.

The balance of this review elaborates the basis for the conclusion reached that the ACF's PAP document omits the central issues bearing on economic performance and distorts the narrower issues it does address.

II. AN ELABORATION OF THE "EFFICIENCY EFFECT"

Where a sector of industry has available to it the opportunity to raise its rates of production relative to the resources it employs, by better production organisation or improved technology that becomes available, it is nothing short of a significant economic contribution that those opportunities ARE grasped, even if jobs and resource use generally are much reduced in consequence.

This efficiency effect reduces product real unit costs, contributes to NATIONAL economic efficiency, and where enforced production restraints apply (as in forest industries) it releases resources with high marginal economic use for application in other sectors.

(If, as is the case, national rates of unemployment have increased over a period considered, then that fact should be laid at the door of rising real labour unit costs and declining trade competitiveness, or restraints including environmental on national economic growth, not of the adoption of better technology. This is illustrated below.)

These beneficial results are the longer-run consequences of efficiency, often referred to by economists as the "economy-wide implications".

The economists' efficiency approach, which has been propounded by the Industries Assistance Commission (IAC) among others, is often difficult to communicate and easy to override if the "blinker" view, like that advanced by the ACF, is all that an uninformed reader is given.

But the economists approach can be stated in a meaningful way to arrest the simplistic tendency to be lured by the narrow approach. The following economic propositions capture the broader notion:

1. The economic contribution of an industry depends not so much on the quantum of resources it employs, but the efficiency with which they are used.
2. Where an industry is constrained (as is forestry) by enforced production restrictions, then it is far better for the economy that the industry utilises best-practice technology to the fullest extent and releases resources than for it to try to hold labour and other factors of production by adhering to outdated methods.

The plain result of 2 is that jobs will be lost as part of a superior economic contribution. But the job loss is actually the MEANS, in the circumstances, of gaining the better economy-wide contribution. Yet this can then crudely be reported as the "bad" of less employment and be immediately accepted as adversity alone by unthinking readers.

Putting this another way makes the efficiency point more bluntly.

Suppose that the industry (here and abroad) had never progressed beyond the stage of axes, splitters, hand-held sawing equipment and horse-drawn haulage, and further that technology had not provided the building and other materials that are now substitutable for timber products.

There would obviously have been vastly more employees engaged in forest and timber industries, both as compared with the past and with the technologically-advanced conditions that we DO have.

But this outcome of greater employment could only logically be PRAISED on the crude and narrow test of jobs on which the ACF approach concentrates. Yet it is plainly a poorer economic state for us, overall, than to have used the technology we do have, provided inevitably by a relatively smaller number of firms with many less people employed.

It is interesting that while the ACF cites (PAP p104) the IAC Annual Reports (1981 "and earlier editions"), it seems not to have absorbed the central messages therein.

In its first Annual Report, for 1973-74, the IAC spelt out the efficiency factor with great clarity:

"The ability of the economy to generate the wealth (and welfare) needed to realise the community's broad social objectives depends fundamentally on the efficiency with which the community uses its basic resources of land, labour and capital ... " (p17).

The IAC went on to champion the very capital intensity that the ACF condemns. This theme has been reiterated in every IAC report and in nearly every one of its hundreds of case determinations since, yet nothing of it flows to the ACF approach.

The simple "jobs in one industry" test is thus bogus and misleading.

The major fault with the ACF submission is not merely that they use it, but that at no stage whatever do they embrace or even imply the economy-wide or efficiency implications which should mandatorily be introduced by any responsible economist, no matter how those implications then be treated.

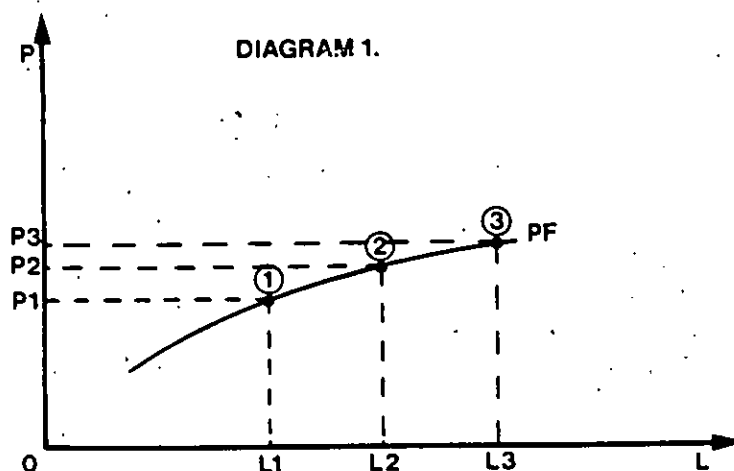
The rising productivity of the forest industries is indeed directly obvious to any economist scanning the ACF diagram used in the circulated summary version of their report, where rising output contrasts with falling employment (designated as Attachment B therein).

Nor is this merely to criticise the ACF, for the representatives of various industries, including trade unions, have, from time to time, also given expectations and offered targets concerning jobs.

It is perhaps even understandable that, if the quality of the political and policy debates in Australia is so poor that readers of the PAP report are blinkered to the test of jobs in one sector alone, the ACF should seek to pander to these fallacies.

There is a simple diagram that sets out the production and employment relationships in industries such as forestry.

Known as the "production function" (PF) diagram, it has the employment "input" on the horizontal axis, and logging and timber production "output" on the vertical. Connecting these things for the industry overall, for a given time period and technology, is the relationship between them.



The relationship PF slopes upwards, implying that, in the given technology, an additional application of labour resources will generate additional production.

Thus, moving in Diagram I from labour application L1 to L2, production rises from P1 to P2. But the relationship bends, to reflect diminishing returns in production. That is, a further application of labour to L3 gives a lesser percentage boost to production, to P3, the ratio of production, P, to labour input, L, necessarily declining.

(This can be seen directly by drawing "rays" from the origin to points 1, 2, and 3 in the diagram and noting that the slopes of such rays decline through the sequence).

This diminishing productivity arises, in the short-run sense, from using too much labour relative to machinery and land resources, and, in the long run sense, from managerial and other diseconomies or the resort to more marginal forests if reafforestation were severely neglected.

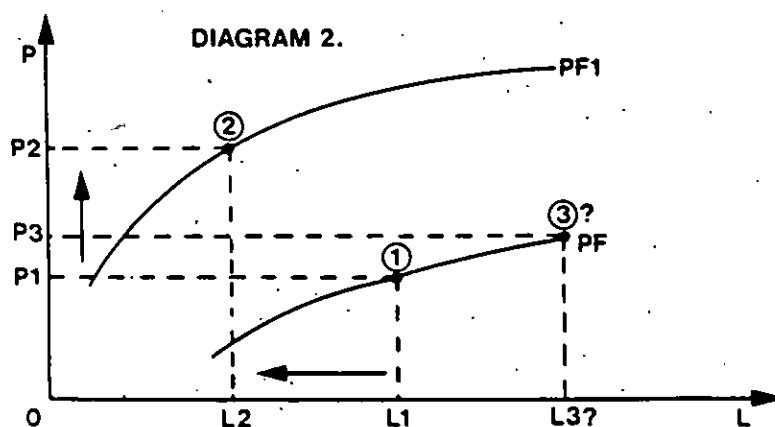
Technology, however, which emerges over time, has the capacity to arrest these tendencies. It can be expressed as replacing the original production function with a new one.

In Diagram II the better (and more recent) technological opportunities are shown by PF' rather than PF. At all relevant points PF' yields greater production for given employment use than the outmoded technological opportunities shown at PF.

Yet to get to PF' requires not merely the contribution of science. It is necessary for business firms to take the risk, provide or arrange the capital and install the machinery and methods that make PF' possible.

PF' may also reflect the superior materials and more highly skilled workforce available.

The plain facts are that PF' HAS been available to the industry and it HAS seized the opportunity. We may now make use of Diagram II to identify some alternatives.



In this diagram, point 1 joins L1 and P1 as before, the situation of long ago. Since then the demand base for timber products has expanded greatly, substitutes have emerged, the superior technology of PF' is available and production capacity has been restricted by environmental considerations.

The joint effect of these four developments is that production grows, to P2 and employment falls to L2, noting that these points are co-ordinates of the only relevant production function that now applies, PF'.

The plain fact, on which the ACF has so heavily relied, is that employment has fallen from L1 to L2. But what is the alternative?

Is the ACF saying that to meet the simple and only significant criterion it advances that the industry should have remained with the old technology and sought out a point like 3, with close to the same output as today and with more jobs than before ($L3 > L1$)?

Elementary consideration will confirm that 3 is untenable, for the (unit) cost and price effects of old technology today would have defeated the purpose and indeed little of the industry would have remained, in the face of severe competition from substitutes and imports.

Nor would 3 be desirable: it would have preserved jobs at the cost of limited production returns (low productivity) in logging and forestry industries.

This merely demonstrates that to focus on jobs in the industry alone and to ignore the economic efficiency effects, which is exactly what the ACF submission does, gives the wrong answers, ignores the economic contribution and is potentially extremely unrealistic on its own terms and implications.

In 1978 the author produced "The Productivity Connection" and followed this with on site studies of the same. One is particularly noteworthy. It related to Fibremakers, then a Division of ICI, which faced rampant import competition after the protection afforded it had been much reduced.

The company decided to rationalise production severely, to limit line items, concentrate on capital-intensive operations to which the Australian economic environment is most suited. The workforce in two years fell from 900 to 530, some by attrition, some made redundant.

It was, however, beyond doubt that in the absence of these moves, the entire operation would have collapsed. The result was that 500 jobs were SAVED, not that 400 were lost.

Thus, the central point of the ACF submission - that there has been a decline in jobs and a failure of "value added" industry growth - even if true is substantially irrelevant and misleading to the task of gauging the industry's economic contribution.

III. THE ENVIRONMENTAL EFFECT ON PRODUCTION

The analysis presented above makes no explicit allowance for the impact on production and plant-capacity (ie. "investment") decisions in the industry of environmental restrictions, or perhaps more significantly the threats that environmental lobbies and prospective official restrictions can have.

To the extent that they have any impact at all, then:

- (i) current production;
- (ii) investment in plant capacity; and
- (iii) levels of technology embodied therein

will each be curtailed. Accordingly, to this extent, both the jobs and efficiency contributions overall of the industry's economic activities will be damaged.

This is not to say that from a societal viewpoint the result is not superior to position as it would have been in the absence of environmental influences. But it is to acknowledge that, on the economic tests on which the ACF concentrates, the environmental responses have adverse economic consequences in themselves and that, as the ACF correctly says, there is inevitably conflict between the two.

The logic that supports this argument is not simply the blunt effect of environmental restrictions themselves, but also the expectation risk effects of the mere presence of environmental lobbies on investment in the industry.

In the economic analysis of the business investment decision, especially in the face of policy uncertainties and market risk, this result follows except in the extremely off case of negative risk aversion propensities of the investor*.

From the practical viewpoint we need to check the theory in real-world circumstances. This we now do.

Since 1983 the housing and building industries have experienced strong demand (interrupted by some recession in 1985-7).

* D.G. Champernowne, Estimation and Uncertainty in Economics, Vol. 3, and N.R. Norman, Tariff Uncertainty and the Decision to Invest, University of Melbourne Department of Economics Research Paper 16, March 1974.

Moreover, the large currency depreciations (against Scandinavian currencies especially) has provided strong incentives to paper product industries to install capacity to replace imports and meet market demand.

Yet it cannot be denied that the extent and timing of the industry investment programme has been affected by the risk allowances that have to be made in these investment decisions for prospective further environmental-based restraints on the prime materials supplies.

It is difficult to source evidence for this, for it requires access to the confidential planning documents of individual business enterprises. But the author can state from direct contact with many of the companies involved that this is the case.

Some samples from the confidential correspondence may express, perhaps uniquely, how business executives responsible for these decisions view the matter:

"The reduction in hardwood available to our company has restricted the investment of capital for the past few years ...

"Uncertainty over the future has meant virtually no expenditure on new equipment even though plant is recognised as in need of replacement ... sawlog availability has been affected by State Government decisions to preserve rainforests ... loss of forest areas to National Parks has had similar effects ...

"Our company [agrees they are essential] ... however, we do argue about the need for further large buffer zones around these areas ...

"Once the uncertainty over the resource is removed, reinvestment in [stated] equipment to handle the changing log mix can begin ...

"One mill [named] was closed recently due to lack of sustained resource to enable reinvestment."

Several mill closures were detailed with linkages back to supply restrictions and mix changes brought about through the quota system.

Details of ongoing investment plans and commitments were also provided confidentially, some having been stalled, some proceeding at a reduced rate and pace in the face of commercial hazard from the environmental factor.

At the public level, reports have already emerged. Thus in The Australian of 2 April 1987 (p12) there are reports that Australian Newsprint Mills (ANM) had deferred its decision on investment worth \$500m pending decisions on the Lemon-thyme and Southern forests, and also that Associated Pulp

There is thus little, if any, intellectual basis for any inference that the ACF might wish a casual reader to draw between the fact of increasing industry concentration and adverse economic performance.

To strengthen this point, it needs to be remembered that even very large firms today face the pressures of potential competition, if they abuse their power, and the provisions of trade practices legislation.

On another tack, the ACF argues that forest resources are to be treated as non-renewable, like mineral resources.

This is not the factual assumption made in economic analysis, where "trees" are treated as "renewable after some cost and delay" and an intermediated case between annually renewable and replantable crops and the completely irreplacable minerals. In short, trees grow again.

In the economic analysis of the trees case, optimal rates of forest removal can be established as well as the optimal time of tree cutting, which under concavity growth conditions will always be before full growth*.

The ACF contentions that forestry and product imports exceeded exports again reflect little economics.

There is no reason why, in a multilateral trading system, particular product and country balances should be zero. It is healthy that they differ, especially where natural advantages lie with other countries.

Using the ACF's argument, should we now ban wool exports because they are several-fold greater than imports?

To the extent that an adverse trade balance contributes to the national trade imbalance (requiring offsetting net capital inflow in a flexible exchange rate regime) it ought also to be asked by how much environmental factors have contributed to this imbalance, and also to the excess government forest services expenditures over revenue.

V. CONCLUSION AND OVERALL APPRAISAL

Overall, the economic content of the ACF report is rather shallow, and it omits major or contradictory considerations - such as the national efficiency issue - in a way that must be either incompetent or designed to mislead.

This rebuttal is not designed to force the significance of the economic arguments as against the environmental, for that is not the task of an economist to do. But it is to

* For example, see Micha Gisser, *Intermediate Price Theory*, McGraw-Hill, 1981, Chapter 16.

contend and to explain why the economic significance and contribution of the forest and forest products industries is badly and misleadingly represented in the ACF approach.

It is possible that the environmental cause has been responsibly and persuasively represented by the ACF. The same cannot be said for their economic arguments.

N.R. Norman
22 April 1988

A P P E N D I X

FORESTRY & FOREST PRODUCTS
INDUSTRY COUNCIL

A SUBMISSION
OF A
FOREST INDUSTRIES GROWTH PLAN
TO THE
AUSTRALIAN GOVERNMENT

NOVEMBER, 1987.

EXECUTIVE SUMMARY

1. Demand for forest products is increasing Australia's balance of payments deficit by \$1 billion per annum.

2. Declining resource availability is reducing employment prospects in the industry.

3. However, the potential exists for the industry to make major investments totalling \$11 billion in sawmilling and the production of pulp and paper and timber products over the next 43 years.

4. The major constraint on this investment is resource availability. We estimate that by 2030 the resource shortfall will be 14.4 million cubic metres a year and can be overcome with an average investment of \$49 million a year in current dollars.

5. The resource availability problem can be overcome by:

- a.) Commonwealth-State co-operation to achieve a nationwide moratorium on hardwood resource alienation by Governments until an operating plan is established.
- b.) Commitment to tripartite development of this plan, under the auspices of FAFPIC, into a detailed action program able to be implemented from 1988 by industry, trade unions and Governments. This will require additional resources for FAFPIC.

6. If these actions are taken and this plan is implemented, employment will increase by 125,000 jobs and the annual industry balance of payments deficit of \$1 billion today will be reduced to \$350 million by 1995, will come into balance between 2010-2015, and run into surplus between 2015-2030. If this plan is not implemented the annual industry balance of payments deficit will progressively deteriorate from \$1 billion to \$2.9 billion.

7. The proposal is for a growth scenario that will generate investment, create jobs in Australia, have a substantial favourable effect on the nation's balance of payments and allow us to capitalise on a comparative advantage in an area where Australia can be genuinely internationally competitive. No other Australian manufacturing industry has a similar opportunity to make such a contribution to the Australian economy.

A. INTRODUCTION

The purpose of this submission is to gain agreement on industry - Government action to make possible a significant expansion of the forest products industry's contribution to the Australian economy.

Given the right environment - and the correct policy settings - the industry will be able to bring about a substantial overall boost in employment in Australia as well as in specific regional areas.

The industry is also poised to embark on an investment program that will lead to major import substitution in the entire forest products market while at the same time opening up new export opportunities.

International and domestic circumstances have combined to create a unique growth opportunity for this forest-based manufacturing industry.

This submission describes the nature of that opportunity; the means by which it can be grasped; and the industry-government co-operation necessary to achieve it.

B. BACKGROUND

The submission has been prepared by the tripartite Forestry and Forest Product Industries Council established by the Australian Government under the Australian Manufacturing Council umbrella:

Between 1984 and 1986 FAFPIC prepared a detailed growth plan for the industry.

The primary issues the plan addressed were the need for secure access to an expanded regional forest resource; and, the need to inform the public of the indispensability of the forest products industry.

In May 1986 FAFPIC received Ministerial approval to implement the plan.

As a first step a study of the available forest resource; domestic and international consumption patterns; and population and market trends was undertaken by FAFPIC in conjunction with industry, trade unions and State forestry services.

The study has analysed:

- * The extent of existing forest resources;
- * The current and projected demand on those resources for sawn and veneer timber applications and pulp, paper and re-constituted wood fibre production;
- * Additional investment required to develop the opportunities which exist;

- * Implications for employment and balance of payments:
- * Resource allocations necessary to achieve the industry's potential; and,
- * Government and industry action necessary to achieve the industrial, social and economic benefits which are possible.

This FAFPIC study is the basis of this submission.

C. THE OPPORTUNITY

C.1. The resource study

The resource study was based on an extensive study by all State Forest Services on resource availability in the period 1987-2030.

It took into account species, log type, private/public forest mix and the regions involved.

The available resource was analysed to establish the availability of raw materials for finished products such as pulp, sawn timber, panel and other re-constituted product.

This base data was used to develop three scenarios for the industry.

1. A current scenario detailing the industry growth potential based solely on the existing resource and current planting programs.

2. An enhanced scenario based on a 15 per cent expansion of forests.

3. A demand scenario - not based on existing or assumed forest resource - but developed from domestic consumption and export potential estimates based on population growth, per capita consumption and international market projections.

The demand scenario projections have been derived from conservative assessments of industry potential based on anticipated industry investment plans and the overall market opportunities which would be created if adequate forest resources able to support world-scale plants were available.

This proposal will produce the benefits described without any economic or environmental disbenefits. It is based upon a sawlog-driven, sustainable yield policy with emphasis on value-added production in the sawmilling, pulp and paper and panel board industries.

It depends upon the application of modern silvicultural practices in the management of both hardwood and softwood forests. Efficient utilisation of forest residues and regeneration of the forest are key components of the plan, which does not propose any intrusion into areas currently set aside from production for environmental reasons or because of other land-use policies.

This is the first such study undertaken in Australia and it has been made possible only because FAFPIC draws together industry, Government and trade unions.

C.2. Sawnwood production

Current sawnwood domestic consumption is 3.9 million cubic metres comprising 1.891 cubic metres of hardwood and 2.009 million cubic metres of softwood.

The projections indicate that by 2030 the domestic consumption level will be 8.4 million cubic metres comprising 1.6 million cubic metres of hardwood and 6.8 million cubic metres of softwood.

Current plywood consumption is 179,000 million cubic metres - 74,000 cubic metres from hardwood and 105,000 cubic metres from softwood.

Consumption in 2030 will be 310,000 cubic metres - 120,000 cubic metres from hardwood and 190,000 from softwood.

Forecast consumption of hardwood is constrained by availability which cannot be enhanced within the time frame of the study.

These consumption figures have been matched with imports, exports, projected imports and projected exports in each five year period between 1987 and 2030.

The result is a small excess in log availability in the period 1987 to 1990 leading to a shortfall in resource availability of 10 million cubic metres in 2030.

Because of the absolute limitation on hardwood availability the majority of this shortfall must be met by softwood. There is no surplus of hardwood sawlog although processing of additional pulplog could yield a limited amount of sawlog flitch material.

The industry acknowledges that domestic demand for sawn timber has been constant. This has been due to limited sawlog availability compounded by hardwood resource withdrawal.

Implementation of this plan will require a vigorous domestic and international marketing program linked to the increased scale of the industry operations.

C.3 Pulp, paper and reconstituted products.

The projections were also used to analyse pulp and paper consumption as well as potential consumption in specialised product areas such as particle board, MDF, woodchips, treated roundwood.

Current domestic paper consumption is 2.27 million tonnes and this is projected to increase to 5.45 million tonnes in 2030.

Total reconstituted panel production is 918,000 cubic metres and is projected to rise to 2.732 million cubic metres in 2030.

A supply shortfall will first emerge in the period 2005 to 2010. By 2030, unless remedial action is taken, the shortfall will be 4.526 million tonnes of softwood.

Because of regional imbalances the projected pulp mills will draw upon some established plantations from 1995 and a further program of plantation development will be necessary to maintain pulp mill furnish at the regional level from 2010 onwards.

C.4. Industry investment

Domestic and export demand requires a dramatic increase in industry investment.

Essentially the increase, subject to resource availability, would involve:

- * three new hardwood pulp mills costing \$2.8 billion employing 1320 people;
- * six new softwood pulp and paper mills costing \$6 billion employing 2640 people;
- * thirty-four new softwood sawmills costing \$1.75 billion employing 4080 people; and,
- * twelve new softwood panel mills costing \$845 million employing 3000 people.

The required industry investment in world-scale mills would total \$11.34 billion in the period 1990-2030.

INDUSTRY INVESTMENT - NEW FACILITIES

(1987 - 2030)

TYPE OF MILL			TOTAL NO OF MILLS	COST \$m	JOBS DIRECT & INDIRECT
Hardwood	2	1991-1995	3	2800	3300
Pulp	1	1996-2005			
Softwood	1	1991-1995	6	6000	6600
Pulp/Paper	1	1996-2005			
	1	2006-2010			
	1	2011-2015			
	1	2016-2020			
	1	2021-2030			
Softwood	6	1991-2000	34	1700	10200
Sawn	11	2001-2010			
	10	2011-2020			
	7	2021-2030			
Softwood	2	1991-2000	12	840	7500
Panel &	3	2001-2010			
Re-	3	2011-2020			
constituted	4	2021-2030			
Products					
TOTAL			55	11340	27600

C.5 Population

The population projections on which the consumption forecasts are based are derived from lowest estimate ABS statistics and assume immigration of 75,000 per annum.

C.6 Summary

The consumption projections, it should be stressed, are based on very conservative estimates of demand, per capita growth, import replacement, export potential and population projections.

The current international situation could justify a more optimistic scenario.

A major study by Jaakko Poyry, an international forest products consultant, was commissioned by FAFFPIC and completed in 1985. It showed that for most product sectors, Australian producers with world-sized mills could be highly competitive in domestic markets, and that in many product sectors Australian producers could be competitive in export markets.

This combination of factors has created a unique opportunity for Australia.

Australia has the climate, area, technology and the skills to capitalise on the opportunity.

D. REMEDYING THE RESOURCE SHORTFALL

Working from these consumption projections and the existing resource availability FAFPIC has calculated what resource has to be made available to allow the industry to fulfil its potential.

The calculations are based on standard formulae commonly used to match hectares planted with resource available.

D.1. Softwood

The current softwood resource is 837,000 hectares in size.

To meet the log volume needed to sustain the growth outlined earlier we need 1.17 million hectares of softwoods.

This means that we have to plant an additional 523,000 hectares or just over 13,000 hectares a year from 1988.

Current forestry services planting programs should meet 10,000 hectares a year of this requirement until 1996 - leaving a 1988-1996 shortfall of 3000 hectares a year.

D.2 Hardwood

The existing hardwood resource must be maintained as production forest to meet sawlog requirements and to provide the major part of the necessary pulpwood.

Current hardwood plantation resource is 39,000 hectares. We need to increase that to 115,000 hectares to meet demand projections.

This requires planting of 76,000 hectares or 3800 hectares a year in the period 1988 to 2008.

D.3 Costs

The costs of this expansion project over the whole 43 year period are:

Softwood plantations (523,000 hectares)

CAPITAL COSTS

Land acquisition and plantation establishment	\$1307 million.
Later year investments	\$237 million.
Recurring maintenance	\$405 million.
TOTAL	\$1949 million.

Hardwood plantations (76,000 hectares)

Land acquisition and planting	\$178 million
GRAND TOTAL	\$2127 MILLION.

It is envisaged that this cost could be met jointly by industry and State Governments within their respective spheres of expertise.

The total investment required is \$49 million a year.

E. ECONOMIC AND SOCIAL CONSEQUENCES

FAFPIC has calculated the positive benefits of these projections on Australian overall employment; employment in key decentralised regional areas; and, the balance of payments situation.

E.1 Employment

The industry currently employs 106,700 people directly and 160,000 people indirectly - a total of 266,700.

The increases are not linear because of the timing of various construction projects but a total of 125,416 additional direct and indirect jobs would be created in the period 1987 to 2030.

INCREASES IN EMPLOYMENT

(000'S)

YEARS	DIRECT	INDIRECT	TOTAL
1987-90	0.50	0.75	1.25
1990-95	6.14	9.22	15.36
1995-2000	5.78	8.68	14.46
2000-2005	6.57	9.86	16.43
2005-2010	5.78	8.68	14.46
2010-2015	7.7	11.54	19.23
2015-2020	5.78	8.68	14.46
2020-2025	6.5	9.74	16.23
2025-2030	5.41	8.12	13.53
TOTAL	50.16	75.25	125.41

E.2 Balance of payments

Currently the heavy volume of forest products imports has created an annual industry deficit in trade of \$1 billion.

Given the projections - and the right policy mix by Government and industry - this could be converted to an annual surplus of \$390 million by 2030.

The balance of payments deficit would be reduced to \$350 million by 1995; come into balance in the period 2010-2015; and, run into surplus between 2015 to 2030.

This involves boosting exports from a current level of \$374 million to \$1.718 billion annually and reducing imports from \$1.448 billion to \$1.332 million.

The alternative is a progressive deterioration of the industry's balance of payments from \$1.3 billion to \$2.9 billion annually.

The following table illustrates the trends:

POSITIVE TRADE IMPACT

	EXPORTS	IMPORTS	SURPLUS/ (DEFICIT)	SURPLUS/ (DEFICIT) NO INVEST
	\$M	\$M	\$M	\$M
1987	374	1448	(1074)	(1068)
1990	427	1610	(1183)	(1177)
1995	1023	1377	(354)	(1104)
2000	1074	1557	(483)	(1349)
2005	1313	1462	(149)	(1492)
2010	1370	1490	(120)	(1773)
2015	1537	1417	120	(2130)
2020	1657	1390	266	(2296)
2025	1718	1359	359	(2589)
2030	1718	1328	390	(2908)

F. CAPITALISING ON THE OPPORTUNITY

To capitalise on these opportunities the industry is seeking the following:

1. Commonwealth-State co-operation to achieve a nationwide moratorium on hardwood resource alienation by Government until an operating plan is established.
2. Commitment to tripartite development of this plan, under the auspices of FAFPIC, into a detailed action program able to be implemented from 1988 by industry, trade unions and Government. This will require additional resource for FAFPIC.

G. CONCLUSION

Australia has a unique opportunity to implement an industry plan based on growth and not contraction.

Unlike other manufacturing industries we are not talking about structural adjustment but about growth - an enlargement of a naturally-created, renewable asset.

That growth would create jobs in Australia; have a positive benefit for the nation's balance of payments situation; and allow us to capitalise on a comparative advantage in an area where Australia can be genuinely internationally competitive if security of tenure and adequate log volumes enable industry to invest in world-scale mills.

The industry plan brings the forest products trading account into balance. Without expanded resource availability the balance of payments deficit increases:

FOREST INDUSTRIES GROWTH PLAN

A SUBMISSION

TO THE

AUSTRALIAN GOVERNMENT

DECEMBER, 1987

EXECUTIVE SUMMARY

1. This plan, by Australia's second largest manufacturing industry, provides an opportunity to make a fundamental attack on some of the nation's foremost economic problems namely the balance of payments deficit, investment and unemployment.
2. The potential exists for the industry to make major investments totalling \$11 billion (constant 87/88 dollars) in world scale plant for the production of pulp and paper, timber and reconstituted wood products over the next 43 years.
3. The major constraint on this investment is availability of and access to sufficient forest resources. We estimate that by 2030 the total resource shortfall will be 14.4 million cubic metres a year and can be overcome with a total investment of \$2 billion in expanding the resource over 43 years. This amounts to an average investment of \$49 million a year in constant 1987/88 dollars.
4. To achieve these outcomes Commonwealth Government commitment is required to:
 - a) ensuring Commonwealth-State co-operation on a nationwide moratorium on any further removal of hardwood resource from timber production by Governments until a detailed operating program is established, within 6 months, in line with this plan.

- b) tripartite development of this plan, under the auspices of Forestry and Forest Products Industry Council (FAFPIC), into a detailed action program able to be implemented from 1988 by industry and Governments. This will require significant additional work beyond the resources of FAFPIC.

In particular such a study will need to address sensitivities to changes in key macro-economic variables as well as infrastructure requirements, costs and options. It is probable that high level consulting assistance will be required.

5. If these actions are taken and this plan is implemented, employment will increase by 125,000 jobs and the annual industry balance of payments deficit of \$1 billion today will be reduced to \$350 million by 1995, will come into balance between 2010-2015, and run into surplus between 2015-2030. If this plan is not implemented the annual industry balance of payments deficit will progressively deteriorate from \$1 billion to \$2.9 billion.

6. The proposal is for a growth scenario that will generate investment, create jobs in Australia, have a substantial favourable effect on the nation's balance of payments and allow us to capitalise on a renewable resource in an area where Australia can be genuinely internationally competitive. No other Australian manufacturing industry has a similar opportunity to make such a contribution to the Australian economy.

A. INTRODUCTION

The purpose of this submission is to gain agreement on industry - Government action to make possible a significant expansion of the forest products industry's contribution to the Australian economy.

Given the right environment - and the correct policy settings - the industry is poised to embark on an investment program that will lead to significant, efficient import substitution in the entire forest products market while at the same time opening up new export opportunities.

The industry will also be able to bring about a substantial overall boost in employment in Australia as well as in specific regional areas.

International and domestic circumstances have combined to create a unique growth opportunity for this forest-based manufacturing industry.

This submission describes the nature of that opportunity; the means by which it can be grasped; and the industry-government co-operation necessary to achieve it.

B. BACKGROUND

The submission has been prepared by the tripartite Forestry and Forest Products Industry Council (FAFPIC) established by the Australian Government under the Australian Manufacturing Council (AMC) umbrella.

Between 1984 and 1986 FAFPIC prepared a detailed growth plan for the industry.

The primary issues the plan addressed were the need for secure access to an expanded forest resource in specific regions to sustain world scale mills, and, the need to inform the public of the economic value of the forest products industry.

In May 1986 FAFPIC received Ministerial approval to implement the plan.

As a first step a study of the available forest resource, domestic consumption and trade patterns, and population and market trends was undertaken by FAFPIC in conjunction with industry, trade unions and State forestry services.

The study has analysed:

- * The extent of existing forest resources;
- * The current and projected demand on those resources for sawn and veneer timber applications and pulp, paper and re-constituted wood fibre production;
- * Additional investment required to develop the opportunities which exist;

- * Implications for employment and balance of payments:
- * Resource allocations necessary to achieve the industry's potential; and,
- * Government and industry action necessary to achieve the industrial, social and economic benefits which are possible.

This FAFPIC study is the basis of this submission.

Economic Rationale

The economic rationale for the study originated in the AMC's publication "Future Directions for Australian Manufacturing Industry". In that document the AMC noted that for resource intensive industries, such as forest products, international competitiveness depended on being price competitive. Price competitiveness depended on world scale production facilities which in turn required availability of an access to adequate natural resources (forests).

Following this logic revealed that the major blockage to developing the industry's potential was the forest resource. Without access to sufficient resource industry cannot have the confidence to invest in world scale mills.

C. THE OPPORTUNITY

C.1. The resource study

The resource study was based on an extensive study by all State Forest Services on resource availability in the 43 year period 1987-2030.

It took into account species, log type, private/public forest mix and the regions involved.

The available resource was analysed to establish the availability of raw materials for finished products such as pulp, sawn timber, panel and other re-constituted product.

This base data was used to develop three scenarios for the industry.

1. A current scenario detailing the industry growth potential based solely on the existing forest resource and current planting programs.
2. An enhanced scenario based on a 15 per cent expansion of softwood availability.
3. A demand scenario - not based on existing or assumed forest resource - but developed from domestic consumption and export potential estimates based on projections of population growth, per capita consumption and international market projections.

The demand scenario projections have been derived from conservative assessments of industry potential based on anticipated industry investment plans and the overall market opportunities which would be created if adequate forest resources able to support world-scale plants were available.

This proposal will produce the benefits described without economic or environmental disbenefits. It is based upon a sawlog-driven, sustainable yield policy with emphasis on value-added production in the sawmilling, pulp and paper and panel board industries.

It depends upon the application of modern silvicultural practices in the management of both hardwood and softwood forests. Efficient utilisation of forest residues and regeneration of the forest are key components of the plan, which does not propose any intrusion into areas currently set aside from production for environmental reasons or because of other land-use policies.

The proposal also depends upon the establishment of new production capacity which to be internationally competitive needs to be of world scale - a conclusion supported by the Jaakko Poyry Study commissioned by FAFPIC in 1985.

This is the first such nation wide study of the forest industries undertaken in Australia and it has been made possible only because FAFPIC draws together industry, Government and trade unions.

C.2. Sawnwood production

Current sawnwood domestic consumption is 3.9 million cubic metres comprising 1.891 million cubic metres of hardwood and 2.009 million cubic metres of softwood.

The projections indicate that by 2030 the domestic consumption level will be 8.4 million cubic metres comprising 1.6 million cubic metres of hardwood and 6.8 million cubic metres of softwood also, included are projections of consumption of new value added sawn timber products.

Current plywood consumption is 179,000 cubic metres - 74,000 cubic metres from hardwood and 105,000 cubic metres from softwood.

Consumption in 2030 will be 310,000 cubic metres - 120,000 cubic metres from hardwood and 190,000 cubic metres from softwood.

Forecast consumption of domestic hardwood production is constrained by resource availability which cannot be enhanced within the time frame of the study due to a minimum 75-80 year rotation requirement. Much work is being done on shorter hardwood rotations. However, even in this event shorter rotations would still take us to the limit of the study period.

These consumption figures along with current imports and exports, projected imports and projected exports have been matched with projected log availability at each five year period between 1987 and 2030.

The result is a small excess in log availability in the period 1987 to 1990 leading to a shortfall in sawlog availability of 10 million cubic metres in 2030.

Because of the absolute limitation on hardwood availability the majority of this shortfall must be met by softwood. There is no surplus of hardwood sawlog although processing of additional pulplog could yield a limited amount of sawlog flitch material.

The industry acknowledges that domestic demand for sawn timber has been constant. This has been due to limited sawlog availability compounded by hardwood resource withdrawal.

Implementation of this plan will require a vigorous domestic and international marketing program linked to the increased scale of the industry operations.

C.3 Pulp, paper and reconstituted products.

The projections were also used to analyse pulp and paper consumption as well as potential consumption in specialised product areas such as particle board, medium density fibreboard, woodchips and treated roundwood.

Current domestic paper consumption is 2.27 million tonnes and this is projected to increase to 5.45 million tonnes in 2030.

Total reconstituted panel production is 918,000 cubic metres and is projected to rise to 2.732 million cubic metres in 2030.

A supply shortfall will first emerge in the period 2005 to 2010. By 2030, unless remedial action is taken, the shortfall will be 4.526 million tonnes of softwood.

INDUSTRY INVESTMENT - NEW FACILITIES

(1987 - 2030)

TYPE OF MILL			TOTAL NO OF MILLS	COST sm (1)
Hardwood	2	1991-1995	3	2800
Pulp	1	1996-2005		
Softwood	1	1991-1995	6	6000
Pulp/Paper	1	1996-2005		
	1	2006-2010		
	1	2011-2015		
	1	2016-2020		
	1	2021-2030		
Softwood	6	1991-2000	34	1700
Sawn	11	2001-2010		
	10	2011-2020		
	7	2021-2030		
Softwood	2	1991-2000	12	840
Panel &	3	2001-2010		
Re-	3	2011-2020		
constituted	4	2021-2030		
Products				

TOTAL			55	11340

(1) Constant 1987/88 prices

C.5 Population

The population projections on which the consumption forecasts are based are derived from lowest estimate ABS statistics and assume net immigration of 75,000 per annum.

C.6 Summary

The consumption projections, it should be stressed, are based on very conservative estimates of demand, per capita growth, import replacement, export potential and population projections.

The current international supply and demand situation for forest products could justify a more optimistic scenario.

A major study by Jaakko Poyry, an international forest products consultant, was commissioned by FAFPIC and completed in 1985. It showed that for most product sectors, Australian producers with world-sized mills could be highly competitive in domestic markets, and that in many product sectors Australian producers could be competitive in export markets.

This combination of factors has created a unique opportunity for Australia.

Australia has the climate, area, technology and the skills to capitalise on the opportunity.

D. REMEDYING THE RESOURCE SHORTFALL

Working from these consumption projections and the existing resource availability FAFPIC has calculated what forest resource has to be made available to allow the industry to fulfil its potential.

The calculations are based on standard formulae commonly used to match hectares planted with resource available.

D.1. Softwood

The current softwood resource is 837,000 hectares in size.

To meet the log volume needed to sustain the growth outlined earlier we need 1.36 million hectares of softwoods by 2030.

This means that we have to plant an additional 523,000 hectares or just over 13,000 hectares a year from 1988 to 2030.

Current forestry services planting programs should meet 10,000 hectares a year of this requirement until 1996 - leaving a 1988-1996 shortfall of 3000 hectares a year.

D.2 Hardwood

The existing hardwood resource must be maintained as production forest to meet sawlog requirements and to provide the major part of the necessary pulpwood.

Current hardwood plantation resource is 39,000 hectares. We need to increase that to 115,000 hectares to meet demand projections.

This requires planting of 76,000 hectares or 3800 hectares a year in the period 1988 to 2008.

D.3 Costs

The costs, in constant 1987/88 dollars, of this expansion project over the whole 43 year period are:

SOFTWOOD PLANTATIONS (523,000 hectares)

Capital Costs

Land acquisition and plantation establishment	\$1307 million.
Later year investments	\$237 million.
Recurring maintenance	\$405 million.
TOTAL	\$1949 million.

HARDWOOD PLANTATIONS (76,000 hectares)

Land acquisition and planting	\$178 million
<u>GRAND TOTAL</u>	\$2127 MILLION

Ideally sources of funding of plantation costs would be a mix of:

- * Private investment by companies;
- * Farm forestry;
- * Joint ventures; and
- * State Government plantations.

The exact mix can only be worked out by industry and Governments as detailed action plans are developed.

The total investment required is \$49 million a year in constant 1987/88 dollars.

E. ECONOMIC AND SOCIAL CONSEQUENCES

FAFPIC has calculated the positive benefits of these projections on Australian overall employment; employment in key decentralised regional areas; and, the balance of payments situation.

E.1 Employment

The industry currently employs 106,700 people directly and 160,000 people indirectly - a total of 266,700.

The increases are not linear because of the timing of various construction projects but a total of 125,416 additional direct and indirect jobs would be created in the period 1987 to 2030.

INCREASES IN EMPLOYMENT (1)

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TOTAL	50.16	75.25	125.41

(1) increments per 5 year period

E.2 Balance of Payments (in constant 1987/88 dollars)

Currently the heavy volume of forest products imports has created an annual industry deficit in trade of \$1 billion p.a.

Given the projections - and the right policy mix by Government and industry - this could be converted to an annual surplus of \$390 million by 2030.

The balance of payments deficit in forest products would be reduced to \$350 million by 1995; come into balance in the period 2010-2015; and, run into surplus between 2015 to 2030.

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F. CAPITALISING ON THE OPPORTUNITY

To capitalise on these opportunities the industry is seeking the following:

1. Commonwealth-State co-operation to achieve a nationwide moratorium on further hardwood resource alienation by Government until a detailed operating program is established.
2. Commitment to tripartite development of this plan, under the auspices of FAFPIC, into a detailed action program able to be implemented from 1988 by industry, trade unions and Government. This will require additional resource for FAFPIC.

FORESTRY POLICY



BOB CARR AND THE ALP
A BETTER WAY



A FORESTRY POLICY FOR THE FUTURE

JACK HALLAM MLC

SHADOW MINISTER FOR FORESTS

- 1.0 Forests are an essential and vital part of our State's and Nation's heritage and biological resource. Forests protect and nourish our soils, provide habitat for much of our unique flora and fauna and provide us with renewable resources for ecologically sustainable development, study and leisure.
- A Carr Labor Government will support the development of a national strategy for ecologically sustainable development whereby environmental and equity issues can be integrated with economic and resource use decision-making.
- Labor will initiate a review and evaluation, by scientific assessment all old growth forestry operation in New South Wales. This model, as successfully agreed upon in Tasmania will provide the method for identifying and protecting the environmental value of old growth forests and may be used as a model for the sustainable use of contentious forest areas.
- 1.1 Taking into account the Resource Assessment Commission's findings, and in consultation with industry and environmental groups, a Carr Labor Government will ensure our forests are managed scientifically and in an environmentally sensitive way so that their many benefits can be realised now and for future generations.
- 1.2 Governments have a central role in this regard and the NSW Labor Party is committed to ensuring the forests of this State are managed and conserved for all time.
- 1.3 A Carr Labor Government endorses the philosophy of the interdependence of conservation and sustainable development enshrined in the National Conservation Strategy for Australia which provides for resource use with appropriate conservation measures to maintain resources for future generations.
- 1.4 In line with developing national forest strategies, we believe the ecologically sustainable development of our forest resources can be achieved without damage to biodiversity, recreational, wildlife and scientific values through wise management and appropriate policies.

- 1.5 Labor endorses the concept of multiple use management where appropriate for the sustained yield of our forests. Where timber harvesting is appropriate we will endorse the use of environmentally responsible management practices, including the maintenance of adequate wildlife habitat, enforcement of up-to-date erosion controls and the assurance of adequate forest regeneration.
- 1.6 Under Labor, the NSW Forestry Commission will be required to conduct environmental impact studies under the Environmental Planning and Assessment Act.
- 1.7 The Forestry Commission's public accountability will be maintained through the Department of Planning which is responsible for the approval of management practices and review of EIS's.
- 1.8 The Forestry Commission's charter will be reviewed to take greater account of forest conservation issues.
- 1.9 Labor will promote ecologically sound and sustainable forestry practice including:-
 - 2.0 re-forestation of previously cleared lands both public and private.
 - 2.1 minimisation of, and elimination of, wherever possible the wasteful uses of forest products
 - 2.2 cessation of clear-felling of native forests
 - 2.3 large scale planting of eucalypt species (native hardwoods) for specific purposes such as cabinet timbers, in suitable areas on previously cleared land.
 - 2.4 protection of water catchment areas
 - 2.5 mandatory planting of eucalypt forests when wood chipping licenses are granted
 - 2.6 no woodchip licenses be issued until full environmental impact studies are undertaken in the areas from which the resource is obtained
 - 2.7 primary producers be encouraged to expand their agricultural base to include eucalypt hardwood plantations

- 2.8 develop and implement strategies to encourage maximum utilisation of new technology for the timber industry including and emphasising increased value-adding of timber products, and recycling of wood products. Included in these new technologies are such products as Scrimber.
- 2.9 In co-operation with the Federal Government, explore further the feasibility of developing a flitch recovery industry in the southern forests of the state to recover saw wood from logs which are currently chipped for export.
- 3.0 Labor recognises the technological advances made in recent years in timber technology. We will encourage industry to adopt new technology and we will seek to increase industry funding for further technological research. We will encourage industry to take advantage of the Federal Government's soon to be established Forest Industry Research and Development Corporation.
- 3.1 from the viewpoint of sustainability, fully explore the potential of the Kenaf Plant, and other non-wood fibres to supplement woodchip requirements from forests for pulp and paper production.
- 3.2 no new pulp mill will be permitted to be established without all proper environmental studies completed, safeguards acted upon, and in place, nor without adequate resource availability.
- Future industry developments in the pulp and paper sector using hardwoods must comply with the Commonwealth's guidelines for bleached eucalypt kraft pulp mills.
- In determining the export of pulp mill development in New South Wales, Labor will consider the outcome of the Industry Commission's study into the opportunities for paper production using unbleached pulp. Labor will also take into account the potential market acceptance of recycled paper products.
- 3.3 Labor's forestry policies will maintain ecologically sustainable forestry operations in NSW with the primary objective of reducing forest product imports of timber and wood related products.
- 3.4 Labor will actively encourage greater use of Australian-produced timber products.
- 3.5 Labor's environmental concerns and related wood producing policies must relate to private forestry operations as well as to public operations.

- 3.6 Labor will institute clearly defined policies to ensure the continued existence of representatives of all species of plant and animal communities, i.e., that biodiversity be maintained.
- 3.7 Labor will require all forest management authorities to accurately catalogue the biodiversity, ecological, wilderness, and Aboriginal cultural values of forests they manage with the aim of integrating wildlife conservation objectives.
- 3.8 Labor will fully co-operate with the Commonwealth National Forest Inventory designed to ascertain the extent of our nature forest species. In order to achieve this the Forestry Commission will be required to employ additional forest ecologists and biologists at relevant levels.
- 3.9 Labor will instruct the NSW Forestry Commission, together with the NSW Soil Conservation Service and the Department of Agriculture, to develop a group of technical experts to advise on sewage effluent.
- 4.0 This advice would be on a contract basis to public works and local government, and would assist in the establishment of farms and forests, managed by either local government or private enterprise leases. Such schemes already exist at Werribee in Victoria and in Israel.
- Three pilot town sites will be selected in the first six months of the Carr Government - two coastal and one in an inland centre.

5.0

PLANTATION FORESTRY AND JOINT VENTURE SHARE FARMING

Labor will co-operate with the Commonwealth on recently announced National Plantations Advisory Committee which will develop a national plantations strategy for Australia.

This committee will focus on the issues from the perspective of the major interest groups including the conservation movement, forest industries, unions and the community.

This Committee will make a useful contribution by identifying existing impediments to the development of plantations.

A Carr Government will actively encourage private landholders to establish woodlots on previously cleared land with suitable soils, on a joint venture share farming basis with the NSW Forestry Commission, with emphasis on combination with private enterprise.

As the implementation of planting and management policies will be State responsibilities, and NSW represents more than one third of Australia's forestry operations, it is imperative that we have clear and definitive policies to enable private industry investment programs to proceed.

We believe greater emphasis should be placed on afforestation with native hardwood species, including species that are native to the particular region where plantations are established.

Towards this end, we will encourage public plantation reafforestation as well as private enterprise plantations.

Reafforestation should have sufficient diversity and be managed by environmentally sound management practices.

Joint-venture plantations will be modelled along similar lines as those schemes operating in Tasmania and Western Australia, where a contractual agreement is reached between the landholder and another party to harvest a crop of trees grown on the landholder's property.

A Carr Labor Government will ask the Commonwealth to implement (already recommended by the House of Representatives Standing Committee on Environment and Conservation) the introduction of taxation incentives for plantation establishment on previously cleared agricultural land.

HOW IT WILL WORK:

FORESTRY SHARE FARMING AND PLANTATION SCHEMES

- 1 Forestry Share Farming Schemes or Joint Venture Schemes, as they are more generally known, were introduced to Tasmania in 1984 after first being introduced in New Zealand.
- 2 Joint venture agreements are a contract between the landowner and another party to harvest a crop of trees on the landowners' property. Generally the landowner provides the land, fencing and perhaps some maintenance and other costs; the other party, usually a forestry company, does the major part of the work. When the trees are felled the landowner receives a payment based on a formula which takes into account the landowner's input into the project. The forestry company has sole rights to the wood.
- 3 Tasmania currently has a draft Forestry Rights Registration Bill along similar lines to the New Zealand model. It creates a 'Forestry Right' which has recognition in law and can be registered on the Land Title in the same way as a deed.
- 4 Most joint ventures are not partnerships for income tax purposes, ie, both partners claim tax deductions independently according to their own costs.
- 5 There are three forestry companies currently offering Joint Ventures. They are:
 - a) Australian Newsprint Mills Ltd., Boyer. Joint Venture Farm Forestry Scheme.
Southern Tasmania.
To provide pine pulpwood to Boyer.
Minimum area 20 hectares
Land must be within approved zones within 100km of Boyer mill
Limited to radiata pine
 - b) APPM Forest Products
Joint Venture Scheme
To provide eucalypt pulpwood for domestic use and for export
Northern Tasmania
Minimum area 10 hectares within approved zones
Choice of species restricted to Eucalyptus nitens and Eucalyptus globulus

c) Forest Resources.

Share Forestry Scheme

To provide eucalypt pulpwood for export

Northern Tasmania (not exclusively)

Minimum area of 10 hectares

Choice of species restricted to Eucalyptus nitens and Eucalyptus globulus

- 6 All three companies have had some success in signing up a number of landholders with an unknown area. However, there has also been some resistance to Joint Ventures as many landholders are suspicious of losing control of their enterprise.
- 7 The Tasmanian Forestry Commission has been considering Joint Ventures with industry to grow trees on Crown Land but as yet has not reached a decision.

THE WESTERN AUSTRALIAN EXPERIENCE

WA has established a TREE TRUST which is described as "a project which combines environmental and economic advantages".

The Government's 'Tree Fund' hardwood sharefarming scheme began in 1988. It has at present 5970 hectares under establishment with the average hectare being 102.

Interested farmers lease their land to the Government for periods of 14 years for one crop, or 26 years for 2 crops.

The minimum size of these is 20 to 40 hectares.

The annuity paid to farmers varies from \$65 to \$125 per hectare plus a residual payment at the end of the venture.

A private enterprise group, the Western Australian Chip and Pulp Company (WACAP) has embarked on a program which assists farmers using a variety of incentive schemes to establish hardwood plantations.

Under these schemes, over 3000 hectares of plantation have been established on 21 different farms on a 10 to 15 year rotation rate.

There are two versions - plantations on pasture and plantations on forested sites.

WACAP's legal agreement gives its first right of refusal for timber. The size under this scheme is five hectares.

VICTORIA

Plantation sharefarming in Victoria was started by APM, initially for pine, and later, eucalypt in April 1989, however, no eucalypt (hardwood) plantations have been established as yet.

The criteria for these schemes is that they must be within an economic radius of APM's Maryvale Mill.

Benefits from such schemes include:

- . a guaranteed market for pulp wood.
- . major discounts on planting stock
- . pulpwood royalty rates identical to pine pulpwood royalty rates
- . APM manages all harvesting and transport of timber

The Department of Conservation and Environment has no hardwood plantation sharefarming scheme going yet.

However, under proposals in hand, participating farmers will receive an agreed annuity for the period of the venture, indexed to inflation.

A combination of an annuity and a lump sum can be negotiated.

There is provision for farmers to earn additional income from the enterprise by undertaking contract work on the plantation.

Minimum hectares, 20, and must be located within 60k of a major mill or within 30k for a large plantation.

Other considerations in the scheme are of course reliant on rainfall, soil type and slope conditions.

NEW SOUTH WALES

There are no hardwood plantation sharefarming schemes in NSW.

The Forestry Commission's previous pine sharefarming schemes phased out in 1985 because of escalating costs.

CONCLUSIONS

Advantages of plantation sharefarming are:

- * Plantations offer uniform wood quality, better growth rates. Purchase of land costs are avoided, farmers and landowners are encouraged to be part of the process, land holder suspicion about resumption is avoided.
- * Annuities and royalties help supplement farm income.
- * Total Catchment Management plans are ideally suited to plantation sharefarming arrangements.

Some negative aspects need to be acknowledged. High levels of care are needed in the establishment period.

Some farmers resist a long term approach. Past shonky operators have given forestry sharefarming a bad name. There is still considerable landholder resistance to the idea in some areas. But the concept is ideally suited to a sustainable development strategy.

NEWS

11 October, 1990

CRABB ANNOUNCES EAST GIPPSLAND LOGGING STRATEGY

Protection of "old growth" forests and full use of harvested sawlogs are the major components of a strategy for East Gippsland announced by Conservation Minister, Mr Steve Crabb, today.

The declaration of three new areas of National Park will mean that 90 percent of East Gippsland's National Estate will now be included within National Parks, reserves and other areas excluded from logging.

"There will be logging and regeneration in National Estate areas, but only those which have had considerable disturbance already or have values, which are already fully represented in other National Parks," Mr Crabb said.

Of the one million hectares of forest in the region, 40 percent is protected by National Parks and reserves. Of the balance, a further one-third is protected by environment protection measures.

"In effect, almost two-thirds of the forest is managed for environmental values which exclude logging," he said.

Mr Crabb said the Australian Heritage Commission has been approached to comment on the adequacy of representation of forest values in National Estate areas currently located in National Parks and State Forests.

He said the East Gippsland logging strategy reinforces the Timber Industry Strategy commitment to a saw log driven industry. Additional volumes of currently felled, low grade sawlog will be processed by saw mills.

"This decision means where trees are harvested, more use will be made of the timber to produce sawn timber products.

"It will also guarantee small sawlog mills a future".

Mr Crabb said as part of this "value added" strategy, Australian Paper Manufacturers will undertake a study into the expansion of its Maryvale operations to produce high quality printing and writing paper.

"This would involve an investment of \$800 million, provide 550 jobs (1500 indirect), and a return of up to \$350 million annually.

"It has the potential to slash a quarter of the nation's bill for paper imports."

Mr Crabb said the Government is not about creating an export wood chip industry, but rather, establishing our own high quality paper product industry.

He said the current Value Added Utilisation System Trial will continue.

Mr Crabb said amendments to legislation will include the new National Park areas and list regional sustainable yield volumes of sawlogs.

The National Estate areas to be included in National Parks are:

Swamp Creek and Good Hope Creek (2280 ha) to be included in Snowy-Rodger National Park,

Headwaters of Goolengook River (470 ha) to be included in Errinundra National Park,

Catchment of West Thurra River (3700 ha) to be included in Coopracambra National Park.

These areas have been selected to increase the representation of old growth forests.

Mr Crabb also issued a detailed listing of areas of National Estate outside National Parks identifying the reasons why they were unsuitable for inclusion in National Parks.

He said the Victorian Government has implemented Australia's only legislated Code of Forest Practice to ensure cutting areas are carefully selected to exclude streams and areas of important habitat.

"The long rotation time of forestry means that, for the ordinary person, these forests will remain just as beautiful and enjoyable to visit.

"I believe the conservation movement should look closely at the way Victoria has sought a long term solution.

"It is clearly years ahead of other states and is an acceptable solution which protects all the objectives of the environment movement, except for those whose real aim is to close forestry down entirely in native forests," Mr Crabb said.

Media Enquiries:
Jim Tennison
Press Secretary
412 4354
1110LOGG

BACKGROUND INFORMATION ON MINISTER CRABB'S ANNOUNCEMENT ON FOREST MANAGEMENT AND TIMBER HARVESTING MANAGEMENT ARRANGEMENTS FOR EAST GIPPSLAND FOREST MANAGEMENT AREA

FOREST MANAGEMENT AND TIMBER SUPPLY OBJECTIVES

Objectives of management for East Gippsland Forest Management Areas are to implement management actions which:

- * sustain biological diversity in the forests of East Gippsland;
- * sustain supply of sawlogs to industry (currently 179,000 m³/yr of Grade A to C sawlogs) and keep open options for potential development of pulp and paper mills;
- * provide a range of benefits and incentives to the following key stakeholders :
 - . industry;
 - . unions;
 - . conservationists;
 - . local communities;

PROPOSED TIMBER HARVESTING MANAGEMENT ARRANGEMENTS

To meet the objectives outlined the course of action to be implemented involves greater protection of "old growth forest values", Limited Logging of National Estate remaining within State Forest and improved use of trees felled for processing as sawlogs.

The major elements of the proposal are :

- (i) Management of the various components of national estate in a more selective manner to give increased protection of environmental values, particularly "old growth forests".

This will be achieved by transferring selected areas of national estate with high "old growth forest" values to national park, while retaining remaining areas of national estate in State forest. The national estate areas proposed for transfer to national parks are detailed below and illustrated on the attached map.

- Swamp Creek/Good Hope Creek (2,280 ha) - an addition to Snowy/Rodger River Park (Area 1 on Map);
- Goolengook (470 ha) to Errinundra National Park (Area 2 on Map);
- West Thurra (3,700 ha) to Coopracambra National Park (Area 3 on Map).

Transfer of the above areas to national park will decrease the standing volume of high grade sawlogs available for logging by 240,000 m³ and sustainable yield of Grade C plus sawlogs by 5,400 m³/year and represents 17½ % of timber yield in national estate areas.

It should be noted that the recent Agreement between the NSW and Commonwealth Governments call for the transfer of 58% of national estate areas to national park containing 12% of timber resources. In the Victorian case what is proposed is the transfer of an additional 6,800 ha of national estate (containing 17½% of timber resources in national estate) to national park, increasing areas of national estate in national park to 82%, a much higher proportion than the Agreement with the NSW/Commonwealth Governments.

Attachment 1 provides detailed information on each of the areas to be transferred to national parks.

- (ii) Continued logging of areas in national estate not transferred to national park status under the framework of the Code of Forest Practice (The Code of Forest Practice provides the highest level of protection to environmental values in harvesting operations).

In summary, of the 423,000 ha of forest on the national estate register, 74,000 ha will remain as State forest and be available for logging conducted under the Code of Forest Practice. With application of the prescription in the Code of Forest Practice to protect environment values including exclusion of logging from biological sites of significance, one third of this area will not be harvested.

Attachment 1 provides detailed information on national estate area to be retained in State forest.

- (iii) Implementation on a Statewide basis of improved utilisation of all timber currently felled during harvesting operations. In other words, harvest Grade A to E of sawlogs and residual roundwood.
- (iv) Allocation to sawmillers of all wood harvested. No logs will be allocated to standalone woodchipping facilities. This arrangement would ensure all wood processing is sawlog driven and provides maximum opportunity for recovery of sawn timber from logs of different grades.

This arrangement should alleviate criticism of conservationists and sawmillers in NSW and Tasmania. In both of these States lower quality logs (defined as pulpwood) is allocated directly to woodchip mills with both sawmillers and conservationists claiming that as a consequence sawmillers are being squeezed out of the industry, as the industry is woodchip driven. In effect, the allocation system would provide sawmillers with a maximum opportunity to determine strategies for the recovery of some timber and reinforce the Government's commitment that harvesting is sawlog driven.

- (v) Expansion of hardwood plantations to provide additional and/or alternative wood resources for industry development. The Governments current program of 4,000 ha/year is a major commitment to this strategy.

BACKGROUND INFORMATION ON NATIONAL ESTATE IN EAST GIPPSLAND

1. PURPOSE

The purpose of this document is to detail information on the placement of additional areas of national estate in National Park and retention of remaining areas of national estate in State forest.

In addition information is presented regarding the protection of some wide ranging fauna in East Gippsland such as Long-footed Potoroo and Tiger Quoll.

2. BACKGROUND INFORMATION ON RATIONALE FOR THE GOVERNMENT LAND USE DECISIONS IN EAST GIPPSLAND

In analysing the national estate issue it is helpful to review the chronology of land use decisions for East Gippsland as this background information provides an historical perspective to current decisions in national estate.

Chronology for Decisions on Land Use and National Estate Listings

1974 - 1977	LCC land use Study.
1979	Government land use decision - Croajingolong and Snowy National Parks, Coopracambra State Parks plus smaller parks and reserves.
1977 - 1982	Various areas nominated, interim listed and placed on the Register of the National Estate including Snowy River National Park, Croajingolong National Park and adjacent areas. Coopracambra State Park and Alfred National Park. Ewing Morass Wildlife Reserve.
1984 - 1986	LCC land use review. Final recommendations published December 1986.
October 1986	Rodger River Area, Coopracambra Extension and Errinundra Plateau Area placed on the interim list of the Register of the National Estate.
November 1987	Government land use decisions following LCC review. The decisions: - virtually doubled the area of National Parks from 133,666 to 260,321 ha.

- created the following new parks:
 - . Errinundra 24,950 ha
 - . Snowy - Rodger River 95,290 ha
(including 53,990 ha new area)
 - . Coopracambra 35,355 ha
(including 21,955 ha new area)
 - . Sydenham Inlet - Cape Conran 11,100 ha
Coastal Park

April / May 1989

Areas in the Rodger River, Coopracambra and Errinundra which were placed on the interim list of the Register of the N.E. in October 1986, were placed on the Register following some modifications to boundaries. Additional areas were placed on the Interim list.

In almost doubling the area of National Parks in 1987, the Government recognised the need to permanently protect areas which had been identified as having outstanding biological values in Victoria's parks and reserve system.

Of the 130,000 ha of public forest placed on the interim list of the Register of the National Estate in 1986, (outside national park boundaries at this time) some 89,300 ha was permanently reserved in the new National Parks. In addition the Government increased the area of the Errinundra and Snowy River National Parks above that recommended by the LCC, to take into account areas on the interim list with high natural values by including the headwaters of the Brodribb River (4,700 ha), the southern Coast Range (3,150 ha) and the Warbisco and Home Creeks (3340 ha). A small portion of the areas on the interim list of the National Estate was not included in the new National Parks as the values were more site specific and of lesser significance and could be protected by prescriptions under the Code of Forest Practice.

In addressing the future use of public land in East Gippsland in 1987 the Government made a clear commitment to:-

- Protection of East Gippsland's magnificent natural assets in new parks and reserves;
- Ensuring that representative samples of all ecosystems were included in parks and reserves;
- A viable, value-added timber industry which is sawlog-driven and includes integrated harvesting within the value adding utilizing system;
- Continuing support for job creation in East Gippsland.

The Government's fundamental position on the use of public land has not changed. However in the light of new information from flora and fauna survey and consideration of the social, and economic needs of the community some amendments to the decisions made three years ago are appropriate.

3. PROPOSED MANAGEMENT STRATEGY FOR NATIONAL ESTATE

A main element of the management arrangement for addressing the national estate issue is to manage the various components of national estate currently not in national parks in a more selective manner to give increased emphasis to environmental values, particularly increased protection of old growth forest.

It is proposed to give effect to the strategy by transferring selected areas of national estate to national parks while retaining the remaining area in State forest.

Detailed below is information to support the proposed transfer of national estate areas to national park or their retention in State forest.

(i) National Estate Areas to be Added to National Parks

(a) Description (Please refer to attached map for location of areas)

A total area of 6,450 ha will be added to the existing major parks as follows:

Snowy-Rodger National Park

. Swamp Creek and Good Hope Creek (Area 1 on Map) - 2280 ha

Errinundra National Park

. Headwaters of Goolengook River (Area 2 on Map) - 470 ha

Coopracambra National Park

. Catchment of West Thurra River (Area 3 on Map) - 3700 ha

Total area to be added to National Parks = 6450 ha

(b) National Estate Values

Additional information from recently completed ecological studies has enabled the following biological values to be identified. These values include substantial areas of old growth forest in largely undisturbed catchments and their inclusion will significantly enhance these values in the existing National Parks.

(i) Swamp Creek and Good Hope Creek (Snowy-Rodger NP)

The area has significance for the understanding of natural history and the study of natural processes. These north flowing streams are part of the upper headwaters of the Deddick River and are both fine examples of relatively pristine catchments which will be valuable additions to the existing National Park. Both sub-catchments contain a high proportion of tall old growth forests which are relatively intact occurrences of the wet sclerophyll forest community.

(ii) Headwaters of Goolengook River (Errinundra NP)

This proposed extension of the Errinundra National Park includes an entire sub-catchment forming one of the eastern tributaries of the Goolengook River. It contains ecologically mature stands of wet sclerophyll forest in a relatively undisturbed catchment. Of particular significance is an area of Cool Temperate Rainforest which is the best developed example of its type in the Goolengook Block and will compliment the rainforest values already conserved in the Park.

In this area there are exceptional occurrences of the significant rainforest ferns - the Slender Tree-fern, Skirted Tree-fern, Oval Fork-fern and the Small Fork-fern. A recent ecological survey has revealed that the tree ferns at this site are amongst the best developed populations known in East Gippsland, and these will also compliment rainforest flora in the Park.

A further reason for adding this area to the existing National Park is to afford greater protection to the Sooty Owl which requires suitably mature forest for the development of large tree hollows in which to roost and nest. The Greater Glider occurs in this area and the additional area of old growth forest will extend the favourable habitat which already exists in the existing National Park.

(iii) West Thurra Catchment (Coopracambra NP)

The extension proposed here includes a wide range of vegetation types from tall wet sclerophyll forest through damp and dry sclerophyll forest to a closed scrub - heath - sedgeland complex and these will complement the existing complex mosaic of plant communities within the existing National Park. There is a high diversity of plant species including many rare or threatened plants particularly in rocky outcrop vegetation communities.

The particularly high botanical diversity is reflected in the diversity of animal species especially several notable bird species including the Powerful Owl.

Another rare species is the uncommon reptile - The Swamp Skink. The area also includes significant aquatic environment as habitat for the native fish the Australian Grayling.

The west branch of the Thurra River is of particular value as a reference catchment and is also important as the headwater of a river system which is one of the least modified in the State.

c. Timber Resources in Proposed Additions to National Parks

As all of the proposed additions to National Parks are in relatively undisturbed, tall and ecologically mature forest they are also of considerable value for sawlog production.

Sawlog volumes (C + grades) are as follows:

Swamp Creek / Good Hope Creek	110 000 m ³
Goolengook River headwaters	44 000 m ³
West Thurra River Catchment	86 000 m ³
	240 000 m ³

In addition it is estimated that these areas contain 500,000 m³ of lower graded logs.

In terms of sustainable yield of C plus good sawlogs this is equivalent to 5,400 m³/annum, and represents 17½ % of the sustainable yield of 31,000 m³ from all areas of National Estate within State Forest.

4. REASONS FOR NOT ADDING OTHER AREAS OF NATIONAL ESTATE TO EXISTING PARKS

The three areas to be added to existing National Parks therefore represent that portion of the National Estate which contain significant values relating to richness and diversity of flora and fauna and also the intact nature of catchments.

The remaining area of National Estate is not proposed for addition to existing parks because of significant disturbance or other reasons which are summarised below:

(i) Croajingolong

- significant disturbance from logging since 1940's (Corryingle)
- significant disturbance from logging since 1950's (Yerung, Tamboon, East Wingan, Stony Peak, Binns)
- similar areas well represented in existing Park and reserve system
- severely burnt in 1983 (East Wingan, Stony Peak, Genoa)
- extensively roaded

(ii) Errinundra

(a) Coast Range - Tennyson

- significant disturbance from recent clear felling;
- western portion subject to intensive mining as evidenced by mineshafts and stumps of trees used for pit props;
- adjoins pine plantations in NSW which would lead to weed invasion;

- . adjacent to Tennyson Creek Flora Reserve in NSW;
 - . contain representative Flora Reserve (Little Bog Creek).
- (b) North Misery
- . long history of grazing, evidenced by old cattle yards and pronounced butt scars from frequent deliberate burning in country that has low natural fire frequency;
 - . biological values well represented in adjoining Errinundra NP.
- (c) Delegate
- . significant disturbance from logging over past 20 years;
 - . disturbance from mining in the late 1800's and early 1900's.
- (d) Clarkeville
- . Location of old mining towns;
 - . heavily logged to feed boilers at mines (eg. Victorian Star) and batteries in early 1900's;
 - . wattle bark stripping and logging operations in 1940's and 1950's.
- (e) Bonang North
- . history of disturbance through land selection and grazing;
 - . roading and mining adjacent to Bidwell Creek area;
 - . recent logging history;
 - . severe defoliation in Kanuka Creek in early 1970's resulted in extensive mortality of older trees - indicating need to regenerate Shining Gum;
 - . significant biological values protected by Code of Forest Practice, and site of significance identified from recent ecological survey will protect flora and fauna values.
- (f) Brown Mountain
- . recent logging history;
 - . biological values well represented in adjoining Errinundra NP (as indicated by intensive flora and fauna surveys);
 - . other values protected by Code of Forest Practice.
- (g) Ellery Creek
- . biological values well represented in adjoining Errinundra NP (as indicated by intensive flora and fauna survey);
 - . other values protected by Code of Forest Practice

(h) Big River

- . recent history of logging;
- . biological values well represented in adjoining Errinundra NP.

(iii) Snowy River

(a) Yalmy / Serpentine

- . recent logging history;
- . current logging operations;
- . areas of key significance already identified by flora and fauna surveys and excluded from logging;
- . long grazing history (Paradise Ridge derives its name from the quality of the feed).

(b) Martins Creek / Sardine Creek

- . significant disturbance from logging over recent years;
- . current logging operations
- . biological values well represented in adjoining Snowy/Rodger NP

(c) Goongerah West

- . significant disturbance from logging over past 20 years;
- . biological values well represented in adjoining Snowy/Rodger NP.

(iv) Coopracambra

(a) East Thurra

- . significant disturbance from past logging;
- . biological values well represented in adjoining Coopracambra NP;
- . many areas severely burnt in 1983.

5. PROTECTION OF SOME WIDE RANGING FAUNA IN EAST GIPPSLAND

A number of fauna species require wide ranging habitats to maintain viable populations. Conservation groups have identified various fauna species as being in danger of extinction if national estate areas are not fully protected from logging. Detailed below is information on the status of the "high profile" fauna species sighted by conservation groups.

Long-footed Potoroo - although classified as endangered in Victoria, confirmed records and sightings come from a wide geographic range (Snowy/Rodger National Park in the north to Bellbird in the south) and a wide range of plant communities, including logged over forest. So field surveys involving new techniques targetted at this species intensify, the number of new locations for the species is increasing.

Habitat protection is provided in the Potoroo Management Plan which is now in place and which takes account of all current research findings.

Great Pipistrelle Bat - despite suggestions that this mammal is endangered and under serious threat, the species is locally common in East Gippsland. It occurs in mature wet sclerophyll forest which is well represented in all 3 major mountain national parks (Errinundra, Coopracambra and Snowy/Rodger).

Greater Glider - this, the largest of the gliding possum, also covers a wide range of habitats from lowland sclerophyll forest, rainforest and montane sclerophyll forest. The most suitable habitat for this species which requires tree hollows for nesting sites, in ecologically mature forests and this is well represented in Errinundra, Snowy/Rodger and Coopracambra National Parks. The area proposed for addition to these Parks will complement existing Greater Glider habitat.

Tiger Quoll - although distributed throughout the Great Dividing Range from northern Queensland to southern Victoria and Tasmania the Tiger Quoll is considered rare in Victoria. However it is still widespread, occurring sparsely throughout much of the eastern highlands and foothills. In East Gippsland it occurs in dry rainshadow woodlands of the upper Snowy River in the Snowy National park as well as wet sclerophyll forest in Errinundra and Coopracambra Parks.

East Gippsland is important for the conservation of this species and suitable habitat occurs in the National Parks system and also in rainforests all of which are protected from logging.

Powerful Owl and Sooty Owl - these large forest dwelling owls require large tree hollows for nesting and usually occupy large home ranges - 200 to 800 ha for the Sooty Owl and 800 to 1000 ha for the Powerful Owl.

Sooty Owls live in wet sclerophyll forest with large eucalypts and rainforest or fern gullies. Both habitats are well represented in Snowy/Rodger, Errinundra and Coopracambra National Parks and the addition of the West Thurra catchment to the latter Park will increase the area of existing suitable habitat.

Powerful Owls utilise a wider range of forest habitats which support their prey. The requirements for large territories make the maintenance of viable populations a problem and further research is required to clarify their habitat requirements.

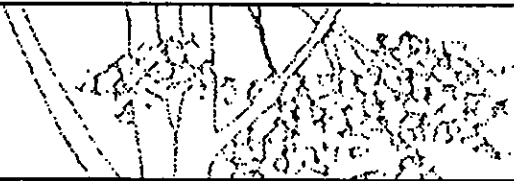
The existing system of Parks and reserves in East Gippsland contain over 400,000 ha of forest most of it mature and unlogged. This area combined with retained unlogged systems in State Forest, provides an extensive habitat for the continued conservation of the Powerful Owl.

**FORESTS FOR AUSTRALIA :
TOWARDS POLICIES AND
STRATEGIES FOR THE
MANAGEMENT OF
AUSTRALIAN FORESTS**

PUBLIC COMMENT DRAFT



**STATEMENT PREPARED BY THE STANDING COMMITTEE
OF THE AUSTRALIAN FORESTRY COUNCIL**



COMMENTS ON THE DRAFT STATEMENT SHOULD BE FORWARDED TO :

Mr L D Wood
Secretary
Australian Forestry Council
C/- GPO Box 858
CANBERRA ACT 2601

OR : State Forestry Authorities

BY : 31 October 1990

FORESTS FOR AUSTRALIA

TOWARDS POLICIES AND STRATEGIES FOR THE MANAGEMENT OF AUSTRALIAN FORESTS



A DISCUSSION PAPER

May 1990

FOREWORD

The Australian Forestry Council released its National Forest Strategy in 1986 following public comment on a draft document. The 1986 Strategy document sought to indicate the important basic principles and goals associated with the management of Australia's forests.

Most recently the Council endorsed a review of the Strategy by its Standing Committee. The resultant Discussion Paper draws on several previously published conservation and forest strategies which contain the scientific knowledge and a wide range of views crucial to a proper analysis of the forestry issues in Australia. This paper provides a framework for a rational and comprehensive debate on the important forestry issues facing Australia, leading in turn to the achievement of widely accepted forest management practices, encompassing both conservation and sustainable use of forests providing environmental, social and economic benefits for the nation.

The review was undertaken against the background of the Resources Assessment Commission's inquiry (RAC) into Australia's Forest and Timber Resources and a copy of the Discussion Paper has been made available to the RAC.

The Standing Committee strongly believes that until a set of principles, goals and action steps can be developed, discussed and widely supported, the forestry debate in Australia will continue to be unduly polarised and the development of this ecologically and economically sustainable sector will be hindered.

The 1986 Strategy document foreshadowed the need for Council to prepare shorter statements of forestry management objectives. The Council has also authorised the release for public comment an accompanying statement on principles for forest practices related to wood production in native forests. Amongst other things, this document outlines principles of environmental care to be followed in tree growing and timber harvesting.

On behalf of the Standing Committee on Forestry I thank all those who have contributed to the preparation of these papers. I suggest that those interested in obtaining additional information on forest practices should contact the relevant State or Territory Forest Authority.

Comments on these papers should be forwarded to the Secretary, Standing Committee on Forestry, c/o The Department of Primary Industries and Energy, GPO Box 858, Canberra City ACT 2600 by, if possible, 31 October 1990.

D R MUTTON
CHAIRMAN
STANDING COMMITTEE ON FORESTRY

September 1990

INTRODUCTION

This discussion paper deals with some of the most important issues facing the Australian people - the use of the nation's forests and the planting of more forests. Unfortunately, most of the current debate about forestry in Australia has been destructive. This paper - "Towards a National Forest Strategy for Australia" - has been prepared to provide a framework for rational and comprehensive community debate on the forest issues.

In preparing this discussion paper, the store of wisdom, scientific knowledge about forestry and land management, and the practical experience incorporated in a number of important documents was drawn upon.

These documents are:

- World Conservation Strategy
- Institute of Foresters of Australia National Forest Policy
- Australian Conservation Foundation Forest Strategy
- National Forest Strategy for Australia, of the Australian Forestry Council
- World Wildlife Fund Forestry Strategy
- State Conservation Strategies for Australian States
- FAFPIC Growth Plan
- Public Land Fire Management - Australian Forestry Council

In particular, it is assumed that any strategy for Australian forests should be based on the fundamental tenets of the 1984 National Conservation Strategy for Australia, which are:

- . The maintenance of ecological processes and life support systems.
- . The preservation of genetic diversity.
- . The sustainable utilisation of species and ecosystems.
- . The maintenance and enhancement of environmental qualities.

Accordingly, it is proposed that the objectives of an Australian forest strategy should be:

- . To ensure that Australia's natural forests are maintained as viable ecosystems.
- . To ensure the provision of a full range of values and uses of Australian forests on a sustainable basis.
- . To facilitate the planting of more forests, both for timber production and to restore and sustain other environmental values.
- . To provide a secure basis for the development of commercially viable forest product based manufacturing industries.
- . To provide processes for resolving differences in the community about forest management and the balance between different forest uses.

The discussion paper has been prepared jointly by the Heads of the State and Federal forest agencies of Australia. Comments from all Australians are sought.

The development and implementation of a national forest strategy will only be possible if there is a partnership between States and the Commonwealth Government and industry and community groups, representative of all those who have an interest in forest values. The purpose of this paper is to contribute towards the development of a nationally agreed forest strategy to conserve forests, provide for maximum sustainable development for all forest values and to achieve an acceptable balance between the various uses of forests.

PART I: BACKGROUND

Australia's native forests are largely comprised of species of the genus *Eucalyptus*. These remarkable trees, more than anything else, are responsible for the appearance of the living part of the Australian landscape and are deeply etched into the psyche of all Australians.

There are also forests dominated by other types of trees, for example the rainforests of Queensland and New South Wales, the cypress pine of inland New South Wales and Queensland and the cool temperate forests of Tasmania. The vast coniferous forests which dominate the northern hemisphere are absent in Australia, but we have established considerable areas of softwood forests in most States to provide for our softwood needs and to supplement the timber supplies from native forests.

Our forests have enormous value to Australians. They provide protection for water catchments and soils; they provide areas for recreation; they contain a great variety of native plants and provide habitat for native animals; and they provide the timber and wood fibre used to manufacture a variety of essential products.

The proportion of the Australian continent which is capable of supporting forest growth is limited by our climate and is small relative to total land area. Nevertheless fine natural forests occurred all down eastern and in south-eastern Australia, in Tasmania and south-western Western Australia at the time of European settlement; eucalypt and acacia or paperbark woodlands are still widespread in the vast sub-tropical and semi-arid regions.

Prior to European settlement at the end of the 18th century, there was a substantial interaction between the Aboriginal people and the forests in which they lived. For example, fire was used to manage vegetation, to bring down trees, in hunting and to assist access. The forests which European settlers encountered were in no sense completely "natural". They had been managed by the Aboriginal people for many thousands of years.

For most of the period since European settlement, farming was seen by the community as the "highest" form of rural land use, and forests were the prime targets for clearing for agriculture. Strong social pressure for the conversion of native forests to farms persisted until the 1960s. It must be recognised that the agricultural production which was made possible from forest clearing has been a major factor contributing to Australia's economic development. Nonetheless, it is recognised across all sectors of the community that there are significant undesirable consequences to forest clearance, such as salination and soil degradation. The challenge to Australians is to retain the benefits of agricultural production, while minimising or removing the environmental costs. The integration of trees into farming practice, and in some situations the re-establishment of forests on land which should not have been cleared, is one of the principal ways by which this can be achieved.

Australia's forests also have been used by governments as a vehicle for the promotion of regional development and decentralisation, and as the raw material for achieving a high standard of living and affordable housing, and for earning export income.

The Extent of Australian Forests Today

The greatest area of forest is native forest set aside by the States originally for timber production, but managed for many years for multiple uses which include timber production, catchment protection, recreation, landscape protection and flora and fauna conservation. There are also large areas of forest in national parks and on privately owned land and a significant area of plantation established for timber production, mainly with exotic tree species.

Australian Forest Areas

	<u>Total</u> (million ha)	<u>% of Total</u>
Private native forest	11.0	26.8
Public native forest	30.0	73.2
Total native forest:	41.0	100.0
Public forest:		
Parks and other reserves	5.3	12.9
Vacant or leased	11.8	28.8
Managed for multiple use	12.9	31.5
Total public forest:	30.0	73.2
Multiple use public forest:		
Wood production	6.6	16.1
Environment Protection or uneconomic	6.3	15.4
Total multiple use forest:	12.9	31.5
Plantations	0.93	

* Source: Forestry Branch Department of Primary Industry and Energy, Canberra, March 1990.

Forest Management

Forest management didn't commence in Australia until the late decades of the last century. The early preoccupations of the State forest services were the dedication of publicly owned forests to secure them from agricultural development, regenerating cutover forests, fire protection and the establishment of pine plantations to augment domestic timber supplies. From about the mid-1960s, management has systematically incorporated catchment management, recreation and wildlife conservation.

With few exceptions, the allocation of public forests for purposes of nature conservation and recreation (for example national parks) did not commence in Australia until the early 1900s. Strategies for creation of forested parks and reserves from 1920 differed between States. By the middle part of this century, national parks and wildlife agencies had been established in all States and the total forest area in these reserves now total about 5.3 million hectares, or 18% of the publicly owned forest area.

Native forests on private land had very largely been regarded as transitional - that is, occupying land destined for urban development or agricultural production (they are frequently grazed), rather than serving as multiple use forest. More recently, there have been significant changes in the attitude of the farming community to forests, and increasingly, farmers are taking an active role in preserving remnant native forests and, in some cases, with the assistance of private companies and State forest services, managing them for timber production. But in the main, they have received little attention, even though they occupy a significant area (some 27% of native forests) and could make a significant contribution to the preservation of forest ecosystems and to provide a number of forest products and services.

Private forests established by investors, or by large timber industry companies, are generally managed intensively for timber production, but they can have a high value for recreation and nature conservation.

Forest Values and Uses

Conservation

While the principal reasons for forest conservation in the early part of the century related to the need to protect the forests from agricultural clearing in order to preserve the timber resource, even then there were also proponents who called for forest conservation to ensure protection of flora and fauna. In the last two decades, the appreciation of the conservation role of forests has become a major issue through much of the community. In addition to the role of forests in preserving specific species of flora and fauna endemic to forests, they are important because they provide some of the most significant large areas of contiguous areas of native vegetation in Australia. They have also become refuges for a number of plants and animals whose habitat has been destroyed by agricultural clearing. In addition to their role in preserving genetic diversity, because trees grow to large sizes and ages and may contain hollows for fauna, the conservation of old growth or mature forests is also an important conservation issue.

Water Production

Forests throughout Australia play a key role in preserving what some regard as Australia's most important natural resource, fresh water. Again, in many cases fortuitously, the reservation of native forests, primarily to preserve the timber resource, also ensured that the water resources of the nation were protected. Management of native forests in the future will have a major impact on preserving water quality and, in some areas, providing for increasing water yields of high quality water.

Forest Industries

Forest-based industries were a feature of the Australian economy from the earliest days of settlement.

Today these industries are of enormous economic and social value to Australia. With an annual turnover of \$7.3 billion in 1987 they are, in total, of about the same economic significance as the wheat industry, and slightly smaller than the wool industry. The forest industries provide direct employment for 86,000 people, and are especially valuable in providing diversity and stability of employment in rural areas.

Australians have a relatively high per capita demand for a wide variety of timber, and paper products. Timber is used for houses, buildings, landscaping, other construction, boats and furniture. The introduction of electronic office equipment has accelerated rather than reduced our demand for paper.

International trade is an important aspect of the Australian forest products industry. Australia imports roughly one-third of our timber and paper requirements. Currently, imports total \$2 billion worth of timber and other forest products each year and forecasts suggest continued growth, justifying close consideration of our future industry strategy. Substantial quantities of pulpwood in the form of woodchips are exported and lesser quantities of timber, panels and pulp and paper products.

Several studies have indicated that Australia could be competitive in international markets if it were to add value to pulpwood exports by further processing. The increase in returns generated by processing even part of our current pulpwood exports prior to shipping would have a significant impact on the sector balance of payments. Increased domestic paper production (eg of newsprint) also appears to be commercially feasible, and would assist Australia's economic performance by import substitution.

Pulpwood worth \$70 per tonne as woodchips can potentially be manufactured into pulp worth \$800-900 per tonne, and later into paper worth \$1,900 or more per tonne. Considerable interest also is being shown in prospects for manufacture and export of timber furniture.

The Australian Bureau of Agricultural and Resource Economics (Discussion Paper 89.6) estimates that our sawn timber consumption will increase from about 4 million cubic metres per annum to between 5.2 to 6.5 million cubic metres per annum by the year 2030. Wood-based panels consumption could increase from one million cubic metres/annum to between 1.6 and 2.2 million cubic metres/annum by 2030. Paper and paper products are expected to more than double by 2030 to between 4.6 and 5.5 million tonnes. A National Forest Strategy will need to address the contribution that our forests and forest-based industries can make to meet this demand on a sustainable basis.

Australia has the land, the soil and the climate to grow fine forests. Unlike some substitutes, timber is an "environmentally friendly" product. Its growing and processing require low energy input. Wise use of timber products, regrowth forests and the establishment of additional forests, contribute positively to amelioration of the "greenhouse effect".

In addition, many Australians work in the timber industry or in forest development and protection. A particular value of this employment is that it occurs in rural areas where many other traditional jobs are in decline. In many regions, forest-based industry is the mainstay of substantial towns and rural economies.

Recreation

Forests have always been attractive places for recreation. From the early times of Australian settlement, they were used particularly by communities in rural areas. In the last decade, there has been an exponential use of forests resulting from increased urbanisation, increased mobility and expanded incomes and the dramatic increase in the appreciation by the community of the attractiveness of the natural environment.

The Debate about Forest Use

Concern about forest conservation arose for the first time in Australia in the 1920s when attempts were made to stem the alienation of forests for agriculture. However, the major political debates about forest use did not emerge until the mid 1970s and have become since that time more intense and polarised.

There are four fundamental issues on which there is conflict:

1. Is timber harvesting a legitimate use of native forests? Subsets of this question concern the adequacy of the national park and reserve system, the value of regrowth forests, the trade-offs between forest use and forest beauty, the capacity of ecosystem processes and components to persist in the presence of timber harvesting, and whether cyclical harvesting and regeneration is compatible with other forest use.
2. Do old growth forests (ie, forests which have been largely unmodified since European settlement) have a special value? Should timber harvest be restricted to regrowth forests or plantations, and if so, are our forests more important than the forests in other countries? In other words, is it morally acceptable to import timber from places where forest management is less sophisticated than it is in Australia?
3. Should productive agricultural land be converted back into forests? What is the impact of afforestation of agricultural land on regional economies and social infrastructure? Subsets of this question concern whether forests should be considered as intensively managed crops, or as "multiple use" resources, the choice of tree species (native or introduced) and the techniques for reforestation of degraded agricultural or pastoral land.
4. Should native forest be converted to plantations of native or exotic tree species? Subsets of this question relate to the supposed biological simplicity of man-made forests and the loss or modification of wildlife habitat.

Forest use and management issues are extraordinarily complex. Every possible course of action has consequences which please some sections of the community and displease others. But, unlike other land uses, forestry is demonstrably a sustainable industry and, with sensitive innovative management, seemingly opposite uses can be made complementary. The principal causes of our failure to resolve conflict over forests are -

- Community uncertainty about which forestry principles and goals should be reflected in a strategic forest plan for Australia.
- Inadequate information on the extent and nature of Australia's forests and the effects of different management strategies and uses on forest values.
- The lack of agreement in the community as to the most appropriate processes for public participation which would result in forest managers reflecting the correct balance between different uses.

In recent years major forest policy initiatives have been taken by State and Commonwealth governments to improve planning, program funding, and conflict resolution. These include establishing the national afforestation program, the national forest inventory, various industry packages, and State-Commonwealth Memoranda of Understanding. Most recently, the Commonwealth government has requested its Resource Assessment Commission to conduct an inquiry into options for the use of Australia's forest and timber resources.

The discussion paper proposes content for inclusion in a strategy to meet the national objectives. The proposals are intended as a focus for detailed consideration and discussion, ultimately leading to broad community agreement.

PART II

Goals for Australian Forest Conservation, Management and Development

The goals set out below are designed to meet the objectives proposed for a National Forest Strategy, themselves based on the objectives of the existing National Conservation Strategy for Australia.

1. To conserve native forest ecosystems

To achieve this goal, strategies must be developed which ensure that -

- . sufficient area of native forest is conserved with security of tenure and purpose to meet the long term needs of the Australian people for all forest uses and values;
- . a system of reserves, which is representative of all major forest ecosystems, is set aside under secure tenure, specifically for the purpose of flora and fauna conservation and of recreation, but the latter only to the extent that it does not conflict with conservation of the forest ecosystems;
- . the maintenance of the quality of forest support systems, that is air, soil and water, in perpetuity;
- . the maintenance of essential ecological processes of the forest, such as nutrient cycling;
- . the diversity of all components of the forest ecosystem is maintained;
- . a diverse range of wildlife habitats is maintained;
- . specific management practices are developed to ensure protection of rare and endangered plants and animals.

2. To ensure a balance of forest uses

To achieve this goal, strategies must be developed which ensure that -

- . There is an appropriate balance between the area of forests allocated to different uses, or combination of uses, determined on a State by State basis and using planning processes in which the community is involved.

3. To provide for sustainable development of all forest uses

To achieve this goal, strategies must be developed which ensure that -

- . management on a sustainable yield basis for all forest values and uses is achieved;
- . an adequate financial return to forest owners, and in the case of public forests, the community, is achieved;
- . where forests are harvested, it is undertaken in a way which ensures minimum wastage and maximises the value obtained from the forest products;

- . integration of forests with other land uses on agricultural and urban lands is carried out in a way that improves the overall sustainability of land use in Australia;
 - . protection of forest soils from erosion, compaction and nutrient depletion;
 - . control of forest pests and diseases and the prevention of entry of forest pests and diseases to Australia from other countries.
4. **To ensure that in native forest areas in which harvesting for timber production is a permitted long-term use, that the forest ecosystem is maintained**

To achieve this goal, strategies must be developed which ensure that -

- . the forest is regenerated after harvest;
- . the harvest levels are sustainable in the long term on a regional basis;
- . with a view to maximising the value of forest resources, forest harvesting is confined to areas where it is compatible with other defined uses;

5. **To encourage the planting of additional forests**

To achieve this goal, strategies must be developed which ensure that -

- . where possible plantations are located on cleared agricultural land and integrated with existing rural land uses;
- . new plantations establishment conforms to relevant requirements of regional land management plans drawn up by the responsible State authorities;
- . plantations are commercially viable where the principal objective of management is timber production;
- . where the principal objective of additional forests is to obtain community benefit, such as amelioration of salinity, funds should be sought from the beneficiaries of these benefits whether they be individuals or governments;
- . suitable species (hardwood and/or softwood) are used, and facilitated through regional planning processes;
- . landscape management principles are applied to ensure that new forests are sympathetically integrated into the landscape;
- . adequate research and land capability assessment is carried out.

6. To manage Australian forests cooperatively

To achieve this goal, strategies must be developed which ensure that -

- . national coordination of long-term forest land use and timber resource planning occurs, taking into account a national forest inventory and an agreed national forest strategy;
- . particular emphasis is given to close collaboration with New Zealand and other Pacific near-neighbours with respect to forestry policy;
- . research, aimed at continuing to provide a sound scientific basis for management, and technological advances in forest development, utilisation and conservation is continuous;
- . community involvement in regional and State forest land use and management planning is actively pursued in accordance with effective community consultation process;
- . education programs, to ensure the Australian people understand and support the goals for forest management in Australia, are undertaken.

7. To observe international responsibilities

To achieve this goal, strategies must be developed which ensure that -

- . other countries are assisted to conserve their forests by appropriate aid projects;
- . the international forest conservation treaties and conventions to which Australia is a signatory are observed;
- . standards of leadership are maintained in sustainable forest management, forest development, forest practices and community involvement, which can provide a model for world forestry.

PART III: PRIORITY ACTION FOR AUSTRALIAN FORESTRY

Forest management priorities cannot be static. Both the human socio-economic world with which forests interact, and the biological world of the forest itself, are dynamic and ever-changing. Nevertheless, it is possible to identify the most important steps which need to be taken if we are to achieve the goals set out in Part II of this document.

These steps constitute an action plan for forestry in Australia.

1. Native forest conservation

- . Representative areas of all major native forest types within public forests will be placed in secure reserves where no timber harvesting will be permitted. Such reserves will also be protected from inappropriate development, which may include mining and grazing. The size and location of reserves will be based on planning, economic and scientific advice and community views. Reserve systems will be in place by 1995.
- . Timber harvesting in forests where long-term timber production is one of the uses, will be permitted only on the basis of sustainable use ie, the harvesting and regeneration process may not significantly adversely affect long-term forest productivity nor the regional diversity of its flora and fauna.
- . Monitoring programs will be expanded to study the impacts of forest use on all forest values.

2. Recreation in forests

- . Use of public forests for community enjoyment and recreation will be encouraged by the provision of appropriate facilities, guides and interpretive literature.
- . Recreation uses of forests must be sustainable - ie, they may not adversely affect forest ecosystems or forest productivity in the long term.
- . Recreation impacts on flora and fauna will be monitored.

3. Commonwealth-State relationships in forest management

- . Each State will develop or review its own State forest management strategy by December 1995 which will set out its plans for implementing a national strategy within its own State context.
- . The Commonwealth Government will be responsible for national-level planning in cooperation with the States, and for funding of national initiatives in tree planting and land conservation, as well as financial incentives.
- . The Commonwealth Government will, in partnership with the States, work towards establishing and maintaining a national forest inventory, which should encompass all private and public forests, so that it can then become the basis of all national level forest planning, including national estate and world heritage nomination.

The Commonwealth government will work with the States to develop a national policy on the import and export of forest products.

The Commonwealth and State governments will negotiate bilateral long term forestry agreement which will set out the respective interests of each level of government and the agreed basis for effective and efficient cooperation in the implementation of national and State forestry policies and the fulfilment of legal and other responsibilities.

State Governments will be responsible for forest planning, management and protection. They will maintain adequately resourced organisations for that purpose.

The Commonwealth Government will maintain a policy advisory role with prime responsibility for the ongoing coordination of State-Commonwealth activities in forestry and coordination with neighbouring countries.

The State Governments will work cooperatively with the Commonwealth to coordinate and resource adequate forest research.

4. Timber harvesting and regeneration

On all publicly owned forests in Australia in which timber production is a planned use, felling and logging will not take place (except where stands are being thinned) unless prompt and effective regeneration can be implemented.

Except where they are already in place, all forest managing agencies will develop and implement appropriate codes of forest harvesting practice, and reference to these codes will be included as a legal requirement in timber harvesting contracts. These codes of forest harvesting practice should also apply to private forests to the extent this would be consistent with statutory powers and the States' forest management strategy.

5. Utilisation of forest products

Commonwealth and State governments will seek to encourage a domestic wood processing industry which is efficient, internationally competitive and environmentally responsible.

Australia will work towards producing its domestic forest products requirements where commercially feasible and to exporting those products which can be produced competitively on the international market.

Examine the scope for increasing the export of value-added forest products in order to maximise the national economic benefits.

Any new intensive timber utilisation industry with export potential, such as a pulp mill, will meet nationally agreed standards.

Efficiency in the use of forest products will be promoted by appropriate technology, in-forest control systems and timber royalty structures.

Recycling of wood products, and especially paper, will be promoted and facilitated by government and industry.

6. Forest management

Multiple use of native forests will be defined and recognised in forest management plans as the management approach which best optimises the net value to society of Australian forests. The application of multiple use management in these plans for public forests will involve the forests being zoned for priority uses, reflecting their values and the requirements of society. Public participation will be a key part of the initial planning process and of plan reviews. The plans will be produced for regional areas, preferably on a ten year cycle.

A positive program of reforestation of cleared farmland will be undertaken to meet a higher proportion of Australia's timber requirements where economic. Species used in the reforestation programme will be selected to meet the future needs for wood production, with consideration being given to other benefits, such as catchment restoration. Special emphasis will be given to facilitating the integration of the program with agriculture. Public participation will be a key activity in planning specific programs.

Nationally coordinated work will be undertaken so that royalties on harvested timber should reflect the full social value of the resource and be such as to ensure continued forest management investment.

Public forests will be given appropriate legal security of purpose as well as tenure, so that their range of permitted uses cannot be changed without parliamentary approval.

Reforestation will be used as a tool to assist in the amelioration of land degradation, and to provide other environmental and economic benefits which will assist in the development of sustainable agriculture.

Recreational opportunities will be provided in forests, according to regional plans.

Populations of forest wildlife will be maintained on a regional basis; declared "rare" species and their habitats will be appropriately managed, and work will be undertaken to extend the range of "rare" species if they formerly were more extensive.

7. Forest protection

Forests and rural communities will be protected as far as practicable from wildfire damage by appropriate fire management procedures, including prescribed burning for fuel reduction where appropriate, as set out in management plans.

Forest management procedures will be developed to counter adverse effects of diseases or insects.

8. Research

An adequate research capacity will be maintained by State forestry agencies to provide the knowledge required to protect forests from damaging diseases and pests, to maintain essential ecosystem processes in forests and to maintain or enhance forest productivity.

Forest users will help fund forest research.

Timber utilisation research will be conducted so as to maximise the value of forest products, the efficiency of timber harvest and regeneration and the recovery of timber from felled trees.

Research will be conducted into the conservation of Australian forest gene resources and the genetic improvement of forest trees for a range of purposes.

Australian forestry agencies will cooperate internationally in the preservation of genetic material, in species and provenance trials, genetic improvement of forest trees and the development of improved forest planning, protection and management.

Monitoring programs will be set up to assess the impact of forest use and provide guidance for management.

Research will be conducted into the most effective and efficient means for rehabilitating degraded agricultural or pastoral land through reforestation, and in the use of Australian trees for rehabilitation in other countries.

Social and economic research will be carried out with a view to maximising the benefits of forests to Australian communities over time.

The Commonwealth Government, in partnership with the States' and the forest based industries' development of a Forest Industry Research and Development Corporation, to facilitate enhanced funding and a national focus for forest-based industry research.

9. Community education

State forestry agencies will liaise with education departments and private schools to promote the teaching of forestry in schools; and with tertiary institutions to encourage further courses in forest management to be developed and taught.

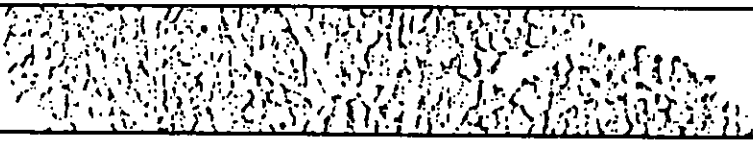
Education programs on tree growing and forest management will be developed and targeted at private landowners.

States will establish demonstration forests and arboreta to provide examples of forest management close to urban and rural centres throughout Australia.

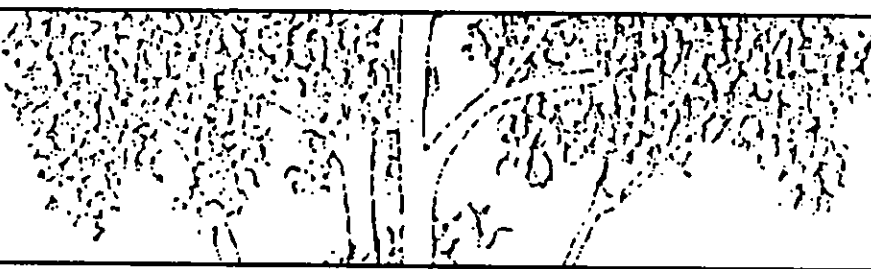
**FOREST PRACTICES
IN
NATIVE FORESTS**



PUBLIC COMMENT DRAFT



STATEMENT PREPARED BY THE STANDING COMMITTEE OF
THE AUSTRALIAN FORESTRY COUNCIL

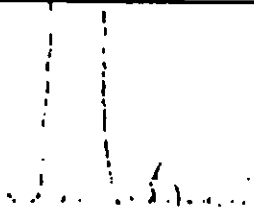


COMMENTS ON THE DRAFT STATEMENT SHOULD BE FORWARDED TO :

Mr L D Wood
Secretary
Australian Forestry Council
C/- GPO Box 858
CANBERRA ACT 2601

OR : State Forestry Authorities

BY: 31 October 1990



NATIONAL PRINCIPLES FOR FOREST PRACTICES RELATED TO WOOD PRODUCTION IN NATIVE FORESTS

PREAMBLE

The Australian Forestry Council first produced a National Forest Strategy in 1986. This aimed to guide the management of forests so that "they would be protected and managed scientifically for sustained production of resources such as water, wood and other forest products; for soil conservation and protection of the forest environment; to maintain genetic diversity of flora and fauna; and to provide opportunities for wilderness experience, recreation, education, and scientific research."

The strategy specifically provided that the management of the forests for wood production should ensure that the other values of the forests were maintained or enhanced. It recognised the role of the States in regard to land management and each State has actively pursued its own policy within the strategy's ambit and principles.

With the recent strong and growing interest in management of the forests, the Australian Forestry Council has taken two major new initiatives.

The first has been to review the existing Strategy, producing a Discussion Paper to provide a framework for rational and comprehensive community debate on the more important issues facing the Australian people. Among the national goals identified in the discussion paper, the following are directly relevant to the planning and implementation of wood production activities in the native forests:

- . To conserve native forest ecosystems
- . To ensure a balance of forest uses
- . To provide for sustainable development of all forest uses
- . To ensure that in native forest areas in which harvesting for timber production is a permitted long-term use, that the forest ecosystem is maintained

A specific priority action identified in relation to forest practices is:

Timber Harvesting and Regeneration

Except where they are already in place, all forest managing agencies will develop and implement appropriate codes of forest harvesting practice, and reference to these codes will be included as a legal requirement in timber harvesting contracts. These

codes of forest harvesting practice should also apply to private forests to the extent this would be consistent with statutory powers and the State's forest management strategy

The second initiative has been to develop a uniform national set of principles for guiding the planning and implementation of forest operations related to wood production in native forests. This statement on forest practices will continue the impetus for enhancing professional management of Australia's native forests and informing the community.

Many of the national principles for application to the native forest situation could be applied equally to existing plantations or those planned to be established on cleared farmland. However, as some differences may be found necessary and the need is not considered to be as pressing, it has been decided to defer consideration of these situations until a later stage.

GLOSSARY DEFINITIONS

action plan

A written plan for the control of forest operations related to timber harvesting in a coupe or to road construction or maintenance in a defined location

afforestation

The establishment of trees on an unstocked forest site, or on a site being converted from native forest, generally by means of planting

Code of Forest Practice

A document defining and prescribing forest practices aimed at protecting the forest environment, its assets, and its users, while allowing economically viable operations, good standards of work, and safe work

coupe

An area of forest that is subject to timber harvesting operations as a single unit

Crown Forest

Publicly owned or leased forest and which may be assigned one of several categories of tenure

fire protection

All activities concerned with protection of forest from fire, including prevention, detection, and suppression

forest activities

Activities involving people to fulfill functions of forest management and to which principles for forest practices apply

forest operation

A forest activity deploying people and machinery to perform work

forest practices

Specifications or standards to be applied in the conduct of specific forest activities or operations

forest values

Attributes of the forest and its environment, which are recognised and required to be managed

management plan

A plan, revised periodically, defining forest policy governing management activities within the management plan area. Typically includes forest geography and history, land uses allocation, objectives and prescriptions for management

native forest

Naturally occurring forest, self-regenerating, whose current floristic condition may or may not have been influenced by past human activity

operations plan

A plan, revised annually, defining the timber harvesting schedule, wood production targets, roadworks, reforestation/afforestation and forest protection requirements

reforestation

The establishment of trees on an existing forest site following timber harvesting, generally by means of natural or artificial seeded regeneration

road construction

The building of roads including such operations as location, clearing, forming, metalling, surfacing, draining, and drainage line crossings- bridges, culverts, fords, excavations, embankments.

Associated works include quarries, gravel pits, and disposal fills.

road maintenance

Operations to repair or rehabilitate any road surfaces, drainage works, and drainage line crossings, and including drainage required when roads are taken out of service

snigging

The pulling of logs, either wholly or partially in contact with the ground, from tree stump to log dump

State Forest

Public forest dedicated to management by a State for a range of multiple uses including wood production

strategic planning

Planning to determine and achieve management policy objectives for designated regional areas of forest lands

timber harvesting

Removal of timber produce from the forest for utilisation

timber salvage

Timber harvesting of products which would otherwise be destroyed or wasted

wood production

Activities associated with the use of the forests for the wood material products of their growth

PRINCIPLES

The native forests of Australia, both public and private, are valuable renewable resources providing many benefits. Managed in a responsible way, they provide environment protective functions as well as satisfy many community needs for resource use such as wood production, water, other products and other services.

The management emphasis for public and private forests differs, but there is recognition that operations in the forests need to be of a high standard, regardless of ownership. The Australian Forestry Council, representing the States' and the Commonwealth's forestry authorities, has decided to develop a set of national principles to be applied in the management of native forest resources used for wood production.

These principles determine a common basis for sound management to which all States are committed. Specific prescriptions by the different States conforming to the national principles take into account the wide range of forest types, conditions, and situations applying due to natural and cultural variations.

The principles have been structured into several sections, relating to different activities associated with wood production in the native forests.

1. AUTHORISATION

1.1 Legislation in each State will provide for the management of State Forests under sustainable development principles and the relationship with associated industry to ensure conservation and protection of the environment.

1.2 Principles should also apply to other Crown native forests subject to wood production and private forests to the extent this would be consistent with statutory powers and the States's forest management strategy.

1.3 Each State will provide an appropriate system for the specification, control, and accountability for forest practices relating to wood production activities.

1.4 The system may involve either separate legislation, legally enforceable contract, licence under other legislation, some combination, or other means.

1.5 The system will provide for code(s) of forest practice suitable for the State.

1.6 The purpose of the code(s) of forest practice related to wood production is to ensure that timber growing and timber production activities for commercial purposes, are conducted in

a manner that safeguards the identified environmental values associated with those forests.

1.7 Review of the code(s) of forest practice related to wood production will be conducted at intervals permitting responses to developments in knowledge and technology. Community views should be actively sought as part of the review process.

2. SAFETY

2.1 All wood production activities will be conducted to comply with relevant safety legislation and policy. In particular, all operators should be trained to designated standards in the safe and efficient use of equipment and machinery and be responsible for safe working practices.

3. PRINCIPLES OF ENVIRONMENTAL CARE

The principles of environmental care with regard to planning and conducting of timber growing and harvesting operations are that:

3.1 water quality (physical, chemical, or biological), be protected by measures controlling disturbance resulting from forest activities;

3.2 water yield be managed as required by careful planning of operations;

3.3 soil stability be protected by measures which regulate site disturbance;

3.4 soil, water catchment, and landscape values be protected by the careful location, construction, and maintenance of timber extraction roads and tracks, and regulation of their use;

3.5 fauna, flora, and landscape values be protected by the careful planning of operations and the reservation of appropriate patches and corridors of vegetation;

3.6 the floral and faunal diversity of native forests, including a range of successional stages, be maintained on public land;

3.7 forests be protected from the adverse effects of fire and from the introduction of, and spread of, plant, insect, and animal pests, and plant diseases;

3.8 important forest values such as intensive recreation, high scenic quality, significant geomorphic, biological, or cultural heritage sites, be protected from the adverse effects of forest operations on public land;

3.9 forest values be protected by the removal of rubbish from sites following forest operations.

4. IMPLEMENTATION

4.1 Planning

4.1.1 For public land strategic planning should be achieved through management plans for suitably sized areas of forest.

4.1.2 For public lands the distribution of wood production throughout the management plan area should be achieved by operations plans, subject to the management plan.

4.1.3 Individual forest operations, will be conducted in accordance with approved action plans, which incorporate a map and a schedule specifying relevant conditions.

4.1.4 The action plan will include details of any necessary planned access to the coupe additional to the road system approved under the management plan or operations plan.

4.2 Access

4.2.1 Planning of road systems in public forests will be based on the economic principle of minimising the combined cost of snagging and roading and on the Principles of Environmental Care.

4.2.2 Road design will be to standards capable of carrying the anticipated traffic with reasonable safety

4.2.3 Construction of roads and associated works will be undertaken in a manner which will ensure compliance with the Principles of Environmental Care.

4.2.4 Timber salvage should be a standard practice during road clearing operations.

4.2.5 Maintenance of roads in service will be undertaken to protect the road surface and water quality.

4.2.6 Roads will be closed in wet conditions when unacceptable damage would occur, or when such other conditions may warrant.

4.3 Timber Harvesting

4.3.1 Timber harvesting will be planned and carried out to meet the Principles of Environmental Care. The action plan will be approved by relevant authorities prior to commencement of harvesting.

4.3.2 The action plan for harvesting will consider factors such as coupe size, slope and location, design and location of landings and snig tracks, harvesting equipment and areas excluded from logging, protection, and reforestation.

4.3.3 Harvesting operations should be suspended where the Principles of Environmental Care will be compromised, or where the safety of workers is at unacceptable risk.

4.3.4 Any restoration measures for snig tracks drainage, and landings should be done progressively during harvesting.

4.4 Forest Establishment

4.4.1 Planning for reforestation or afforestation will be based upon the use of silvicultural methods that are economically and environmentally appropriate for the particular type of forest, and applied with local variations to suit specific stand and site conditions.

4.4.2 Reforestation of native forest will, where desirable, be with species and provenances native to the area or general locality so as to maintain species patterns and genetic pools present prior to harvesting.

4.4.3 Where permitted, the afforestation of native forest sites to plantation of exotic or native species will comply with any requirements of legislation or policy controlling such practices.

4.4.4 Intensive management practices, such as site preparation, fertilising, weed control, pest and disease control, and other operations will be carried out in accordance with standard instructions, and consistent with the Principles of Environmental Care.

4.4.5 Stocking assessments will be undertaken, where appropriate, to monitor the success of forest establishment practices and to provide a basis for corrective measures.

4.5 Forest Protection

4.5.1 Fire protection planning should be undertaken in coordination with relevant land management agencies.

4.5.2 Where pests or diseases cause significant damage, decline, or deaths of trees, specialist advice should be sought.

4.5.3 Where forest operations are planned for healthy forest vegetation, known to be susceptible to important and recognised pests or diseases, specialist advice should be sought before commencing work.

4.5.4 Use of chemicals, such as herbicides, in forest operations will be strictly in accordance with State policies and procedures.

and the